Bituminous Seal Coat (Chip Seal) Modified Warranty Pilot Project

Ahmed A. Ahmed
ETS, Technical Services
North Dakota Dept. of Transportation (NDDOT)

Overview of the Presentation

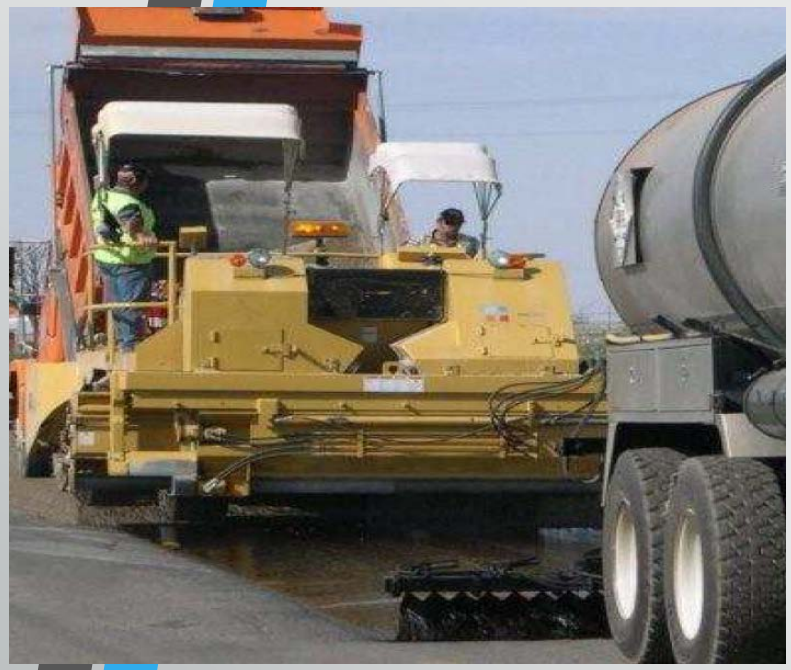
- Basic introduction of Bituminous Seal Coat (Chip Seal)
- Why NDDOT is interested in Chip Seal alternative contract option?
- Overview of Chip Seal warranty contracts used by other state DOTs and what is proposed for 2017 NDDOT pilot project.

What is Bituminous Seal Coat (Chip Seal)?

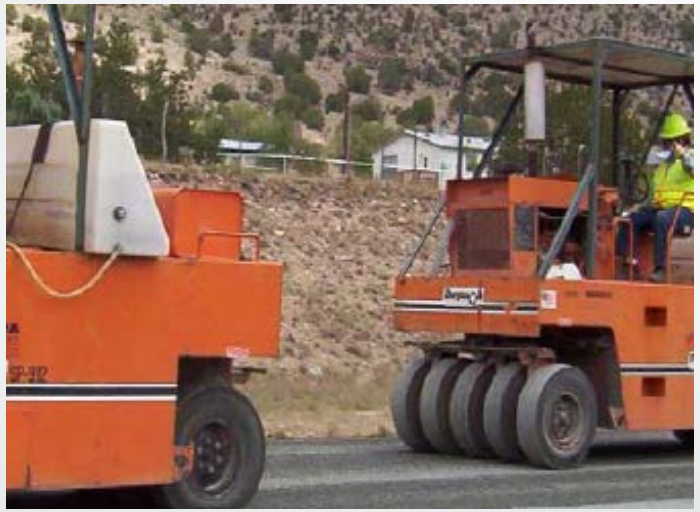
Bituminous Seal Coat is a cost effective preventive maintenance for bituminous pavements and purpose of using are:

- Improve skid resistance,
- Seal fine surface cracks, and
- Delay oxidation of an existing bituminous pavement surface

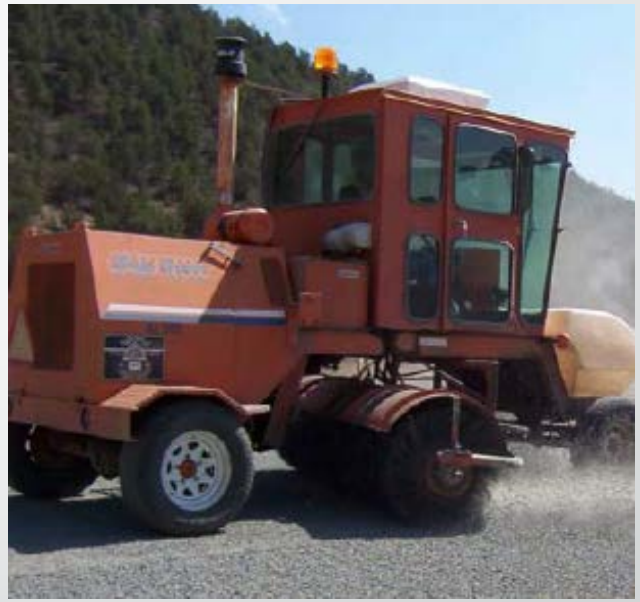
Basic Overview of Chip Seal Construction



Emulsion and aggregate application



Compaction



Sweeping excess aggregate

- Requires traffic control tailored for Chip Seal operation.
- In some cases fog seal application is applied right after the sweeping operation.

How this pilot project started?

NDDOT management initiated this project with intention of proposing Chip-Seal contract specification that eliminates or minimizes material testing and field inspections and at least meets current department Chip-Seal performance.

Project Kick-off

- I was assigned to lead the proposal of Special Provision spec. for alternative Chip Seal warranty contract.
- Project started looking into existing other state DOTs Chip Seal warranty contracts and literature reviews.

Other State DOTs

- Chip Seal warranty contract is not something new in state DOTs;
- Most of the state DOTs that has Chip Seal warranty contract uses 1 year warranty contract with a specified requirements at the end of the term.
- Some use surety bond held during the warranty period.
- Contractor is required to meet the specification set in the contract or penalties specified in the contract will be implemented.

Weakness of Using Existing Chip Seal Warranty Contract for NDDOT Highways

- Every winter NDDOT uses snowplow to remove snow off the pavement surfaces. Depending on number of snowplows and quality chip retention – the condition of the Chip Seal may deteriorate.
- For Chip Seal warranty contract if this risk is transferred to the Contractor; it would increase the cost of the project.

What is Proposed for 2017 Pilot Chip-Seal Construction Project

- 1,000 foot long of Test Strip for each road segment; this will require NDDOT inspection and must meet specified criteria shown below:
  - Minimum residue asphalt embedment of 70% of the average chip height;
  - Less than 2% of bleeding/flushing of the test strip area; and
  - Less than 2% loss of cover aggregate of the test strip area.
- Prior to construction, aggregate and emulsion oil are needed to be verified.
- Once NDDOT Engineer approves, the contractor must take ownership of the project and complete.

Secondary Review

- In the following year before May 15th, if certain surface areas are below the existing condition of the Test Strip. Engineer will arrange a field trip with the contractor and designate areas that need repair.
- Repair areas must meet the existing condition of the Test Strip.
- Department will not pay any traffic control needed during the repair.
- If contractor fails to perform the repairs; department may prohibit the contractor from bidding future projects for up to 6 months.

End of My Presentation

Chad Beggs is next