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14. Supplementary Notes

15. Abstract

Purpose and Need

This research will use a locally available chemical additive called Evotherm 3G to produce the WMA. Evotherm 3G (Third Generation) – was developed in partnership with Paragon Technical Services and Mathy Technology & Engineering. This water-free form of Evotherm is suitable for introducing additives at the hot mix plant or asphalt terminal. Evotherm 3G generally lowers mix temperatures 60-85°F. The purpose of this research is to evaluate the performance of WMA using Evotherm 3G as an additive on NDDOT asphalt paving projects.

Objective

The objective of this project is to compare the compaction density of WMA to the compaction density of typical Hot Mix Asphalt (HMA). The asphalt plant mix temperature will also be monitored to compare fuel consumption for the production of HMA to fuel consumption for the production of WMA using Evotherm 3G as an additive.

Scope

This project will use one thin lift paving project to evaluate the WMA using Evotherm 3G to provide the viscosity reduction in the asphalt. The project selected for this research is H-MDF-2-011(025)035. This project is planned to be 25.210 miles in length. Approximately 5 miles of the project will be paved with WMA for the experimental section and approximately 5 miles of the project will be the control section using a Class 27, PG 58-28 HMA. The research project duration will be three years and will include a construction report and a final report.

Summary

The WMA research section and the HMA control section are both performing the same. The construction method of the WMA provides a lower temperature asphalt mix therefore reducing the emissions, exposure to workers, and fuel consumption. The end product of WMA appears to be the equivalent to HMA. Therefore, it is recommended that use of WMA be an option on thin lift paving projects.

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