

Town of Ledyard, CT



Pavement Management Program



Existing Conditions Summary and Capital Improvement Plan

February 2011

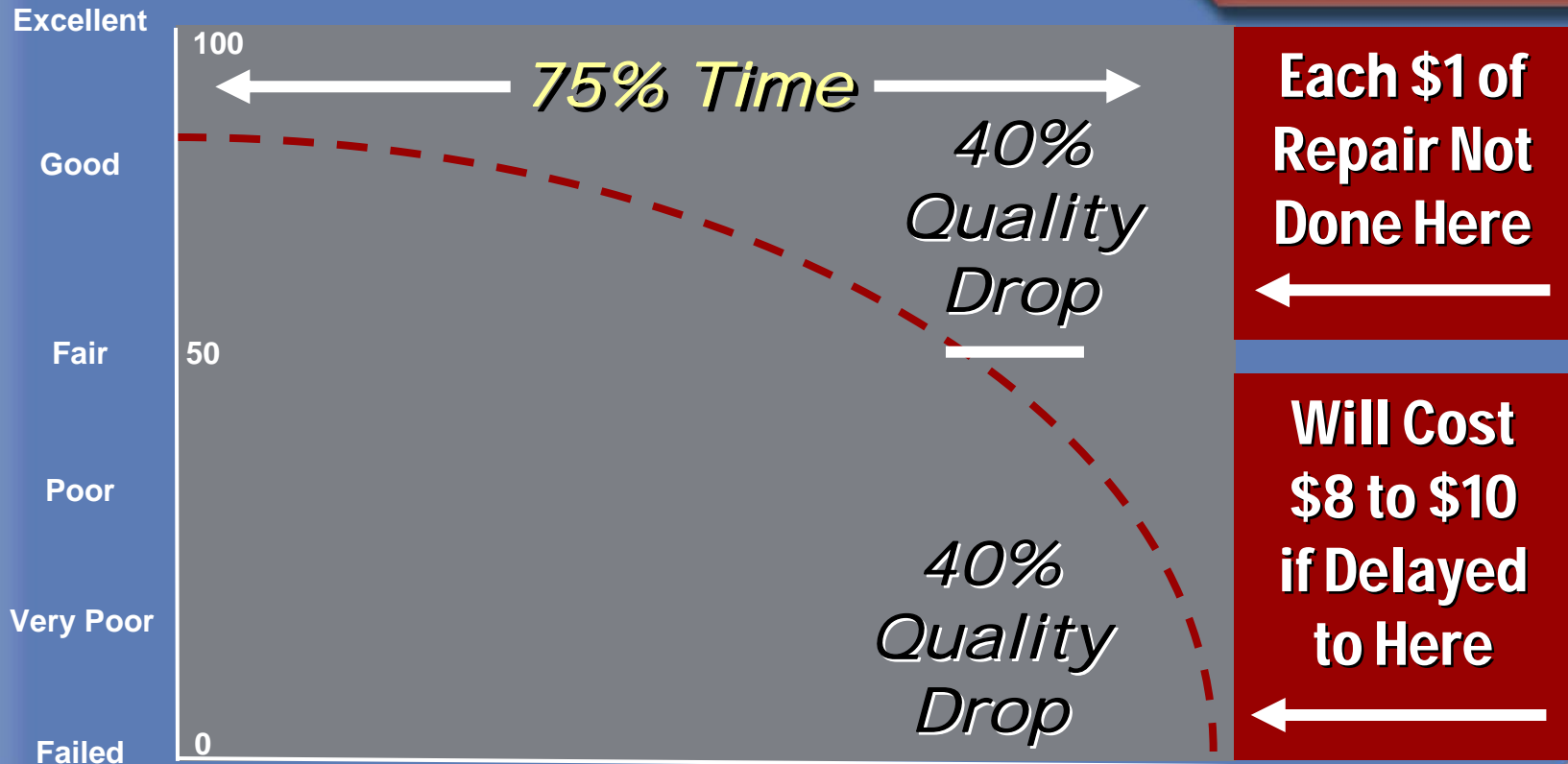
Why Pavement Management?

- **Maximize Available Funding**
- **Reduce long-term maintenance costs**
- **Short and long range repair plan**
- **Better roads for less money**



Why Pavement Management?

Deterioration Curve



System Overview

- MS Access-based Program
- Geodatabase Format
- Dynamic Link with Tables and GIS
- CIP Tools
- Bid Specifications

NAME	OG_NAME	Length	Miles	Width	Owner
ABBEY ROAD	ABBEY RD	977.882	0.1952	26	Town
ADIOS LANE	ADIOS LN	270.223	0.0512	26	Town
ALBATROSS DRIVE	ALBATROSS DR	1391.85	0.2636	26	Town
ALIEN AVENUE	ALIEN AVE-01	320.794	0.0008	24	Town
ALIEN AVENUE	ALIEN AVE-02	200.342	0.0531	22	Town
ALIEN AVENUE	ALIEN AVE-03	239.259	0.0483	23	Town
ALIEN AVENUE	ALIEN AVE-04	660.977	0.1044	23	Town
ALLYN LANE	ALLYN LN-01	598.043	0.1057	26	Town
ALLYN LANE	ALLYN LN-02	190.368	0.0361	26	Town
AMBER CIRCLE	AMBER CR	419.020	0.0795	26	Town
AMOS GEORGE DRIVE	AMOS GEORGE DR	289.03	0.0547	0	Private
ANDERSON DRIVE	ANDERSON DR	1270.67	0.2437	24	Town
ANN WAMPEY DRIVE	ANN WAMPEY DR-01	474.569	0.0099	0	Private
ANN WAMPEY DRIVE	ANN WAMPEY DR-02	1159.74	0.2196	0	Private
ANNE GEORGE DRIVE	ANNE GEORGE DR-01	467.41	0.0095	0	Private
ANNE GEORGE DRIVE	ANNE GEORGE DR-02	549.898	0.1041	0	Private
ANNE GEORGE DRIVE	ANNE GEORGE DR-03	435.543	0.0005	0	Private
ANNE GEORGE DRIVE	ANNE GEORGE DR-04	1193.21	0.226	0	Private
ANNE GEORGE DRIVE	ANNE GEORGE DR-05	1015.58	0.1923	0	Private
APPLEWOOD DRIVE	APPLEWOOD DR	942.320	0.1785	26	Town
ARROWHEAD DRIVE	ARROWHEAD DR-01	1216.46	0.2384	24	Town
ARROWHEAD DRIVE	ARROWHEAD DR-02	665.138	0.1241	22	Town
ARROWHEAD DRIVE	ARROWHEAD DR-03	916.142	0.1735	23	Town
ASH DRIVE	ASH DR-01	392.592	0.0744	20	Town
ASH DRIVE	ASH DR-02	1611.71	0.3052	20	Town
ASPEN LANE	ASPEN LN	117.371	0.0222	24	Town
AUGUST MEADOWS	AUGUST MEADOWS	2036.38	0.5372	20	Town
AUTUMN WAY	AUTUMN WAY	951.739	0.1803	20	Town
AVEBURY BERWICK	AVEBURY BERWICK-01	749.376	0.1419	26	Town
AVEBURY BERWICK	AVEBURY BERWICK-02	370.962	0.0703	26	Town
AVEBURY BERWICK	AVEBURY BERWICK-03	942.547	0.1795	20	Town
AVERY HILL ROAD	AVERY HILL RD-01	2320.07	0.4409	22	Town
AVERY HILL ROAD	AVERY HILL RD-02	3036.18	0.5845	26	Town
AVERY HILL ROAD	AVERY HILL RD-03	4170.51	0.7899	22	Town
AVERY HILL ROAD	AVERY HILL RD-04	964.906	0.1809	22	Town
AVERY HILL ROAD	AVERY HILL RD-05	598.271	0.1133	22	Town
AVERY HILL ROAD	AVERY HILL RD-06	2066.39	0.3914	22	Town
AVERY HILL ROAD EXT	AVERY HILL ROAD EXT	3065.79	0.5906	20	Town
BALDWIN HILL ROAD	BALDWIN HILL RD-01	417.342	0.0790	24	Town
BALDWIN HILL ROAD	BALDWIN HILL RD-02	1837.51	0.3480	24	Town
BALDWIN HILL ROAD	BALDWIN HILL RD-03	462.935	0.0858	24	Town
RAPID ROAD	RAPID RD	614.575	0.1154	27	Town

System Overview

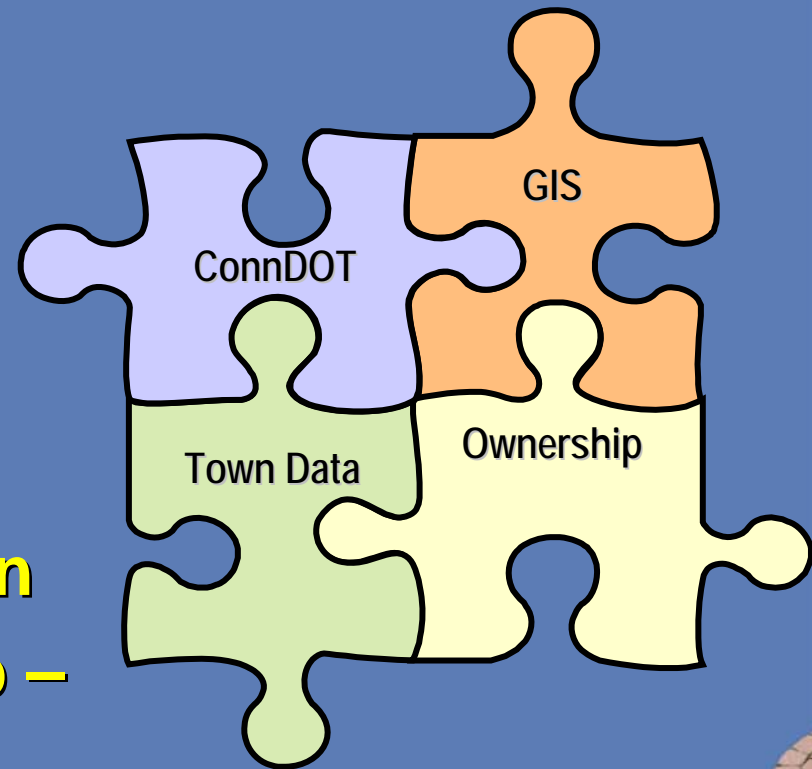
Four Step Process:

- 1 – Establish Roadway Inventory**
- 2 – Field Inspection Program**
- 3 – Capital Improvement Planning**
- 4 – System Maintenance**

Establish Roadway Inventory

Step 1

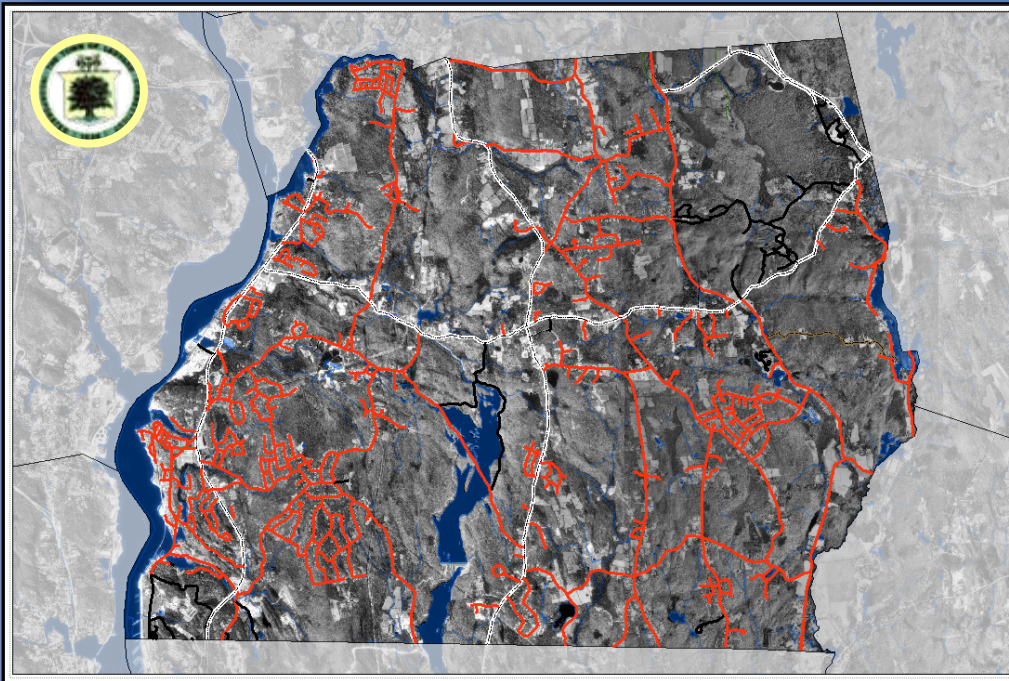
- **ConnDOT Road Inventory File (RIF)**
- **Town GIS and other Available Data**
- **Maximize Prior or Existing Pavement Management Data**
- **Review Street Acceptance Information**
- **Understand Ownership – Develop Profile**



Establish Roadway Inventory

Step 1

Roadway Profile



<u>Type</u>	<u>Miles</u>
State	20
Private	15
Town	110
<hr/>	
Total	145

Field Inspection Program

Step 2

Roadway Inventory

Inventory and Inspection Form

GIS ID: 1529

Street: **ABBEY ROAD** RSR: **98**

Segment Name: ABBEY RD Length Feet: 977.88

From Street: MATHEWSON MILL RD Length Miles: 0.19

To Street: CUL DE SAC Flow Route: _____

Owner: **Town**

Inspection Data

Inspector: BETA

Inspection Date: 5/25/2010

Alignment: Acceptable

Ride: Acceptable

Pavement Material: BC Width: 28.00

Detailed Distresses

	Severity	Extent (%)	Notes
Edge Cracking:			
Alligator Cracking:			
Linear Cracking:	Low	10	
Potholes:			
Patching:			
Flutting:			
Depressions:			
Drainage:			
General Notes:			

Curb Data

Odd Curb Type: Asphalt Even Curb Type: Asphalt Avg. Reveal: 5

Sidewalk Data

Sidewalk Odd: No Sidewalk Even: No

Refresh RSR **Close Form**

Record: 1 of 821

- Calculate Road Surface Rating (RSR) On-the-Fly
- Ratings are 0 to 100 (Worst to Best)
- QA/QC Program
- Pilot Project

Sample Inspection Data

Step 2



Church Hill Road

RSR = 48

Mill and Overlay



Vinegar Hill Road

RSR = 68

Level and Overlay

Sample Inspection Data

Step 2



Fanning Road

RSR = 92

Crack Seal



Christy Hill Road

RSR = 96

Defer Maintenance

Existing Conditions Summary

Step 2

Defer Maintenance (22%)

Maintenance (21%)

- *Crack Seal*

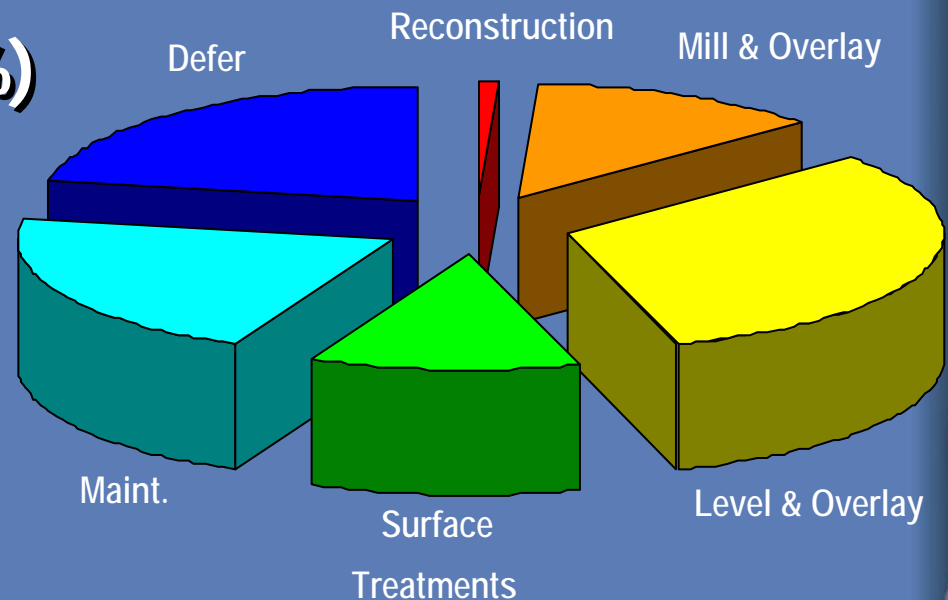
Surface Treatments (11%)

- *Chip Seal*
- *Micro Surfacing*

Level & Overlay (32%)

Mill & Overlay (13%)

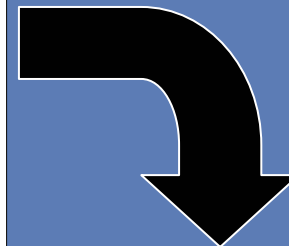
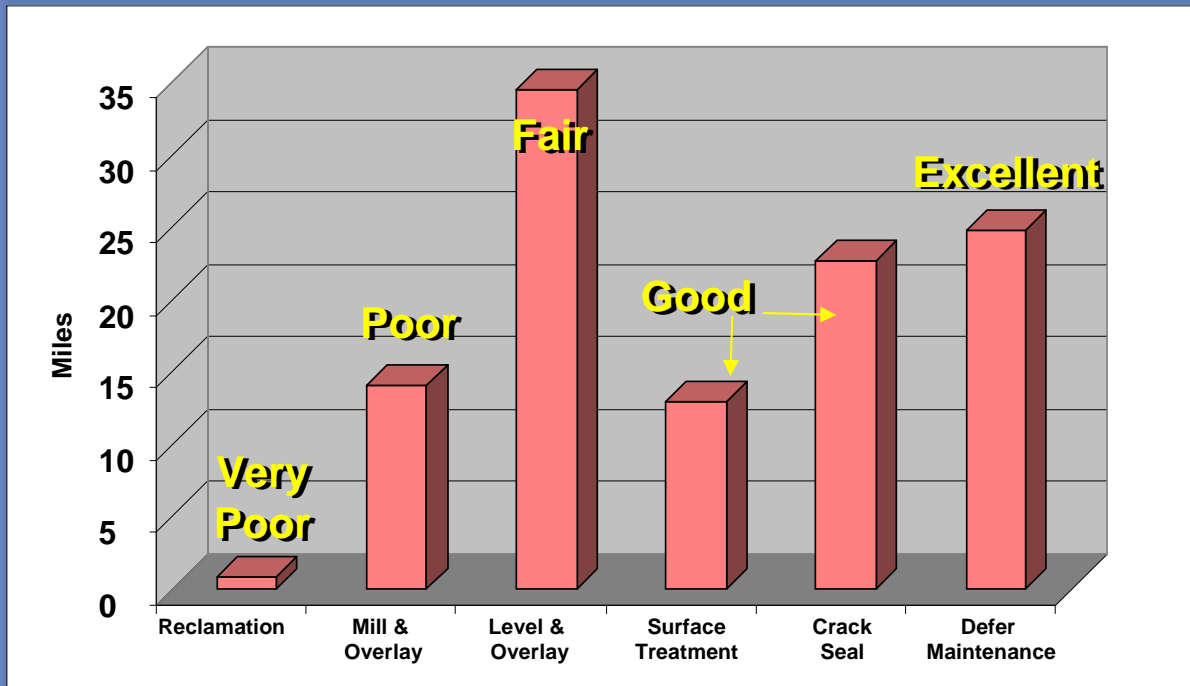
Reclamation (1%)



Roadway Condition Summary

Step 2

Town Maintained
Roadways



110 Miles
RSR = 75

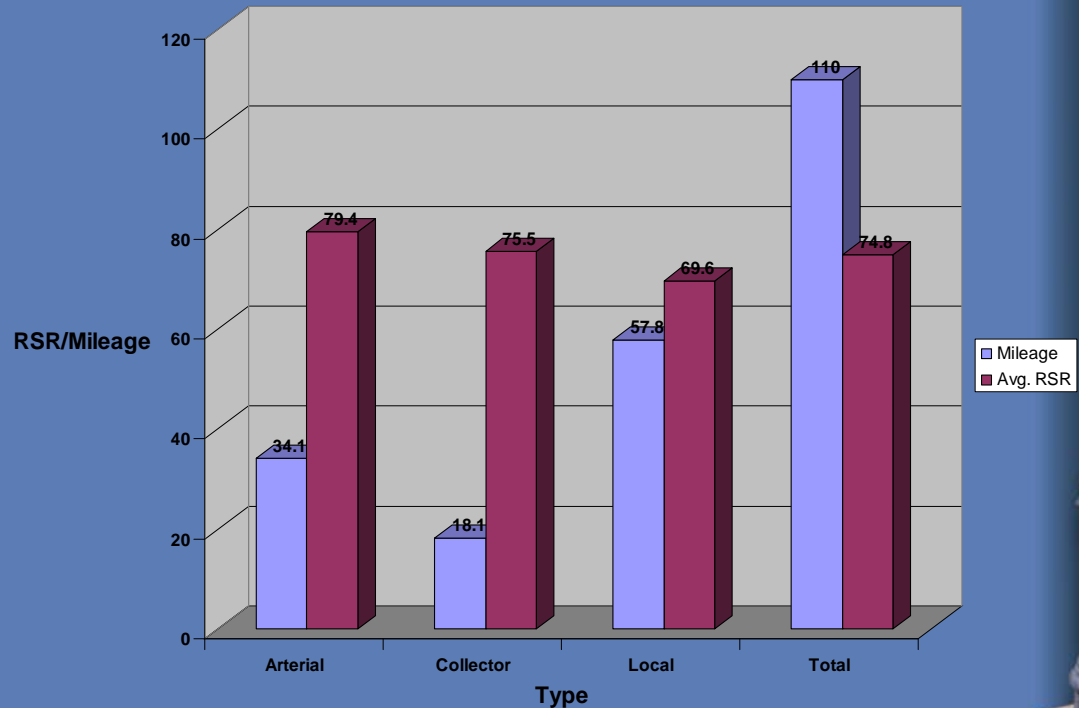
Roadway Condition Summary

RSR Breakdown by Functional Class

Step 2

Summary

Type	Mileage	Avg RSR
Arterial	34.1	79.4
Collector	18.1	75.5
Art./Col.	52.2	77.5
Local	57.8	69.6
Total	110	74.8

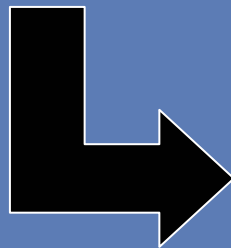


Existing Conditions Summary

Backlog Summary Town Roadways

Step 2

Repair Method	Length (Miles)	Cost	% By Repair
Reclamation	0.90	\$314,365	0.82
Mill and Overlay	14.13	\$3,170,217	12.85
Level and Overlay	34.54	\$7,206,026	31.42
Surface Treatment	12.92	\$637,152	11.75
Crack Seal	22.67	\$184,970	20.62
Defer Maintenance	24.78	\$0	22.54
TOTALS:	110.00	\$11,512,730	100.00

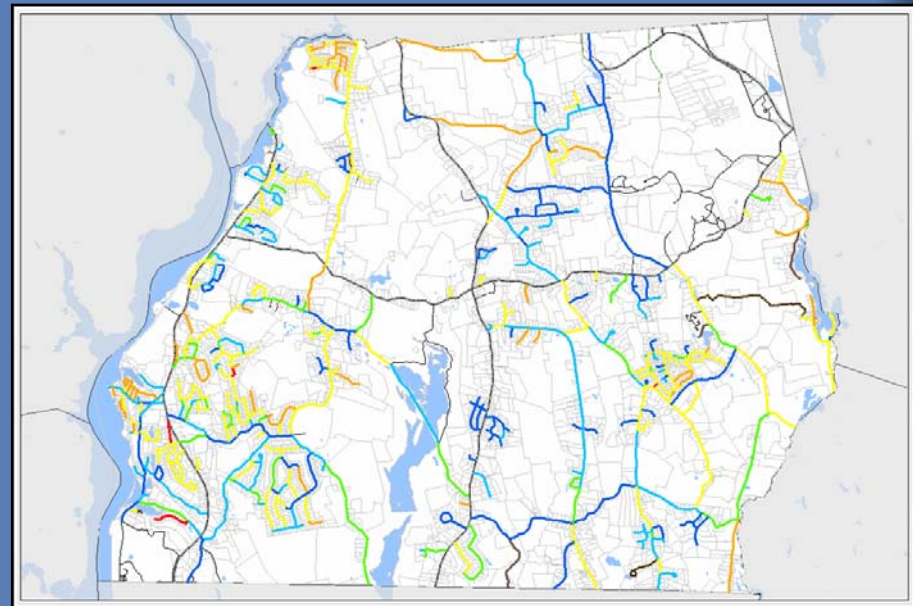


Backlog = Approx. \$12 Million

Capital Improvement Planning

Step 3

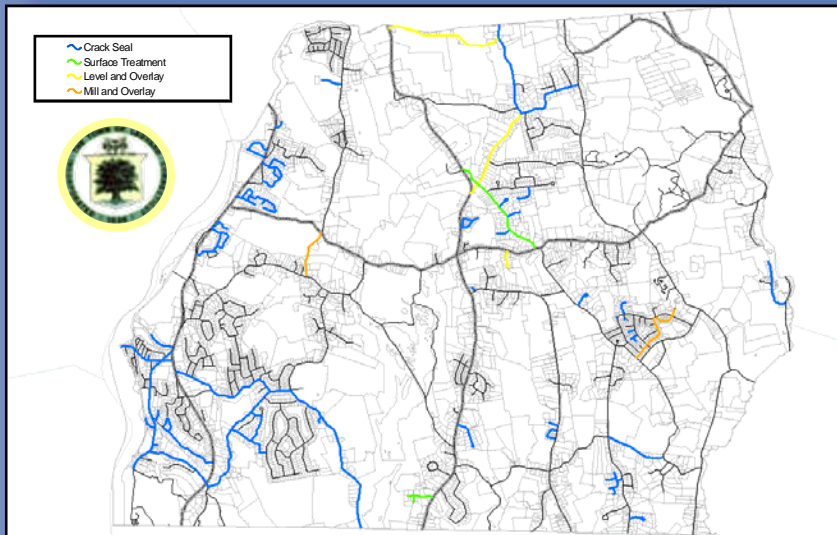
- **Review Backlog**
- **Budget Requirements**
 - *Town Aid*
 - *Local*
 - *Other*
- **Identify Repair Methods Unit Costs**
- **Prioritization Strategies**



Capital Improvement Planning

Repair Breakdown by Miles

Step 3



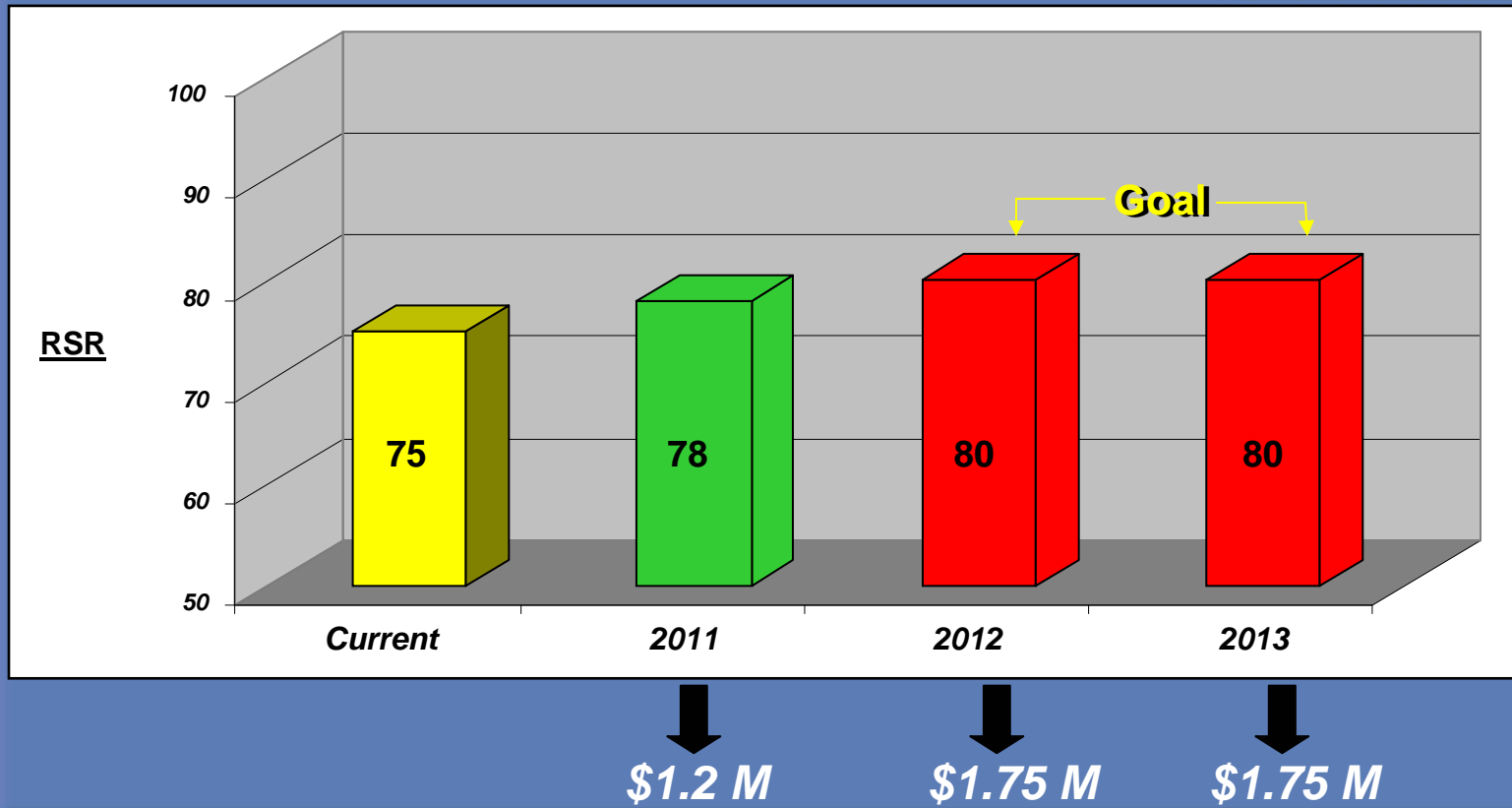
<u>Type</u>	<u>Miles</u>
Crack Seal	22.27
Surface Treatment	1.72
Level and Overlay	2.71
Mill & Overlay	1.50
Estimated Total	28.20

Approximately 25% of Paved Road Miles Targeted For Improvements

Capital Improvement Planning

3 -Year Projection

Step 3



Capital Improvement Planning

2011 CIP

Summary of Improvements

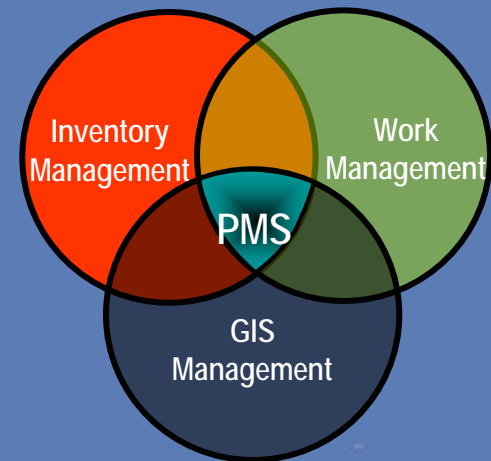
Step 3

	Miles	Initial Cost	Police Estimate	DYCL Striping	Fog Line Striping	CIP Estimate
Project Year: 2011						
Funding Source: Local Funds						
Crack Seal	22.27	\$176,669.00	\$0.00	\$0.00	\$0.00	\$185,501.00
Level and Overlay	2.71	\$526,469.00	\$0.00	\$0.00	\$0.00	\$552,792.00
Mill and Overlay	1.50	\$326,786.00	\$0.00	\$0.00	\$0.00	\$343,126.00
Surface Treatment	1.72	\$91,199.00	\$0.00	\$0.00	\$0.00	\$95,759.00
2011 Total:	28.20	\$1,121,123.00	\$0.00	\$0.00	\$0.00	\$1,177,178.00
Year Total:	28.20	\$1,121,123.00	\$0.00	\$0.00	\$0.00	\$1,177,178.00

System Maintenance

Step 4

- **Update Data as Repairs are Completed – Refresh RSR**
- **Identify Actual Project Costs and Contractor Information**
- **Re-inspect Roadways periodically**
- **Built-in Deterioration Curve (Based on Functional Classification)**



Town of Ledyard, CT



Pavement Management Program



Existing Conditions Summary and Capital Improvement Plan

Thank You