

Pavement Management

Public Works June 2018

Full Report Available on City Website at:
<http://www.lewistonmaine.gov/DocumentCenter/View/6297>

Pavement Management

"Keep the Good Roads Good"

Public Works

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Presenters

- ▶ Richard C. Burnham, PE, City Engineer
- ▶ Ryan Barnes, PE, Project Engineer

Outline

- ▶ What is Pavement Management
- ▶ Statistics
- ▶ Lewiston's Pavement Management Program
- ▶ 5 yr. Plan
- ▶ Q/A

What is Pavement Management

- ▶ A system that provides tools and methods to help decision makers keep pavements in a serviceable condition.
- ▶ Inspect all pavements and rate from 1– 100, PCI
- ▶ Develop a moving scale for pavement ratings
- ▶ Determine status of pavement system and establish paving plan based on ability to pay and ultimate serviceability

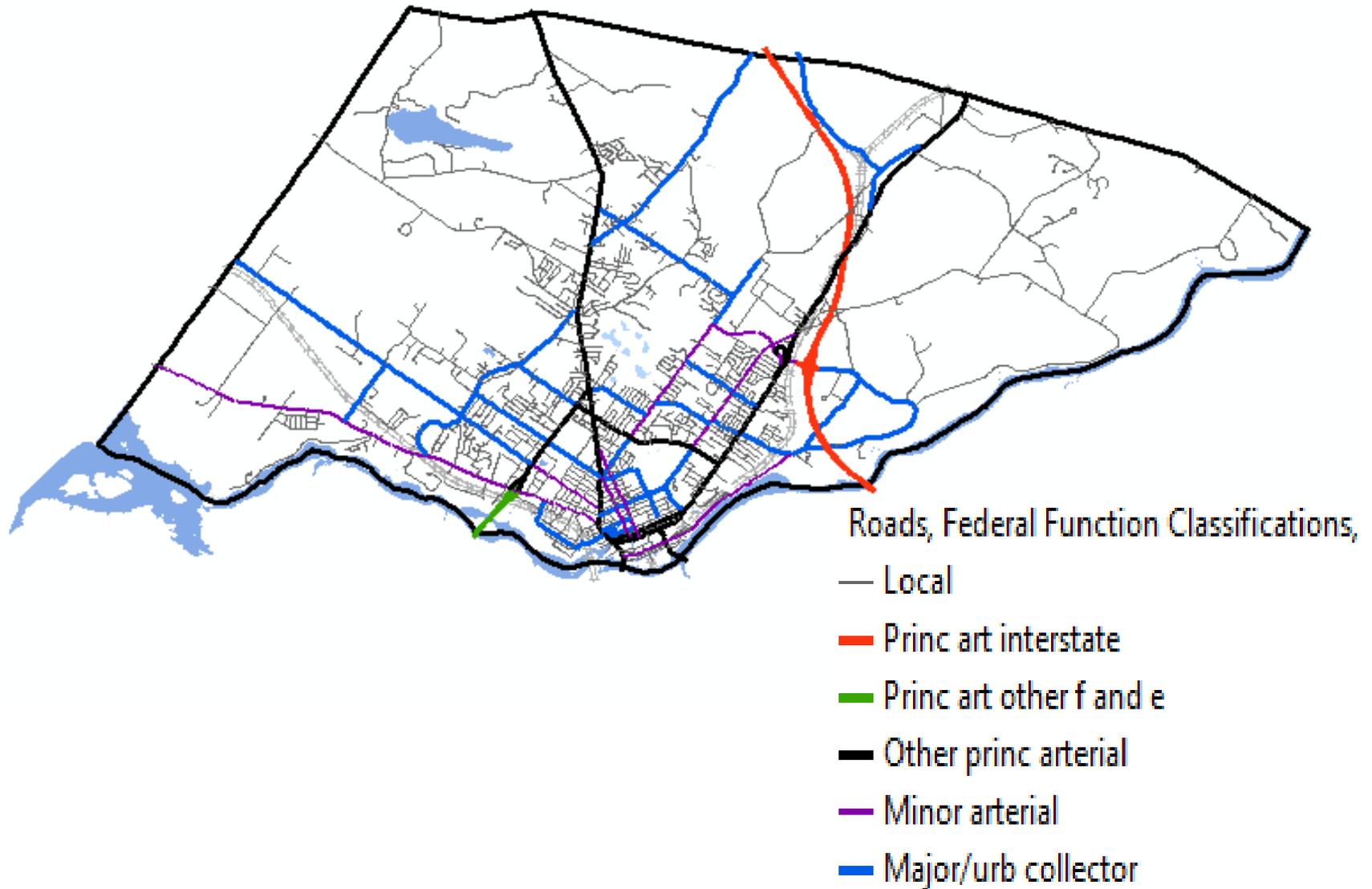
Why is Pavement Management Necessary?

- ▶ Provides an overall status of the pavement system
- ▶ Provides mechanism to know where and how to spend money on streets
- ▶ Maintains pavement condition at a PCI above 70
- ▶ Preserves investment in infrastructure

Statistics

- ▶ Population of Lewiston is 36,684 with a Daytime Population of 44,459
- ▶ AADT's
 - Lisbon Street at Adams Avenue 17,170
 - Main Street at Lisbon Street 29,700
 - Sabattus Street at Russell Street 22,100

Statistics



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Statistics

Road Classification Centerline Miles

	<u>Miles</u>
▶ Local (Park Street)	-131.8
▶ Major/Urban Collector (Pond Road)	- 25.8
▶ Minor Arterial (Pleasant Street)	- 12.7
▶ Other Principal Arterial (Sabattus Street)	- 15.9
▶ Principal Arterial e and f (VMB Ramps)	- 1.7
▶ Principal Arterial Interstate (I-95)	- <u>11.2</u>
	199.1

Statistics

Road Classification Centerline Miles

	<u>Miles</u>
▶ Local (Park Street)	-131.8 (65%)
▶ Major/Urban Collector (Pond Road)	- 25.8
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	199.1

100% Local Funding

Statistics

Road Classification Centerline Miles

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Limited Funding Available

Statistics

Road Classification Centerline Miles

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Limited Funding Available

Statistics

Road Classification Centerline Miles

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▶ Principal Arterial e and f (VMB Ramps)	- 1.7
▶ Principal Arterial Interstate (I-95)	- <u>11.2</u> (6%)
	199.1

100% State/Federal Funding

Lewiston's Proposed Program

- ▶ \$2,000,000 per year drops the PCI 3 points in ten years.
- ▶ \$2,800,000 would have to be spent annually to maintain PCI

Lewiston's Proposed Program

▶ Street Maintenance	\$2,100,000
◦ Overlays, Mill & Fills	
▶ Preventative Maintenance	\$ 200,000
◦ Pot Hole Repair, Crack Seal, Drag Shim	
▶ Reconstruction	\$ 500,000
◦ Reclaim, Full Depth Reconstruction	
▶ <i>Total</i>	<i>\$2,800,000</i>

Lewiston's Proposed Program

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▶ Reconstruction	\$ 500,000
◦ Reclaim, Full Depth Reconstruction	
▶ <i>Total</i>	<i>\$2,800,000</i>

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Asset Management

Pavement Management



Figure 1

*Graph from TRNews 228

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Asset Management Pavement Management

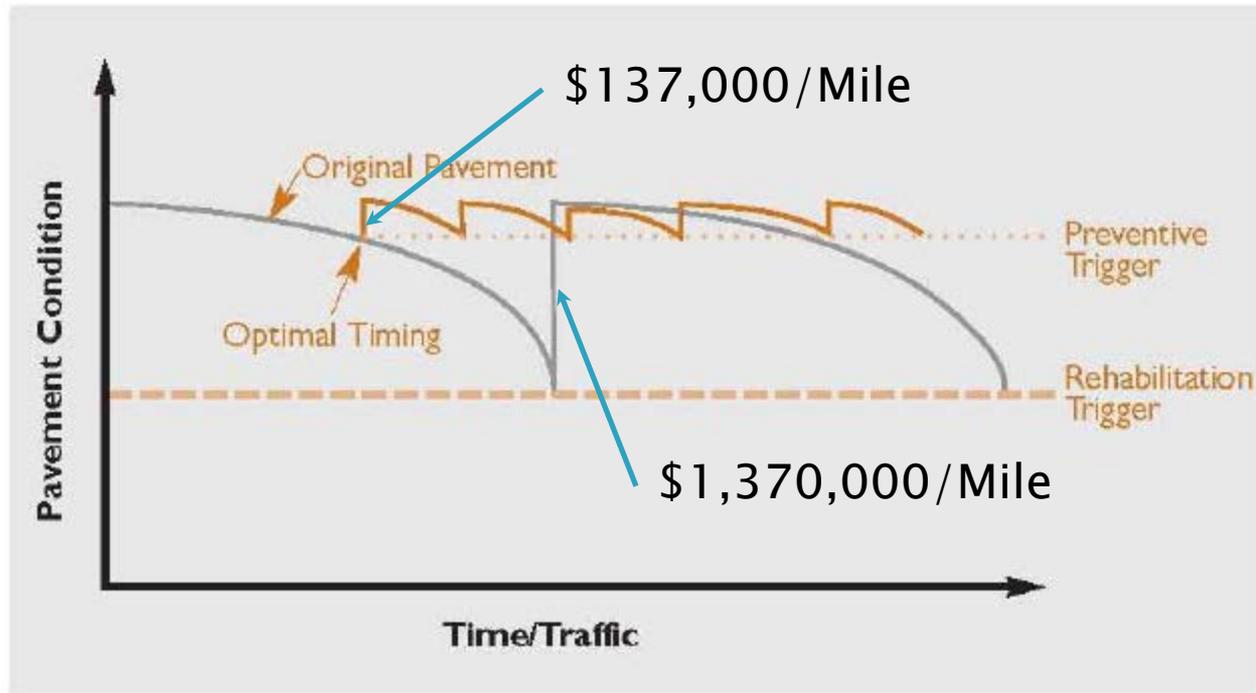


Figure 1

*Graph from TRNews 228

“Keep the Good Roads Good”

PCI Gradation

PCI	Maintenance Strategy
100	Good - Future Overlay
85	Satisfactory - Future Overlay
70	Fair - Light Overlay/Shim (1.0")
55	Poor - Heavy Overlay/Shim(2.25")
40	Very Poor – Reclaim/Reconstruct
25	Serious - Reconstruct
10	Failed - Reconstruct
0	Failed - Reconstruct

Figure 3

“Keep the Good Roads Good”

PCI Gradation

PCI	Maintenance Strategy
100	Good - Future Overlay
85	Satisfactory - Future Overlay
70	Fair - Light Overlay/Shim (1.0")
55	Poor - Heavy Overlay/Shim(2.25")
40	Very Poor – Reclaim/Reconstruct
25	Serious - Reconstruct
10	Failed - Reconstruct
0	Failed - Reconstruct

Failed Roads

Figure 5

“Keep the Good Roads Good”

PCI Gradation

PCI	Maintenance Strategy
100	Good - Future Overlay
85	Satisfactory - Future Overlay
70	Fair - Light Overlay/Shim (1.0")
55	Poor - Heavy Overlay/Shim(2.25")
40	Very Poor – Reclaim/Reconstruct
25	Serious - Reconstruct
10	Failed - Reconstruct
0	

Bad Roads

Figure 3

“Keep the Good Roads Good”

PCI Gradation

PCI	Maintenance Strategy
100	Good - Future Overlay
85	Satisfactory - Future Overlay
70	Fair - Light Overlay/Shim (1.0")
55	Poor - Heavy Overlay/Shim(2.25")
40	Very Poor – Reclaim/Reconstruct
25	Serious - Reconstruct
10	Failed - Reconstruct
0	

Good Roads

Figure 3

“Keep the Good Roads Good”

PCI Gradation

PCI	Maintenance Strategy
100	Good - Future Overlay
75	Satisfactory - Future Overlay
70	Fair - Thin Overlay/Shim (1.0")
55	Poor - Heavy Overlay/Shim(2.25")
40	Very Poor - Reclaim/Reconstruct
25	Serious - Reconstruct
10	Failed - Reconstruct
0	

Figure 3

“Keep the Good Roads Good”

“Keep the Good Roads Good”

Treatment Options

- ▶ Crack Sealing
- ▶ Pot Hole Repair
- ▶ Light Overlay
- ▶ Heavy Overlay
- ▶ Reclaim
- ▶ Strip and Pave
- ▶ Reconstruction

Crack Sealing



PCI = 70 to 100

Crack Sealing (Pleasant St.)



PCI = 70 to 100



Prevents Water from
Damaging Pavement

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Pothole Repair



Localized Failure

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Pothole Repair (Various Locations)



Localized Repair



Prevents Future
Deterioration

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Light Overlay



PCI = 55 to 70

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Light Overlay (Various Roads)



PCI = 55 to 70



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Heavy Overlay



PCI = 40 to 55

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Heavy Overlay (Spruce Street)



PCI = 40 to 55

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Strip and Pave



PCI = 40 to 55

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Strip and Pave(Adolphe Street)



PCI = 40 to 55

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Pavement Reclamation



PCI = 25 to 40

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Pavement Reclamation (Webster St)



PCI = 25 to 40

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Full Depth Reconstruction



PCI = 0 to 25

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Full Depth Reconstruction (Willow Circle)



PCI = 0 to 25



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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)		
Bad (PCI 55 – 26)		
Failed (PCI 25–0)		

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	
Bad (PCI 55 – 26)		
Failed (PCI 25–0)		

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	80.8%
Bad (PCI 55 – 26)		
Failed (PCI 25–0)		

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	80.8%
Bad (PCI 55 – 26)	19.7%	
Failed (PCI 25–0)		

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	80.8%
Bad (PCI 55 – 26)	19.7%	16.4%
Failed (PCI 25–0)		

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	80.8%
Bad (PCI 55 – 26)	19.7%	16.4%
Failed (PCI 25–0)	3.3%	

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How Are we Doing?

Condition	2015	2018
Good (PCI 100–56)	77.1%	80.8%
Bad (PCI 55 – 26)	19.7%	16.4%
Failed (PCI 25–0)	3.3%	2.8%

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A Five Year Plan

- ▶ Continue using the PCI Ratings to guide the program
- ▶ Reevaluate the PCI Ratings in 2020
- ▶ Keep the Good Roads Good

Questions

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