

Northeast Pavement Preservation Partnership Burlington, Vermont

Rhode Island DOT

April 8, 2014

SHRP2 R26 (Preservation of High-Traffic Volume Roadways)
and
MAP-21 Impacts to RIDOT Pavement Management

David E. Capalbo, P.E.

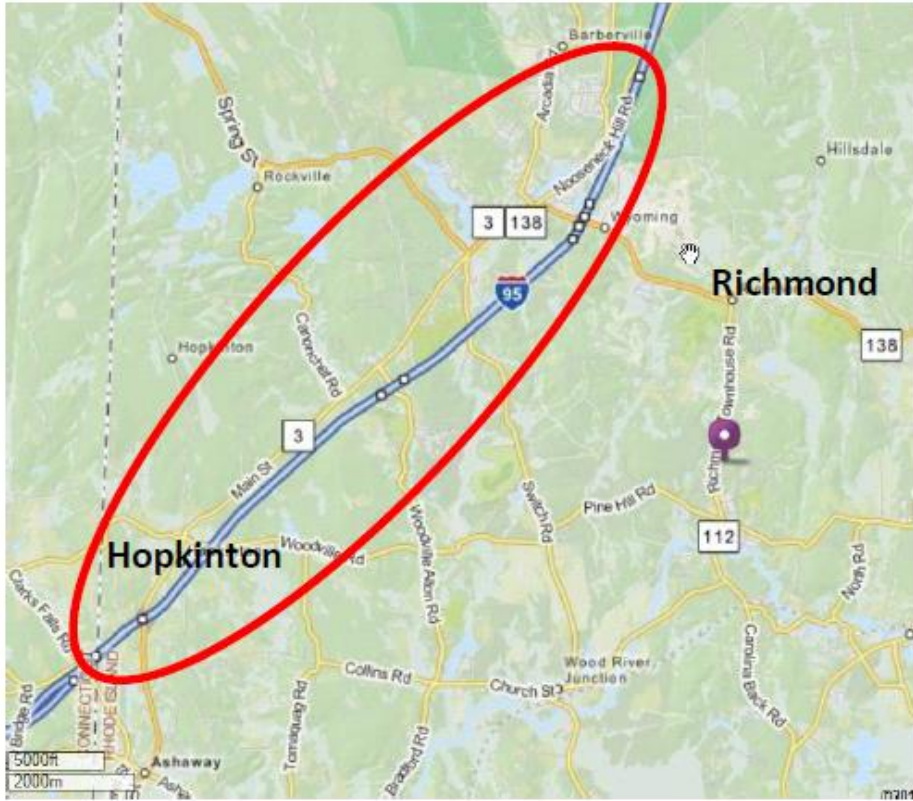
SHRP2 R26

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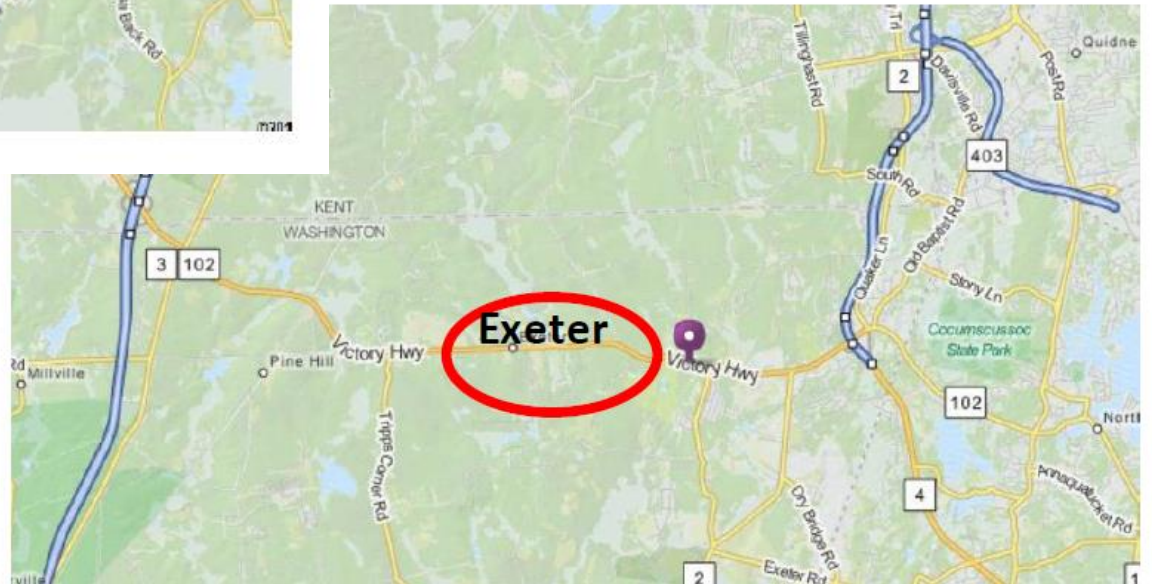
Implementation Assistance Program Preservation Projects

- Rhode Island DOT (Lead Adopter)
 - Colin A. Franco, P.E. (colin.franco@dot.ri.gov)
 - Jose Lima (jose.lima@dot.ri.gov)
- Participation Summary (4 Projects)
 - Crack Seal
 - Rubber Chip Seal
 - SAMI Chip Seal
 - Thin HMA Overlay

I-95 Crack Seal Test Site Location



SR 102 Chip Seal Test Site Location

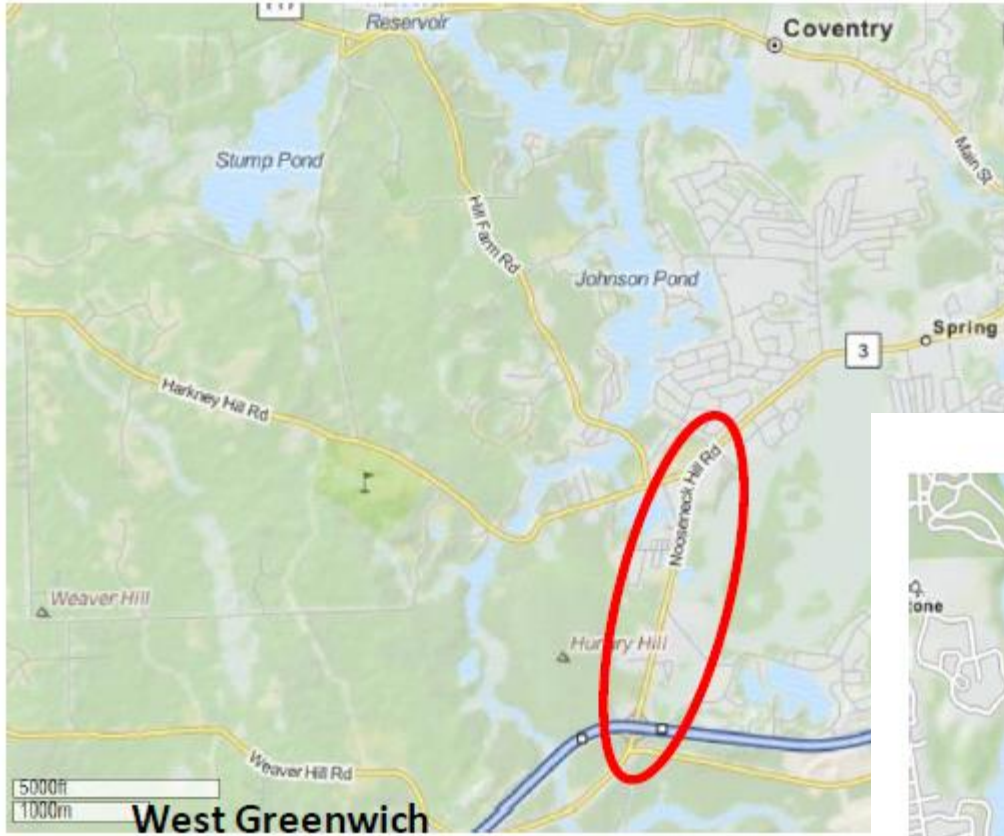


SHRP2 R26

Implementation Assistance Program Preservation Projects

Project ID, Highway Route & Treatment	Location (City/Town, County, Milepost, Direction)	Time of Treatment Application	Facility Type & Number of Lanes	2-Way Average Annual Daily Traffic (2009) and % Trucks	Project Details (Treatment Description, Material Type, Application Thickness and Method/Equip, Test Section Length, Existing Pavement Type/Condition)
(1) I-95 Crack Seal	Hopkinton and Richmond (Washington County), from Connecticut State Line to Exit 4, both directions	May to July 2014	Urban Interstate 4 lanes	23,100 4.9%	The work includes cleaning, sealing, and filling cracks and open joints across all existing pavement. Also included in the work shall be maintenance and protection of traffic and public access, and final sweeping of each roadway segment for 9.4 miles.
(2) SR 102 Rubber Chip Seal	Exeter (Washington County), from Pole 38 to Wheeler Lane, both directions	May to July 2014	Rural Collector 2 lanes	10,200 2.8%	The project involves grinding existing epoxy pavement markings, applying new water based pavement markings, spot leveling with HMA to restore road profile, applying a ½" thick 20% rubberized asphalt chip seal, sweeping and restriping with epoxy pavement markings. The chip seal treatment will be applied from edge to edge for 2.6 miles.

SR 3 SAMI Seal Test Site Location



SR 114 Mill and Thin HMA Overlay Test Site Location



SHRP2 R26

Implementation Assistance Program Preservation Projects

Project ID, Highway Route & Treatment	Location (City/Town, County, Milepost, Direction)	Time of Treatment Application	Facility Type & Number of Lanes	2-Way Average Annual Daily Traffic (2009) and % Trucks	Project Details (Treatment Description, Material Type, Application Thickness and Method/Equip, Test Section Length, Existing Pavement Type/Condition)
(3) SR 3 SAMI Chip Seal	West Greenwich and Coventry (Kent County), from I-95 to SR 118, both directions	May to July 2014	Rural Collector 5 lanes	16,200 2.8%	The work includes sweeping, 1-1/2" micromilling of bituminous pavement, leveling, and application of 3/8" thick 20% rubber asphalt chip seal and overlay with 1" thick paver placed polymer/rubber modified elastomeric surface treatment (PPEST). Also included in the work shall be maintenance and protection of traffic, adjustment of all structures and restriping for 1.2 miles.
(4) SR 114 Thin HMA Overlay	East Providence (Providence County), from SR 1A to SR 152, both directions	May to July 2014	Urban Arterial 4 lanes	10,900 4.8%	The work includes sweeping, 1" micromilling of bituminous pavement, leveling, and placement of 1" thick PPEST. Also included in the work shall be maintenance and protection of traffic, adjustment of all structures and restriping for 0.5 miles.

MAP-21 Impacts to RIDOT Pavement Management

MAP-21 Impacts to RIDOT Pavement Management

- MAP 21 (Moving Ahead for Progress in the 21st Century)
 - National Highway System (NHS) .vs. Remaining Roads
 - NHS includes Interstates, Limited Access Highways and Principal Arterials
 - Remaining State roads includes Minor Arterials, Collectors and Locals
 - National Performance Standards for NHS
 - International Roughness Index (IRI) for Interstates will be set in Summer 2014
 - Pavement Structural Health Index (PSHI) for remaining NHS roads will be set in Summer 2015
 - Rhode Island ranks 49th in nation (2010 Reason Foundation)
 - RIDOT goals to be approved by FHWA
 - Funding penalties of up to 35% if goals are not met

MAP-21 Impacts to RIDOT Pavement Management

Pavement Structural Health Index (PSHI)

Original PCI equation

$$=0.10IRI+0.15Delam+0.10Rut+0.20Allig+0.15Block+0.10Long+0.10Trans+0.05Ege+0.05Bleed$$

Current PSHI equation*

$$=0.30IRI+0.20Delam+0.10Rut+0.16Allig+0.10Block+0.07Long+0.07Trans$$

*Developed in 2013 and implemented for 2012 data

Scores were modified for IRI and rutting in 2013, and will be adjusted for sealed cracks in 2014

MAP-21 Impacts to RIDOT Pavement Management

Centerline Miles of Roads in Rhode Island

	Total	NHS	Non-NHS Eligible for Federal Funds	Not Eligible for Federal Funds
RIDOT	1099	523	510	66
Municipal	5275	38	663	4574
Others*	106	3	6	97
Total	6480	564	1179	4737

*Includes RITBA, State Colleges, Military, FWS, BIA, Narragansett Indian Tribe, QPD, DOA, DEM and Airports

MAP-21 Impacts to RIDOT Pavement Management

Condition of RIDOT Roads

	2012 PSHI	2023 PSHI Goals
Good (PSHI >80)	59.6%	70.0%
Fair (PSHI 70-80)	23.2%	25.0%
Poor (PSHI <70)	17.2%	5.0%

MAP-21 Impacts to RIDOT Pavement Management

Annual Construction Funds to Reach 10 Year Goals

	2012 PSHI	2023 PSHI Goal	Annual Funds Needed to Meet 10 Year Goal	Current Annual Funding	2023 PSHI Results with Current Annual Funding
NHS – Interstate 71 miles	100.0 Good 0.0 Fair 0.0 Poor	100.0 Good 0.0 Fair 0.0 Poor	\$ 9,000,000	\$ 9,000,000	100.0 Good 0.0 Fair 0.0 Poor
NHS – Limited Access (RIDOT & RITBA) 86 miles	74.5 Good 16.7 Fair 8.8 Poor	100.0 Good 0.0 Fair 0.0 Poor	\$ 8,000,000	\$ 8,000,000	100.0 Good 0.0 Fair 0.0 Poor
NHS – Principal Arterials (RIDOT, RITBA & Municipal) 415 miles	49.4 Good 27.8 Fair 22.7 Poor	76.0 Good 20.0 Fair 4.0 Poor	\$ 36,000,000	\$ 27,000,000	70.6 Good 22.3 Fair 7.1 Poor
Remaining RIDOT Roads 576 miles	56.3 Good 24.6 Fair 19.1 Poor	63.0 Good 32.0 Fair 5.0 Poor	\$ 25,000,000	\$ 4,000,000	29.4 Good 45.3 Fair 25.3 Poor
Municipal/Other Roads Eligible for Federal Funds 669 miles			\$ 5,000,000	\$ 3,000,000	
All Roads 1099 miles RIDOT 710 miles Municipal & Other			\$ 83,000,000	\$ 51,000,000	

MAP-21 Impacts to RIDOT Pavement Management

Annual Construction Funds Breakdown

	Crack/Chip Seal	Resurface	Reclaim	Reconstruct
NHS	\$ 1,500,000	\$ 37,000,000	\$ 250,000	\$ 5,000,000
Other State Roads	\$ 500,000	\$ 3,000,000	\$ 250,000	\$ 500,000
Municipal Roads	\$ 0	\$ 3,000,000	\$ 0	\$ 0
Total for \$51 million	\$ 2,000,000	\$ 43,000,000	\$ 500,000	\$ 5,500,000

NHS	\$ 1,500,000	\$ 40,000,000	\$ 500,000	\$ 5,000,000
Other State Roads	\$ 3,500,000	\$ 25,000,000	\$ 500,000	\$ 2,000,000
Municipal Roads	\$ 0	\$ 5,000,000	\$ 0	\$ 0
Total for \$83 million	\$ 5,000,000	\$ 70,000,000	\$ 1,000,000	\$ 7,000,000

MAP-21 Impacts to RIDOT Pavement Management

Annual Construction Centerline Mileage Breakdown

	Crack/Chip Seal	Resurface	Reclaim	Reconstruct
NHS	44.2	35.1	0.3	1.2
Other State Roads	4.1	6.6	0.3	0.1
Municipal Roads	0	3.0	0	0
Total for \$51 million	48.3	44.7	0.6	1.3

NHS	44.2	38.1	0.3	1.2
Other State Roads	64.1	34.4	1.2	2.5
Municipal Roads	0	5.0	0	0
Total for \$83 million	108.3	77.5	1.5	3.7

MAP-21 Impacts to RIDOT Pavement Management

Challenges to Reach 10 Year Goal

- Current funding of \$51 million/yr targeted to previously selected roads in TIP
- Additional \$32 million/yr needed (63% increase)
- Flexibility in project selection (Right treatment, to the right pavement, at the right time)
- Municipal roads on NHS and others eligible for Federal funding
- Environmental permitting challenges
- Justice Department's clarification on ADA
- Utility company work within State right-of-way

Questions?