



# Pavement Surface Evaluation and Rating Presentation

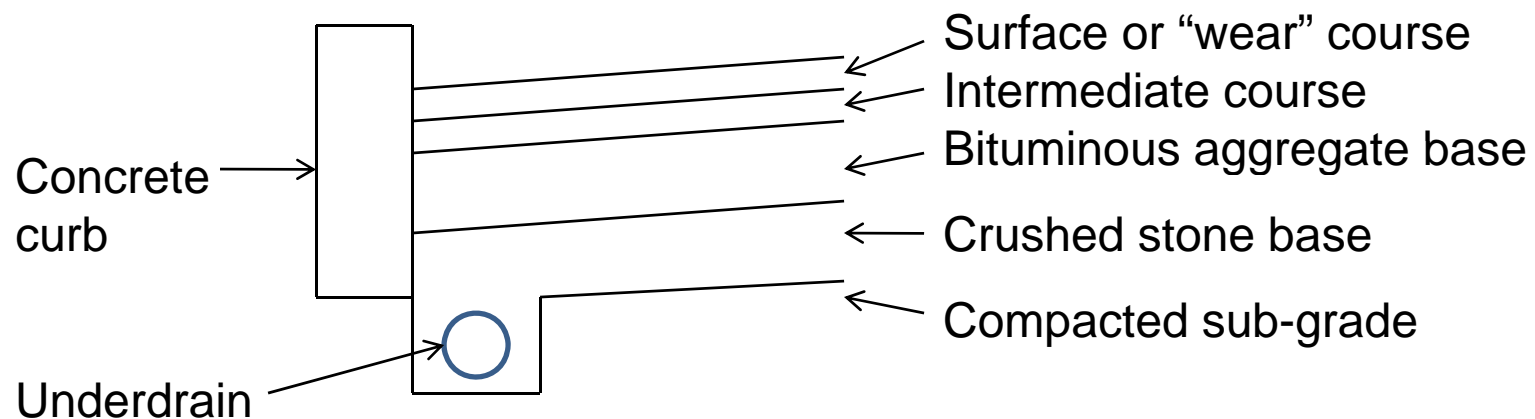
City of Oberlin  
Public Works Department  
July 5, 2011



# Causes of Pavement Deterioration

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- Environmental : weathering and aging
- Structural: repeated traffic loading
  - Sub base, base, quality of materials/construction
- Both

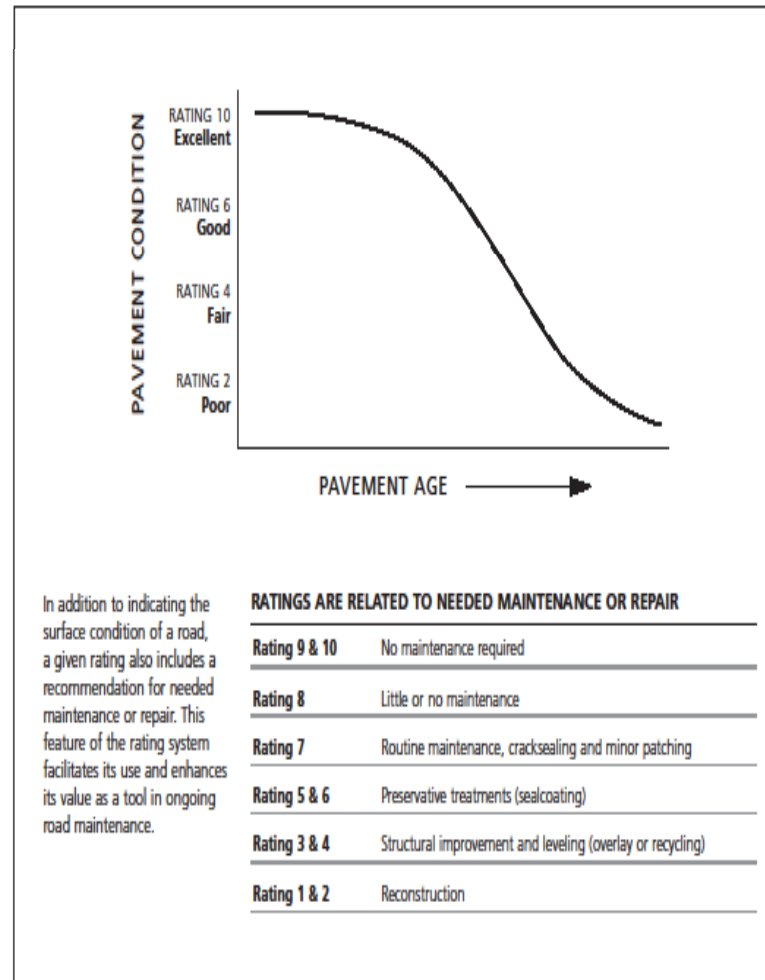


# Four Categories of Pavement Distress

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- Surface Defects
- Surface deformation
- Cracks
- Patches and Potholes

# Pavement Condition Over Time



## Rating system

Surface rating	Visible distress*	General condition/ treatment measures
<b>10</b> Excellent	None.	New construction.
<b>9</b> Excellent	None.	Recent overlay. Like new.
<b>8</b> Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.
<b>7</b> Good	Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
<b>6</b> Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"-1/2"), some spaced less than 10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
<b>5</b> Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2")
<b>4</b> Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2" or more).
<b>3</b> Poor	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
<b>2</b> Very Poor	Alligator cracking (over 25% of surface). Severe distortions (over 2" deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.
<b>1</b> Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

\* Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.

## Pavement Surface Evaluation and Rating (PASER)

- Visual inspection system
- Rates pavement surface on a scale of 1-10
- Published by The Transportation Information Center, University of Wisconsin.
- Based in part on a roadway management system originally developed by Phil Scherer, transportation Planner, Northwest Wisconsin Regional Planning Commission.
- Compared to a more complicated 1-100 Pavement Condition Index (PCI) which measures and rates each type of defect.

# Excellent/Very Good

<i>Surface Rating</i>	<i>Visible Distress*</i>	<i>General condition/treatment measures</i>
10 Excellent	None.	New construction.
9 Excellent	None.	Recent overlay. Like new.
8 Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.

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# Surface Rating - 10

New Construction – No maintenance required.



Eric Nord Way – Constructed 2010



# Surface Rating - 9

Recent Overlay. Like new. – No maintenance required.



East College (Oberlin Rd to RT 511)



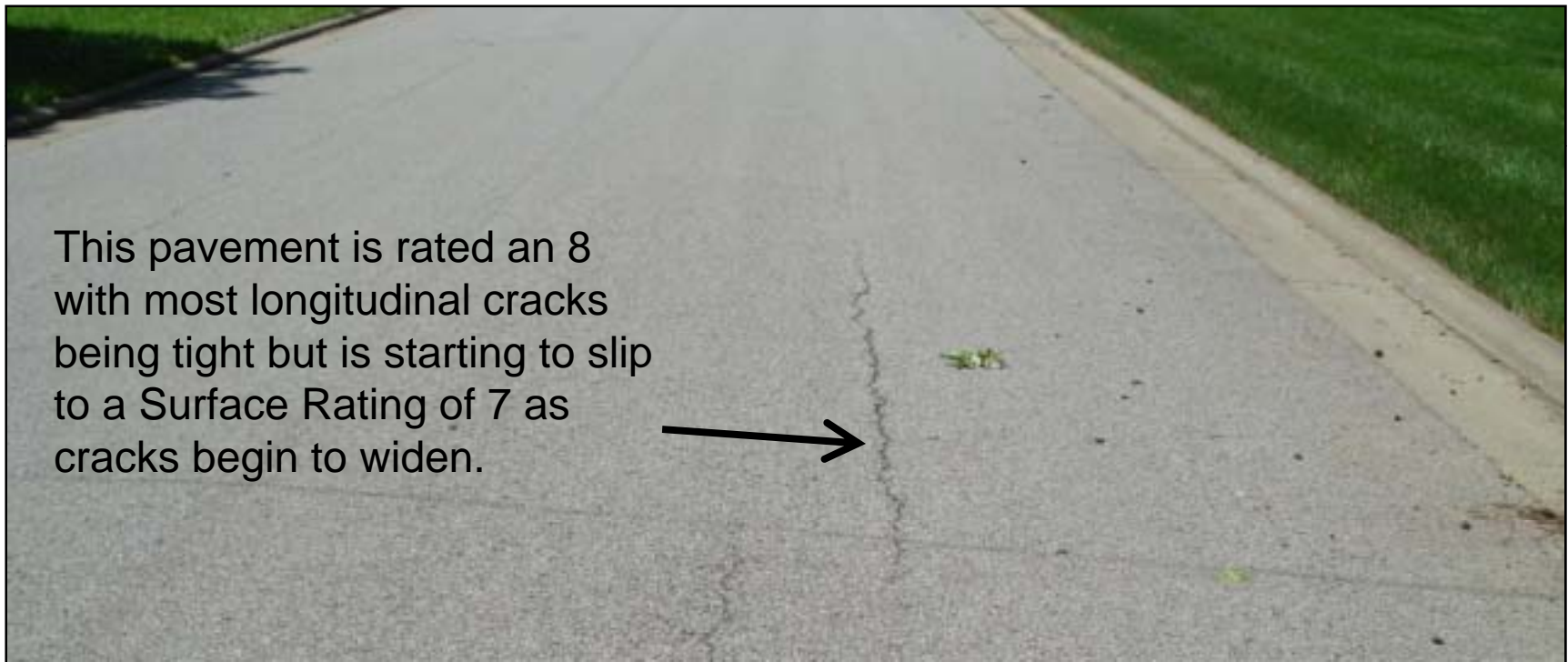
Oberlin Rd (East College to Plum Creek Bridge)

Other examples: S. Pleasant, King, Oak, Smith, Edison, Gladys Ct., Prospect, Colony, Woodhaven, Orchard.



# Surface Rating - 8

Recent Overlay showing longitudinal or transverse cracks. All cracks are tight or sealed. Little or no maintenance required



Fairway Dr.

# Good

<i>Surface Rating</i>	<i>Visible Distress*</i>	<i>General condition/treatment measures</i>
<p><b>7</b> Good</p>	<p>Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.</p>	<p>First signs of aging. Maintain with routine crack filling.</p>
<p><b>6</b> Good</p>	<p>Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"–1/2"), some spaced less than 10'. First sign of block cracking. Sight to moderate flushing or polishing. Occasional patching in good condition.</p>	<p>Shows signs of aging. Sound structural condition.</p>

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# Surface Rating - 7

First signs of aging. Maintain with routine crack filling.



Hill Creek Dr.

# Surface Rating - 6

Shows signs of aging. Sound structural condition.



E. College  
(Orchard to Oberlin Rd.)

Large cracks forming small “pot holes” requiring patching.



Oberlin Rd  
(Lorain to College)

Note multiple cracks forming along the curb.

# Surface Rating - 6

Shows signs of aging. Sound structural condition.



Beginning stages of block cracking caused by shrinking and hardening of the asphalt over time.

Thomas Street



# Fair

<i>Surface Rating</i>	<i>Visible Distress*</i>	<i>General condition/treatment measures</i>
5 Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealing or thin non-structural overlay (less than 2")
4 Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2" or more).

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# Surface Rating - 5

Roads are still in good structural condition but clearly need sealcoating or overlay.



Robin Park

Cracking up to 50% of surface. Longitudinal cracking in the wheel path will move rating to a 4.



Stern

Block cracking up to 50% of surface. Cracks open to 1/2".



# Surface Rating - 4

Roads show first signs of needing an overlay.  
Severe surface raveling which should no longer be sealed.



Elm (Professor to Prospect)

Extensive block cracking over 50% of surface. Patches in fair condition.



Forest

Severe raveling and loss of surface material.

# Surface Rating - 4

Roads show first signs of needing an overlay.  
Severe surface raveling which should no longer be sealed.



Groveland

Significant patches in fair condition.



S. Professor

Longitudinal cracking in the wheel path. Beginning signs of alligator cracking (a level 3 condition).

# Poor-Failed

<i>Surface Rating</i>	<i>Visible Distress*</i>	<i>General condition/treatment measures</i>
<p><b>3</b> Poor</p>	<p>Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.</p>	<p>Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.</p>
<p><b>2</b> Very Poor</p>	<p>Alligator cracking (over 25% of surface). Severe distortions (over 2" deep) Extensive patching in poor condition. Potholes.</p>	<p>Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.</p>
<p><b>1</b> Failed</p>	<p>Severe distress with extensive loss of surface integrity.</p>	<p>Failed. Needs total reconstruction.</p>

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# Surface Rating - 3

Will require select structural repair prior to milling and resurfacing.



Woodland

Extensive patching in poor condition.



Union (Professor to Main)

Open raveled alligator cracking.  
Small potholes.



# Surface Rating - 3

Will require select structural repair prior to milling and resurfacing.



Artino

Severe alligator cracking on the edges. Distortion with patches in poor condition.



Elm (Prospect to cul-de-sac)

Severe alligator cracking with small potholes.

# Surface Rating - 2

Severely deteriorated. Normally needs reconstruction.



Severe alligator cracking over 75% of surface (criteria is 25%). Potholes, patches, and rutting.

Sumner

# Other considerations that factor into project prioritization.

- Underground utilities
- Curbs
- Under drainage system
- Select areas of failure
- Street type by function
  - Local, collector, arterial
- Street type by use
  - Residential, commercial, industrial
- Funding availability





# 5-Year Capital Plan

## STREETS

Project Name/Description	From	To	Status	2011	2012	2013	2014	2015
North Professor	Lorain	Union		\$195,332				
Union	Main	Professor		\$117,224				
Union	Professor	Woodland		\$68,724				
Woodland	Lorain	Union		\$166,432				
Artino	Lorain	Stern		\$287,707				
Stern	Artino	Terminus		\$23,017				
Sumner	Park	Terminus		\$114,035				
Pavement Maintenance	Select Locations			<u>\$60,000</u>				
<b>2011 Subtotal:</b>				<b>\$1,032,471</b>				
Elm	East of Cul-de-Sac	Prospect			\$72,009			
Elm	Prospect	Cedar			\$222,062			
Elm	Cedar	Professor			\$115,806			
Forest	Professor	Cedar			\$92,437			
Forest	Cedar	Prospect			\$70,900			
West College	College Pl.	Main			\$93,285			
Pavement Maintenance	Select Locations				<u>\$90,000</u>			
<b>2012 Subtotal:</b>					<b>\$756,499</b>			
South Professor	Hamilton	Lincoln				\$163,220		
South Professor	Lincoln	Bike Path				\$122,786		
South Professor	Bike Path	South				\$72,229		
South Professor	South	Morgan				\$124,910		
South Professor	Morgan	Forest				\$92,372		
South Professor	Forest	Vine				\$49,920		
South Professor	Vine	Elm				\$99,215		
South Professor	Elm	College				\$94,361		
Pavement Maintenance	Select Locations					<u>\$90,000</u>		
<b>2013 Subtotal:</b>						<b>\$909,013</b>		
Groveland	Main	Pleasant					\$93,052	
Groveland	Pleasant	Park					\$91,694	
Groveland	Park	Spring					\$151,880	
Edgemere	Prospect	Cul-de-Sac					\$70,198	
North Pleasant	Lorain	College					\$128,691	
Pavement Maintenance	Select Locations						<u>\$90,000</u>	
<b>2014 Subtotal:</b>							<b>\$625,515</b>	
SR58	ODOT - 80%; Match - 20%							\$593,200
SR511	ODOT - 80%; Match - 20%							\$2,489,400
Pavement Maintenance								<u>\$90,000</u>
<b>2015 Subtotal:</b>								<b>\$3,172,600</b>

Cost includes construction and inspection (where applicable)



This PowerPoint presentation is posted on the City's website at <http://www.cityofoberlin.com/PublicWorks/EngineeringDivision/CurrentProjectsandStudies.page>