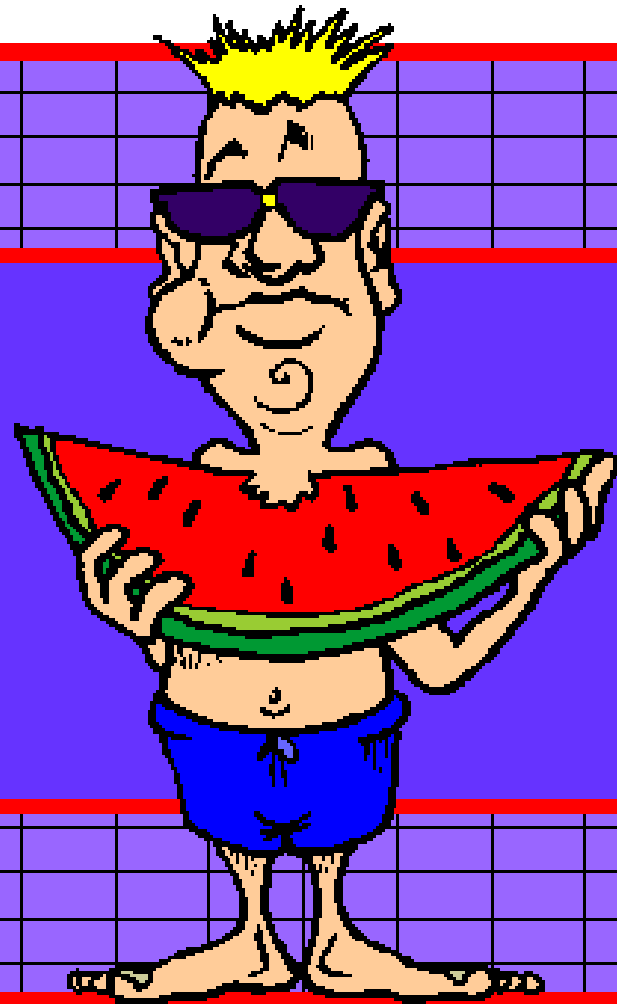


# Cold In-place Recycling with Foamed Asphalt

Ohio Asphalt Paving Conference  
February 7, 2006

Eric G. Heckert, P.E.  
ODOT District #2 DET



**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





05.25.2005 09:59





05.24.2005 09:58





05.18.2005 17:00





05.17.2005 15:45





05.18.2005 18:29



# 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



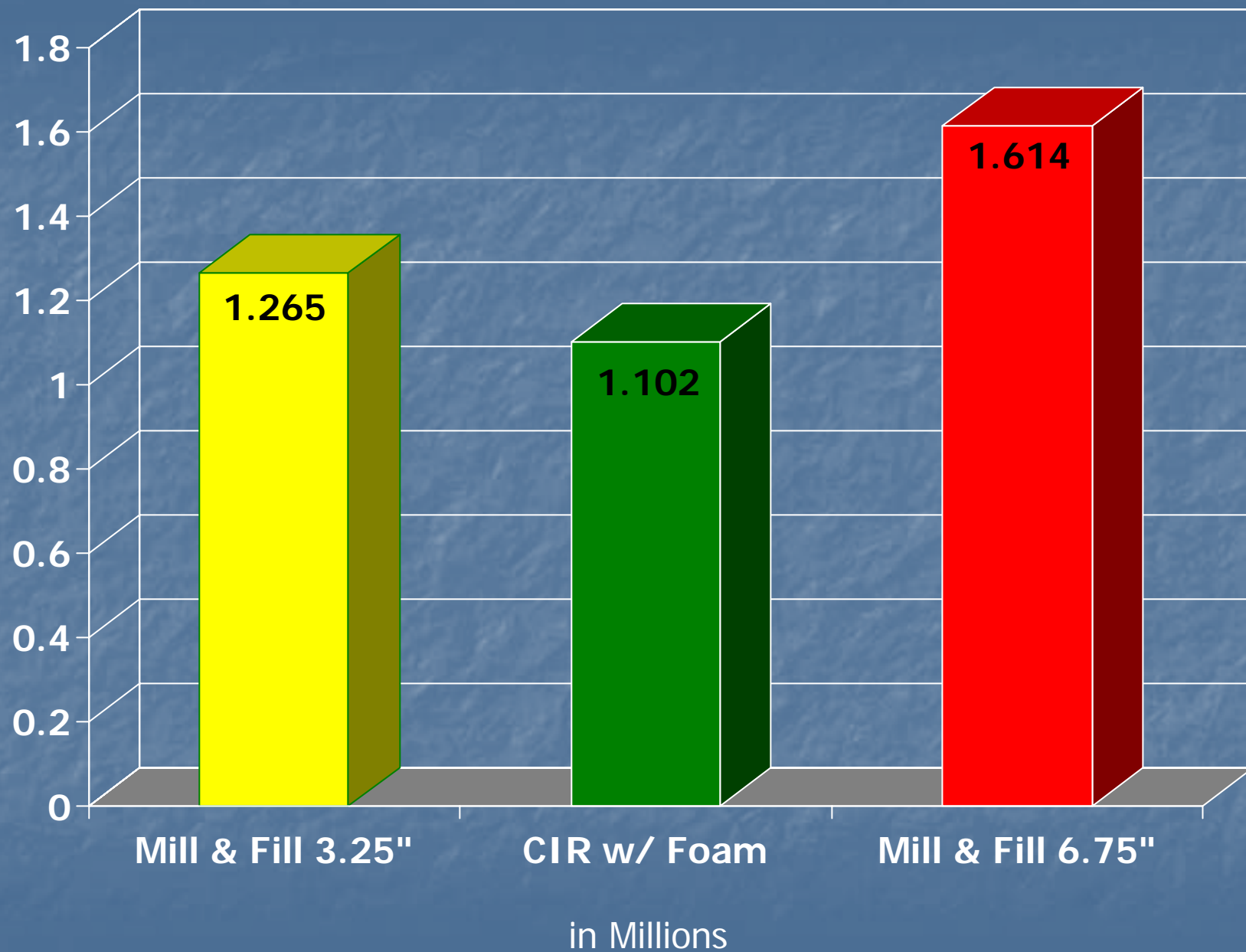
# What Should We Do?



# 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



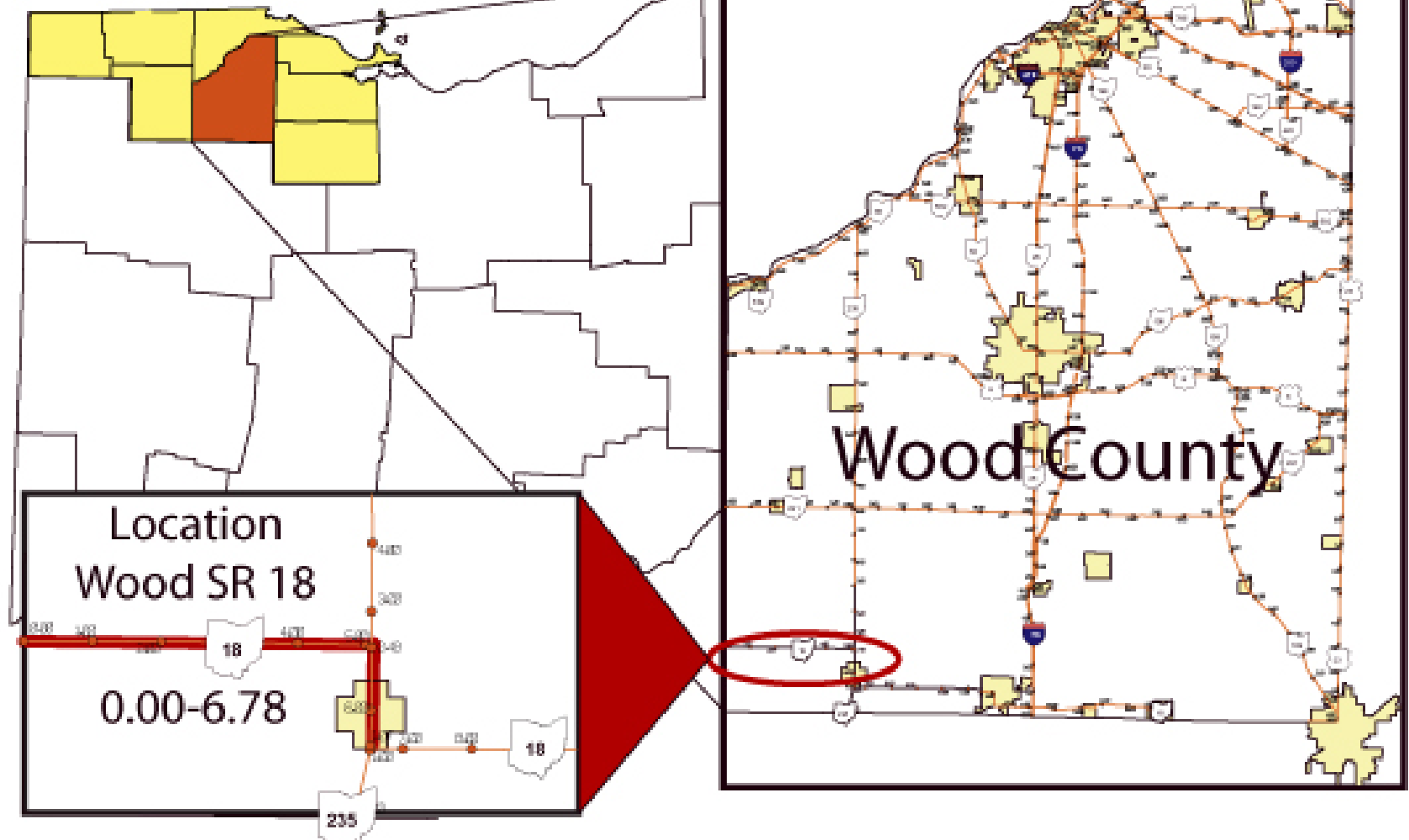


# Wood County, RT-18





# District 2



# ODOT 153 (05)

## Wood-18-0.00 to 6.78

- 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









05.18.2005 15:50





06.07.2005 12:43





06.07.2005 21:05









06.10.2005 12:30





05.18.2005 18:29



05.25.2005 12:30



Everything Went Perfectly

Almost...





06.10.2005 12:30





06.09.2005 14:53





06.03.2005 11:38





06.03.2005 12:07





06.03.2005 13:40





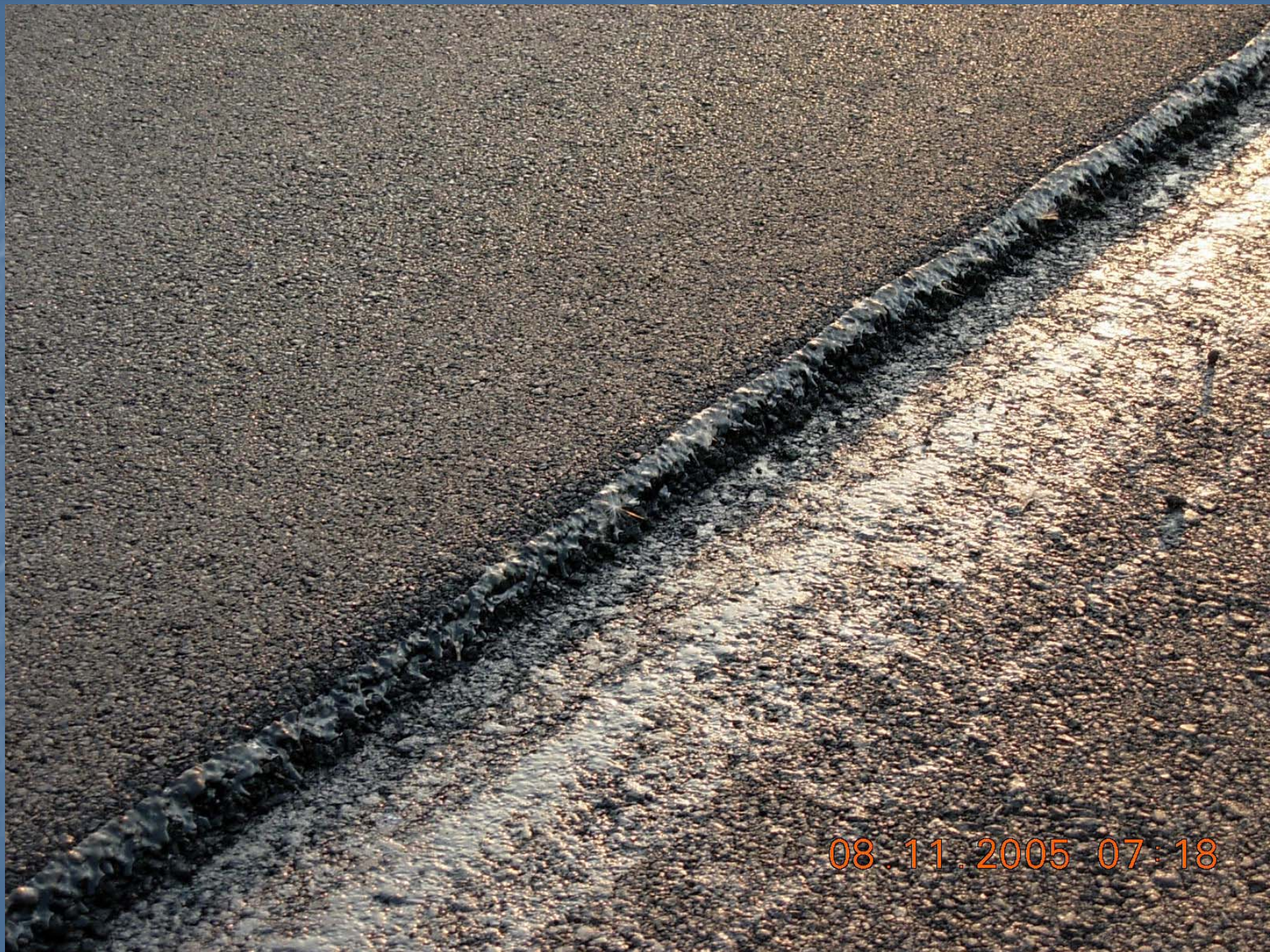
06.11.2005 12:43





05.18.2005 09:01









06.11.2005 10:45





07.07.2005 11:45







# 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?