

# Surface Treatments Over View

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# Agenda

- Why Preservation
- Treatments
- Performance



# Service Life Enhancement of Substrates Overlaid with Thin Overlays (UTBWC, Chip Seals, and Micro-Surfacing)

NRRRA PREVENTIVE MAINTENANCE TEAM

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Table 5.1 Weibull parameters obtained for various treatments overlaid on different substrates.

Type of Treatment	Type of Substrate	Threshold Time to Failure, $t_o$	Failure Mode, $\beta$	Remaining Service Life, $\mu$
UTBWC	BOB <sup>1</sup>	0	Wear-out failures	13
	BOC <sup>1</sup>	2		8
Chip Seals	BOB	0	Wear-out failures	9
	BOC <sup>1</sup>	0		8
	BAB	0, 2		8 - 10
Micro-surfacing	BOB	0, 2	Wear-out failures	10 - 11
	BOC	0		9 - 15 <sup>2</sup>
	BAB	0		8 - 9

<sup>1</sup> NDDOT does not have substrates that have been overlaid with this type of treatment.

<sup>2</sup> Significant difference observed between two data sets from t-test analysis.

# Preservation Options

- Crack Sealing / Filling
- Chip Seal
- Micro Surfacing
- Ultra Thin Bonded Wearing Course (UTBWC)



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# What Is a Chip Seal?

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- Bituminous surface treatment
  - Heavy asphalt binder membrane
  - Followed by aggregate chip
  - Fog Seal

# Micro Surfacing





# UTBWC



# How

- Application of polymer modified emulsion
- CRS-1p
  - 0.17 to 0.22 g/y<sup>2</sup>
- Applied just before the mod. HMA is applied
- Forms water proof seal of surface
- Strong bond
- Gap graded polymer modified HMA



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- the job of supervising or taking care of something, such as an organization or property.
- "responsible stewardship of our public lands"
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# Questions?



# Thanks You

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