Asphalt Recycling 1975
Recycling Fact

Asphalt is the most commonly recycled material on the face of the earth
MEMBERSHIP of ARRA

• CONTRACTORS
• SUPPLIERS
• AFFILIATE MEMBERS
DISCIPLINES of ARRA

- CP  Cold Planning
- HR  Hot Recycling
- HIR Hot In-Place Recycling
- CIR Cold In-Place Recycling
- FDR Full Depth Reclamation
Hot In-Place Recycling

A Rehabilitation Alternative
3 Types of HIR

- Surface Recycling
- Surface Repaving
  - Remixing
The Bottom Line Question

- How can I maximize the return on my investment in asphalt pavement rehabilitation funding?
Answer

• By repairing your asphalt pavement during the first 40% drop in quality
The Cost of Timely Maintenance

Each $1 spent during the first 40% drop in quality will cost $4-5 if delayed until pavement loses 80% of its original quality.

Graph showing the relationship between pavement condition, time, and quality drop.
The Surface is the Critical Area

Aging of asphalt pavement occurs most rapidly at the surface

Surface Defects

• Ruts, Shoves & Bumps
• Patches & Utility Costs
• Reflective & Shrinkage Cracks
• Weathering, Bleeding & Raveling
• Pavement Geometry
Surface Recycling

Heating, reworking and rejuvenating the top one inch of an existing asphalt pavement in preparation of either a seal coat, micro-surfacing or overlay
Surface Repaving

Heating, reworking and rejuvenating the top one inch of an existing asphalt pavement and simultaneously applying an overlay while the temperature of the recycled layer is 200°F
Urban Applications

• Curb line milling may be necessary
• Traffic easily controlled in work zone
• Environmental considerations
Remixing

Heating, reworking and rejuvenating the top 1 to 1-1/2 inches of an existing asphalt pavement adding virgin admix and mixing the combined recycled and new material in a pugmill prior to laying, either as a binder or surface course.
Mischwerk für Remixer
Laydown
Hot In-Place Recycling

- Treats surface to a depth of 1 inch
- A hot process
- Adds additional binder/modifier
- Adds additional hot mix asphalt
- Increase structural coefficient
Recycling Depth Considerations

- Depth of existing HMA
- Depth of distress
- Recompaction considerations
- Smoothness considerations
- Asphalt content
- Age of asphalt cement
Project Considerations

- Uniformity
- Depth of existing HMA
- Presence of Chip Seals
- Asphalt content (bleeding)
- Asphalt properties
- Traffic
- Types of pavement distress
- Environment
Decision Making Process of Public Agency

- Field Samples
- Field tests
- Analysis
- Evaluation (pavement history)
- Options
Potential HIPR Benefits

- Repairs Distress
- Extends Life
- Improves Ride Quality
- Improves Friction Coefficient
- Improves Appearance
- Improved Bonding
- Work completed in a single pass