

# Route 1 Corridor Study

North Attleborough and Attleboro



SRPEDD 88 Broadway, Taunton



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## **Introduction**

In 2016, SRPEDD received a formal request from former Mayor Kevin Dumas (2003-2017) of the city of Attleboro to study the congestion and safety issues on Route 1 in Attleboro from the intersections of Highland Avenue & Newport Avenue (Route 123) and Route 1A north to the I-295 interchange which is located in the town of North Attleborough. Route 1 has long been a corridor that experiences congestion and safety issues with several intersections in Attleboro and North Attleborough appearing on SRPEDD's Top 100 Most Dangerous Crash Locations. Following the request of then Mayor Dumas, SRPEDD contacted the town of North Attleborough concerning the study and a mutual decision was made to expand the study north to Hoppin Hill Road (Route 120) in North Attleborough.

The study began at the close of 2017 with a public outreach plan and the start of the process of the collection of data (traffic counts, crash reports, levels of service, etc.) to determine the locations and the extent of both safety and congestion issues currently along the corridor. SRPEDD also looked at land use and development in both communities and attempted to anticipate how this growth will affect the existing traffic issues into the future.

SRPEDD is able to forecast future traffic by using the Travel Demand Model, a computer program that analyzes existing traffic operations for the entire SRPEDD region and forecasts future traffic patterns based on projected growth in the region.

The intent of this Route 1 Corridor Study is to address present issues, recommend measures to address future issues and provide recommendations on specific improvements necessary to resolve traffic congestion and safety issues for consideration by the Massachusetts Department of Transportation (MassDOT), the city of Attleboro and the town of North Attleborough.

## **Public Outreach**

Before the commencement of the Route 1 transportation study, a public outreach strategy was developed to inform the public, including local residents, business owners and any interested parties, of the study, and to encourage and garner feedback on the issues facing the Route 1 corridor in both communities of Attleboro and North Attleborough.

All public outreach efforts were devised to encourage participation in the process and to garner comments and feedback from anyone who lives, works and travels on or near the Route 1 corridor in the study area of Attleboro and North Attleborough. The unique experiences and insight from people who live, work and travel in the area is invaluable while conducting a study such as this.

Meeting notices were sent to the town clerks in each town for public posting, as well as distributed by SRPEDD staff to businesses along the Route 1 corridor and surrounding areas in both communities. The meeting notices were also posted on SRPEDD's webpage, Facebook page and Twitter feed. A press release was sent out, alerting the media of the study and the upcoming public meetings. Over 250 public meeting notices were distributed.

The first public meeting was held in North Attleborough at the Richards Memorial Library on April 24, 2018. The second meeting was held at the Coelho Middle School on April 25, 2018 in Attleboro. In 2019, SRPEDD hosted 2 additional public meetings and presented findings and recommendations on February 25<sup>th</sup> in Attleboro and February 26<sup>th</sup> in North Attleborough.

The meetings presented an opportunity for participants to express their concerns, share experiences while traveling the corridor and share wishes for improvements. This resulted in numerous comments and first-hand information concerning the day-to-day travel on Route 1. The public meetings and the door-to-door distribution of meeting notices to businesses along the corridor presented the opportunity for person-to-person contact and conversations which resulted in valuable feedback and comments with residents, business owners, employees and local residents of both communities.

A public survey concerning the travel experience on Route 1 was released via Survey Monkey on April 4, 2018, with the last responses submitted on May 7, 2018, and netted a total of 147 responses. Out of the 147 respondents, 103 left additional comments. A number of these comments involved the poor timing of lights and the need for additional thru lanes and turning lanes. There were numerous general comments related to congestion and the overdevelopment of the Route 1 area, as well as the poor condition of the pavement.

The following items were the specific issues that were mentioned repeatedly in survey results:

1. The extensive queue of left-turning vehicles at Allen Avenue;
2. The difficulty in taking left-turns at both signalized intersections and uncontrolled business driveways;
3. The danger and /or lack of facilities for transit riders, such as bus shelters, as well as for pedestrians and bicyclists, such as sidewalks and bike lanes;

4. The use of residential and local roads as cut-throughs or detours around the Route 1 traffic; and
5. Dangerous left-turns and the lack of a turn arrow at Route 1 and Hoppin Hill Road (Route 120).

(It should be noted that the intersection of Route 1 at Hoppin Hill Road (Route 120) was undergoing construction during the public outreach and the writing of the study.)

All public outreach materials, (meeting notices, public meeting sign-in sheets, public comments, and all survey results can be found in **Appendix A – Public Outreach**.

## **Existing Conditions**

### **Study Area & Land Use**

In the Commonwealth of Massachusetts, the Route 1 corridor begins at the Rhode Island border in Pawtucket and continues north through the state for 86 miles to the New Hampshire border in Seabrook. In this study area, Route 1 is designated as Washington Street in Attleboro and changes to South Washington Street in North Attleborough. It is a north/south running, urban minor arterial road that is owned and maintained by MassDOT.

The study area begins at Hoppin Hill Avenue (Route 120) in North Attleborough and continues south to Irving Avenue in Attleboro. (See Figure 1) Study Area map. The study area is approximately 3.4 miles long. The study area also includes the road segment between Route 1 and May Street, 14 signalized intersections, the interchange with Interstate Highway 295, and provides access to numerous retail centers, businesses, offices and residential areas.

The study area is a densely developed commercial corridor with plazas and retail outlets with numerous driveway curb-cuts. The corridor provides access to the Emerald Square Mall, a Walmart super center, Fashion Crossing, the Shoppes at Mayfaire, several auto dealerships, restaurants, gas stations and numerous smaller retail outlets. There is very little residential land use along the study area with the exception of the Riverview Estates and the Royal Park Apartments. Riverview Estates is a 55 and older mobile home park in North Attleborough, with its entrance located just south of Hoppin Hill Road (Route 120). The Royal Park Apartments is a 224-unit complex of apartments and townhouses with access from two locations directly from Route 1, the first just south of Hoppin Hill Road and the second just north of Hoppin Hill Road, both from Route 1.



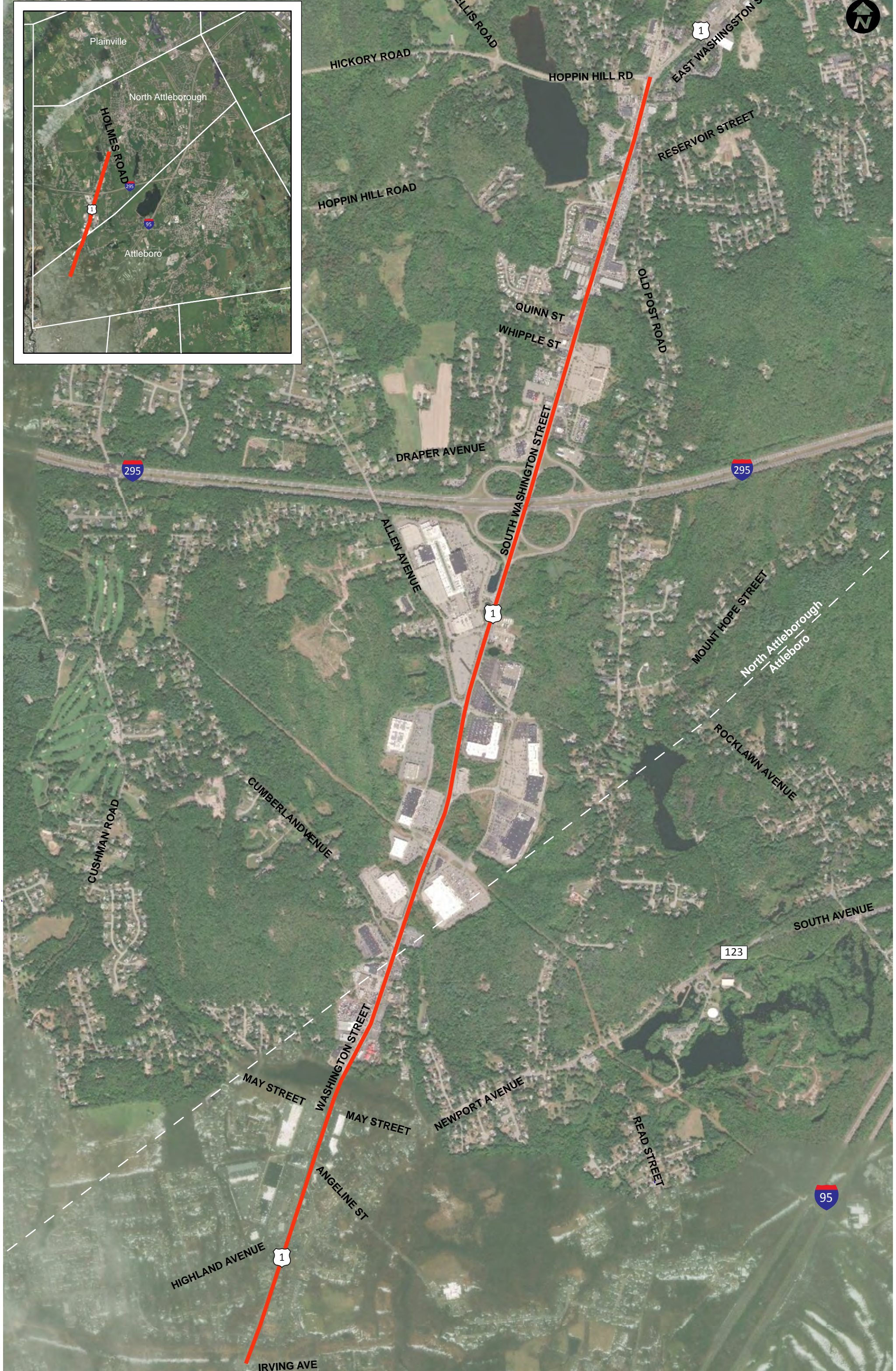


Figure 1- Study Area

Route 1 provides access to Interstate 295 (and subsequently to I-95) and to Pawtucket, Rhode Island and points to the south, and to Plainville, MA and Interstate 495 and points to the north. Route 1A is a branch of Route 1 that begins just north of Newport Avenue (Route 123) and runs south for approximately 2 miles and provides access to Pawtucket, Rhode Island and points south and connects to Interstate 95 with access to Providence, Rhode Island.

## **Roadway & Pavement**

In general, Route 1 is a four-lane road consisting of 2 lanes in each direction throughout the study area.

At the start of the study area at Hoppin Hill Road (Route 120) in North Attleborough, there are double yellow pavement markings to separate Route 1. The markings continue south to north of Quinn Street. South of Quinn Street, these pavement markings are replaced by a guardrail which continues until north of Draper Avenue. Route 1 at the Draper Avenue intersection is separated by a raised concrete median.

South of Draper Avenue the concrete median is replaced with guardrails that continue until north of Allen Avenue. Route 1 at the Allen Avenue intersection is separated by a raised concrete median. South of Allen Avenue, Route 1 is separated by jersey barriers until the Pet Smart entrance where they transition into a very short section of jersey barriers bordered by guardrail. At the Cumberland Avenue intersection, Route 1 is again separated by a raised concrete median.

South of the Cumberland Avenue intersection, Route 1 is separated by double yellow pavement markings that continue to Como Drive. The raised concrete median returns south of Como Drive and continues through the intersection at Angeline Street. South of Angeline, the double yellow pavement markings return and continues through where Route 1 meets the Route 1A connector and south to Irving Street, the end of the study area.

Based on the latest pavement condition survey, Route 1 is classified as being in poor condition between Cumberland Avenue and just south of where Route 1 meets Route 1A at Highland Avenue (Route 123). The remainder of the area along Route 1 is classified as being in fair condition with visible pot holes and extensive cracking.

Detailed information for each intersection highlighting the traffic controls, layout, surrounding land uses, crash frequency, and pavement conditions can be found in **Appendix B – Existing Conditions**.

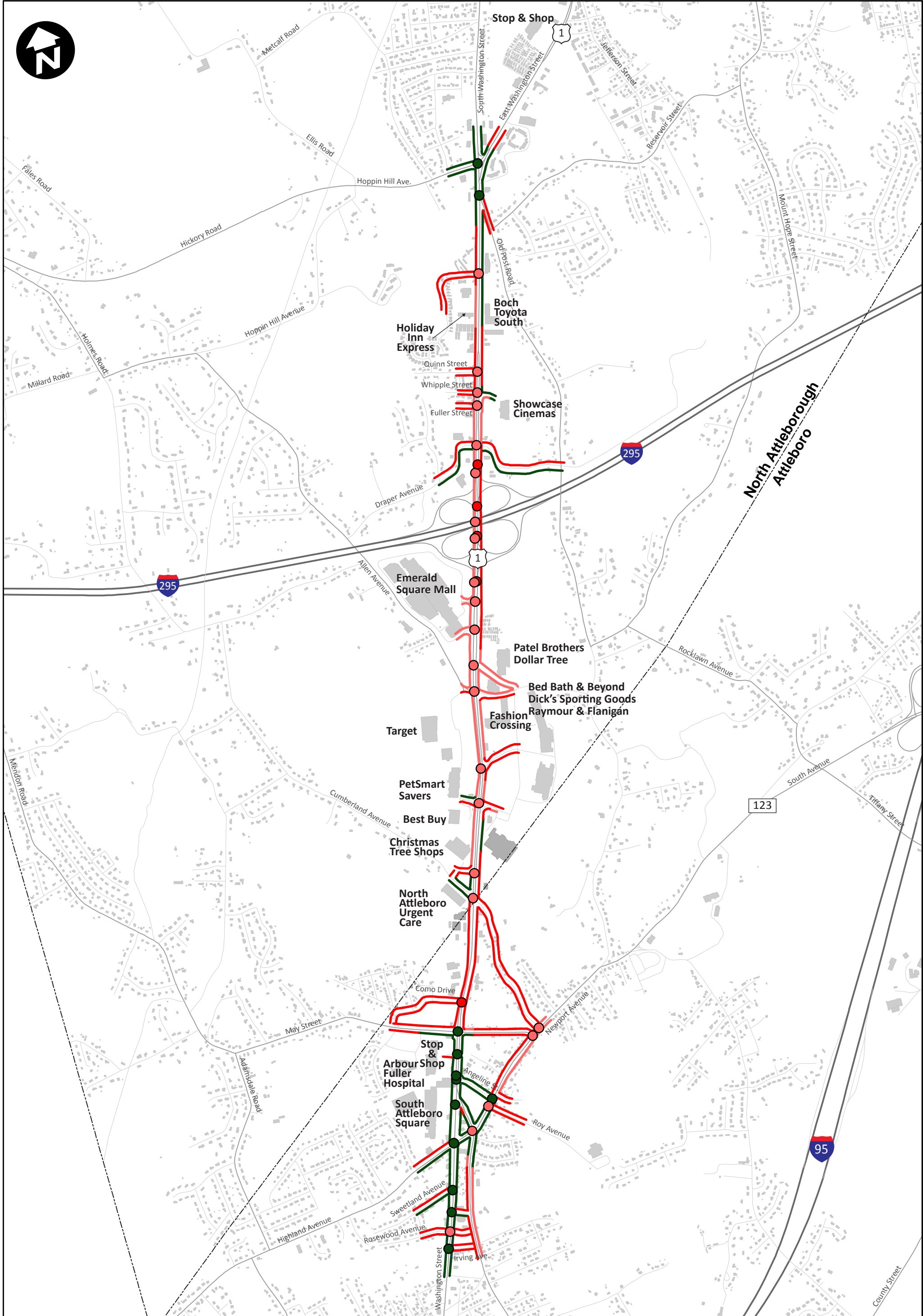
## **Bicycle & Pedestrian Accommodations**

Route 1 is a busy commercial corridor with many destinations, including shopping, entertainment and for employment purposes. The transportation options along Route 1 include driving a vehicle, taking a bus, walking and bicycling. Walking and bicycling as a means of transportation is growing and are a viable option for people due to various reasons, including choosing a more active lifestyle, for environmental concerns and as a very low-cost transportation option. Walking and bicycling are also generally considered the “first and last mile” to connect to buses and other modes of transit, therefore, the presence of transit increases the importance of bicycle and pedestrian access. Bus service is provided on Route 1 by the Greater Attleboro Taunton Regional Transit Authority (GATRA).

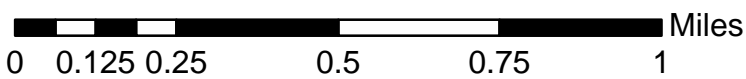
Currently, Route 1 does not provide adequate and/or consistent pedestrian accommodations for the majority of the corridor. Figure 2 (Sidewalk & Intersection Condition Map) displays the condition of sidewalks along the corridor as well as at each intersection and also notes where sidewalks do not exist. There are several significant gaps in the sidewalk network. Where there are sidewalks, a majority are 5 feet wide or greater, but are in fair to poor condition. Several sidewalk segments end, abruptly leaving pedestrians with no safe travel path.

The majority of intersections do not have adequate crosswalks or curb ramps on the side streets and/or across Route 1. Of the signalized intersections, very few have crosswalks where needed and even less are fully integrated with the signal system. Of the intersections that do have crosswalks integrated with the signal systems, all but two are outdated, poorly functioning and do not meet modern design standards. Many intersections have free right-turn (or slip) lane configurations that are very dangerous to pedestrians due to the lack of sight distance, lack of adequate protection or stop control, and the tendency of the geometry to encourage high vehicle speeds. A detailed analysis of pedestrian access at each intersection can be found in **Appendix C - Bicycle & Pedestrian Accommodations.**

Bicycle facilities are severely lacking over most of the corridor. There is one small section of bicycle lane, from Route 1A north to May Street on both sides of the road that was constructed as part of recent development in the area. The bicycle lane has appropriate markings and signage, however, does not provide any network connectivity. There is also a safety issue with the southbound right turn into the BJ’s driveway, as the bicycle lane is poorly delineated and acts as a vehicle right-turn lane instead of a bicycle lane. Outside of this small section of bicycle lane, the majority of the corridor has one narrow shoulder, if any at all, averaging from less than 6 inches to about one-foot wide, leaving no refuge for cyclists. For the very few locations where there are wider shoulders, there are no markings or guidance for bicyclists.



**Figure 2 - Sidewalk & Intersection Condition**



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## Crash Analysis

Safety has been a concern along the Route 1 corridor with several intersections being listed on SRPEDD's Top 100 Most Dangerous Intersections in the region. The most recent listing appeared in the FFY 2020 Regional Transportation Plan and includes 5 intersections along the corridor.

The 4 intersections were ranked as follows:

- #11 - Washington Street (Route 1) at Highland Avenue (Route 123) in Attleboro;
- #49 - South Washington Street (Route 1) at Allen Avenue/Emerald Square Mall in North Attleborough;
- #51 - South & East Washington Street (Route 1/1A) at Hoppin Hill Road (Route 120) in North Attleborough;
- #73 - Washington Street (Route 1) at May Street in Attleboro; and
- #97 - Newport Avenue (Route 1A) at Highland Avenue (Route 123) in Attleboro.

Since 2011 there have been six individual Road Safety Audits (RSA) conducted at numerous locations along the study area. An RSA is the examination of safety issues at an existing or future road or intersection by an independent, multidisciplinary team. The ultimate goal is to identify potential road safety issues and opportunities for improvements. Most recent RSA's completed in 2018 by independent consultants included the intersections of South Washington Street (Route 1) at Old Post Road, South Washington Street (Route 1) at I-295 Interchange, South Washington Street (Route 1) at Draper Avenue, South Washington Street (Route 1) at Allen Avenue, and South Washington Street (Route 1) at North Attleborough Marketplace Access Road in North Attleborough.

In addition to all of the previous work completed, a detailed crash analysis was conducted along the entire corridor. The Town of North Attleborough and City of Attleboro Police Departments provided copies of 2014-2016 crash reports for the study. Data was compiled and analyzed, crash diagrams were created and crash rates were determined to measure the relative safety at each location. Both the Accidents per Million Entering Vehicles (ACC/MEV) rate and the Equivalent Property Damage Only (EPDO) index were calculated at each intersection. The Accidents per Million Vehicle Miles Traveled (ACC/MVMT) was calculated for roadway segments along the corridor.

The average ACC/MEV threshold rates for the SRPEDD region are 0.75 for signalized intersections and 0.57 for unsignalized intersections. The ACC/MVMT threshold for urban minor arterials is 3.8, and the regional EPDO threshold is 15.0, therefore, anything exceeding these averages identifies a safety concern.

Table 1 displays crash data for any intersection where the total number of crashes was 10 or greater for the three-year study period (2014-2016). The table displays the intersections with the highest crash rates in descending order and includes the total number of crashes, the severity of crash (property damage only or injury), and the crash rates at each intersection.

**Table 1 - Intersections with 10 or More Crashes (2014-2016)**

<b>Intersection</b>	<b>Community</b>	<b>Total Crashes</b>	<b>Property Damage Only</b>	<b>Injury Crashes</b>	<b>ACC/MEV Crash Rate</b>	<b>EPDO Crash Rate</b>
Washington Street (Route 1) at Highland Avenue (Route 123)	Attleboro	55	46	9	<b>1.73</b>	<b>30.33</b>
Washington Street (Route 1) at May Street	Attleboro	29	19	10	0.71	<b>23</b>
South Washington Street (Route 1) at Walmart Entrance / Best Buy Entrance	North Attleborough	31	22	9	<b>0.78</b>	<b>22.33</b>
South Washington Street (Route 1) at Allen Avenue	North Attleborough	33	27	6	<b>0.89</b>	<b>19</b>
South Washington Street (Route 1) at Old Post Road	North Attleborough	20	13	7	0.60	<b>16</b>
South Washington Street (Route 1) at Hoppin Hill Avenue (Route 120)	North Attleborough	29	25	4	<b>0.86</b>	<b>15</b>
South Washington Street (Route 1) at Draper Avenue	North Attleborough	21	15	6	0.62	<b>15</b>
Newport Ave (Route 1A) at Highland Ave/Newport Avenue (Route 123)	Attleboro	19	13	6	0.61	14.33

Intersection	Community	Total Crashes	Property Damage Only	Injury Crashes	ACC/MEV Crash Rate	EPDO Crash Rate
South Washington Street (Route 1) at Emerald Square Mall (North Entrance)	North Attleborough	20	15	5	0.54	13.3
South Washington Street (Route 1) at Emerald Square Mall (South Entrance)	North Attleborough	21	17	4	0.62	12.3
Newport Ave (Route 123) at May Street	Attleboro	15	10	5	0.73	11.66
South Washington (Route 1) at Cumberland Avenue	North Attleborough	14	9	5	0.37	11.33
Washington Street (Route 1) at Route 1A Connector	Attleboro	15	12	3	0.46	9
Washington Street (Route 1) at Como Drive	Attleboro	10	10	0	0.28	3.33

Over the 3-year period of 2014-2016, there were 332 crashes that occurred at the 14 intersections listed in the table above; 164 (49%) were rear-end crashes, 103 (31%) were angle crashes, 42 (13%) were sideswipe and 18 (7%) were single vehicles crashes.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate signal clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors can include weather and driver distraction.

Of the 332 total crashes, 253 involved property damage only (76%) and 79 (24%) involved injury.

Seven of the eleven locations that were evaluated (based on the number of crashes) exceeded at least one of the crash rate thresholds. The most problematic intersection along the corridor was found to be the Washington Street (Route 1) at Highland Avenue (Route 123) in Attleboro.

The intersection had a total of 55 crashes over a three-year period and both crash rates exceeded the thresholds.

To more easily analyze the midblock crash data, we divided Route 1 into eight segments. (Please see Table 2). Crashes per Million Vehicle Miles Traveled (MVMT) rate was determined and crash diagrams were created to measure the relative safety along each of the eight segments. Route 1 is classified as an urban minor arterial, and the MVMT threshold based on the statewide average crash rates for this type of roadway is 3.80, and any rate exceeding this is considered a safety issue. Table XX lists each segment, the total number of crashes (separated into property damage only and injury), and the MVMT crash severity rate.

**Table 2 - MVMT for Route 1 Segments**

<b>Route 1 Segments</b>	<b>Total Crashes</b>	<b>Property Damage Only</b>	<b>Injury Crashes</b>	<b>MVMT</b>
From Hoppin Hill Road to Riverview Drive	24	16	8*	2.79
From Riverview Drive to Quinn Street	<b>42</b>	36	6	<b>6.40</b>
From Quinn Street to I-295	4	3	1	0.38
From I-295 to Allen Avenue	9	9	0	0.58
From Allen Avenue to Walmart Entrance	7	6	1	0.46
From Walmart Entrance to Cumberland Avenue	14	11	3	1.08
From Cumberland Avenue to Como Drive	<b>45</b>	33	12	<b>3.41</b>
From May Street to Highland Avenue	6	2	4	0.46

\*Including 1 Fatality



Although only one of the segments along the corridor exceeded the MVMT rate, there are three segments that should be considered as having serious safety issues and be considered for improvements. The most dangerous of the three is the segment between Riverside Drive and Quinn Street in North Attleborough, which had 42 total crashes, with an MVMT crash rate nearly double the threshold. (See Figure 3.) Nearly 40% of the total crashes in this segment involved a motorist entering or exiting a driveway. As with most of the Route 1 corridor, this segment is heavily developed and the myriad driveway accesses simply increase the conflict points, adding to the safety issues here. (A conflict point is the point at which a vehicle crossing, merging with, or diverging from a road or driveway will conflict with another vehicle using the same road or driveway.)

The remaining crashes were either rear-enders, likely caused by motorists slowing or stopping to enter a driveway access, or sideswipe crashes, caused by a driver attempting to make a lane change, often to avoid a turning or exiting vehicle.

The second segment that should be considered for improvements is the segment between Cumberland Avenue and Como Drive. There were a total of 45 crashes along this segment. (See Figure 4.) Twelve (26%) of these crashes resulted in injuries. Twenty-four (53%) of the total crashes involved someone either entering or exiting a driveway. The remaining crashes were either rear-enders or sideswipe crashes.

Lastly, the segment between Hoppin Hill Road and Riverside Drive in North Attleborough should be considered for improvements. (See Figure 5.) There were a total of 24 crashes along this segment of roadway with 8 (33%) of them resulting in injury, including a fatality. The majority of these crashes 16 (66%) occurred at the two driveways providing access to the Dunkin Donuts located there.



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	→	Rear End	
●	Injury Collision	↙	Left Turn	
⊙	Fatal Collision	→	Overtake	
→	Moving Vehicle	↘	Out of Control	
↘	Turning Vehicle	↔	Side Swipe	
↔	Backing Vehicle	↔	Head On	
🚶	Pedestrian	↘	Right Turn	
🏍️	Motorcyclist	↗	Right Angle	
🚲	Bicyclist	↘	Animal	
🐕	Animal	☐	Fixed Object	
☐	Fixed Object	▢	Parked Vehicle	
▢	Parked Vehicle	<p>Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center. Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information. MassDOT: 10 Park Plaza, Boston, MA 02116</p>		

Figure 3 - Crash Diagram (2014-2016) of Route 1 Segment between Riverside Drive and Quinn Street



Legend		Location and Type of Collision		Intersection Location
Ⓝ Property Damage Collision	🚶 Pedestrian	→ Rear End	↔ Head On	
🔴 Injury Collision	🏍️ Motorcyclist	↩ Left Turn	↘ Right Turn	
⬛ Fatal Collision	🚲 Bicyclist	→ Overtake	↗ Right Angle	
→ Moving Vehicle	🐕 Animal	⚡ Out of Control	↔ Side Swipe	
↘ Turning Vehicle	☐ Fixed Object			
↔ Backing Vehicle	▭ Parked Vehicle			
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Figure 4 - Crash Diagram (2014-2016) of Route 1 Segment between Cumberland Avenue and Como Drive



Legend		Location and Type of Collision		Intersection Location
Ⓝ Property Damage Collision	🚶 Pedestrian	→ Rear End	↔ Head On	
🔴 Injury Collision	🏍️ Motorcyclist	↩ Left Turn	↪ Right Turn	
⚫ Fatal Collision	🚲 Bicyclist	→ Overtake	↗ Right Angle	
→ Moving Vehicle	🐕 Animal	⚡ Out of Control	↔ Side Swipe	
↪ Turning Vehicle	☐ Fixed Object			
↔ Backing Vehicle	▭ Parked Vehicle			
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Figure 5 - Crash Diagram (2014-2016) of Route 1 Segment between Hoppin Hill Road and Riverside Drive

## Traffic Volumes & Speed

Automatic Traffic Recorders were used to record traffic data on Route 1 and surrounding roadways, including the volume, speed and classification of vehicle. The Average Daily Traffic (ADT) varies along the nearly 3 ½ miles of the study area on Route 1, as does the recorded speed and classification of vehicles.

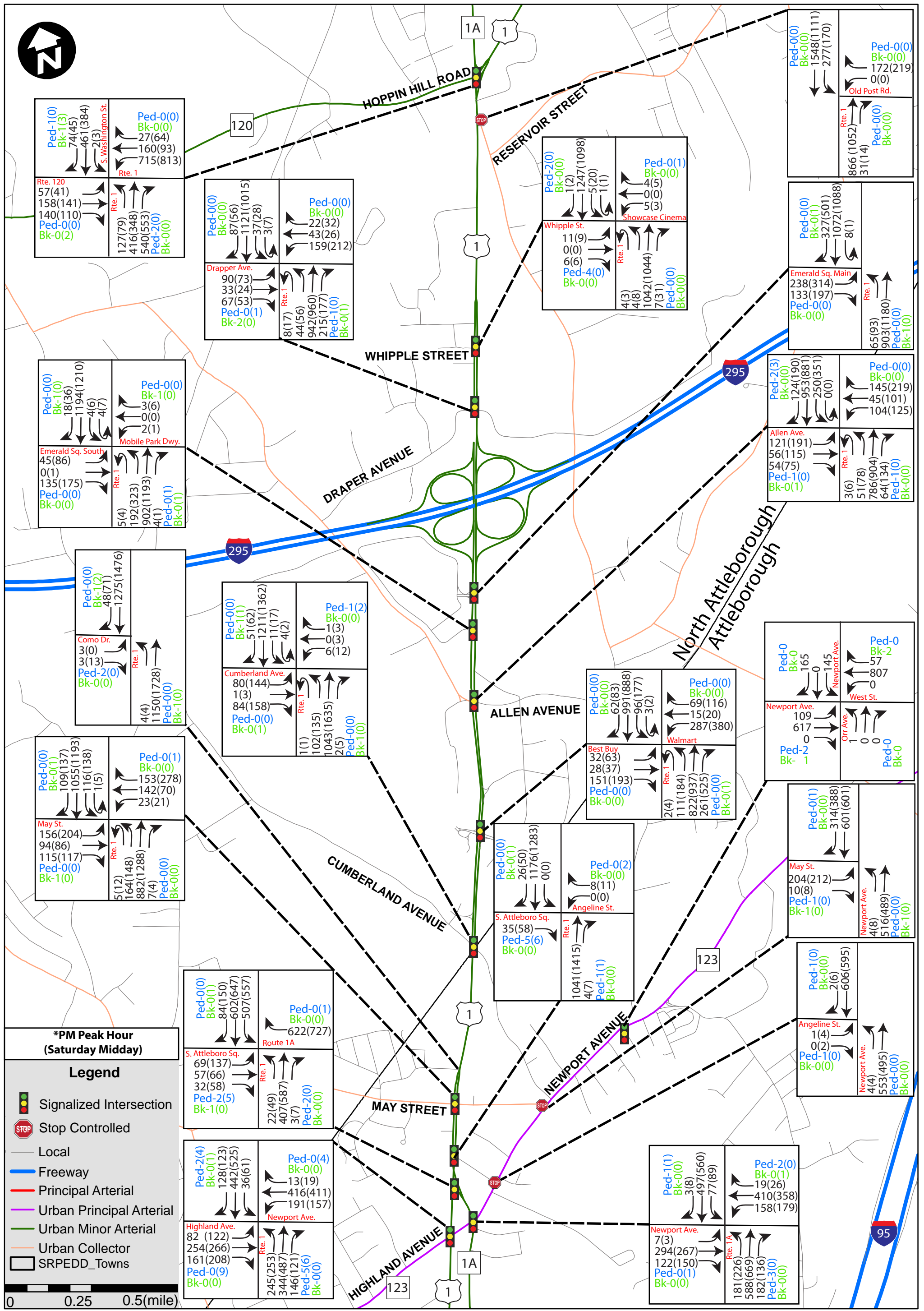
The volume of traffic on a roadway is calculated as Average Daily Traffic (ADT). Speed is calculated as 85th percentile speed. This is the speed which 85% of vehicles are traveling at, or below, under free flowing conditions. In other words, the speed that motorists tend to travel according to the road environment. Vehicles types are recorded into 13 classes, from motorcycles to multi-trailer trucks. To simplify this, the 13 classification of vehicles can be broken down into three categories: the first being passenger vehicles and buses; the second being small (light) trucks of up to 3 axles; and the third category are vehicles of 4 or more axles such as construction vehicles and tractor trailers (heavy trucks). Heavy truck traffic will be noted at each location. Anything over 2% for truck traffic is considered significant. (Please see map labeled Existing Volume Counts (Figure 6) which displays all of the traffic data collected in the study area.)

The locations directly on Route 1 that we recorded traffic data for include: north of the I-295 interchange; south of the I-295 interchange; north of Cumberland Avenue; south of May Street; and south of Highland Avenue (Route 123).

The Average Daily Traffic (ADT) for each of these locations are as follows. North of the I-295 interchange the ADT was 27,923. South of the I-295 interchange the ADT was 36,937. North of Cumberland Avenue the ADT was 35,384. South of May Street the ADT was 30,110. South of Highland Avenue (Route 123) the ADT was 9,863.

The 85<sup>th</sup> percentile speeds for each of these locations are as follows. North of the I-295 interchange the 85<sup>th</sup> percentile speed was measured at 44 mph; it was 47 mph south of the I-295 interchange; 42 mph north of Cumberland Avenue; and 41 mph south of Highland Avenue. However, the posted speed limit is 40 mph on Route 1. This indicates that most motorists are exceeding the speed limit on this roadway. The 85<sup>th</sup> percentile speed south of May Street was measured at 36 mph. This location indicated that most motorists are traveling within the posted speed limit.

North of Route I-295, heavy trucks accounted for 3.73% of all traffic, which is considered a significant amount of heavy trucks. South of the I-295 interchange it was 1.30%; north of



Participating Agencies:

# Route 1 Corridor Study

## Figure 6 - Existing Volume Counts

Compiled by:

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Cumberland Avenue it was 1.14%; south of May Street it was 1.16% and 0.43% south of Highland Avenue, all within acceptable amounts.

## Traffic Operations

In order to thoroughly analyze the operation of the corridor and the intersections several site visits were conducted to document the physical characteristics. Reviewers took note of the roadway cross section including number of lanes and width, lane utilization (left, thru, right), pavement markings, including lane designation, shoulder type and width, median type and width, pavement conditions, sidewalk, and bicycle lanes. In addition, the control type was noted and signal timings and phases were recorded.

In addition, Turning Movement Counts were conducted during the PM and Saturday peak periods to collect vehicle approach movements (left, thru, right), pedestrian and/or bicycle data through individual intersections. This data was used to examine the operation of the intersections and to calculate a Level of Service (LOS).

Level of Service (LOS) reflects the operating conditions of an intersection, approach and/or specific movement. There are six LOS categories, ranging from A to F; LOS A representing the best operating conditions and LOS F representing the worst. LOS A through C is considered acceptable because it provides an adequate quality of service to motorists. LOS D indicates that traffic flow is worsening but still tolerable. At LOS E and F, traffic flow is considered unacceptable.

Table 3 displays the PM Peak and the Saturday Peak LOS for the intersections that fall within the study area.

**Table 3 - Peak LOS - Weekday PM & Saturday**

Time & Day		2018 Weekday		2018 Saturday	
		5PM-6PM		1PM-2PM	
Locations	Traffic Control	LOS	Delay (Seconds)	LOS	Delay (Seconds)
South Washington Street (Route 1) at Hoppin Hill Avenue (Route 120)	Signal	F	>120	F	>120

Time & Day		2018 Weekday		2018 Saturday	
		5PM-6PM		1PM-2PM	
Locations	Traffic Control	LOS	Delay (Seconds)	LOS	Delay (Seconds)
South Washington Street (Route 1) at Old Post Road	Stop Sign	A	5.3	A	4.1
South Washington Street (Route 1) at Whipple Street	Signal	A	4	A	6
South Washington Street (Route 1) at Draper Avenue	Signal	F	110	F	>120
South Washington Street (Route 1) at Emerald Square Mall Northern Entrance	Signal	B	15	B	18
South Washington Street (Route 1) at Emerald Square Mall Southern Entrance	Signal	B	20	C	25
South Washington Street (Route 1) at Allen Avenue	Signal	F	118	F	>120
South Washington Street (Route 1) at Walmart / Best Buy Store Entrance	Signal	F	106	F	>120
South Washington Street (Route 1) at Cumberland Avenue	Signal	B	18	C	24
Washington Street (Route 1) at Como Drive	Signal	A	0.1	A	0.1
Washington Street (Route 1) at May Street	Signal	F	>120	F	>120
Washington Street (Route 1) at Angeline Street	Signal	A	2	A	4
Washington Street (Route 1) at Route 1A Connector	Signal	C	25	D	52



Time & Day		2018 Weekday		2018 Saturday	
		5PM-6PM		1PM-2PM	
Locations	Traffic Control	LOS	Delay (Seconds)	LOS	Delay (Seconds)
Washington Street (Route 1) at Highland Avenue/Newport Avenue(Route 123)	Signal	E	57	E	59
Newport Avenue/Highland Avenue(Route 123) at Route 1A	Signal	D	43	D	44
Newport Avenue (Route 123) at Angeline Street	Stop Sign	A	0.1	A	0.2
Newport Avenue (Route 123) at May Street	Stop Sign	E	46	F	53

Currently, there are five intersections that operate at a failing LOS, causing motorists excessive delays, during both the PM Peak period and the Saturday Peak period. In North Attleborough, those intersections are: South Washington Street (Route 1) at Hoppin Hill Avenue (Route 120); South Washington Street (Route 1) at Draper Avenue; South Washington Street (Route 1) at Allen Avenue; and South Washington Street (Route 1) at Walmart / Best Buy Store Entrance. In Attleboro that intersection is Washington Street (Route 1) at May Street. The intersection of Newport Avenue (Route 123) at May Street in Attleboro borders a failing LOS during the PM and Saturday peak periods.

## Future Conditions

### Traffic Operations

During the course of this study, an analysis was conducted using SRPEDD's Regional Travel Demand Forecasting Model. The model analyzes existing traffic operations for the entire SRPEDD region and forecasts future traffic patterns based on projected growth in the region that considers population, households, employment and development. Table 4 displays LOS and delay for all of the intersections during the 2025 and 2040 PM and Saturday peak periods.

**Table 4 - Peak LOS-Weekday PM & Saturday 2025 & 2040**

Time & Day		2025 Weekday		2040 Weekday		2025 Saturday		2040 Saturday	
		5PM-6PM		5PM-6PM		1PM-2PM		1PM-2PM	
Location	Traffic Control	LOS	Delay in Seconds	LOS	Delay in Seconds	LOS	Delay in Seconds	LOS	Delay in Seconds
South Washington Street (Route 1) at Hoppin Hill Avenue (Route 120)	Signal	F	>120	F	>120	F	>120	F	>120
South Washington Street (Route 1) at Old Post Road	Stop Sign	A	7.4	A	14.3	A	5.7	A	12
South Washington Street (Route 1) at Whipple Street	Signal	A	5	A	5	A	6	A	7
South Washington Street (Route 1) at Draper Avenue	Signal	F	>120	F	>120	F	>120	F	>120
South Washington Street (Route 1) at Emerald Square Mall Northern Entrance	Signal	B	16	B	19	C	20	C	25
South Washington Street (Route 1) at Emerald Square Mall Southern Entrance	Signal	E	59	E	76	E	66	F	97
South Washington Street (Route 1) at Allen Avenue	Signal	F	>120	F	>120	F	>120	F	>120
South Washington Street (Route 1) at Walmart / Best Buy Store Entrance	Signal	F	112	F	>120	F	>120	F	>120
South Washington Street (Route 1) at Cumberland Avenue	Signal	C	21	C	28	C	33	E	56
Washington Street (Route 1) at Como Drive	Signal	A	0.2	A	0.7	A	0.2	A	0.3

Time & Day		2025 Weekday		2040 Weekday		2025 Saturday		2040 Saturday	
		5PM-6PM		5PM-6PM		1PM-2PM		1PM-2PM	
Location	Traffic Control	LOS	Delay in Seconds	LOS	Delay in Seconds	LOS	Delay in Seconds	LOS	Delay in Seconds
Washington Street (Route 1) at May Street	Signal	F	>120	F	>120	F	>120	F	>120
Washington Street (Route 1) at Angeline Street	Signal	B	11	B	14	C	25	D	36
Washington Street (Route 1) at Route 1A Connector	Signal	D	41	F	>120	F	93	F	>120
Washington Street (Route 1) at Highland Avenue/Newport Avenue(Route 123)	Signal	E	69	F	>120	F	85	F	>120
Newport Avenue/Highland Avenue(Route 123) at Route 1A	Signal	D	45	E	75	F	57	F	86
Newport Avenue (Route 123) at Angeline Street	Stop Sign	A	3.4	A	7	A	7.3	A	17.1
Newport Avenue (Route 123) at May Street	Stop Sign	F	93	F	>120	F	102	F	>120

By 2025, six intersections are projected to operate at unacceptable levels of service (LOS F) resulting in excessive delays during the PM peak period. An additional three are expected to operate at unacceptable levels during the Saturday peak period.

By 2040, eight intersections are projected to operate at an unacceptable level of services (LOS F) with an additional two intersections operating at unacceptable levels during the Saturday peak period.

## Recommendations

The following is a summary of SPREDD's findings and proposed recommendations based on our safety and capacity analysis for the Route 1 corridor.

### Corridor Wide/Segment Recommendations & Considerations

#### Adaptive Signal Control Technology Installation

Adaptive signal control refers to technology that captures current traffic demand data and adjusts traffic signal timing to optimize traffic flow in coordinated traffic signal systems. Adaptive traffic signal technologies are best suited for arterials that experience highly variable or unpredictable traffic demand for which multiple signal timing solutions are necessary during a typical time of day period. The traffic sensors collect data and determine when and how long lights should be green. Many studies have shown that adaptive signal control improves average performance metrics (travel time, control delay, emissions, and fuel consumption) by 10 % or more. In systems with particularly poor conditions, the improvement can be 50% or more. Improvement might be somewhat less in areas with high-performing pre-time systems in which fluctuations are rare, but every system experiences some fluctuations.

Based on the analysis, using Synchro software, it was determined that specific sections of roadway would most benefit from the installation of adaptive signal control technology. Synchro contains an internal methodology to calculate a coordination factor between intersections and recommends whether or not coordination is warranted. Scoring for the Route 1 corridor varies from a low of 13 to a high of 112. A score of 51 was not recommended for signal coordination, however, the score of 67 did recommend that intersections would benefit from signal coordination. Scores beginning at 83 identify that the intersections would definitely benefit from signal coordination. Below are the recommended sections that would benefit from signal coordination:

- Route 1 (South Washington Street) at Whipple Street and Draper Avenue in North Attleborough;
- Route 1 (South Washington Street) at Emerald Square Mall North, Emerald Square Mall South and Allen Avenue in North Attleborough; and

- Route 1 (Washington Street) at May Street, Angeline Street, Route 1A Connector, Route 123 (Highland Avenue), and Route 123 (Highland Avenue/Newport Ave) at Route 1A Connector.

### **Construction of a separate use paths along Route 1 to provide bicycle and pedestrian accommodation**

Currently, Route 1 does not provide adequate and/or consistent walking conditions for the majority of the corridor. There are several significant gaps in the sidewalk network. Where there are sidewalks, the majority of them are 5 feet wide or greater but are in fair to poor condition. Several sidewalk segments end abruptly leaving pedestrians stranded with no safe travel path.

The most significant gaps in the sidewalk network are as follows:

1. In North Attleborough, there is a small gap on the west side from Draper Avenue to Fuller Street.
2. In North Attleborough, there is a large section of roadway from Draper Street to the Attleboro city line where there are almost no sidewalks on the east side of Route 1 except for some very small sections with limited connectivity such as the North Attleborough Marketplace section as discussed in Item 3 below.
3. In Attleboro, there is a sidepath on the east side of Route 1 south of the North Attleborough Marketplace intersection that ends at a small patch of pavement, as shown in Figure 2. There is a wetland immediately adjacent to the patch of pavement surrounded by guardrail and a median leaving pedestrians to either turn around or risk walking in the road on a very narrow shoulder (less than 1-foot wide) next to high speed traffic.

There are several locations without sidewalks that show evidence of pedestrian demand through the presence of worn and beaten paths, an example shown in Figure 7.



**Figure 7: Pedestrian beaten path in North Attleborough near Quinn Street**

Massachusetts state law allows bicycles to travel in any travel lane unless prohibited and marked with appropriate signage. However, the speed of travel along most of Route 1 discourages and may even prevent safe travel by bicyclists in the travel lanes. During site visits, several bicycles were observed using sidewalks to travel the corridor. Massachusetts state law also allows the travel of bicyclists on the sidewalk outside of a designated central business district unless a city or town has a specific bylaw related to bicycle travel on a sidewalk. The City of Attleboro has a bylaw prohibiting the travel of bicycles on a sidewalk, however, North Attleborough does not.

Ideally, all sidewalk gaps would be closed and bicycle lanes separated from traffic by a grass strip or other physical barrier. The total cross section width required for this would be about 75 feet. Due to space and environmental constraints, it is unlikely that the Route 1 corridor would be able to provide this type of cross section for the entire length of the corridor.

Another option for providing adequate facilities would be to convert existing sidewalks to separate use paths that accommodate both pedestrians and bicyclists. This could also be considered in places where there are sidewalk gaps. Ideally, access would be provided on both sides of Route 1 but consideration could be taken in places where it may not be needed or appropriate, such as the eastern side of Route 1 in the vicinity of the Interstate 295 ramp system where there are no generators on the east side for some distance. Other inappropriate places are areas of environmental concern, for example, the wetlands just north of the May Street intersection.

These alternatives are not mutually exclusive and could be used in combination. Due to the complexity of the corridor and its surroundings, context sensitive solutions will need to be developed to provide connectivity and access. Wayfinding should be considered in any change of cross section to provide adequate guidance to bicyclists and pedestrians.

### **Installation of a Two-Way Continuous Left Turn between Old Post Road and Quinn Street in North Attleborough**

This section of roadway encompassed two of the three highest crash segments along the Route 1 corridor. The segment between Riverview Drive and Quinn Street experienced 42 crashes and has a Million Vehicle Miles Traveled (MVMT) crash rate of 6.4 which exceeds the statewide average of 3.8 MVMT. Old Post Road to Riverside Drive was part of the segment that experienced 24 crashes, including one fatality, and includes the Dunkin Donuts with two driveways with 12 crashes directly related to a motorist either entering or exiting one of the Dunkin Donuts driveways.

Based on the high frequency of crashes that involved motorists attempting to enter a driveway (24 along this section of Route 1), this segment of roadway would benefit from installation of a Two-way Continuous Left Turn Lane (TWLTL), see Figure 8.

### **Consideration of constructing a raised median between Cumberland Avenue and May Street in Attleboro**

The segment between Cumberland Avenue and Como Drive was identified as the second highest crash location along Route 1. Although the crash rate of 3.40 did not exceed the statewide average (3.80) this segment had 45 crashes, the most crashes within our study limits.

There are 17 curb cuts along this segment, with two of those curb cuts offering a center left-turn lane. The safety issue does not involve accessing driveways, but rather exiting them. Almost a third of the total crashes involved a motorist attempting to turn left turn from a driveway across two lanes of opposing traffic to access the other direction of travel.

Installation of a raised median will prevent these left-turns, as well as U-turns along this segment. It is recommended that the installation of the raised median start at Cumberland Avenue and end at May Street. May Street is located just south of that segment and should be considered as the beginning/terminus for a raised center median where traffic can be properly mitigated.



Figure 8 - Consideration of a TWLTL between Old Post Road & Quinn Street



Motorists will be forced to travel up to a controlled intersection to reverse direction if their ultimate destination is located on the opposite side of the road from where they are traveling. Median installation has been recognized as an effective method of increasing vehicular safety on busy commercial corridors such as Route 1.

### **Consideration of Formal Bus Stops and Bus Pull-Outs Where Warranted**

The Greater Attleboro Taunton Regional Transit Authority (GATRA) currently runs 3 fixed bus routes that service the Route 1 corridor. Route 10 originates at the Emerald Square Mall and travels along the corridor to Elm Street with a final destination at the Attleboro Transit Center, located adjacent to the MBTA Train Station on South Main Street. Route 11 originates at the Emerald Square Mall and travels along the corridor with a final destination in Pawtucket Rhode Island. Route 12 originates at the Attleboro Transit Center and travels along the corridor and Route 123 with a final destination at the Emerald Square Mall. Based on 2017 National Transit Data (NTD) ridership, Routes 10, 11 & 12 totaled 18,247, 13,092 and 16,556 respectively over the four-month period of June through September.

GATRA currently operates as a flag system with no designated bus stops or shelters. Therefore, a bus can be waved down by a rider anywhere along the route. Although the flag system provides flexibility, it lacks a level of safety for riders waiting for a bus. Ridership should be analyzed to determine if designated bus stops and/or shelters are warranted to protect riders from inclement weather and offer a visible and/or well-lit area to wait for the bus.

Designated bus stops, usually within the public right-of-way or on private property, should be made accessible for all transit users. Although transit agencies generally do not have jurisdiction to implement improvements, GATRA would be required to work with the city of Attleboro and town of North Attleborough, as well as with MassDO, on bus stop improvements in the form of either formal bus stops or bus shelters. The ultimate goal is to create safe, comfortable bus stop environments for all transit users.

### **Consideration of Bypass Road Connections**

Although Route 1 is classified as a minor arterial, the amount of daily traffic it carries far exceeds the thresholds (3,000 to 14,000 vehicles per day) for its classification. With that in mind, it is important to note that there are no bypass or adjacent roadways that currently exist

between Route 123 and the Emerald Square Mall to assist in alleviating traffic from the Route 1 corridor.

Several options could be considered for bypass roads that would alleviate traffic from the Route 1 corridor. Some of these options may require land takings to meet current roadway standards.

A connection from the Emerald Square Mall to Allen Avenue, see Item 1 on west of Route 1 could be established to provide more direct access to residents west of the mall. Figure 9 Establishing a formal roadway through the Emerald Square Mall parking lot to Allen Avenue would eliminate the need for residents from the west side of town to utilize Route 1.

The combination of a back road behind Seven Mile Shoppes to Allen Avenue, and the continuation of traffic along Allen Avenue between the currently gated section, which starts at the frontage road to North Attleborough Marketplace and would continue to Old Post Road, would provide residents from the south and east with direct access to numerous shopping outlets. (see areas labeled #2 and #3 on Figure 9). These connections would be beneficial to those currently wishing to make 2 or more trips within the same area and would alleviate traffic from Route 1. Currently, Allen Avenue varies in width from 15 feet to 16 feet. In order to accommodate two-way traffic, the road would have to be re-constructed to accommodate two travel lanes. This change would add traffic to what is a now a low traffic volume local street which may not be desirable and met with opposition from residents. It has also been stated in the past that the gated section provides critical access for emergency response to the shopping plazas.

Extension of the Route 1 Walmart Access Road to Old Post Road and the reconnection of Cumberland Avenue south of Route 1 combined with an internal connection between the Walmart Access Road extension and Cumberland Avenue would provide an alternate route for travelers from the east and possibly south (see areas labeled #5 and #6 on Figure 9.) The reconnection of Cumberland Avenue would require reconstruction to accommodate two travel lanes but may not be desirable and met with opposition by residents.



Figure 9- Possible Bypass Road Connections

## **Access Management Plan**

To address overall safety and congestion along the corridor, serious consideration needs to be given to an Access Management Plan by both communities, as well as with MassDOT. Access Management is a set of techniques that State and local governments can use to control access to highways, major arterials, and other roadways. The benefits of access management include improved movement of traffic, reduced crashes, and fewer vehicle conflicts, while still enabling access to land uses and maintaining roadway safety and mobility. Planned development can coexist with good access management and can promote safe and efficient transportation for the general public.

The numerous driveways along this section of Route 1 create conflict points that increase the potential for vehicle crashes. These curb cuts are often located in close proximity to one another, are located too closely to an intersection or are not clearly marked, or are much too wide, contributing to safety and congestion issues on the corridor. Curb cut access should be limited and opening widths of curb cuts reduced whenever possible. Such driveways create opportunities for crashes that can be fatal or injurious. Access Management should also be considered in all future development along the corridor.

The communities should adopt an Access Management Plan to alleviate conflict points and delay due to left-turning vehicles. This plan should include the consolidation of curb cuts where possible, as well as promoting and making cross access between businesses available. For guidance, please see SRPEDD's Access Management: Model Curb Cut Bylaw, available in the Resource Library of our website at [www.srpedd.org](http://www.srpedd.org) or contact the SRPEDD office for further assistance.

## **Intersections Findings and Recommendations**

A thorough review of the crash data and capacity at each intersection facilitated recommendations that include signal retiming/adjustments and geometric modifications such as the addition of travel lanes. Although signal retiming may not increase capacity physically, it increases capacity by improving traffic flow efficiency by optimizing the operation of the intersection. Table 5 provides detailed recommendations at specific intersections and displays the LOS improvements for the Saturday peak period for 2018 and 2040 as a result of those recommendations.

**Table 5 - LOS Results 2018 & 2040 with improvements**

Intersection	Proposed Improvements	2018 Saturday 1PM-2PM		2018 Saturday 1PM-2PM With Improvements		2040 Saturday 1PM-2PM		2040 Saturday 1PM-2PM With Improvements	
		LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)
South Washington Street (Route 1) at Old Post Road	Construct a southbound left-turn lane.	A	4.1	A	3.2	A	12	A	8.7
South Washington Street (Route 1) at Whipple Street	Install adaptive and coordinated signal system between Whipple St and Draper Ave.	A	6	A	4	A	7	A	5
South Washington Street (Route 1) at Draper Avenue	Construct a westbound left-turn lane. Construct a northbound right-turn lane. Install Adaptive and coordinated signal system between Whipple St and Draper Ave.	F	>120	C	30	F	>120	C	35
South Washington Street (Route 1) at Emerald Square Mall Northern Entrance	Install adaptive and coordinated signal system between Emerald Square Mall Northern Entrance and Allen Avenue.	B	18	B	17	C	25	B	16
South Washington Street (Route 1) at Emerald Square Mall Southern Entrance	Construct additional northbound and southbound through lane. Construct eastbound right-turn lane. Install adaptive and coordinated signal system between Emerald Square Mall Northern Entrance and Allen Avenue.	C	25	B	19	F	97	D	46

Intersection	Proposed Improvements	2018 Saturday 1PM-2PM		2018 Saturday 1PM-2PM With Improvements		2040 Saturday 1PM-2PM		2040 Saturday 1PM-2PM With Improvements	
		LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)
South Washington Street (Route 1) at Allen Avenue	Construct one additional southbound left-turn lane. Construct westbound right-turn lane. Install adaptive and coordinated signal system between Emerald Square Mall Northern Entrance and Allen Avenue.	F	>120	D	44	F	>120	D	52
South Washington Street (Route 1) at Walmart/Best Buy Store Entrance	Construct one additional westbound left-turn lane.	F	>120	C	32	F	>120	D	40
Washington Street (Route 1) at Cumberland Avenue	Signal timing optimization.	C	24	C	24	E	56	D	39
Washington Street (Route 1) at May Street	Construct additional northbound and southbound through lanes. Install adaptive and coordinated signal system between May St and Highland Ave.	F	>120	C	33	F	>120	D	36
Washington Street (Route 1) at Route 1A	Construct one additional southbound left-turn lane.	D	52	D	41	F	>120	D	37
Washington Street (Route 1) at Highland Avenue/Newport Avenue(Route 123)	Construct one eastbound left- turn lane and one right-turn lane. Construct one westbound left-turn lane.	E	59	C	33	F	>120	D	55

Intersection	Proposed Improvements	2018 Saturday 1PM-2PM		2018 Saturday 1PM-2PM With Improvements		2040 Saturday 1PM-2PM		2040 Saturday 1PM-2PM With Improvements	
		LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)	LOS	Delay (Seconds/Vehicle)
Newport Avenue/Highland Avenue(Route 123) at Route 1A	Construct a westbound left-turn lane. Construct a northbound right-turn lane.	D	44	C	35	F	86	D	53
Newport Avenue at West Street (Route 123)	Construct southbound right-turn lane.	C	34	C	31	F	>120	D	55

Proposed geometric modifications along this corridor vary in projected time savings for motorists. An added left-turn lane at the intersection of Route 1 at Old Post Road will decrease the wait time of vehicles by 3.3 seconds per vehicle. During the projected 2040 Saturday peak period this 3.3 seconds per vehicle would add up to approximately 3 hours of wait time saved for all vehicles. In addition, the amount of Carbon Emissions (CO<sup>2</sup>) savings would yield approximately 18,179 kg per year.

The installation of an additional westbound left-turn lane at the intersection of Route 1 at Walmart/Best Buy Store Entrance will decrease the wait time of vehicles by a minimum of 80 seconds per vehicle in both 2018 and 2040. Considering that the intersection currently carries 3,714 vehicles during the Saturday peak period, this is an overwhelming time savings.

Signal modifications also provide varied results along the corridor. Installing an adaptive and coordinated signal system between Emerald Square Mall - Northern Entrance and Allen Avenue will result in a decrease of 9 seconds per vehicle (36% reduction) during the projected 2040 Saturday peak period. At the intersection of Route 1 at Cumberland Avenue, simply optimizing the signal timings will result in a decrease of 17 seconds per vehicle (30% reduction) during the projected 2040 Saturday peak period.

The remaining two major intersections that were not listed in the table are discussed below. The intersection of Newport Avenue (Route 123) at May Street should be evaluated for a signal or roundabout.

The intersection of South Washington Street (Route 1) at Hoppin Hill Road (Route 120) was identified as one of the most congested intersections along the corridor. An analysis of added capacity did not yield significant improvements. The intersection, although recently reconstructed, will continue to experience congestion and extensive delays (> 2 minutes per vehicle) during peak periods. The recent modifications to the intersection provided for safety improvements and multimodal accommodations.

An alternative that could be considered would include major modifications to the intersection and traffic flow. In order to better mitigate the heavy southbound movement along East Washington Street, the creation of two offset T-intersections could be considered. These intersections would be spaced approximately 650 feet apart and would require coordination. Motorists traveling south on South Washington Street would be required to travel onto a side street, where a roundabout could be considered, and through a traffic signal before completing their maneuver. Although more turning movements are introduced at the intersection, the frequency at which motorists are entering assists in improving traffic flow. These modifications would improve the failing LOS F to a LOS C or better during peak periods in 2040. Figures 10 and



11 display the South Washington St/East Washington St at Hoppin Hill Road intersection prior to the recent improvements and the conceptual design for consideration.

Such a major undertaking would require significant landtakings and further study to determine if the benefit would outweigh the cost.



Figure 10



Figure 11

Any improvements on the Route 1 Corridor are the responsibility of MassDOT, as is the decision to proceed with any project. However, communities may prioritize necessary improvements as a wish list of separate projects and may initiate and expedite the process by contributing toward the initial cost of design. These efforts must be coordinated with MassDOT.

Improvements along the corridor are eligible for construction funds through the Transportation Improvement Program (TIP). Funding for such projects would be 80% from the Federal Highway Administration (FHWA) and 20% from MassDOT, provided that the project meets state, federal, and local design requirements. As always, SRPEDD staff is willing and available to assist communities in these efforts.

# Appendix A

## Public Outreach

# Public Outreach

Before the commencement of the Route 1 transportation study, a public outreach strategy was devised. This public outreach effort was developed to inform the public, including local residents, business owners and any interested parties, of the study, and to encourage and garner feedback on the issues facing the corridor in both communities of Attleboro and North Attleborough. The initial strategy entailed holding two public outreach meetings, one in each community and to conduct a public survey.

Meeting notices were created and distributed to inform as many residents and business owners as possible about the study and the public meetings being held. These efforts were to encourage participation in the process and to garner comments and feedback from anyone who lives, works and travels on or near the Route 1 corridor in the study area of Attleboro and North Attleborough. The unique experiences and insight from people who live, work and travel in the area is invaluable while conducting a study such as this.



SRPEDD is holding an informal drop-in meeting to *discuss potential improvements* to the **Route 1 Roadway from Hoppin Hill Ave. in North Attleborough south to the Route 1A connector in Attleboro**. Residents, business owners and those who travel the corridor are invited to come and learn more, as well as *to offer comments and express concerns*.

 Please come to one of our informal 'drop-in' meetings:

<b>Richards Memorial Library</b> 118 N. Washington Street North Attleborough, MA Tuesday, April 24, 2018	<b>Coelho Middle School</b> 99 Brown Street Attleboro, MA Wednesday, April 25, 2018
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Both from 4 pm to 7 pm

 Please Take a Survey about the Route 1 Corridor  
[Route 1 Survey Link](#) [www.surveymonkey.com/r/Route\\_1](http://www.surveymonkey.com/r/Route_1)  
← Scan with a Smart Phone

TO COMMENT ANYTIME: Call: 508 824-1367 Fax: 508 823-1803  
E-mail: [lcabral@srpedd.org](mailto:lcabral@srpedd.org) or [Visit our website](http://www.srpedd.org) at [www.srpedd.org](http://www.srpedd.org)

 Se você preferir isto traduzido em Português, por favor ligue para nos.  
Si desea que esta traducido al español, llámenos.  
Si ou bezwen sa a tradui yo nan lang angle tanpri kontakte nou. 

These locations are accessible to people with disabilities. The library is served by GATRA public transit Routes 10 & 14 and the school by Routes 11 & 24. Upon request, every effort will be made to provide accommodation or language assistance at no charge. Please contact SRPEDD's Title VI Coordinator by phone (508 824-1367), fax (508 823-1803), or by email [lcabral@srpedd.org](mailto:lcabral@srpedd.org). Requests should be made as soon as possible prior to the meeting.

Figure 1 - The Public Meeting Notice

The meeting notice was widely distributed prior to the public meetings. (See Figure 1 on the previous page.) Meeting notices were sent to the town clerks in each town for public posting as well as distributed by SRPEDD staff to businesses along the Route 1 corridor and surrounding areas in both communities. The meeting notices were also posted on SRPEDD's webpage, Facebook page and Twitter feed. A press release was also sent out, alerting the media of the study and the upcoming public meetings. Over 250 public meeting notices were distributed during the process. All meeting notices can be found on page A-4 and A-5 of this appendix.



*Figure 2- the public meeting held at the Richards Memorial Library in North Attleborough on April 24, 2018*

The first meeting was held in North Attleborough at the Richards Memorial Library on April 24, 2018. This meeting was well attended, with approximately 20 participants. The second meeting was held at the Coelho Middle School on April 25, 2018 in Attleboro. This meeting had approximately 12 participants. The lower turnout in Attleboro was likely due to inclement weather, with heavy rain experienced that evening.

The meetings presented an opportunity for participants to express their concerns, share experiences while traveling the corridor and share wishes for improvements. This resulted in numerous comments and first-hand information concerning the day-to-day travel on Route 1. The door-to-door distribution of meeting notices to businesses along the corridor presented the opportunity for person-to-person contact and conversations which resulted in valuable

feedback and comments with residents, business owners, employees and local residents of both communities. All comments received through the public process, both written and verbal, can be found on pages A-10 to A-14, A-20 to A-24, and A-29 to A-30 of this appendix.



*Figure 3 -The public meeting held at the Coelho Middle School in Attleboro on April 25, 2018*

The meeting notice included the location, date and time of both meetings, as well as other options and methods for commenting such as e-mail, phone, fax, SRPEDD's website in lieu of attendance at any of the meetings. Also included were offers of translations into three other languages, an offer of accommodations and accessibility information, as well as a Title VI notification of nondiscrimination on the back of the notice. The meeting notice also included a web address and a QR reader that linked to the public survey on Survey Monkey concerning the travel experience on the Route 1 Corridor. In 2019, SRPEDD hosted 2 Route 1 Corridor Study public meetings and presented findings and recommendations on February 25<sup>th</sup> in Attleboro and on February 26<sup>th</sup> in North Attleborough. Sign-in sheets from all public meetings can be found on pages A-2 to A-3, A-6 to A-8, A-15 to A-16, A-5 to A-28, A-31 to A-34 of this appendix.

All meeting photos can be found on pages A-17 to A-19 of this appendix.

The public survey that was conducted enabled the collection of travel data for Route 1, including the origin and destination of motorists, the frequency, the length, and the purpose of travel trips, how many stops are made during a typical trip, which surrounding roads are used

to detour around Route 1, and at which signalized intersections motorists find the most delay or find the most dangerous to travel through.

Some of the survey results were informative. 80% of all origins and destinations while traveling along Route 1 were within Attleboro and/or North Attleborough. The roads cited most that are used to detour around Route 1 were Cumberland Avenue (often as a way to access Routes 123, I-95 and I-295), Newport Avenue/Old Post Road, Draper Avenue, May Street and Allen Avenue. There were an additional 20 roads mentioned that are also used as detours. The intersections that motorists found had the longest delay or found the most dangerous were: Route 1 @ May Street; Route 1 @ Hoppin Hill Road; and Route 1 @ Allen Avenue (Fashion Crossing).

The survey went live on April 4, 2018, with the last responses submitted on May 7, 2018 and netted a total of 147 responses. Out of the 147 respondents, 103 left additional comments. A good number of these comments involved the poor timing of lights and the need for additional thru lanes and turning lanes. There were numerous general comments related to congestion and the overdevelopment of the Route 1 area, as well as the poor condition of the pavement. These were the specific issues that were mentioned repeatedly:

1. The extensive queue of left-turning vehicles at Allen Avenue;
2. The difficulty in taking left-turns at both signalized intersections and uncontrolled business driveways;
3. The danger and /or lack of facilities for transit riders, as well as for pedestrians and bicyclists, such as bus shelters, lack of sidewalks and bike lanes;
4. The use of residential and local roads being used for detours around the Route 1 traffic; and
5. Dangerous lefts and the lack of a turn arrow at Route 1 and Route 20 (Hoppin Hill Road).

(It should be noted that the intersection of Route 1 at Hoppin Hill Road (Route 120) was undergoing construction during the public outreach and the writing of the study.)

A complete summary of the survey findings can be found on pages A-35 to A-71 of this appendix.

Route 1-Public Outreach Events

<b>DATE</b>	<b>LOCATION</b>		<b>EVENT</b>
4/23/2018	Police Dept.	N. Attleborough	Community Officials Meeting
4/23/2018	Attleboro City Hall	Attleboro	Community Officials Meeting
4/24/2018	Richards Memorial Library	N. Attleborough	Public Meeting
4/25/2018	Coelho Middle School	Attleboro	Public Meeting
4/14/2018	Region-wide	Region-wide	Public Survey Goes Live
5/7/2018	Region-wide	Region-wide	Public Survey Closed
11/6/2018	GATRA	Taunton	Transit Coordination Meeting
1/29/2019	Town Hall	N. Attleborough	Community Officials Meeting
2/11/2019	Attleboro City Hall	Attleboro	Community Officials Meeting
2/25/2019	Coelho Middle School	Attleboro	Public Meeting
2/26/2019	Town Hall	N. Attleborough	Public Meeting

# Route 1 Corridor Study Initial Meeting

City of Attleboro

April 23 2018

1:00 PM



Name	Department	Email	Phone
Kyle HEAGNEY	Police	kheagney@attleboro.org	774-203-1892
PAUL Mission	SRPEDD	pmission@srpedd.org	508-824-1367
Gary Agrassian	Attleboro	cityplanner@cityofattleboro.us	508-223-2222 ext. 3143
Lisa Estrela-Pedro	SRPEDD	lestrela@srpedd.org	508-824-1367
Guoqiang Li	"	gli@srpedd.org	" "
Paul Heroux	Mayor	Paul.heroux@cityofattleboro.us	508-455-7990
Scott T Lachance	Fire Chief	ChiefLachance@cityofattleboro.us	508-922-0154
BOB ARAUJO	D.P.W.	pw70REMAN@CITY OF ATTLEBORO.US	
Michael Tyler	D.P.W.	dpw-supervisor@cityofattleboro.us	(774) 266-7257



# Route 1 Corridor Study Initial Meeting

Town of North  
Attleborough

April 23 2018

10:00 AM



Name	Department	Email	Phone
JOHN MILLER	NA Electric	Jmiller@naelectric.com	508 643 6314
MICHAEL GALLAGHER	Town Admin.	mgallagher@nattleboro.com	508-699-0100
MARIE CLARNER	PLANNING BOARD	mclarner@nattleboro.com	508-699-8116
MICHAEL COULD	NAPD	mpcould@NATLE	508 675-1212
KYLE KUMMEZS	NAPS	KyleKummez@nattleboro.com	508 922 7574
MICHAEL BROUSSEAU	NA FIRE	mbrousseau@nattleboro.com	508 958 1268
NANCY RUNKLE	PLANNING	nrunkle@nattleboro.com	<del>508</del> 508-699-0116
LYLE PIRNIE	ECON. DEV.	lpirnie@nattleboro.com	699-0120
MARK HOLLOWELL	DPW	mhollowell@nattleboro.com	



# SRPEDD is Holding 2 Public Meetings to Present the Findings of the Route 1 Study

For the ! boro P :  
Robert J. Coelho Middle School  
In the Cafeteria  
99 Brown Street  
! o, M! 02703  
Monday, February 25, 2019  
5:00 PM – 7:00 PM



For the North ! borough P  
North ! borough Town Hall  
In the Foyer  
43 South Washington Street  
North ! ough, M! 02760  
Tuesday, February 26, 2019  
5:30 PM – 7:30 PM



**These Venues  
are Accessible**

### TO COMMENT ANYTIME:

Call: 508 824-1367

Use Postal Mail:

Fax: 508 823-1803

88 Broadway

E-mail: [gli@srpedd.org](mailto:gli@srpedd.org)

Taunton, MA 02780

Visit our website at [www.srpedd.org](http://www.srpedd.org)



~or~

[SRPEDD's Facebook Page](#)

SRPEDD provides reasonable accommodations, including language assistance and/or auxiliary aids & services free of charge upon request and as available; For accommodation or language assistance, please contact SRPEDD's Title VI Coordinator by phone (508 824-1367), dial 711 to use MassRelay, fax (508 823-1803), or by email [lcabral@srpedd.org](mailto:lcabral@srpedd.org); Requests should be made as soon as possible (at least ten business days) prior to the meeting;



SRPEDD is holding an informal drop-in meeting to *discuss potential improvements* to the **Route 1** Roadway from Hoppin Hill Ave. in North Attleborough south to the Route 1A connector in Attleboro. Residents, business owners and those who travel the corridor are invited to come and learn more, as well as *to offer comments and express concerns*.



**Please come to one of our informal 'drop-in' meetings:**

**Richards Memorial Library**  
118 N. Washington Street  
North Attleborough, MA  
Tuesday, April 24, 2018

**Coelho Middle School**  
99 Brown Street  
Attleboro, MA  
Wednesday, April 25, 2018

**Both from 4 pm to 7 pm**



Please Take a Survey about the Route 1 Corridor  
[Route 1 Survey Link](#)      [www;surveymonkey.com/r/Route\\_1](http://www.surveymonkey.com/r/Route_1)

← Scan with a Smart Phone

TO COMMENT ANYTIME: Call: 508 824-1367 Fax: 508 823-1803  
E- mail: [lcabral@srpedd.org](mailto:lcabral@srpedd.org) or Visit our website at [www.srpedd.org](http://www.srpedd.org)



Se você preferir isto traduzido em Português, por favor ligue para nos.  
Si desea que esta traducido al espanol, llamenos.  
Si ou bezwen sa a tradui yo nan lang angle tanpri kontakte nou.



These locations are accessible to people with disabilities; The library is served by G! TR! public transit Routes 10 & 14 and the school by Routes 11 & 24; Upon request, every effort will be made to provide accommodation or language assistance at no charge; Please contact SRPEDD's Title VI Coordinator by phone (508 824-1367), fax (508 823-1803), or by email [lcabral@srpedd.org](mailto:lcabral@srpedd.org); Requests should be made as soon as possible prior to the meeting;

Attendance for the Public Meeting on the study of Route 1 in North Attleborough and Attleboro.  
Tuesday, April 24, 2018, 4-7 pm @ Richards Memorial Library, North Attleborough, MA

Name (PLEASE PRINT)

Affiliation (if any)

E-mail (optional)

MAURIE LUAKNER

RAMMUSICBARRELS

mlarner@na.attleboro.ma.gov

Mary Brady.

Self. Computer to Cumberland.

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Attendance for the Public Meeting on the study of Route 1 in North Attleborough and Attleboro.  
 Tuesday, April 24, 2018, 4-7 pm @ Richards Memorial Library, North Attleborough, MA

Name (PLEASE PRINT)

Affiliation (if any)

E-mail (optional)

SKM NORTON

SKN54@COMCAST.NET

Barbara Boynton

b4boynton@verizon.com

Kerry Vigorito

SKV@earthmail.com

Paulette Murphy

Paulette Murphy 49@gmail.com

Robert Houde

RDHOUDE@yahoo.com

Tom Adams

L7A569@VERIZON.NET

Nancy Runkle

Town Planner

MATTHEW MORIN

Resident

matt\_t@yahoo.com

Attendance for the Public Meeting on the study of Route 1 in North Attleborough and Attleboro.  
 Tuesday, April 24, 2018, 4-7 pm @ Richards Memorial Library, North Attleborough, MA

Name (PLEASE PRINT)	Affiliation (if any)	E-mail (optional)
ROBERT GIBBS	NA Commission on Disability	Rgibbs@comwell.net
Dorothy Sousa	Resident	41 May St. S. Attleboro
Tony Sousa	" "	
Tom R. Richardson	" "	buzze@carriehardson.com
Jan Marchese	Resident	
Tom White	Resident	few444@msn.com
Udai Varkey		Udai-Varkey@hotmail.com
Maurfen Leaden	Resident	tiggm019@yahoo.com



Route 1 Public Drop-in Meeting #1 - April 24, 2018  
Richard's Memorial Library, 118 North Washington Street, North Attleborough

Bob Giers

1. Design of Route 1 should consider accessibility of people with disabilities
2. MAAB design standard should be considered
3. Adequate time for pedestrian crossing should be assigned

Paulette

1. High left turn volume at R120 at Route 1 intersection
2. Speed limit should be reduced along Route 1

Ron Lagasse

1. Route 120 and Route 1 intersection safety concerns
2. Old Post Road and Route 1 intersection safety concerns and should be rebuilt with better alignment
3. Draper intersection safety concerns

Matt

1. Resident of May St
2. Use of ITS strategy along Route 1
3. Left turn lane is important along Route 1

Charlie

1. Truck using May St
2. Crash problem on May St
3. Tree block sight distance along May St



#### April 24, 2018 Drop-In Meetings for Route 1 Corridor Study

- From southbound coming north / no left turn (Route 120 / Route 1 / Route 1A)
- Route 120 eastbound allows a maximum of 5 cars to get through / it's a mess
- Southbound / Why not eliminates lefts onto Route 1
- Coffee Shop Closed at Subaru's Dealership
- Robert Giers "Make sure people with disabilities are not overlooked shadowed by bicyclists, AAB standards should be considered because they are much stricter than ID!"
- May Street, considered thickly settled? / Eastbound backs up continually
- Dorothy Sousa "Ingerline Street has no Truck Sign. Open up Cumberland. May Street is taking all of the traffic, it's narrow and has no sidewalks, it's dangerous to walk, even to go out to get mail. There is too much traffic, everyday there are lots of trucks. Make trucks use Newport Avenue. Home values have gone down, it's not fair.
- Coming from South Attleboro intersection at Route 120, timing for left turns is not sufficient

#### April 25, 2018 Drop In Meetings for Route 1 Corridor Study

- May Street is narrow, has no sidewalks (have to walk on peoples lawns, which is not fair), almost been hit by a car getting mail. Biggest concern is tractor trailers, evenly distributed throughout the day. Traffic from 2-6. Southbound onto May is difficult for tractor trailers.
- Safety Concerns - 1A northbound at Howarth Avenue, motorists go right on red against the eastbound through. Vehicles are doubling up jockeying for the one lane.
- Teacher at High School "I avoid a left at any intersection (in or out), When he was at Complete Fitness we would go to the D&D and take a right then go down Old Post Road / Walmart South. Avoids the area, especially at Christmas. Route 1/1A/123 may have gotten better since extra light.
- Kelly Snyder / My Notes based on our discussion – "Shell Station is rebuilding, gonna try to contact for bus pullouts. Pineapple Inn is a perfect location for bus pullout. Ideally Bus Shelters with solar supported lighting should be installed wherever possible. At a previous job they changed from a flag system to a stop system and both safety and wheel chair ridership went up. The timing on the side streets is insufficient to clear traffic, even when a bus is the 5<sup>th</sup> vehicle, especially on May Street. Three designed stops along the corridor in each direction would be ideal.
- Kelly Snyder / Written Notes Supplied – "Shell rebuilding that area, ideal cutout location– farside. Other businesses that could do the same – Pineapple Inn already has

place to stop but would need signage. Designed Stops – Kelly already knows where.  
Solar Shelters – no benches – Always lit with solar. Boch Toyota has 2 back entrances.  
ADA issues along entire corridor. Nights Inn – hasn't called him back. Side Street lights  
are short, i.e. getting out of Target. Far side is safest.

## Route 1 Public Drop-in Meeting #1 - April 24, 2018

Richard's Memorial Library, 118 North Washington Street, North Attleborough

### Public Comments:

#### #1 – Hoppin Hill Resident

- Route 1 & 120 intersection – under construction, lights not functioning properly – green time too short, sees a lot of red light running. Also observed a lot of distracted driving. PM replied that timing is temporary due to ongoing construction and will most likely be correct when construction is complete.
- Very concerned with access management to business along the entire length of the corridor. Stated that there were a lot of inconsistencies that could lead to crashes. Specifically mentioned section between Friendly's and 123 (in Attleboro) and maybe limiting left turn access with a median.
- Noted that there was no shoulder for bicycle and that people who have no other option may need a bicycle to get somewhere.

#### #2 – Reservoir Street Resident

- Concerned with left turns out of Reservoir Street and increased volumes from new construction including a Cumberland Farms and a +45 housing unit development.
- Mentioned Elm Street project completed by Northeastern students.
- Had questions about Route 1 & 120, what will it look like when it's done?
- Also concerned with access management, mentioned the area around the Triple Play Car Wash (in Attleboro) and maybe extending the median and adding u-turns.

#### #3 – Stern Gentleman

- Asked about criteria for putting in medians and expressed concern with left-turn movements along the corridor.
- Discussed the Elmwood Street intersection – out of study area.

#### #4 – Paulette

- Several questions about study and purpose.
- Wants to be contacted about study progress and opportunities for input.
- Route 1 & 120 intersection – needs a left arrow heading north from Attleboro.
- MassDOT needs to be better informed of private projects – cited a public meeting for the Hoppin Hill project where MassDOT did not know about Rockin' Roasters. Expressed frustration that there was no follow up after design public hearing.
- Concerned with speeding on the corridor – wants to see lower speed limits.

#### #5 – Gentleman with a gray v-neck sweater

- Route 1 & 120 – confusing lane layouts and overall intersection configuration. Suggested eliminating left turns southbound onto Route 1. Expressed frustration with queue lengths and reported sitting through at least 4 light cycles on several occasions.

#6 – Thom Welch

- Southbound turn into Fashion Crossing (Attleboro) should be a double left and there is room to accommodate a receiving lane for the additional turn lane. Weekend and holiday traffic exceeds capacity; traffic backs up to mall entrance. Shoppes at Emerald Square project will worsen traffic.
- Pizzeria Romano – parking lot too small, lots of takeout business, traffic backs out onto Route 1 causing an unsafe condition.

#6 – Maureen from the YMCA

- Travels often from North Attleborough to South Attleboro and frequently detours around Route 1 to avoid traffic, especially during the holiday season.
- Concerned with turns into and out of CVS near the Hoppin Hill intersection.
- Discussed Elmwood Ave intersection – not in study area.

#7 – Joan Marchitto

- Concerned with snow removal on sidewalks.
- Discussed jurisdiction of Allen Avenue.

Attendance for the Public Meeting on the study of Route 1 in North Attleborough and Attleboro.  
 Wednesday, April 25, 2018, 4-7 pm @ Robert J. Coelho Middle School, Attleboro, MA

Name (PLEASE PRINT)

Affiliation (if any)

E-mail (optional)

Attleboro

JOE CAPPONIERO

TRAFFIC STUDY COMMISSION

joe-cappoier@comcast.net

Timothy Kochan

MassDOT-Districts

David Laurie

Tony Sousa

MAY ST

Janice Markey

Dan Smith

Newport Ave

dan.smith4589@gmail.com

John Stella

Brown St

jes.stella330@gmail.com

lirio\_jm@hotmail.com

Attendance for the Public Meeting on the study of Route 1 in North Attleborough and Attleboro.  
 Wednesday, April 25, 2018, 4-7 pm @ Robert J. Coelho Middle School, Attleboro, MA

Name (PLEASE PRINT)

Affiliation (if any)

E-mail (optional)

Deb Walsh

Sara-Lynna Reynolds

Daniel Nolin

Kelley Snyder

Attleboro City Councilor  
WARD 2

Coelho School Teacher  
North Attleboro Resident.

Safety & Training Manager  
GATRA / Ptm of Attleboro bus

welshd57@msn.com

sreynold5@cityofattleboro.ms

Ksnyder@gatra.org

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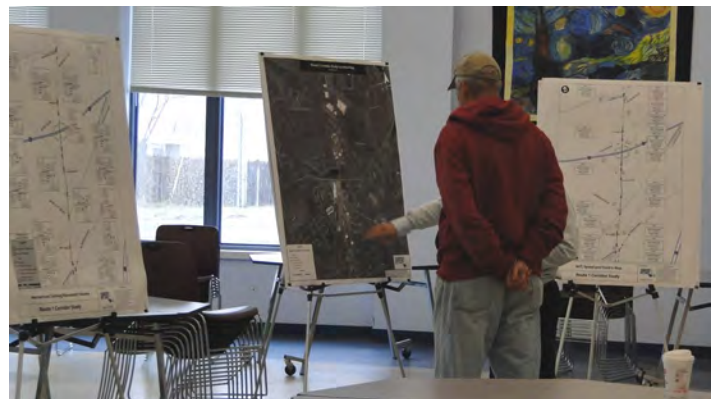
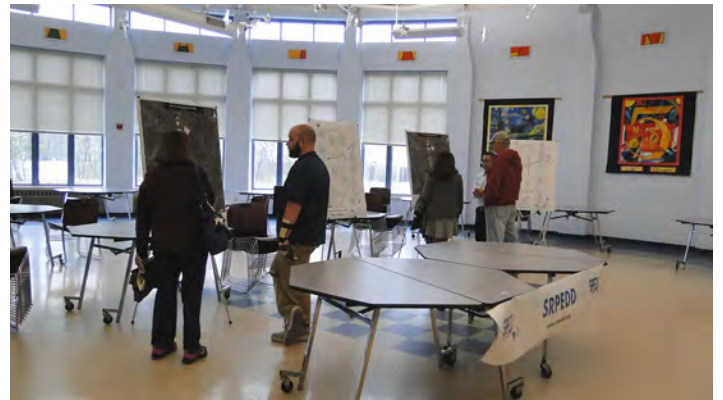
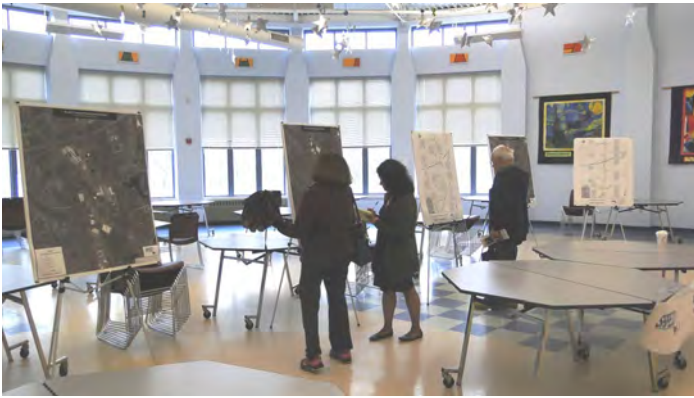
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Sara Lynn Reynolds (Councilor 1)

1. Operation for Angeline St

Bryan

1. He is a bicyclist but does not think Route 1 area is safe enough to bike
2. He likes to see my left turn turns along Route 1

Janice

1. There are too many driveways on May St
2. May St is too fast
3. Crashes happened on May St
4. Angeline and Route 1 intersection is a concern for safety and capacity
5. She often walks on May St, on the sidewalk on Route 1 and Route 123
6. Como Drive at Route 1 is a concern for safety and capacity
7. Snow removal in the winter time concern.

## April 25, 2018 Drop-In Meeting Attleboro for Route 1 Corridor Study

- May Street is narrow, has no sidewalks (have to walk on peoples lawns, which is not fair), almost been hit by a car getting mail. Biggest concern is tractor trailers, evenly distributed throughout the day. Traffic from 2-6. Southbound onto May is difficult for tractor trailers.
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## **Phone call to SRPEDD office in regards to the Route 1 study**

Robert Houde

33 Bertram Rd, North Attleborough

401-782-4484

The light going east on Route 120 and Route 1 only allow 4-5 cars from Hoppin Hill Rd. Created huge backups, especially in the morning.

There is no left turn arrow for northbound vehicles to turn left onto R120 west.

North-south at Route 1A into Route 1 going south, vehicles can go straight, turn right or turn left while vehicles headed north into 1A can do the same. What a mess.

Route 1 and Old Post Road is a dangerous intersection and raised median along Route at this intersection.

Fix the light for Route 120 east at Route 1 to allow a lot more vehicles through

Four way lights

Left turn allow onto 120 at 1-1A northbound

Eliminate left turn onto Route 1 for vehicles going south on 1A

Dave

1. 18 Wheelers and buses off of May St.
2. Lights need to be adjusted, only a few cars can proceed heading west.
3. Lower speed limit
4. Vehicles trying to turn right can not ?
5. A lot of pedestrian traffic no sidewalk or ?
6. Possibility of light on May St at New Port Ave
7. If Cumberland Ave was open traffic could travel

Janice

Significant amount of traffic since Mayfaire Plaza has opened up

## Route 1 Attleboro Meeting Notes

- May Street at Newport Avenue Resident
  - Bike and pedestrian accommodations needed.
    - Proposed bike path on Newport Avenue East of Route 1A mentioned.
  - Truck traffic travelling through Route 1 & May Street noted as problematic.
    - Truck volumes on May Street are a problem.
    - Trucks turning at Route 1 / May causes problems.
  - Lack of shoulder / buffer is dangerous for abutting residents / pedestrians and bicycles.
  - Vehicles approach Route 1A & Route 123 from the East on the shoulder, treating a single lane road as a two lane road.
  
- Attleboro Traffic Commissioner
  - Backing out of driveways on May Street East is dangerous for residents.
  - Signal timing issues mentioned at Route 1 & May Street.
  - Signal timing / queueing issues on Route 123 between Route 1 and Route 1A.
  - Mentioned addition of capacity lane at Westbound approach of Route 1A and Route 123.
  - Mentioned that Route 1 & Route 1A intersection functioned better before changes were made.
  - Mentioned that rezoning of space between Route 1 and Route 1A South of Route 123 from residential to commercial will be occurring.
  
- Resident of Newport Avenue near May Street area
  - Backup on Route 123 between Route 1A and Route 1
  - Signal coordination on Route 1 (or lack thereof) mentioned as a problem.
  - Possible no left turn posted at BJ's driveway / access located on Route 123 West of Route 1.
  - Possible construction of overpass on Route 123 between Route 1 and Route 1A.
  
- Brown Street Resident
  - Addition of signal at Angeline Street appears to be causing more congestion
    - Elimination of left turn lanes would help alleviate this issue.
  - Too many places for left turns along corridor, resulting in traffic backup behind people making these turns.
    - Addition of jersey barriers to prevent left turns at problematic locations could be beneficial, specifically south of Angeline Street.

# Route 1 Corridor Study Public Meeting

North Attleborough - Town Hall, 43 S Washington St; 5:30-7:30 PM, Feb 26<sup>th</sup> 2019



Sign in Sheet

Name

Address

Email/phone(optional)

Melodie Kirby 145 Broad St, #7, North Attleboro melodiekirby5@gmail

LYE FERRE 9 DEERHOLLOW RD N ATTLEBORO lymf@nattleborov.com

Daniel Voisinet 25 Hadak Drive, N. Attleboro. 508 761-8918

Charlie Mills 88 Broadway, Taunton cmills@srpedd.org

Lisa Estrela-Pedro 88 Broadway, Taunton lestrela@srpedd.org

Guoqiang Li 88 Broadway, Taunton gl@srpedd.org

# Route 1 Corridor Study Public Meeting

North Attleborough - Town Hall, 43 S Washington St; 5:30-7:30 PM, Feb 26<sup>th</sup> 2019



Sign in Sheet

Name

Address

Email/phone (optional)

Nancy Runkle	NA Town Banner	nrunkle@nattleboro.com	508-699-0116
Robert Houde	33 Beethoven Rd	RD Houde@YHbor.com	
Bobo Couvo	NACOD	RCouvo@comcast.net	617 759 2968
Tim McKenna	North Attleboro		
Mike Lenoix	BOS CHAIR	MLENOIX@NATTLEBORO.COM	
Kevin Huster	31 Dwyer Ave	khuster@comcast.net	
Anneke Eaton	19 Fraser St	ahouston@verizon.net	
Diane Fusillo	130 West Mt		
Marsha Goldstein	6 Poppyash Ln	mgoldstein@comcast.net	
Timothy Sheehan	1000 County St Taunton	tsheehan@state.ma.us	
Raul Adrias	179 Rowlands Road	RAdrias@verizon.net	
Sadek Siddis	206 Mount Hope St	ksiddis@gmail.com	
MAURIE CLARKER	CHAIR NA Planning Board	mcclarkern@nattleboro.com	
Luis de Oliveira	88 Broadway, TN	ldeoliveira@sppedd.org	



# Route 1 Corridor Study Public Meeting

Attleboro - Coelho Middle School, 99 Brown St; 5:00-7:00 PM, Feb 25<sup>th</sup> 2019



Sign in Sheet

Name Address Email/phone(optional)

Jim Hawkins State Rep JAMES.HAWKINS@MAHOUSE.GOV

WALTER RARUS 115 BACON ST, ATTLEBORO 02703

JAMES DOYLE 43 ORKST. " "

Reth Oliveira MASSDOT DS richard.oliveira@dot.state.ma.us

Ty Waterman City Counselor tywaterman@1918@gmail.com

Jance Marky 55 May St jancejmarky@icloud.com

DAVID FROEMAN Poulter Marshall DAVIDFROEMAN@PHHEGMAIL.COM

Luís de Oliveira 88 Brooklwy, TN ldeoliveira@srpedd.org

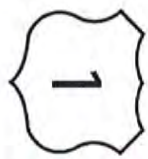
Charlie Mills 88 Broadway, Taunton cmills@srpedd.org

Lisa Estrela-Pedro 88 Broadway, Taunton lestrela@srpedd.org

Guoqiang Li 88 Broadway, Taunton g1i@srpedd.org

# Route 1 Corridor Study Public Meeting

Attleboro - Coelho Middle School, 99 Brown St; 5:00-7:00 PM, Feb 25<sup>th</sup> 2019



Sign in Sheet

Name	Address	Email/phone (Optional)
Brn JH	131 Melch R Apt	
Jim MOYES	GPI Wilmington	jmoyes@gpinet.com
Rob HIGGS	TRANSYSTERS	RW HIGGS TRANSYSTERS.COM
Don Marshall	Slocum St Attle	Dampiro Don@gmail.com
Alexander Blagov	Newport Ave	
Myata Bryn J	Newport Ave	
William Collins	122 Harris Drive N Attleboro	wcollins@eservices.edu
Wendy Powers	Emerald Lane	
Matt Morin	36 May St	Matt.t.faboa.com
Ron PROUT	628 NEWPORT AVE	RPROUT24@COMCAST.NET
HENRY PORRECA	9 BUSTIN AVE	COUNCILORPORRECA@gmail.com
Tim TRAVINO	824 Newport Ave	
John Corrigan III	200 Robert Street	
Jenice Waterman	33 Dorchester Ave	

## **Notes for the Route 1 Meeting at Coelho Middle School**

**February 25, 2019**

Route 1A at Route 1 Intersection

Comment made that the arial photo was old and that there have been updates made to the intersection.

Question – Where would bicycle lanes be considered/proposed?

Heather – Questioned the width capacity along Cumberland Avenue and if there would be enough width for a two lane road.

Heather – Questioned the history behind the disconnect of Allen Avenue.

Someone questioned if there would be issues if both May St and Cumberland Ave were given access along Route 123 due to their close proximity to each other.

Although not within the scope of the study area someone commented on the need for better accommodations for bicyclists and pedestrians for the **MBTA Station's** surrounding area.

Someone inquired about the limits of the study area and questioned why it had not started at I-95.

Someone inquired about the feasibility of making improvements along Route 1.

Someone stated that they had concerns over side roads becoming main roads.

Someone inquired about the ability to balance/distribute traffic between two intersections (LOS F & LOS A) so that both intersections could operate at an acceptable LOS. After the meeting I spoke with the gentlemen and he elaborated **that why couldn't people go past May Street to the next intersection further south** and take a left onto the other street to then access Route 123.

Someone questioned if there was enough physical space (land/real estate) to make the proposed improvements.

## **Notes for the Route 1 Meeting at North Attleborough Town Hall**

**February 26, 2019**

An audience member voiced concerns over bicyclists traveling along Route 1.

An audience member voiced concerns on the segment of Route 1 southbound between the I-295 ramps and the northern entrance to the mall. Stating that motorists utilize the outer most right lane that is intended for rights into the mall to bypass traffic and then they attempt to merge into southbound traffic.

Also the left southbound turn **lane to the Lowe's is a choke point.**

An audience member questioned if the Mobile home Park redevelopment had been considered.

An audience member stated that they did not think an F to D was a big improvement and they would tell the state to save their money. Marie explained that F to D can be a big improvement in time savings.

Marie added that a frontage road had been considered between Cumberland Ave **and the Mall but at the time it would have required rezoning and they "couldn't make it happen".**

**A comment was made that Target's placement was restricted due to wetlands.**

An audience member commented that the improvement at Old Post Road was not an improvement and that they found it safer going through Dunkin & Donuts.

A gentleman in the audience commented that he found the ridership numbers flawed and that he only sees on to two buses daily with one to two people on them.

The question was raised if there was a documented transit need. The BOS Chair commented that there have been request for service on Route 152 to Sturdy.

A woman (ADA Compliance Representative?) in the audience stated that in this area the need is more for Dial-A-Ride.

A comment was made that the reconnection of roadways would be scary to local access not allowing people to get out of their driveways.

A woman from the Keep North Attleborough Beautiful organization inquired about **the consideration of aesthetics. She stated that "weeds grow out of the median cracks" the whole median is disintegrated.**

Audience members questioned pavement maintenance plans between Stop & Shop and CVS, and Pub 99 & Cumberland Avenue.

Concerns were brought up in reference to the green timing for vehicles on Draper Avenue at Route 1 during the peak periods.

# SIGN-IN SHEET

Route 1 Corridor Study Meeting

Feb 11th, 2019, City of Attleboro

A-31

Name	Department	Email
Jim Hawkins	State Rep	JAMES.HAWKINS@MAHOUSE.GOV
Michael Tyler	D.P.W. Super	dpw supervisor @ city of attleboro .us
Scott T Kachana	FIRS	ChieBlachance@cityofAttleboro.us
Gary Agassian	Dept. of Planning & Development	cityplanner@cityofAttleboro.us
Paul Heroux	MAYOR	MAYOR @ CITY OF ATTLEBORO .US
Kyle Higgins	ATTLEBORO Police	Kmegney@attleboro police.org

Route 1 Corridor Study Meeting

Jan 29th, Town of N Attleborough

SIGN-IN SHEET

Name

Department

Email

MIKE BROSSMAN

FIRE

mbrossman@nattleboro.com

MICHAEL GALAGHER

TOWN ADMINISTRATOR

mgalagher@nattleboro.com

MARIE CLARKE

PLANNING

mclarke@nattleboro.com

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# SIGN-IN SHEET

Route 1 Corridor Study Meeting

Jan 29<sup>th</sup>, Town of Northborough

Name	Department	Email
Joe Mihill	DRM	jmihill@nattleboro.com
Mike Chabot	Fire	Mchabot@nattleboro.com
Lisa Estrela-Pedro	SRPEDD	lestrela@srpedd.org
Joe Collins	BOS	Jcollins@Nattleboro.com
Nancy Runkle	PLANNER	nrunkle@nattleboro.com
Lyle Pirnie	ECONOMIC DEV.	lpirnie@nattleboro.com

# SIGN-IN SHEET

Route 1 Corridor Study Coordination Meeting with GATRA

November 6<sup>th</sup>, GATRA, 10 Oak Street, 2nd Floor, Taunton, MA 02780

Name

Department

Email

Rou Morgan

GATRA

R.MORGAN@GATRA.ORG

Kelly Snyder

PTM of Attleboro

ksnyder@gatra.org

Debbie Luzzo

PTM#.

DLuzzo@gatra.org

Tuqiang Li

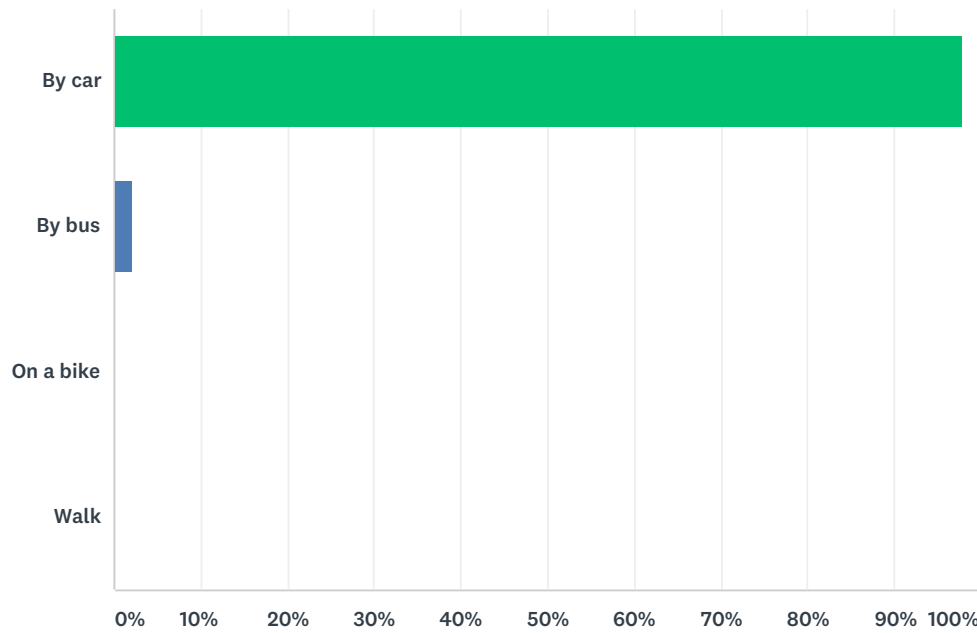
SRPEDD

gli@srpedd.org



# Q1 How do you usually travel on Route 1 in Attleboro and North Attleborough?

Answered: 147 Skipped: 0

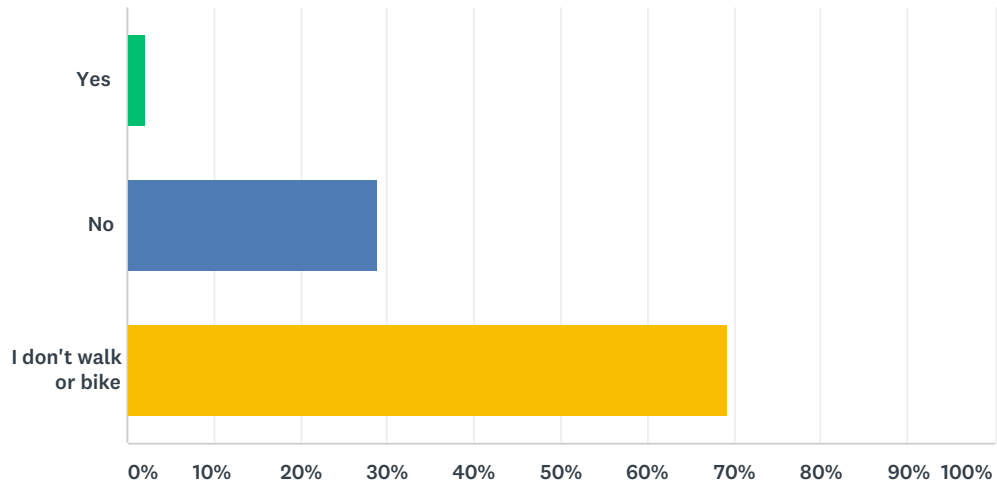


ANSWER CHOICES	RESPONSES
By car	97.96% 144
By bus	2.04% 3
On a bike	0.00% 0
Walk	0.00% 0
<b>TOTAL</b>	<b>147</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	Walk	4/23/2018 1:02 PM
2	North Attleboro intersection Rte 1, Rte 1A, Hoppin Hill travel also by walk, run, and bike.	4/20/2018 2:58 PM
3	Car and run from Brown St to Rt 123	4/19/2018 7:46 AM
4	Too dangerous to walk!	4/13/2018 6:43 PM
5	Pickup truck	4/12/2018 1:21 PM

## Q2 If you walk or bike, do you feel safe with the traffic conditions?

Answered: 146 Skipped: 1



ANSWER CHOICES	RESPONSES
Yes	2.05% 3
No	28.77% 42
I don't walk or bike	69.18% 101
TOTAL	146

### Q3 In which town or zip code do you usually start your trip?

Answered: 148 Skipped: -1

#	RESPONSES	DATE
1	02760	5/10/2018 4:22 PM
2	02703	5/8/2018 2:21 PM
3	02703	5/8/2018 2:21 PM
4	02703	5/3/2018 6:59 PM
5	02760	4/26/2018 6:50 AM
6	02864	4/25/2018 7:14 PM
7	South Attleboro	4/25/2018 7:00 PM
8	02703	4/25/2018 6:00 PM
9	02703	4/25/2018 4:34 PM
10	North Attleboro	4/25/2018 4:29 PM
11	02703	4/25/2018 3:55 PM
12	S. Washington St needs real sidewalks through out for wheelchair passengers and ADA concrete pads and cut outside for a bus stop to drop off and pucjyo wheelchair passengers safely. You can get Grant's from the feds for this project.	4/25/2018 11:31 AM
13	North Attleboro	4/25/2018 10:35 AM
14	NA	4/25/2018 4:43 AM
15	02760	4/24/2018 9:23 PM
16	02760	4/24/2018 6:30 PM
17	Southattleboro	4/24/2018 6:26 PM
18	No attleboroq. 02760	4/24/2018 5:33 PM
19	p 02760	4/24/2018 4:21 PM
20	No attleboro	4/24/2018 4:19 PM
21	Attleboro	4/24/2018 2:13 PM
22	02760	4/24/2018 7:33 AM
23	02703	4/23/2018 10:28 PM
24	02703 to South Attleboro to Rt. 1 towards Emerald Square, etc.	4/23/2018 6:15 PM
25	02760	4/23/2018 1:02 PM
26	02760	4/23/2018 12:00 PM
27	02760	4/23/2018 10:31 AM
28	02760	4/23/2018 10:25 AM
29	02760	4/23/2018 1:18 AM
30	02703	4/21/2018 4:54 PM
31	North Attleboro	4/21/2018 6:51 AM
32	02760	4/20/2018 3:33 PM
33	02760	4/20/2018 3:01 PM
34	02760	4/20/2018 2:58 PM

35	Attleboro	4/20/2018 1:19 PM
36	02760	4/20/2018 12:59 PM
37	02760	4/20/2018 11:41 AM
38	02760	4/20/2018 10:57 AM
39	02703	4/20/2018 10:47 AM
40	02703	4/20/2018 9:59 AM
41	02760	4/20/2018 9:55 AM
42	02760	4/20/2018 9:34 AM
43	02703	4/20/2018 8:51 AM
44	02760	4/20/2018 6:00 AM
45	02703	4/20/2018 5:41 AM
46	02760	4/20/2018 2:18 AM
47	02760	4/19/2018 11:21 PM
48	02760	4/19/2018 10:34 PM
49	02703	4/19/2018 10:06 PM
50	02763	4/19/2018 9:37 PM
51	02048	4/19/2018 9:08 PM
52	Attleboro	4/19/2018 8:58 PM
53	South Attleboro 02703	4/19/2018 7:54 PM
54	02760	4/19/2018 7:08 PM
55	02703	4/19/2018 6:48 PM
56	02760	4/19/2018 6:07 PM
57	02760	4/19/2018 5:26 PM
58	Attleboro	4/19/2018 5:23 PM
59	02760	4/19/2018 4:15 PM
60	02760	4/19/2018 4:04 PM
61	02760	4/19/2018 3:09 PM
62	02760	4/19/2018 2:56 PM
63	02760	4/19/2018 2:17 PM
64	02703	4/19/2018 1:46 PM
65	02703	4/19/2018 1:39 PM
66	02703	4/19/2018 1:11 PM
67	02760	4/19/2018 1:03 PM
68	02760	4/19/2018 1:00 PM
69	Attleboro	4/19/2018 12:46 PM
70	02703	4/19/2018 11:46 AM
71	02760	4/19/2018 11:24 AM
72	02081	4/19/2018 11:23 AM
73	02703	4/19/2018 11:17 AM
74	Downtown Attleboro	4/19/2018 10:25 AM
75	02766	4/19/2018 9:53 AM

76	Attleboro	4/19/2018 9:47 AM
77	02703	4/19/2018 9:45 AM
78	02760	4/19/2018 9:33 AM
79	North Attleborough	4/19/2018 9:32 AM
80	02703	4/19/2018 9:05 AM
81	02760	4/19/2018 9:00 AM
82	02038	4/19/2018 8:58 AM
83	02703	4/19/2018 8:56 AM
84	02038	4/19/2018 8:43 AM
85	02760	4/19/2018 8:40 AM
86	02762	4/19/2018 8:34 AM
87	North Attleboro	4/19/2018 8:33 AM
88	02703	4/19/2018 8:18 AM
89	South Attleboro	4/19/2018 8:09 AM
90	02703	4/19/2018 7:59 AM
91	02703	4/19/2018 7:46 AM
92	02760	4/19/2018 7:38 AM
93	02762	4/19/2018 6:12 AM
94	02760	4/19/2018 5:18 AM
95	02703	4/19/2018 5:12 AM
96	02864	4/19/2018 3:14 AM
97	02861	4/19/2018 1:47 AM
98	02703	4/19/2018 12:42 AM
99	02703	4/18/2018 3:03 PM
100	02865	4/18/2018 2:41 PM
101	02763	4/18/2018 12:12 AM
102	02760	4/17/2018 11:29 AM
103	02760	4/17/2018 10:01 AM
104	02780	4/17/2018 9:04 AM
105	02703	4/16/2018 11:25 AM
106	02760	4/15/2018 10:21 AM
107	02760	4/14/2018 8:44 PM
108	02703	4/14/2018 12:08 PM
109	02760	4/14/2018 8:30 AM
110	02760	4/14/2018 8:05 AM
111	02760	4/14/2018 12:13 AM
112	North Attleboro	4/13/2018 9:55 PM
113	02760	4/13/2018 9:06 PM
114	02769	4/13/2018 7:20 PM
115	02703	4/13/2018 6:43 PM
116	02703	4/13/2018 5:47 PM

117	02703	4/13/2018 5:41 PM
118	02760	4/13/2018 2:39 PM
119	02760	4/13/2018 12:01 PM
120	02760	4/13/2018 11:34 AM
121	02760	4/13/2018 11:25 AM
122	02760	4/13/2018 11:17 AM
123	South Attleboro 02703	4/13/2018 10:39 AM
124	02760	4/13/2018 10:27 AM
125	02760	4/13/2018 9:53 AM
126	02760	4/13/2018 9:21 AM
127	02760	4/13/2018 9:14 AM
128	02760	4/13/2018 9:11 AM
129	02760	4/13/2018 9:08 AM
130	02861	4/13/2018 9:01 AM
131	02760	4/13/2018 9:00 AM
132	02763	4/13/2018 8:52 AM
133	02760	4/13/2018 8:50 AM
134	02760	4/13/2018 8:45 AM
135	02760	4/13/2018 8:42 AM
136	02703	4/13/2018 8:42 AM
137	02760	4/13/2018 8:42 AM
138	02760	4/12/2018 11:00 PM
139	02703	4/12/2018 2:52 PM
140	02760	4/12/2018 2:06 PM
141	equally from attleboro to north attle. and north attle. to attleboro	4/12/2018 2:01 PM
142	02760	4/12/2018 1:35 PM
143	02760	4/12/2018 1:21 PM
144	02760	4/12/2018 1:14 PM
145	02760	4/10/2018 7:46 AM
146	02703	4/6/2018 1:37 PM
147	02760	4/5/2018 5:21 PM
148	02861 pawtucket	4/5/2018 4:30 PM

## Q4 In which town or zip code do you usually end your trip?

Answered: 147 Skipped: 0

#	RESPONSES	DATE
1	02760	5/10/2018 4:22 PM
2	03760	5/8/2018 2:21 PM
3	03760	5/8/2018 2:21 PM
4	02703	5/3/2018 6:59 PM
5	02760	4/26/2018 6:50 AM
6	02048	4/25/2018 7:14 PM
7	Norwood	4/25/2018 7:00 PM
8	02703	4/25/2018 6:00 PM
9	02760	4/25/2018 4:34 PM
10	Attleboro	4/25/2018 4:29 PM
11	02703	4/25/2018 3:55 PM
12	From the Emerald Mall S. Washington St they and onto E. Washington St in Attleboro	4/25/2018 11:31 AM
13	Pawtucket	4/25/2018 10:35 AM
14	Attleboro	4/25/2018 4:43 AM
15	02760	4/24/2018 9:23 PM
16	02703	4/24/2018 6:30 PM
17	Cumberland	4/24/2018 6:26 PM
18	02760. 57073.	4/24/2018 5:33 PM
19	02760	4/24/2018 4:21 PM
20	No attleboro	4/24/2018 4:19 PM
21	Attleboro / North Attleboro	4/24/2018 2:13 PM
22	02760	4/24/2018 7:33 AM
23	North Attleboro	4/23/2018 10:28 PM
24	North Attleboro	4/23/2018 6:15 PM
25	02760	4/23/2018 1:02 PM
26	02703	4/23/2018 10:31 AM
27	02760	4/23/2018 10:25 AM
28	Attleboro	4/23/2018 1:18 AM
29	02703	4/21/2018 4:54 PM
30	North Attleboro	4/21/2018 6:51 AM
31	02760	4/20/2018 3:33 PM
32	02760	4/20/2018 3:01 PM
33	02760	4/20/2018 2:58 PM
34	Attleboro	4/20/2018 1:19 PM
35	02703	4/20/2018 12:59 PM

36	02762	4/20/2018 11:41 AM
37	02760	4/20/2018 10:57 AM
38	02703	4/20/2018 10:47 AM
39	Attleboro	4/20/2018 9:59 AM
40	02703	4/20/2018 9:55 AM
41	South Attleboro	4/20/2018 9:34 AM
42	North Attleboro, Providence or Foxboro	4/20/2018 8:51 AM
43	02760	4/20/2018 6:00 AM
44	02703	4/20/2018 5:41 AM
45	02703	4/20/2018 2:18 AM
46	02760	4/19/2018 11:21 PM
47	02760	4/19/2018 10:34 PM
48	02703	4/19/2018 10:06 PM
49	02763	4/19/2018 9:37 PM
50	02048	4/19/2018 9:08 PM
51	I travel through rt.1 starting in Attleboro to go to North attleboro, Plainville and/or Foxboro	4/19/2018 8:58 PM
52	02703	4/19/2018 7:54 PM
53	02760	4/19/2018 7:08 PM
54	north attleboro	4/19/2018 6:48 PM
55	02860	4/19/2018 6:07 PM
56	South Attleboro	4/19/2018 5:26 PM
57	North Attleboro	4/19/2018 5:23 PM
58	02760	4/19/2018 4:15 PM
59	02760	4/19/2018 4:04 PM
60	02760	4/19/2018 3:09 PM
61	02760	4/19/2018 2:56 PM
62	ATtleboro	4/19/2018 2:17 PM
63	02703	4/19/2018 1:46 PM
64	02703	4/19/2018 1:39 PM
65	02860	4/19/2018 1:11 PM
66	02760	4/19/2018 1:03 PM
67	02760	4/19/2018 1:00 PM
68	North Attleboro	4/19/2018 12:46 PM
69	02760 or 02703	4/19/2018 11:46 AM
70	02760	4/19/2018 11:24 AM
71	02860	4/19/2018 11:23 AM
72	02760	4/19/2018 11:17 AM
73	Downtown Attleboro	4/19/2018 10:25 AM
74	North attleboro	4/19/2018 9:53 AM
75	North Attleboro	4/19/2018 9:47 AM
76	02703	4/19/2018 9:45 AM

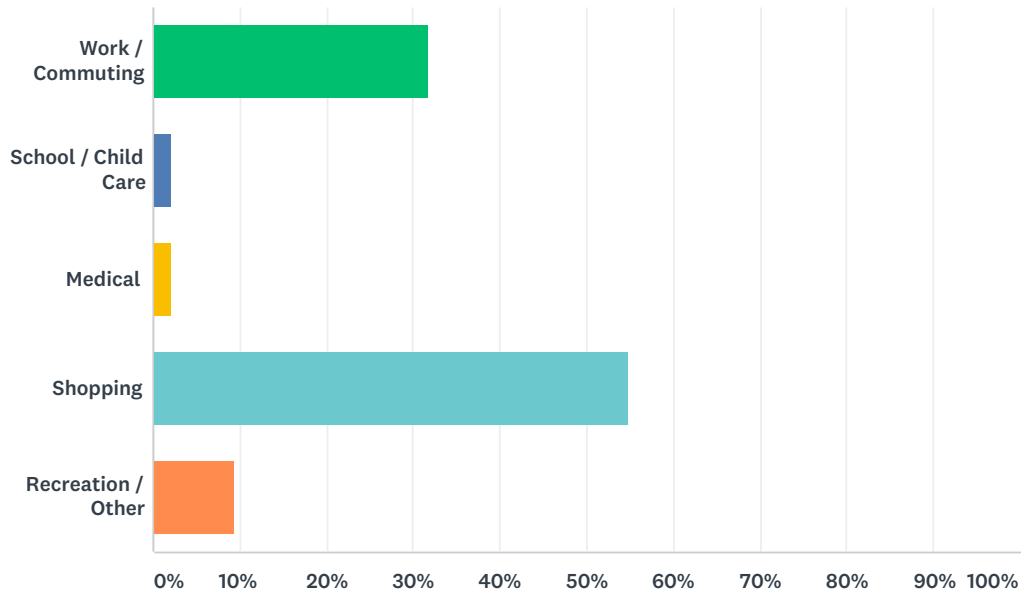


77	02703	4/19/2018 9:33 AM
78	North Attleborough	4/19/2018 9:32 AM
79	north attleboro	4/19/2018 9:05 AM
80	02760	4/19/2018 9:00 AM
81	02703	4/19/2018 8:58 AM
82	02703	4/19/2018 8:56 AM
83	02703	4/19/2018 8:43 AM
84	02703	4/19/2018 8:40 AM
85	02730	4/19/2018 8:34 AM
86	South Attleboro or North Attleboro	4/19/2018 8:33 AM
87	02703	4/19/2018 8:18 AM
88	North Attleboro	4/19/2018 8:09 AM
89	02703	4/19/2018 7:59 AM
90	02703	4/19/2018 7:46 AM
91	02760	4/19/2018 7:38 AM
92	02760	4/19/2018 6:12 AM
93	02760	4/19/2018 5:18 AM
94	02703	4/19/2018 5:12 AM
95	02760	4/19/2018 3:14 AM
96	02760	4/19/2018 1:47 AM
97	02760	4/19/2018 12:42 AM
98	02760	4/18/2018 3:03 PM
99	02703	4/18/2018 2:41 PM
100	Pawtucket Ri	4/18/2018 12:12 AM
101	02494	4/17/2018 11:29 AM
102	02760	4/17/2018 10:01 AM
103	02703	4/17/2018 9:04 AM
104	02760	4/16/2018 11:25 AM
105	02861	4/15/2018 10:21 AM
106	02760	4/14/2018 8:44 PM
107	02703	4/14/2018 12:08 PM
108	South Attleboro	4/14/2018 8:30 AM
109	02760	4/14/2018 8:05 AM
110	02760	4/14/2018 12:13 AM
111	North Attleboro	4/13/2018 9:55 PM
112	02760	4/13/2018 9:06 PM
113	02760	4/13/2018 7:20 PM
114	02703	4/13/2018 6:43 PM
115	North attleboro	4/13/2018 5:47 PM
116	02762	4/13/2018 5:41 PM
117	02760	4/13/2018 2:39 PM

118	Attleboro	4/13/2018 12:01 PM
119	02760	4/13/2018 11:34 AM
120	Attleboro	4/13/2018 11:25 AM
121	Attleboro	4/13/2018 11:17 AM
122	North Attleboro 02760	4/13/2018 10:39 AM
123	02760	4/13/2018 10:27 AM
124	02760	4/13/2018 9:53 AM
125	O2760	4/13/2018 9:21 AM
126	02760	4/13/2018 9:14 AM
127	02760	4/13/2018 9:11 AM
128	02760	4/13/2018 9:08 AM
129	02760	4/13/2018 9:01 AM
130	02760	4/13/2018 9:00 AM
131	02763	4/13/2018 8:52 AM
132	02703	4/13/2018 8:50 AM
133	02860	4/13/2018 8:45 AM
134	02760	4/13/2018 8:42 AM
135	02760	4/13/2018 8:42 AM
136	Attleboro, MA	4/13/2018 8:42 AM
137	02760	4/12/2018 11:00 PM
138	02703	4/12/2018 2:52 PM
139	02760	4/12/2018 2:06 PM
140	travel back and forth equally in both directions	4/12/2018 2:01 PM
141	02703	4/12/2018 1:35 PM
142	02915	4/12/2018 1:21 PM
143	02760	4/12/2018 1:14 PM
144	02760	4/10/2018 7:46 AM
145	02703	4/6/2018 1:37 PM
146	It varies between 02864, 02703 or 02864	4/5/2018 5:21 PM
147	02760 north attleboro	4/5/2018 4:30 PM

### Q5 What is usually the reason for your trip?

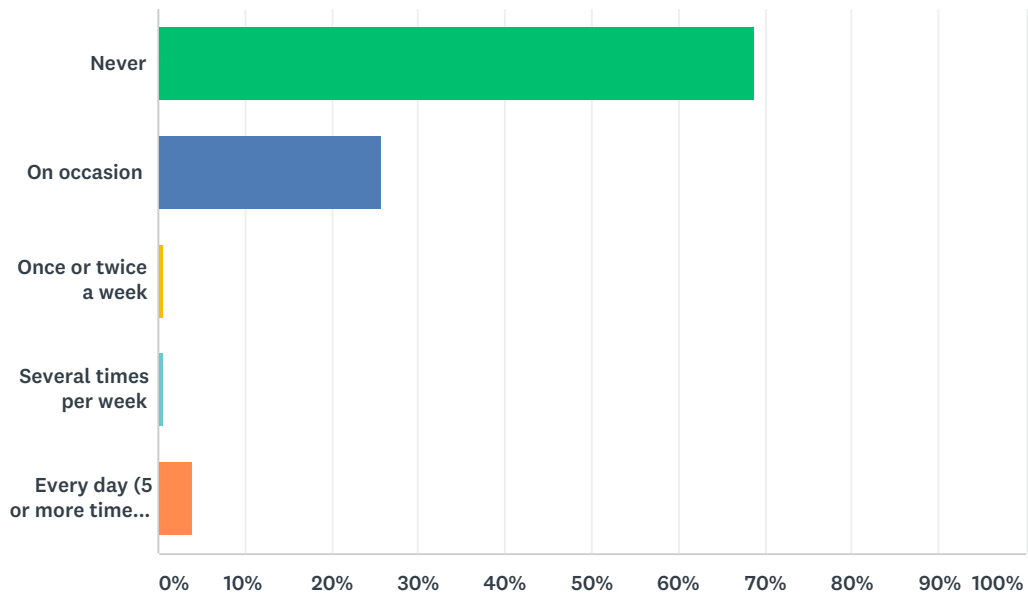
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES
Work / Commuting	31.76% 47
School / Child Care	2.03% 3
Medical	2.03% 3
Shopping	54.73% 81
Recreation / Other	9.46% 14
<b>TOTAL</b>	<b>148</b>

### Q6 How often do you travel Route 1 to access the MBTA Commuter Rail Station in South Attleboro?

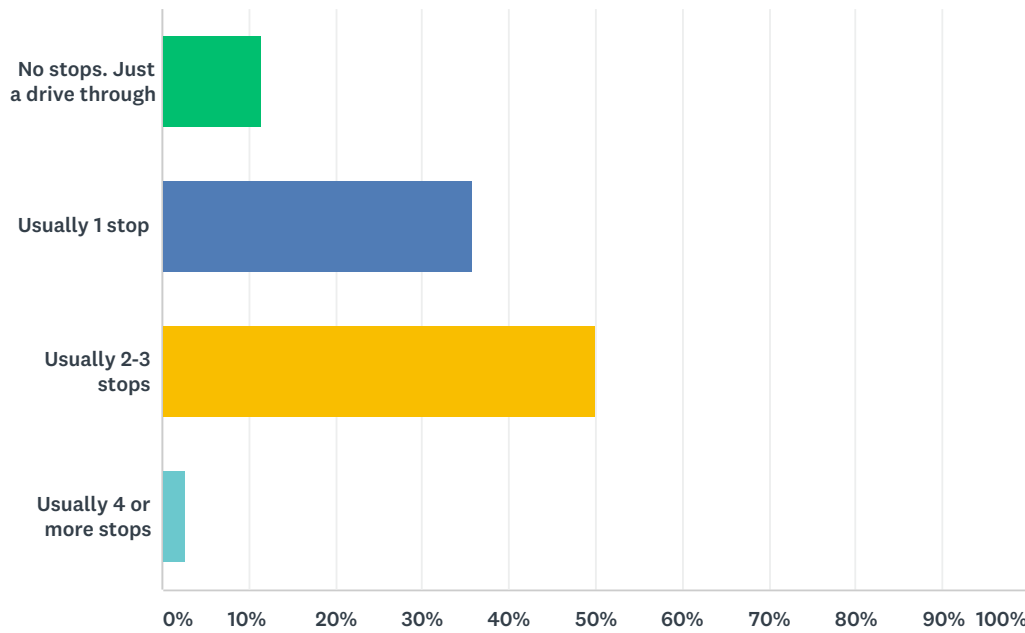
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES	
Never	68.92%	102
On occasion	25.68%	38
Once or twice a week	0.68%	1
Several times per week	0.68%	1
Every day (5 or more times a week)	4.05%	6
<b>TOTAL</b>		<b>148</b>

### Q7 Is your trip on Route 1 usually a drive through trip on the way to somewhere else or do you make a stop or stops along Route 1?

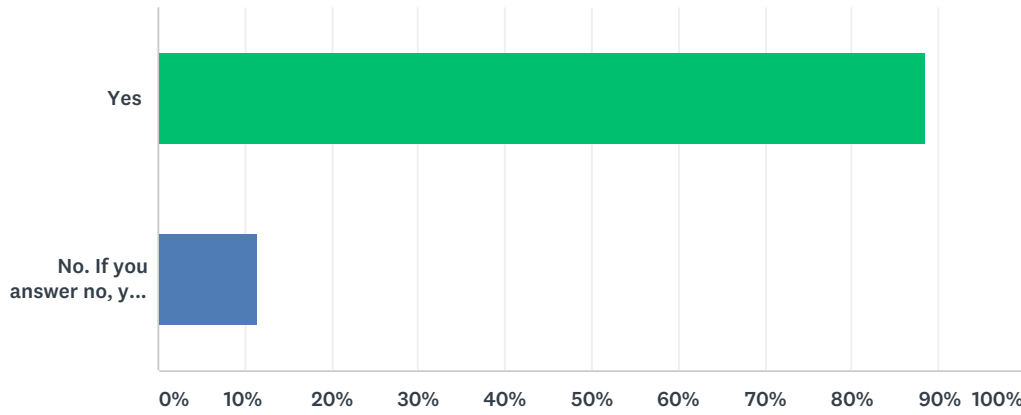
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES	
No stops. Just a drive through	11.49%	17
Usually 1 stop	35.81%	53
Usually 2-3 stops	50.00%	74
Usually 4 or more stops	2.70%	4
<b>TOTAL</b>		<b>148</b>

### Q8 Do you ever take a detour to avoid Route 1?

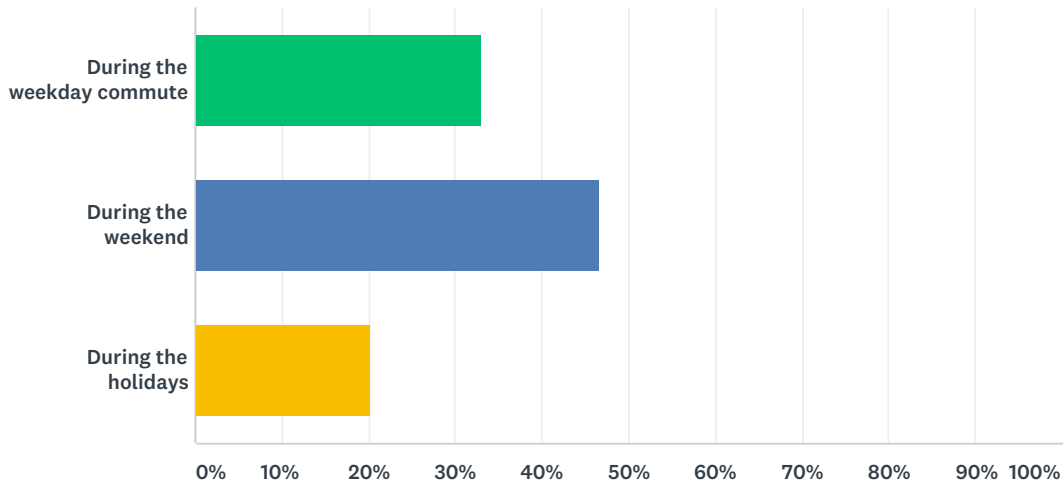
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES	
Yes	88.51%	131
No. If you answer no, you my skip ahead to question 12.	11.49%	17
TOTAL		148

### Q9 When do you take a detour?

Answered: 133 Skipped: 14



ANSWER CHOICES	RESPONSES	
During the weekday commute	33.08%	44
During the weekend	46.62%	62
During the holidays	20.30%	27
<b>TOTAL</b>		<b>133</b>

## Q10 What other roads do you use to avoid Route 1?

Answered: 126 Skipped: 21

#	RESPONSES	DATE
1	Old post rd Mt hope st	5/10/2018 4:22 PM
2	123, 152	5/8/2018 2:21 PM
3	123, 152	5/8/2018 2:21 PM
4	152/123	5/3/2018 6:59 PM
5	Allen Ave, Ellis Rd, Metcalf Rd, Broadway, North/South Washington St, Cushman Rd, Mendon Rd, Adamsdale Rd	4/26/2018 6:50 AM
6	Route 1A, Anawan, Metcalf, Broadway	4/25/2018 7:14 PM
7	Route 123 or route 95	4/25/2018 7:00 PM
8	95, Cumberland,	4/25/2018 6:00 PM
9	Back roads	4/25/2018 4:34 PM
10	Mendon Road, Robinson Avenue	4/25/2018 4:29 PM
11	Mount Hope Street	4/25/2018 3:55 PM
12	I am still learning the roads, I refer the GPS for help	4/25/2018 11:31 AM
13	as many side streets as I can	4/25/2018 10:35 AM
14	May st, 295/95	4/25/2018 4:43 AM
15	old post road	4/24/2018 9:23 PM
16	Old Post Rd to Newport Ave. To Rte 123	4/24/2018 6:30 PM
17	Old Post Rd reservoir Mt Hope	4/24/2018 6:26 PM
18	Page Rd. ;. Calvin Rd. Washington St. Reservoir St. Mt Hope St. Etc etc	4/24/2018 5:33 PM
19	120, Adamsdale Rd, Cumberland Ave, Reservoir St	4/24/2018 4:21 PM
20	I anawan Rd my	4/24/2018 4:19 PM
21	May St Newport Ave	4/24/2018 2:13 PM
22	Anawan- the light at the end of Hoppin Hill only allows for 3 cars to pass. The morning traffic is awful. Takes 3-4 red lights before you can get through	4/24/2018 7:33 AM
23	Old Post Rd	4/23/2018 10:28 PM
24	Rt. 123 Attle., Rocklawn Attle., and Linden, Mount Hope to Old Post Road to Draper Ave.(North Attleboro) May St.	4/23/2018 6:15 PM
25	Rte 120, Draper Ave, May St, Cumberland Rd, Allen Ave: any available that may legally be used.	4/23/2018 1:02 PM
26	Old Post Road	4/23/2018 12:00 PM
27	123, Old Post	4/23/2018 10:31 AM
28	Old post rd draper rd allen ave	4/23/2018 10:25 AM
29	Old post rd	4/23/2018 1:18 AM
30	all roads around rt 1...Newport Ave/Adamsdale/Robbinson/Old Post Rd/Mendon/Curran/Cumberland/Cushman/Allen/Draper...295 to 95...	4/21/2018 4:54 PM
31	Old Post Rd - Allen Ave - or Cumberland Ave to...	4/20/2018 3:33 PM
32	Allen ave	4/20/2018 3:01 PM



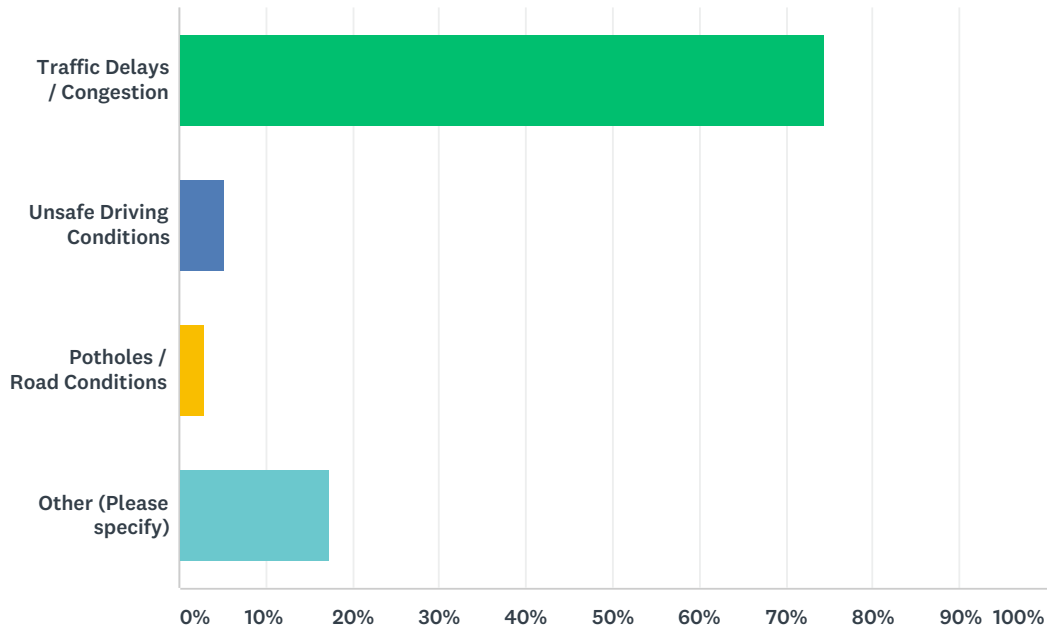
33	North Attleboro- Anawan broadway, Hoppin Hill, Draper, Allen, Cumberland, May, Old Post. Previous questions should have multiple answers and/or comments available.	4/20/2018 2:58 PM
34	Old Post Road, Mt Hope Street	4/20/2018 1:19 PM
35	Old Post Road	4/20/2018 12:59 PM
36	Mount HOPE OLD POST ROAD	4/20/2018 11:41 AM
37	May street, old Newport ave, draper ave, other roads I do not know their name	4/20/2018 10:47 AM
38	May St	4/20/2018 9:59 AM
39	Draper avenue to paine road to Cumberland avenue to other back roads which brings me back to route 1 in south Attleboro.	4/20/2018 9:55 AM
40	Paine, Cumberland Ave, going toward May Street.	4/20/2018 9:34 AM
41	May street or Draper Ave the road behind Applebees	4/20/2018 8:51 AM
42	mendon rd	4/20/2018 6:00 AM
43	May St, Newport Ave	4/20/2018 5:41 AM
44	Draper avenue, old post, mount hope, get to 123 somehow.,,or Cushman to may street	4/20/2018 2:18 AM
45	Reservoir road	4/19/2018 11:21 PM
46	Old post road	4/19/2018 10:34 PM
47	123	4/19/2018 10:06 PM
48	South Ave	4/19/2018 9:37 PM
49	backroadd	4/19/2018 9:08 PM
50	All! I will take Mt. Hope and any other roads to avoid.	4/19/2018 8:58 PM
51	May Street	4/19/2018 7:54 PM
52	other end of Newport ave to old post rd	4/19/2018 6:48 PM
53	May Street. 295 to 95	4/19/2018 6:07 PM
54	Old post Road	4/19/2018 5:26 PM
55	Back roads through Attleboro Center	4/19/2018 5:23 PM
56	Draper	4/19/2018 4:15 PM
57	Old post road	4/19/2018 4:04 PM
58	Old Post Road, Hoppin Hill	4/19/2018 3:09 PM
59	Rt95 to rt 123	4/19/2018 2:17 PM
60	1A, Rte 123, Old post Rd, Route 95 - exit to exit	4/19/2018 1:46 PM
61	Old post	4/19/2018 1:39 PM
62	Cumberland Avenue, Allen Avenue, Hoppin Hill, Draper Avenue, Cushman Road.	4/19/2018 1:03 PM
63	Draper Ave, Old Post Road, Allen Ave, Hoppin Hill, May Street	4/19/2018 1:00 PM
64	Old Post Road, West Street / Newport Ave,	4/19/2018 11:46 AM
65	Old Post Road, Hoppin Hill Rd	4/19/2018 11:24 AM
66	n/a	4/19/2018 11:23 AM
67	Old post Road	4/19/2018 11:17 AM
68	All of them: Adamsdale Road, Cushman Road, Cumberland Ave, Sheldonville Road, Hoppin Hill Ave, Newport Ave, Old Post Road.	4/19/2018 9:47 AM
69	95/295	4/19/2018 9:45 AM
70	old post road to newport ave/rt 123	4/19/2018 9:33 AM
71	Back roads	4/19/2018 9:32 AM

72	Old Post Road	4/19/2018 9:05 AM
73	Mount Hope, Reservoir	4/19/2018 9:00 AM
74	Hope Street	4/19/2018 8:56 AM
75	Old Post Road, Newport Ave, May Street, Allen Ave, Draper	4/19/2018 8:40 AM
76	95	4/19/2018 8:34 AM
77	Cumberland Avenue, Draper Avenue, Allen Ave	4/19/2018 8:33 AM
78	The backroads! If I am going to the far side of North Attleboro/Plainville I take the Newport/Old Post Road and if I am trying to go to mall/Target area, I take Cumberland/Paine.	4/19/2018 8:18 AM
79	1A and side roads	4/19/2018 8:09 AM
80	old newport ave, draper ave, 295	4/19/2018 7:59 AM
81	Traveling from Brown St, I'll go down Robinson, to 123, to Adamsdale, to Mendon, to Cushman, Norborough, to Cumberland Ave to route one near Davids Bridal	4/19/2018 7:46 AM
82	many	4/19/2018 7:38 AM
83	old post road	4/19/2018 6:12 AM
84	not sure of names, road runs parallel along rte 1	4/19/2018 5:18 AM
85	Route 120	4/19/2018 3:14 AM
86	123 and Old Post Road	4/19/2018 1:47 AM
87	Allen ave Cumberland ave May st	4/19/2018 12:42 AM
88	Adamsdale, Mendon, Hunts Bridge, Draper	4/18/2018 3:03 PM
89	152	4/18/2018 12:12 AM
90	Forget street name - it runs behind Dunkin Donuts and comes out near Attleboro Fire Dept.	4/17/2018 11:29 AM
91	Old Post Road	4/17/2018 10:01 AM
92	Newport Ave/Old Post Road, May Street, Rocklawn Ave from Route 123	4/16/2018 11:25 AM
93	Old post & Newport ave	4/15/2018 10:21 AM
94	95, 295, and a side road can't think of the name	4/14/2018 12:08 PM
95	Old Post Road	4/14/2018 8:30 AM
96	Any other	4/14/2018 8:05 AM
97	Draper Ave, Old Post Rd, Rt 1A	4/13/2018 9:55 PM
98	Draper Ave, Allen Ave, Old Post Road	4/13/2018 9:06 PM
99	Cumberland	4/13/2018 7:20 PM
100	May St, Angeline St	4/13/2018 6:43 PM
101	Newport ave/old post road	4/13/2018 5:47 PM
102	This survey is ridiculous. I take rt 1 for work, planned shopping and quick errands. I also take many back roads around it often. The options you give are not great. I live smack in the middle of this crap	4/13/2018 5:41 PM
103	Old Post Road	4/13/2018 2:39 PM
104	Old Post Rd , Newport Ave, Route 95	4/13/2018 12:01 PM
105	Old Post Road to Rt 123	4/13/2018 11:17 AM
106	Old Post Rd., Mount Hope St., Adamsdale Road, Cumberland Ave.	4/13/2018 10:39 AM
107	Draper, Paine, Cumberland	4/13/2018 10:27 AM
108	Old post road	4/13/2018 9:53 AM
109	Allen ave, Paine, Mendon, hunts mill	4/13/2018 9:21 AM

110	The backroads from Draper Ave to behind the mall, leading to Mendon Rd and back to Rte 1 at Uno's/May St.	4/13/2018 9:14 AM
111	side roads	4/13/2018 9:08 AM
112	Newport Ave in Attleboro to Old Post Rd in North Attleboro	4/13/2018 9:01 AM
113	Old post rd	4/13/2018 9:00 AM
114	Old Post Rd to Newport Ave	4/13/2018 8:50 AM
115	Allen Ave, Rt 95, Reed/County Street	4/13/2018 8:45 AM
116	Old Post Rd./Newport Ave. - West St. - May St. Rte.120 - Hoppin Hill Ave. - Allen Ave.	4/13/2018 8:42 AM
117	Mt. Hope to Reservoir Dr to Old Post to Draper	4/13/2018 8:42 AM
118	Allen Ave, hoppin hill, may st	4/12/2018 11:00 PM
119	Old Post Road	4/12/2018 2:06 PM
120	i take detours as often as possible during the week, weekends and holidays I take old post road	4/12/2018 2:01 PM
121	Cumberland ave, cushman road, draper ave, adamsdale rd, etc	4/12/2018 1:35 PM
122	Old Post Rd or Allen Ave/Paine Rd/Cumberland Ave	4/12/2018 1:21 PM
123	Hoppin Hill Ave	4/12/2018 1:14 PM
124	Old Post Road	4/10/2018 7:46 AM
125	I use several roads on both sides of route one to avoid it. Question 10 should let you check them all because I would. Route one is poorly designed and horrible to drive on.	4/5/2018 5:21 PM
126	old post road	4/5/2018 4:30 PM

### Q11 Why do you avoid this area?

Answered: 133 Skipped: 14



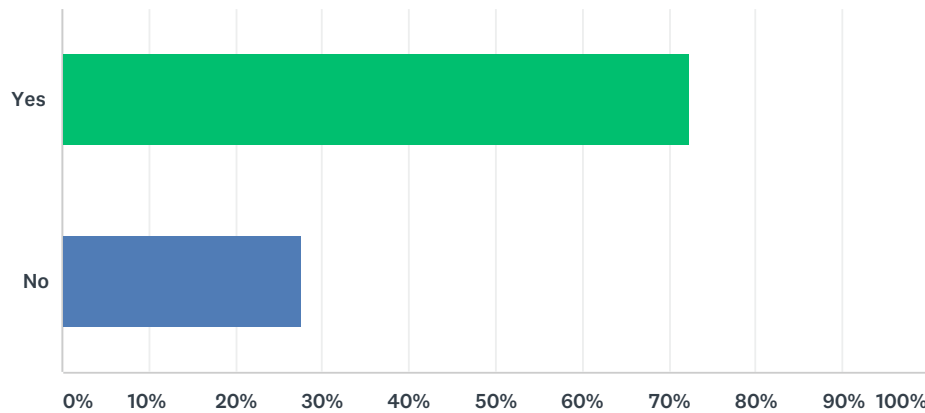
ANSWER CHOICES	RESPONSES
Traffic Delays / Congestion	74.44% 99
Unsafe Driving Conditions	5.26% 7
Potholes / Road Conditions	3.01% 4
Other (Please specify)	17.29% 23
<b>TOTAL</b>	<b>133</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	All of the above, traffic, congestion, potholes, con	5/10/2018 4:22 PM
2	Pot holes, traffic delays and unsafe driving conditions from road conditions and speed limits and vehicles	4/25/2018 11:31 AM
3	All of the above	4/23/2018 10:28 PM
4	Congestion and unsafe driving conditions	4/23/2018 6:15 PM
5	All of the above choices apply.	4/23/2018 1:02 PM
6	North has potholes like craters but the traffic congestion is the worst	4/21/2018 4:54 PM
7	Hoppin hill ave traffic signal is only allowing 4 car to clear green light, all other cars are running light, am and pm. Rte1 north turning cars onto Hoppin Hii are turning on a red light. Need a turning light onto Hoppin Hill. Huge oversight on new inspection.	4/20/2018 2:58 PM
8	You should be able to check more than 1. I avoid due to traffic, unsafe driving conditions and awful road conditions.	4/19/2018 8:58 PM
9	lived on route 1A,trying to sell property. way to dangerous to live on anymore	4/19/2018 6:48 PM
10	All of the above	4/19/2018 1:46 PM
11	All of the above	4/19/2018 11:24 AM

12	Signal lights not in sync	4/19/2018 11:17 AM
13	ALL: Traffic, Unsafe, Potholes	4/19/2018 9:47 AM
14	Timing of lights--I usually end up sitting at every light	4/19/2018 7:46 AM
15	many causes-congestion, people driving poorly	4/19/2018 5:18 AM
16	Traffic unsafe and potholes	4/19/2018 12:42 AM
17	All of the above	4/14/2018 12:13 AM
18	All of the above. Primarily traffic	4/13/2018 5:47 PM
19	all of the above. Traffic sucks, north attleboro pot holes could swallow a car and getting to the same spot could take between 5-25 minutes depending on the day/time. r	4/13/2018 5:41 PM
20	All of the above!	4/13/2018 10:39 AM
21	A lot quicker	4/13/2018 8:42 AM
22	All the above	4/10/2018 7:46 AM
23	All of the above	4/5/2018 5:21 PM

### Q12 Did you know that there are several GATRA routes providing bus service on Route 1?

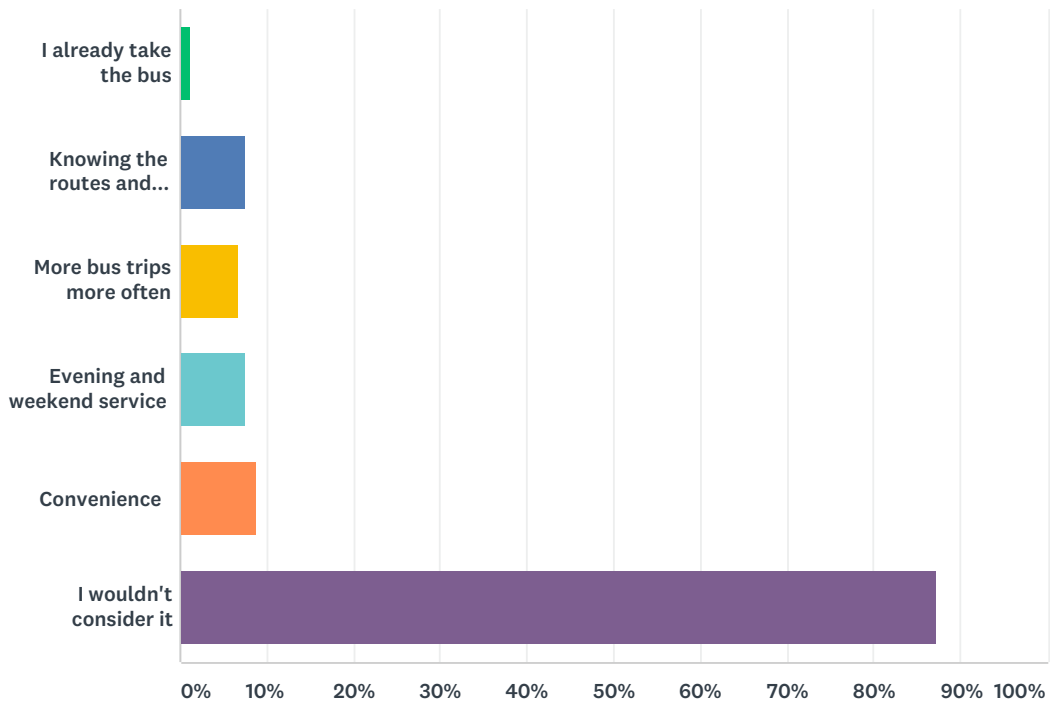
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES	
Yes	72.30%	107
No	27.70%	41
TOTAL		148

### Q13 What would make you consider leaving your car at home to take a bus to a location on or near Route 1? Check all that apply.

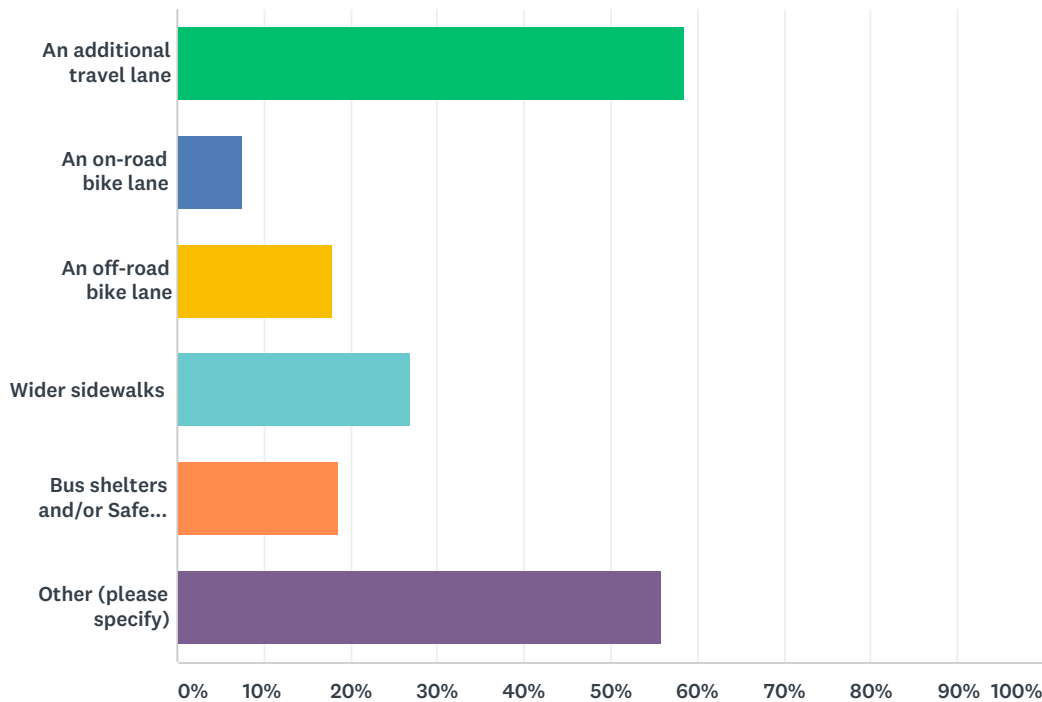
Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES
I already take the bus	1.35% 2
Knowing the routes and schedules	7.43% 11
More bus trips more often	6.76% 10
Evening and weekend service	7.43% 11
Convenience	8.78% 13
I wouldn't consider it	87.16% 129
Total Respondents: 148	

# Q14 What do you think could improve travel and/or safety along Route 1? Check all that apply.

Answered: 145 Skipped: 2



ANSWER CHOICES	RESPONSES
An additional travel lane	58.62% 85
An on-road bike lane	7.59% 11
An off-road bike lane	17.93% 26
Wider sidewalks	26.90% 39
Bus shelters and/or Safe Boarding Areas along Route 1	18.62% 27
Other (please specify)	55.86% 81
Total Respondents: 145	

#	OTHER (PLEASE SPECIFY)	DATE
1	The timing of the traffic lights	5/10/2018 4:22 PM
2	More left turns lights	5/3/2018 6:59 PM
3	Better coordination of traffic signals especially at the North Attleboro/South Attleboro border at Cumberland Ave and May St intersections. Rt. 1 and Rt. 120 intersection has also turned into a huge bottleneck. New pattern made it WORSE by taking away right lane on Rt. 1 North and not adding a left turn light from Rt. 1 North onto Rt. 120.	4/26/2018 6:50 AM
4	More time at Route 120 light	4/25/2018 7:14 PM
5	Jersey barriers and turning lanes	4/25/2018 7:00 PM
6	Sidewalks at all & poor snow removal	4/25/2018 6:00 PM
7	Prefer no bike lanes	4/25/2018 4:34 PM



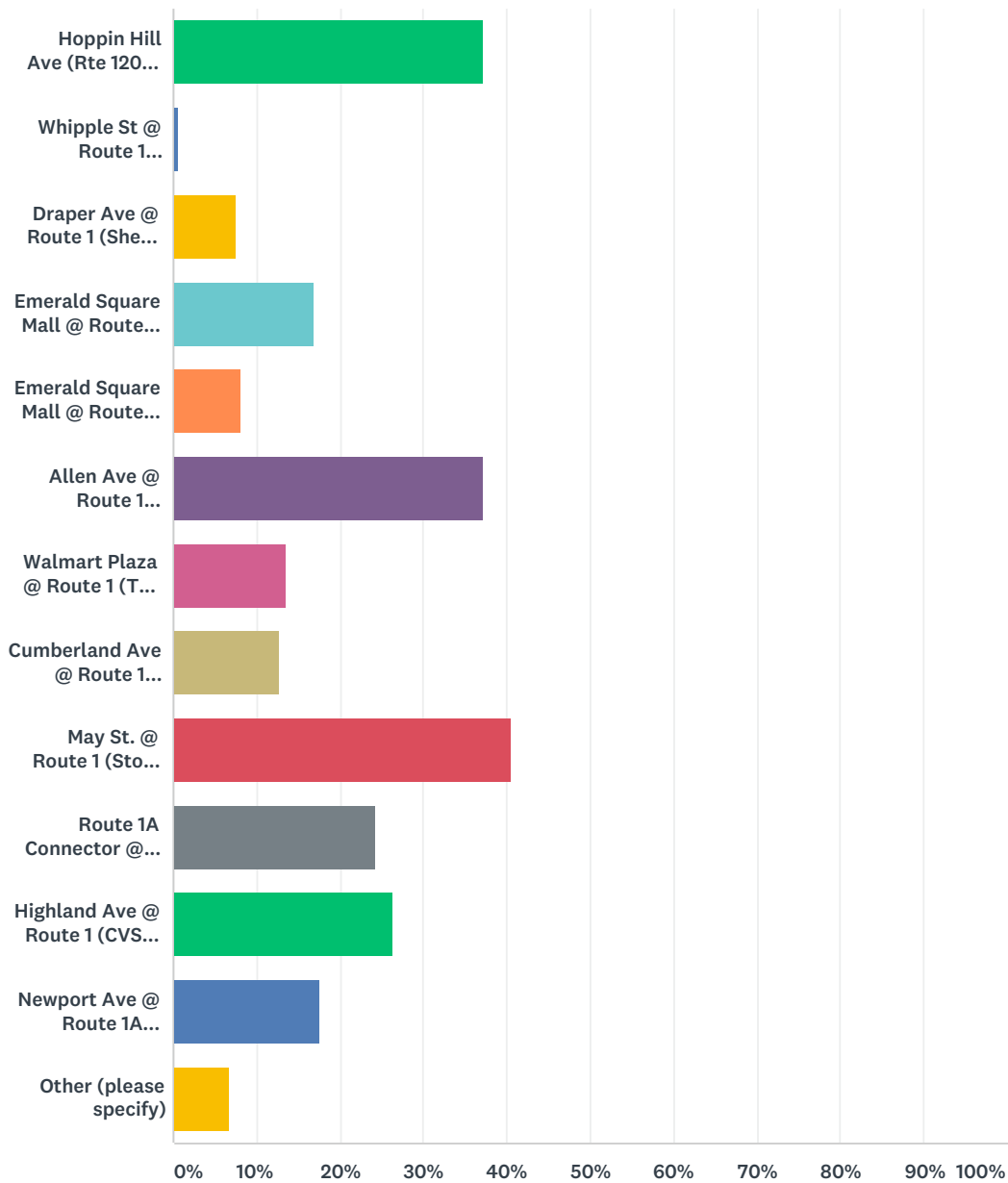
8	Jersey barriers and turning lanes	4/25/2018 4:29 PM
9	Designated left turn lights at RT 120, designated u-turns with barriers to stop blocked traffic at side streets and stores.	4/25/2018 3:55 PM
10	Real sidewalks and make sure the whe area has sidewalks. I cannot use my wheelchair along many areas with bad weather and mud without side walks. Very UNSAFE and illegal per ADA requirements	4/25/2018 11:31 AM
11	less potholes and trying to avoid them makes safer streets!	4/25/2018 10:35 AM
12	Synchronized lights and fewer lights at side streets. The lights cause major backups especially Target, Walmart and again at May st.	4/25/2018 4:43 AM
13	Less potholes, congestion	4/24/2018 6:30 PM
14	Left arrow to 120	4/24/2018 6:26 PM
15	Light sequences well cordinated safety	4/24/2018 5:33 PM
16	Median along Rt 1	4/24/2018 4:21 PM
17	Four way lights on	4/24/2018 4:19 PM
18	All of the above, and make travel lanes like the one from Walmart past Lowes to Marshalls, etc. For some reason the Draper Ave/Rt 1 intersection seems dangerous. Also make more roads off Old Post Road continue to Route 1, such as Cumberland Ave. at Friendlies or Allen Ave next to Monkey Joes.	4/23/2018 6:15 PM
19	Bring the roadway state of repair up to a reasonable standard.	4/23/2018 1:02 PM
20	Better timing of traffic lights, especially the left turn into the Panera/Bed Bath & Beyond plazas.	4/23/2018 10:31 AM
21	Keeping all the RI shoppers out!	4/21/2018 4:54 PM
22	Marked bus areas	4/20/2018 3:33 PM
23	Improve turning lanes and painted lanes at Rte1, Allen ave, Target, Longhorns intersection. From Target to turn right sour on Rte 1, State/Town needs to plow the right turning lane and paint. Across the street, need to control Rte1 northbound yields into intersection as the Allen Ave is crossing straight ahead. The intersection jams as car cross each other, cars trying to go to Fashion crossing and pan handlers stoping all as a civil rights. Southbound turning lane left turning lane too short! Back up to Mall.	4/20/2018 2:58 PM
24	Change the timing of the traffic signal at Rt 1 and May Street. That signal does not allow enough traffic to flow south, backing up traffic for 2 miles, causing unsafe entry from businesses on the east and west sides of Rt in both directions.	4/20/2018 1:19 PM
25	A left-turn advance green arrow at Route 1 North to turn onto Rt 120	4/20/2018 12:59 PM
26	Monorail	4/20/2018 9:59 AM
27	better traffic light patterns	4/20/2018 9:55 AM
28	Less fast food places	4/20/2018 9:34 AM
29	Better light systems	4/20/2018 8:51 AM
30	I do not think the problem is solvable. Too much traffic. Too poor drivers	4/20/2018 6:00 AM
31	Less lights? Less businesses?	4/20/2018 5:41 AM
32	Proper center turning lane in appropriate area	4/19/2018 9:37 PM
33	better timed signals. better access management.	4/19/2018 9:08 PM
34	Open Cumberland Ave, make May Street a one way and either Cumberland Street or Angeline Street a one way	4/19/2018 7:54 PM
35	It's just so dangerous. not sure what the answer would be	4/19/2018 6:48 PM
36	blocking left turns to/from businesses, perhaps turn around areas - especially the dunkin donuts in the morning	4/19/2018 5:26 PM
37	more police presence and ticketing	4/19/2018 3:09 PM

38	None of the above selections	4/19/2018 2:56 PM
39	a through lane, no left turn prevention except where allowed	4/19/2018 1:46 PM
40	Definitely NOT more travel lanes! Maybe some additional turning lanes.	4/19/2018 1:11 PM
41	Stopping the construction of new businesses. Removing the right lane in front of Emerald Square Mall that people use as a passing lane.	4/19/2018 1:03 PM
42	Left turn only onto Hoppin Hill Road	4/19/2018 12:46 PM
43	Green arrow to turn left on Hoppin Hill (Route 120) when coming from South Attleboro. Physical barriers separating both sides of traffic. Sidewalks along both sides for pedestrians.	4/19/2018 11:24 AM
44	Signal lights made to be in sync	4/19/2018 11:17 AM
45	More bus stops so I wouldn't have to walk	4/19/2018 10:25 AM
46	Limit locations for making turns across highway	4/19/2018 9:53 AM
47	Reconfiguration of traffic lights (and timing; OR smarter lights that aren't a pattern but rather based on need), Better defined entrances to business in South Attleboro (e.g. plaza with Orange Theory is a complete disaster), Dedicated turning lanes (Highland/Route 1 intersection), Walking bridge connecting shops	4/19/2018 9:47 AM
48	Dividers, elevated rotary like the one in Norwood	4/19/2018 9:45 AM
49	Less people coming from Rhode Island - its always the RI plates that make up most of the traffic	4/19/2018 9:33 AM
50	barrier dividing middle of road. very dangerous now. route 1 is almost like a highway with people traveling at high speeds. put a concrete median up in the middle of the road. only allow left hand turns in certain designated areas.	4/19/2018 9:05 AM
51	medians/le ts medians with designated turn lanes, yet less turn lanes holding up traffic flow in travel lanes	4/19/2018 9:00 AM
52	Lengthening lanes that are designated as "turn only" lanes	4/19/2018 8:58 AM
53	The facility is only congested during peak periods (shopping season, weekends, etc.) the rest of the time it operates well. Frankly, there is little you can do to improve the facility during those peaks. The bottom line during those peaks is that there are just too many cars. With that said, I would like to see better sidewalks along the corridor. I have witnessed pathetic pedestrians slogging through foot deep snow where there are no sidewalks, or unplowed sidewalks. The pedestrian amenities are a disgrace. Bike lanes should be added the entire length. They will be little used and the state will be mocked for installing them but in the long run they will be a big benefit.	4/19/2018 8:40 AM
54	Timing of the lights changed to promote flow of traffic	4/19/2018 7:46 AM
55	fix all the defects in the road, people swerve around them	4/19/2018 6:12 AM
56	stop construction, there are too many plazas	4/19/2018 5:18 AM
57	Improving road conditions by better up keep of the road surface. Better light timing.	4/19/2018 1:47 AM
58	Faster lights and bigger roads	4/19/2018 12:42 AM
59	clear signage , and somewhere safe to turn around when you can only take right hand turns out of lots. Sometimes left hand turns are impossible across the four lanes when heavy traffic	4/18/2018 3:03 PM
60	Barriers to prevent left turns on two lane sections	4/17/2018 10:01 AM
61	A bike lane will DECREASE safety and someone will get killed. You are kidding yourself if you think adding a bike lane will improve anything.	4/15/2018 10:21 AM
62	Extra travel lane, better light coordination	4/14/2018 12:08 PM
63	Complete Sidewalks along all route 1	4/14/2018 8:05 AM
64	Right now, the biggest issue is the ridiculous number of potholes. These need immediate attention.	4/13/2018 9:55 PM
65	Turn lanes at intersections..more capacity	4/13/2018 9:06 PM

66	The school zone lights aren't flashing anymore for Hill Roberts & there is no longer a crossing guard to turn them on and off. The 20mph is never enforced with police presence or speed traps. Cameras could ticket speeders and that money could be used to fund safer intersections.	4/13/2018 6:43 PM
67	Fewer traffic lights/overpass. Wider lanes	4/13/2018 5:47 PM
68	Better turning lanes at busy intersections. Widen road at Emerald Square Mall where it narrows to two travel lanes - adding a right hand lane all the way to the Allen Ave intersection	4/13/2018 12:01 PM
69	New traffic flow on 120, 1A and route 1 intersection has created more issues than its corrected! There is no longer a right lane flow to the traffic. I am in a back up EVERY morning and have had many near miss accidents due to other people lane hopping!	4/13/2018 10:39 AM
70	Turning lanes near north of Showcase Cinemas	4/13/2018 10:27 AM
71	Proper turning lanes at hoppin hill and turning light times adjusted specifically left at the target/Marshall's light	4/13/2018 9:53 AM
72	Longer light turning into the marshalls/Panera plaza	4/13/2018 8:45 AM
73	Reconfiguring the Rte.295 interchange and entrance to Emerald Square Mall.	4/13/2018 8:42 AM
74	A center left or right hand only turning only lane	4/13/2018 8:42 AM
75	More lights and lanes for turning left. Turning left across Rt 1 is suicide, even at a light due to the double lanes. In addition to worrying about getting t-boned as I try to cross two lanes, I'm always worried about getting rear-ended. Are bikes even allowed on rt 1? Isn't it a "highway"?	4/13/2018 8:42 AM
76	Better light synchronization, safer ways for pedestrians to cross-raised walking bridge	4/12/2018 11:00 PM
77	better timing of lights - there is too much congestion and that is why people seek alternate routes which are back roads and residential areas	4/12/2018 2:01 PM
78	Interconnection behind buildings	4/12/2018 1:14 PM
79	Smarter turn lanes at supposedly new intersection at route one and 120 going south at new intersection is very dangerous to take a left to go north bound on east Washington Street not an improvement a new danger created	4/10/2018 7:46 AM
80	Fix all the damn potholes also!	4/5/2018 5:21 PM
81	street lights timed better and/or sensed better so if no one is coming the rest of traffic isnt sitting at a red light	4/5/2018 4:30 PM

### Q15 At which traffic signal(s) do you find the longest delay, or feel is the most dangerous? Pick no more than 3.

Answered: 148 Skipped: -1



ANSWER CHOICES	RESPONSES
Hoppin Hill Ave (Rte 120) & E. Washington @ Route 1 (CVS / United Methodist Church)	37.16% 55
Whipple St @ Route 1 (Showcase Cinemas)	0.68% 1
Draper Ave @ Route 1 (Shell Gas / Applebee's)	7.43% 11
Emerald Square Mall @ Route 1 (J.C. Penney / Northern Entrance)	16.89% 25
Emerald Square Mall @ Route 1 (Parking Garage / Southern Entrance)	8.11% 12

Allen Ave @ Route 1 (Fashion Crossing / Target)	37.16%	55
Walmart Plaza @ Route 1 (TGI Friday's / Lowe's)	13.51%	20
Cumberland Ave @ Route 1 (Friendly's / Christmas Tree Shops)	12.84%	19
May St. @ Route 1 (Stop & Shop / Pizzeria Uno)	40.54%	60
Route 1A Connector @ Route 1 (Petco / BJ's)	24.32%	36
Highland Ave @ Route 1 (CVS / Shell Gas / Dunkin Donuts)	26.35%	39
Newport Ave @ Route 1A (Robert's Tuxedo's / D'Angelo's)	17.57%	26
Other (please specify)	6.76%	10
Total Respondents: 148		

#	OTHER (PLEASE SPECIFY)	DATE
1	Whole bus route from E. Washington St onto S. Washington St to and from Emerald Square Mall	4/25/2018 11:31 AM
2	Draper will be a problem with another new car dealership. Need a designated right turning lane on Draper, CarMax side. New construction Hoppin Hill longest delays have started with new lights. Traffic lights need to be reviewed and sync to clear cars in queue. On Rte 120, Hoppin Hill the car can wait 3 cycles. Never happened before.	4/20/2018 2:58 PM
3	the third lane at emerald square where people use the enter/exit lane as a high speed passing lane	4/19/2018 5:26 PM
4	Angeline Street	4/19/2018 1:03 PM
5	All lights from the mall to RI border have you stop and are out of sync	4/19/2018 11:17 AM
6	The May street intersection causes South Bound traffic (coming from North Attleboro) to back up and one weekends it seems to be the bottleneck that creates a backup all the way back up to the Mall area	4/19/2018 9:05 AM
7	Route 1A, Route 1, at route 120	4/13/2018 10:39 AM
8	The intersections are not dangerous. People making left hand turns into business parking lots across 2 lanes of travel is what is causing delays and unsafe conditions.	4/13/2018 9:01 AM
9	Rt 1 to Old Post Rd, where there is no light or turning lane. Heavily used turn.	4/13/2018 8:42 AM
10	limiting to three is unreasonable- in front of the mall down to walmart, cumberland ave by christmas tree shops, may street straight through the lights at cvs and dangelos are all congested and cause significant back ups - unfair to limit to 3	4/12/2018 2:01 PM

## Q16 Please share any other concerns or comments about travel along Route 1 in Attleboro and North Attleborough.

Answered: 103 Skipped: 44

#	RESPONSES	DATE
1	The condition of the roads are atrocious. The construction is an absolute nightmare and I don't see how the "improvements" will actually help make the intersection safer.	5/10/2018 4:22 PM
2	Blocked intersections must end	5/8/2018 2:21 PM
3	Blocked intersections must end	5/8/2018 2:21 PM
4	The green light at Route 120 is too short.	4/25/2018 7:14 PM
5	All together to much traffic allowed to make left turns during rush hours	4/25/2018 7:00 PM
6	Too much congestion. Not walker friendly	4/25/2018 6:00 PM
7	The lights need to be synced correctly	4/25/2018 4:34 PM
8	Delays at traffic lights and dangerous left turns into route one businesses where there are no jersey barriers.	4/25/2018 4:29 PM
9	Addition of center barriers with designated u-turns similar to further north on Rt 1 would make travel smoother and safer. People block traffic to turn left into Dunkin Donuts, Old Post Road, Boch Toyota etc. and it is dangerous and backs up traffic in both directions. Not safe or efficient.	4/25/2018 3:55 PM
10	Businesses like Bak Toyota and Knights Inn in each side needs to work with the GATRA Bus officials to provide safe drip and pickup areas and be team players.	4/25/2018 11:31 AM
11	The CVS East Washington Street, Hoppin Hill intersection is awful, someone is going to get seriously hurt taking a left(s) onto 120 from Rt. 1 North or onto RT.1 A. Where is the arrow and delayed red for cars turning????	4/25/2018 10:35 AM
12	The lights should at least be synchronized with each other to avoid major backups. It's terrible and very frustrating to travel.	4/25/2018 4:43 AM
13	need more bigger turning lanes	4/24/2018 9:23 PM
14	Fisher St intersection is crazy. I am always nervous about large trucks not stopping. North Washington St and Rte 1 should have right turns on red. They don't look to see if anyone is crossing from Elmwood. St.	4/24/2018 6:30 PM
15	New route light at 120 impedes traffic flow for left turn to 120 causing backups and cars turning in local parking lots	4/24/2018 6:26 PM
16	Better traffic flow. And safety for people converging from many streets in rt 1 intersection and 120 and 1a	4/24/2018 5:33 PM
17	Too many potholes, not just in winter.	4/24/2018 4:21 PM
18	Dangerous conditions on May St. including heavy use by trucks, speeding (even the speed limit of 30 mph is high for a densely populated area), no sidewalks, excessive traffic often backed up end to end.	4/24/2018 2:13 PM
19	The light at the end of Hoppin Hill is too quick. Only 3 cars can pass and this causes huge back ups in the morning . It shouldn't take 3-4 red lights to get through the light	4/24/2018 7:33 AM
20	Coming from May St. and going left onto rt. 123/Newport Ave. is a long wait and dangerous. There is usually a long line of cars on Friday and Saturdays when I usually travel there. I don't know how people get out of there driveways on May St. during busy times. going North on Rt. 1 in front of Applebees, there should be an official lane for turn right only (on red) onto Draper. This would keep traffic from backing up so far during busy times.	4/23/2018 6:15 PM
21	South Attleboro areas of Routes 1 and 1A are heavily residential in spots. North Attleboro is building up into a Norwood/Dedham-like Automile. No apparent long-term planning in route work. Fail to see efficacy of planned Rte 1/Chestnut St work by MA Highway Dept.	4/23/2018 1:02 PM

22	Gets worse every time a new plaza goes in... I don't like to drive down Rt 1 from NA on weekends and especially during the holidays.	4/23/2018 12:00 PM
23	I would walk or bike from my home to Target if I felt safe crossing Route 1. Reopening the street that runs from Okd Post Rd to the Lowe's plaza would also help (I live on that side)	4/23/2018 10:31 AM
24	The new lights at rt 1 and 120 are ridiculous!!! When traveling north on rt 1 we did not need a right turn signal and that right lane shouldve been left alone there shouldve been left turn signal to go up 120. They have made this intersection worse and confusing by losing that right lane to go north on rt 1. Also comin down 120 the light changes too quickly ive witnessed only 3 cars get through the green light before it changes to red again.	4/23/2018 10:25 AM
25	.	4/23/2018 1:18 AM
26	The traffic has become worse than rt 4/Bald Hill Rd in RI. Residential areas are blocked by lines of traffic and speeding cars. You can not go anywhere unless its before 9 am or after 6:30/7pm on weekends. Holidays are even worse	4/21/2018 4:54 PM
27	Pot holes and left turns create a lot of zigging and zagging.	4/20/2018 3:33 PM
28	Too many traffic lights	4/20/2018 3:01 PM
29	First and foremost, thank you and good luck. Re evaluate Rte 1, Rte1A, Hoppin Hill. Snow plow and clear the 2 southbound lanes on South Washington. And snow plow the sidewalks on both sides of s. Washington st. Snow plow the side walk in front of the Medical centers and Hopping Hill. Snow plow sidewalks on all Rte 1. Re- evaluate fashion Crossing, paint lines, and snow plow lanes. Thank you.	4/20/2018 2:58 PM
30	Please smooth out the new intersection/signal mess at the south end of Rt 1 where the new Sturdy Clinic and Chic Fil A are located.	4/20/2018 1:19 PM
31	The road condition at route 1 and 120 is terrible, so many potholes at every asphalt seam and the redesigned intersection still makes turning onto Rt 120 from Rt1 North impossible. The light at May Street and Route 1 Southbound should be a more frequent cycle to avoid traffic backing up past triple play car wash.	4/20/2018 12:59 PM
32	No turn lanes. Traffic stacking up at left hand turns into businesses	4/20/2018 11:41 AM
33	Big issue is cars blocking intersections so when light changes causes significant delays	4/20/2018 10:47 AM
34	Put in a monorail on route 1 between PVD and Boston	4/20/2018 9:59 AM
35	I live at royal park apartments and it's very difficult to make a left turn out of the parking lot. there have been many accidents. Need to have a longer delay from traffic so people can leave and enter our parking lot with safety. Speed lim should also be reduced going north around the bend at the traffic light.	4/20/2018 9:55 AM
36	Roads are not wide enough. Too much traffic.	4/20/2018 9:34 AM
37	With all the new shops they are building it is starting to cause incredible congestion. It used to be just during Christmas but now it is all year. The worst is the new light they put in for Chik fila. It causes major back ups and as a result of rude impatient drivers causes dangerous conditions.	4/20/2018 8:51 AM
38	At night the may st route one light seems set differently, I sat through many light cycles, 8 minutes of time, and the light never turned green to go left onto route one. There were no cars even on the road as it was near midnight.I gave up and went on a red light.	4/20/2018 2:18 AM
39	Tons of potholes	4/19/2018 11:21 PM
40	None	4/19/2018 10:06 PM
41	Dedicated right turn lane for Draper Ave when traveling North on Route 1	4/19/2018 9:37 PM
42	add a striped lane - no pavement needed - just striping fir a third lane under the underpass near the exit from 295 sb	4/19/2018 9:08 PM
43	The 2 lights by the mall need to be timed better. They are not timed logically. This leads to cars blocking the road way as they are in the middle of the intersection. The light to turn left into fashion crossing is awful. This problem is due to a lack of a left hand turn lane (a larger one). In addition the awful entrance/exit into the shopping plaza contributes to the back up all the way to rt.1	4/19/2018 8:58 PM

44	People travel too fast on May Street. It's too congested with cars going both ways. People living on May have a hard time getting out of their driveways. If there is a health emergency we would have a difficult time getting to a hospital and could cause a fatal consequences. My husband and I both have heart conditions and this is a great concern to us. People walking up our street have no safe place to walk on May Street and need to walk in the street causing a danger to them. Our mail boxes are so close to the street that I have to wait until the cars pass my house before I can open my mailbox to retrieve my mail. It just is a dangerous situation to everyone who live on May Street or uses May Street if they are walking or riding bikes.	4/19/2018 7:54 PM
45	Should not be residential between SA post office and CVS Newport ave. people drive way to fast, I own a home there now trying to sell. I feared everyone I had to stop to turn in my drive way, At one time a car cut someone off and the car flipped into my front yard just missed landing on my truck. It's like 95!	4/19/2018 6:48 PM
46	potholes	4/19/2018 5:26 PM
47	Taking a left out of any establishment is taking a gamble with life	4/19/2018 4:04 PM
48	out of state drivers not obeying posted speed limits	4/19/2018 3:09 PM
49	The new lights installed at the Hoppin Hill intersection are no improvement over what there prior to this change. There is still no left turn light when traveling north and wanting to turn left onto Hoppin Hill. Seems like an awful lot of money for zero improvement. The intersection is a mess!	4/19/2018 2:56 PM
50	pot holes, road condition is very poor	4/19/2018 2:17 PM
51	I am a lifelong resident of the south end of North Attleboro and I am very unhappy about how much construction is being done on Route 1 in both South Attleboro and North Attleboro. We can't even use Route 1 on the weekends and definitely not during the holidays.	4/19/2018 1:03 PM
52	I really hope that the road work at Rte 120 and Route 1 is a rotary installation. I have seen them installed in the Apponaug area of Warwick, RI. It is an improvement for time and pollution. Open Cumberland Ave for through traffic. The traffic is getting backed up on May St as a cut-through.	4/19/2018 1:00 PM
53	Difficult to make left onto Hoppin hill road	4/19/2018 12:46 PM
54	There need to be additional travel lanes, considering the number of cars that travel there daily. The whole stretch is a nightmare on weekends.	4/19/2018 11:46 AM
55	Again, the rebuilding of the intersection at Routes 1, 1A and 120 and still no left turn arrow for going up Route 120 from South Attleboro. Pedestrians walking where there is no sidewalk. And people running across the street near Boch Toyota	4/19/2018 11:24 AM
56	n/a	4/19/2018 11:23 AM
57	Fix signal lights timing	4/19/2018 11:17 AM
58	It would be nice if you had trollys that started at the Burlington Coat Factory and went all the way up to Emerald Square Mall in a constant loop stopping at each major shopping area. Walmart, Best Buy etc. Create a couple of large parking lots so people could park their cars and then ride the trolley. It would also be nice if the GARTRA ran as late as the shops were open, which might encourage more people to take public transportation. You have to find a way to lower the number of cars using that road way. It would be great if GARTRA ran on Sundays as well.	4/19/2018 10:25 AM
59	I honestly don't think minor improvements would benefit the travel; a complete overhaul is needed. Especially with all the new businesses in South Attleboro, it doesn't appear that the overall picture was taken into account. From Highland Ave. to Walmart takes 10-20 minutes, which is nuts. South Attleboro has gotten to cluttered with ill-timed lights and horrific traffic patterns.	4/19/2018 9:47 AM
60	My biggest concern right now is the ongoing construction @ Hoppin Hill/Route 1. The north bound side of route 1 is a freaking confusing mess. I'm not sure what problem they are trying to solve there... they are creating one where there wasn't one before. Its ridiculous. at that location on the rte 1 north direction they are taking 2 travel lanes, making it merge into one only to go back into 2 lanes again once you pass the light. I have no idea what they are up to but its ridiculous and i'm not sure what problem they are trying to solve. There's no problem on that side of route 1 for travelers.... but now there is - its ridiculous.	4/19/2018 9:33 AM
61	Please put up some sort of concrete barrier Median after the May street intersection up to the Walmart plaza intersection. Too many cars traveling at high rates of speed and trying to turn left into one of the strip malls	4/19/2018 9:05 AM
62	Pavement conditions are poor.	4/19/2018 9:00 AM



63	May Street/South Street intersection needs a traffic signal	4/19/2018 8:58 AM
64	none	4/19/2018 8:40 AM
65	None	4/19/2018 8:34 AM
66	There is a concern for those living on the "cut throughs" off of route one- these are residential areas and people often speed their way through to get from one point of route 1 to another. It is very dangerous for those living on these roads.	4/19/2018 8:33 AM
67	I don't know what goes into the traffic lights and what not, but the lights don't seemed to be timed correctly or something. Traffic gets backed up into the intersections and then it just cycles from there. The intersection in South Attleboro at CVS - both sides - is a nightmare. I live close by and if I don't do my errands first thing Saturday morning, I have to take the back roads.	4/19/2018 8:18 AM
68	The large amount of traffic that comes over the border from RI on 1A causes a lot of backups/congestion. Bad during the morning commute at some points, always on a weekend and worse during the holidays.	4/19/2018 8:09 AM
69	There are always police out in that area driving along which makes me feel a little safer while running along route one and route 123 heading towards RI	4/19/2018 7:46 AM
70	The road is very congested, at night you can wait for several light changes near the Christmas tree shop before you get through the intersection	4/19/2018 6:12 AM
71	I've been known to avoid the area and shop elsewhere to avoid the area. It's impossible during holidays.	4/19/2018 5:18 AM
72	There has been an increase in traffic with new commercial businesses opening.	4/19/2018 3:14 AM
73	Hard to turn into certain shopping plaza get out of plaza a lot of speeding Lane turning into fashion crossing causes a lot of back up from the mall because so many cars turn into that lanes so get backed up into other lanes	4/19/2018 12:42 AM
74	that stretch is too congested , dangerous going in and out of store parking lots.	4/18/2018 3:03 PM
75	Just traffic, and getting stuck at light after light between highland ave and may st.	4/18/2018 2:41 PM
76	Construction on going	4/18/2018 12:12 AM
77	I live right on Rt. 1 but I will never have my pre-teen son walk along this road. People drive it so fast, and come around the corner from where the CVS is, heading toward North Bowl like a bat out of hell sometimes.	4/17/2018 11:29 AM
78	Road is a mess up by Boch. Potholes and dips going south for YEARS starring up by hopping hill . Too many people trying to access the area I don't think anything you do will fix it. Still more development coming.	4/15/2018 10:21 AM
79	All for development but traffic easement is not planned well	4/14/2018 12:08 PM
80	The condition of this road is atrocious. I usually shop this route because I live in North Attleboro but now I'm taking my business elsewhere.	4/13/2018 9:55 PM
81	Southbound Rte1 double left turn lane to Fashion Crossing desperately needed..no weekend capacity at peak hour...long queues...intersection improvement project.	4/13/2018 9:06 PM
82	Perhaps police parked along rt 1 would help slow things down. The holidays are horrendous.	4/13/2018 6:43 PM
83	During the holidays its impossible to use the corridor on weekend days. Its only slightly better the rest of the year. Southbound from friendly past cvs is regularly so bad I'll go northbound on route 1 to get to Newport ave in south attleboro. Adding a light at Angeline didn't help the situation. Make 123 an overpass and close Angeline and may street cross overs. Intersection at hopin hill is confusing and can be tough to navigate. Coming off of old post road onto 1 south is hard because of the angle the 2 roads meet.	4/13/2018 5:47 PM
84	This entire area is ridiculous on weekends, holidays and during the commute. If 95 is backed up, it gets even worse. No one waljs or rides a bike, its too dangerous. Way too much commercialism for those of us that live here to consider walking. And its only getting worse as more stores/plazas move in. I drive this almost every weekday, sometimes multiple times a day but backroads as much as possible. I won't go anywhere near rt 1/1a on a weekend unless its before 9am or after 7pm	4/13/2018 5:41 PM
85	Road is in terrible condition in some areas	4/13/2018 12:01 PM

86	Timing of the lights. There should be a delay before crossing traffic can go. People tend to run lights.	4/13/2018 11:17 AM
87	Need all left turn lanes with lights. The new light at Route 1 and Chic-fil-a intersection is a MESS! Four lights in less than a 1/2 mile is too many lights!	4/13/2018 10:39 AM
88	Road should be widened north of Showcase Cinema to have turning lanes, a narrow shoulder and wider sidewalks.	4/13/2018 10:27 AM
89	Pizzaria romana on weekends, cars stop on rt1 to wait for parking	4/13/2018 9:53 AM
90	Don't think walk/bike modes of transportation will work, most people are shopping and it's heavy traffic for walkers/bicyclists	4/13/2018 9:21 AM
91	I would be more likely to shop in this area if the traffic was better. Instead I find myself heading to Mansfield instead. I would rather support business in NA.	4/13/2018 9:14 AM
92	na	4/13/2018 9:08 AM
93	There should be dedicated right hand turning lanes into Stop and Shop at May St. Heading south.	4/13/2018 9:01 AM
94	It should not take this long to get down such a short stretch. The increased volume of stores/restaurants opening will further increase traffic making this an undesirable area to travel.	4/13/2018 8:45 AM
95	Most of the congestion is due to lack of proper turning lanes. Lack of visibility is the problem with the Rte.295 interchange. Those offramps need stop signs or lights, at minimum.	4/13/2018 8:42 AM
96	Left turning lanes! Lights that help people turn left!!	4/13/2018 8:42 AM
97	Quality of road service is poor, left turn lane into fashion crossing backups up too far creating only one lane of travel when heading south, most vehicles turn across double yellow line to enter commercial plazas creating dangerous turns	4/12/2018 11:00 PM
98	Dont have any	4/12/2018 2:52 PM
99	I live on one of the side roads that is used as a cut through and it is concerning to me with the amount of traffic that travels my street. If we are going to have a stretch of road with all of the commercial real estates- we need to have more adequate space for travel and timing of lights to allow for a better flow.	4/12/2018 2:01 PM
100	Too much sprawl, not enough pedestrian accessibility	4/12/2018 1:35 PM
101	A better thought out turn signal pattern at route 1 and hoppin hill	4/10/2018 7:46 AM
102	We pay taxes that are supposed to fix our roads yet route 1 is a disaster filled with potholes, speeding cars and inadequate amounts of lanes.	4/5/2018 5:21 PM
103	pot holes and giant puddle area near 99 restaurant that people slow down to avoid and swerve into other lane causing hazardous driving conditions.	4/5/2018 4:30 PM

## Q17 Please add additional comments or concerns about transportation in any area of the region here. A map of the region is below.

Answered: 43 Skipped: 104

#	RESPONSES	DATE
1	When designing traffic flow patterns, the area residential constituents need to be considered, not just businesses traffic.	4/25/2018 7:00 PM
2	More convenient access for public transportation	4/25/2018 6:00 PM
3	Towns keep adding apartments and housing which all bring more traffic into the area with no foresight or planning. Public transit should be more convenient and encouraging if traffic is going to be assessed.	4/25/2018 4:43 AM
4	the draper ave turn is to narrow	4/24/2018 9:23 PM
5	See response to #16. Another place there should be no turn on red is at Rte 1 & Elm St.	4/24/2018 6:30 PM
6	Rt #1. Rt 106. Rt 1a. Intersection	4/24/2018 5:33 PM
7	Looking forward to the reconstruction of Rt 1, Rt 1A, and Elmwood St in North Attleboro.	4/24/2018 4:21 PM
8	Would like to consider making May St more safe and conducive towards a residential neighborhood- consider eliminating left turn lane on Rte 1 south onto May St and routing traffic to Angeline to reduce end to end back ups, reducing speed limit to 25 mph, limiting trucks due to safety concerns and noise.	4/24/2018 2:13 PM
9	1. Taking a left or right onto Rt. 123 Attleboro from West St. at the gas station/Dunkin Donuts is very difficult due to traffic going into and out of the gas station. Coming off Rt. 95 onto Rt. 123 and trying to get into the left lane to take a left onto West St. is also very dangerous. People are speeding on 123 in both directions and with people trying to get in and out of the gas station and West St. it can be very dangerous. 2. Side streets near the Attleboro Courthouse on North Main St. (Rt. 152): When court is in session there are lots of people crossing, especially across Mechanic St. There is also a crosswalk to get across North Main at that intersection. If one is trying to take a left onto North Main it is hard to see people coming into the crosswalk towards Dunkin Donuts plaza. I think the crosswalk would be safer to use if it were moved to the courthouse side because drivers are already watching for crossers there. I've almost hit people twice coming out of Mechanic St. I just didn't see the people on the sidewalk starting to go into the street until I was at the crosswalk. Perhaps it is the way the front left side of my windshield frame lines up with the crosswalk that I can't see people in addition to the difficulty of getting onto the busy street and watching for people crossing in front of me, but this is dangerous for pedestrians, not to mention drivers. A person (pedestrian, I believe) got killed at that corner last year. Down the street a little ways there is a light to get out of CVS. That spot works well with a light. It probably didn't need it. Getting onto North Main from Peck St. and Dean are dangerous also but not so much from pedestrians, more from speeding cars and not being able to see around cars parked right in front of the courthouse to know if it is safe to pull onto North Main. A light would make a world of difference and save lives.	4/23/2018 6:15 PM
10	One disadvantage to improving the roadways is it makes it easier to drive places, which may negatively impact expanding public transit.	4/23/2018 1:02 PM
11	.	4/23/2018 1:18 AM
12	Bottlenecks Rte 95 & 495, Bottlenecks 152, Bottlenecks 95 & 295, 295 going South on 95. Then south, Rte 495 & 24, 495 changing into 2 lanes, Middlesbrough rotary, rte24 & 44, rte 24 & 140.	4/20/2018 2:58 PM
13	Plainville. At routes one and 152. Also at route one and 106. Traffic lights are not timed correctly with the lights at Plainridge Park	4/20/2018 11:41 AM
14	Too dangerous to walk on Route 1.	4/20/2018 9:34 AM
15	The construction they are doing on 95 around 295 is confusing as to what is going on it and how long this construction will last.	4/20/2018 8:51 AM

16	Route one backs up big time on weekends between Cumberland avenue and the bjs plaza (highland ave). I avoid travel on it because of that. People turning left on the road is an issue too.	4/20/2018 2:18 AM
17	None	4/19/2018 10:06 PM
18	Not sure how the current project at intersection of rt120 and rt1 will work out but the current light preventing the continuous travel North bound in the right lane will definitely be dangerous when people miss the signal. The project is not an improvement in that regard.	4/19/2018 9:37 PM
19	This whole area in South Attleboro is just too congested. It can't handle the amount of traffic there is. There needs to be more Streets open to handle the overall traffic. Cumberland Ave. already has a traffic light and can easily be open for through traffic. They say the street is too narrow for trucks. If it is a one way it should be able to handle it. Have a sign stating no trucks and that would solve the problem. The trucks can use the main throughway.	4/19/2018 7:54 PM
20	Drivers are not stopping at the yellow lights and are blocking the intersections from Hoppin Hill to Highland Avenue in both directions. Drivers are using the narrow side streets as cut through when the traffic backs up and they travel at least 10-20 miles over the posted speed limit. The posted speed limit on most of the back roads is either 20 or 30 MPH. Not 40 or 50. This makes for a very dangerous situation.	4/19/2018 1:03 PM
21	Go to the commuter rail in Attleboro Center which allows for traffic flow especially with River Road access even though the South Attleboro one is closer. Driving Route 1 is a crap shoot, you never know how many red lights you will encounter	4/19/2018 11:24 AM
22	n/a	4/19/2018 11:23 AM
23	Drive the route at various times and it's obvious that the lack of lights being in sync causes one to stop at nearly 90% of the signal lights. On a Sunday I left North Attleborough in a caravan, heading to Olive Garden in South Attleboro. I ended up taking Old Post Rd, the other cars took Route 1 to 1A. I arrived 10 minutes before the other cars. This was a "normal" Sunday.	4/19/2018 11:17 AM
24	Thank you for taking the time to listen to the people that drive the road. Much appreciated.	4/19/2018 9:33 AM
25	Kelley Boulevard (Rt 152) area in North Attleboro/Plainville: With the increased amount of traffic in this area in recent years, there are far too many entrances and exits for each businesses. Each lot/property could be limited to one entrance and one exit. Cars are dangerously pulling in and out while crossing 3 lanes from so many locations. The middle lane is also very confusing and dangerous. Cars drive in one lane in opposite directions for a long unlimited distance to turn, when there are many other turn points in between. Many drivers are not familiar with this ambiguous lane and do not know what to do. Very risky! The corner of Kelley Boulevard & Plain Street in North Attleboro/Plainville: Significant traffic in this area makes it difficult, if not impossible, and dangerous to make a left hand turn, especially exiting Plain Street. In addition, the middle turn lane on Kelley Blvd presents additional issues where cars are going in either direction while cars are trying to pull in or out. There NEEDS TO BE A LIGHT at this intersection. The current renovation of Cumberland Farms will only increase traffic and flow in this area, exacerbating the above issues.	4/19/2018 9:00 AM
26	Route 44 in Middleborough east of Interstate 495 should be expanded to two lanes in either direction. There is consistently significant backup/delay during commuting hours.	4/19/2018 8:58 AM
27	none	4/19/2018 8:40 AM
28	None	4/19/2018 8:34 AM
29	Cumberland Ave- a major cut through should have speed bumps to slow drivers. This would deter speeding and keep the families and children safe.	4/19/2018 8:33 AM
30	none	4/19/2018 6:12 AM
31	None	4/19/2018 3:14 AM
32	We need more red lights coming from side streets like Adamsdale Rd onto RT 123 which is used as a cut through for many Rhode Islanders since its on the RI line	4/18/2018 3:03 PM
33	I get that a lot of RI'ers like to go to the malls, shopping centers - etc. here, but the area is just getting WAY more congested and we need more lanes, and better timed traffic lights. I nearly hit someone twice because they were all over the place trying to figure out how to maneuver the new lights at the CVS/Church intersection. I get that a lot of people don't know it yet, but it's not even a good setup it appears. I hope that once it's completed, it makes things easier. So far, it's missing the mark	4/17/2018 11:29 AM
34	The new development at Chick-fil-A, before May Street those light cycles are a mess	4/14/2018 12:08 PM

## Route 1 Attleboro / North Attleborough

SurveyMonkey

35	Need more investment in Northern part of Spradd region	4/13/2018 9:06 PM
36	The school zone is concerning and lack of sidewalks on both sides of 123.	4/13/2018 6:43 PM
37	Route 123 from 95 through the tiffany should be 2 lanes, dropping a lane is confusing coming west. Left turns into the gas station and Lathrop road from 123 east should be stopped, cars crossing from 95 south are dangerous.	4/13/2018 5:47 PM
38	East Washington/Rt 1 in north attleboro has the worst timing w/lights. Every am commute I see people speeding to make the light and usually running a red or almost hitting someone because you hit every-single-light. Its crazy. Add in the crater potholes and its a miracle one survives the trip	4/13/2018 5:41 PM
39	Rte 1 SB at Elmwood St in North Attleboro during PM rush.	4/13/2018 2:39 PM
40	Route 1 South Attleboro to Plainville is a parking lot on most evenings, weekends an Holidays.	4/13/2018 10:39 AM
41	na	4/13/2018 9:08 AM
42	Sidewalks	4/12/2018 2:52 PM
43	n/a	4/5/2018 4:30 PM

# Appendix B

## Existing Conditions

# **Route 1 at Hoppin Hill Road (Route 120)**

## **Layout**

Route 1 at Hoppin Hill Road (Route 120) is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Hoppin Hill Road (Route 120) is an east/west running urban minor arterial with one lane in each direction.

There is a private residence located at the northwest corner, a CVS pharmacy at the northeast corner, the Royal Park Apartment complex is located at the southeast corner and the First United Methodist Church is located at the southwest corner.

The northbound approach widens to 3 lanes at the intersection, consisting of a shared thru/right turn lane, a thru lane and an exclusive left-turn lane. The southbound approach has a slip ramp for the westbound movement, located just before the 3 approach lanes, consisting of a shared thru/right turn lane, a thru lane and an exclusive left-turn lane.

This intersection experiences more than 2 minutes of delay, operating at a LOS F during both the weekday PM peak and Saturday peak periods, which is unacceptable.

During the course of this study, this intersection was undergoing reconstruction and the existing conditions listed here have changed since that time. The design plan included bicycle and pedestrian accommodations, with sidewalks on both sides of South Washington and East Washington and crosswalks at all approaches. The northbound channelized island that provided free flow right turns has been eliminated, and the turn will now be controlled at the signalized intersection. The outdated traffic signal system is being replaced with standard mast arms and new signal heads.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 29 crashes that occurred at the intersection; The most common crashes at this intersection were angle crashes at 14 (48%), rear-end crashes at 8 (28%), 4 single-vehicle crashes (14%) and one head-on crash (3%).

Of the 14 angle crashes, 7 involved a left-turning vehicle and 2 of these 7 crashes involved a driver running a red light.

Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Rear-end crashes are usually attributed to

speeding, following too closely and/or inadequate clearance time. Other contributing factors to crashes can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Out of the 29 total crashes, 25 involved property damage only and 4 involved injury. The ACC/MEV crash rate at this intersection is .86, while the regional average is 0.75. The EPDO is 15 which comes in at the regional threshold of 15. Both of these indicate that there are safety issues at this intersection.



# Collision Diagram

Municipality: Town of North Attleborough RPA: SRPEDD

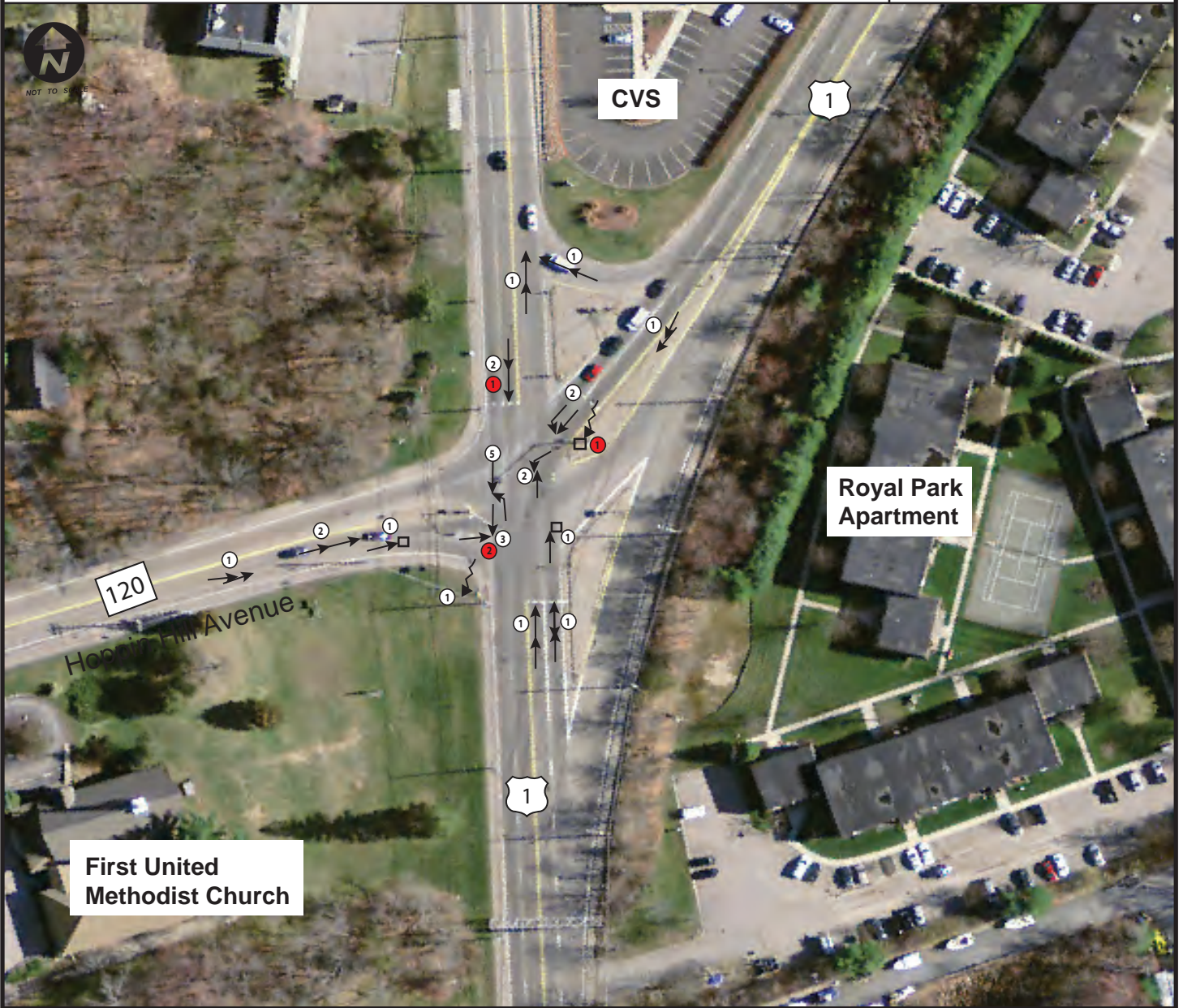
Project: Route 1 Corridor

Location: Route 1 @ Hoppin Hill Road (Route 120)

By: LE-P

Period: 3 Years 0 Months Period: From 2014 To 2016

Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
Ⓝ	Property Damage Collision	➡➡➡	Rear End	
Ⓢ	Injury Collision	↙↘	Left Turn	
Ⓜ	Fatal Collision	➡➡➡	Overtake	
➡	Moving Vehicle	↔↔↔	Backing Vehicle	
↘	Turning Vehicle	↔↔↔	Head On	
↔↔↔	Backing Vehicle	↘↙	Right Turn	
🚶	Pedestrian	↘↙	Right Angle	
🏍️	Motorcyclist	↘↙	Side Swipe	
🚲	Bicyclist	⚡	Out of Control	
🐇	Animal			
☐	Fixed Object			
▭	Parked Vehicle			

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## CRASH SUMMARY SHEET

INTERSECTION: Route 1 (South Washington) at Route 120 (Hoppin Hill Road)  
 TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	5	17%
6AM-10AM	2	7%
10AM-3PM	12	41%
3PM-7PM	6	21%
7PM-12PM	4	14%
<b>Total</b>	<b>29</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	8	28%
Spring (Mar - May)	9	31%
Summer (Jun - Aug)	7	24%
Fall (Sep - Nov)	5	17%
<b>Total</b>	<b>29</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	20	69%
Cloudy	6	21%
Rain	1	3%
Snow	1	3%
Sleet, Hail, Freezing Rain	1	3%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	24	83%
Wet	3	10%
Snow	1	3%
Ice	1	3%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	17	59%
Dawn	0	0%
Dusk	1	3%
Dark / Lighted Road	10	34%
Dark / Road Not Lit	1	3%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	4	14%
Rear-End	8	28%
Angle	14	48%
SS, Same Direction	2	7%
SS, Opp Direction	0	0%
Head On	1	3%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	4	14%
PDO	25	86%
<b>Total</b>	<b>29</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	25	86%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, bu	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	4	14%
<b>Total</b>	<b>29</b>	<b>100%</b>

## **Route 1 at Old Post Road**

### **Layout**

Route 1 at Old Post Road is a 3-legged intersection which is controlled by a stop sign on Old Post Road. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Old Post Road is an urban collector, also north/south running, with one lane in each direction. The two roads form a triangle at their juncture. This intersection is 700 feet south of the intersection of Route 1 at Hoppin Hill Road (Route 120).

Patriot Subaru of North Attleborough is located on the southeast side of the juncture of Route 1 and Old Post Road. South Attleboro Marine is located on the northeast side. Located in the triangle shaped area formed by the juncture is a Dunkin Donuts, with 4 separate driveway accesses, two on Route 1 and two on Old Post Road.

The northbound Old Post Road approach consists of one lane at the intersection which is controlled by a stop sign. There is no traffic control on the southbound Route 1 approach at this intersection. The stop control on Old Post Road experiences minimal delay, operating at a LOS A during both the weekday PM peak and Saturday peak periods, which is excellent.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 20 crashes that occurred at Route 1 and Old Post Road. The most common crashes at this intersection were rear-end crashes at 11 (55%) and sideswipe crashes at 4 (20%).

Rear-end crashes are usually attributed to distracted driving, speeding, following too closely and/or inadequate clearance time. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include weather and driver distraction.

Of the 20 total crashes here, 13 involved property damage only and 7 involved injury. The ACC/MEV crash rate at this intersection is 0.60, while the regional average is 0.75. The EPDO is 16 which exceeds the regional threshold of 15. Both of these indicate that there are safety issues at this intersection.

# Collision Diagram

Municipality: North Attleborough RPA: SRPEDD  
 Location: Route 1 @ Old Post Rd & Dunkin' Donut  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	➔	Rear End	
⊕	Injury Collision	➔	Left Turn	
⊕	Fatal Collision	➔	Overtake	
➔	Moving Vehicle	➔	Out of Control	
➔	Turning Vehicle	➔	Head On	
➔	Backing Vehicle	➔	Right Turn	
➔	Pedestrian	➔	Right Angle	
➔	Motorcyclist	➔	Side Swipe	
➔	Bicyclist			
➔	Animal			
➔	Fixed Object			
➔	Parked Vehicle			

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## CRASH SUMMARY SHEET

INTERSECTION: Route 1 (South Washington) at Old Post Road and DD Dwy

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	1	5%
6AM-10AM	3	15%
10AM-3PM	6	30%
3PM-7PM	9	45%
7PM-12PM	1	5%
<b>Total</b>	<b>20</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	1	5%
Spring (Mar - May)	9	45%
Summer (Jun - Aug)	5	25%
Fall (Sep - Nov)	5	25%
<b>Total</b>	<b>20</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	11	55%
Cloudy	8	40%
Rain	1	5%
Snow	0	0%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	16	80%
Wet	3	15%
Snow	0	0%
Ice	1	5%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	18	90%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	2	10%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	5%
Rear-End	11	55%
Angle	4	20%
SS, Same Direction	3	15%
SS, Opp Direction	0	0%
Head On	1	5%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	7	35%
PDO	13	65%
<b>Total</b>	<b>20</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	18	90%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	2	10%
Collision with other fixed object (wall, bu	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

## Route 1 at Whipple Avenue

### Layout

Route 1 at Whipple Avenue is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Whipple Avenue is an east/west running local roadway with the west side leg culminating in a dead end residential street and the east side is the entrance to Showcase Cinemas. Route 1 is separated by a guardrail at this intersection.

There is a doctor's office located at the northwest corner, Payless Floors at the southwest corner and the parking lots for Showcase Cinemas are located at both the northeast and southeast corners of the intersection.

The northbound approach widens to 4 lanes at the intersection, consisting of an exclusive left-turn lane, 2 thru lanes and an exclusive right-turn slip ramp into the Cinema property. The left-turn stacking lane measures approximately 175 feet, accommodating 6 to 7 vehicles. There are sidewalks provided on the east side of this approach that continue into the Cinema property. There are no crosswalks provided here.

The southbound approach widens to 3 lanes, an exclusive left-turn lane and two undesignated lanes. The left-turn stacking lane measures approximately 250 feet, accommodating 9 to 10 waiting vehicles. There are sidewalks provided on both sides of this approach but each are just a short section of 6 feet. These sections contain curb ramps with Tactile Warning Panels, however, they do not lead in the travel direction of the crosswalk provided at this intersection, which happen to be the only crosswalk provided at this intersection. Only this southbound approach is part of the pedestrian signal which is an outdated, push-button, non APS system with a white 'walk' and red flashing 'don't walk' hand.

The eastbound approach consists of one lane with no curbing, sidewalks or crosswalks provided. This leg is a dead-end residential local road.

The westbound approach consists of 2 lanes, including an exclusive right-turn lane and a shared thru/left-turn lane. There are sidewalks on both sides of this approach but crosswalks are located more than 100 feet back from intersection and are not included in signal system.

The Cinema Entrance is located on the east side of Route 1. There is a center median island on both the southbound and northbound approaches but no pedestrian refuge is provided and the northbound right-turn slip ramp creates hazardous conditions for pedestrians if they attempt to

cross here. The crosswalk is set back 100 feet from the intersection at the driveway to the cinema.

During the course of this study, this intersection was undergoing reconstruction and the existing conditions listed here may have changed since then.

This intersection experiences 4 and 6 seconds of delay respectively, operating at a LOS A during both the weekday PM peak and Saturday peak periods.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were only 5 crashes at this intersection which did not necessitate a detailed analysis of the crash data.

## **Route 1 at Draper Avenue**

### **Layout**

Route 1 at Draper Avenue is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Draper Avenue is an east/west running local roadway with one lane in each direction. Route 1 is separated by a raised concrete median at this intersection.

There is a Gulf Gas Station located at the northwest corner, a Shell gas station at the northeast corner, an Applebee's restaurant at the southeast corner and an auto dealership at the southwest corner.

The northbound approach widens to 4 lanes at the intersection, consisting of an exclusive left-turn lane and 3 undesignated lanes. The left-turn lane stacking lane measures approximately 125 feet, accommodating 5-6 waiting vehicles. There are sidewalks on the west side of the roadway but they have no curb ramps and there are no crosswalks provided at this intersection. There is a worn pedestrian path on the east side where pedestrians have been forced to walk along a grassy area due to the lack of accommodations.

The southbound approach widens to 3 lanes consisting of an exclusive left-turn lane and two undesignated lanes. The left-turn stacking lane measures approximately 150 feet, which will accommodate 6-7 waiting vehicles. The sidewalks provided at this approach are gravel-filled and are not ADA compliant. There are no crosswalks provided here.

Both the eastbound and westbound Draper Avenue approaches each consist of one lane and both have sidewalks on the south side of the roadway. There is no pedestrian control at this signal system and no crosswalks provided at these or at any other approaches.

This intersection experiences 110 seconds of delay, operating at a LOS F during the PM peak period and during the Saturday peak period, which is unacceptable.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 21 crashes that occurred at the intersection. The most common crashes at this intersection were rear-end crashes at 10 (48%), angle crashes at 7 (33%) and sideswipe crashes at 4 (19%).

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include weather and driver distraction.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Of the 21 total crashes here, 15 involved property damage only and 6 involved injury. The ACC/MEV crash rate at this intersection is .62, while the regional average is 0.75. The EPDO is 15, which comes in at the regional threshold of 15. Based on the crash rates this intersection is bordering safety issues and should continue to be monitored in the future.



# Collision Diagram

Municipality: Town of North Attleborough RPA: SRPEDD  
 Location: Route 1 @ Draper Ave  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	➔➔➔	Rear End	
⊙	Injury Collision	➔➔➔	Head On	
⊕	Fatal Collision	➔➔➔	Left Turn	
➔	Moving Vehicle	➔➔➔	Right Turn	
➔	Turning Vehicle	➔➔➔	Overtake	
➔	Backing Vehicle	➔➔➔	Right Angle	
➔	Pedestrian	➔➔➔	Out of Control	
➔	Motorcyclist	➔➔➔	Side Swipe	
➔	Bicyclist			
➔	Animal			
➔	Fixed Object			
➔	Parked Vehicle			

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## CRASH SUMMARY SHEET

INTERSECTION: Route 1 @ Draper Avenue

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	0	0%
6AM-10AM	4	19%
10AM-3PM	6	29%
3PM-7PM	8	38%
7PM-12PM	3	14%
<b>Total</b>	<b>21</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	3	14%
Spring (Mar - May)	5	24%
Summer (Jun - Aug)	7	33%
Fall (Sep - Nov)	6	29%
<b>Total</b>	<b>21</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	15	71%
Cloudy	1	5%
Rain	2	10%
Snow	1	5%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	2	10%
<b>Total</b>	<b>21</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	15	71%
Wet	4	19%
Snow	1	5%
Ice	0	0%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	1	5%
<b>Total</b>	<b>21</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	16	76%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	4	19%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	1	5%
<b>Total</b>	<b>21</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	0	0%
Rear-End	10	48%
Angle	7	33%
SS, Same Direction	4	19%
SS, Opp Direction	0	0%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	6	29%
PDO	15	71%
<b>Total</b>	<b>21</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	17	81%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, building, tunnel)	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	4	19%
<b>Total</b>	<b>21</b>	<b>100%</b>

## **Route 1 at Emerald Square Mall (North Entrance)**

### **Layout**

Route 1 at Emerald Square Mall North Entrance is a 3-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running road which consists of 2 lanes in each direction throughout the study area. The entrance to the mall is located on the west side of Route 1. Route 1 is separated by a guardrail at this intersection.

The Emerald Square Mall is located at the northwest and southwest corners of this intersection. There is a wooded area opposite the mall on east side of the roadway.

The northbound approach widens to 3 lanes at the intersection, consisting of 2 thru lanes and an exclusive left-turn lane. The exclusive left turn lane measures approximately 300 feet, and can accommodate 11-12 turning vehicles. There are sidewalks on the west side of the roadway but no crosswalk is provided here.

The southbound approach widens to 3 lanes at the intersection, consisting of 2 thru lanes and a right-turn lane to a slip ramp into the mall entrance. There are sidewalks on the west side of the roadway but no crosswalk is provided.

The eastbound approach (the southern entrance/exit to the mall) widens to 3 lanes, an exclusive right-turn lane and two exclusive left-turn lanes. There are sidewalks on both sides and a very long crosswalk with 3 distinct sections divided by medians. The pedestrian signal is not part of signal system at this intersection.

Pedestrian accommodations at this intersection consist of one crosswalk and a pedestrian signal that is not part of the signal system. The southbound right-turn slip ramp approach into the mall is very dangerous for pedestrians as it is difficult for drivers to see pedestrians in the crosswalk and turning speeds were observed to be very fast. Curb ramps were noted to be sloped asphalt with breaks in curbing and do not appear to be ADA compliant.

This intersection operates at a LOS B during the PM peak period and during the Saturday peak period, which is acceptable.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 20 crashes that occurred at the intersection. The most common crashes at this intersection were rear-end crashes at 15 (75%).

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Other contributing factors to any type of crash can include weather and driver distraction.

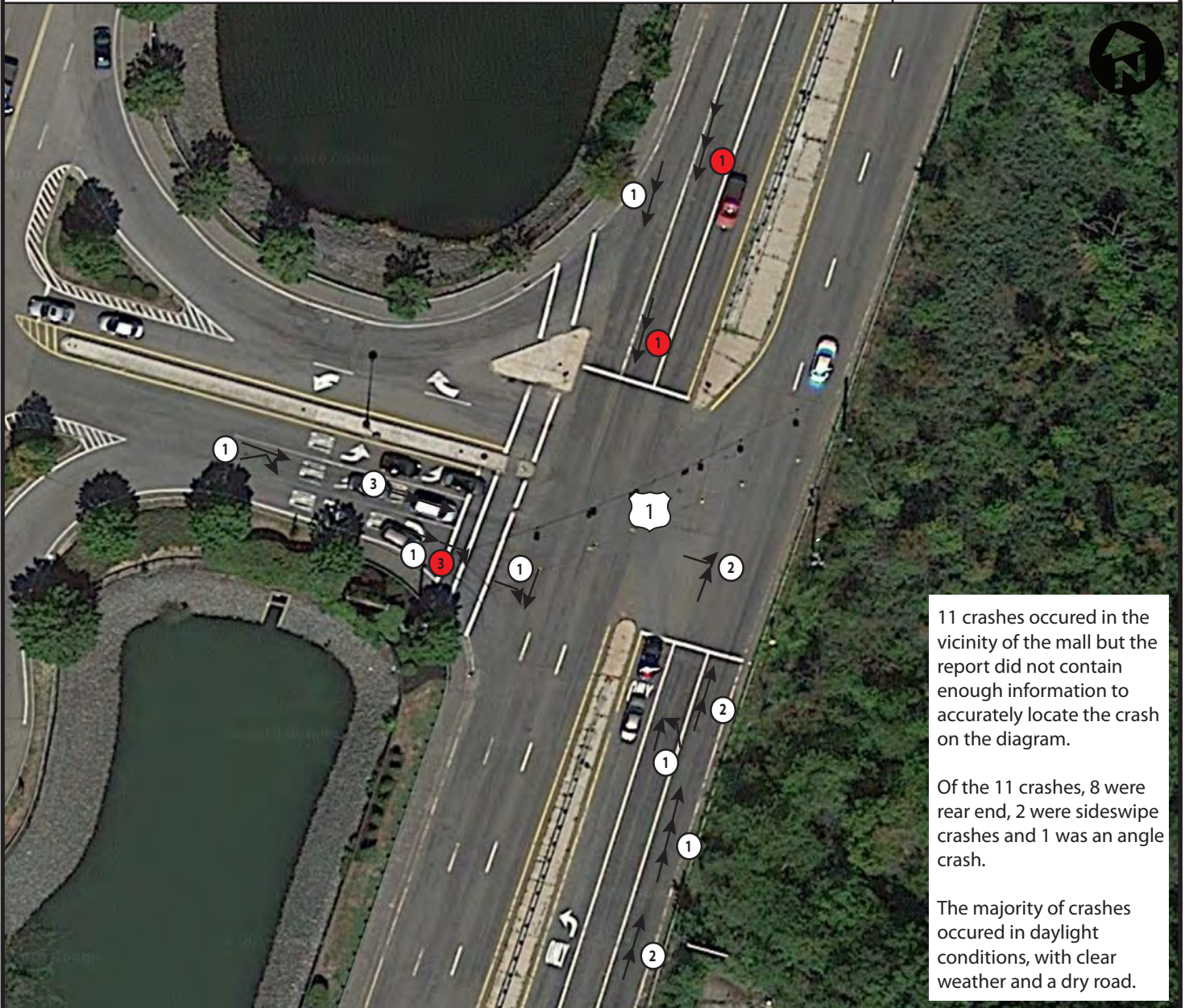
It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

15 of the 20 crashes involved property damage only and 5 involved injury. The ACC/MEV crash rate at this intersection is .54, while the regional average is 0.76. The EPDO is 13.3, just below the regional threshold of 15. Both of these indicate that currently there is not a significant safety issues at this intersection. However, the rates may be higher. There were an additional 11 crashes that occurred in the vicinity of the mall but based on the information provided we were not able to place them at a specific location.

# Collision Diagram

Municipality: Town of North Attleborough RPA: SRPEDD  
 Location: Route 1 @ Emerald Square North Driveway  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: JLJ  
 Date: 10-29-2018



Legend		Location and Type of Collision		Intersection Location
Ⓝ	Property Damage Collision	➔➔➔➔	Rear End	
Ⓢ	Injury Collision	➔➔➔➔	Left Turn	
Ⓜ	Fatal Collision	➔➔➔➔	Overtake	
➔	Moving Vehicle	➔➔➔➔	Out of Control	
➔↘	Turning Vehicle	➔➔➔➔	Right Turn	
↔↔↔	Backing Vehicle	➔➔➔➔	Right Angle	
➔↔	Turning Vehicle	➔➔➔➔	Side Swipe	
➡	Pedestrian			
➡	Motorcyclist			
➡	Bicyclist			
➡	Animal			
□	Fixed Object			
▭	Parked Vehicle			

Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center  
 Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information  
 MassDOT: 10 Park Plaza, Boston, MA 02116

## CRASH SUMMARY SHEET

INTERSECTION: Emerald Square Mall Northern Entrance  
 TIME PERIOD: 2014-2016

TIME OF DAY:	#	ACC	%
12AM-6AM	0		0%
6AM-10AM	0		0%
10AM-3PM	8		40%
3PM-7PM	8		40%
7PM-12PM	4		20%
<b>Total</b>	<b>20</b>		<b>100%</b>

TIME OF YEAR:	#	ACC	%
Winter (Dec - Feb)	6		30%
Spring (Mar - May)	3		15%
Summer (Jun - Aug)	3		15%
Fall (Sep - Nov)	8		40%
<b>Total</b>	<b>20</b>		<b>100%</b>

WEATHER:	#	ACC	%
Clear	13		65%
Cloudy	3		15%
Rain	3		15%
Snow	1		5%
Sleet, Hail, Freezing Rain	0		0%
Fog, Smog, Smoke	0		0%
Severe Crosswinds	0		0%
Blowing Sand, Snow	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>20</b>		<b>100%</b>

SURFACE:	#	ACC	%
Dry	15		75%
Wet	4		20%
Snow	1		5%
Ice	0		0%
Sand, Mud, Dirt, Oil, Gravel	0		0%
Water (Standing, Moving)	0		0%
Slush	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>20</b>		<b>100%</b>

LIGHT CONDITION:	#	ACC	%
Daylight	13		65%
Dawn	0		0%
Dusk	2		10%
Dark / Lighted Road	5		25%
Dark / Road Not Lit	0		0%
Dark / Unknown Lighting	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>20</b>		<b>100%</b>

CRASH TYPE:	#	ACC	%
Single Veh Crash	0		0%
Rear-End	15		75%
Angle	3		15%
SS, Same Direction	2		10%
SS, Opp Direction	0		0%
Head On	0		0%
Rear to Rear	0		0%
Unknown	0		0%
<b>Total</b>	<b>20</b>		<b>100%</b>

CRASH SEVERITY:	#	ACC	%
Fatal	0		0%
Injury	5		25%
PDO	15		75%
<b>Total</b>	<b>20</b>		<b>100%</b>

COLLISION WITH:	#	ACC	%
Motor Vehicle In Traffic	20		100%
Parked Motor Vehicle	0		0%
Pedestrian	0		0%
Cyclist	0		0%
Animal (Deer)	0		0%
Animal (Other)	0		0%
Moped	0		0%
Workzone Maintenance Equip	0		0%
Railway (Train, Engine)	0		0%
Other Movable Object	0		0%
Curb	0		0%
Tree	0		0%
Utility Pole	0		0%
Light Pole or other post/support	0		0%
Guardrail	0		0%
Median Barrier	0		0%
Ditch	0		0%
Embankment	0		0%
Bridge	0		0%
Bridge overhead structure	0		0%
Collision with other fixed object (wall, bu	0		0%
Unknown fixed object	0		0%
Overturn/rollover	0		0
Jackknife	0		0
<i>Other non-collision</i>	0		0
Unknown non-collision	0		0
Other	0		0
Unknown	0		0
<b>Total</b>	<b>20</b>		<b>100%</b>

## **Route 1 at Emerald Square Mall (South Entrance)**

### **Layout**

Route 1 at Emerald Square Mall South Entrance is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. The mall entrance is located on the west side of Route 1 with the entrance to a trailer park directly across. Route 1 is separated by a guardrail at this intersection.

The Emerald Square Mall is located at the northwest and southwest corners and the trailer park at the southeast and southwest corners.

The northbound approach widens to 4 lanes, two exclusive left-turn lanes, a thru lane and a shared thru/right-turn lane. The exclusive left turn stacking lanes each measure approximately 425 feet, able to accommodate a total of 34 turning vehicles in both. There is sidewalk on west side but there is no crosswalk here as there is no sidewalk or shoulder on the east side of Route 1 with which to connect.

The southbound approach widens to 4 lanes consisting of an exclusive left-turn lane and 3 unmarked lanes. The left-turn stacking lane measures approximately 75 feet that accommodates 3 vehicles turning left into the trailer park across from the mall. There is a sidewalk on the west side only.

The eastbound approach (the southern entrance/exit to the mall) widens to 3 lanes, an exclusive right-turn lane and 2 exclusive left-turn lanes. This approach provides a crosswalk but it is very long with no refuge in the middle. Curb ramps are present but are non-ADA compliant with no Tactile Warning Panels.

The westbound approach is the driveway to a small business and a trailer park. There are no pavement markings or crosswalks here, however the crosswalk located at the southbound Route 1 approach does extend across the entire roadway to accommodate pedestrians crossing here.

Only the southbound approach is part of the pedestrian signal which is an outdated, push-button, non-Accessible Pedestrian Signal system. It provides a white 'walk' symbol and red flashing hand to indicate 'don't walk'. The pedestrian phasing is exclusive, with a total of 29 seconds, 8 seconds of 'walk' and 21 seconds of the flashing hand 'don't walk'. Exclusive pedestrian phasing is when vehicles are stopped on all approaches while pedestrians are given a 'walk' indication. The lack of full pedestrian accommodations, coupled with motorists taking right turns on red in and out of the mall, is a dangerous situation for pedestrians.

This intersection operates at a LOS C during the Saturday peak period and at a LOS B during the PM peak period, which is accessible.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 21 crashes that occurred at the intersection; 13 (62%) were rear-end crashes, 6 (28%) were sideswipe crashes, one was an angle crash and one was a single vehicle crash.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Sideswipe crashes are generally attributed to lane confusion and/or jockeying and driver distraction. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Other contributing factors to all types of crashes can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

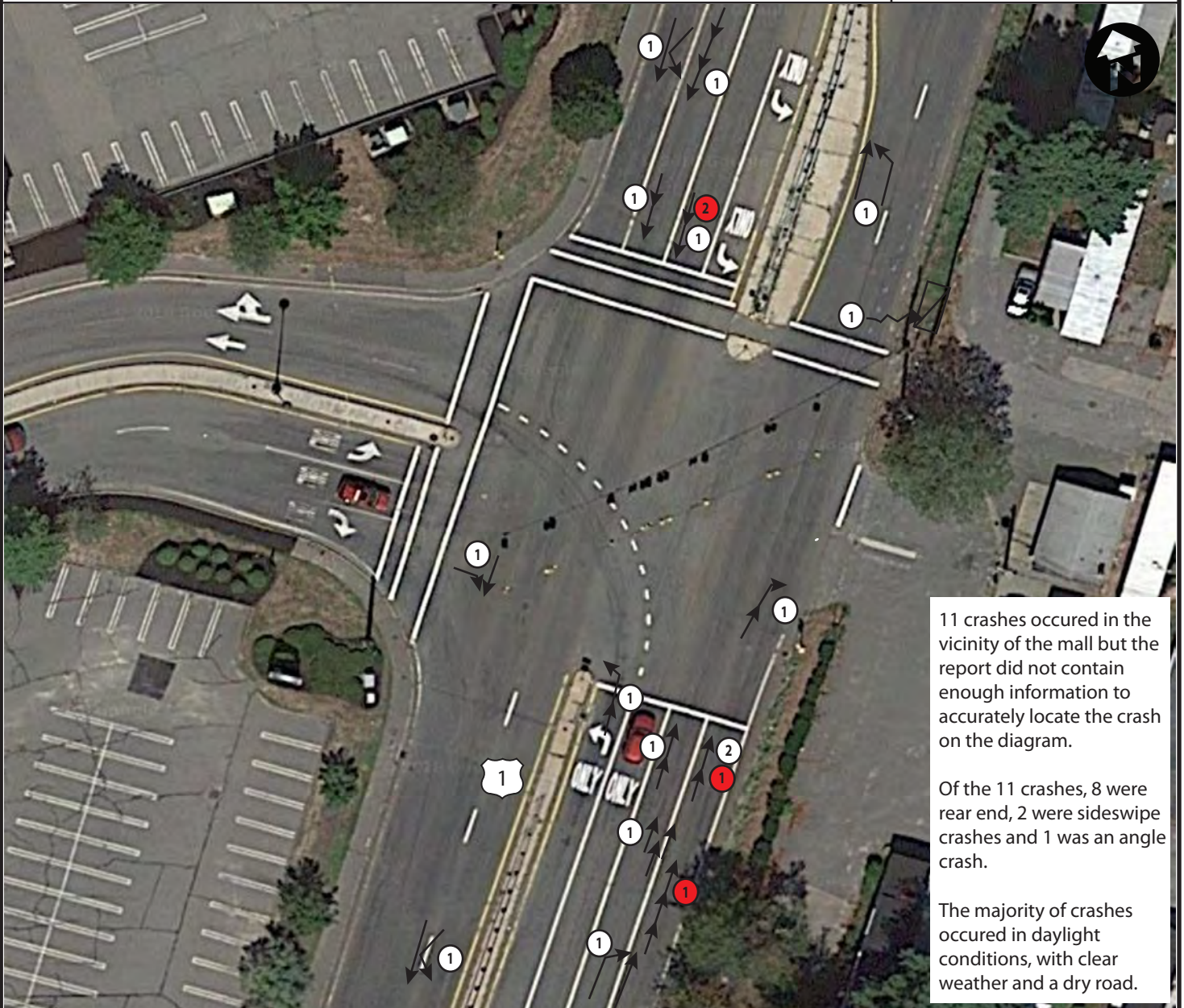
Out of the 21 crashes, 17 involved property damage only and 4 involved injury. The ACC/MEV crash rate at this intersection is .62, while the regional average is 0.75. The EPDO is 12.3 which falls below the regional threshold of 15. Both of these indicate that currently, there is not significant safety issues at this intersection.



# Collision Diagram

Municipality: Town of North Attleborough RPA: SRPEDD  
 Location: Route 1 @ Emerald Square South Driveway  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: JLJ  
 Date: 11-27-2018



11 crashes occurred in the vicinity of the mall but the report did not contain enough information to accurately locate the crash on the diagram.

Of the 11 crashes, 8 were rear end, 2 were sideswipe crashes and 1 was an angle crash.

The majority of crashes occurred in daylight conditions, with clear weather and a dry road.

Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	➡	Rear End	
⊙	Injury Collision	↙	Left Turn	
⊛	Fatal Collision	➡	Overtake	
➡	Moving Vehicle	↔	Out of Control	
↘	Turning Vehicle	↔	Side Swipe	
↔	Backing Vehicle	↔	Right Angle	
➡	Pedestrian	↔	Head On	
➡	Motorcyclist	↘	Right Turn	
➡	Bicyclist	↘	Right Turn	
➡	Animal	↘	Right Turn	
☐	Fixed Object	↘	Right Turn	
☐	Parked Vehicle	↘	Right Turn	

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## CRASH SUMMARY SHEET

INTERSECTION: Emerald Square Mall Southern Entrance  
 TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	0	0%
6AM-10AM	0	0%
10AM-3PM	9	43%
3PM-7PM	10	48%
7PM-12PM	2	10%
<b>Total</b>	<b>21</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	12	57%
Spring (Mar - May)	1	5%
Summer (Jun - Aug)	2	10%
Fall (Sep - Nov)	6	29%
<b>Total</b>	<b>21</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	16	76%
Cloudy	2	10%
Rain	1	5%
Snow	2	10%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	18	86%
Wet	1	5%
Snow	2	10%
Ice	0	0%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	17	81%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	4	19%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	5%
Rear-End	13	62%
Angle	1	5%
SS, Same Direction	6	29%
SS, Opp Direction	0	0%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	4	19%
PDO	17	81%
<b>Total</b>	<b>21</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	20	95%
Parked Motor Vehicle	1	5%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, bui	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
<i>Other non-collision</i>	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

## Route 1 at Allen Avenue

### Layout

Route 1 at Allen Avenue is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Allen Avenue is an east/west running local roadway with one lane in each direction. Route 1 is separated by jersey barriers with a guardrail cap south of the intersection and guardrails north of the intersection.

There is overflow parking for Emerald Square Mall located at the northwest corner, a shopping plaza containing Gasbarro's Liquors at the northeast corner, the Fashion Crossing Shopping Plaza at the southeast corner, and a wooded area with a shopping plaza anchored by Target just beyond at the southwest corner.

The northbound approach widens to 3 lanes at the intersection, consisting of an exclusive left-turn lane, a thru lane and a shared thru/right-turn lane that leads to a slip ramp into Fashion Crossing. The left-turn stacking lane is approximately 375 feet long accommodating 15-16 vehicles. There is only a sidewalk on the west side of the roadway and a crosswalk provided.

The southbound approach widens to 4 lanes at the intersection, an exclusive left-turn lane, two thru lanes and a right-turn slip ramp onto Allen Avenue. The left-turn stacking lane is approximately 325 feet long accommodating 12-13 vehicles. There are sidewalks on both sides providing curb ramps with no Tactile Warning Panels. There is no crosswalk here.

The eastbound Allen Avenue approach widens to 3 lanes at the intersection, an exclusive left-turn lane, a shared thru/left-turn lane and an exclusive right lane although the pavement markings are faded to the point of being nearly indistinguishable. This approach has sidewalks on the south side only and provides a crosswalk.

The westbound Allen Avenue approach widens to 3 lanes at the intersection, an exclusive left-turn lane, a shared thru/left-turn lane and an exclusive right lane. This approach provides a crosswalk with curb ramps but there is a sidewalk on the north side only. The south side shows a worn pedestrian path through a grassy area.

The pedestrian signal operates for the northbound approach only and is an outdated, push-button, non-Accessible Pedestrian System. The timing is 24 seconds total, with 10 seconds of white 'walk' symbol and 14 seconds of red 'no walk' hand. The slip ramp right turns, especially from the northbound approach are very dangerous for pedestrians. There were high speeds and red-light-running observed here.

This intersection operates at a LOS F both during the PM peak period and during the Saturday peak period, which are both unacceptable.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 33 crashes that occurred at the intersection; 22 (67%) were rear-end crashes, 6 (18%) were sideswipe crashes, 3 were single vehicle crashes and 2 were angle crashes.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Other contributing factors to any type of crash can include weather and driver distraction.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Out of the 33 total crashes, 27 involved property damage only and 6 involved injury. The ACC/MEV crash rate at this intersection is .89, while the regional average is 0.75. The EPDO is 19, just above the regional threshold of 15. Both of these indicate that there are safety issues at this intersection.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Route 1 @ Allen Ave & Fashion Crossing  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	↔	Rear End	
⊙	Injury Collision	↙	Left Turn	
⦿	Fatal Collision	↘	Overtake	
→	Moving Vehicle	↔	Out of Control	
↘	Turning Vehicle	↔	Head On	
↔	Backing Vehicle	↘	Right Turn	
🚶	Pedestrian	↗	Right Angle	
🏍️	Motorcyclist	↘	Side Swipe	
🚲	Bicyclist			
🐕	Animal			
□	Fixed Object			
▭	Parked Vehicle			

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## CRASH SUMMARY SHEET

INTERSECTION: NA South Washington St (Rte 1) at Allen Ave Intererction  
 TIME PERIOD: 2014-2016

TIME OF DAY:	#	ACC	%
12AM-6AM	1		3%
6AM-10AM	1		3%
10AM-3PM	19		58%
3PM-7PM	8		24%
7PM-12PM	4		12%
<b>Total</b>	<b>33</b>		<b>100%</b>

TIME OF YEAR:	#	ACC	%
Winter (Dec - Feb)	12		36%
Spring (Mar - May)	5		15%
Summer (Jun - Aug)	8		24%
Fall (Sep - Nov)	8		24%
<b>Total</b>	<b>33</b>		<b>100%</b>

WEATHER:	#	ACC	%
Clear	22		67%
Cloudy	6		18%
Rain	3		9%
Snow	1		3%
Sleet, Hail, Freezing Rain	0		0%
Fog, Smog, Smoke	0		0%
Severe Crosswinds	0		0%
Blowing Sand, Snow	0		0%
Other	0		0%
Unknown	1		3%
<b>Total</b>	<b>33</b>		<b>100%</b>

SURFACE:	#	ACC	%
Dry	25		76%
Wet	7		21%
Snow	0		0%
Ice	0		0%
Sand, Mud, Dirt, Oil, Gravel	0		0%
Water (Standing, Moving)	0		0%
Slush	0		0%
Other	0		0%
Unknown	1		3%
<b>Total</b>	<b>33</b>		<b>100%</b>

LIGHT CONDITION:	#	ACC	%
Daylight	26		79%
Dawn	0		0%
Dusk	0		0%
Dark / Lighted Road	5		15%
Dark / Road Not Lit	0		0%
Dark / Unknown Lighting	1		3%
Other	0		0%
Unknown	1		3%
<b>Total</b>	<b>33</b>		<b>100%</b>

CRASH TYPE:	#	ACC	%
Single Veh Crash	3		9%
Rear-End	22		67%
Angle	2		6%
SS, Same Direction	6		18%
SS, Opp Direction	0		0%
Head On	0		0%
Rear to Rear	0		0%
Unknown	0		0%
<b>Total</b>	<b>33</b>		<b>100%</b>

CRASH SEVERITY:	#	ACC	%
Fatal	0		0%
Injury	6		18%
PDO	27		82%
<b>Total</b>	<b>33</b>		<b>100%</b>

COLLISION WITH:	#	ACC	%
Motor Vehicle In Traffic	29		88%
Parked Motor Vehicle	0		0%
Pedestrian	0		0%
Cyclist	0		0%
Animal (Deer)	0		0%
Animal (Other)	0		0%
Moped	0		0%
Workzone Maintenance Equip	0		0%
Railway (Train, Engine)	0		0%
Other Movable Object	0		0%
Curb	0		0%
Tree	0		0%
Utility Pole	0		0%
Light Pole or other post/support	1		3%
Guardrail	0		0%
Median Barrier	0		0%
Ditch	0		0%
Embankment	0		0%
Bridge	1		3%
Bridge overhead structure	0		0%
Unknown fixed object	0		0%
Overturn/rollover	0		0%
Jackknife	0		0%
Other non-collision	0		0%
Unknown non-collision	0		0%
Other	0		0%
Unknown	2		6%
Collision with other fixed object (wall, building, tunnel)	0		0%
<b>Total</b>	<b>33</b>		<b>100%</b>

# Route 1 at Walmart & Best Buy Entrances

## Layout

Route 1 at Walmart & Best Buy Entrances to Shopping Plazas is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. The unnamed entrances are privately owned and provide access in an east/west direction to retail outlets such as Best Buy, TGI Fridays, Michael's and Savers, and PetSmart on the west side of Route 1 and to the Walmart Supercenter, Lowe's, Dick's Sporting Goods and Raymour & Flanigan Furniture on the east side of Route 1. Route 1 is separated by jersey barriers with guardrail caps at this intersection.

There is a TGIF Restaurant with other outlets located further behind at the northwest corner, a wooded area at the northeast corner, a Walmart Supercenter at the southeast corner and a Best Buy and other retail outlets at the southwest corner.

The northbound approach widens to 4 lanes at the intersection, consisting of an exclusive left-turn lane, 2 thru lanes and an exclusive right-turn lane to a slip ramp leading to Walmart. The left-turn stacking lane measures approximately 450 feet, accommodating 17-18 vehicles. There is a sidewalk on the west side of this approach but there are no crosswalks or any other accommodations. There is a paved walking path approximately 15 feet from the east side of roadway which leads into the shopping plaza.

The southbound approach widens to 4 lanes at the intersection, consisting of an exclusive left-turn lane, 2 thru lanes and an exclusive right-turn lane to a slip ramp leading to shopping plazas. The left-turn stacking lane measures approximately 175 feet, accommodating 7-8 vehicles. There is a sidewalk on the west side of this approach but there are no crosswalks or any other accommodations provided.

The eastbound approach (from Best Buy & TGI Friday's) currently has no distinguishable pavement markings but it is being utilized as 3 multi-use lanes. This is the only approach that provides crosswalks and curb ramps, although they are non-ADA compliant.

The westbound approach (from Walmart & Lowe's) widens to 3 lanes at the intersection, consisting of an exclusive left-turn lane, one shared thru/left-turn lane and an exclusive right-turn lane.

The pedestrian signal here is a push-button, non-ADA compliant system that is concurrent. A concurrent pedestrian signal phase activates simultaneously with the parallel vehicle phase, permitting motorists to turn left or right across pedestrians' paths after yielding to pedestrians. The right-turn slip ramps on the northbound and southbound approaches are very dangerous for pedestrians because these are not part of the signal system.

This intersection experiences 118 seconds of delay during the PM peak and over 120 seconds of delay during the Saturday peak period, both operating at a LOS F, which are unacceptable.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 31 crashes that occurred at the intersection; 16 (52%) were rear-end crashes, 10 (32%) were angle crashes, 3 were sideswipes, while there was one single vehicle crash, and one crash that is listed as unknown.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Two out of the 10 angle crashes were due to red-light running.

Other contributing factors to all types of crashes can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

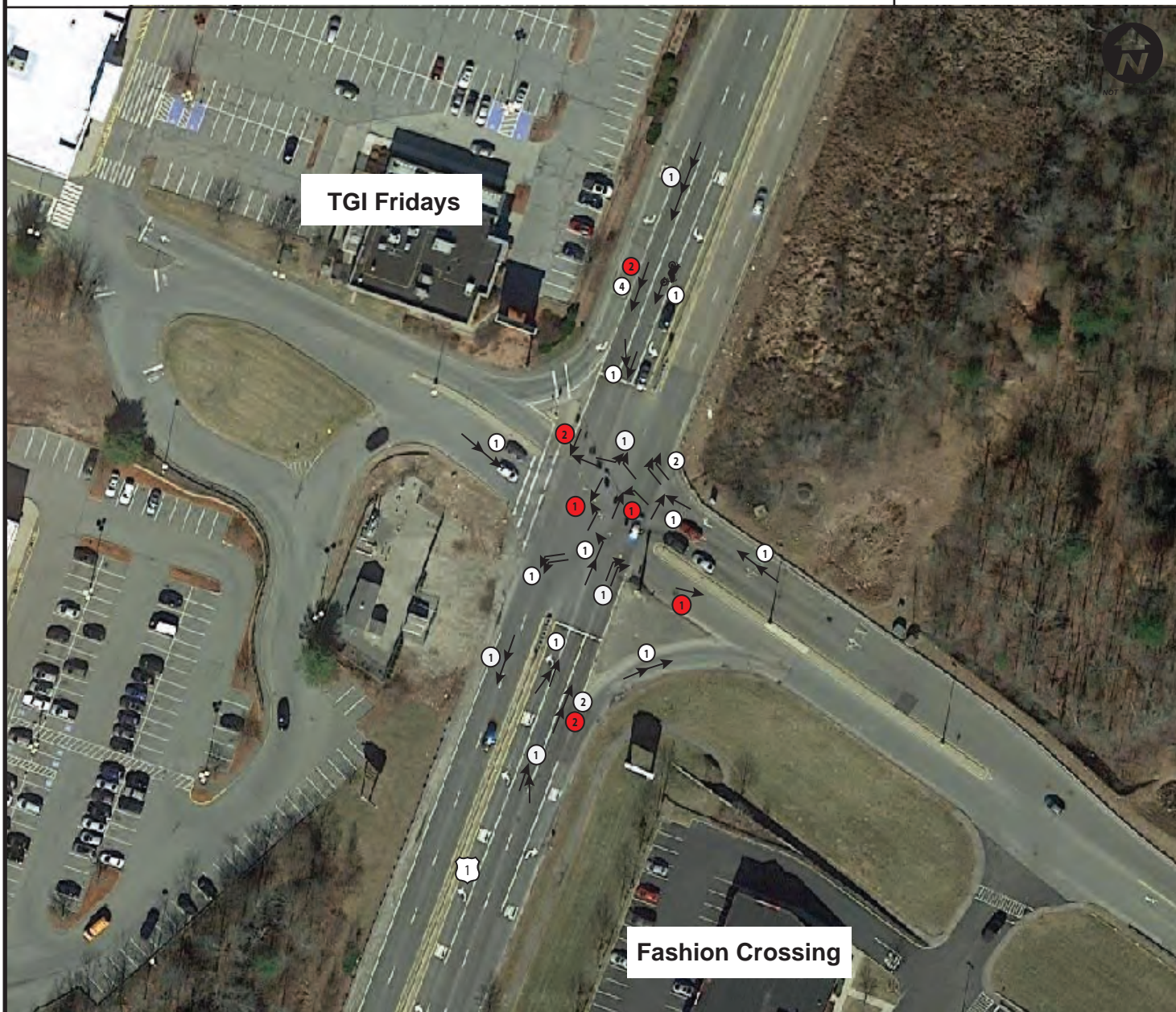
Out of the 31 total crashes, 22 involved property damage only and 9 involved injury. The ACC/MEV crash rate at this intersection is .78, while the regional average is 0.75. The EPDO is 22.33, above the regional threshold of 15. Both of these indicate there are safety issues at this intersection.



# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Route 1 @ Walmart & Best Buy Entrance  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location	
Ⓝ	Property Damage Collision	🚶	Pedestrian		
Ⓝ	Injury Collision	🏍️	Motorcyclist		
Ⓝ	Fatal Collision	🚲	Bicyclist		
➡	Moving Vehicle	🐾	Animal		
↘	Turning Vehicle	☐	Fixed Object		
↔	Backing Vehicle	🚗	Parked Vehicle		
		➡➡➡	Rear End	↔↔↔	Head On
		↙↘	Left Turn	↘↙	Right Turn
		➡➡➡	Overtake	↕↗	Right Angle
		⚡➡	Out of Control	↘↗	Side Swipe
<p><small>Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center                      Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information                      MassDOT: 10 Park Plaza, Boston, MA 02116</small></p>					

## CRASH SUMMARY SHEET

INTERSECTION: South Washington St (Route 1) @ Best Buy & Walmart Intersections

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
6AM-8AM	0	0%
8AM-10AM	3	10%
10AM-12PM	11	35%
12PM-2PM	12	39%
2PM-4PM	5	16%
<b>Total</b>	<b>31</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	13	42%
Spring (Mar - May)	4	13%
Summer (Jun - Aug)	5	16%
Fall (Sep - Nov)	9	29%
<b>Total</b>	<b>31</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	18	58%
Cloudy	4	13%
Rain	4	13%
Snow	2	6%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	3	10%
<b>Total</b>	<b>31</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	20	65%
Wet	5	16%
Snow	1	3%
Ice	2	6%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	3	10%
<b>Total</b>	<b>31</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	18	58%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	9	29%
Dark / Road Not Lit	1	3%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	3	10%
<b>Total</b>	<b>31</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	3%
Rear-End	16	52%
Angle	10	32%
SS, Same Direction	2	6%
SS, Opp Direction	1	3%
Head On	0	0%
Rear to Rear	0	0%
Unknown	1	3%
<b>Total</b>	<b>31</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	9	29%
PDO	22	71%
<b>Total</b>	<b>31</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	29	94%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	1	3%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, bu	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
<i>Other non-collision</i>	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	1	3%
<b>Total</b>	<b>31</b>	<b>100%</b>

# Route 1 at Cumberland Avenue

## Layout

The intersection of Route 1 at Cumberland Avenue is a 4-legged intersection controlled by a traffic signal with the eastbound and westbound Cumberland Avenue approaches being slightly off-set from each other with a large area at the center of the intersection divided by a lone crosswalk. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Cumberland Street is an east/west running local roadway with one lane in each direction, with the east side leg culminating in a dead end. Route 1 is separated by a narrow raised asphalt median at this intersection.

There is a grassy area located at the northwest corner, an auto sales lot at the northeast corner, a Friendly's restaurant at the southeast corner and a David's Bridal at the southwest corner.

The northbound approach widens to 3 lanes at the intersection, consisting of an exclusive left-turn lane and two unmarked lanes. The left-turn stacking lane measures approximately 225 feet accommodating 8-9 queueing vehicles. There are no crosswalks or sidewalks at this approach with the exception of a short section on the west side of the roadway to meet the one crosswalk here. This one crosswalk is located across the large center area of the intersection, slightly closer to the northbound approach than the southbound, from just south of the west leg of Cumberland Avenue and ending just north of the east leg. The east side of the crosswalk leads to a small area of concrete sidewalk that continues into a U-turn of sorts into a side path. This is about 15 feet removed from the right-of way and heads south for approximately 100 feet into the parking lot of a bridal shop.

The southbound approach widens to 3 lanes at the intersection, consisting of an exclusive left-turn lane and two lanes with no marked designation. The left-turn stacking lane measures approximately 125 feet accommodating 4 to 5 queueing vehicles. It also includes an auxiliary right lane to accommodate traffic serving the Christmas Tree Shop and other retail outlets just north of the intersection. This approach provides a sidewalk on the east side of the roadway but no crosswalks or other accommodations.

The eastbound approach widens to two lanes at the intersection, providing an exclusive right-turn lane and an undesignated lane that is utilized as a shared thru/left lane. The westbound Cumberland Avenue approach is an unmarked roadway with poor pavement conditions and no curbing, sidewalks or crosswalks. It is a dead end that provides access to the Friendly's Ice Cream parking lot and private residences.

The pedestrian control at this intersection is an outdated, push-button non-Accessible Pedestrian Signal, that provides 22 seconds of total walk time, 6 seconds of walk (white walk symbol), and 16 seconds of the red flashing hand which are difficult to see.

This intersection experiences 18 seconds of delay, operating at a LOS B during the PM peak period and 24 seconds of delay during the Saturday peak period, operating at a LOS C, which are both acceptable.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 14 crashes that occurred at the intersection; 12 (86%) were rear-end crashes, one was an angle crash and one a single vehicle crash.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Other contributing factors to all types of crashes can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Out of the total 14 crashes, 9 were property damage only and 5 involved injury. The ACC/MEV crash rate at this intersection is .37, while the regional average is 0.75. The EPDO is 11.33, below the regional threshold of 15. Both of these indicate that there are not major safety issues at this intersection.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Route 1 @ Cumberland Ave  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
<ul style="list-style-type: none"> <li><span style="border: 1px solid black; border-radius: 50%; padding: 2px;">#</span> Property Damage Collision</li> <li><span style="background-color: red; border: 1px solid black; border-radius: 50%; padding: 2px;">#</span> Injury Collision</li> <li><span style="background-color: black; border: 1px solid black; border-radius: 50%; padding: 2px;">#</span> Fatal Collision</li> <li><math>\longrightarrow</math> Moving Vehicle</li> <li><math>\curvearrowright</math> Turning Vehicle</li> <li><math>\longleftrightarrow</math> Backing Vehicle</li> </ul>	<ul style="list-style-type: none"> <li> Pedestrian</li> <li> Motorcyclist</li> <li> Bicyclist</li> <li> Animal</li> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px; vertical-align: middle;"></span> Fixed Object</li> <li><span style="border: 1px solid black; border-bottom: 3px double black; display: inline-block; width: 15px; height: 15px; vertical-align: middle;"></span> Parked Vehicle</li> </ul>	<ul style="list-style-type: none"> <li><math>\longrightarrow</math> Rear End</li> <li><math>\curvearrowleft</math> Left Turn</li> <li><math>\longrightarrow</math> Overtake</li> <li><math>\sim\sim\sim</math> Out of Control</li> <li><math>\longleftrightarrow</math> Head On</li> <li><math>\curvearrowright</math> Right Turn</li> <li><math>\longrightarrow</math> Right Angle</li> <li><math>\curvearrowright</math> Side Swipe</li> </ul>		
<p><small>Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center. Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information. MassDOT: 10 Park Plaza, Boston, MA 02116</small></p>				

## CRASH SUMMARY SHEET

INTERSECTION:

TIME PERIOD:

TIME OF DAY:	# ACC	%
12AM-6AM	0	0%
6AM-10AM	1	7%
10AM-3PM	7	50%
3PM-7PM	3	21%
7PM-12PM	3	21%
<b>Total</b>	<b>14</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	7	50%
Spring (Mar - May)	3	21%
Summer (Jun - Aug)	2	14%
Fall (Sep - Nov)	2	14%
<b>Total</b>	<b>14</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	12	86%
Cloudy	1	7%
Rain	0	0%
Snow	1	7%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>14</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	11	79%
Wet	1	7%
Snow	1	7%
Ice	0	0%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	1	7%
<b>Total</b>	<b>14</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	10	71%
Dawn	0	0%
Dusk	1	7%
Dark / Lighted Road	3	21%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>14</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	7%
Rear-End	12	86%
Angle	1	7%
SS, Same Direction	0	0%
SS, Opp Direction	0	0%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>14</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	5	36%
PDO	9	64%
<b>Total</b>	<b>14</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	13	93%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	1	7%
Collision with other fixed object (wall, bu	0	0%
<b>Total</b>	<b>14</b>	<b>100%</b>

## **Route 1 at Como Drive**

### **Layout**

Route 1 at Como Drive is a 3-legged intersection which is controlled by a stop sign on Como Drive. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Como Drive is an east-west running local road, with one unmarked lane in each direction.

The eastside of Route 1 at Como Drive is wooded, as is the southwest corner. The shopping plaza is located at the northwest corner.

The eastbound Como Drive approach to Route 1 provides driveway access to the shopping plaza on the west side of Route 1 which houses Mattress World and a SpeedDee Oil Change. Como Drive runs westbound from Route 1 into a residential neighborhood and continues in a westerly direction until it turns south to its terminus at May Street.

The eastbound Como Drive approach consists of one lane at the intersection and is controlled by a stop sign. There is no traffic control on the Route 1 approach at this intersection. The stop control experiences minimal delay, operating at a LOS A at all times, which is acceptable.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 10 crashes that occurred at Route 1 and Como Drive. The most common crashes at this intersection were rear-end crashes at 7 (70%) and angle crashes at 3 (30%).

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Other contributing factors to any type of crash can include driver distraction and weather.

Of the 10 total crashes here, all 10 involved property damage only and none involved an injury. The ACC/MEV crash rate at this intersection is 0.28, while the regional average is 0.75. The EPDO is 3.33 which comes in at the regional threshold of 15. Both of these indicate that there are no serious safety issues at this intersection.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Route 1 @ Como Dr  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	→ →	Rear End	
⊙	Injury Collision	← →	Head On	
⊖	Fatal Collision	↙ ↘	Left Turn	
→	Moving Vehicle	↘ ↙	Right Turn	
↘	Turning Vehicle	↔	Overtake	
↔↔	Backing Vehicle	↗ ↖	Right Angle	
↔	Out of Control	↘ ↙	Side Swipe	
🚶	Pedestrian	Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center. Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information. MassDOT: 10 Park Plaza, Boston, MA 02116		
🏍️	Motorcyclist			
🚲	Bicyclist			
🐇	Animal			
□	Fixed Object			
▭	Parked Vehicle			



## CRASH SUMMARY SHEET

INTERSECTION: Washington Street (Route 1) at Como Drive  
 TIME PERIOD: 2014-2016

TIME OF DAY:	#	ACC	%
12AM-6AM	0		0%
6AM-10AM	0		0%
10AM-3PM	7		70%
3PM-7PM	2		20%
7PM-12PM	1		10%
<b>Total</b>	<b>10</b>		<b>100%</b>

TIME OF YEAR:	#	ACC	%
Winter (Dec - Feb)	3		30%
Spring (Mar - May)	2		20%
Summer (Jun - Aug)	1		10%
Fall (Sep - Nov)	4		40%
<b>Total</b>	<b>10</b>		<b>100%</b>

WEATHER:	#	ACC	%
Clear	9		90%
Cloudy	1		10%
Rain	0		0%
Snow	0		0%
Sleet, Hail, Freezing Rain	0		0%
Fog, Smog, Smoke	0		0%
Severe Crosswinds	0		0%
Blowing Sand, Snow	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>10</b>		<b>100%</b>

SURFACE:	#	ACC	%
Dry	10		100%
Wet	0		0%
Snow	0		0%
Ice	0		0%
Sand, Mud, Dirt, Oil, Gravel	0		0%
Water (Standing, Moving)	0		0%
Slush	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>10</b>		<b>100%</b>

LIGHT CONDITION:	#	ACC	%
Daylight	8		80%
Dawn	0		0%
Dusk	0		0%
Dark / Lighted Road	2		20%
Dark / Road Not Lit	0		0%
Dark / Unknown Lighting	0		0%
Other	0		0%
Unknown	0		0%
<b>Total</b>	<b>10</b>		<b>100%</b>

CRASH TYPE:	#	ACC	%
Single Veh Crash	0		0%
Rear-End	7		70%
Angle	3		30%
SS, Same Direction	0		0%
SS, Opp Direction	0		0%
Head On	0		0%
Rear to Rear	0		0%
Unknown	0		0%
<b>Total</b>	<b>10</b>		<b>100%</b>

CRASH SEVERITY:	#	ACC	%
Fatal	0		0%
Injury	0		0%
PDO	10		100%
<b>Total</b>	<b>10</b>		<b>100%</b>

COLLISION WITH:	#	ACC	%
Motor Vehicle In Traffic	10		100%
Parked Motor Vehicle	0		0%
Pedestrian	0		0%
Cyclist	0		0%
Animal (Deer)	0		0%
Animal (Other)	0		0%
Moped	0		0%
Workzone Maintenance Equip	0		0%
Railway (Train, Engine)	0		0%
Other Movable Object	0		0%
Curb	0		0%
Tree	0		0%
Utility Pole	0		0%
Light Pole or other post/support	0		0%
Guardrail	0		0%
Median Barrier	0		0%
Ditch	0		0%
Embankment	0		0%
Bridge	0		0%
Bridge overhead structure	0		0%
Unknown fixed object	0		0%
Overturn/rollover	0		0%
Jackknife	0		0%
Other non-collision	0		0%
Unknown non-collision	0		0%
Other	0		0%
Unknown	0		0%
Collision with other fixed object (wall, bu	0		0%
<b>Total</b>	<b>10</b>		<b>100%</b>

# Route 1 at May Street

## Layout

The intersection of Route 1 at May Street is a 4-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. May Street is an east/west running roadway with one lane in each direction which provides access to Newport Avenue and West Street to the east and to Mendon and Adamsdale Roads to the west. Route 1 is separated by a raised concrete median at this intersection.

King's Barber Shop is located at the northwest corner, there are wooded areas at the northeast southeast corners, and a Pizzeria Uno restaurant at the southwest corner.

The northbound approach widens to 3 lanes at the intersection, consisting of a thru lane, an exclusive left-turn lane and a shared thru/right-turn lane. The left-turn lane measures approximately 275 feet, accommodating 10-11 waiting vehicles. There are no crosswalks on this approach but sidewalks are provided on both sides.

The southbound approach widens to 3 lanes at the intersection, consisting of a thru lane, an exclusive left-turn lane and a shared thru/right lane. The left-turn lane measures approximately 125 feet, accommodating 5-6 waiting vehicles. This approach provides crosswalks and curb ramps with Tactile Warning Panels but no sidewalks.

The May Street eastbound approach widens to 3 lanes, an exclusive right-turn only lane, an exclusive left-turn only lane and a shared thru/left-turn lane. This approach provides crosswalks, a curb ramp at the northwest corner and sidewalks on the south side only.

The May Street westbound approach widens to two lanes, a right-turn only lane and a shared thru/left-turn lane. This approach provides crosswalks but the curb ramps are poorly angled, leading away from the direction of travel. There is a small section of sidewalk on both sides.

There are *Americans with Disabilities Act* issues with a discontinuous and very small section of sidewalk in front of King's Barber (the northwest corner of this intersection). There are tactile warning panels but no outlet from that small section of sidewalk which starts and ends abruptly with no outlet. It also provides no access to the parking area, with high concrete curbing between the sidewalk and the pavement of the parking area.

There are bicycle lanes that start/end just south of the intersection.

The pedestrian control at this intersection is an Accessible Pedestrian Signal with verbal 'wait' and audible walk sound (machine gun). There is a white walk symbol and red hand symbol with countdown. The timing is 33 seconds total, 9 seconds of walk and 24 seconds of count down.

This intersection experiences over 120 seconds of delay during the PM peak period and during the Saturday peak period, operating at a LOS F, which are both failing.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 29 crashes that occurred at the intersection; 18 (62%) were rear-end crashes, 5 (17%) were angle crashes (one of these involved a pedestrian), 4 were sideswipe and 2 were single vehicle crashes.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying and driver distraction. Other contributing factors to all types of crashes can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Of the 29 total crashes, 19 involved property damage only and 10 involved injury. The ACC/MEV crash rate at this intersection is .71, while the regional average is 0.75. The EPDO is 23, just above the regional threshold of 15. The EPDO indicates that there are safety issues at this intersection.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Washington Street (Route 1) at May Street  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 07-26-2018



Legend		Location and Type of Collision		Intersection Location
⊙ #	Property Damage Collision	➔	Rear End	
⊙ #	Injury Collision	➔	Head On	
⊙ #	Fatal Collision	➔	Left Turn	
➔	Moving Vehicle	➔	Right Turn	
➔	Turning Vehicle	➔	Overtake	
➔	Backing Vehicle	➔	Right Angle	
➔	Fixed Object	➔	Out of Control	
➔	Parked Vehicle	➔	Side Swipe	
➔	Pedestrian			
➔	Motorcyclist			
➔	Bicyclist			
➔	Animal			

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 Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information  
 MassDOT: 10 Park Plaza, Boston, MA 02116

## CRASH SUMMARY SHEET

INTERSECTION: At Washington St (Rte 1) at May St Intersection

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	2	7%
6AM-10AM	4	14%
10AM-3PM	14	48%
3PM-7PM	4	14%
7PM-12PM	5	17%
<b>Total</b>	<b>29</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	10	34%
Spring (Mar - May)	6	21%
Summer (Jun - Aug)	5	17%
Fall (Sep - Nov)	8	28%
<b>Total</b>	<b>29</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	13	45%
Cloudy	12	41%
Rain	2	7%
Snow	1	3%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	1	3%
<b>Total</b>	<b>29</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	17	59%
Wet	8	28%
Snow	1	3%
Ice	1	3%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	1	3%
Other	0	0%
Unknown	1	3%
<b>Total</b>	<b>29</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	20	69%
Dawn	0	0%
Dusk	1	3%
Dark / Lighted Road	7	24%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	1	3%
<b>Total</b>	<b>29</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	2	7%
Rear-End	18	62%
Angle	5	17%
SS, Same Direction	3	10%
SS, Opp Direction	1	3%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>29</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	10	34%
PDO	19	66%
<b>Total</b>	<b>29</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	26	90%
Parked Motor Vehicle	0	0%
Pedestrian	1	3%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, bu	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	2	7%
<b>Total</b>	<b>29</b>	<b>100%</b>

## **Route 1 at Angeline Street (Petco, Chick Fil-a)**

### **Layout**

The intersection of Route 1 at Angeline Street is a 4-legged intersection with the northbound, southbound, and westbound approaches controlled by a traffic signal. The slightly offset eastbound approach is a right-turn-in and right-turn-out only driveway entrance which is controlled by a stop sign. The eastbound approach provides access to South Attleboro Square and additional retail outlets that can be accessed from the previous intersection at the Route 1A connector.

There is a Stop & Shop located at the northwest corner, an Arooga's Restaurant at the northeast corner, a Chick-fil-A at the southeast corner and a Petco at the southwest corner.

The northbound approach consists of two lanes, a thru lane and a shared thru/right-turn lane. This approach does not allow for a left-turn into the Stop & Shop parking lot. This approach provides a crosswalk with tactile warning panels and new sidewalks on both sides, but the sidewalk on the west side is obstructed by sign posts.

The southbound approach also consists of two lanes, a thru lane and a shared thru/right-turn lane. There are no crosswalks on this approach and a sidewalk only on the east side of the road.

The eastbound approach is a driveway that allows for right-turn-in and right-turn-out only that is controlled by a stop sign. This driveway approach provides a crosswalk but no other accommodations.

The westbound Angeline Street approach provides a crosswalk with tactile warning panels, but these lead directly into traffic. There are sidewalks on both sides of Angeline Street.

The signal system includes an Accessible Pedestrian Signals (APS) and there are 6-foot bike lanes on both sides of Route 1 north and south. The bike lane is not well defined near the BJ's driveway, and it is sometimes used as a right-turn lane.

This intersection experiences little delay during the PM peak period and during the Saturday peak period, operating at a LOS A.

### **Safety Analysis**

This is a fairly new intersection with no crash data as of yet to conduct any safety analysis.

## **Route 1 at Route 1A Connector (BJ's, Burlington Coat, Ruby Tuesday)**

### **Layout**

Route 1 at Route 1A Connector is a 4-legged intersection with a separate right turn slip ramp which is controlled by an interconnected signal system. This system provides a separate traffic signal for the right-turn slip ramp that provides access to Route 1 for vehicles traveling in a parallel direction on Route 1A. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Route 1A is also a north/south running road which consists of 2 lanes in each direction. It is designated as Newport Avenue. It intersects with Route 1 just north of Route 123 (Highland and Newport Avenues). Route 1 is separated by pavement markings at this intersection.

South Attleboro Square and the Ruby Tuesday Restaurant and their parking areas take up the land on both the northwest and southwest corners; Sturdy Memorial Urgent Care is located on the northeast corner; and an addition/extension of the Shoppes of Mayfaire retail plaza is being constructed at the northeast corner.

The northbound approach on Route 1 widens to 3 lanes, an exclusive left-turn lane and two thru lanes. The left-turn stacking lane measures approximately 275 feet, accommodating 10 to 11 vehicles. This approach provides sidewalks on the east sides and a crosswalk with curb ramps, however, the curb ramps are angled into traffic.

The southbound approach widens to 3 lanes consisting of an exclusive left-turn lane, a thru lane and a shared thru/right lane. The left-turn stacking lane measures approximately 325 feet, accommodating 10 to 11 vehicles. This approach provides sidewalks on both sides with curb ramps, but no crosswalk is provided.

The westbound approach is a one-way only that provides two lanes of access to Route 1A. This approach does not have sidewalks, however, the northbound adjacent slip ramp provides a sidewalk on the east side of the road. There is a crosswalk and curb ramps here.

The eastbound approach, which is the access to South Attleboro Square shopping plaza, widens to 2 lanes, a shared thru/left-turn and a shared thru/right-turn lane. No sidewalks are provided at this entrance.

The pedestrian control at this intersection is an Accessible Pedestrian Signals (APS) with verbal wait and audible walk sound (machine gun). There is a white walk symbol and a red hand with countdown provided.

This intersection experiences 25 seconds of delay, operating at a LOS C during the PM peak period, and 52 seconds of delay during the Saturday peak period, operating at a LOS D.

Although LOS C is acceptable, LOS D indicates that the traffic flow is worsening but still tolerable.

### **Safety Analysis**

Over the 3-year period of 2014-2016, there were 15 crashes that occurred at the intersection; 9 were rear-end crashes (60%), 3 were angle crashes, and 3 were sideswipe.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

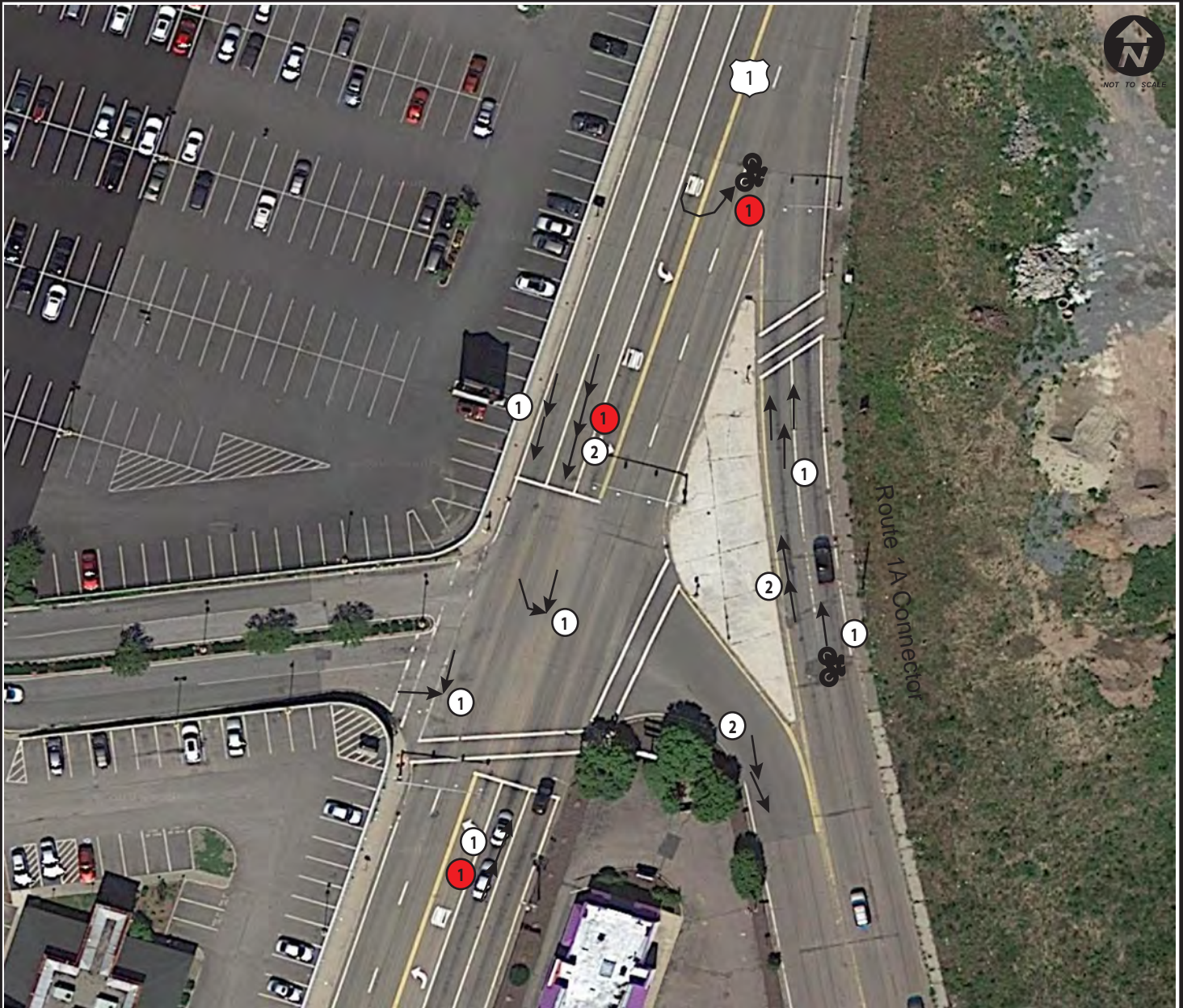
Over the 3-year period of 2014-2016, there were 15 crashes that occurred at the intersection; 12 of which involved property damage only and 3 which involved injury. The ACC/MEV crash rate at this intersection is .46, while the regional average is 0.75. The EPDO is 9, well below the regional threshold of 15. The EPDO indicates that there are no safety issues at this intersection.



# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Washington Street (Route 1) at Route 1A Connector  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-21-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	➔	Rear End	
⊙	Injury Collision	➔	Left Turn	
⊛	Fatal Collision	➔	Overtake	
➔	Moving Vehicle	➔	Out of Control	
➔	Turning Vehicle	➔	Head On	
➔	Backing Vehicle	➔	Right Turn	
➔	Pedestrian	➔	Right Angle	
➔	Motorcyclist	➔	Side Swipe	
➔	Bicyclist			
➔	Animal			
➔	Fixed Object			
➔	Parked Vehicle			

Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center  
 Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information  
 MassDOT: 10 Park Plaza, Boston, MA 02116

## CRASH SUMMARY SHEET

INTERSECTION: Route 1 at Route 1A Connector

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
6AM-8AM	0	0%
8AM-10AM	3	20%
10AM-12PM	5	33%
12PM-2PM	2	13%
2PM-4PM	5	33%
<b>Total</b>	<b>15</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	5	33%
Spring (Mar - May)	5	33%
Summer (Jun - Aug)	1	7%
Fall (Sep - Nov)	4	27%
<b>Total</b>	<b>15</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	12	80%
Cloudy	3	20%
Rain	0	0%
Snow	0	0%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	14	93%
Wet	0	0%
Snow	0	0%
Ice	0	0%
Sand, Mud, Dirt, Oil, Gravel	1	7%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	10	67%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	5	33%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	0	0%
Rear-End	9	60%
Angle	3	20%
SS, Same Direction	3	20%
SS, Opp Direction	0	0%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	3	20%
PDO	12	80%
<b>Total</b>	<b>15</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	15	100%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
<i>Unknown non-collision</i>	0	0%
Other	0	0%
Unknown	0	0%
Collision with other fixed object (wall, bui	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

# Route 1A (Newport Avenue) at Route 123 (Highland Avenue /Newport Avenue)

## Layout

Route 1A (Newport Avenue) at Route 123 (Highland Avenue/Newport Avenue) is a four-legged intersection which is controlled by a traffic signal. Route 1A is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Route 123 (Highland Avenue/Newport Avenue) is an east/west running principal arterial roadway with one lane in each direction.

There is a D'Angelo's Sandwich Shop located at the northwest corner, a Robert's Tuxedo at the northeast corner, a private residence both at the southeast corner and south of Howarth Avenue (located just southeast of the intersection), and a CVS pharmacy at the southwest corner.

The northbound approach widens to 3 lanes, an exclusive left-turn lane and 2 undesignated multi-use lanes. The left-turn stacking lane measures approximately 275 feet, accommodating 10 to 11 vehicles. The right lane provides access to Howarth Avenue, a local residential road, just prior to the intersection with Route 1. This approach provides sidewalks on both sides and crosswalks with curb ramps, however, the curb ramps are angled into traffic.

The southbound approach widens to 3 lanes, an exclusive left-turn lane and 2 undesignated multi-use lanes. The left-turn stacking lane measure 125 feet which can accommodate 5 waiting vehicles. This approach provides sidewalks, crosswalks and apex ramps (a wider ramp located at the apex of the corner and aligned to guide users into the middle of the intersection), but no Tactile Warning Panels (TWP).

The eastbound approach widens to two separate multi-use lanes, one being utilized as a shared thru/left-turn lane and a shared thru/right-turn lane. This approach provides sidewalks on both sides and crosswalks with curb ramps, however, the curb ramps are older and not in good condition.

The westbound approach widens to two lanes, a left-turn lane and a shared thru/right-turn lane. This approach provides sidewalks on both sides and crosswalks with curb ramps, however, the curb ramps are older and not in good condition.

Although this signal system provides pedestrian control, only the northeast corner equipment is functioning correctly. On the remaining three corners the "Don't Walk" light is not functioning.

This intersection experiences 43 seconds of delay, operating at a LOS E during the PM peak period and 44 seconds of delay during the Saturday peak period, operating at a LOS E.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 19 crashes that occurred at the intersection; 8 (42%) were rear-end crashes, 7 (37%) were angle crashes (2 of these head-on), 3 were sideswipe crashes, and one was a single vehicle crash.

Rear-end crashes are usually attributed to speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Of the 19 total crashes, 13 involved property damage only and 6 involved injury. The ACC/MEV crash rate at this intersection is .61, while the regional average is 0.75. The EPDO is 14.33, just below the regional threshold of 15. Based on the crash rates this intersection is bordering safety issues and should continue to be monitored in the future.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Route 1A (Newport Ave) @ Route 123 (Highland Ave/Newport Ave)  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-14-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	➔➔➔	Rear End	
⊙	Injury Collision	➔➔➔	Left Turn	
⊛	Fatal Collision	➔➔➔	Overtake	
➔	Moving Vehicle	➔➔➔	Out of Control	
➔	Turning Vehicle	➔➔➔	Side Swipe	
↔↔↔	Backing Vehicle	➔➔➔	Head On	
➔	Fixed Object	➔➔➔	Right Turn	
➔	Parked Vehicle	➔➔➔	Right Angle	
➔	Pedestrian	<small>Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center. Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information. MassDOT: 10 Park Plaza, Boston, MA 02116</small>		

## CRASH SUMMARY SHEET

INTERSECTION: Newport Ave (Route 1A) @ Newport Ave - Highland Ave (Route 123)

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
6AM-8AM	3	16%
8AM-10AM	1	5%
10AM-12PM	5	26%
12PM-2PM	5	26%
2PM-4PM	5	26%
<b>Total</b>	<b>19</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	7	37%
Spring (Mar - May)	3	16%
Summer (Jun - Aug)	3	16%
Fall (Sep - Nov)	6	32%
<b>Total</b>	<b>19</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	9	53%
Cloudy	7	41%
Rain	1	6%
Snow	0	0%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>17</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	14	74%
Wet	5	26%
Snow	0	0%
Ice	0	0%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>19</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	8	42%
Dawn	0	0%
Dusk	0	0%
Dark / Lighted Road	11	58%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>19</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	5%
Rear-End	8	42%
Angle	5	26%
SS, Same Direction	2	11%
SS, Opp Direction	1	5%
Head On	2	11%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>19</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	6	32%
PDO	13	68%
<b>Total</b>	<b>19</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	18	100%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Collision with other fixed object (wall, bui	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
Unknown non-collision	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>18</b>	<b>100%</b>

# Washington Street (Route 1) at Highland Avenue (Route 123)

## Layout

Washington Street (Route 1) at Highland Street (Route 123) is a four-legged intersection which is controlled by a traffic signal. Washington Street (Route 1) is a north/south running urban minor arterial which consists of 2 lanes in each direction throughout the study area. Highland Avenue (Route 123) is an east/west running principal arterial roadway with one lane in each direction. Route 1 is separated by a double yellow line pavement marking at this intersection.

There is a Shell Gas Station located at the northwest corner, a D'Angelo's Sandwich at the northeast corner, a CVS at the southeast corner and a Dunkin Donuts at the southwest corner.

The northbound approach widens to 3 lanes at the intersection consisting of an exclusive left-turn lane and two undesignated lanes. The left-turn stacking lane measures approximately 250 feet accommodating 9 to 10 queueing vehicles. There are sidewalks present on both sides of the roadway and there is also a crosswalk present with curb ramps that are poorly angled.

The southbound approach widens to 3 lanes at the intersection, consisting of an exclusive left-turn lane and two undesignated multi-use lanes. The southbound exclusive left-turn stacking lane is approximately 100 feet long, accommodating 4 queueing vehicles. There are sidewalks on both sides of the approach and a crosswalk is present but the curb ramps are poorly angled.

The eastbound approach widens to 2 multi-use lanes at the approach, and they are being utilized as a left lane and a shared thru/right lane. There is a sidewalk on the south side but only curbing and grass on the north side at the Shell Gas Station.

The westbound approach widens to 2 multi-use lanes at the approach, and are being utilized as a left lane and a shared thru/right lane. Sidewalks are present at both sides of this approach and there is a crosswalk and curb ramps facing the crosswalk but they are poorly angled with no landing.

The pedestrian control at this signal is an older push button text "walk, dont walk" sign with no Accessible Pedestrian Signal (APS). The pedestrian timing is exclusive with 35 seconds total; 10 walk seconds and 25 countdown seconds. The pedestrian signal is presently obstructed with landscaping.

This intersection operates at a LOS E during the PM peak period and during the Saturday peak period. LOS E is considered unacceptable.

## Safety Analysis

Over the 3-year period of 2014-2016, there were 55 crashes that occurred at the intersection; 33 (60%) were angle crashes, 15 (27%) were rear-end crashes, 4 (7%) were sideswipe, and 3 (5%) were single vehicle crashes.

Rear-end crashes are usually attributed to distracted driving, speeding, following too closely and/or inadequate clearance time. Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

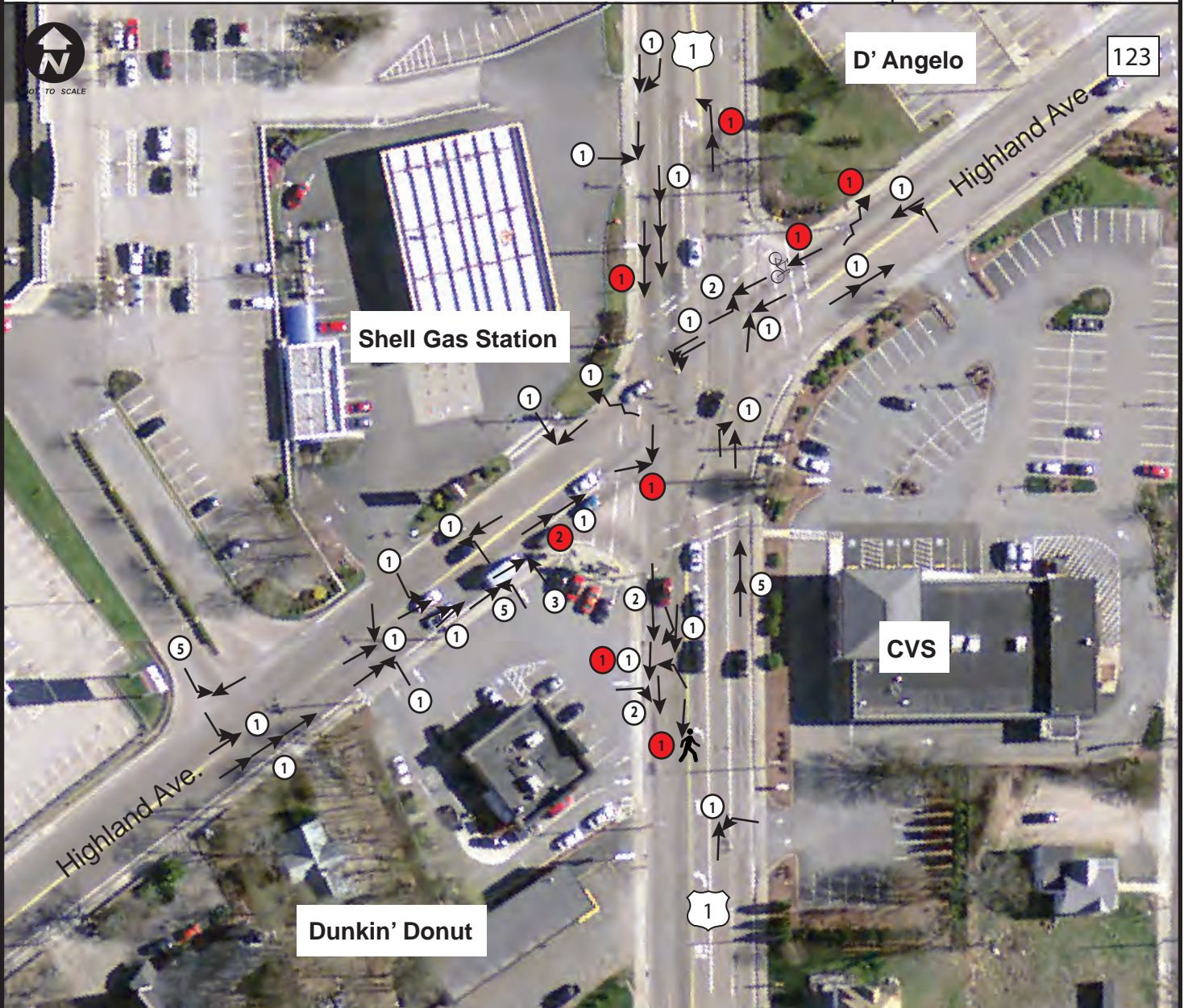
Of the 55 total crashes at this intersection, 46 involved property damage only and 9 involved injury. The ACC/MEV crash rate at this intersection is 1.73, while the regional average is 0.76. The EPDO is 30.33, well above the regional threshold of 15. Both of these indicate that there are serious safety issues at this intersection.



# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Washington Street (Route 1) at Highland Avenue (Route 123)  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: LE-P  
 Date: 08-21-2018



Legend		Location and Type of Collision		Intersection Location
⊕	Property Damage Collision	→	Rear End	
⊙	Injury Collision	↙	Left Turn	
⊛	Fatal Collision	→	Overtake	
→	Moving Vehicle	↔	Out of Control	
↘	Turning Vehicle	↔	Side Swipe	
↔	Backing Vehicle	↔	Right Angle	
🚶	Pedestrian	↔	Head On	
🏍️	Motorcyclist	↘	Right Turn	
🚲	Bicyclist	↘	Right Turn	
🐕	Animal	↘	Right Turn	
□	Fixed Object			
▭	Parked Vehicle			

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## CRASH SUMMARY SHEET

INTERSECTION: AT Washington St (Rte 1) at Highland Ave (Rte 123)

TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	1	2%
6AM-10AM	9	16%
10AM-3PM	18	33%
3PM-7PM	19	35%
7PM-12PM	8	15%
<b>Total</b>	<b>55</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	17	31%
Spring (Mar - May)	14	25%
Summer (Jun - Aug)	5	9%
Fall (Sep - Nov)	19	35%
<b>Total</b>	<b>55</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	37	67%
Cloudy	9	16%
Rain	7	13%
Snow	1	2%
Sleet, Hail, Freezing Rain	0	0%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	1	2%
<b>Total</b>	<b>55</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	42	76%
Wet	10	18%
Snow	0	0%
Ice	1	2%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	2	4%
<b>Total</b>	<b>55</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	41	75%
Dawn	1	2%
Dusk	2	4%
Dark / Lighted Road	11	20%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>55</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	3	5%
Rear-End	15	27%
Angle	33	60%
SS, Same Direction	4	7%
SS, Opp Direction	0	0%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>55</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	9	16%
PDO	46	84%
<b>Total</b>	<b>55</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	51	93%
Parked Motor Vehicle	0	0%
Pedestrian	1	2%
Cyclist	1	2%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	0	0%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Unknown fixed object	0	0%
Overturn/rollover	0	0%
Jackknife	0	0%
Other non-collision	0	0%
<i>Unknown non-collision</i>	0	0%
Other	0	0%
Unknown	0	0%
Collision with other fixed object (wall, building, tunnel)	2	4%
<b>Total</b>	<b>55</b>	<b>100%</b>

## **Newport Avenue (Route 123) at Angeline Street**

### **Layout**

Newport Avenue (Route 123) at Angeline Street is a 3-legged intersection which is controlled by a stop sign on Angeline Street. Newport Avenue (Route 123) is a northeast/southwest running principal arterial which consists of one lane in each direction throughout the study area. Angeline Street is a local road, running northwest/southeast between Newport Avenue (Route 123) and Washington Street (Route 1), with one approach lane in the southeast direction. Angeline Street serves as a connector to businesses along Route 1, including the newly constructed commercial developments (Shops of Mayfaire and Shops on Washington) at its intersection with Route 1.

Newport Avenue (Route 123) at Angeline Street operates at Level of Service A, with the controlled traffic on Angeline experiencing minimal delay during both the weekday PM Peak and Saturday peak periods.

### **Safety Analysis**

There was only one crash reported between 2014-2016 at this intersection, which did not constitute any further safety analysis.

## **Newport Avenue (Route 123) at May Street**

### **Layout**

Newport Avenue (Route 123) at May Street is a 3-legged intersection which is controlled by a stop sign on May Street. Newport Avenue (Route 123) is a northeast/southwest running principal arterial which consists of one lane in each direction throughout the study area. May Street is a urban collector, running northwest/southeast between Newport Avenue (Route 123) and Washington Street (Route 1), with one approach lane in the southeast direction accommodating right and left turns on Newport Avenue.

Newport Avenue (Route 123) at May Street operates at a LOS E during the weekday PM peak hour and at a LOS F during the Saturday peak hour. The May Street approach experiences excessive delay during peak periods.

## **Safety Analysis**

Over the 3-year period of 2014-2016, there were 15 crashes that occurred at the intersection; 12 (80%) were angle crashes, 2 (14%) were sideswipe, and one (7%) was a single vehicle crash.

Angle crashes can be attributed to a variety of factors, including failure to yield right-of-way or attempts to beat a yellow light and/or run a red light. Sideswipe crashes are generally attributed to lane confusion and/or jockeying. Other contributing factors to any type of crash can include driver distraction and weather.

It is important to note that the reporting of contributing crash factors is often subjective. Crash reporting is limited to the responding officer's ability to fully understand the cause of a crash and to rely on the honesty of those involved in the crash.

Of the 15 total crashes at this intersection, 10 involved property damage only and 5 involved injury. The ACC/MEV crash rate at this intersection is .73, while the regional average is 0.76. The EPDO is 2.3, well below the regional threshold of 15. Based on the crash rates this intersection is bordering safety issues and should continue to be monitored in the future.

# Collision Diagram

Municipality: City of Attleboro RPA: SRPEDD  
 Location: Newport Ave (Route 123) at May Street  
 Period: 3 Years 0 Months Period: From 2014 To 2016

Project: Route 1 Corridor  
 By: Charlie/Guoqiang  
 Date: 02-21-2019



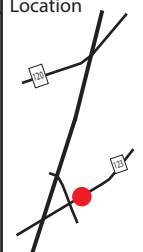
### Legend

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><span style="border: 1px solid black; border-radius: 50%; padding: 2px;">#</span> Property Damage Collision</li> <li><span style="background-color: red; color: white; border-radius: 50%; padding: 2px;">#</span> Injury Collision</li> <li><span style="background-color: black; color: white; border-radius: 50%; padding: 2px;">#</span> Fatal Collision</li> <li>→ Moving Vehicle</li> <li>↘ Turning Vehicle</li> <li>↔ Backing Vehicle</li> </ul> | <ul style="list-style-type: none"> <li> Pedestrian</li> <li> Motorcyclist</li> <li> Bicyclist</li> <li> Animal</li> <li> Fixed Object</li> <li> Parked Vehicle</li> </ul> |
|--|---|

### Location and Type of Collision

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>→ Rear End</li> <li>↙ Left Turn</li> <li>→ Overtake</li> <li>↘ Out of Control</li> </ul> | <ul style="list-style-type: none"> <li>← Head On</li> <li>↘ Right Turn</li> <li>↗ Right Angle</li> <li>↔ Side Swipe</li> </ul> |
|---|--|

### Intersection Location



Note: Maps produced by SRPEDD are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. This map is not intended for engineering, legal or survey purposes. Produced by: SRPEDD, GIS Regional Service Center. Data source: MassGIS, Commonwealth's Office of Geographic and Environmental Information. MassDOT: 10 Park Plaza, Boston, MA 02116

## CRASH SUMMARY SHEET

INTERSECTION: Newport Avenue (Route 123) at May Street  
 TIME PERIOD: 2014-2016

TIME OF DAY:	# ACC	%
12AM-6AM	1	7%
6AM-10AM	1	7%
10AM-3PM	3	20%
3PM-7PM	7	47%
7PM-12PM	3	20%
<b>Total</b>	<b>15</b>	<b>100%</b>

TIME OF YEAR:	# ACC	%
Winter (Dec - Feb)	4	27%
Spring (Mar - May)	2	13%
Summer (Jun - Aug)	5	33%
Fall (Sep - Nov)	4	27%
<b>Total</b>	<b>15</b>	<b>100%</b>

WEATHER:	# ACC	%
Clear	12	80%
Cloudy	1	7%
Rain	0	0%
Snow	1	7%
Sleet, Hail, Freezing Rain	1	7%
Fog, Smog, Smoke	0	0%
Severe Crosswinds	0	0%
Blowing Sand, Snow	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

SURFACE:	# ACC	%
Dry	11	73%
Wet	1	7%
Snow	1	7%
Ice	2	13%
Sand, Mud, Dirt, Oil, Gravel	0	0%
Water (Standing, Moving)	0	0%
Slush	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

LIGHT CONDITION:	# ACC	%
Daylight	10	67%
Dawn	0	0%
Dusk	1	7%
Dark / Lighted Road	4	27%
Dark / Road Not Lit	0	0%
Dark / Unknown Lighting	0	0%
Other	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

CRASH TYPE:	# ACC	%
Single Veh Crash	1	7%
Rear-End	0	0%
Angle	12	80%
SS, Same Direction	1	7%
SS, Opp Direction	1	7%
Head On	0	0%
Rear to Rear	0	0%
Unknown	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

CRASH SEVERITY:	# ACC	%
Fatal	0	0%
Injury	5	33%
PDO	10	67%
<b>Total</b>	<b>15</b>	<b>100%</b>

COLLISION WITH:	# ACC	%
Motor Vehicle In Traffic	14	93%
Parked Motor Vehicle	0	0%
Pedestrian	0	0%
Cyclist	0	0%
Animal (Deer)	0	0%
Animal (Other)	0	0%
Moped	0	0%
Workzone Maintenance Equip	0	0%
Railway (Train, Engine)	0	0%
Other Movable Object	0	0%
Curb	0	0%
Tree	0	0%
Utility Pole	1	7%
Light Pole or other post/support	0	0%
Guardrail	0	0%
Median Barrier	0	0%
Ditch	0	0%
Embankment	0	0%
Bridge	0	0%
Bridge overhead structure	0	0%
Unknown fixed object	0	0%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Attleboro Police Department (2014-2016)

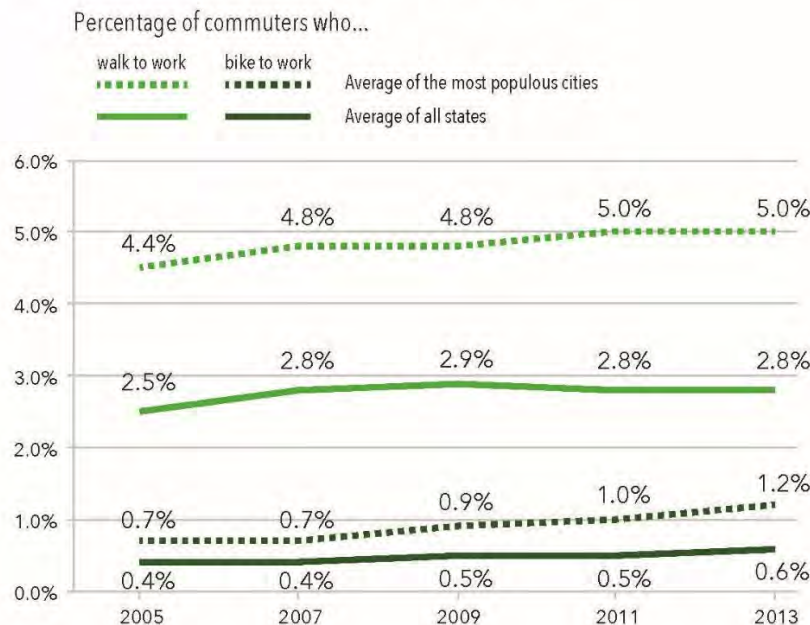
Appendix C  
Bicycle & Pedestrian  
Accommodations

## Bicycle and Pedestrian Conditions on Route 1

Route 1 is a busy commercial corridor with many places that could be considered bicycle or pedestrian trip generators. A bicycle and/or pedestrian trip generator is a place or facility that is likely to attract a person to travel there by bicycle or on foot. In general, retail stores, grocery stores, service providers, entertainment facilities, etc. are all considered to be bicycle and/or pedestrian trip generators, either for their intended use or for employment purposes.

Current trends show an increase in people who are choosing to walk or ride bicycles for transportation purposes either due to the desire to have a more active form of transportation, for efficiency, for environmental concerns and for many other purposes. According to the 2016 Bicycling and Walking in the United States Benchmarking Report from the Alliance for Walking and Bicycling, there has been a small but steady increase in people nationally who use bicycling and walking from 2005-2014 as shown in Figure 1. The report also shows a similar trend for the state of Massachusetts, as well as ranking Massachusetts as the state with the 7<sup>th</sup> highest percent of commuters who bike or walk to work. The report uses a variety of sources as evidence for these trends including data from the US Census Bureau American Community Survey (ACS), the Center for Disease Control (CDC), the National Household Travel Survey (NHTS), the National Center for Safe Routes to School (NCSRTS), AARP, the National Bicycle and Pedestrian Documentation Project (NBPD), Strava, state and city level surveys and other data sources.

### U.S. Commuter Trends (2005-2013)



Sources: ACS 2005 (1-yr est), ACS 2007, 2009, 2011, 2013 (3-yr est)

Figure 1: United States Bicycling and Walking Commuter Trends, Source: 2016 Bicycling and Walking in the United States Benchmarking Report



Bicycling and walking are very low-cost transportation options compared to vehicle ownership and therefore may be attractive for economic purposes, especially for people who are below the poverty level or have low income. Walking and bicycling are generally considered the “first and last mile” or connecting modes to transit, therefore the presence of transit increases the importance of bicycle and pedestrian access. Route 1 is served by the Greater Attleboro Taunton Regional Transit Authority (GATRA).

In 2009, the Massachusetts State Legislature passed the Healthy Transportation Compact as part of transportation reform legislation. The Compact is an inter-agency initiative designed to facilitate transportation decisions that balance the needs of all transportation users, by reducing greenhouse gas emissions, improving access to services for persons with mobility limitations and increasing opportunities for physical activities, increasing bicycle and pedestrian travel, implementing a policy of complete streets for all users and many other actions. As a result of the compact, MassDOT developed and implemented the Healthy Transportation Policy Directive in 2013. The directive requires that all MassDOT funded and or designed projects must provide pedestrian, bicycle and transit trips unless an exemption is obtained from the Secretary of Transportation. In order to receive an exemption, the proponent must be able to prove that providing safe passage for all modes is not physically or economically feasible. Any project developed on Route 1 would likely require compliance with the Healthy Transportation Policy Directive.

There are two recently developed tools for determining potential demand for walking and cycling that highlight the importance of bicycle and pedestrian transportation on Route 1; The Potential for Everyday Biking Scores created as part of the in-process 2018 Massachusetts Bicycle Transportation Plan and the Metropolitan Area Planning Council’s (MAPC’s) Local Access Scores.

The Potential for Everyday Biking Scores were developed to identify areas with the most potential for short, bikeable trips with the purpose of targeting infrastructure investment. Figure 2 shows the Potential for Everyday Biking score along Route 1 and nearby roadways. The area with the highest potential for bicycle trips is the southern end of the study area from approximately May Street to the end of the study area near Irving Street.

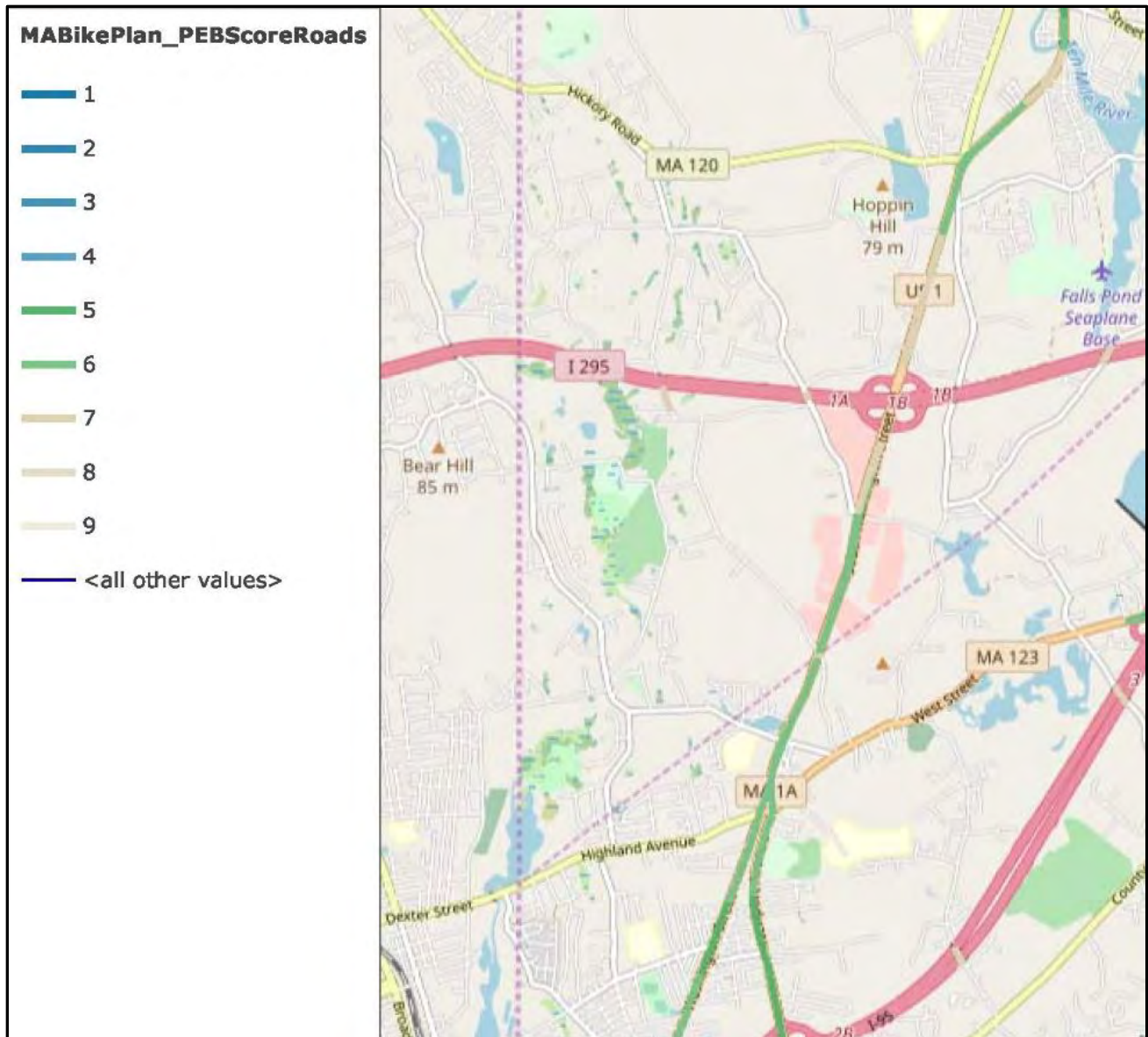
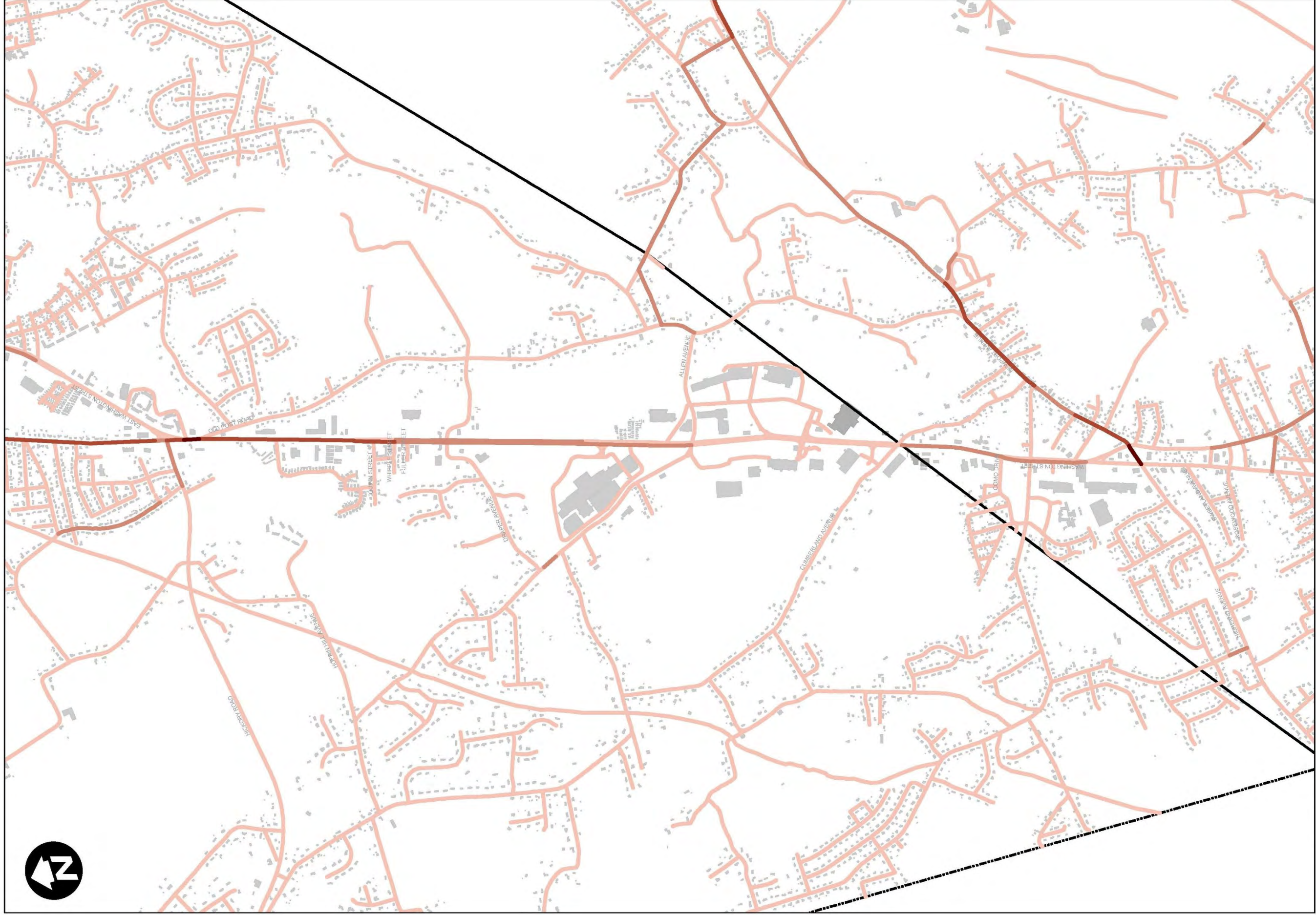


Figure 2: Massachusetts Statewide Bike Plan Draft Potential for Everyday (PEB) Scores

MAPC's Local Access Score identifies areas that have the greatest potential for walking based on factors such as connectivity, proximity to schools, commercial, transit, and recreational facilities. The Local Access Score areas for Route 1 are shown in Figure 3. Higher score areas appear darker on the map and should be considered higher priority. Route 1 has several high priority areas, mainly concentrated in the southern and northern sections of the study area.



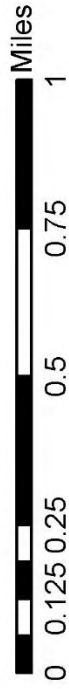
**Local Access Score (Walking)**

**Score Percentile**

- █ Highest
- █ High
- █ Moderate
- █ Base

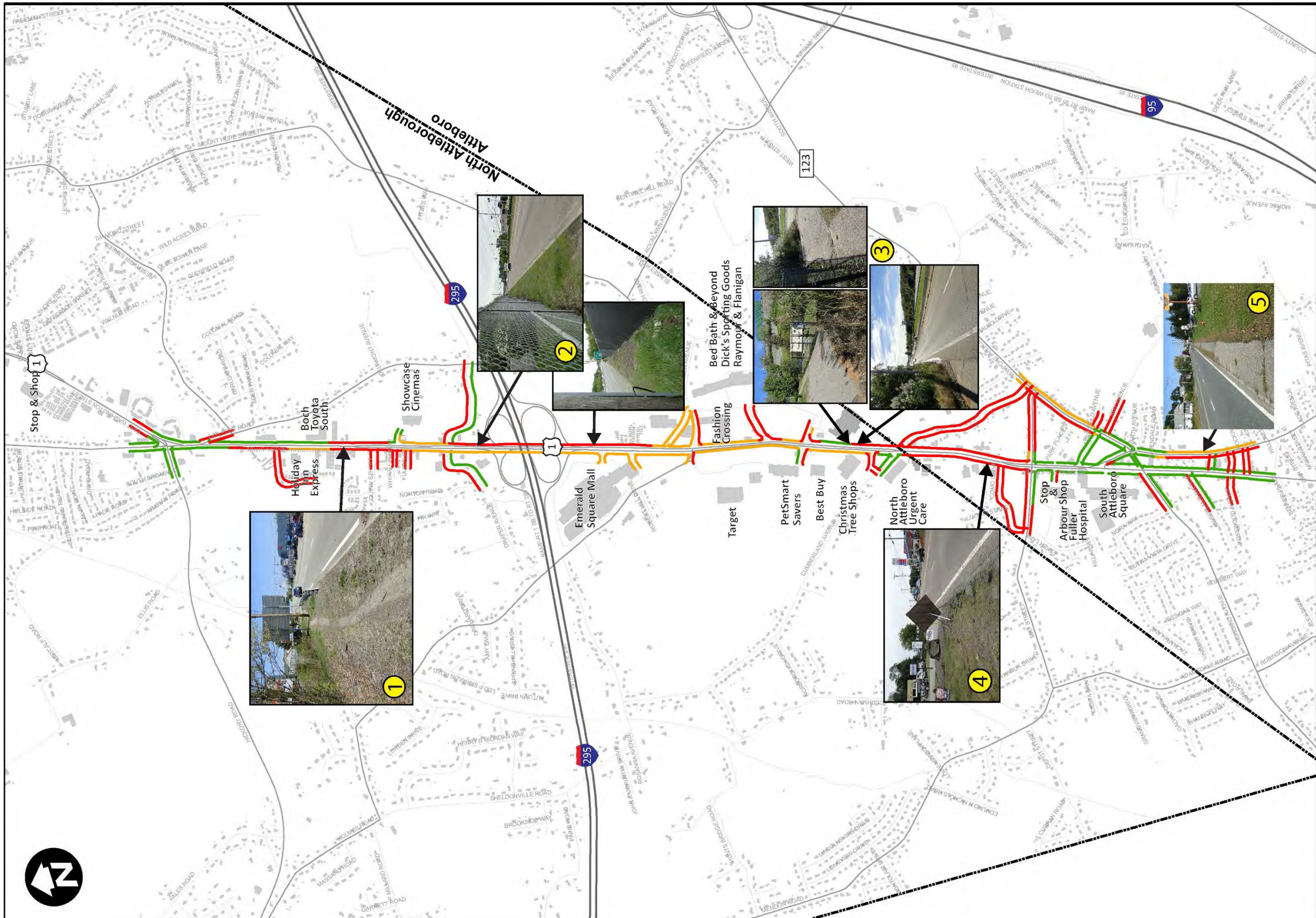
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 Data source: MassGIS, MAPC, SRPEDD



Both scoring systems have similar results, meaning that areas highlighted should be prioritized for bicycle and pedestrian improvements. Prioritizing these areas should result in an increase of bicycle and pedestrian transportation volumes.

Currently Route 1 does not provide adequate and/or consistent walking conditions for the majority of the corridor. There are several significant gaps in the sidewalk network as shown on the map in Figure 4 on the next. Where there are sidewalks, the majority of them are 5 feet wide or greater but are in fair to poor condition. Several sidewalk segments end abruptly leaving pedestrians with no safe travel path.



**Legend**

**Existing Sidewalk Condition**

- No Sidewalk Present
- Excellent / Good
- Poor
- # Text Reference Number

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 MassDOT, 10 Park Plaza, Boston, MA 02116

0 0.125 0.25 0.5 0.75 1 Miles

Figure 3: Sidewalk Existing Condition Map

The most significant gaps in the sidewalk network are as follows and correspond with numbering on the Sidewalk Map in Figure 5:

1. In North Attleborough, there is a small gap on the west side from Draper Avenue to Fuller Street.
2. In North Attleborough, there is a large section of roadway from Draper Street to the Attleboro City Line where there are almost no sidewalks on the east side of Route 1 except for some very small sections with limited connectivity such as the North Attleborough Marketplace section as discussed in Item 3.
3. In Attleboro, there is a sidepath on the east side of Route 1 south of the North Attleborough Marketplace intersection that ends at a small patch of pavement as shown in Figure 2. There is a wetland immediately adjacent to the patch of pavement surrounded by guardrail and a median leaving pedestrians to either turn around or risk traveling in the road on a very narrow shoulder (less than 1-foot wide) next to high speed traffic. A graphic highlighting these conditions are shown in Figure 5.



Figure 4: North Attleborough Marketplace Sidewalk End Conditions

4. There are no sidewalks on either side of Route 1 from just south of Cumberland Avenue at the North Attleborough Town Line south to May Street in Attleboro.
5. In Attleboro, along Route 1A from Route 123 to Irving Street there is sidewalk present along the east side of the roadway but the condition is very poor and there are large sections where the width is less than 3 feet as shown in Figure 6 on the next page.



Figure 5: Poor sidewalk conditions on Route 1A south of Route 123

There are several locations without sidewalks that show evidence of demand through the presence of a beaten path, an example is shown in Figure 5. Locations where beaten path were observed along the corridor are also shown in Figure 1.



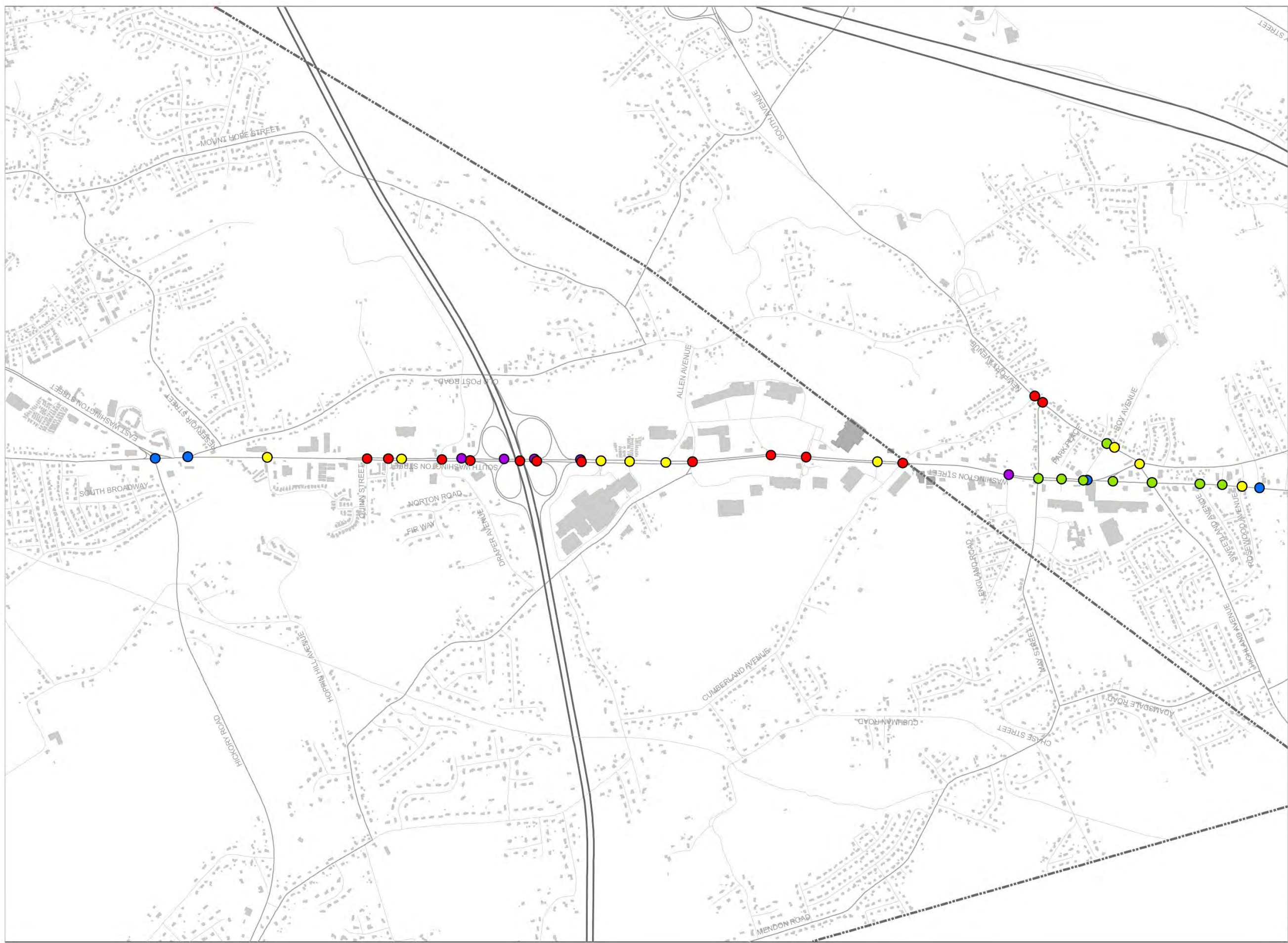
Figure 6: Pedestrian beaten path in North Attleborough near Quinn Street

The majority of intersections do not have adequate crosswalks or curb ramps on the side streets and/or across Route 1. Several of the signalized intersections do not have crosswalks where needed and/or are integrated with the signal system. Of the ones that do have crosswalks integrated with the signal systems all but two are outdated, poorly functioning and do not meet modern standards. Many intersections have free right turn (or slip) lane configurations that are very dangerous to pedestrians due to the lack of sight distance, lack of adequate protection or stop control and the tendency of the geometry to encourage high vehicle speeds. The Existing Condition section of this report describes pedestrian access at each intersection in more detail.

Overall pedestrian access categories were developed to show basic pedestrian connectivity for corridor intersections and are shown in Figure 6. The scores were based on the level of connectivity provided by curb ramps, crosswalks and integration with the signal system if applicable and the estimated level of upgrades needed to improve connectivity. The categories were designed to show the overall pedestrian conditions “at a glance” and are not a level of service analysis. The categories are assigned as follows:

- Excellent – the infrastructure (crosswalks, curb ramps and signal system if applicable) at the intersection provide full connectivity and require no upgrades.
- Acceptable – the infrastructure provides adequate connectivity (safe and accessible crossing for side streets and at least one crossing for the major roadway) and all systems are in a state of good repair, including signal systems.
- Minor Upgrades Needed – Some infrastructure exists and only minor repairs or upgrades are needed to bring the intersection up to an acceptable condition. For example, lines need to be repainted or tactile warning panels need to be installed on existing curb ramps.
- Major Upgrades Needed – Some infrastructure exists but major repairs or upgrades are needed to bring the intersection to an acceptable condition. For example, curb ramp installation, pedestrian signal head repair or system replacement, additional crosswalk locations needed, etc.
- No infrastructure exists where there is an identified need.





**Legend**

**Intersection Pedestrian Access Category**

- Excellent - The infrastructure provides full connectivity and requires no upgrades
- Acceptable - The infrastructure provides adequate connectivity and all facilities/systems are in a state of good repair
- Minor Upgrades Needed - Most infrastructure exists and only minor repairs or upgrades are needed
- Major Upgrades Needed - Some infrastructure exists but major repairs or upgrades are needed
- No infrastructure exists where there is an identified need



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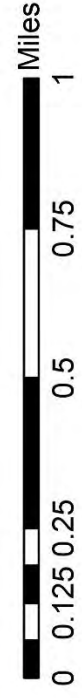


Figure 6: Intersection Pedestrian Category Map

Bicycle facilities are severely lacking for most of the corridor. There is one small section of bicycle lane, from just south of the Route 1 and Route 1A intersection north to the Route 1 at May Street intersection on both sides of the road that was constructed as part of recent development in the area. The bicycle lane has appropriate markings and signage as shown in Figure 7, however does not provide any network connectivity. There is also a safety issue with the southbound right turn into the BJ's driveway, as the bicycle lane is poorly marked in that area and acts as a vehicle right turn lane instead of a bicycle lane. Outside of the small section of bicycle lane, the majority of the corridor has very narrow marked shoulders if at all, averaging from less than 6-inches wide to about a foot wide, leaving no refuge for cyclists. For the very few locations where there are wider shoulders, there are no markings or guidance for use by bicyclists.



Figure 7: Bicycle Lane Markings and Signage near May Street

Massachusetts state law allows bicycles to travel in any travel lane unless prohibited specifically by signage, however the speed of travel along most of Route 1 discourages and may even prevent safe travel by bicyclists in the travel lanes. Several bicycles were observed using sidewalks to travel the corridor. Massachusetts state law also allows the travel of bicyclists on the sidewalk outside of a designated central business district unless a city or town has a specific bylaw related to bicycle travel on a sidewalk. The City of Attleboro has a bylaw prohibiting the travel of bicycles on a sidewalk, North Attleborough does not.

The newly reconstructed Route 1 and 1A and Route 1 and Angeline Street intersections are the only intersections on the corridor that have bicycle actuation included in the signal system. The intersections have bicycle pavement markings and signage showing bicycles where to wait at a red light in order to activate the green light as shown in Figure 8.

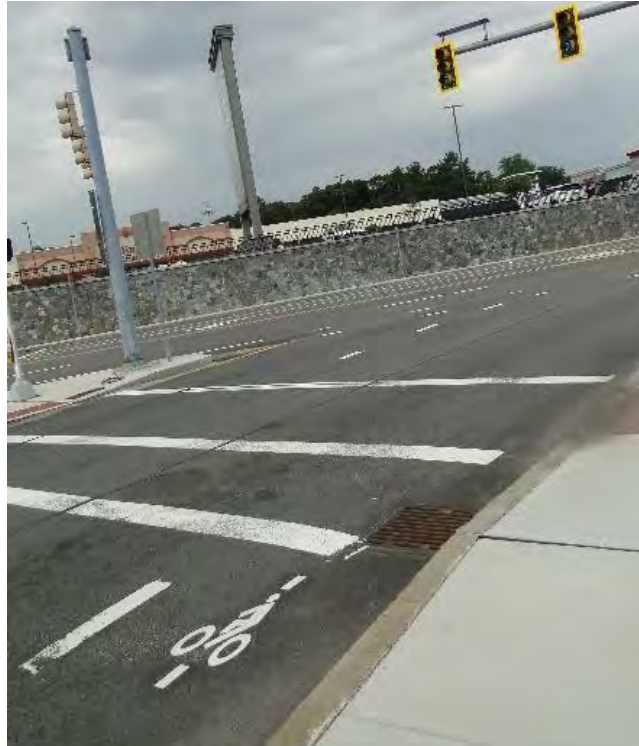


Figure 8: Bicycle Signal Actuation Lane Markings on Route 1A

The Route 1 and Route 120 and the Route 1 and Old Post Road intersections were under construction at the time of this study. The newly constructed Route 1 and 120 intersections will have significantly upgraded pedestrian conditions including new sidewalks, new crosswalks and new pedestrian activated signals that meet the newest standards. The Route 1 and Old Post Road will feature new sidewalks on Route 1 and a new crosswalk and curb ramps on the Old Post Road approach. It is unclear if either intersection will contain bicycle related infrastructure.

There are many retail plazas along Route 1, very few of them have appropriate bicycle and pedestrian access leading into the plaza or for safe circulation within the plazas. Very few businesses provide bicycle racks.

## Options for Consideration and Design Guidance

Ideally all sidewalk gaps would be closed and bicycle lanes separated from traffic by a grass strip or other physical barrier would be provided. The total cross section width required would be about 75 feet. Please see Figure 9 for a sample cross section. Due to space and environmental constraints, it is unlikely that the Route 1 corridor would be able to provide this type of cross section for the entire length of the corridor.

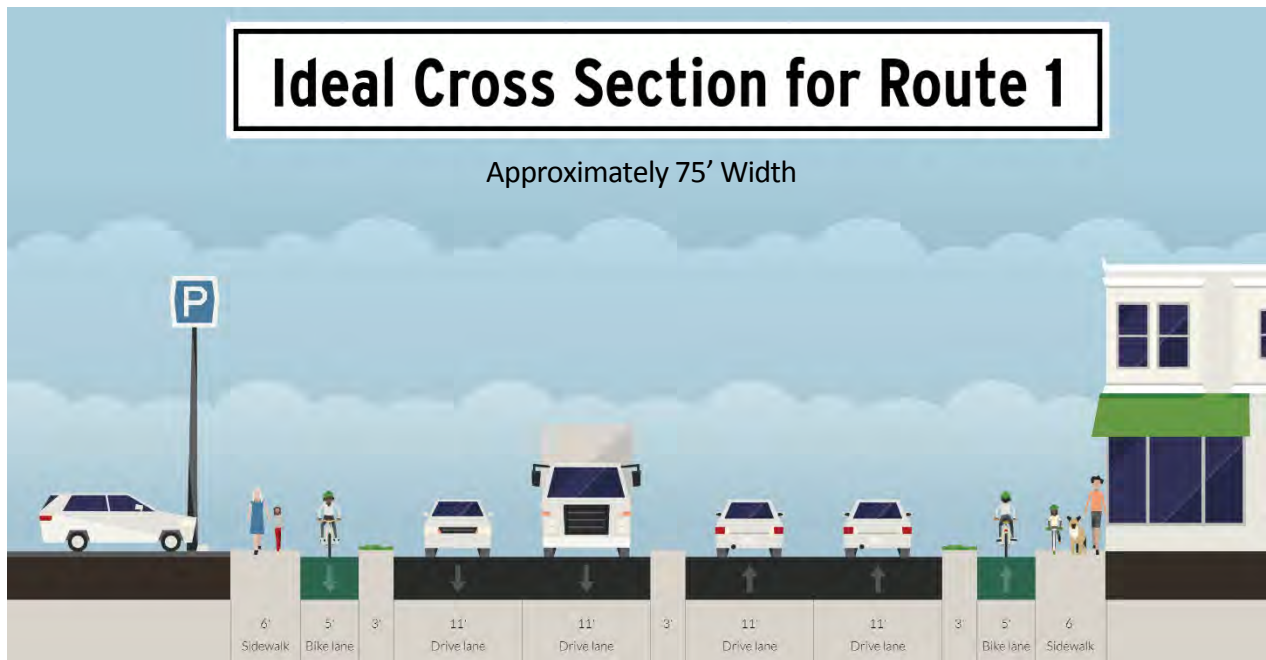


Figure 9: Ideal cross section for Route 1 (Source: Streetmix.net)

Another option for providing adequate facilities would be to convert existing sidewalks to separate use paths that accommodate both pedestrians and bicyclists. This could also be considered in places where there are sidewalk gaps. Ideally access would be provided on both sides of Route 1 but consideration could be taken in places where it may not be needed or appropriate, such as the eastern side of Route 1 in the vicinity of the Interstate 295 ramp system where there are no generators on the east side for some distance or where there are areas of environmental concern, for example, the wetlands just north of the May Street intersection. Location of utilities could also be a factor in the amount of space available. In cases where access cannot be provided on both sides, adequate care should be taken to provide access to facilities on the side of the road and wayfinding signage. Examples of these cross section options are shown in Figure 10 on the next page. Option A has separate use paths on both sides of Route 1 and would require an approximately 71-foot wide cross-section. Option B has a separate use path on one side of Route 1 and would require an approximately 58-foot wide cross-section.

# Route 1 - Cross-Section Option A

Approximately 71' Width



# Route 1 - Cross-Section Option B

Approximately 59' Width



Figure 7: Potential Cross-section Options A and B for Route 1 showing separate use paths on both sides (A) and on one side (B) (Source: Streetmix.net)

These alternatives are not mutually exclusive and could be used in combination as shown in Figure 11. Due to the complexity of the corridor and its surroundings, context sensitive solutions will need to be developed to provide connectivity and access. Wayfinding should be considered in any change of cross section to provide adequate guidance to bicyclists and pedestrians.

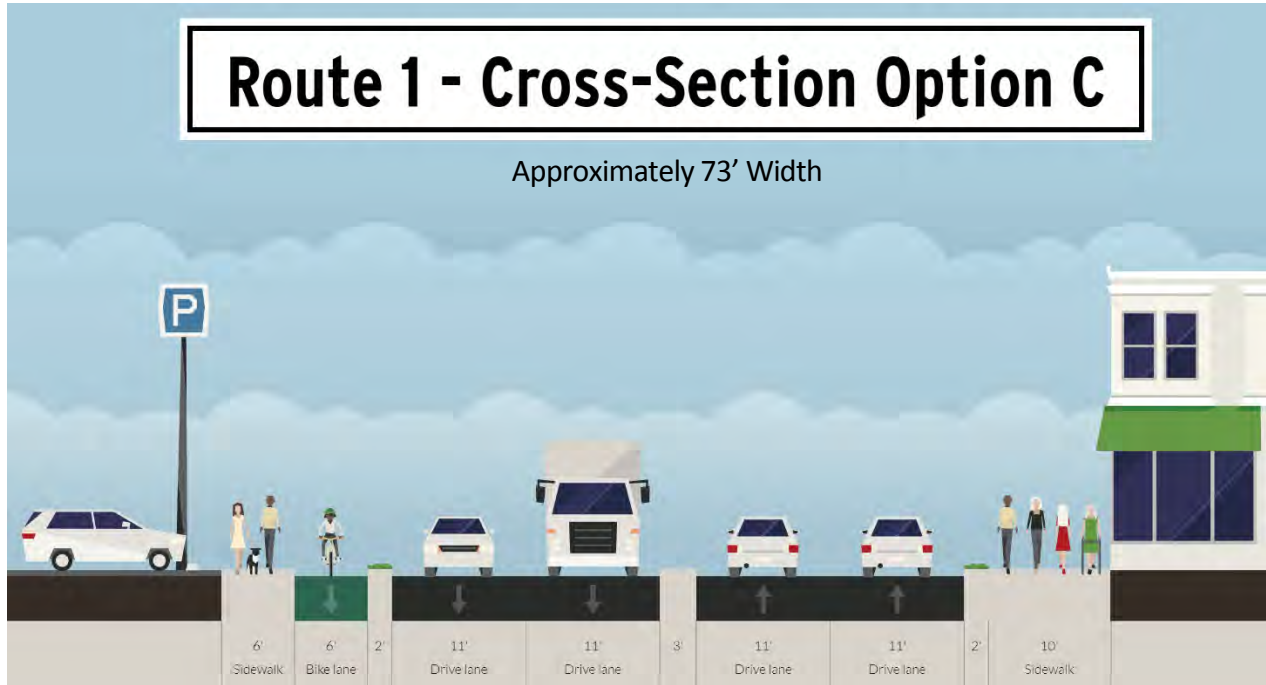


Figure 1: Potential Cross-section Option C for Route 1 showing a bicycle lane and sidewalk on one side and a separate use path on the other (Source: Streetmix.net)

Massachusetts design standards, including the Massachusetts Department of Transportation (MassDOT) Highway Design Guide and the Massachusetts Separated Bike Lane Planning and Design Guide, require the following:

- Sidewalks – 5-foot minimum width, 6-foot width or greater preferred
- Separate Use Paths – 10-foot minimum width, 12-foot width or greater preferred.
- Bicycle Lanes – 5-foot minimum width, 6.5-foot width recommended.
- Street Buffer – 2-foot minimum width, 6-foot width recommended. A 1-foot wide buffer may be acceptable in scenarios where there is a raised bicycle lane. Recommended width can also vary based on the type of barrier, for example pavement markings versus a physical barrier such as planter boxes or raised medians.

Cross-Section Elements Requirements and Guidance

Cross-Section Element	Design Standards/Guidance		Option that Utilizes Element
	Minimum	Recommended	
Sidewalk	Width – 5 feet	Width – 6 feet	Ideal & Option C
Separate Use Path	Width – 10 feet	Width – 12 feet or greater	Options A, B & C

<b>Bicycle Lane</b>	<b>Width – 5 feet</b>	<b>Width – 6.5 feet</b>	<b>Option C</b>
<b>Street Buffer</b>	<b>Width – 2 feet</b>	<b>Width – 6 feet</b>	<b>All Options</b>

**Recommendations**

All intersections should provide crosswalks and curb ramps that meet ADA standards on side roads.

All signalized intersections should provide at least one crosswalk across Route 1 in addition to crosswalks on side roads.

All crosswalk access at signalized intersections should be incorporated into the signal system and all curb ramps should meet ADA standards.

Any signal upgrades should include Accessible Pedestrian Signal systems and should meet or exceed modern best practices for pedestrian access.

Any new bicycle facilities should also be incorporated into each intersection and adequate guidance for bicycle flow through the intersection (including turning movements) should be provided.

Slip ramps at intersections should be eliminated wherever possible as the lack of control, tendency for high speed travel and the lack of adequate sight distance causes danger to pedestrian travel.

Pedestrian and Bicycle Improvements should be prioritized to coincide with Local Access Score and Potential for Everyday Bicycling high score areas to prioritize spending in areas with the highest potential for increasing bicycle and pedestrian transportation options.

Businesses/retail plazas along Route 1 should be encouraged to provide adequate access for bicycles and pedestrians and to provide bicycle parking.