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# **Route 9 Enhancement Study and Plan**

## **Inventory and Assessment of Existing Conditions**



DRAFT September 2015



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## Introduction

The main objective of this report is to provide information about existing conditions along the Route 9 corridor. The Existing Conditions report summarizes previous planning initiatives which have identified goals and concerns for the corridor. An overview of commuter rail and bus service, an analysis of recent crash data, and a discussion of pedestrian and bicycle activity are contained as well. The Existing Conditions report concludes with a synopsis of physical conditions that include right-of-way and travel lanes, medians, driveways and curbcuts, stormwater facilities, signage, pavement markings, lighting, landscaping, historic features, and guardrails. Indented to serve as a baseline of information, the Existing Conditions report is anticipated to allow informed judgments regarding future recommendations for the Route 9 corridor.

Traversing through twenty-eight cities and towns, Route 9 is an east-west state highway providing a direct connection between Boston and Worcester. Its eastern terminus is in Boston and its western terminus is in Pittsfield. Route 9 crosses through the middle of Wellesley for a total of 4.8 miles. The extent of Route 9 in Wellesley, a mature suburban community, is primarily residential with single- and multi-family homes but “bookended” by various types of office and retail land uses to the east and west. To the east, the concentrations of office and retail are primarily at the intersections of Route 9 with Route 16, Cedar Street, and I-95 (Route 128). The western side of Route 9, at the town boundary, is a continuation of the office and retail development which continues further west into Natick.

Route 9 is a component of Wellesley’s complex roadway network. Numerous abutter sites (residential, office, and retail) with driveways have direct access onto Route 9. The majority of these driveways are the only access points to these sites and allow right turn movements only. While many roads accessing Route 9 are local roads serving residential areas, there are several roadways of higher functional class that also intersect with or cross over this roadway. These roadways include:

- I-95 - Interstate
- Route 16/Washington Street - Urban Principal Arterial
- Weston Road, Kingsbury Street, and Cedar Street - Urban Minor Arterials
- Standish Road, Oakland Street, Cliff Road, and Oak Street - Urban Collectors

Route 9 in Wellesley is a divided highway with two travel lanes in each direction and 8- to 10- foot shoulders along most of its length. While Route 9 serves both as a major highway for commuters and non-local traffic, it is also a critical link for local travel needs. For many, Route 9 provides an alternate route to the MassPike and its tolls. Locally, Route 9 is perceived as separating, rather than integrating the Town.

## Previous Planning Initiatives

Over the years, several planning initiatives have been undertaken by the Town that encompass the Route 9 area. Below, in chronological order, is a summary of the key planning studies and site-specific plans which have identified concerns and goals for the corridor.

### Key Planning Studies

#### **Route 9 – Wellesley Reconstruction, Natick to I-95 (July 14, 2015) – Greenman-Pedersen, Inc.**

This technical memorandum prepared for MassDOT details enhancements along the Route 9 corridor including major project components. Kingsbury Street, Route 16 (Washington Street), and Westgate Road are identified as three critical intersections in need of additional upgrades and enhancements to improve safety and capacity.

#### **Route 9 Smart Growth Plan (2013)**

The MWRC and MAPC worked with Southborough, Framingham, Natick, and Wellesley on the *Route 9 Smart Growth Plan* that further develops the recommendations outlined in the [Route 9 Corridor Analysis](#) (2011). The *Route 9 Smart Growth Plan* includes alternative designs and land uses for several smart growth opportunity areas along with computer visualizations, traffic analysis, design guidelines and zoning recommendations. By advancing the recommendations of the *Route 9 Corridor Analysis*, the *Route 9 Smart Growth Plan* focuses on the potential for compact, mixed-use (housing, office, and commercial) developments that are pedestrian and bicycle friendly.

The *Route 9 Smart Growth Plan* developed the notion of creating denser Smart Growth Opportunity Areas that would be better served by public transportation and generate fewer automobile trips than current development patterns. Alternative designs and land uses for three Smart Growth Opportunity Areas are included along with, traffic analysis, design guidelines, and zoning recommendations.

#### **Open Space Residential Design (ORS) Study (2010-2013)**

The Town of Wellesley enacted a Natural Resources Protection (NRP) Development Bylaw following a study by Horsley Witten and Dodson Associates. The study used the Wellesley North 40 parcel and the St. James parcel among others to illustrate cluster-style development scenarios.

#### **Route 9 Corridor Analysis (2011)**

MAPC studied the potential for growth along the Route 9 Corridor between Route 128 and I-495, comparing two different development scenarios in order to better understand how land use changes could achieve growth but also mitigate traffic congestion along this section of Route 9.

The *Route 9 Corridor Analysis* determined that the current build-out potential could result in an 88 percent increase in the building square footage and a 41 percent increase in vehicular trips that would significantly exceed capacity and overwhelm Route 9. Alternatively, the projected Smart Growth build-out scenario would yield a 61 percent increase in commercial building square footage plus over 3,000 new housing units compared to existing conditions along Route 9 but only result in a 20 percent increase in vehicular trips. Under the current regulations, there is potential for redevelopment in Wellesley, but little potential for net new growth because the majority of the corridor is zoned for single-family residential development, and much of the existing commercial development is already built to or over the current zoning limit.

The *Route 9 Corridor Analysis* recommended that future development on Route 9 entail more mixed use (residential, commercial, retail, etc.) and compact walkable developments (e.g., parcel connectivity) as well as an improved pedestrian, transit, and bicycle friendly environment. Denser

areas of development along Route 9 have the potential to be better served by public transportation. As a result, fewer automobile trips would be generated as compared to growth using conventional development patterns.

#### [Wellesley Walks – A Comprehensive Pedestrian Program \(2009\)](#)

Commissioned by the Planning Board and authored by Nelson/Nygaard, this report details numerous short- and long-term goals and strategies for enhancing the pedestrian experience throughout Wellesley, with special attention given to commercial districts and areas around schools. Specifically, one of the stated objectives under Goal 8: Expand Community Access through All Forms of Transportation is to improve walking connections to transit and parking. Another strategy suggests a shuttle or trolley in commercial districts. No specific crash or traffic data were detailed, but input from the community noted that traffic and speeding drivers were barriers to creating a pedestrian-friendly environment.

This report has a very detailed listing of school access, sidewalk, and crossing needs throughout the town. Within the Route 9 corridor, specific problems listed are access to Wellesley Middle School and Sprague Elementary (due to “treacherous” Route 9 crossings); inconsistent sidewalks on Route 9; and problem crossings and intersections at Kingsbury Street, Oakland Street, Dearborn Street, and the interchange at Weston Road.

#### [Wellesley West Gateway Study \(2008\)](#)

Authored by Donna Jacobs of the MetroWest Growth Management Committee, this report examined how the commercial area at the town border with Natick could be redeveloped using various smart growth strategies including mixed-use zoning and traditional neighborhood development, based in part on community preferences expressed at two public forums. The report includes detailed photographic inventory of commercial properties on Route 9.

An issue discussed was the incidence of rear-end crashes within the study area, with the implication that bad driveways to businesses are causing queuing and leading to rear-end crashes. Additionally, based on feedback received at a public forum, the second-greatest concern was problematic Route 9 intersections, including Overbrook Drive, Weston Road and Oak Street.

#### [Final Comprehensive Plan \(2007-2017\) \(2007\)](#)

The Final Comprehensive Plan is Wellesley’s fourth Comprehensive Plan. Phase One was undertaken in 2004-2005 and Phase Two from 2005-2006. Part of the Phase One planning process was to develop goals and policies for all the plan elements, including some that were to be pursued in depth during Phase Two.

The Plan refers to Route 9 as a “critical high-volume/high hazard corridor that should be critiqued for improvements.” The Plan further states that improvement projects should separate pedestrian and bicycle traffic from peak hour traffic congestion, indicates the need to improve traffic safety and correct hazardous locations, and supports strengthening public transit.

#### [Cedar Street Land Use and Neighborhood Design Plan \(2001\)](#)

This report was commissioned by the Planning Board and authored by The Cecil Group with Abend Associates, building on a Phase I report from 1999. One of the goals of the report is to help foster neighborhood character and identity at several intersections along the length of Cedar Street. While the report addresses the length of Cedar Street Corridor, particular attention is given to the Cedar Street/Route 9 interchange and the notion of a “Cedar Center” using adjacent redevelopment parcels.

Much attention is given to land use and zoning changes to promote neighborhood nodes with character. Associated with that, some emphasis is also given to streetscape design for sections of the corridor. Particular focus was given to various reconfigurations of the Cedar Street/Route 9 intersection, which has subsequently been reconfigured, based on a configuration other than the expressed preference.

Crash and traffic data were not specifically addressed, but notions of traffic calming, improving the pedestrian and bicycling experience and improved signalization are incorporated within. Additionally, the report notes that existing bus routes do not stop at the Cedar/Route 9 intersection and existing bus shelters need upgrading, on both the eastbound and westbound sides.

#### [Route 9 Corridor Study in Wellesley, CTPS \(July 2001\)](#)

This study evaluated the intersections and interchanges along Route 9 in Wellesley and provided development improvement options for addressing congestion, safety, and accessibility problems in the corridor. This study aims to present sufficient information about conditions along the Route 9 corridor to allow informed judgments about the most desirable strategies to advance. Such strategies may become future projects, to be designed and implemented by MassHighway, the town, and/or others. The key intersections identified are Overbrook Drive, Weston Road, Oak and Westgate Road, Kingsbury Street, Grantland Road, Oakland Street, Cedar Street, and William Street.

#### **Route 9 Corridor Planning Study – Short-Range Element (1986) – Central Transportation Planning Staff**

This report analyzed levels of use in the Route 9 corridor at the time and identified short-range solution projects such as pavement re-striping, signal retiming/phasing, and purchasing of new equipment. The report identified the following intersections with existing traffic problems: Route 128, Cedar Street, Emerson Road, Oakland Road, Route 16, Worcester Street, Cliff Road, Westgate Road, Weston Road, and Overbrook Drive.

#### **Site-Specific Plans**

Below are summaries of ongoing site-specific projects along the Route 9 corridor. Of note, these projects are all concentrated to the west on the south side of Route 9.

#### [900 Worcester Street Committee/St. James Church Site](#)

There has been a lot of attention given to this location in recent years, which is currently owned by the Town. The former St. James the Great Church stood on the site until its demolition in September 2015. In May 2010, Concord Square Planning and Development issued the “Saint James the Great Alternative Land Use Study” which analyzed recreation, residential, and retail/office redevelopment scenarios. In July 2015, ColnsultEcon, Inc. and Isaac Sports Group issued a “Wellesley Aquatic Facility - Final Report” on a proposed aquatic facility for the site. The Town has issued a Request for Proposal seeking private development of the site for a recent facility.

#### [978 Worcester Road – Former Wellesley Travel Inn Site](#)

In 2008, the Design Review Board reviewed a proposed two-story 24,000 square foot commercial structure and a 36-unit residential unit development at the site of the former Wellesley Travel Inn. The commercial structure has been developed along Route 9, and the residential component appears to be under construction behind that site.

#### [Wellesley North 40 Parcel](#)

In December 2014, the town completed the purchase of this site just south of Route 9 west of Weston Road, formerly owned by Wellesley College. At least half of the 46 acres will remain open space. The town had established a North 40 Visioning Committee to evaluate the potential acquisition of the site. The Wellesley Comprehensive Plan envisions cluster overlay zoning at this site, but the Town has committed to conducting a complete planning evaluation for the property before determining its future use.

## Public Transportation

Commuter rail and bus service in Wellesley provides both regional and local access. The following is a detailed description of the Framingham/Worcester commuter rail and MetroWest Regional Transit Authority bus service provided in Wellesley along and proximate to Route 9.

### **Framingham/Worcester Commuter Rail**

Wellesley has MBTA commuter rail service at three rail stations on the Worcester/Framingham Line. The stations, which serve both commuters from Wellesley and surrounding communities, are located at Wellesley Square, Wellesley Hills and Wellesley Farms and are all proximate to Route 9. At approximately 820 feet away, Wellesley Hills is the closest to Route 9 while Wellesley Square and Wellesley Farms are both slightly more than three-quarters of a mile from the highway. In 2012, there were a combined 2,010 daily inbound and outbound trips at all three stations on one weekday. At 978 riders, Wellesley Square has the highest ridership. Wellesley Hills and Wellesley Farms have similar ridership levels with 519 and 513 daily riders respectively.

Of the commuter rail lines in the Boston metro area, the Framingham/Worcester has the third most frequent ridership at approximately 12,790 riders. The three stations in Wellesley comprise an estimated 16 percent of the total daily ridership on the Worcester/Framingham line<sup>1</sup>. On weekdays, 20 inbound trips depart from the three Wellesley Stations to South Station, Boston. There are 19 outbound trips departing from the three Wellesley Stations. Of the 19 outbound departures, 16 have final station stops in Worcester and three are in Framingham. Each station is served by 9 inbound and outbound trips on Saturday and Sunday. The train takes between 30 to 40 minutes to travel from the three Wellesley Stations to Boston and between 60 to 80 minutes to reach Worcester. The MBTA commuter rail schedule for the Framingham/Worcester Line is attached as Appendix A.

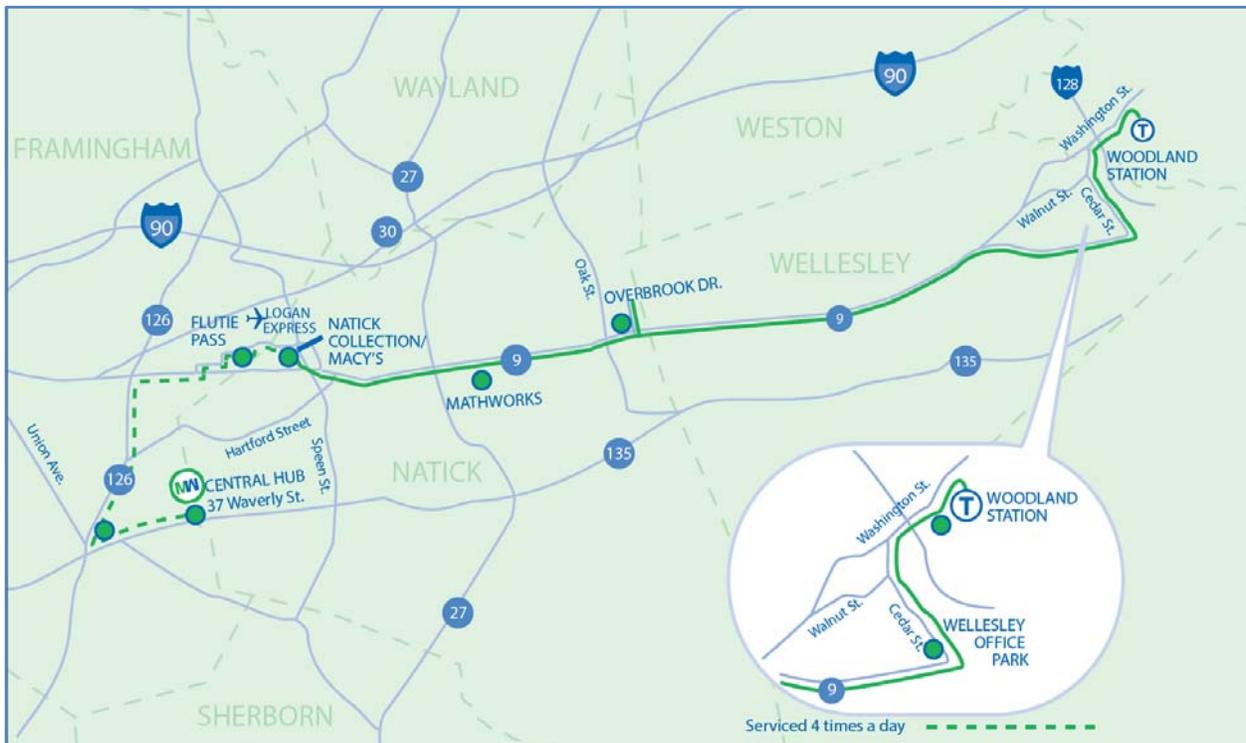
### **MWRTA (MetroWest Regional Transit Authority) Bus Service**

With the intent to give riders more transfer options as well as frequent and continuous service, MWRTA's Bus Route 1 (Woodland Shuttle) was recently restructured. Since June 2014, MWRTA's Bus Route 1 traverses Route 9 from the Natick Mall to the Woodland MBTA Station on the Green Line D Branch in Newton. Running Monday through Friday, this bus route has scheduled station stops at the 9/27 Plaza, Math Works, Overbrook Drive, Mass Bay Community College, and Cedar Street. The first Route 1 departure is at 5:30am and the last departure is at 8:32pm. There are 32 daily westbound and eastbound trips along the Route 9 corridor with frequent headways throughout the day. A map of MWRTA Bus Route 1 is shown in Figure 1 and the Bus Route 1 schedule is attached as Appendix B.

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<sup>1</sup> MBTA Framingham/Worcester Line – Weekday Boardings, Alightings, and Loads by Train and Station, CTPS Commuter Rail Passenger Counts, Winter/Spring 2012.

**Figure 1: MWRTA Bus Route 1 (Woodland Shuttle)**



Source: MWRTA

Since the restructuring of Route 1, ridership has been strong. Approximately 37,000 boardings occurred between September 2014-August 2015 and monthly ridership trends are steadily increasing. It is interesting to note that significantly more passengers (65 percent) board the Route 1 shuttle traveling eastbound; a strong indication that many passengers are accessing employment areas along the Route 9 corridor and Woodland Station.

MWRTA Bus Route 8 (Wellesley Line), which started service in November 2013, runs Monday through Friday and provides access to Wellesley Square, Wellesley Hills, and Woodland MBTA Station. Bus Route 8 crosses Route 9 and accesses Weston Road/Manor Avenue north of Route 9 eight times daily Monday through Friday. This Bus Route 8 primarily serves as a commuter route in the morning and evening and a local route during the midday. In 2014, Route 8 had 8,162 riders. There were 300 boardings and alightings at Weston Road/Manor Avenue in August 2015, an increase from 239 in August 2014.

The MWRTA operates as a 'Flag Down' system where buses can be accessed either at designated stops or waved down anywhere on its route. Fares are reduced if riders use Charlie Cards instead of cash. For example, the cost for a single adult ride is \$1.10 with a Charlie Card and \$1.50 if cash is used. Almost 90 percent of the riders on MWRTA Bus Route 1 use Charlie Cards. Although the MWRTA offers transfer coupons, transfers are good within the MWRTA system only and are not compatible within the MBTA system.



MWRTA BUS

Source: [employmentoptions.org](http://employmentoptions.org)

In spite of high ridership, there are no clearly signed transit stops, designated pull-offs, or shelters along the Route 9 corridor to service Bus Route 1. While the image below is an example of a well-proportioned and maintained sidewalk with a bench, there is room for improvement. The signage is that of a mile marker, not indicating Bus Route 1 and the bench is not weather-protected.



*Bus waiting area with room for enhancements east of Weston Road on Route 9 eastbound.*

Bus shelters were observed along the corridor but it was unclear as to whether they were still active as shown in the images below:

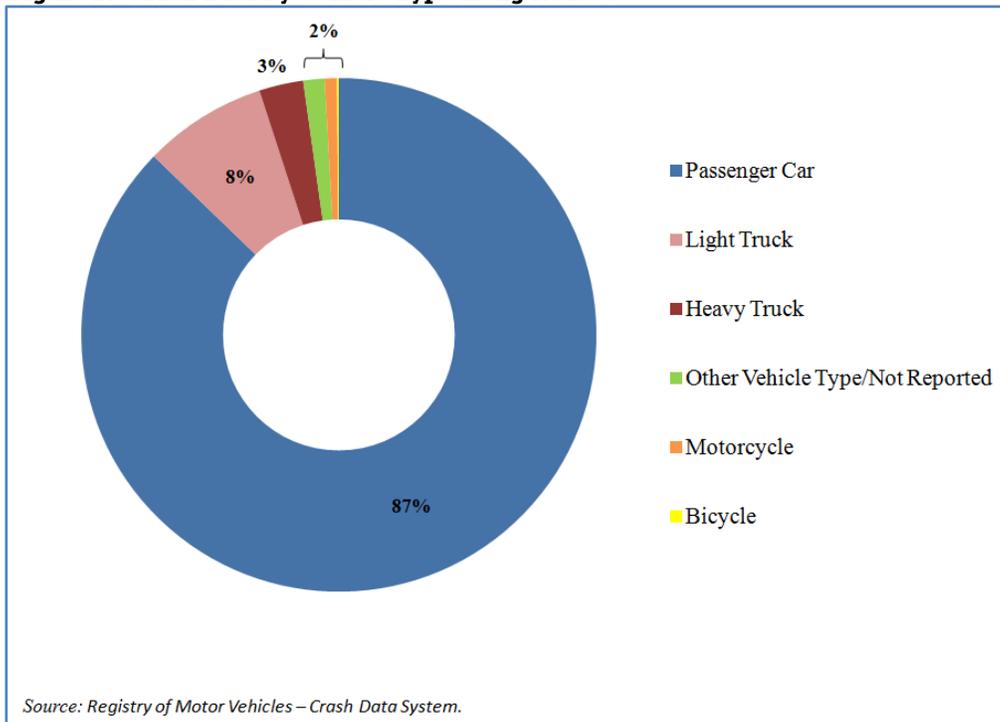


*Former bus shelters on Route 9 eastbound at Cedar Street (left) and east of Weston Road (right).*

## Crash Data

Route 9 is a high volume corridor with a significant number of crashes. For the three years between 2011 and 2013<sup>2</sup>, there were 901 reported crashes along Route 9 in Wellesley. As shown in Figure 2, of these crashes, 786 or 87 percent were passenger cars and 11 percent involved trucks. During this three year period, there were no reported crashes involving pedestrians and one crash involved a bicycle at Kingsbury Street. There were two fatalities at Route 9 and Route 16. One fatality involved a passenger car and the other a motorcyclist. Both fatalities were crashes with fixed objects (e.g., median barrier) not other vehicles.

**Figure 2: Crash Data by Vehicle Type along Route 9**



Overall, the pattern of truck crashes is consistent with that of vehicular crashes. The majority of truck crashes occurred at the I-95 interchange, followed by Kingsbury Street, Weston Road, and Route 16. Of the truck crashes, 74 and 26 percent were light and heavy trucks respectively<sup>3</sup>.

The total number of crashes along the Route 9 corridor has remained relatively consistent. According to Wellesley's Comprehensive Plan Update (2007-2017), there were 883 crashes during the three-year period from 2002-2004. CTPS' Route 9 Corridor Study in Wellesley (2001) reported there were 954 crashes between 1994 through 1996.

As depicted in Figure 3 and the Crash Data maps in Appendix C, the highest concentration of crashes along the Route 9 corridor are at the I-95 interchange, Route 16, Kingsbury Street, Weston Road,

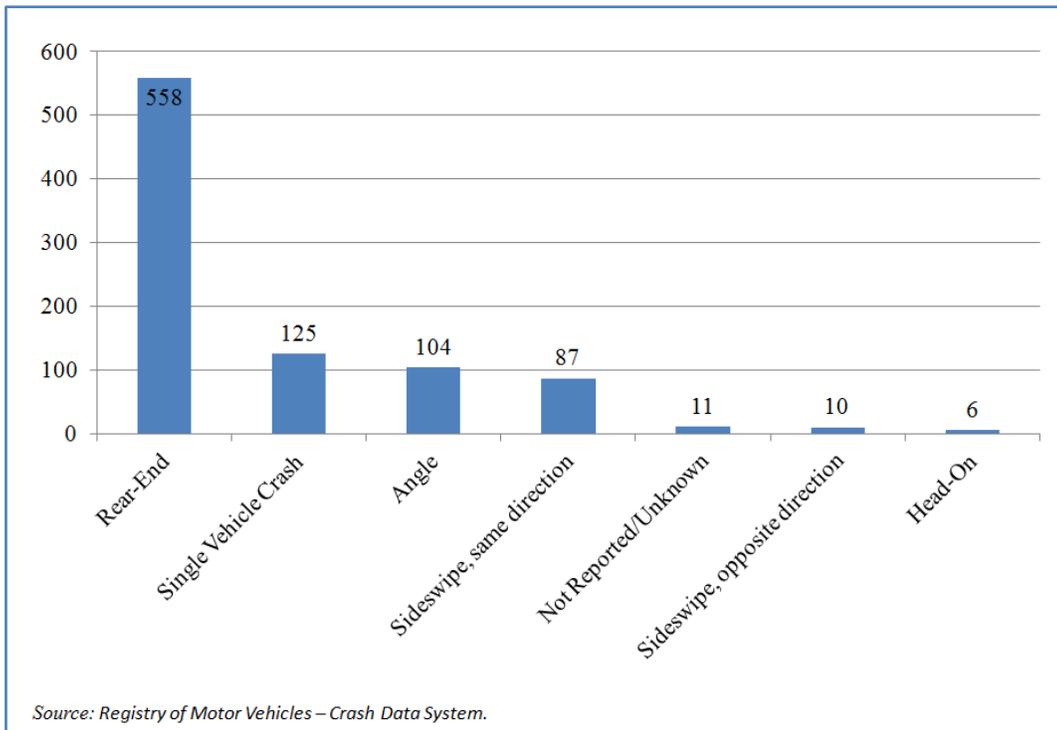
<sup>2</sup> The three most recent years of available data from the Registry of Motor Vehicles. The data represents a comprehensive source of information on reported crashes.

<sup>3</sup> Light truck - van, mini-van, panel, or pickup sport utility with only four tires.  
Heavy truck - single-unit truck with 2 or more axels or a tractor-trailer.

and Overbrook Drive. Of the total number of crashes, 62 percent or 558 were rear-end. Of the rear end crashes in which both vehicles were traveling in one direction, 56 percent were traveling eastbound and 44 percent were traveling westbound. Locations characterized by rear-end collisions are strong indicators that there may be a need for improved sight lines and advanced warning of signals. Crashes can also be indicators of poor signage and roadway geometry.

The next most frequent crash types are single vehicle followed by angle crashes at 14 and 12 percent respectively. Locations where angle-type collisions are recurrent may indicate poor sight distances, need for improved signal timings, or exclusive turning phases. Table 1 contains the full crash profile of the 901 crashes along Route 9 for the three year period between 2011 and 2013. An interesting observation is that the majority (54 percent) of all crashes that occurred along Route 9 were during the weekday and times other than the morning peak (7-9am) or evening peak (4-6pm).

**Figure 3: Types of Crashes along Route 9**



**Table 1: Profile of Crash Data between 2011-2013**

	2011	2012	2013	Total	Annual Average
<b>Collision Type</b>					
Angle	24	36	44	104	35
Head-On	1	2	3	6	2
Rear-End	177	192	189	558	186
Sideswipe, opposite direction	4	5	1	10	3
Sideswipe, same direction	25	23	39	87	29
Single Vehicle Crash	35	49	41	125	42
Not Reported/Unknown	5	5	1	11	4
TOTAL	271	312	318	901	300
<b>Crash Severity</b>					
Fatal Injury	0	1 <sup>a</sup>	1 <sup>b</sup>	2	1
Non-Fatal Injury	56	57	62	175	58
Property Damage Only (none injured)	209	243	251	703	234
Not Reported/Unknown	6	11	4	21	7
<b>Time of Day</b>					
Weekday, 7:00AM-9:00AM	42	49	44	135	45
Weekday, 4:00PM-6:00PM	38	48	49	135	45
Saturday, 11:00AM-2:00PM	11	6	8	25	8
Weekday, Other Time	142	172	173	487	162
Weekend, Other Time	38	37	44	119	40
<b>Pavement Conditions</b>					
Dry	200	249	260	709	236
Wet	51	49	45	145	48
Snow	16	10	11	37	12
Ice	2	2	2	6	2
Other	2	2	0	4	1
<b>Lighting Conditions</b>					
Daylight	222	256	255	733	244
Dawn/Dusk	6	10	10	26	9
Dark-Lighted Roadway	35	39	42	116	39
Dark-Roadway Not Lighted	7	7	11	25	8
Not Recorded	1	0	0	1	0
<b>Non Motorist</b>					
Bicyclist	1	0	0	1	0
Pedestrian	0	0	0	0	0

<sup>a</sup> 2012 fatality was a motorcycle crash with a median barrier.

<sup>b</sup> 2013 fatality was a single vehicle crash with a fixed object (wall, building, tunnel, etc.).

Source: Registry of Motor Vehicles – Crash Data System.

## East of Cliff Road – Top High Crash Intersection Location

For the past several years, Route 9 east of Cliff Road has met the criteria of MassDOT’s “Top High Crash Intersection Locations.” MassDOT’s “Top High Crash Intersection Locations” are based on a clustering of crashes that have been submitted to the statewide crash system at the Registry of Motor Vehicles and are located to a geographical point for all vehicle types. These crashes have been ranked based on the weighting of the number and severity of crashes. Rankings are based on 200 intersection locations throughout the Commonwealth and include all vehicle types. Crash Intersection Locations do not include roadways with grade separations (interchanges), ramps, or rotaries. Table 2 outlines the details of how Route 9 East of Cliff Road has ranked as a “Top High Crash Intersection Location” from 2008 to 2012 with regard to crashes and injuries.

**Table 2: Top High Crash Intersection Location – East of Cliff Road**

Location	2008-2010	2009-2011	2010-2012
East of Cliff Road	Rank 38 with 111 Crashes (10 injuries)	Rank 25 with 116 Crashes (11 injuries)	Rank 39 with 95 Crashes (11 injuries)

Source: MassDOT’s interactive website, Top Crash Locations.

<http://services.massdot.state.ma.us/maptemplate/TopCrashLocations/>

## Highway Safety Improvement Program (HSIP) Clusters

Table 3 summarizes the number of clusters and crashes along the Route 9 Corridor. Unlike the Top High Crash Intersection Location Table, HSIP Clusters do include roadways with grade separations (interchanges), ramps, or rotaries. The locations with the highest number of crashes are east of Cliff Road, east of Oakland Street, and at the I-95 Interchange.

**Table 3: Highway Safety Improvement Program (HSIP) Clusters**

Location	2008-2010	2009-2011	2010-2012
Between Byron Road and Overbrook Drive	64 crashes in 2 area clusters (12 injuries & 1 fatality)		
At Overbrook Drive		32 crashes in 1 area cluster (3 injuries & 1 fatality)	37 crashes in 1 area cluster (8 injuries & 1 fatality)
East of Weston Road		36 crashes in 1 area cluster (6 injuries)	33 crashes in 1 area cluster (6 injuries)
At Oak Street	29 crashes in 1 area cluster (13 injuries)	25 crashes in 1 area cluster (9 injuries)	
At Kingsbury Street	39 crashes in 1 area cluster (3 injuries)	31 crashes in 1 area cluster (6 injuries)	35 crashes in 1 area cluster (10 injuries)
At Audubon Road		23 crashes in 1 area cluster (5 injuries)	26 crashes in 1 area cluster (8 injuries)
East of Cliff Road	111 crashes in 1 area cluster (10 injuries)	116 crashes in 1 area cluster (11 injuries)	95 crashes in 1 area cluster (11 injuries)
East of Oakland Street		32 crashes in 1 area cluster (4 injuries)	69 crashes in 2 area clusters (7 injuries)
At Route 16 (Washington Street) Intersection	57 crashes in 1 area cluster (16 injuries)		
At Cedar Street			19 crashes in 1 area cluster (6 injuries)
East of I-95 Interchange	67 crashes in 1 area cluster (13 injuries)	53 crashes in 1 area cluster (9 injuries)	69 crashes in 2 area clusters (7 injuries)
At I-95 Interchange	171 crashes in 1 area cluster (45 injuries & 1 fatality)	144 crashes in 1 area cluster (44 injuries)	150 crashes in 2 area clusters (41 injuries)

A Highway Safety Improvement Program (HSIP) eligible cluster is one in which the total number of "equivalent property damage only" (EPDO) crashes in the cluster is within the top 5 percent of all clusters of each Regional Planning Agency in the Commonwealth. EPDO is a method of combining the number of crashes with the severity of crashes based on a weighted scale. HSIP clusters are used to identify safety projects by a data-driven process and are determined by grouping crashes within a 25 meter (82 ft.) fixed search distance around each crash.

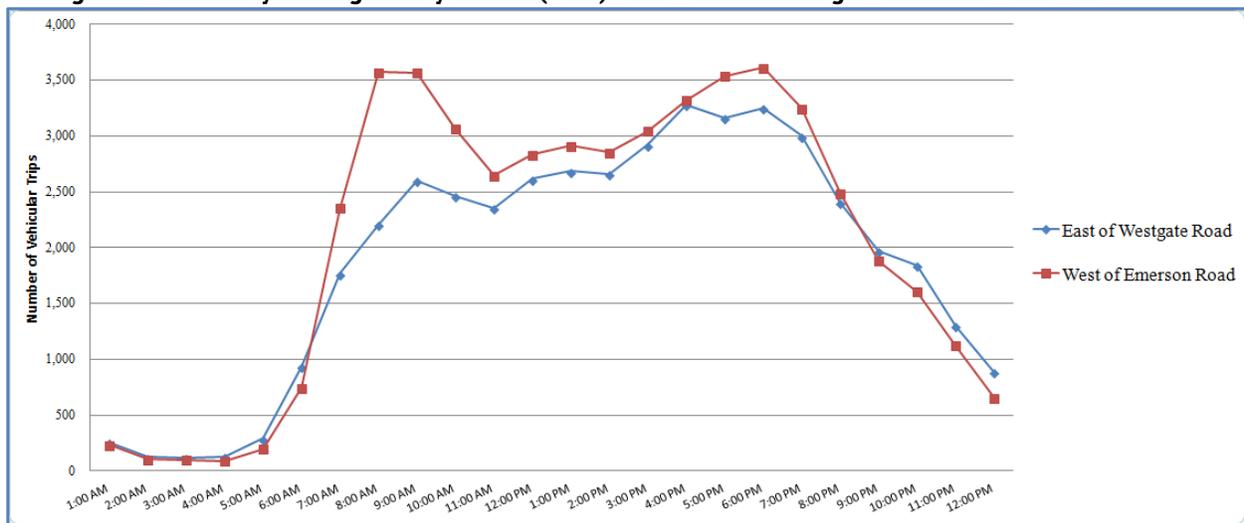
Source: MassDOT's interactive website, *Top Crash Locations*.  
<http://services.massdot.state.ma.us/maptemplate/TopCrashLocations/>

## Traffic Count Data

Automatic Traffic Recorder (ATR) counts were collected by hour and direction of travel by Greenman-Pedersen, Inc. (GPI) in October 2013 at Route 9 east of Westgate Road and west of Emerson Road. The Average Daily Traffic (ADT) for Route 9 east of Westgate Road is 41,600 and 45,800 at Route 9 west of Emerson Road. ADT is a measurement of the daily number of vehicles on a specific point along a roadway in both directions. This measurement indicates how busy a specific location along a roadway is. Both ADT counts show that Route 9 has high volumes of traffic.

ADT at Emerson Road was significantly higher during the morning peak period at slightly over 3,500 trips compared to approximately 2,500 for the ADT collected east of Westgate Road. Vehicular trips during the evening peak period are closer for both count locations, with ADT ranging between 3,250 to slightly over 3,500. It is interesting to note that the evening peak traffic period is not as sharp compared to the morning peak traffic period for both traffic count locations. While the amount of eastbound and westbound traffic along Route 9 west of Emerson Road was relatively even in both directions, Route 9 east of Westgate Road recorded about 10 percent more trips traveling westbound. Figure 4 shows the pattern of the weekday ADT at these two intersections over a 24-hour period.

**Figure 4: Weekday Average Daily Traffic (ADT) for Route 9 at Westgate Road and Emerson Road**



Source: Data collected by Greenman-Pedersen, Inc. in October 2013 and provided by MassDOT.

## Level of Service (LOS)

Level-of-service (LOS) is the term used to denote the different operating conditions that occur on a specific roadway segment or intersection. It is a qualitative measure of the effect of a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. LOS serves as an index to the operational qualities of a roadway segment or intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

According to LOS analysis conducted at Route 9 at Kingsbury Street and at Route 16 (Washington Street), the Route 9 corridor fluctuates in free flow to approaching unstable flow throughout the day. Table 4 depicts the fluctuating LOS.

**Table 4: Level of Service Summary – Route 9 at Kingsbury Street and Route 9 at Route 16**

### Route 9 at Kingsbury Street

Approach	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Route 9 EB	C	B	C
Route 9 WB	B	B	B
Kingsbury Street NB	D	D	D
<b>Overall</b>	<b>C</b>	<b>B</b>	<b>B</b>

### Route 9 at Route 16 (Washington Street)

Approach	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Route 9 EB	D	B	C
Route 9 WB	A	A	D
Washington St NB	B	D	C
Municipal/Fire SB	B	B	B
<b>Overall</b>	<b>C</b>	<b>A</b>	<b>D</b>

Source: Greenman-Pedersen, Inc. Technical Memorandum to MassDOT re Route 9 – Wellesley Reconstruction – Natick to I-95, July 14, 2015.

## Speed Limits

Special Speed Regulation No. 7480, dated June 11, 1990, applies to the section of Route 9 from Brookline to Framingham which includes Wellesley. In Wellesley, the designated speed limit is either 40MPH or 50MPH depending on the section of roadway. Chapter 90, Section 18 of the Massachusetts General Laws (MGL) requires posted speed limits to be established through the issuance of special speed regulations.

## Pedestrians and Bicycle Activity

During the three year period for which crash data was collected, there was only one recorded crash involving a bicyclist and none involving pedestrians. Consistent with the crash profile for pedestrians and bicyclists, the Route 9 corridor has a low level of pedestrian and bicycle activity. Accordingly, pedestrian and bicycle data collected for intersections in October 2013 recorded low counts for pedestrians and bicyclists during the morning and evening peak periods as well as during the day Saturday. As shown in Table 5, with 36 counts, the Kingsbury Street intersection had the most pedestrian activity during the weekday morning peak and during the day Saturday. The intersection of Route 9 and Municipal Way had the second highest level of pedestrian counts.

**Table 5: Pedestrian and Bicycle Activity at Key Intersections along Route 9**

	Weekday AM Peak (7am-9am)		Weekday PM Peak (4pm-6am)		Saturday (10am-2pm)	
	Pedestrians	Bicyclists	Pedestrians	Bicyclists	Pedestrians	Bicyclists
Westgate Road and Oak Street	2	7	0	17	9	3
Kingsbury Street	36	0	3	1	36	4
Weston Road <sup>a</sup>	5	3	2	2	5	7
Route 9 @ Fire Station/Municipal Way	1	0	6	15	8	1
Route 9 @ Municipal Way & Washington Street <sup>b</sup>	17	6	19	5	18	3

Counts are for intersections at all approaches.

<sup>a</sup> includes Cleveland Road and Route 9 WB on/off ramp

<sup>b</sup> includes Municipal Way at Washington Street to WB Ramp

Source: Data collected by Greenman-Pedersen, Inc. in October 2013 and provided by MassDOT.

## Access

Inconsistent signage and striping along the Route 9 corridor does not promote bicycle and pedestrian use. Since there are minimal designated pedestrian and bicycle crossings, Route 9 acts as more of a barrier than a conduit facilitating these transportation modes.

## Wellesley Trails Network

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As shown in Appendix D, Transportation Facilities Map, Crosstown Trail and the Charles River Path are two trails in Wellesley's Trails network that traverse Route 9 and connect to open space destinations in Wellesley. Running east-west through Wellesley, the Crosstown Trail, starts at the Wellesley/Natick town line to the west, accesses the Morses Pond Area, and follows the Cochituate Aqueduct. The Crosstown Trail traverses Route 9 west of Ottaway Circle. Further to the east, the Crosstown Trail crosses over Route 9 on Washington Street and ends at the Charles River Reservation at the Wellesley/Newton town Line. However, the Cochituate Aqueduct continues east through Newton and terminates at the Chestnut Hill Reservoir in Brookline. Running north-south, the Charles River Path provides access to the banks of the Charles River and the Town Forest. From the Town Forest, the Charles River Path accesses Route 9 east of Hastings Street and runs along Route 9 for a short distance until reaching Worcester Street frontage road. After a short length, the Charles River Path then crosses over Route 9 at Cedar Street before continuing north. Both the Charlestown Trail and the Charles River Path are part of the Charles River Link, a 16-mile regional trail system. The Charles River Link provides a connection between the Bay Circuit Trail in Medfield and downtown Boston.

## Key Intersections

Table 6 summarizes Route 9 intersections that were identified by either previous studies or feedback from the Stakeholders Group as deficient or problematic.

**Table 6: Key Intersections along the Route 9 Corridor**

Route 9 Intersection (EB)	Issues/Opportunities
Overbrook Drive	Queuing to/from Oak Street in Natick.
900 Worcester Street	Old traffic signal and signage for former church site access; median break; redevelopment of site as a recreation facility is in process.
Weston Road	Modernize interchange; improve pedestrian access to Hardy School.
Oak Street/Westgate Road	Need protected lefts; median break issues; confusing signage.
Kingsbury Street	Improved signalization needed; Wellesley Middle School is nearby; concerns about student safety.
Audubon Road	Safety issues with nearby U-Turn.
Cliff Road	There have been recent observations of an increase in truck turning movements from Cliff Road southbound to Route 9 westbound "running afoul of the signs and bridge parapet." (GPI meeting minutes 1/21/14)
Rt. 16/Washington Street	Traffic queuing; overall pedestrian access, roadways are at different grades; roadway flooding.
Grantland Road	Complex and confusing roadway geometry and merging; vegetation affecting visibility.
Oakland Street	Speeding; Signalization; potential redevelopment of Mass Bay Community College property.
Cedar Street	Narrow sidewalks limit pedestrian access; short acceleration lanes.
Sun Life/ Harvard Pilgrim Driveways	Business campus with high concentration of jobs with separate single driveway entry north and south of Route 9. Dearborn Street on eastbound side of Route 9 before driveways is affected.
Route I-95/128	Construction related to MassDOT Add-a-Lane project (ID number 603711) that includes upgrading interchange at Route 9 and replacing/rehabbing bridge at I-95 over Route 9.
William Street	Business campus (Wellesley Office Park) with high concentration of jobs with single roadway entry/exit.

## Physical Conditions

In order to begin assessing the physical characteristics within the corridor, the project team conducted a field survey on August 6, 2015 at selected locations along the Route 9 corridor. While by no means a complete or exhaustive inventory, the following descriptions and photographs are meant to be representative of the key issues found in multiple locations throughout the corridor. This section identifies the following characteristics: Right-of-Way and Travel Lanes, Medians, Driveways and Curbcuts, Stormwater Facilities, Signage, Pavement Markings, Lighting, Landscaping, Historic Features, and Guardrails.

### Right-of-Way and Travel Lanes

Route 9 in Wellesley has two travel lanes in each direction, with 8- to 10-foot shoulders along most of its length. It operates as a divided highway, with median guardrail-type barriers along its entire length except for a short section at Kingsbury Street where a grass median is provided (former carriage road).

Openings in the median occur at intervals to allow left turns and U-turns. At the locations where these median breaks occur and at signalized intersections where turns are permitted, additional turning lanes are provided. The longest span without opportunities to make left turns or U-turns occurs between Rt. 16 and Cedar Street (almost 1.5 miles in the eastbound direction). The second-longest segment occurs between Kingsbury Street and Grantland Road (about 0.8 miles in the eastbound direction).

Although Route 9 in Wellesley is a divided highway, it is not a limited access highway. Many abutter sites, both office/commercial and residential, have driveways with direct access on to Route 9, which in many cases is the only access available for these sites (although most of these allow right turns only).

Additionally, there are sidewalks through some of the corridor, although not all. Repair and maintenance of current sidewalk facilities is uneven and maintenance responsibility is unclear in many locations.



*Examples of narrow sidewalks with significant vegetative overgrowth east of Cedar Street (left) and east of Audubon Road (right) on Route 9 westbound.*



*Narrow sidewalk adjacent to fence in state of disrepair.*



*Discontinued sidewalk on north side of Route 9 looking east near Cedar Street (left) and no sidewalk on south side of Route 9 west of the Oak Street intersection (right).*

## Medians

Route 9 operates as a divided highway with median guardrails along its entire length with the exception of a short section at Kingsbury Street, where there is a grass median. Openings along Route 9 medians occur at intervals, to allow left turns and U-turns. Additional turning lanes are provided at locations where there are median barrier breaks and at most signalized intersections where turns are permitted.

The longest interval without opportunities to make left turns or U-turns occurs in the eastbound direction is between Route 16 and Cedar Street, a distance of almost 1.5 miles. The second-longest segment occurs between Kingsbury Street and Grantland Road, also in the eastbound direction, a distance of about 0.8 miles. Table 7 outlines the distances between successive opportunities to cross Route 9 medians.

**Table 7: Distances between Successive Opportunities to Cross Route 9 Medians**

Cross Street	Distance between Opportunities (feet)	Left Turn or U-Turn Possible?	
		Eastbound Direction	Westbound Direction
Oak Street (Natick)	1,750	Yes	Yes
Overbrook Drive	1,660	Yes	Yes
St. James' Church	1,570	---	Yes
Weston Road	3,030	Yes	Yes
Oak/Westgate Street	2,230	Yes	Yes
WB to EB U-turn/Kingsbury Street	870	---	Yes
EB to WB U-turn/Kingsbury Street	3,810	Yes	---
Cliff Road	490	---	---
Route 16/Fire Station	1,460	Yes	---
Grantland Road/WB off	730	---	Yes
Oakland Street	5,450	---	---
Cedar Street	2,180	Yes	Yes
Harvard Pilgrim	3,200	Yes	Yes
Chestnut Street (Newton)		Yes	Yes

Source: Route 9 Corridor Study in Wellesley, Table 2-9



*Example of break in median encouraging unsafe crossings for pedestrians and bicyclists across Route 9 east of Cedar Street.*

### Route 9 and Kingsbury Street

There are median U-turn openings east and west of the Kingsbury Street intersection and a pedestrian refuge area within the median. As there is no median break for vehicles at Kingsbury Street, they are required to turn right to access Route 9 and travel eastbound.

The Wellesley Middle School is located on Kingsbury Street south of the intersection and is a frequent destination for vehicles, pedestrians, and bicyclists. As discussed earlier, this intersection has the highest number of walking and bicycling counts along the Route 9 corridor and has a high number of accidents. It can be surmised that the majority of pedestrians and bicyclists are school-age. There should be particular attention to making this intersection safe for the use of all modes of travel.



Source: Google Street View



Source: Wellesley Historical Commission

*Intersection of Route 9 and Kingsbury Street (northbound from Kingsbury Street) (left) and median east of Kingsbury Street (right).*

## Driveways and Curbcuts

There are numerous driveways and curbcuts providing access to abutting residential homes, retail establishments, office buildings, and gas stations along the Route 9 corridor. For many, these are the only access points to the sites and allow right turn movements only. However, many of the driveways and curbcuts do not clearly distinguish between the sidewalk and the roadway. This characteristic especially pertains to the retail and office uses on the east and west sides of the corridor. Inadequately designed driveways and curbcuts promote unsafe vehicular access, pedestrian, and bicycle access and crossings, and can contribute to poor drainage.



*Example of a curbcut not providing access to a driveway or a street north side of Route 9 west of Oakland Street.*



*Source: Google Street View*

*Example of unclear distinction between curbcut, sidewalk, and site on north side of Route 9 near Overbrook Drive.*

## Stormwater Facilities

According to a map from the 2011 Open Space and Recreation Plan, Route 9 crosses through a number of watershed drainage basins including: Waban Brook Basin, Fuller Brook Basin, Cold Stream Brook Basin, Rosemary Brook Basin, Charles River-East Basin, and Hurd Brook Basin.

According to the Wellesley Comprehensive Plan, non-point source pollution from stormwater runoff is the greatest threat to water quality in Wellesley. In particular, ponds, wells and vernal ponds are threatened by stormwater runoff and require additional management. Much of Route 9 is located within a Water Supply Protection District. Sensitive wetlands or waterways within or adjacent to the Route 9 Corridor include Morse's Pond, Boulder Brook, as well as the Town Forest.

A number of areas along Route 9 are susceptible to roadway flooding due to inadequate culverts or other issues. Areas identified by Stakeholders and existing reports include:

- Culvert at Overbrook Drive and Russell Road
- Dale Street
- Boulder Brook Culvert
- 900 Worcester Street (undersized culvert) leads to flooding on road and former church property
- Mansfield Road
- Sprague Road
- Kirkland Circle/Shaw Road
- Route 16 Intersection (ramps and roadway)



*Cold Stream Brook Sanctuary at Oak Street.*



*The following partially blocked storm drains were also observed during the team's field visit.*

## Signage

There does not seem to be a cohesive signage program throughout the corridor, whether with local street signs, traffic control signs, or highway directional signs. Signage in many places along the corridor is confusing or inadequate. Additionally, signage in many places does not include information about key destinations in Wellesley such as commuter rail stations, Town Forest, Linden Square or Wellesley Square. There is no overall branding of signage to reinforce placemaking.

Note: Inventory was requested from the Town to begin determining what signs are within their purview and which ones may be under MassDOT's jurisdiction.



*Signage conveying confusing and unclear messages at Maple Street and Route 9 (left) and Oak Street and Route 9 (right).*



*A common occurrence is signage obscured by vegetation, such as this sign located near the Route 16 intersection.*



*Outdated directional sign east of Cedar Street.*



*Long-term 'temporary' signage informing drivers of access to Route 16 from Route 9.*



*Signage directing drivers to locations outside of Wellesley as opposed to destinations within the Town.*



*Exceptional example of branding/wayfinding signage in Wellesley Hills.*



*Source: Google Street View*

*Outdated signage informing drivers of nonexistent traffic signal on Route 9 eastbound east of the former St. James Church. Note mast arm with no traffic signals. The same condition was observed across the street on Route 9 westbound.*

## Pavement Markings

Pavement markings are generally visible throughout the length of the corridor although there are some areas that have been recently paved or patched and have more distinctly visible markings.

It should be noted that MassDOT is planning a roadway resurfacing project (ID number 608180) for the entire span of Route 9 in Wellesley. Using NHS (National Highway System) funds, this project will focus on pavement resurfacing only (also referred to as curb-to-curb). It is anticipated that the project will be advertised in October 2015 and pavement resurfacing work is expected to commence approximately 3 months later. The estimated project cost is \$5 million. Roadway restriping is anticipated to be part of this project.



*Example of confusing pavement markings near Wellesley Library - Hills Branch near Route 9/Route 16 intersection.*



*Recent roadwork at Cedar Street has not yet been painted with travel lane markings or crosswalks.*



*Example of clear pavement markings on Route 9 westbound near Oakland Street.*



*Example of roadway segment with faded markings on Route 9 eastbound east of Weston Road.*

## Lighting

Good street lighting contributes to the overall safety of drivers and pedestrians. We are still in the process of identifying who has jurisdiction for the maintenance of lighting within the Route 9 corridor, thus we cannot make a full assessment at this time. Moreover, while not specifically related to lighting, there are also overhead wires present in some stretches of the corridor.

Note: Requested information from the Town of Wellesley to determine the characteristics (age, lumens) of street lighting within the corridor.



*Lighting in some locations is obscured by tree branches and vegetation.*

## Landscaping

While good landscaping features can often enhance the overall appearance and character of a location, there is no unified landscaping theme or program along the Route 9 corridor. In some locations, overgrown landscaping affects driver and pedestrian sightlines as well as the visibility of street signs and directional signs, thus potentially affecting overall safety.



*Overgrown landscaping at the corner of Grantland Road and Route 9 discourages pedestrian and bicycle access.*



*Source: Wellesley Historical Commission*

*Overgrown median near underpass at Washington Street.*

## Historic Features

As noted by the Wellesley Historical Commission, there are several examples of 1930s public works engineering that are part of Route 9 today. These components include stone walls, retaining walls, bridges, staircases, and grassy medians. Many of these engineering components are either overlooked, in poor condition, or are at risk.



Source: Wellesley Historical Commission

Stone wall from the 1920s on Route 9 eastbound west of Rockland Street.



Source: Wellesley Historical Commission

Streetcar waiting station at Kingsbury Street.



Source: Wellesley Historical Commission

Damaged metal railing near Rice House (Unitarian Church) east of Cliff Road.

## Guardrails

While guardrails can promote safety of pedestrians, bicyclists, property, and vehicles along a roadway, there is no consistent placement of guardrails within the study corridor. In many locations, guardrails are not located between the sidewalk and the roadway to protect pedestrians and bicyclists, rather they are sited on the private side of the sidewalk.



*Examples of guardrail placement on the 'private side' of the sidewalk.*

# Appendix A: MBTA Framingham/Worcester Line - Commuter Rail Schedule



## FRAMINGHAM/WORCESTER LINE

### Train Schedule Effective July 1, 2014

#### Monday to Friday

Inbound to Boston		AM										PM										AM		PM																			
ZONE	STATION	TRAIN #	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	1500	1502	1504	1506	1508	1510	1512	1514	1516	2500	2502	2504	2506	2508	2510	2512	2514	2516
			6:45	6:50	6:55	7:00	7:05	7:10	7:15	7:20	7:25	7:30	7:35	7:40	7:45	7:50	7:55	8:00	8:05	8:10	8:15	8:20	8:25	8:30	15:01	15:03	15:05	15:07	15:09	15:11	15:13	15:15	15:17	25:01	25:03	25:05	25:07	25:09	25:11	25:13	25:15	25:17	
8	Worcester																																										
8	Grafton																																										
7	Westborough																																										
6	Southborough																																										
6	Ashland																																										
5	Framingham																																										
4	West Natick																																										
4	Natick Center																																										
3	Wellesley Square																																										
3	Wellesley Hills																																										
3	Wellesley Farms																																										
2	Auburndale																																										
2	West Newton																																										
1	Newtonville																																										
1A	Yawkey																																										
1A	Back Bay																																										
1A	South Station																																										

Trains in purple box indicate peak period trains.

#### Monday to Friday

Outbound from Boston		AM										PM										AM		PM																				
ZONE	STATION	TRAIN #	501	503	505	507	509	511	513	515	517	519	521	523	525	527	529	583	581	533	535	537	539	541	543	545	1501	1503	1505	1507	1509	1511	1513	1515	1517	2501	2503	2505	2507	2509	2511	2513	2515	2517
			6:40	6:45	6:50	6:55	7:00	7:05	7:10	7:15	7:20	7:25	7:30	7:35	7:40	7:45	7:50	7:55	8:00	8:05	8:10	8:15	8:20	8:25	8:30	15:01	15:03	15:05	15:07	15:09	15:11	15:13	15:15	15:17	25:01	25:03	25:05	25:07	25:09	25:11	25:13	25:15	25:17	
1A	South Station																																											
1A	Back Bay																																											
1A	Yawkey																																											
1	Newtonville																																											
2	West Newton																																											
2	Auburndale																																											
3	Wellesley Hills																																											
3	Wellesley Square																																											
4	Natick Center																																											
5	Framingham																																											
6	Ashland																																											
6	Southborough																																											
7	Westborough																																											
8	Grafton																																											
8	Worcester																																											

Trains in purple box indicate peak period trains.

#### Keep in Mind

This schedule will be effective from July 1, 2014, and will replace the schedule of March 10, 2014.

#### Holiday Service:

Saturday service: President's Day, 4th of July (train #157 may be held for 30 minutes after the 4th of July fireworks).

Sunday service: New Year's Day, Memorial Day, Labor Day, Thanksgiving Day, Christmas Day.

All other holidays: For other holiday schedules, please check MBTA.com or call 617-222-3200.



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Call MBTA Customer Service at 617-222-3200.

**Times in purple with "r"** indicate a flag stop: Passengers must tell the conductor that they wish to leave. Passengers waiting to board must be visible on the platform for the train to stop.

**Times in blue indicate an early departure (L stop):** The train may leave ahead of schedule at these stops.

**Bikes:** Bicycles are allowed on trains with the bicycle symbol shown below the train number.

# ROUTE 1 AM

EASTBOUND	Central Hub	5:30 AM	5:55 AM													
	Concord & Howard Flutie Pass	5:32 AM	5:57 AM													
EASTBOUND	Natick Mall	5:43 AM	6:06 AM	6:18 AM	6:46 AM	6:58 AM	7:25 AM	7:41 AM	8:08 AM	8:27 AM	8:53 AM	9:22 AM	9:46 AM	10:07 AM	10:53 AM	11:35 AM
	MathWorks	5:47 AM	6:10 AM	6:22 AM	6:50 AM	7:02 AM	7:29 AM	7:45 AM	8:12 AM	8:31 AM	8:57 AM	9:26 AM	9:50 AM	10:11 AM	10:57 AM	11:39 AM
WESTBOUND	Woodland	6:00 AM	6:25 AM	6:35 AM	7:03 AM	7:19 AM	7:47 AM	8:04 AM	8:31 AM	8:52 AM	9:16 AM	9:42 AM	10:09 AM	10:27 AM	11:12 AM	11:54 AM
	Woodland	6:00 AM	6:28 AM	6:40 AM	7:08 AM	7:24 AM	7:52 AM	8:09 AM	8:35 AM	9:02 AM	9:26 AM	9:47 AM	10:14 AM	10:32 AM	11:17 AM	11:59 AM
WESTBOUND	Natick Mall	6:18 AM	6:46 AM	6:56 AM	7:24 AM	7:40 AM	8:08 AM	8:27 AM	8:53 AM	9:22 AM	9:46 AM	10:05 AM	10:32 AM	10:52 AM	11:35 AM	12:17 PM
	Central Hub	10:37 AM														

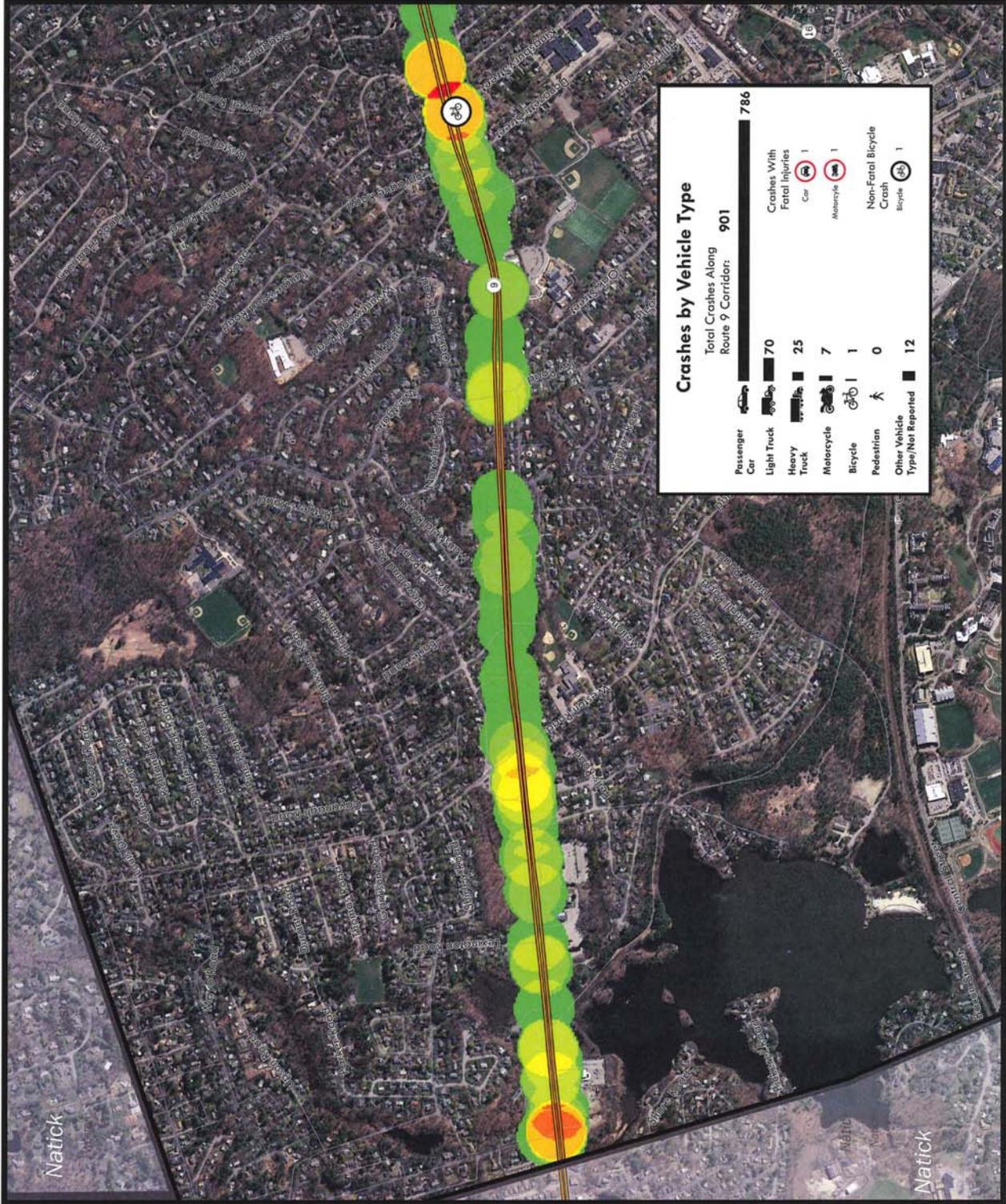
# ROUTE 1 PM

EASTBOUND	Central Hub	1:35 PM	3:35 PM															
	Concord & Howard Flutie Pass																	
EASTBOUND	Natick Mall	12:18 PM	1:00 PM	1:50 PM	2:35 PM	3:20 PM	3:50 PM	4:05 PM	4:35 PM	4:50 PM	5:20 PM	5:35 PM	6:05 PM	6:20 PM	6:50 PM	7:05 PM	7:35 PM	7:50 PM
	MathWorks	12:22 PM	1:04 PM	1:54 PM	2:39 PM	3:24 PM	3:54 PM	4:09 PM	4:39 PM	4:54 PM	5:24 PM	5:39 PM	6:09 PM	6:24 PM	6:54 PM	7:09 PM	7:39 PM	7:54 PM
WESTBOUND	Woodland	12:37 PM	1:19 PM	2:09 PM	2:54 PM	3:39 PM	4:09 PM	4:24 PM	4:54 PM	5:12 PM	5:39 PM	5:54 PM	6:24 PM	6:39 PM	7:09 PM	7:24 PM	7:54 PM	8:09 PM
	Woodland	12:42 PM	1:22 PM	2:14 PM	2:59 PM	3:44 PM	4:14 PM	4:29 PM	4:59 PM	5:17 PM	5:44 PM	5:59 PM	6:29 PM	6:44 PM	7:14 PM	7:29 PM	7:59 PM	8:14 PM
WESTBOUND	Natick Mall	1:00 PM	1:36 PM	2:32 PM	3:17 PM	4:02 PM	4:32 PM	4:47 PM	5:17 PM	5:35 PM	6:02 PM	6:17 PM	6:47 PM	7:02 PM	7:32 PM	7:47 PM	8:17 PM	8:27 PM
	Central Hub	1:43 PM																

**Please note:**

Shaded areas are approximate arrival times only. The bus may leave these locations prior to the listed time. Riders should be at these time points at least ten minutes prior to the time listed. The bus will not leave the **bolded** locations prior to listed times.

If you have any questions, please contact Customer Service at (508) 935-2222.



# Wellesley Route 9 Corridor Study 2011-2013 MassDOT Crash Data



The information depicted on this map is for planning purposes only. It is not intended for regulatory, interpretation, or operational analysis.

Produced by:  
Metropolitan Area Planning Council  
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources:  
Metropolitan Area Planning Council (MAPC)  
Massachusetts Department of Transportation (MassDOT)  
Registry of Motor Vehicle Crash Data System (RMV)



September, 2015



# Wellesley Route 9 Corridor Study 2011-2013 MassDOT Crash Data

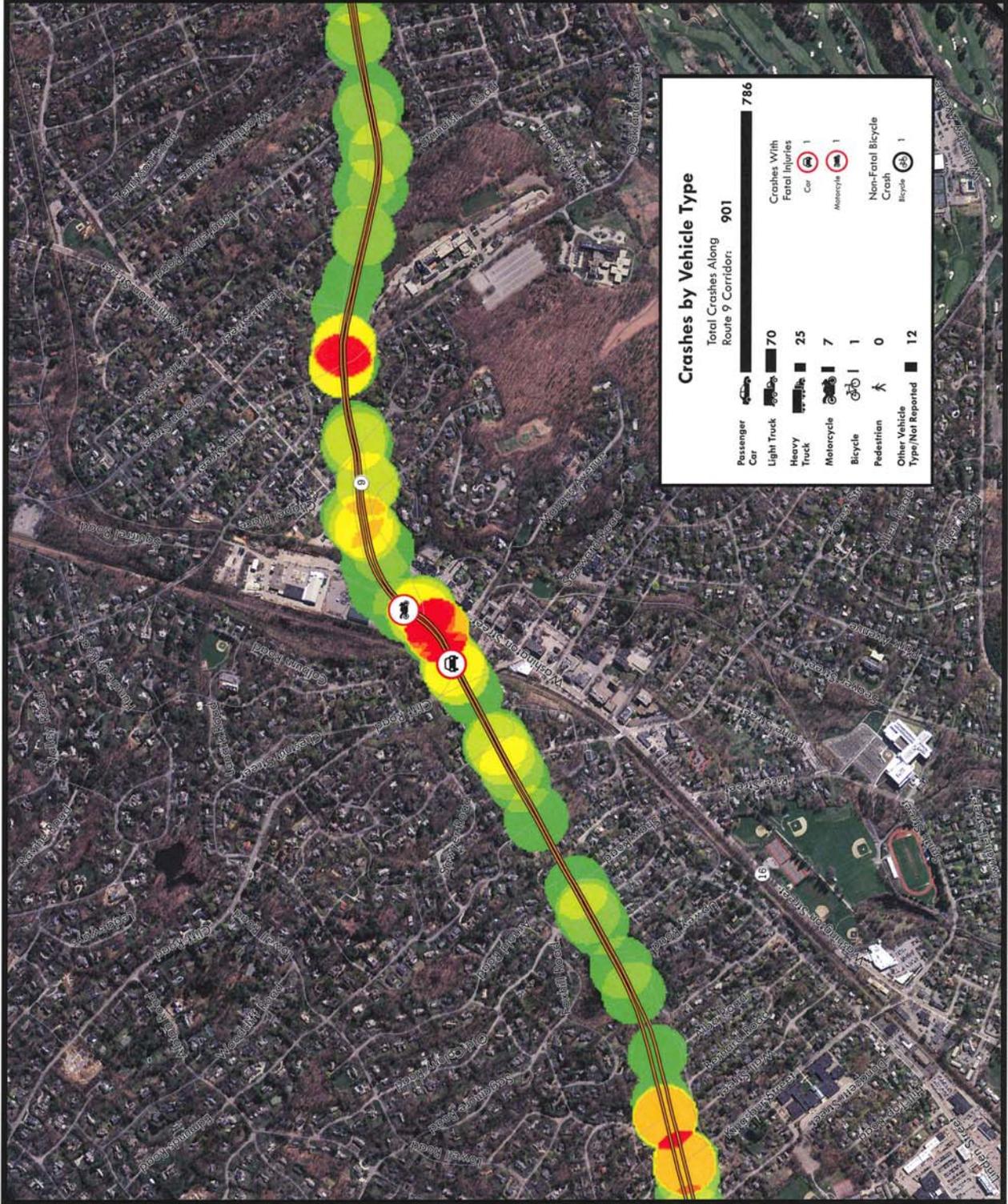


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Date Source:  
Metropolitan Area Planning Council (MAPC)  
Massachusetts Geographic Information System (MassGIS)  
Massachusetts Department of Transportation (MassDOT)  
Registry of Motor Vehicle Crash Data System (RMV)

September, 2015



# Wellesley Route 9 Corridor Study 2011-2013 MassDOT Crash Data

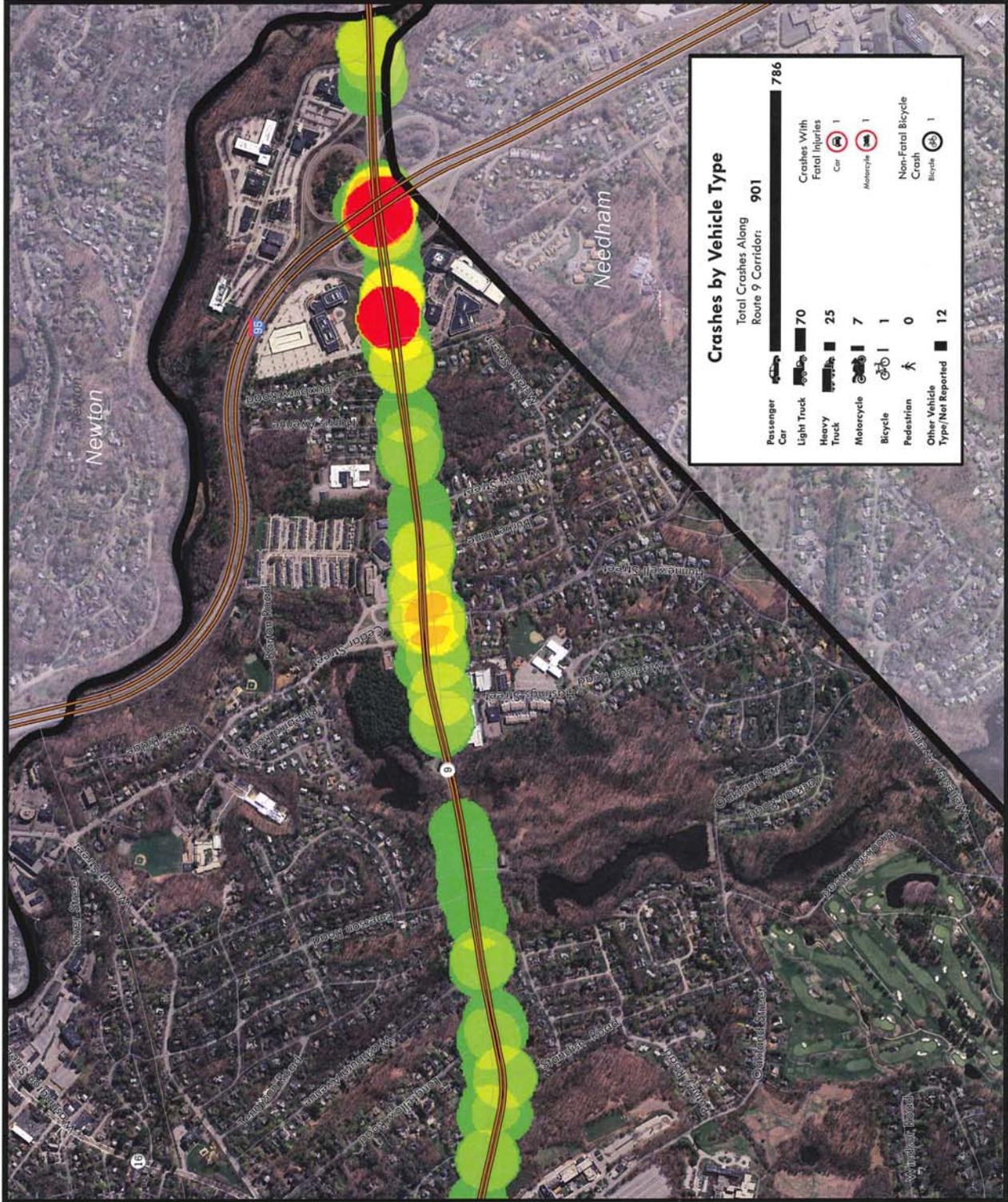


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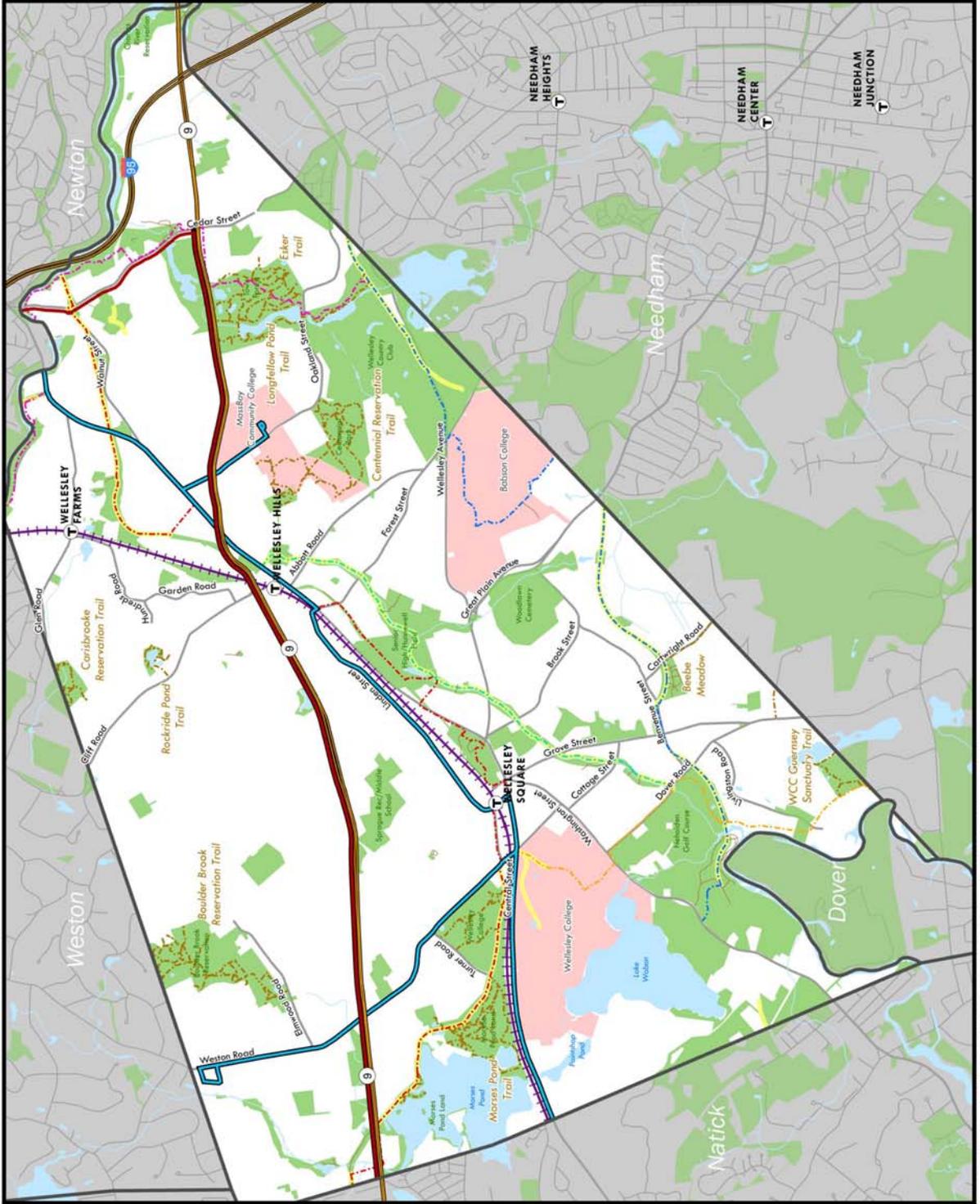
Produced by: Aegis Planning, Coastal  
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources: Aegis Planning, Coastal (MAPC)  
Massachusetts Department of Transportation (MassDOT)  
Massachusetts Department of Transportation (MassDOT)  
Registry of Motor Vehicle Crash Data System (RMV)

September, 2015



Appendix D: Transportation Facilities



Town of Wellesley

Transportation Facilities

Commuter Rail

- Commuter Rail Line
- Commuter Rail Station

MVRTA Bus Routes

- Route 1
- Route 8

Paths and Trails

- Shared-Use Path
- Guernsey Path
- Charles River Path
- Brook Path
- Sudbury Path
- Crosstown Trail
- Woodland Trails

Open Space



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 Massachusetts Geographic Information System (MassGIS)  
 Massachusetts Department of Transportation (MassDOT)

September, 2015

