

Asphalt Emulsions for Flexible Pavement Treatments

Various Pavement Preservation Treatments Utilizing Asphalt Emulsions

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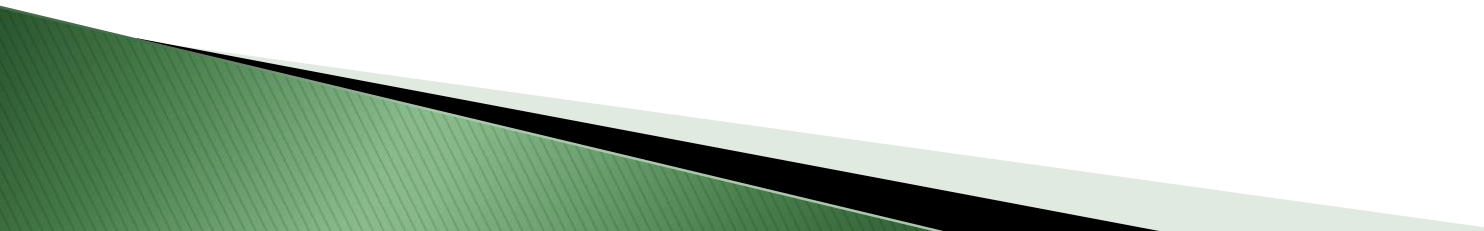
Pavement Preservation Specialty Products

Ergon Asphalt & Emulsions

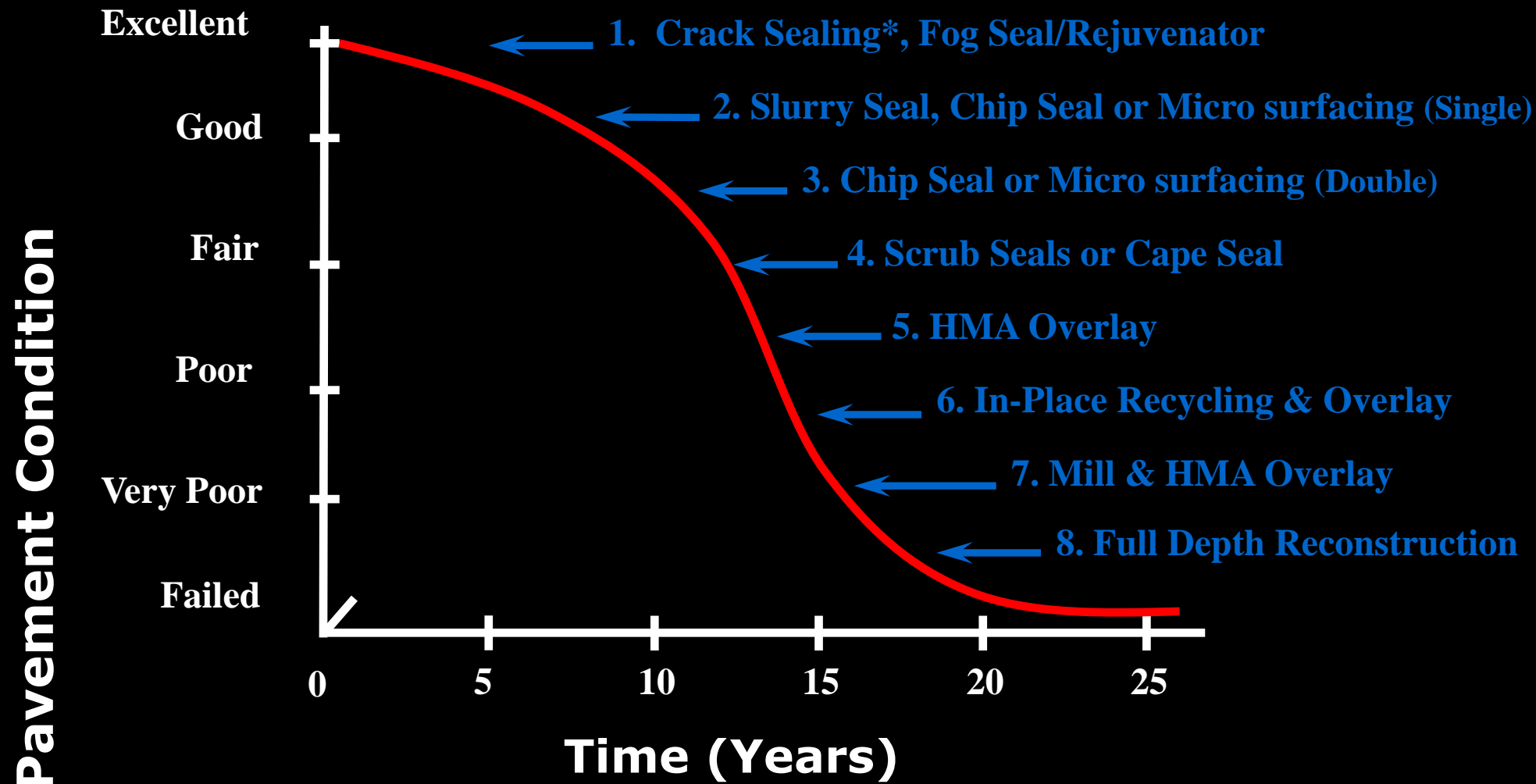
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Major Benefits of Asphalt Emulsion Treatments

- Lower Temperatures
 - Safer Handling and Storage
 - Lower viscosity for better penetration and coating
 - Designed to work with different aggregates
 - Designed to work in different environments
 - Seals, Adhesion and Flexibility
- 

Applying the Right Treatment, to the Right Road, at the Right Time...

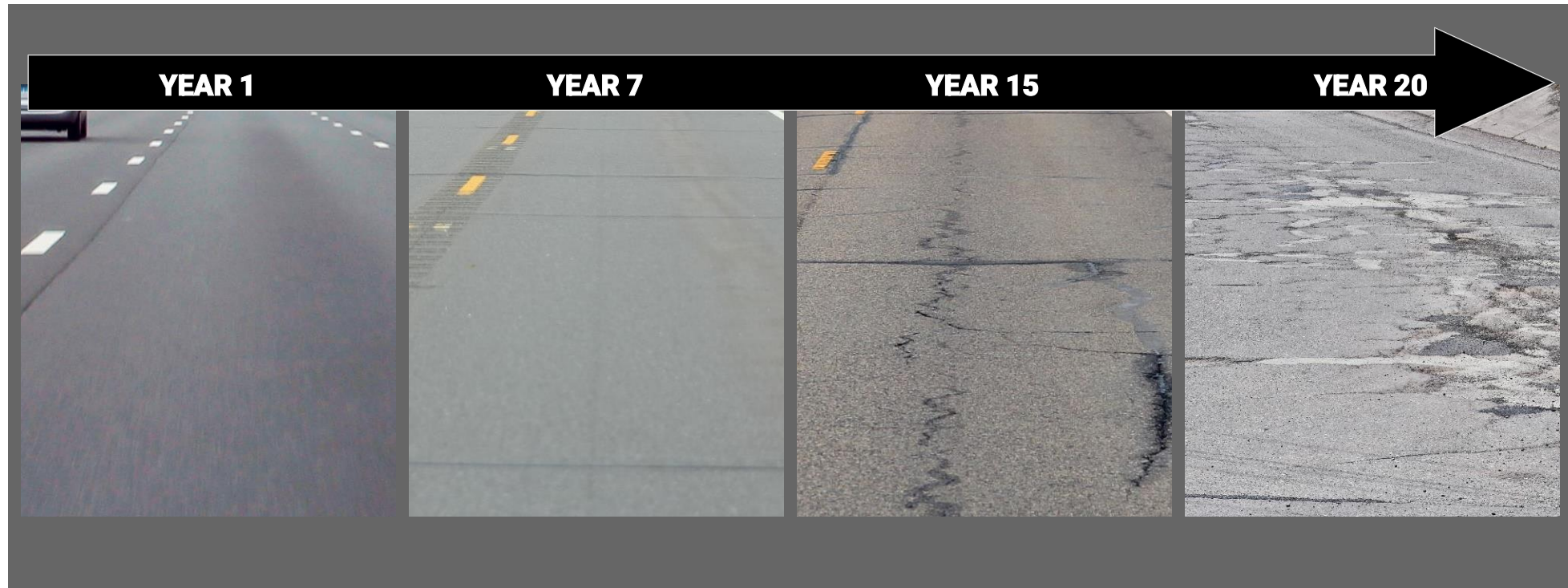


*All of these treatments use Asphalt Emulsions

For each of these processes there is a day of training available covering the following:

- EDC-4
- Best Practices
- Project Selection
- Project QC/QA
- Materials
- Construction
- Trouble Shooting

There is an Asphalt Emulsion System that will work for you in any stage of your pavement's life.





- ▶ Verify dilution amount
- ▶ Dilution cannot be used to “stretch” tack
- ▶ Residual value is key
- Going to Stiffer Base Asphalts
- Verifying Calibration of Distributor
- Treat Tack as Separate Pay Item vs. Incidental Item
- **Tack Coat Pocket Guide**



FHWA recommends dilution by supplier only.

Crack Treatments

- Usually done with RS or CRS emulsions and then covered with a sand blotter
- Eliminates moisture intrusion into base
- Maintains flexible seal of crack if surface fractures
- Cost effective combination - Surface Treatments alone are very thin overlays with little crack penetration



Fog Seals

Light application of diluted, slow-setting asphalt emulsion used without cover aggregate

Purpose

- Seal the pavement
- Inhibit raveling
- Enrich hardened/oxidized asphalt
- Provide delineation with shoulder





Unsealed

Sealed



Chip Seals

Uniform application of asphalt binder on a sound surface followed by placement of cover aggregate then seated with roller

Purpose

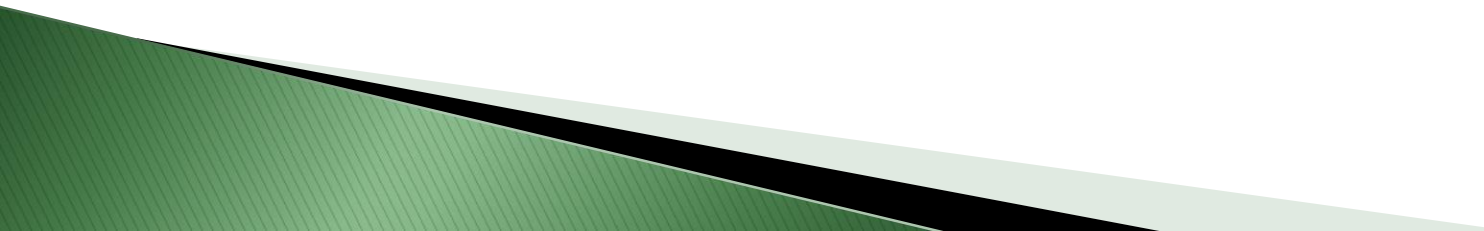
- Protect from water intrusion
- Seal cracks
- Stop Oxidation
- Increase Friction
- Stop Raveling



Chip Seals



Chip Seals

- Protect from water intrusion
 - Seal small cracks to waterproof the road's surface
 - Protect the underlying pavement from oxidation
 - Extend service life
 - Improve surface friction
- 

Scrub Seals

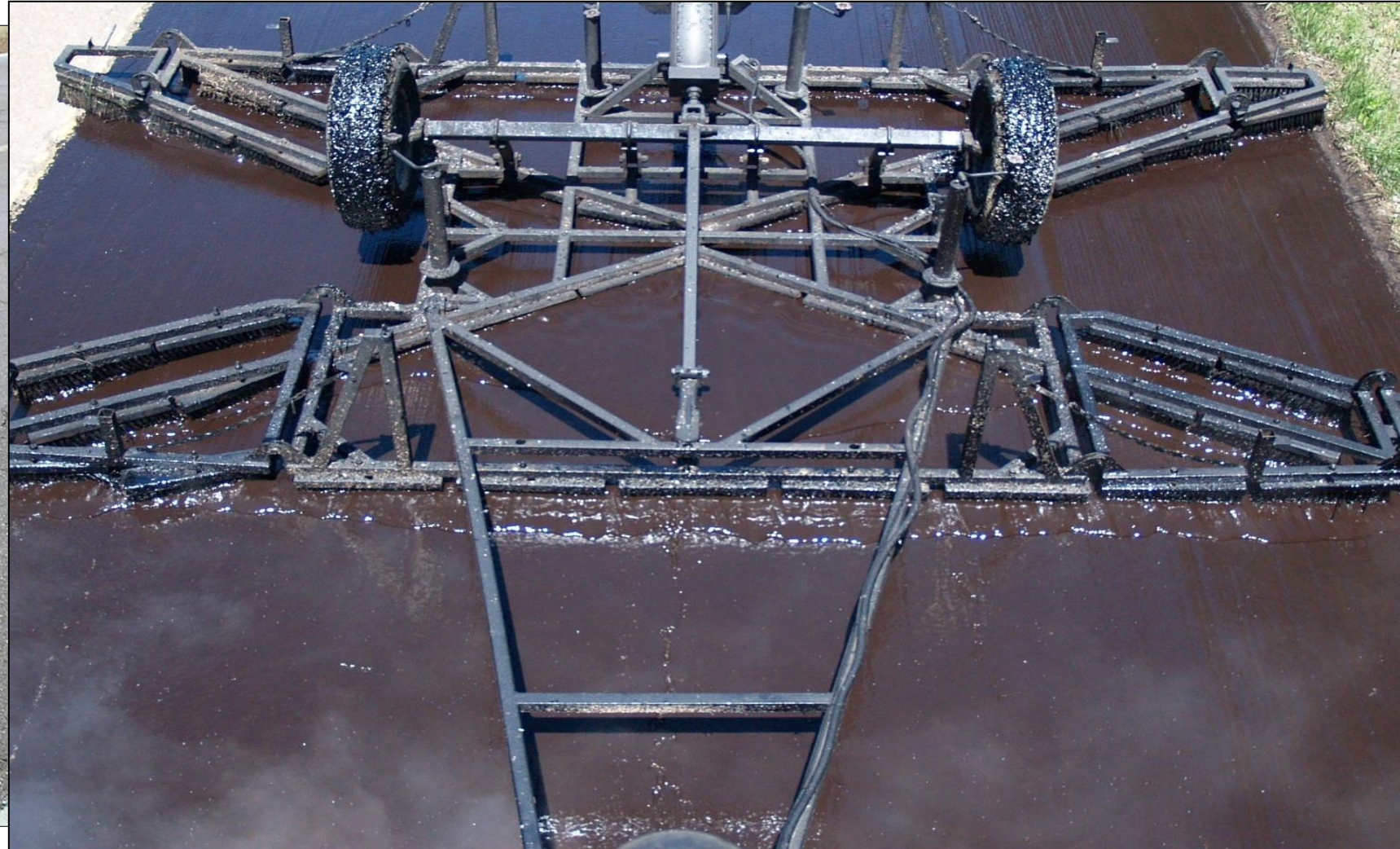
Application of sand or small-sized aggregate on a broomed layer of polymer-modified asphalt

Purpose

- Fill and seal small cracks and void
- Enrich hardened/oxidized asphalt
- Preparation for another treatment



Emulsion Wave



Scrub Seals Video

Mississippi Hwy 35

Scrub Seal = stand alone wearing course



Slurry Seals & Micro Surfacing

Laboratory designed mixtures of asphalt emulsion, aggregate, mineral filler, water and other additives accurately proportioned, mixed and uniformly spread over a properly prepared surface.





Slurry Seals and Micro Surfacing

Will Not

- ▶ Address cracks larger than ¼"
- ▶ Provide structure
- ▶ Correct problems in the base
- ▶ Correct problems in a mix
- ▶ Correct major ride issues

Key Differences

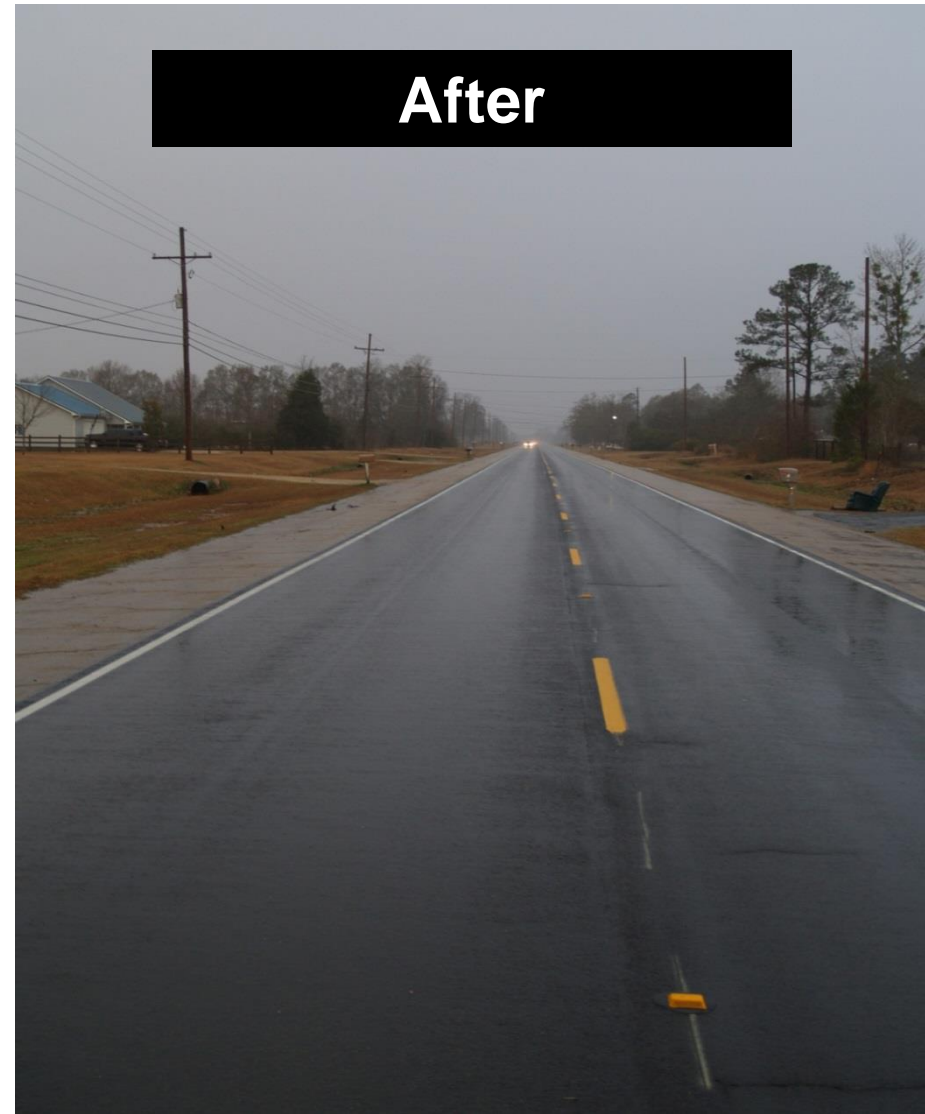
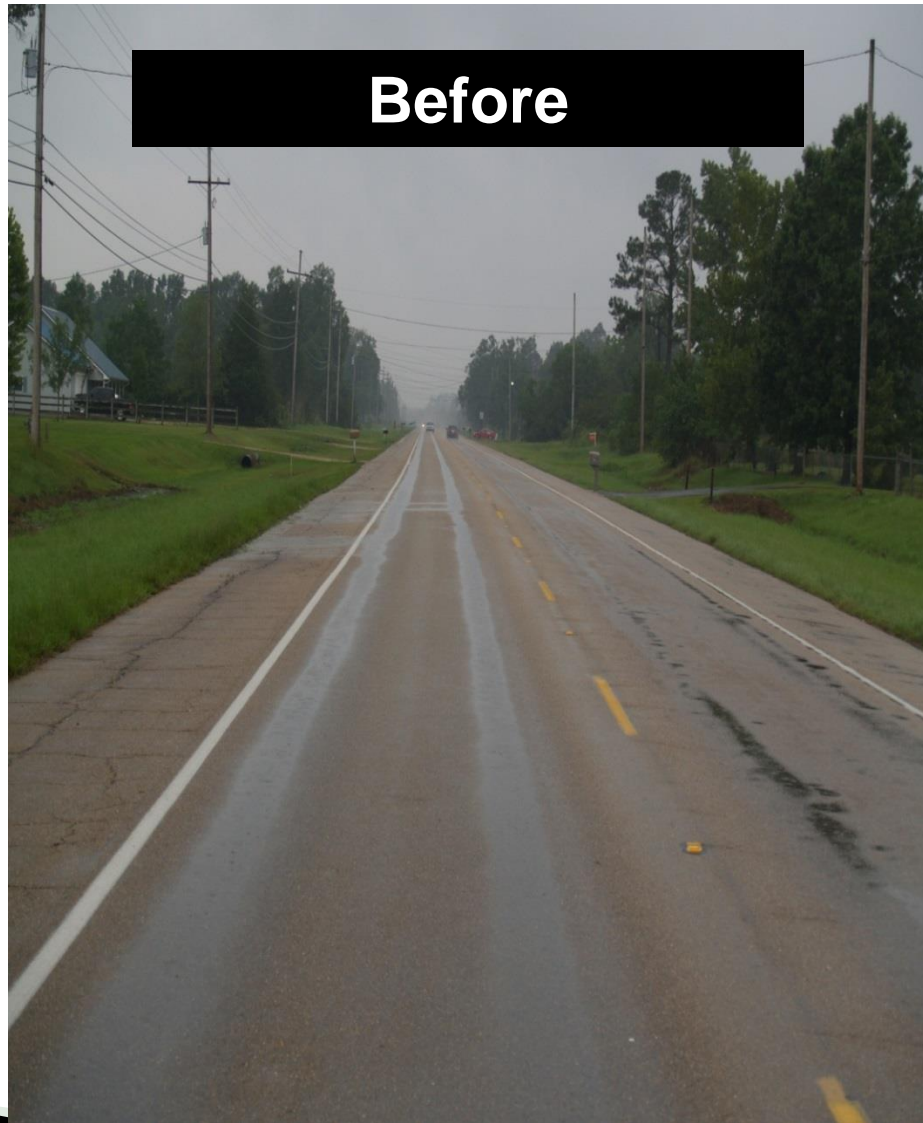
Slurry Seals

- ▶ Anionic or cationic
- ▶ Slow set (evaporative) or quick set
- ▶ Conventional or modified
- ▶ Three Gradations of aggregate (I, II, III)
- ▶ No night work
- ▶ One stone thickness

Micro Surfacing

- ▶ Always Cationic
- ▶ Always quick set
- ▶ Always Polymer modified
- ▶ Requires more robust application equipment
- ▶ Two Gradations of aggregate (II & III)
- ▶ Faster Return to Traffic
- ▶ Night Work
- ▶ Stone stacking ability
- ▶ Can repair larger deviations

RUT FILLING WITH MICROSURFACING



SITE SELECTION

Business Districts



2-Lane Highways



Shoulders



Residential



Interstates



BENEFITS OF HIGH POLYMER MICRO SURFACING

- ▶ Power steering burns are an issue in areas such as cul-de-sacs, street parking, heavy turn areas
- ▶ Areas where heavy trucks are starting & stopping
- ▶ Additional polymer helps with the toughness of the micro, especially early in the curing period



Expectations

Slurry Seal

Life Extension 5-7 years

Micro Surfacing

Life Extension 6-8 years

High Polymer Micro Surfacing

Life Extension 8-10 years



Combinations

- ▶ Crack Seals & Micro
- ▶ Chip Seals & Fog Seals
- ▶ Scrub Seals & Fog Seals
- ▶ Chip Seals + Slurry =
Cape Seals
- ▶ Interlayer



Interlayer with Micro Over the Top



Scrub Seal Interlayer with HMA



Thin HMA Spray Paver Overlays

- ▶ Non-structural overlays
 - Thin Bonded Wearing Course
 - 5/16, 3/8 or 1/2 inch Mix HMA
 - 1" or less
 - Mixture for any volume roads
- ▶ Place on prepared surface
 - Crack Seal
 - Micro Milled
 - Rut Filled w/ Micro Surfacing
 - Option for local contractor/supplier







Common Combinations

- CIR + hot mix overlay (most common)
- CIR + Single or Double Chip Seal
- CIR + Micro or Slurry Surfacing
- CIR + CCPR to increase treatment depth

Cold In Place Recycling with Asphalt Emulsions



Fog and Sand at the end of the day





Hot In-Place Recycling





OVERSIZE LOAD



**You don't get what you
spec; you get what you
inspect.**

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See you down the road.

