Preservation Group (PG) Experiment

- Need to quantify the benefits of preservation
- Good materials, designs, placement quality
- Designs verified with actual onsite materials
- All rates calibrated before and verified as placed
- MAP-21 (cracking, rutting, roughness) focus
- Many other non MAP-21 performance measures
- Benefits as function of pretreatment condition
- Agency decision process implementation.
Preservation Options Studied

• Emulsion surface treatments
  – Fog seals with, without rejuvenators
  – Chip seals with, without rejuvenators (scrubs), fibers
  – Micro surface with, without HiMA, fibers and double
  – Micro surface as Cape seals on chips, scrubs

• Plant produced thinlays
  – 4.75 DGA (virgin, 50% RAP, 5% RAS, 11% RAP + 3% RAS)
  – DGA Thinlays over 100% RAP cold recycle (CCPR, CIR)
  – DGA Thinlays as “HMA Capes” on chips and scrubs
  – Open graded friction course (OGFC) surfaces (tack study).
Lee Road 159 Low Traffic Preservation

910k ESALs
80k ESALs

Lee Road 159
Pavement Preservation Experiment

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MnROAD
National Center for Asphalt Technology
NCAT
US-280 High Traffic Preservation

6M Vehicles, 1 3/4M ESALs
Cold Climate Sections
Cold Climate Sections

710 ADT with 8% Heavy Commercial

16,500 ADT with 3% Heavy Commercial
Benefits = \( f(\text{Pretreatment Condition}) \)

- "Fair" Life Extending Benefit
- "Fair" Condition Improving Benefit at End of Year 3
Benefits = \( f(\text{Pretreatment Condition}) \)
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Summary

• Value of good materials, designs, construction, inspection
• Life extending, x & condition improving, y preservation benefits
• Measured reduction in subgrade moisture contents
• Similar trends in south vs north, low vs high traffic sections
• Planning underway for 2019 northern recycle sections
• Anticipate long term data collection for many years to come
• Support for state agency decision process implementation
• 20 US state DOTs now supporting pooled fund, more likely.
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