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12. Performing Organization Name and Address  NDDOT M+R <input checked="" type="checkbox"/> North Dakota DOT NDDOT OTHER* <input type="checkbox"/> Materials and Research Division NDSU <input type="checkbox"/> 300 Airport Road UND <input type="checkbox"/> Bismarck ND 58504-6005 UGPTI <input type="checkbox"/> OTHER* <input type="checkbox"/> *see supplementary notes		13. Sponsoring Agency Name and Address  North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005	
14. Supplementary Notes			
15. Abstract <b><u>Purpose and Need</u></b> The North Dakota Department of Transportation (NDDOT) uses a process that is referred to as "Mine and Blend" to rehabilitate distressed pavement. This is a process that salvages the existing aggregate base and hot bituminous pavement (HBP) as base material for new pavement. Currently, blended base material is limited to no more than 50% salvaged HBP due to concerns that greater percentages will reduce the performance of the pavement structure. The NDDOT needs to establish if it is practical to construct bases that contain more than 50% salvaged HBP. <b><u>Objective</u></b> The objective of this research project is to determine the maximum percentage of salvaged HBP that may be contained in base material without compromising pavement performance. <b><u>Scope</u></b> Test segments were constructed, as part of a NDDOT Mine & Blend project, with blended base that contain 60%, 70%, and 80% salvaged HBP. Base sections that contain 50% salvaged HBP will be used as the control. After construction, the test section was evaluated with a falling weight deflectometer (FWD) to establish the strength of the different base sections. The test sections will be evaluated annually with the NDDOT "Pathways Van" and visually by NDDOT personnel. The "Pathways Van" will measure ride, distress, and rut depths. Also, a lightweight profiler (LWP) was used to obtain the International Roughness Index (IRI) of the roadway. NDDOT personnel will evaluate the test sections for pavement performance, including ride, rut depth, crack size, and crack spacing. <b><u>Summary</u></b> Laboratory tests show that properties associated with increasing the percentage of salvaged base in blended material include an increase in permeability, a decrease in dry unit weight, and an increase in optimal moisture. All of these properties are likely related to the additional salvaged HBP increasing the coarseness of the blended material. Gyrotory compaction tests showed no differences in the effort required to compact the blended material with different percentages of salvaged HBP. There were no unusual construction problems caused by the test segments. The percentage of salvaged HBP in the constructed blended base of the test segments was estimated using asphalt extractions. The results showed a significant variation in the estimated percentage of salvaged HBP but all of the samples from within the test segments were estimated to contain greater than 50% salvaged HBP. There were no obvious visual differences between the test segments and the control segment. All sections show minimal rut depth and transverse cracking. All sections have intermittent longitudinal cracks, primarily in the outside wheel paths, ranging from 5ft to 20ft in length. The control and test segments were tested with a FWD for pavement moduli and a LWP for ride. There were no major differences in the pavement moduli or ride between the different test segments. The control and test segments will continue to be monitored. Data will continue to be collected for distress, rutting, ride, and subgrade strength. The maintenance operations will be monitored to compare the maintenance costs of the test segments to the control segment.			
16. Key Words  Mine and Blend Asphalt Percent in Blended Base	17. Distribution Statement No restrictions. This document is available electronically by <a href="#">clicking this link.</a>  North Dakota Department of Transportation Materials and Research Division: 300 Airport Road Bismarck ND 58504-6005 Office: (701) 328-6900 Fax: (701) 328-0310		18. No. of Pages 25  19. File type/Size PDF / 1.7 MB