Outline

- Definition
- Project Selection Criteria
- Project Evaluation
- TxDOT Amarillo District CIR Projects
- Potential Cost Savings
CIR Definition

- COLD IN-PLACE RECYCLING – Recycling of asphalt pavement without the application of heat to produce a rehabilitated pavement. Rap is mixed with an additive(s) to produce a reprocessed material used as an asphalt pavement layer.
Project Selection Criteria

- Excellent
- Good
- Fair
- Poor
- Very poor
- Failed

Pavement Condition Index

Time, years (exact values vary depending on traffic, materials, etc.)

- New
- Minor aging
- Micro cracks
- Minor raveling
- Minor cracking
- Minor roughness / friction loss
- Moderate cracking
- Moderate roughness
- Rutting
- Major cracking
- Patching
- Major roughness
- Slurry / Micro surfacing
- Thin overlay / Ultra-thin bonded
- HIR or thin mill & fill Cold in-place recycling
- Full depth reclamations
- Reconstruction
Project Selection Criteria

- Adequate asphalt surface thickness – 3” to 6”

- Base & Subgrade layers in good condition
  - No or only isolated full-depth failures – repair prior to CIR

- Material properties of existing asphalt surface layer
Project Evaluation

• Visual assessment of the pavement condition

• Pavement testing
  o Falling Weight Deflectometer (FWD)
  o Cores of existing pavement
  o Dynamic Cone Penetrometer (DCP)
  o Trenching

• Lab evaluation of asphalt material

• Mix design
  o Optimize additive(s) type and amount
    • Emulsion
    • Aggregate
    • Lime
    • Fly Ash
TxDOT Amarillo District CIR Experience

US 83 Ochiltree County – 2010
US 83 Hemphill County – 2013
US 83 Ochiltree Co.

- US 83 – From Oklahoma to 6.1 miles South
- Constructed - Fall 2010
- ADT – 2,700 vpd (in the rural section)
- 36% Trucks
- ESALs – 4,300,000 (20 yr period)
Existing Typical Section

US 83 Ochiltree County
Proposed Typical Section

US 83 Ochiltree County
US 83 Hemphill Co.

- US 83 – From Lipscomb Co line to 6.1 miles South
- To be Constructed – Summer 2013
- ADT – 2,000 vpd
- 33% Trucks
- ESALs – 2,500,000 (20 yr period)
Proposed Typical Section

US 83 Hemphill County
Potential Cost Savings

• Prices and materials vary by region

• Difficult to compare Apples to Apples

• Typically compare CIR to Mill & Fill or HMA Overlay

• Past experience shows 30%-50% cost savings
Questions

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