



FULL DEPTH RECLAMATION (FDR)

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Full Depth Reclamation (FDR)

Right Tool, Right Place, Right Time

- Save Money
- Save Time
- Reset Pavement Design Process
 - Extend the Life of Pavement
 - Reduce Maintenance Costs
 - Reduce Carbon Emissions
 - Recycle and Re-Use



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Full Depth Reclamation (FDR)

• Overview

- FDR Construction
- Additives
- Project Selection
- QC/Best Practices



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Full Depth Reclamation (FDR)

• **FDR is the multi-tool of pavement rehabilitation:**

- Asphalt Pulverization
- Soil Drying/Modification
- Liquid Additive Stabilization
- Dry Additive Stabilization



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Asphalt Pulverization



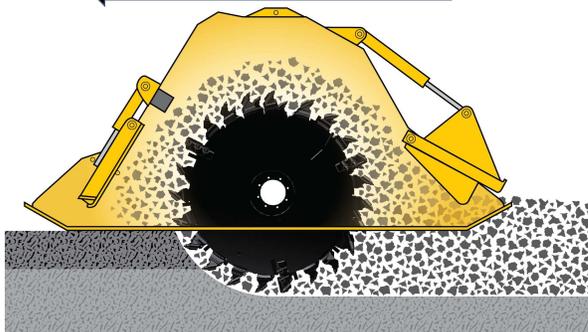
Reclaimer uses a high speed up-cutting drum to pulverize the full depth of insitu asphalt. Creating a recycled, blended, and sized material that can be used as a base.

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Asphalt Pulverization – How it works



Direction of Travel



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FDR Mat



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Soil Drying / Modification



Incorporating dry additives to over saturated soils to dry them down and accelerate construction.



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Soil Drying / Modification



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Liquid Additive Stabilization



Blending insitu materials with liquid stabilization additives to improve the performance of the stabilized layer. This is an ENGINEERED process.

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Liquid Additive Stabilization



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Dry Additive Stabilization



Blending insitu materials with dry stabilization additives to improve the performance of the stabilized layer. This is an ENGINEERED process.



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Dry Additive Stabilization



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Additives- right tool, right time, right place



Dry

- Cement Type I/II
- Lime
- Bentonite
- CKD (Cement Kiln Dust)
- LKD (Lime Kiln Dust)
- Fly Ash
- Mineral Consolidators

Liquid

- Emulsions
 - ✓ CSS-1, HFMS-2S, Engineered
- PG Graded Binder
 - ✓ Foamed
- Calcium Chloride
- Magnesium Chloride
- Base One
- Enzymes

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FDR Surfacing Options



- **Full Depth Recycle needs a wearing surface**
 - ✓ Higher Voids than HMA
 - ✓ Once curing has been met
 - ✓ Before Winter
- **High Volume Traffic to Low Volume**
 - ✓ Multiple Lifts of HMA
 - ✓ Single Lift HMA
 - ✓ Pavement Preservation Treatment
 - ✓ Cape Seals
 - ✓ Chip Seals
 - ✓ Microsurfacing

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FDR Applications

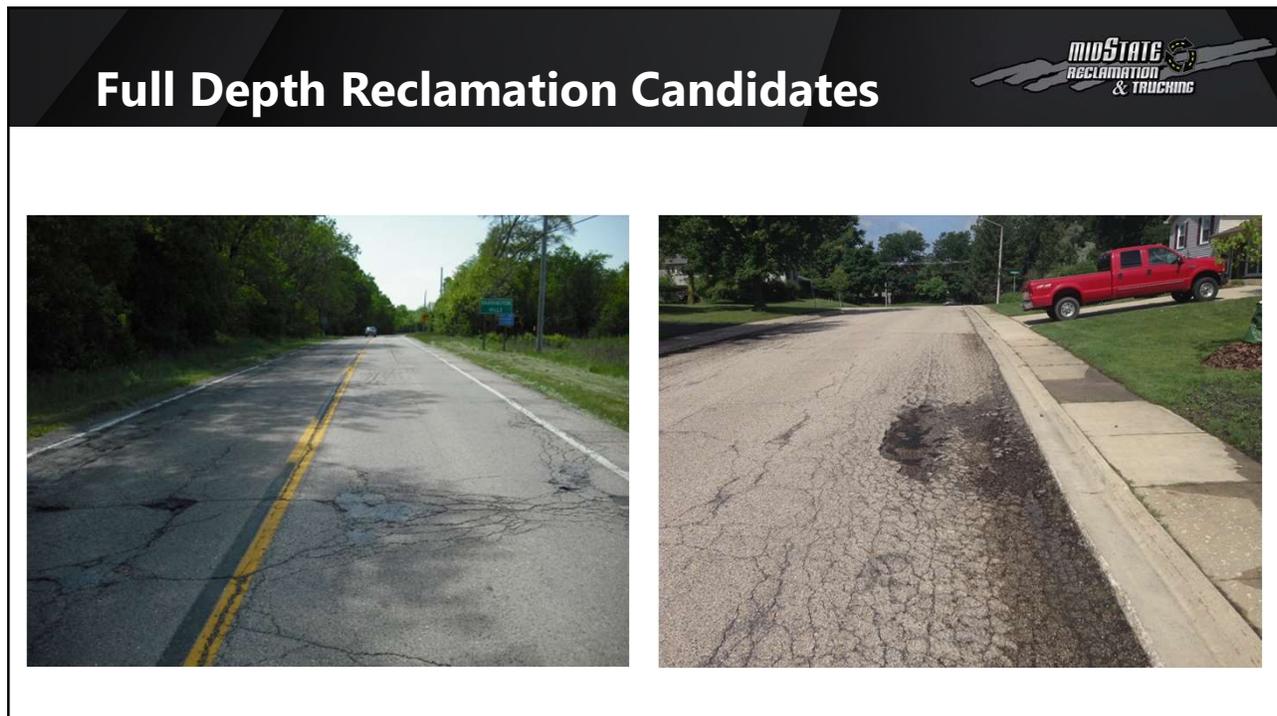


- Interstate
- Airports
- State Highways
- Composite Pavements
- Curb and Gutter
- Urban/ Rural

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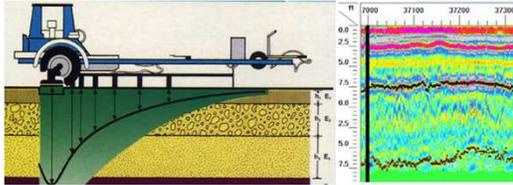


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Pre-planning



- FWD (Falling Weight Deflectometer)
- GPR (Ground Penetrating Radar)

Mix Design

- Potential effects of varying additive rate
- Durability analysis
- Pavement design characteristics



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Additional Resources



- www.roadresource.org
 - ✓ AEMA/ISSA/ARRA
 - ✓ Information on All Treatments
 - ✓ Success Stories
- www.arra.org
 - ✓ Guidelines
 - ✓ Specifications
- **Training**
 - ✓ NHI 131050 Course

Explore by Pavement Criteria

PAVEMENT CRITERIA PAVEMENT PHOTOS

This tool is designed to explore cost-effective solutions to pavement at varying levels of distress. Input your pavement criteria for potential solutions relevant to you.

Though these tools use distress to identify potential treatment solutions, the savviest pavement managers are stretching budgets further by preventatively addressing deterioration before it starts. Link treatments together to make pavement last 40 years or more, or consider using innovative recycling methods to cost-effectively reengineer your pavement cross-section to meet increased load or traffic requirements and increase strength and longevity.

PAVEMENT CONDITION PRIMARY DISTRESS ROAD TYPE SURFACE TYPE OTHER FACTORS TO CONSIDER

PLEASE SELECT PLEASE SELECT PLEASE SELECT PLEASE SELECT

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Contact Information



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