



## Chapter 5

# State of Good Repair

**Objective 1: 80% of all federal aid-roads will be maintained at good to excellent condition**

While only constituting approximately 34% of MVMPO region’s roadway mileage, our Federal Aid roadways carry the vast majority of the vehicle miles traveled in the region. Travel within and through the region is therefore impacted by the quality of its arterial and collector roadways.

Roadway maintenance is a major expense for both MassDOT and the cities and towns in the Commonwealth. Roadways that are in poor condition are more expensive to maintain and repair, so it is important from a fiscal standpoint for both MassDOT and our city and town departments of public works to manage and maintain these facilities in the most efficient manner.

Perhaps most importantly, having a system of roadways that are in ‘good’ or excellent’ condition contributes to the overall quality of life in the MVMPO region. Obviously, roadways that are in poor condition increase the cost of operating and maintaining automobiles, trucks, buses, and bicycles. Roads that are in poor condition also increase safety hazards for drivers as well as cyclists. They also create a sense of decay that can, in its most extreme manifestation, reduce property values.

Managing roadways is best accomplished through the implementation of a pavement management program. Using information on the condition of the pavement of roadways, a pavement management program can assist in identifying specific maintenance strategies that can be applied to roadway segments to extend their

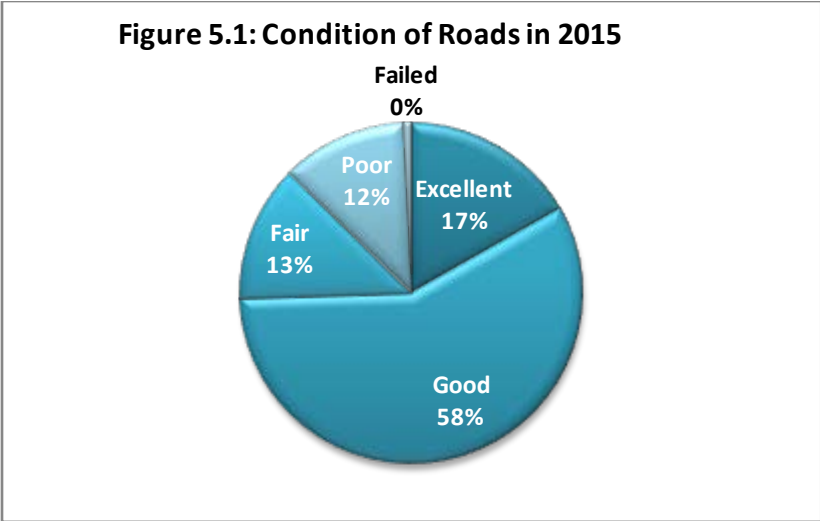
useful life while reducing the need for more costly roadway repair or reconstruction. Following this methodology reduces the overall cost of maintaining roadways.

**State of the Roads**

32.8% of the total 1,600 centerline miles of roadway within the MVMPO region are eligible for federal aid funds. In 2010 and again in 2015, MVMPO staff inventoried all non-interstate federal-aid roads (except for MA-213, which is designed for limited access highway speeds).

Figures 5.1 and 5.2 at right compare the overall condition of the non-interstate federal-aid roadways in the region in 2011 (from the MVMPO 2012 RTP) with the conditions observed in 2015. The percentage of roads in 'Excellent' and 'Good' condition dropped slightly between 2011 and 2015, from 81% to 75%. MVPC Transportation staff that collected this road surface information felt that the severe winter weather was a significant contributor to this decline in road surface quality.

Figures 5.1 and 5.2 Condition of Locally-Owned Federal-Aid Roads for 2015 and 2010

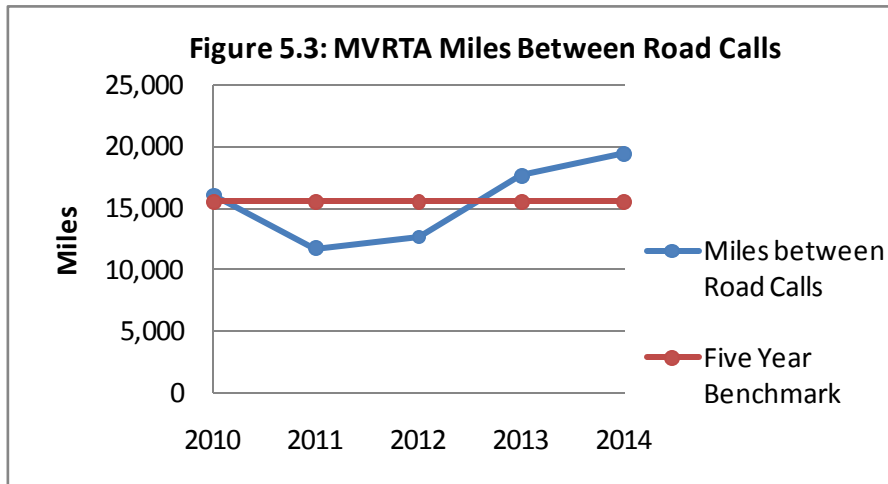


### Objective 2: Maintain and Modernize Transit Capital Assets

The MVRTA regularly schedules maintenance and replacement of its vehicles to ensure that the transit system runs smoothly and so customers feel safe and comfortable. The MVRTA fleet includes 47 transit buses, 11 commuter buses, and 16 ADA vans.

The MVRTA uses three performance measures to evaluate its fleet:

- Miles between road calls – tracks the distance traveled between mechanical breakdowns.
- Maintenance cost per Revenue Hour – a lower maintenance cost per revenue hour indicates an increased effectiveness of the



Measure	2010	2011	2012	2013	2014	5 YR Benchmark
Cost/Rev. Hour	\$11.12	\$7.55	\$8.86	\$8.20	\$8.53	\$8.85
Cost/Rev. Mile	\$.78	\$.78	\$.80	\$.74	\$.76	\$.77

maintenance program.

- Maintenance cost per Revenue Mile – a lower maintenance cost per revenue hour, the more effective the maintenance program.

The MVRTA sets five-year vehicle performance benchmarks. For FYs 2010-2014 five-year period, the MVRTA did not meet its benchmark for miles between road calls every year, though it did for years 2013-2014. It did meet its benchmark for maintenance cost per revenue hour and was only slightly above the benchmark for MVRTA maintenance cost per revenue mile. The target is to fall below the latter two benchmarks (Table 5.1).

In order for the MVRTA to maintain its current transit service levels over the next 25 years, it will need approximately \$100,847,545 in funding. Table 5.2 shows how the funding would be spent. The MVMPO performance target is to achieve 100% on-time replacement of transit vehicles.

**Table 5.2: Merrimack Valley Regional Transit Authority  
Anticipated Capital Expenditures 2016 - 2040**

<b>Category</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>2031-2035</b>	<b>2036-2040</b>	<b>Total</b>
<b>Bus Replacement</b>						
2015-10, 2016-7, 2017-3, 2019-3	\$9,909,385		\$6,385,500	\$2,074,210		<b>\$18,369,095</b>
2021-9, 2023-8, 2024-8		\$12,972,550		\$6,410,550	\$12,271,940	<b>\$31,655,040</b>
2027-5, 2028-5			\$6,054,731			<b>\$6,054,731</b>
Engine/Transmission Replacements	\$490,960	\$349,395	\$1,135,755	\$568,205	\$814,490	<b>\$3,358,805</b>
Intercity Coach Replacement			\$6,396,435		\$6,658,590	<b>\$13,055,025</b>
Van Replacement	\$1,112,000	\$3,152,560		\$1,657,880		<b>\$5,922,440</b>
Support Vehicles Replacement	\$233,100	\$329,540	\$383,885	\$447,255	\$338,835	<b>\$1,732,615</b>
<b>Facility Construction</b>						
Newburyport Intermodal Parking	\$2,500,000	\$5,000,000	\$1,000,000		\$1,000,000	<b>\$9,500,000</b>
Newburyport Intermodal Parking Design	\$150,000					
<b>Facility Updates</b>						
McGovern Transportation Center	\$32,000	\$1,000,000		\$1,000,000		<b>\$2,032,000</b>
Buckley Terminal	\$12,000	\$500,000		\$500,000		<b>\$1,012,000</b>
Haverhill Transit Center			\$500,000		\$500,000	<b>\$1,000,000</b>
Amesbury Transit Center		\$1,000,000		\$1,000,000		<b>\$2,000,000</b>
Haverhill Parking Center		\$1,000,000		\$1,000,000		<b>\$2,000,000</b>
MVRTA Office/ Maintenance Facility	\$58,800		\$1,000,000		\$1,000,000	<b>\$2,058,800</b>
Lawrence Gateway Surface Parking Area	\$10,000	\$50,000	\$55,000	\$60,000	\$65,000	<b>\$240,000</b>
Communications System		\$607,080		\$915,870		<b>\$1,522,950</b>
ITS & Security Cameras		\$1,109,395		\$1,490,930		<b>\$2,600,325</b>
Tools, Planning, Misc. Items	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	<b>\$2,500,000</b>
<b>Total Capital Expense (incl match)</b>	<b>\$15,008,245</b>	<b>\$27,570,520</b>	<b>\$23,411,306</b>	<b>\$17,624,900</b>	<b>\$23,148,855</b>	<b>\$106,613,826</b>



Photo: A walking audit of Winter Street found sidewalks in need of repair. Crumbling sidewalks can be hazardous to elderly and extremely challenging for people in wheelchairs (Photo courtesy of WalkBoston).

### **Objective 3: Improve Conditions of Existing Pedestrian Infrastructure**

In order to succeed in increasing the number of people who walk, the region’s pedestrian infrastructure must be improved to support this mode. Whether walking to school or work, to visit a friend or to walk from a parking lot downtown to a restaurant, people need safe places to walk.

New to this RTP is the purposeful strategy of improving the conditions of existing sidewalks. The first step is creating an inventory of existing conditions. The MVMPO has created an inventory of all sidewalks in Haverhill. While results of the 2015 inventory are not yet available, the MVMPO staff had previously inventoried the sidewalks located in the U.S. Department of Housing and Urban Development Community Development Block Grant (CDBG)-eligible section of the City. The results showed that overall roughly 47% of existing the sidewalks were in good to excellent condition. However, by breaking down the sidewalks by type, over 70% of the CDBG area’s concrete sidewalks were in good to excellent condition, compared to 56.4% for brick and 31.1% for asphalt.

**Strategy for Progress**

Over the next four years, the MVMPO staff will inventory pedestrian infrastructure for all federal aid roads at the very least. We will work with our member communities to encourage them to inventory all sidewalk conditions and to identify missing sidewalk connections. These inventories will include information about ADA ramps.





Photo: Whittier Bridge, MassDOT

### Improve Conditions of On- and Off-System Bridges.

The MVMPO region has 241 federal-aid bridges. Bridges are inspected each year and evaluated to determine their structural soundness and other criteria. Through this process, MassDOT determines whether or not a bridge is either functionally obsolete (FO) or structurally deficient (SD). Below are the definitions:

**Functionally Obsolete** - deck geometry, load-bearing capacity, vertical and horizontal clearances or approach roadway alignment do not meet the criteria for the roadway system of which the bridge is a component.

**Structurally Deficient** – includes bridges that must have vehicle weight restrictions, immediate rehabilitation to remain open, or must be closed.

According to the most recent bridge list supplied by MassDOT in October 2014, there are 69 functionally obsolete bridges (28%) and 17 structurally deficient bridges (8%) in the region.

Since 2011, MassDOT has made improvements to nine bridges, which can be attributed to the

**Table 5.3: Bridge Improvements 2011-2015 (Source MassDOT)**

Community	Bridge Name/Facility Carried	Facility Intersected	Status
Amesbury/ Newburyport/ Salisbury	Whittier Bridge	Merrimack River	Under construction
Amesbury	I 95	Railroad corridor	Under construction
Amesbury	Hines Bridge	Merrimack River	Complete
Groveland/ Haverhill	Bates Bridge	Merrimack River	Complete
Lawrence	Union St. Bridge	Merrimack River	Complete
Lawrence	Amesbury St.	North Canal	Complete
Haverhill	Rocks Village Bridge	Merrimack River	Complete
Haverhill	Ferry Rd.	Railroad corridor	Complete
Lawrence	Canal Street	Spicket River	Complete

**Table 5.4: Structurally Deficient Bridges October 2014 (Source: MassDOT)**

Community	Facility Carried	Facility Intersected	Year Built/rebuilt	Status
Amesbury	R Street	Back River	1908	Closed
Amesbury	I-495 SB	Middle Road	1964	
Andover	Route 28/N. Main St.	Shawsheen River	1927	
Andover	Route 133/Haverhill St.	Shawsheen River	1921	
Andover	Route 28 N. Main St	MBTA	1929	Design
Andover	I-93 NB	Shawsheen River	1958	
Andover	I-93 SB	Shawsheen River	1958	
Andover	Chandler Road	I-93	1959	Design
Haverhill	Basilere Bridge/Route 125	Merrimack River/railroad	1925	Design
Haverhill	I-495 NB	Rt. 108 (Newton Rd)	1964	
Haverhill	I-495 SB	Rt. 110 (Amesbury St)	1964	
Haverhill	River Road/Routes 110 & 113	I495	1964	Under Construction
Lawrence	Amesbury Street	South Canal	1918	
Methuen	Osgood Street	Spicket River	1869	
Methuen	Rt. 213 WB	Spicket River	1959	Design
Methuen	Rt. 213 EB	Railroad	1959	
Methuen	Hampshire Road	Spicket River	1959	
Newburyport	US-1	Merrimack River	1976	

Photo: Duck Bridge, MassDOT



Accelerated Bridge program put into place to fast track bridge replacements around the State (Table 5.3). Table 5.4 lists SD bridges in the region as well as their status. A full list of all bridges can be found in Appendix B.

Bridges that are due to be under construction shortly include:

- I-495 bridges over the Powow Riverwalk in Amesbury (2015 TIP).
- I-495 bridge over the Merrimack River in Haverhill (2018 TIP).

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