Making the Most Out of Our Highway System

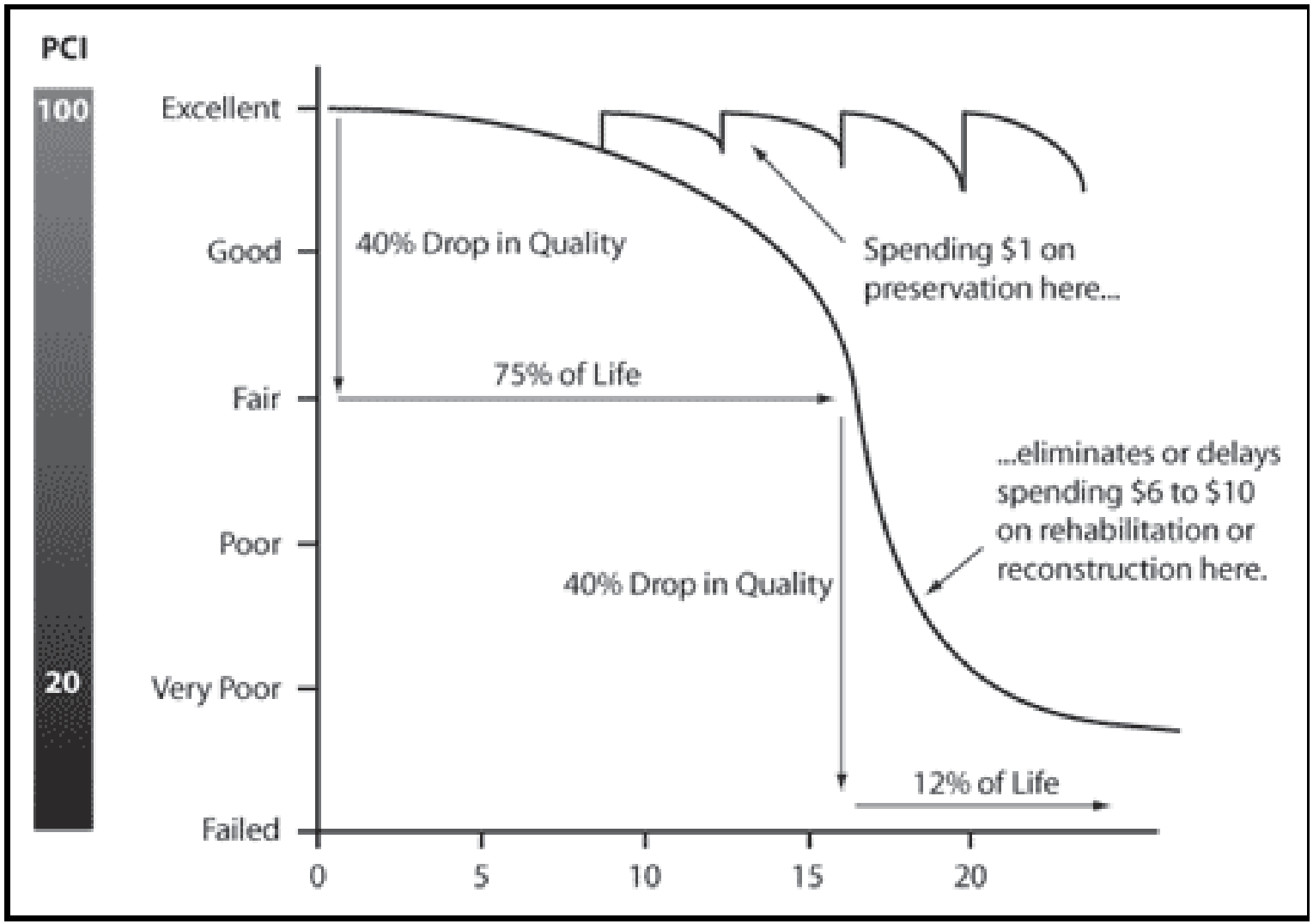
Eau Claire County Highway Commissioner

Jon Johnson

Funding Programs

- GTA
- Local Bridge Assistance Program
- 50/50 Bridge Program
- Disaster Damage Aid – WIDOT, Paul Gingras
- HSIP
- LRIP – Local Road Improvement Program
- Specialty Aid Programs
- Tribal Transportation Program - BIA

Preventative Maintenance Planning
Why do it?



Preventative Maintenance Planning

What's your system condition?

													ROD	PASER
													(1-9)	(1-10)
CTH	FROM	TO	BEGIN	END	LENGTH	LENGTH@22'	ADT	CLASS	PAVEWIDTH	NEWPAVE	NEWSEAL	NEWCRACK	RATE15	RATE15
SS	CTH KB	Edgewater Dr	0.82	1.65	0.83	1.21	2200	MaC3	32	2001	2010	2013	6.5	7.0
SS	Edgewater Dr	Valley View Dr	1.65	1.73	0.08	0.12	2200	MaC3	32	2001	2010	2013	6.5	7.0
SS	Valley View Dr	Beulah Ln	1.73	1.93	0.20	0.29	2200	MaC3	32	2001	2010	2013	6.5	7.0
SS	Beulah Ln	Wenzel Dr	1.93	2.15	0.22	0.32	2000	MaC3	32	2001	2010	2013	6.5	7.0
SS	Wenzel Dr	Elcho Rd	2.15	2.41	0.26	0.38	2000	MaC3	32	2001	2010	2013	6.5	7.0
SS	Elcho Rd	Pheasant Rd	2.41	2.66	0.25	0.36	2000	MaC3	32	2001	2010	2013	6.5	7.0
SS	Pheasant Rd	Partridge Rd	2.66	2.81	0.15	0.22	1500	MaC3	32	2001	2010	2013	6.5	7.0
SS	Partridge Rd	Spring St	2.81	3.48	0.67	0.97	1500	MaC3	32	2001	2010	2013	6.5	7.0
SS	Spring St	Schultz Rd	3.48	3.66	0.18	0.26	1500	MaC3	32	2001	2010	2013	6.5	7.0
SS	Schultz Rd	Louis Rd	3.66	3.72	0.06	0.09	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Louis Rd	Moss Rd	3.72	3.92	0.20	0.29	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Moss Rd	Watt Av	3.92	3.99	0.07	0.10	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Watt Av	Fawn Av	3.99	4.06	0.07	0.10	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Fawn Av	Kim Av	4.06	4.14	0.08	0.12	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Kim Av	Scott Av	4.14	4.24	0.10	0.15	1200	MaC2	32	2001	2010	2013	6.5	7.0
SS	Scott Av	Oak Knoll Rd	4.24	4.94	0.70	1.02	1000	MaC2	32	2001	2010	2013	6.5	7.0
SS	Oak Knoll Rd	Pine Rd	4.94	5.69	0.75	1.09	1000	MaC2	32	2001	2010	2013	6.5	7.0
SS	Pine Rd	Water Tower Rd	5.69	6.44	0.75	1.09	1000	MaC2	32	2001	2010	2013	6.5	7.0
SS	Water Tower Rd	CTH K	6.44	7.12	0.68	0.99	1000	MaC2	32	2001	2010	2013	6.5	7.0

When and What type of maintenance should be done?

Preventative Maintenance Planning

- Develop goals, Implement plan to achieve them.
- Categorize your roads by condition and prioritize them for the type of maintenance they need.
- Usually looking at roads that are rated at a 5 or better for most maintenance methods but a 4 can be considered depending on conditions

Preventative Maintenance Planning

Surface Rating	Visible Distress	General Condition/Treatment
10 Excellent	None	New paved surface not ready for seal coat
8 Very Good	• Few longitudinal cracks (expansion) • All cracks sealed or tight (open ¼" or less) • Very slight or no raveling, surface shows some traffic wear • No patching or very few patches in excellent condition	• Paved 3 to 5 years earlier requiring seal coat preventive maintenance • Recent seal coat • Little or no maintenance required • First sign of aging. Maintain with routine crack filling and seal coat
6 Fair	• Slight raveling (loss of fines) • Longitudinal cracking (open ¼" to ½" and some spaced less than 10 feet apart) • First sign of alligator cracking • Occasional patching in good condition	• Show signs of aging, sound structural condition. Could extend life with seal coat • May require seal coating or nonstructural overlay • Up to 10% of surface failed. Remove and replace failed area and seal coat entire surface
4 Poor	• Surface raveling. • Multiple longitudinal and transverse cracking • Alligator cracking (over 25% of surface) • Slight rutting or deflection (1/2" deep or less) • Patches in fair to poor condition • Occasional potholes	• Significant aging and first signs of need for strengthening. Would benefit from recycling or overlay • Needs patching and major overlay or complete recycling • 25% of paved surface failed. Remove and replace pavement/correct base failure as required and complete overlay/seal coating of remaining paved surface as needed
2 Very Poor or Failed	• Severe alligator cracking (over 25% of surface) • Severe deflection • Extensive patching in poor condition • Potholes • Visible pumping	• Severe deflection. Needs reconstruction with extensive base repair • Alligator cracking with visible sub-grade and water • Failed. May need total reconstruction

Based on University of Wisconsin-Madison, Transportation Information Center Information

Preventative Maintenance Planning

Asphalt Maintenance

- Crack Sealing – 2-3 years
  - And repeat at year 5
- Fog Sealing - 1-2 years
  - Over Chip Seal
- Chip Sealing – 5-8 years
  - Sooner the better !
- Sand Sealing - ?
- Scrub Sealing – 10+ years
- Micro Surfacing – 10+ years
- Rut Paving – as needed
- Wedging – as needed

Other Maintenance Needs

- Shoulders
- Culverts
- Drainage/Ditches
- Mowing
- Bridge – Epoxy Seal
  - Ealier the better

CTH SS – Town of Washington
What's the paser rating on this?

History – Paved 2001

No Data on Crack seal

Chip Sealed 2010

Crack Sealed 2013

Scrub Sealed 2017

Fog Sealed 2017

Video of Scrub Seal

Preventative Maintenance Planning

- Developing a Plan
  - What's your goal?
    - This varies on the amount of road miles and traffic in your area and your road conditions.
    - Examples:

    Township – Crack Fill and Chip Seal

    Village – Crack fill and Thin Asphalt Overlay

    Look at cost / mile and implement a budget based on available funding

Construction / Improvement Plans

- Once a highway is rated a 1-3 the next step is an improvement project.
- Who can afford this?
- Let's look at some asphalt prices

YEAR	SUPPLIER	MIX	OIL	TONS	$/tn
1996	Senn	LV		9,400	$ 16.29
1997	Senn	MV		10,700	$ 17.18
1998	Senn	MV		14,600	$ 16.25
1999	Senn			16,800	$ 16.89
2000	Senn	LV		13,000	$ 19.90
2001	EC Asphalt	LV		21,000	$ 18.48
2002	Senn			14,300	$ 18.40
2003					
2004	Monarch	E1		15,000	$ 19.10
2005	Senn			5,500	$ 19.80
2006	Monarch	E1		8,500	$ 31.80
2007	Senn	E1		15,000	$ 30.75
		E3			$ 33.80
2008	Monarch	E1	58-34	13,000	$ 43.91
		E3	64-28	1,300	$ 44.31
2009					
2010			58-28		$ 38.50
2011	Monarch				$ 40.50
2012	Monarch			14,100	$ 42.48
2013	Monarch	E1	58-28	5,500	$ 40.29
		E3	58-28	7,700	$ 41.20
2014					
2015	Monarch	E1	58-28	3,200	$ 40.00
2016		E3	58-28	12,700	$ 42.67
2017		3LT	58-28		$ 29.00
		4LT	58-28		$ 34.50

Construction / Improvement Plans

- Types of Construction - Highways
  - Reconstruction
  - Recondition
  - Pavement Replacement
  - Resurface / Overlay

Improvement Type	Cost/Mile	Life Expectancy Years	*Justification Summary
Reconstruction	$ 1,200,000.00	20+	Highway is classified as major collector and has over 750 vehicles / day
Reconditioning	$ 500,000.00	20+	Highway is classified as Major or Minor collector and has over 500 vehicles / day
Pavement Replacement	$ 213,000.00	20+	Cost efficient improvement method that can be done on all classifications
Resurface / Overlay	$ 95,000.00	15+	Subgrade is in good shape and existing pavement is in average condition

Construction / Improvement Plans

- Stabilized Full Depth Reclamation
  - How it works
    - Base One
    - Asphalt Emulsion
    - Foamed Asphalt
    - Portland Cement
  - Advantages
  - Where to apply
    - Video


RHINO


NON POTABLE WATER

Construction / Improvement Plans

- Justification
  - Design considerations – Handout
    - ADT
    - Speed limit
    - Classification
    - Geometrics – Alignments, sight distances
    - Highway Structure
  - What type of permits are needed
    - Wetland
    - Storm Sewer
    - Ect..

Bridge Improvements

- Options
  - Full Replacement
  - Deck Replacement – CTH H Town of Wilson - $765,000.00
  - Overlay


11/09/2017


11/09/2017


11/09/2017


PAINTED
11/09/2017


HITACHI
#432
KOMATSU


HITACHI
CATERPILLAR
KOMATSU

How Can We Benefit Each Other?

- Maintenance
  - Pavement Stripping – Town of Pleasant Valley, Washington
  - Culvert Supply – Town of Wilson
  - Plan Development
  - Contractor Coordination
  - Equipment Use
  - Bridge Maintenance
- Construction
  - Coordinate Paving – Town of Otter Creek, Village of Augusta
  - Coordinate Pulverizing
  - Joint Purchases
    - Gravel

Thank you