Cold In-place Recycling with Foamed Asphalt

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Doing nothing is very hard to do. You never know when you're finished.
What is Cold In-place Recycling with Foamed Asphalt

- Recycling the road in place
  - Mill
  - Process and screen
  - Inject water and hot PG liquid simultaneously
    - Water and Hot PG “foam” to coat material
  - Mix
  - Windrow
  - Pave
  - Compact
Potential Benefits

- Resource Preservation
  - Hence the name Cold In-place RECYCLING
- Reduced Trucking
- Potential Cost Savings
- Less Delay to the Traveling Public
- Remediate Cracking
Wood County, RT-18
What We Had

- 15 Year Old Pavement
  - Paved in 1990
  - 8” of asphalt

- With Problems
  - Various patches
  - Block cracking
    - Delamination between some lifts
    - Cracks had severe deterioration
What Should We Do?
Options

- Mill and fill 3.25"
  - 1.75” 19mm
  - 1.5” 9.5mm
  - 12% repair

- Recycle
  - 4.5” Foamed asphalt
  - .75” 9.5mm
  - 1.5” 9.5mm

- Mill and fill 6.75"
  - 3.5” 301
  - 1.75” 19mm Intermediate
  - 1.5” 9.5” Surface

- Mill and fill 1.5"
  - Short term fix
Mill & Fill 3.25" CI R w/ Foam Mill & Fill 6.75" in Millions

- Mill & Fill 3.25": 1.265
- CI R w/ Foam: 1.102
- Mill & Fill 6.75": 1.614
Remove 6” of shoulder material ~3 feet

Remove 6” of material
  - Single pass of mill

Place 4 ½” of Foamed Asphalt

Place ¾” leveling course
  - 9.5mm with PG 70-22

Place 1.5” surface course
  - 9.5mm with PG 70-22
Everything Went Perfectly

Almost...
Lessons Learned

- Road closure – helpful
- Require quality control
  - Attention to detail
- Pave in a timely manner
- Material can be used for small repairs
- Process has potential
  - Time will tell
  - Specs are still evolving
The Future

- Keep learning
  - From projects & communication
- Ottawa Co RT-19 & RT-590
  - Selling in June 2006
- Potential for a lot of two-lane roads
Continue Monitoring

- **Dynaflect**
  - Similar values before and after the project

- **Smoothness**
  - IRI numbers in the low 60’s
Questions?