

Nova Scotia 2009 Pavement Preservation

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NOVA SCOTIA

2009 Construction Overview

- Pavement Preservation
- Hot Mix Asphalt Overlays
- Cold in Place Recycling
- Pulverization/Graveling/HMA Overlays
- Trial Projects
- New Construction
- Construction Issues

Pavement Preservation Overview

Three main treatments in use:

- Micro-Surfacing
- Seal Coat (Single & Double Chip)
- Crack Sealing

Minor treatments:

- Thin Lift Overlays
- Sand Reseal

2009 Pavement Preservation Budget

\$ 7.1 Million between 5 Districts

- \$ 1.5 Million dedicated to Micro Surfacing
- \$ 4.1 Million dedicated to Seal Coats
- \$700,000 dedicated to Sand Reseal
- \$810,000 dedicated to Thin Lift Overlay
- \$ 0 dedicated to Crack Sealing – Budget allocated to micro and seal coats

Micro-Surfacing

- Applied to 100 Series Highways
- Sections that exhibit raveling, moderate rutting
- PM emulsified asphalt (CSS-1H)
- 5 mm minus stone (1/4 in.)
- Rut fill, scratch course, surface course
- 2 yr. warranty period

Seal Coats

Type A (Single Seal Coat):

- Applied to non 100 Series asphalt roads
- PM emulsified asphalt (CRS-2P)
- 14 mm minus stone (3/4 in.)
- Fog Seal applied (protects from plow damage)
- 1 yr. warranty period

Seal Coats

Type B (Double Seal Coat):

- Applied to gravel roads
- Emulsified asphalt (HF-150s, HP-200 or CRS)
- 1st course stone: 14 mm minus (3/4 in.)
- 2nd course stone: 10 mm minus (1/2 in.)
- 1 yr. warranty period

Crack Sealing

- Hot poured rubberized asphalt compound
- Hot air lance clean crack prior to placement
- Cracks > 3 mm, < 20 mm routed to 40 mm
- Longitudinal joint cracks not routed
- 1 yr. warranty period

2009 Preservation Summary

- **Micro:** 2 contracts, 36 km (22 miles)
- **Seal Coat Type A:** 8 contracts, 110 km (70 mi)
- **Seal Coat Type B:** 3 contracts, 4 km (2.5 mi)
- **Crack Sealing:** 0 contracts
- **Thin Lift Overlay:** 3 contracts, 22 km (14 mi)
- **Sand Reseal:** 2 contracts, 54 km (34 mi)

Hot Mix Asphalt Overlays

- End Product (EPS) & Method Specifications
- Based on contract tonnage (EPS > 6000 tonnes)
- EPS Contracts – Bonus/penalty spec. dependent on QA results (gradation, density, binder content, smoothness)
- Method Contracts - Department QC, 1 yr. Warranty Spec.

Hot Mix Asphalt Overlays

- Type B-HF (20 mm), Type C-HF (14mm)
- Type C – Used on low volume local roads
- PG 58-28 Binder, PG 64-28 used in high truck traffic areas (climbing lanes) on 100 Series Highways

Hot Mix Asphalt Overlays

- 106 Repaving Contracts
- 82 EPS Contracts, 460 kms (290 mi.)
- 24 Method Contracts, 57 kms (35 mi.)

Cold in Place Recycling

- Full & Partial Depth dependent on existing thickness
- Emulsified or Expanded (foamed) Asphalt Binder, Portland Cement
- Cold Planing (40-50 mm) to improve profile prior to recycling if required
- Millings either incorporated into mix or hauled off site

Cold in Place Recycling

- 20 Cold In Place Contracts
- Full Depth Recycling (Expanded Asphalt): 4 Contracts, 27 kms (17 mi.)
- Full Depth Recycling (Cement Stabilized): 5 Contracts, 27 kms (17 mi.)
- Partial Depth Rec. (Expanded or Emulsified): 11 Contracts, 72 kms (45 mi.)

Pulverization / Graveling / HMA

- Severely deteriorated roads
- Pulverize full depth of asphalt
- Type I Gravel to 150 mm
- Single or 2 lift overlay depending on traffic loadings

Pulverization / Graveling / HMA

- Pulverize/Gravel/Overlays: 7 Contracts, 43 km (28 mi.)
- Gravel Interlayer/Overlays: 8 Contracts, 53 km (33 mi.)
- Pulverize/Overlays: 2 Contracts, 14 km (9 mi.)

2009 Trial Projects

- Reclaimed Asphalt – 1 Contract
- Warm Mix Asphalt – 1 Contract
- Both projects awarded to same contractor (Basin Contracting Limited)

Reclaimed Asphalt

- 9 km project completed in September
- 15 % Fractionated RAP added to base lift (B-HF)
- Overlaid by C-HF surface course
- Reduction in production of aggregate
- No visible issues with mix during placement

Warm Mix Asphalt

- 5 km project (2.5 km conventional C-HF mix, 2.5 km warm mix) started October 22
- McAsphalt Industries Evotherm 3G liquid blended with asphalt at loading rack
- Reduced plant production temp. (120 ° C vs. 140 ° C).
- Decrease in plant fuel costs

Warm Mix Asphalt

- Maintains temperature – Increase haul / placement time
- Stiffer asphalt – little shoving under rollers
- Placement temp – 100 to 110 ° C
- Compaction met or exceeded spec. (92.5%)
- Odour similar to liquid anti strip

New Construction

- Continuation of twinning 100 Series Highways
- 30 km total, 10 km section ready for paving

Construction Issues

- Provincial election in July – New Gov't put hold on new tender calls for 2 months (new budget had to be approved)
- Poor weather during June /July – High moisture contents in recycled material delayed paving
- Excessive degradation of recycled material due to time left open to traffic/elements

Construction Issues

- Late season paving – As of end of Oct. 150,000 tonnes of HMA to be placed
- Possibility of carry over into 2010 program – Same problems for next fall
- New Executive Director & Chief Engineer in November – Possible changes to construction methods & budgets

Question?



Thank You

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