Performance Measures Presented to Agency Leadership

- In beginning steps of setting up performance measures
- Starting to analyze which pavements preservation performance measures are appropriate for NDDOT

Pavement Preservation Program Size and Treatments

2015 State and Federal Program (Contracted Work)

Treatment	State Funds Only	Federal Funds with State Match
Thin Lift Overlay	148 Miles	366 Miles
Microsurfacing	50 Miles	139 Miles
Chip Seal	0 Miles	529 Miles
Slurry Seal	0 Miles	84 Miles
CPR/DBR/Grind	0 Miles	178 Miles

2016 State and Federal Program (Tentative Contracted Work)

Treatment	State Funds Only	Federal Funds with State Match
Thin Lift Overlay	58 Miles	219 Miles
Microsurfacing	0 Miles	113 Miles
CPR/DBR/Grind	0 Miles	82 Miles

*Chip Seals & Slurry Seals:

$7 Million State Funds Only in Oil Districts

$10 Million Federal Funds with State Match in Non-Oil Districts

Pavement Preservation Program Size and Treatments (cont.)

2015 State and Federal Program (State Forces)

Need for 2015				
District	Asphalt/ Composite Roadway Miles	Depressed Crack Sealed with Minimac (Lane Miles)	CQS-1HP Emulsion Oil (Gallons)	Type II Aggregate (Tons)
Bismarck	1241	20.0	6,800	0.0
Valley City	807	86.0	12,000	400.0
Devils Lake	1070	136.0	20,400	680.0
Minot	1119	0.0	0	0.0
Dickinson	913	0.0	0	0.0
Grand Forks	806	0.0	0	0.0
Williston	964	54.0	16,200	540.0
Fargo	602	30.0	4,500	150.0
Total	7522	326.0	59,900	1,770.0

- 2016 Forecasts to be comparable to 2015 State Forces

Guidance Documents For Pavement Preservation Treatment

- Guidelines are outlined in our Maintenance Operations Manual.

Classification	Desired Chip Seal Cycle (Years)*	Depressed Cracks, Repair if IRI**	Asphalt Repair	Crack Pouring Crack Sealing	Desired Thin Lift Overlay/Micro Surfacing Cycle***	DBR, CPR, & Grinding
Rural Interstate	7	>110	Inspect and schedule each Spring. Repair as needed.	Follow crack pouring/ sealing policy	8 – 12 years	Inspect and schedule each Spring. Repair as needed.
Interregional System	7	>110			8 – 12 years	
State Corridor	7	>120			10 – 15 years	
District Collector	7+	>140			10 – 15 years	
District Corridor	7+	>140			10-15 years	

*** Initial seal coat placed 2-3 years after overlay or reconstruction. Other surface treatments may be used.**

****IRI = International Roughness Index. Excellent: <= 60; Good: 61-99; Fair: 100-145; Poor > 145**

*****Spot patches repaired yearly with HBP or microsurfacing and placed with paving equipment or the minimac. Cold Mix will be used for reactionary repairs only.**

Highest ADT for Preservation Treatment

- Currently no ADT requirements for NDDOT pavement preservation treatments

Successful and Problematic Pavement Preservation Treatments

Greatest Success:

- Chip Seal Coats & Spray Patching work best
- Scotch Patching
- Micro Surfacing
- Slurry Sealing
- Crack Sealing
- Texas Under Seal (finishing construction fall 2015)

Problems:

- Can’t keep up with treatments (lack of funding)

Frequency of Pavement Preservation Training

- Spring Academy covers pavement preservation
  - Classroom training
  - Field training
- NDDOT Maintenance Conference
- Central Office attends various webinars/conferences discussing pavement preservation throughout the year
- North Dakota Asphalt Conference

Pavement Condition Measures Currently Used

	IRI	Distress	Rut
Excellent	0 to 60	98 to 99	0.00 to 0.24
Good	61 to 99	88 to 97	0.25 to 0.37
Fair	100 to 145	77 to 87	0.38 to 0.50
Poor	> 145	< 77	> 0.50

Also track:

- Faulting
- Individual Distresses:

Asphalt Pavements:

- Transverse Cracking
- Longitudinal Cracking
- Alligator Cracking
- Block Cracking
- Bleeding
- Raveling/Weathering
- Bituminous Patching

Rigid Pavements:

- Transverse Cracking
- Transverse Crack Spalling
- Longitudinal Cracking
- Longitudinal Joint Spalling
- D Cracking
- Corner Breaks
- Bituminous Patching
- Concrete Patch Deterioration