

Montana Department of Transportation

In-Place Recycling Presentation

September 10-12, 2013

Schaumburg, IL

Jason Sorenson, PE
Maintenance Reviewer



In-Place Methods

- Pulverizing (Full Depth Recycle)
- Cold In-Place
- Hot In-Place



Pulverizing

- MDT's most common in-place recycle method
- ~ 40 projects, beginning in mid 90s
 - Since 2007, ~ 3/yr
- Good success, but determining proper candidate is difficult
- Design standards greatly limit when we pulverize
 - Primarily road width restrictions
- Implement when PMS is in poor shape, base is good quality
- Spec states that final product has max 50% PMS
 - 60/40 is our ultimate goal

Pulverizing

- Quality soil survey- extremely important
- Sometimes additional soil stabilization is needed
 - Asphalt or Cement – Cement(CTB) wins
 - Past difficulty with controlling % cement, PMS, and base
- Overlay with min 0.30' PMS



Cold In-Place

- First project 1985
 - Chose a mountain pass – Not Smart!
- 6 projects – Mid 90s
- 17 projects – Since (sporadic)
- Difficult choosing proper project
- Cracking
 - Reflective cracking – sometimes immediate, sometimes not
 - When immediate, it leaves us wondering
- Began with chip seal over a CIPR
- Currently – 0.20' Overlay over a CIPR
 - Is CIPR beneficial at this point (compared to a mill-fill?)

Cold In-Place

- CIPR usually stays “soft” for an extended amount of time
 - Traffic control reduces immediate loading, but this costs \$
- Definitely more risk on the Dept. with CIPR
 - We have less control/little input with mix design
 - Existing crack seal can be problematic



Cold In-Place

- CIPR requires long projects due to long “train” and high mob costs
- Public perception is good with recycling effort
- Key- recycling effort **MUST** produce a quality product that heavily competes with HMA



Hot In-Place Recycle

- 2 Projects, ~ 20 years ago
- Not exactly sure why we haven't given more consideration
- May 2013, MDT met with Pave Over to discuss HIPR
- Where to go from here?

Steps Taken to Implement

- Research
- Proper person(s) had to be convinced, then sell
- Choose proper project
 - Note: Failed projects leave a bad taste that lasts a long time
- Produce quality specs
- Educate EPMs and inspectors
- Quality reviews and research
- Strong documentation
- Commit to follow-through



How is it Working?

- Pulverize
 - Good/Continued success
 - Need proper project- quality soil survey and GPR
 - Biggest C.O. history of MDT was a pulverization project
- CIPR
 - Varied success
 - Must question if it's worthwhile and cost effective
 - Mill/Fill will produce a smoother ride and isn't much more expensive
 - Increased risk to MDT
- HIPR
 - OK success
 - Minimal projects
 - Some consideration, need convincing evidence
 - Future at MDT is cloudy

Closing

- Specifications?
 - Can be shared
 - <http://www.mdt.mt.gov/business/contracting.shtml>
- Performed research?
 - Comes up at conferences
 - Asphalt Institute good at keeping us informed of new technologies
 - HIPR meeting in 2013
 - Cold Central Plant Recycling (CCPR) 2013 mtg at MDT
 - Make use of existing stockpiles
- Lessons learned?
 - Choose good candidates – be very sure
 - Educate
 - Hold Contractors accountable, enforce specs.
 - Follow through with reviews/reports

SPECIFICATIONS

Supplemental Specifications

Detailed Drawings

Standard Specifications

Special Provisions

