

JASON L. MAMMONE, P.E.
DIRECTOR OF ENGINEERING

DEBORAH A. FINNIGAN, P.E.
INFRASTRUCTURE ENGINEER

RONALD I. LAWRENCE
PROJECT ENGINEER

LEON C. SCOTT
GIS MANAGER

TOWN OF DEDHAM
Commonwealth of Massachusetts



55 RIVER STREET
DEDHAM, MA 02026-2935

(781) 751-9350
FAX (781) 751-9359

www.dedham-ma.gov

DEPARTMENT OF INFRASTRUCTURE ENGINEERING

MEMORANDUM

TO: William G. Keegan, Jr., Town Administrator
Board of Selectmen

FROM: Jason L. Mammone, P.E., Director of Engineering

DATE: December 10, 2012

SUBJECT: FY2013 Pavement Management Roads and Sidewalks
Preliminary Cost Report

As part of the annual pavement management program, please find an analysis of the costs associated with the FY2013 Pavement Management road improvements which were undertaken over the past construction season.

The FY2013 Recommended Pavement Improvements were presented to the Board and approved on February 16, 2012 as part of the continuing three year FY2013-FY2015 Recommended Pavement Management Improvements. A summary of the work as originally proposed and approved can be found in Table 1.

Table 1 – FY2013 Approved Road Improvements

Repair Type	Length in Feet	Cost
Reclamation	23,685	\$1,917,784.29
Mill and Overlay	390	\$25,256.75
Overlay	0	\$0
Preventative Maintenance	7,186	\$184,630.98
Routine Maintenance	0	\$0
Totals	31,262	\$2,127,672.02

Construction of the planned improvements began in June of 2012 and ended in November of 2012. The preventative maintenance work was completed by All States Asphalt, Inc. and the reclamation work was completed by T.L. Edwards, Inc. under the FY2013 Paving Contract. There were a few of adjustments to the planned FY2013 work. Richards Street, Columbia Terrace and Washington Street were not completed as

anticipated due to scheduling issues and cold temperatures in November. These roads will be completed in the spring of 2013.

A summary of the completed work can be found below in Table 2.

Table 2 – FY2012 Completed Improvements

Repair Type	Length in Feet	Cost
Reclamation	22,942	\$1,681,888.79
Mill and Overlay	0	\$0
Overlay	0	\$0
Preventative Maintenance	7,186	\$274,858.09
Routine Maintenance	0	\$0
Totals	30,128	\$1,956,746.88

Based on the combined efforts of the Department of Public Works and the Engineering Department we were able to complete the FY2013 road improvements well within the available budget. Using the pavement management estimate, the cost to complete the roads that were not completed would be \$96,547.36, which would bring the total costs of the FY2012 roads to \$2,053,294.24 which is still \$74,377.78 less than the original \$2,127,672.02 estimate. A summary of the estimated versus actual unit costs for FY2013 is shown below in Table 3.

Table 3 – FY2012 Units Costs (Estimated vs. Actual)

Repair Type	Estimated Unit Cost	Actual Unit Cost
Reclamation (Major Collector)	\$40.00	-
Reclamation (Minor Collector & Residential)	\$35.00	\$27.68
Mill and Overlay	\$20.00	-
Overlay	\$15.00	\$15.49
Preventative Maintenance	\$7.50	\$11.93
Routine Maintenance	\$0.45	-

We have also compiled and analyzed the costs associated with the FY2012 & FY2013 Pavement Management sidewalk improvements which were undertaken over the past construction season. While many segments of sidewalk repairs were undertaken this year, only wholesale sidewalk replacements are attributed to the sidewalk program.

A summary of the completed work to date can be found below in Table 4.

Table 4 – FY2012 Completed Sidewalk Improvements

Repair Type	Length in Feet	Cost
Bituminous Sidewalk	24,705	\$504,002
Concrete Sidewalk	1,473	\$84,407.75
Totals	26,178	\$588,409.75

Our roadways were resurveyed this summer by Vanasse Hangen Brustlin, Inc. (VHB). The previous survey was conducted in 2009. Road surveys are necessary on a 3 to 5 year cycle to assess if the roads are deteriorating as projected by our roadway deterioration curves. These curves adjust the PCI of the roads over time enabling us to recommend the most cost efficient rehabilitation alternative for each respective roadway.

This recent resurvey has indicated that the Town's overall pavement condition index (PCI) is slightly better than what was projected when we presented the most recent 3-year road program back in February. Back in February the Town had a PCI of 79 and was projected to be at an 82 upon completion of the roads in FY2015. The resurvey has indicated that the Town is currently at an 82 PCI and will be at an 84 upon completion of the roads in FY2015.

Other Towns and Cities in the Commonwealth strive to achieve an overall PCI ranging from 78 to 82. Seeing as though Dedham is projected to have a PCI of 84 at the conclusion of the FY2015 road program, I would recommend maintaining our PCI of 84 moving forward in FY2016. Utilizing our pavement management program on a 10-year outlook starting in FY2016 and assuming a 4% increase in construction materials each year, the Town would need \$1,200,000 to maintain an overall PCI of 84.

Our Chapter 90 funding over the past several years has gone up from approximately \$500,000 (FY09 through FY11) to approximately \$675,000 (FY12 & FY13). Assuming Chapter 90 funding stays around \$675,000 through FY2026, the Town would need to appropriate \$525,000 annually to meet our maintenance budget of \$1,200,000. ***This would be a savings of \$975,000 from the \$1,500,000 requested for appropriations over the past 6 years.*** Through the Town's enormous support over the past 6 years we have been able to implement an aggressive road program that enabled us to achieve a PCI greater than average and now the saving can be realized as we approach a potential maintenance program while maintaining good level of service.

In summary, the DPW and Engineering Departments are pleased to report that we have successfully completed the FY2013 Pavement Management Plan approved last year. Through the diligent efforts of both departments we believe we were able to deliver these improvements in an efficient and cost effective manner. All oversight of the design, bidding, contract administration, field engineering, and inspection was performed using in-house resources. Through these efforts we have been able to raise the Town's PCI to 82 from the initial rating of 70 six years ago.

Cc: Joseph M. Flanagan, Director of Public Works
Nancy A. Baker, Assistant Town Administrator
Mariellen P. Murphy, Director of Finance
Deborah A. Finnigan, P.E., Infrastructure Engineer
Ronald Lawrence, Project Engineer