

Micro-surfacing Mix Design Procedure
List of Pavement Preservation Research
January 2008

Title	Contract / Grant No.	Shortened Abstract	Current Status	Start Date	End Date	Sponsor Organization	Source Organization	Performing Organization	Total Budget
Micro-surface Mix Design Procedure	SPR-3(73)	The procedure should establish the level of components in the mixture and the tests run must predict performance. The mix design procedure should address several specific aspects of micro surfacing.	Active	Mar-99	N/A	CALTRANS, FHWA		CALTRANS	
Use of PMS data for evaluating preventive maintenance guidelines		The research described in this paper involves the use of a large performance data set from 240 preventive maintenance (PM) projects to evaluate the effectiveness of guideline values for various PM fixes used by the Michigan Department of Transportation (MDOT), including non-structural bituminous overlay; surface milling with a non-structural bituminous overlay (mill-and-fill); single chip seal; multiple course micro-surfacing and bituminous crack sealing.		Jun-05	N/A	Queensland Department of Main Roads		Michigan State University, Michigan Technological University	
Impact of Recent Technology Advancements on Pavement Life		In this paper, the benefits of recent technology advancements such as the development of the new AASHTO 2002 pavement design guide, as well as the use of technology advancements such as, pavement smoothness specifications, open graded drainage layers, perpendicular transverse joints in concrete pavements, ultra-thin whitetopping, stone mastic asphalt, micro-surfacing and expanded/foamed asphalt are discussed.		Jun-05	N/A	Transportation Association of Canada		Applied Research Associates, Inc. ERES Division	
Cold mix asphalt concrete and micro-surfacing for coloured wearing courses	90-802884-4-6	This paper aims to present the results of research which has led to the development of two coloured emulsion products that are able to meet the specifications for tunnel wearing courses.		Jun-05	N/A	Foundation Euroasphalt		COLAS, Magny Les Hameaux, Franc	
Performance-Related Specifications for Pavement Preservation Techniques	Report Number: FHWA-IF-03-019	This paper describes several such performance-related specifications and how they are being adopted by agencies.		Jun-05	N/A	FHWA, FPP, and CALTRANS		Blankenship-P; Leach-DR	
New York Stretches Bridge Deck Life		This article describes process involved in the refurbishment of the deteriorating concrete deck on the Fire Island Inlet Bridge, a two-lane steel arch span and causeway.		Jun-05	N/A	James Informational Media, Incorporated,		Constantino-F	
Stretching Pavement Life with Micro-Surfacing		Recommendations from a pavement condition and management analysis for the city of Saskatoon, Saskatchewan in 1996 have led to adoption of a yearly micro-surfacing program for residential streets		Jun-05	N/A	American Public Works Association		Jorgenson-J	
Improvement of Asphalt Pavements on Highways in Germany Through Micro-surfacing		Friction on many German Highways was found to be insufficient to support the ever-increasing sustained traffic. While the problem has been realized for some time, it was not thoroughly investigated until a measuring system, the Sideway-force Coefficient Routine Investigation Machine (SCRIM) allowing continuous registration of highway surface friction conditions, became available.		Jun-05	N/A	Thessaloniki, Greece		HAGER-HJ (POSSEHL Spezialbau GmbH, Wiesbaden, Germany); VOELKER-WH (Voelker & Partner, Germany)	
Use of Grave Emulsion for Road Reprofiting		This paper presents the mixes that are the most suitable for use in reprofiling, in accordance with conditions of use and application.		Jun-05	N/A	Thessaloniki, Greece		LAFON-J-F (Regional Public Works Lab, Toulouse, France)	

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Pavement Preservation with Thin Overlays		This article describes various thin overlays, which are generally between 0.5-inch thick and 1.5 inches, and when to use them in the life of a deteriorating roadway.		Jun-05	N/A	James Informational Media, Incorporated		Hansen-K	
Evaluation of Louisiana's Maintenance Chip Seal and Micro-Surfacing Program	Report Number: Report No. 363,; Report Number: Final Report	The report discusses the performance in terms of Pavement Condition Index (PCI) of 40 chip seal and 24 micro-surface projects after approximately 52 months of service throughout the state.		Jun-05	N/A	Southern University A&M College, Baton Rouge, Department of Civil Engineering		Shah-SC	
Cost-Effective Rut Repair Methods	Report Number: FHWA-AK-RD-00-04	This report reviews state-of-the-practice methods for repairing rutted asphalt concrete pavements.		Jun-05	N/A	Alaska Department of Transportation and Public Facilities		McHattie-RL	
Evaluation of the NovaChip Process in Alabama	630226	THIS PROJECT WILL CONDUCT A THOROUGH INVESTIGATION OF THE NOVACHIP CONSTRUCTION PROCESS AND EVALUATE PERFORMANCE AT REGULAR INTERVALS.	Active	Apr-93	N/A	Alabama State Highway Department, Federal Highway Administration	Alabama DOT	Auburn University	\$18,666
Evaluation of ODOT Roadway/Weather Sensor Systems for Snow and Ice Removal Operations. Part III: Optimization of Salt Brine Pre-Treatment Application Rates and Frequency	Report Number: FHWA/OH-2003/008C	In order for ODOT to develop the most effective plan for pretreatment, an in-situ study to provide data on decay of brine on trafficked pavement was needed. Objectives included a survey of other state DOTs' pretreatment protocols, laboratory studies to discern brine concentrations that precluded ice formation, brine decay with traffic and time on several pavements, and correlation of laboratory and field data.		N/A	N/A	Ohio University, Athens, Department of Civil Engineering and ORITE, Stocker Center, Athens, OH			
Field Persistence of Anti-Icing Sodium Chloride Residuals	Report Number: E-C063,; Report Number: SNOW04-049	An extensive study of brine residual decay over time and traffic was completed on portland cement concrete (PCC), Nova-Chip asphalt cement (NCAC), Micro-Seal asphalt cement (MSAC), and open-grade asphalt cement (OGAC) pavements		N/A	N/A	Transportation Research Board			
Evaluation of Circular Texture Meter for Measuring Surface Texture of Pavements.	Report Number: NCAT Report 04-05	The Circular Texture Meter (CT Meter) is a laser based device for measuring the mean profile depth (MPD) of a pavement at a static location. Both MPD measurements from the CT Meter and mean texture depth (MTD) measurements from the sand patch test were obtained in five random locations in each of 45 section of the 2000 National Center for Asphalt Technology (NCAT) Test Track.		N/A	N/A	National Center for Asphalt Technology (NCAT), Auburn University			
A Thin Layer Asphalt to Meet Local Government Demands		The quest to provide a suitable cost effective, thin surface continues where an asphalt finish is specified. Yet the top few millimetres of a bituminous road surface are subjected to extremes of temperature, tyre stress, abrasion, oxidation and subsequent brittleness and so thin lift surfaces are vulnerable. Therefore those few millimetres on the surface must consist of the best aggregate and binder available. It remains that thin surfacing (less than 25mm thick) has great potential as it can provide both preventive and corrective maintenance and be cost effective when used on a sound pavement at the appropriate time.		N/A	N/A	Australian Asphalt Pavement Association (AAPA)			

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<p>Comparison of Thin-Lift Hot-Mix Asphalt Surface Course Mixes in New Jersey.</p>	<p>309094038</p>	<p>Typically, thin-lift HMA surface course mixes found in New Jersey consist of open-graded friction courses and Novachip, with a few roadway sections using microsurfacing and stone-mastic asphalt. Each of these material types is evaluated to provide an assessment of their ride quality and safety. These thin-lift materials are compared with in-service dense-graded asphalt mixes and portland cement concrete (PCC). PCC pavements have three different surface conditions: no treatment, transverse tined, and diamond grind. To establish performance comparisons between the different surface courses, noise measurements using the close proximity method, wet-skid resistance, and ride quality data consisting of the ride quality index and international roughness index were used. The performance information, along with current costs associated with the materials and construction, can provide a means of establishing the cost-effectiveness for the use of these surface treatments under specific situational conditions.</p>		<p>N/A</p>	<p>N/A</p>	<p>Transportation Research Board (TRB)</p>			
<p>NovaChip™ Surface Treatment: Six Year Evaluation: Theriot Canal Bridge, Route LA 308, LaFourche Parish</p>	<p>Report Number: TAR No. 04-2TA,; Report Number: State Project 407-04-0034</p>	<p>No longer described as NOVACHIP (Trademark) in Louisiana, it is now an Ultrathin HMA Wearing Course. This report presents a six-year (1997-2003) evaluation of Louisiana's first project using this process.</p>		<p>N/A</p>	<p>N/A</p>	<p>Louisiana Transportation Research Center</p>			
<p>NovaChip™</p>	<p>Report Number: WA-RD 571.1,; Report Number: Research Report</p>	<p>For the Washington State Department of Transportation, the first NovaChip (Registered Trademark) application in Washington State was selected as a replacement to a BST on SR 17 through the City of Soap Lake. This report summarizes the design and construction experiences learned on this project, performance to date, and includes discussion of costs and future use recommendations in Washington.</p>		<p>N/A</p>	<p>N/A</p>	<p>Washington State Department of Transportation, Materials Laboratory</p>			