MPPP
Micro Surfacing

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Micro Surfacing

- Description: mixture of a polymer modified asphalt emulsion, aggregate filler, mineral filler, water, additives.
- Purpose: retard oxidation and improve skid resistance. Multiple course can correct rutting, minor surface profile irregularities, light to moderate raveling.

Micro Surfacing in MDOT CPM Program

- 434 lanes miles in 2004
- 423 lane miles in 2005
- 2006?

Micro Surfacing

- MDOT criteria for micro surfacing
- Micro Surfacing in the MDOT CPM program
- Requirements of a successful CPM (micro surface) program

MDOT Criteria

Existing Pavement Condition:

- Uniform cross section and good base
- Slight cracking, rutting, minor surface irregularities, flushed or polished surface, and/or minor raveling
- Surface Prep – Overband Crack Fill, sometimes bump removal
- Flex, RSL>=5, DI<30, RQI<54, Rut<1”

MDOT Criteria

Performance Limitations

- Brittle nature- does not seal cracks and does not resist reflective cracking on composite pavements
- Warm to moderate temperatures required for curing, therefore sensitive to late season night time work

Pavement Condition Parameters

- Rutting
- Raveling
- Debonding
- Bleeding/Flushing

Pavement Condition Parameters

Raveling

Rutting

Flushing

RUT

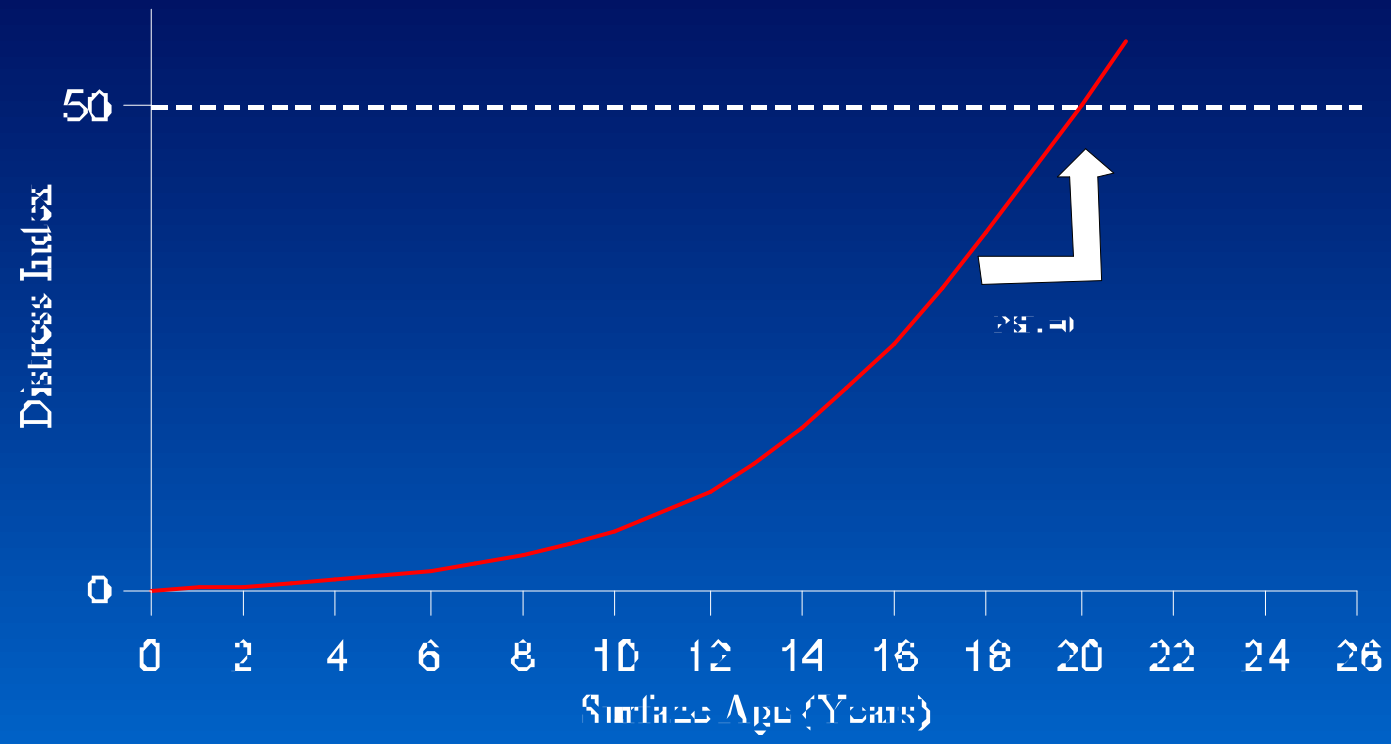
Pavement Management Data

- Distress Index- An index that quantifies the level of distress that exists on a pavement section. Scale starts at 0 and increases as pavement condition worsens (frequency and severity of distress increases).
- Assigned to recorded distresses based on distress type, extent and severity.
- DI<30

Pavement Management Data

- Remaining Service Life, RSL- the estimated number of years until a pavement section reaches the threshold distress index (DI=50). Function of distress and the rate of deterioration. RSL of 0 means the most cost effective treatment is Reconstruct or Rehabilitate.
- RSL>=5

Pavement Performance Curve



Pavement Management Data

- Ride Quality Index- An index developed by Michigan that quantifies the user's perception of pavement ride quality
- < 30 Excellent
- 31 to 53 Good
- 54-69 Fair
- >70 Poor
- RQI<54

Micro Surfacing Plan Development

Log project should include

- Location Map
- Description of Work
- Typical Cross Sections
- Special Provisions
- Pay items/Quantities for Overband, Micro, Maintaining Traffic, Pavement Markings

Micro Surface Warranty

Pre-Paving Meeting

- Discussion of QC Plan
- Review mix design
- Review equipment calibrations
- Inspect equipment condition

Micro Surface Warranty

CONSTRUCTION

- Thoroughly clean pavement.
- Remove existing plastic pavement markings.
- Micro Surface Warranty- minimum of two courses, restored cross section of driving lane within ¼ inch measured transversely.
- Finished surface free of excessive tears, rippling, scratch mark, irregularities.

Micro Surface Warranty

Weather Considerations

- Air and pavement temperature above 45 degrees, no forecasts below 32 degrees within 24 hours

Restored Cross Section??

Rut Filling

Protect Drainage Structures

Two Courses/Protect From Traffic

Micro Surfacing

Requirements of a Good Program

- Develop Guidelines based on pavement management data
- Must have proper project scoping including any necessary preliminary engineering (soils information, traffic information, etc.)
- Combine guidelines with field reviews, pavement history, engineering expertise.
- Proper Inspection/Administration

Successfully Completed Project

QUESTIONS????

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