CTS Presentation
A Green Path to a Black Hard Road

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Problems Still Exist in 2011
The Problem

- Gravel Roads lose about 1” of Agg/yr/100 ADT
- It costs > $5,000 to add 1” of gravel/mile
- Maintenance costs depend on blade cycle, gravel costs
- Dust, bumps, frost boils
- Road network too large to sustain
- Innovation needs to address problems/cost
The Strategy – Lower LCC

Cumulative Total Cost ($)

Time (years)

- Initial Construction
- Routine Maintenance (Re-Gravel)
- Periodic Re-Graveling
- Rehabilitation Alternative
Key Considerations

- What are short and long term plans for road?
- Do I know the root cause of pavement issues?
- What options fit my desired result?
- What additional information do I need to evaluate my options?
- Where can I go for help?
CSAH 48 – Upgrading a Gravel Road

Steps in the Process – the Four P’s

- Planning
- Assessment
- Design
- Production
- Placement
- Performance
Planning
Past practices of stabilizing gravel roads had become cost prohibitive.

A collaborative team of partners worked together to address the issue.

Recycled Materials were used to offset most (up to 80%) of the stabilizing binder that was used in the past.

- RAP (Recycled Asphalt Pavement)
- RAS (Recycled Asphalt Shingles)

An Assessment of the Road preceded the design of the project.
Planning

Design work was provided by Waste Mgt.:

- 65% RAP / 15% RAS / 18% Gravel / 2% Emulsion
- 3.3” / 1.8” / 0.9” = 6” total thickness
- Unconfined compressive strength -125 psi
- Soaked compressive strength - 98 psi

Placement began on 9/13
Production - RAS
Placement of RAP/RAS
Placement - Stabilization
Placement - Compaction
Placement – Finished Surface
Performance – Surface prior to chip seal
Performance - Surface after Chip Seal
Performance – Road after 1st winter
Performance – Road after 1st winter
3 C’s to evaluate new technology in rehab applications

Constructability
Cost
Credibility
Constructability

The process was tweaked for success:

- Haul RAP / RAS
- Inject Emulsion
- Initial Compaction
- Grade to proper cross section
- Final Compaction
- Heat Surface to Prepare for Chip Seal
- Chip Seal Surface after Cure

- 1 Fall 2010
- 2 Spring 2011
Cost

- Project cost was $119,000 per mile
- Expect project cost around $100,000 per mile when implemented
- Implementation will be based on Performance
- Performance will be monitored going forward
Credibility

Several Partners Involved in Project:
- Waste Management
- Midstate Reclamation
- Road Science
- Dustrol
- County Maintenance Forces

Credibility comes with Success and Continued Improvements through Partnerships
Questions