Pavement Management Program
Town of Canton
2015 Update

Presented by
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Presentation Outline

- Pavement Management Background
- Conditions in Canton
- Recommendations
What is Pavement Management?

... The practice of **planning** for pavement **maintenance** and **rehabilitation** with the goal of **maximizing** the **value** and **life** of a **pavement** network.

"Getting the Biggest Bang for your Buck"
The Process

1. Pavement Section Inventory
2. Pavement Distress Identification & Quantification by Visual Inspection
3. Pavement Condition Index (PCI) Calculation on a 0 to 100 Scale
4. GIS Integration
5. Define Repair Strategies and Costs
6. Test Various Budget Scenarios
7. Develop Annual Road Program
Pavement Deterioration Curve

- 40% Drop in Quality
- 75% of Life
- $1.40 for Renovation Here
- 40% Drop in Quality
- 12% of Life
- Will cost $8.00 to $9.00 Here
Do Nothing 93-100 PCI
Routine Maintenance (Crack Seal)  73-92 PCI
Preventive Maintenance  59-72 PCI
(Crack Seal & Patch, Micro surface, Chip Seal)
Structural Improvement Condition (Overlay or Mill & Overlay) 52-58 PCI
Restoration Condition (Reclamation)  40-51 PCI
Reconstruction Condition

0-39 PCI
Average 2011 Pavement Condition Index - 74
2011 Total Backlog Summary - $17,880,000

- **Routine Maintenance**: $290,000 (2%)
- **Preventative Maintenance**: $2,550,000 (14%)
- **Structural Improvement**: $2,125,000 (12%)
- **Base Rehabilitation**: $4,355,000 (24%)
- **Parking Lots**: $8,470,000 (47%)
- **Drainage**: $90,000 (1%)
Funding History

Funding 2000 to 2010
- $200,000 +/- Year

Funding 2011 to 2015
- $1,727,000 Year
- $8,635,000 Total
2011 – 2015 Funding Summary - $8,635,000

$6,000,000 70%

$2,453,728 28%

$181,272 2%

- CIP
- LoCIP
- BONDING
Initial Program Implementation Strategy

2011 Repair work strategy was performed using standard “Book Job” method.

Example:
Lower Dyer Avenue

- Engineering Services – Utilized pre-bid on-call engineering vendor, plans were developed.
- Repair Services - Went out to bid, contractor awarded job, contractor hired sub-vendors (paving, drainage, road marking etc.) – town made one payment to contractor after the road was finished.

Let’s review how we made out.
2012 Repair work strategy executed with new “In-House” method.

Example:

Scoville Road

- **Engineering Services** – Performed in combination with Town staff {Project Administrator/Engineer and DPW}
- **Repair Services** – Drainage work performed by DPW, reclaiming/grading services and paving directly hired by DPW utilizing the CT State Bid Contract.

*Town staff took over role of general contractor!*
2013 – 2015 Repair work strategy directed by town staff solely with “Hybrid” method.

Example:

All roads

- Engineering Services - Performed in combination with Town staff {Project Administrator/DPW} and pre-bid on-call engineering vendor.
- Road Improvements – Incidental Roadwork bid containing 107 different menu items that established distinct costs for each.
- Pavement Services/Rehab - Directly hired by DPW utilizing the CT State Bid Contract.

$7 Million + Work performed the last three years!!!
Powder Mill Road

Before

After
### Yearly Work Performed

<table>
<thead>
<tr>
<th>Year</th>
<th>Series2</th>
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<tbody>
<tr>
<td>2011</td>
<td>$398,263.46</td>
</tr>
<tr>
<td>2012</td>
<td>$231,275.08</td>
</tr>
<tr>
<td>2013</td>
<td>$1,109,677.9</td>
</tr>
<tr>
<td>2014</td>
<td>$3,045,547.9</td>
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<tr>
<td>2015</td>
<td>$3,304,745.4</td>
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</tbody>
</table>
2011-2015 Breakdown of Work - $8,202,363

- Engineering Services: $4,144,924 (50%)
- Road Improvements: $3,590,372 (44%)
- Pavement Services/Rehab: $467,067 (6%)
### Engineering

<table>
<thead>
<tr>
<th></th>
<th>Legal Notice</th>
<th>Engineering Services</th>
<th>Material Testing</th>
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<tbody>
<tr>
<td><strong>Series1</strong></td>
<td>$732.69</td>
<td>$459,604.11</td>
<td>$6,730.24</td>
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# Road Improvements

<table>
<thead>
<tr>
<th></th>
<th>Series1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage/Road Widening</td>
<td>$3,477,132</td>
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<tr>
<td>Guardrails</td>
<td>$71,277</td>
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<tr>
<td>Line Stripping</td>
<td>$15,463</td>
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<tr>
<td>Tree Services</td>
<td>$23,425</td>
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<td>Police Traffic Control</td>
<td>$3,075</td>
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## Paving Services/Rehab

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Paving</td>
<td>$3,673,738</td>
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<tr>
<td>Crack Seal</td>
<td>$189,217</td>
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<tr>
<td>Chip Seal</td>
<td>$107,718</td>
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<tr>
<td>Reclaiming</td>
<td>$141,142</td>
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<tr>
<td>Milling</td>
<td>$30,609</td>
</tr>
<tr>
<td>Unimproved Road Maintenance</td>
<td>$2,500</td>
</tr>
</tbody>
</table>
2011 Adjusted Total Backlog Summary = $18,842,000

- **Routine Maintenance**: $290,000 (2%)
- **Preventative Maintenance**: $3,039,600 (16%)
- **Structural Improvement**: $90,000 (0%)
- **Base Rehabilitation**: $2,125,000 (11%)
- **Parking Lots**: $4,827,600 (26%)
- **Drainage**: $8,470,000 (45%)
2011 – 2015 Historic Repairs
2016+ Backlog Work Summary - $15,844,257

- Engineering Services: $7,922,129 (50%)
- Road Improvements: $6,971,473 (44%)
- Pavement Services/Rehab: $950,655 (6%)
Current Pavement Condition Index (PCI) - 76
Anticipated 2016 Roadway Improvements Schedule

Unfinished Projects From 2015:
- East Hill Road – Reclaim (Arterial/Collector) w/drainage - $298,791
- Pine Acres Drive - Reclaim (Local) w/drainage - $195,000
- Breezy Hill Road - Chip Seal - $41,000
- Indian Hill Road - Chip Seal - $52,000
Unfinished Projects Total - $586,791

New Projects:
- West Mountain Road – Thin Overlay – $161,946
- Powder Mill Road – Thin Overlay - $42,897
- Atwater Road – Thin Overlay - $28,366
- Various Roads – Crack Sealing - $30,000
- Full Depth Patching/Misc. Drainage - $25,000
- Testing and Engineering Services - $25,000
New Projects Total - $313,209

Total - $900,000
Future PCI vs. Funding Level

PCI - Pavement Condition Index

- $0/year for 10-years
- $200,000/year for 10-years
- $600,000/year for 10-years
- $800,000/year for 10-years
- $1,000,000/year for 10-years
- $1,500,000/year for 10-years

2011 2014 2017 2020 2023
Conclusions & Recommendations

- Average conditions have gradually improved with previous five year funding level
- Town should allocate sufficient budget to achieve the desired condition goal
- Continue to include pavement preservation in program while funding major projects
- Provide resources to check quality during construction
- Perform updated road survey
- Continue to monitor conditions and progress
Pavement Management Program
Town of Canton
Questions & Answers