Abstract

Objective

This study will evaluate the use of various rehabilitation strategies for extending the effective service life of NDDOT roadways. The objective of this study is to determine which rehabilitation strategy is most effective in correcting existing roadway distresses. The objective will be met by selecting a roadway exhibiting distresses that are deemed borderline as to which rehabilitation strategy to pursue, and construct multiple sections based on the rehabilitation options in question.

Scope

To compare rehabilitation strategies, sections of the roadway will be rehabilitated using the following designs:

- 20-year design for Mine and Blend with HBP overlay
- 20-year design for HBP overlay
- HBP overlay greater than the standard 20-year overlay design

The projects will be evaluated over a 20 year period or until failure with the possibility of extending the evaluations based on the performance after 20 years. The items that will be monitored and evaluated are as follows:

- Distresses (cracks, rutting, etc.)
- Ride (IRI)
- Construction and maintenance costs (from RIMS)

Summary

Project NH-6-081(055)204 was delayed until summer 2008, at which point the entire length was reconstructed as a mine and blend project. For this reason, research concerning this section has been terminated.

Project NH-6-081(055)192 which runs from RP 192.427 to 204.453 was constructed as specified in the design portion of this report. The contractor was Northstar Material Inc. and the cost was $3,131,856.

The pavement condition is continuing to deteriorate over time. Distresses in the roadway for all three sections have increased since construction. The IRI for the NB lane in Section 3 decreased in IRI since 2008 while the IRI on everything else has increased from initial construction.

Section 2 and Section 3 have similar ride quality which is better than the ride quality in Section 1. Overall, the 3.5" AC overlay section has more visual distresses than the 5.0" overlay section which had more than the mine and blend section. Another evaluation will be conducted in 2014 and 2015 with another report being published in 2015.