

Town of Millbury Pavement Management System (PMS)



What is PMS?

Pavement Management System (PMS) is a planning tool utilized to:

- **Collect** and **monitor** current pavement condition information,
- **Evaluate** and **prioritize** alternative maintenance, rehabilitation and reconstruction (repair) strategies, and
- **Provide** decision makers with necessary information for understanding the long-term consequences of short-term budgeting decisions.

Deliverables

A need-based Master Plan containing recommendations of which Millbury roadways should be addressed in the coming five years (FY2011 to FY2015).

Deliverables

Work backlog report containing a recommended treatment with associated costs for every segment of roadway maintained by the Town of Millbury.

CMRPC Segments Analysis Recommendations Work Backlog

CMRPC Segments Analysis Recommendations by Segment OCI

Scenario Work Backlog **Description** Millbury local pavement management analysis.
Budget Unlimited Funding **Includes** all roads accepted and maintained by the town of Millbury, MA.



Collector Roads

Street	From	To	Area (yd2)	Plan Activity	Plan Cost	OCI
GREENWOOD STREET	WORCESTER CITYLINE	MCCRACKEN ROAD	9827	Routine Maintenance	\$6,191	70.95
GREENWOOD STREET	MCCRACKEN ROAD	HIGHLAND FARMS	10267	Base Rehabilitation	\$205,333	23.93
GREENWOOD STREET	HIGHLAND FARMS	ELMWOOD STREET	8199	Preventive Maintenance	\$32,795	64.04
MILLBURY AVENUE	WHEELLOCK AVENUE	WORCESTER CITYLINE	13329	Routine Maintenance	\$8,397	70.93
MILLBURY AVENUE	HOWE AVENUE	WHEELLOCK AVENUE	16283	Routine Maintenance	\$10,258	74.5
MILLBURY AVENUE	RIVERLIN STREET	HOWE AVENUE	9305	Routine Maintenance	\$5,862	80.06
WHEELLOCK AVENUE	MILLBURY AVENUE	LT HAYNES DRIVE	11349	Preventive Maintenance	\$45,396	51.34
WHEELLOCK AVENUE	LT HAYNES DRIVE	GRAFTON ROAD	9527	Preventive Maintenance	\$36,110	49.59
WEST MAIN STREET	STONE STREET	AUBURN TOWN LINE	8777	Structural Improvement	\$87,765	35.65
WEST MAIN STREET	SOUTH OXFORD ROAD	STONE STREET	9630	Preventive Maintenance	\$38,521	53.48
WEST MAIN STREET	SOUTH OXFORD ROAD	MCGRATH ROAD	7762	Structural Improvement	\$77,616	46.58
WEST MAIN STREET	MCGRATH ROAD	SINGLETARY ROAD	7762	Do Nothing	\$0	97.31
WEST MAIN STREET	SINGLETARY ROAD	SUTTON ROAD	11505	Do Nothing	\$0	97.1
SINGLETARY ROAD	WEST MAIN STREET	SUTTON TOWNLINE	6480	Do Nothing	\$0	97.31
HOWE AVENUE	MILLBURY AVENUE	CANAL STREET	14268	Structural Improvement	\$142,677	30.4
MAIN STREET	ELM STREET	MARTIN STREET	11452	Routine Maintenance	\$7,215	79.41
ELM STREET	WEST MAIN STREET	CANAL STREET	14831	Routine Maintenance	\$9,343	76.29
ELMWOOD STREET	R.E. SHAW SCHOOL ENTRANCE	WEST MAIN STREET	2757	Routine Maintenance	\$1,737	72.88
ELMWOOD STREET	OLD COMMON ROAD	R.E. SHAW SCHOOL ENTRANCE	8260	Do Nothing	\$0	99.85
WEST MAIN STREET	HIGH STREET	SUTTON ROAD	9715	Structural Improvement	\$97,152	29.26
WEST MAIN STREET	ELM STREET	HIGH STREET	111467	Preventive Maintenance	\$445,867	51.38
SOUTH MAIN STREET	ELM STREET	RICE ROAD	7169	Structural Improvement	\$71,691	26.75
SOUTH MAIN STREET	RICE ROAD	SUTTON TOWNLINE	7474	Routine Maintenance	\$4,709	78.39
NORTH PROVIDENCE ROAD	CANAL STREET	RICE ROAD	11810	Routine Maintenance	\$7,440	81.95
NORTH PROVIDENCE ROAD	RICE ROAD	SUTTON TOWNLINE	12936	Preventive Maintenance	\$51,744	51.18
RIVERLIN STREET	NORTH PROVIDENCE ROAD	RAILROAD AVENUE	16178	Preventive Maintenance	\$64,714	66.84
RIVERLIN STREET	RAILROAD AVENUE	DEERNOLM ROAD	12954	Preventive Maintenance	\$51,814	48.68
RIVERLIN STREET	DEERNOLM ROAD	GRAFTON TOWNLINE	11349	Do Nothing	\$0	97.35

Data Collection Process:

The Data

- PAVEMENT DISTRESS SURVEYS (80%)
 - POTHOLES
 - DISTORTIONS
 - ALLIGATOR CRACKING
 - TRANSVERSE & LONGITUDINAL CRACKING
 - BLOCK CRACKING
 - RUTTING
 - BLEEDING/POLISHED AGGREGATE
 - SURFACE WEAR & RAVELING
 - CORRUGATIONS, SHOVING & SLIPPAGE
- RIDEABILITY (10%)
- DRAINAGE (10%)



Overall Condition Index (OCI)

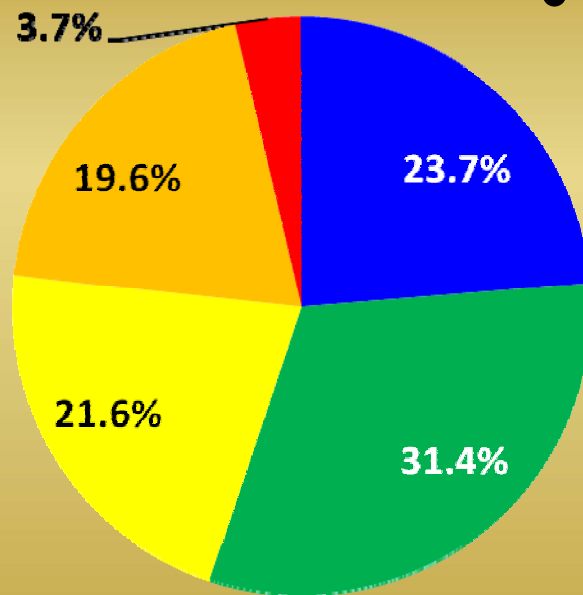
The OCI for an asset inspection is a weighted average of the condition category indexes:

80% - Pavement Distresses • 10% Rideability • 10% Drainage

OCI Range	Pavement Condition	Recommended Action
0 - 24	Very Poor	Base Rehabilitation - Full depth Reconstruction
25 - 47	Poor	Structural Improvement - Thick Overlay
48 - 67	Fair	Preventive Maintenance - Thin Overlay or Surface Treatment
68 - 87	Good	Routine Maintenance - Crack Seal and/or Skin Patch
88 - 100	Excellent	Do Nothing at this time

Overall Condition Index (OCI)

Legend	
0 - 24	Base Rehabilitation
25 - 47	Structural Improvement
48 - 67	Preventative Maintenance
68 - 87	Routine Maintenance
88 - 100	Do Nothing



- Town maintains approximately **69.7 miles** of roadway
Current Network OCI **70.5**
- Approximately **\$4 million** to bring network to “Excellent” or “Do Nothing” status

Figure X-1 Millbury Local Pavement Management Current Condition - Fall 2009

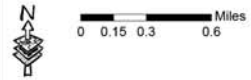


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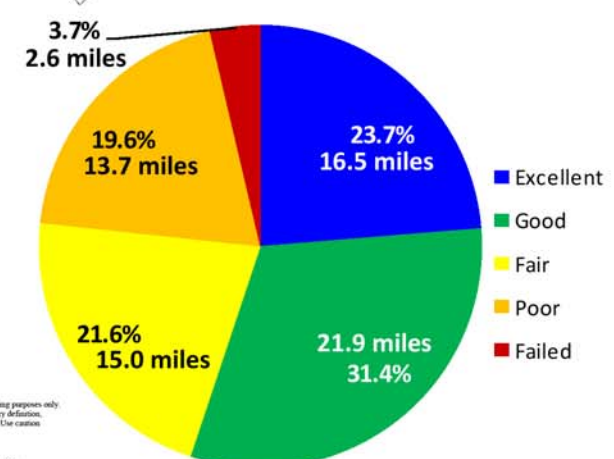
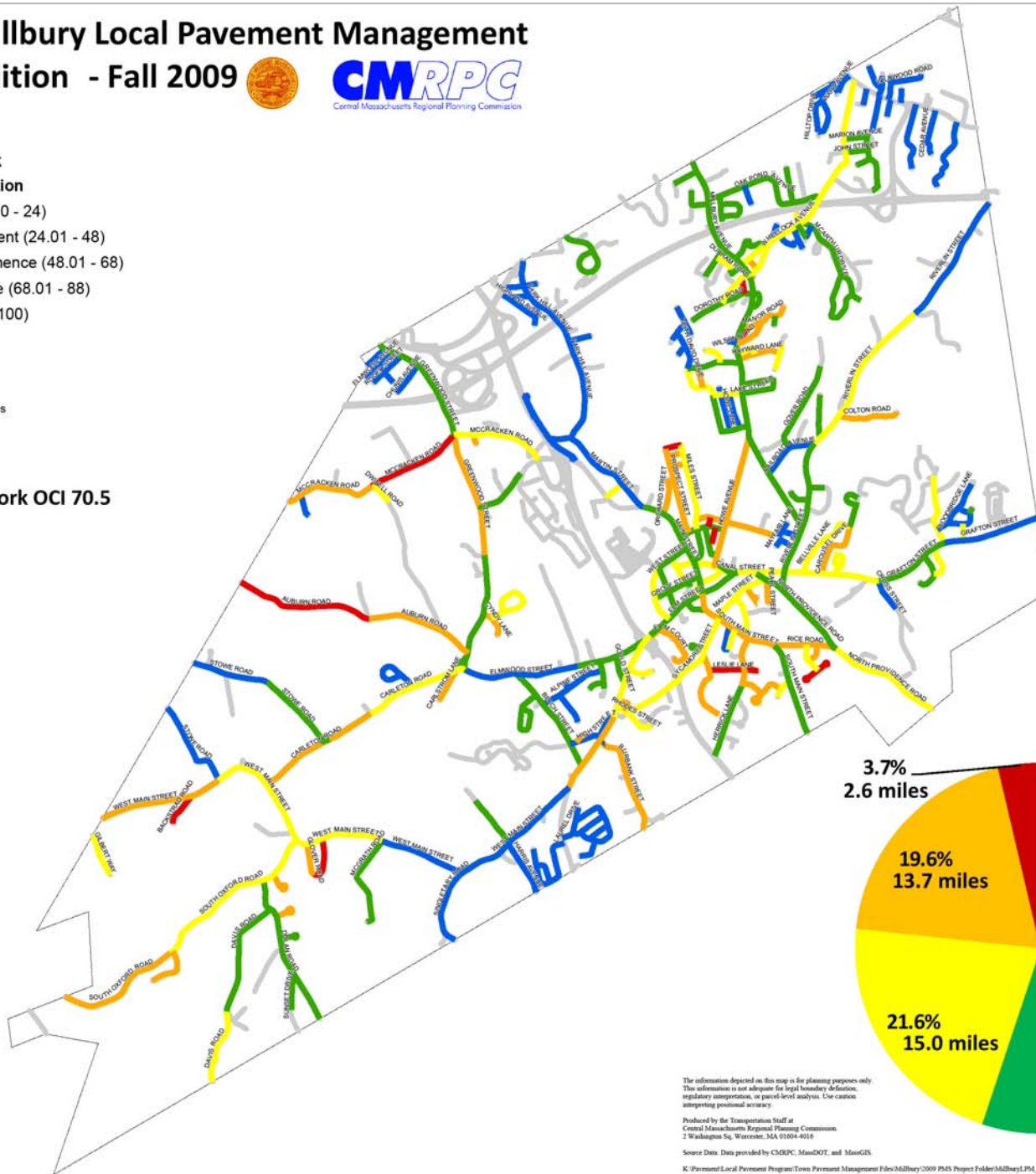
Millbury Road Network

Current Pavement Condition

- ▬ Base Rehabilitation (0 - 24)
- ▬ Structural Improvement (24.01 - 48)
- ▬ Preventative Maintenance (48.01 - 68)
- ▬ Routine Maintenance (68.01 - 88)
- ▬ Do Nothing (88.01 - 100)
- ▬ Other Jurisdiction
- CMRPCTowns



Millbury Local Network OCI 70.5



The information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

Produced by the Transportation Staff at
Central Massachusetts Regional Planning Commission
2 Washington Sq, Worcester, MA 01604-6016

Source Data: Data provided by CMRPC, MassDOT, and MassGIS.

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Figure X-2 Millbury Local Pavement Management No Funding Condition - 2015

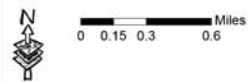


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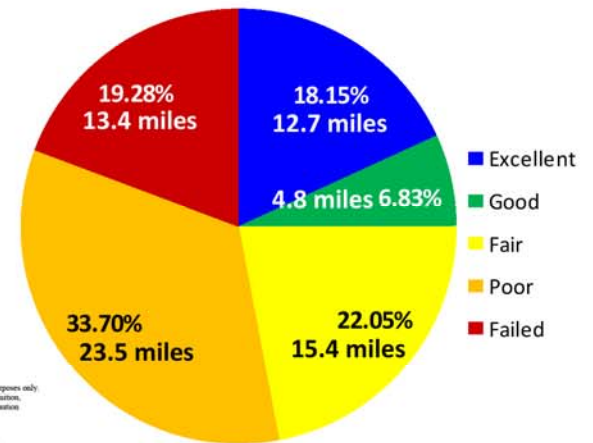
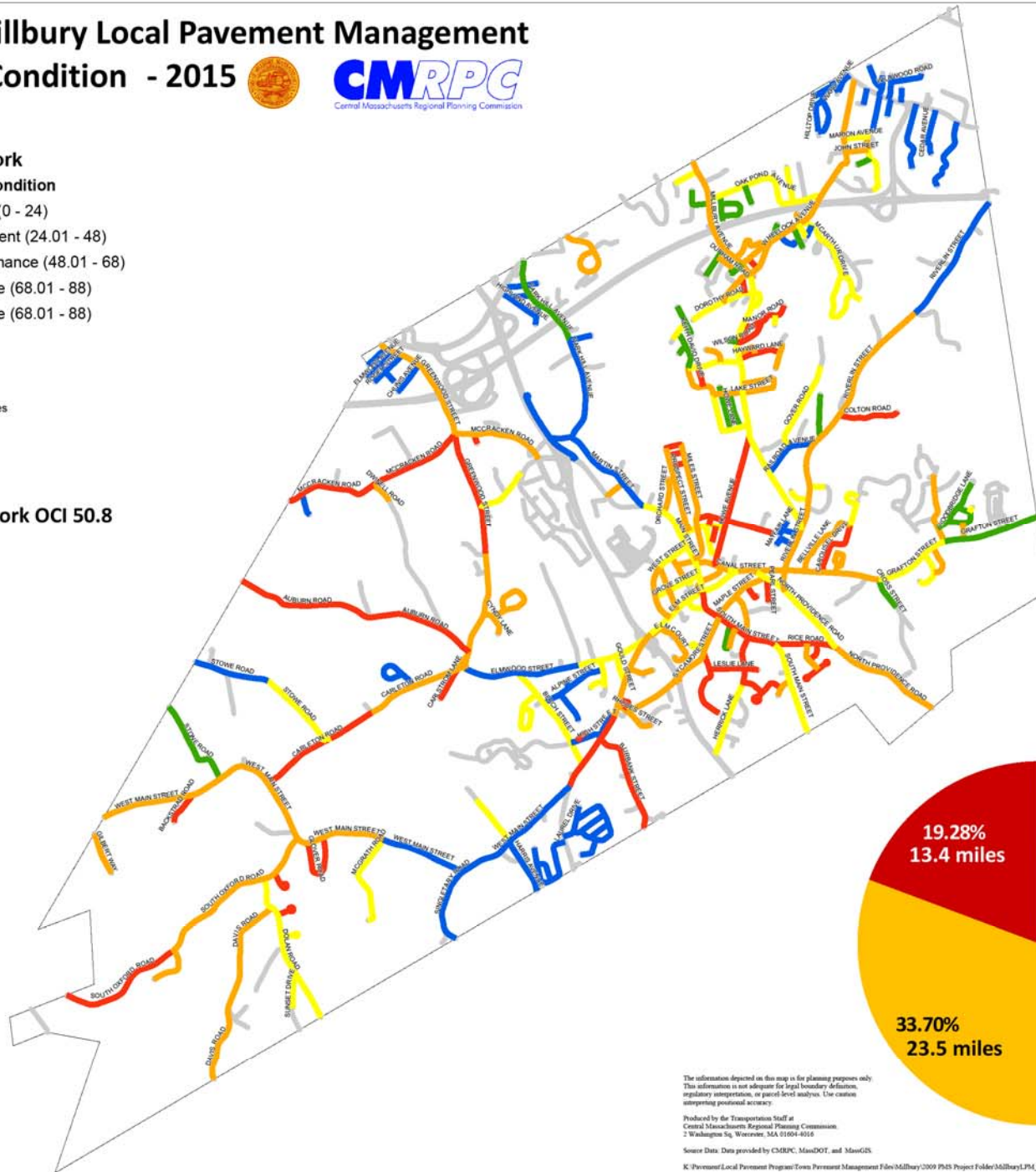
Millbury Road Network

No Funding Pavement Condition

- Base Rehabilitation (0 - 24)
- Structural Improvement (24.01 - 48)
- Preventative Maintenance (48.01 - 68)
- Routine Maintenance (68.01 - 88)
- Routine Maintenance (68.01 - 88)
- Other Jurisdiction
- CMRPCTowns



Millbury Local Network OCI 50.8



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Budget Development

- It would require approx. \$4.1 million to bring all Millbury roads to “do nothing or excellent status”.
- At our current rate of spending (\$250K/YR) we will never get there; in fact the OCI will continue to decline with this level of investment.
- Cost to maintain the current OCI of 70 is approx. \$500,000K/YR.

Budget Development

Current total Chapter 90 funds:	\$334K/YR
Chapter 90 funds allocated to PMS:	\$250K/YR
Chapter 90 funds allocated to other:	\$84K/YR
Requested Town funds (capital expense) to supplement Chapter 90:	\$100K/YR
Total funding for PMS(\$250K + \$100K):	\$350K/YR

Thank You!
QUESTIONS??