# Northeast Pavement Preservation Partnership

**Warwick, Rhode Island**
**December 12 , 2007**

# Maine DOT

- Responsible for approximately 8400 centerline miles of roadway
- Approximately 4300 miles are in Pavement Preservation
- Remaining  are backlog (unbuilt), Maintenance Surface Treatment

# Pavement Preservation Treatments used by MaineDOT

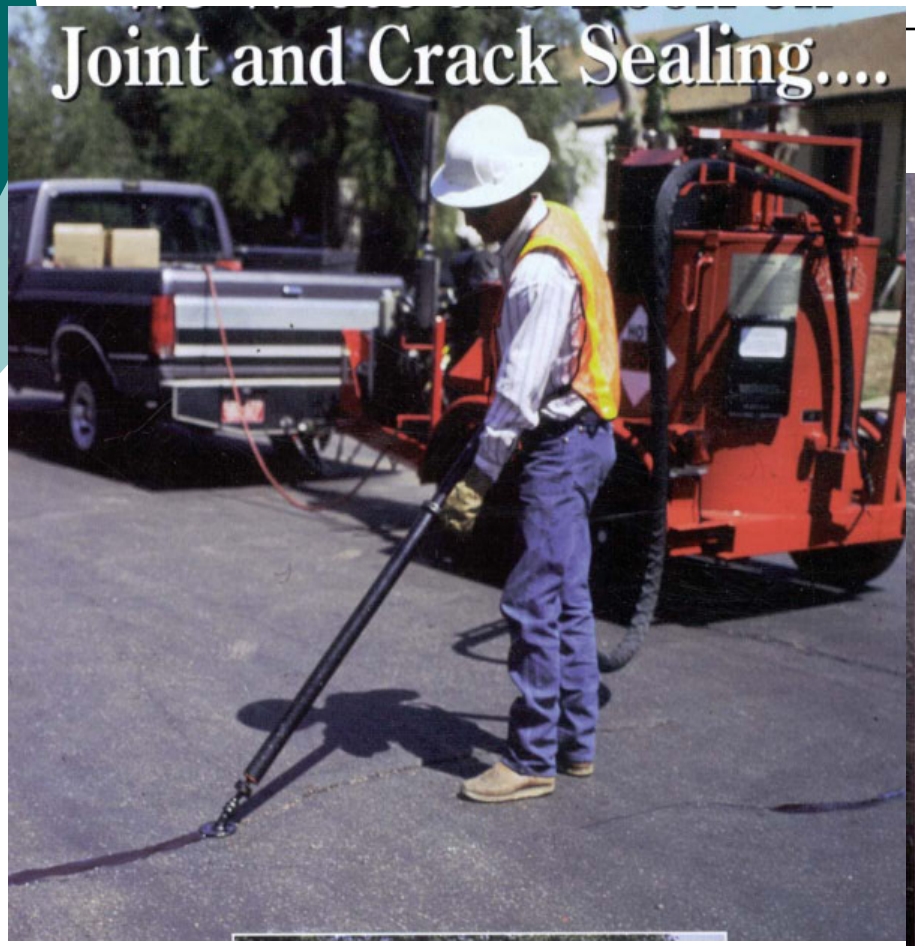
- Crack Seals
- Microsurfacing
- Chip Seals (Rubberized and conventional)
- Hot mix Surface Treatments (3/4” overlays are the workhorse treatment)

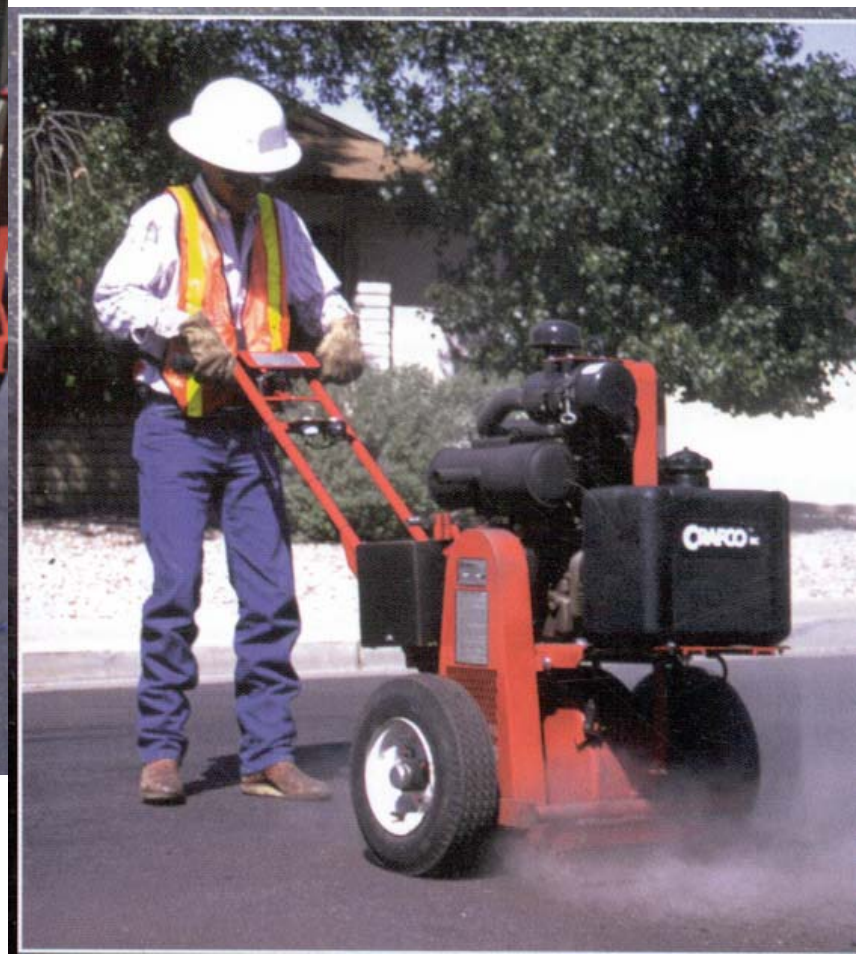
# Crack Sealing

- Crack Seal – Blow clean and heat crack; fill and overband with rubberized asphalt

- Rout and Seal – Grind out and heat crack; fill with low modulus rubberized asphalt

# Crack Sealing



# Microsurfacing

A polymer modified asphalt slurry consisting of emulsion, aggregates, and Portland cement. Applied with specialized equipment and is a relatively fast operation.

- Does not require much surface preparation
- Good skid resistance values
- Good for rut filling
- Prone to cold weather cracking
- Mitigates aging of underlying HMA layer

# Microsurfacing

# Rubberized Asphalt Chip Seal

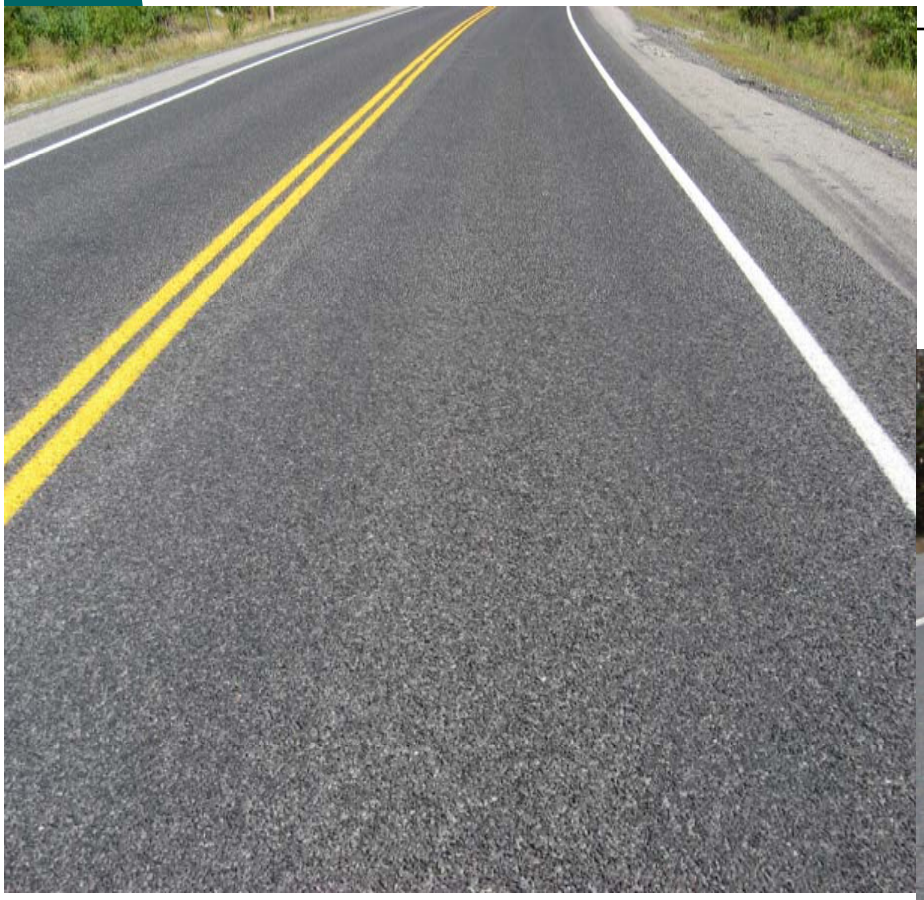
This process is a blend of 20% crumb rubber and asphalt. Blended asphalt is hot spray-applied at the rate of 0.6 +\- gallons per square yard, covered with 3/8" or 1/2" precoated stone, followed by rolling.

- Flexible - Good for moderately cracked roads.
- Relatively easy/fast to apply
- Ideal for cold wet climates
- Other unique applications (such as a lightweight bridge wearing course)

# Rubberized Asphalt Chip Seal
# Chip Spreader

# Rubberized Asphalt Chip Seal

After



Before

# Paver-Placed Surface Treatments

## ra Thin Bonded Wearing Course (UTBWC)

Ultra-thin wearing course (UTBWC, or NovaChip) is a polymer emulsion sprayed immediately before placement of the hot mix overlay (3/4"), followed by rolling.

- Efficient/fast operation
- Used on roads with sound foundation (concrete)
- Good ride and aesthetically pleasing

# Paver-Placed Surface Treatment

Ultra Thin Bonded Wearing Course  (UTBWC)

# 0% Crumb rubber Asphalt  Surface eatment

A mixture of coarse-graded 3/8 inch crushed aggregate and a crumb rubber modified 58-28 asphalt binder. The mix was designed with a binder content of 6.0 to 7.5%.  (actual was 8%)

- Produced in a Conventional hot mix plant
- Applied to a tack-coated surface
- Placed to a one-inch compacted thickness

# 20% Crumb rubber Asphalt Surface Treatment

A mixture of coarse-graded 3/8 inch crushed aggregate and a crumb rubber modified 58-28 asphalt binder. The mix was designed with a binder content of 6.0 to 7.5%. (actual was 8%)

- Produced in a Conventional hot mix plant
- Applied to a tack-coated surface
- Placed to a one-inch compacted thickness

# 20% Crumb rubber Asphalt  Surface Treatment

# Preservation Treatments

- Crack Seal
  - Continuous inspection is required
  - Treatment season limited
- Microsurfacing
  - Some reflective cracking after 1st winter
  - Delamination, scalloping at longitudinal joints (plows)
  - Varying life cycle (1-5 years)
  - Success dependant on aggregate selection and weather/temps.
- Rubber Chip Seal
  - Initially rides rough ( 3-6 months)
  - Sweeping required immediately / frequently

# Preservation Treatments

- Rubber Chip Seal (cont.)
  - Shoving/bleeding from braking action in intersections
  - Limited competition
  - Higher cost per mile over other chip seal processes
- UTBWC/NovaChip
  - Proprietary process and specialized equipment
- Thin Overlays / Mill and Overlay
  - Workhorse of treatments

# Preservation Treatments

## 2008-2009 estimated cost/mile

| | | |
|---|---|---|
| Crack Seal | - $6,000/mile @ 24’ | (T.W.) |
| Microsurfacing | - $66,000/mile @ 24’ | (T.W.) |
| ○ Chip Seal | - $55,000/mile @ 24’ | (T.W.) |
| ○ State funded PPM - ¾” Hot mix overlay | - $85,000/mile @ 34’ | **(6-22-6)** |
| ○ Capital Program PPM - ¾” Hot mix overlay | - $135,000/mile @ 34’ | **(6-22-6)** |
| ○ Capital Program 1 ½” mill and Hot mix overlay | - $140,000/mile @ 24’ | (T.W.) |
| ○ Capital Program 1 ¼” Hot mix overlay | - $170,000/mile @ 34’ | **(6-22-6)** |

# Preservation Treatments

## 2008-2009 Capital Work-plan

- Pavement Preservation Treatments - $ 108 million – 920 miles
  - Crackseals, Chip Seals, Microsurface, Thin HMA overlays
- Maintenance Surface Treatments - $ 23.5 million – 640 miles
  - Unbuilt highways
- Pavement Rehabilitation Treatments - $ 11 million – 15 miles

State and Fed./State monies combined $ 142.5 million - 1575 miles

# MaineDOT

## 2008-2009 Capital Work-plan

$ 668 million - 2 year operating budget

$ 142.5 million for Pavement preservation
(21% two year budget)

$ 200 million in needs.

# Contacts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# MaineDOT Pavement Preservation

THANK YOU !

Questions ?