WisDOT RESEARCH PROGRAM

Annual 2014 Report

To the transportation research community:

The department is committed to providing the safest, most efficient and highest quality transportation services to meet the needs of the state, its citizens and many visitors. A number of innovations are underway within the department aimed at streamlining the time and resources needed to pilot, evaluate and adopt promising materials, technologies, policies and procedures. At the core of great innovation is a strong foundation in research.

To that end, the report that follows provides a summary of Wisconsin Department of Transportation research activities during Federal Fiscal Year 2014. It includes research projects and related initiatives managed by the department's Office of Policy, Finance and Improvement, as well as projects in partnership with universities, the transportation industry, other states, the Federal Highway Administration (FHWA) and other national organizations, including the Transportation Research Board (TRB) and the American Association of State Highway and Transportation Officials (AASHTO).

Over the past year, WisDOT's $3.7 million program completed ten state-sponsored research projects conducted through the Wisconsin Highway Research Program (WHRP) and the Policy Research Program. The department also collaborated with FHWA and other state and federal agencies to accelerate the process of bringing valuable research into practice. Department staff actively participated in numerous national studies and panels and led practice scans to support and advance knowledge. The department served as the lead in two state pooled fund research projects and participated in 42 state pooled fund projects led by other states. The research area also provided funding and staffing resources to support technology transfer services, a peer exchange, 18 literature searches and 12 synthesis reports.

One of the biggest changes within the department's research program has been a recent reorganization that elevated research and library functions into WisDOT's Executive Offices. This change, which occurred in late June 2014, more fully integrates research into the department's culture and emphasizes a strategy of data-driven decision making. By aligning research activities with our strategic mission, the department is creating an environment where applied research results can move quickly to implementation. These operational changes will ensure research recommendations improve mobility, support accountability and transparency, maximize existing infrastructure preservation, improve safety and enhance the customer service we provide to citizens, our transportation partners and stakeholders. Future research annual reports will incorporate the results of this reorganization.

I am proud of the department's accomplishments in the area of research and recognize they are achieved through collaboration with academia, the transportation industry and our state and federal partners. I look forward to continued innovation in support of our mission to "Provide leadership in the development and operation of a safe and efficient transportation system."

Mark Gottlieb, P.E.
Secretary
Wisconsin Department of Transportation

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This is a report of research and technology transfer activities carried out by the Wisconsin Department of Transportation through the Part 2 research portion of the State Planning and Research Program of the Federal Highway Administration, U.S. Department of Transportation. The report describes activities during Federal Fiscal Year 2014, covering October 1, 2013, through September 30, 2014.

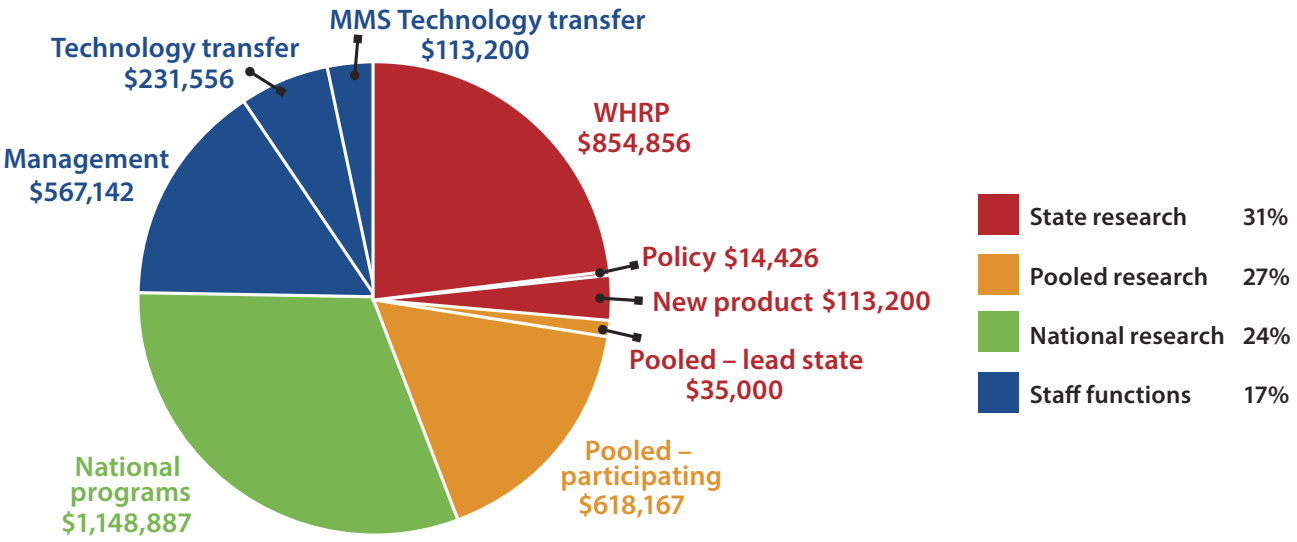
Common Acronyms

AASHTO	American Association of State Highway and Transportation Officials
DOT	Department of Transportation
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
MAPSS	Mobility, Accountability, Preservation, Safety and Service
NCHRP	National Cooperative Highway Research Program
R&L UNIT	Research & Library Unit
SHRP2	Strategic Highway Research Program 2
SPR	State Planning and Research Program
TPF	Transportation Pooled Fund
TRB	Transportation Research Board
UTC	University Transportation Center
UW	University of Wisconsin
WHRP	Wisconsin Highway Research Program
WisDOT	Wisconsin Department of Transportation

Program Overview

WisDOT managed a $4.2 million program for research, library and technology transfer services during federal fiscal year 2014. Ninety percent ($3.76 million) of the program is funded by the state planning and research part 2 (SPR2) federal program with the remaining ten percent from state funds.

State-based research projects



The Wisconsin Highway Research Program (WHRP) is focused on projects to improve the state's highways. WHRP is managed through a partnership with the University of Wisconsin–Madison. The Policy Research Program addresses non-engineering issues such as planning, operations and safety. New Product research funding supports statewide quality assurance and materials testing.

Pooled fund projects

The Transportation Pooled Fund (TPF) Program allows federal, state, and local agencies and other organizations to combine resources to support transportation research studies. The WisDOT research program allocated funds to 41 TPF projects in FFY 2014. Wisconsin was the lead state on three pooled fund projects.

National research

WisDOT helps to sustain national research initiatives through the Transportation Research Board (TRB), the National Cooperative Highway Research Program (NCHRP) and SHRP2.

Technology transfer, library services and program management

The research program funds technology transfer activities and library services to coordinate dissemination of research. Funds for WisDOT's Materials Management Section (MMS) technology transfer activities are also included in the research program. Efficient management of the program contributes to continuous performance improvement.

Featured Research

The Wisconsin Department of Transportation MAPSS Performance Improvement Program focuses on five core goal areas: Mobility, Accountability, Preservation, Safety and Service. Examples of research that contribute to achieving the department's strategic mission are featured.

Mobility

0092-14-19

WisDOT Traffic Forecasting Methods and Best Practices Peer Exchange

FINAL REPORT:
http://wisdotresearch.wi.gov/wp-content/uploads/WisDOT-Traffic-Forecasting-Peer-Exchange-0092-14-19-final-report.pdf

Wisconsin Department of Transportation (WisDOT) hosted a peer exchange from May 20–22, 2014 in Madison, Wisconsin. The objectives of the exchange were to share and communicate state-level traffic forecasting best practices; review existing agency practices, methods and protocols; consider new practices; and improve the validity and accuracy of traffic forecasts. Several state Department of Transportation agencies were invited and representatives were present from the following states: Florida, Iowa, Michigan, Minnesota, North Carolina and Virginia. Several WisDOT employees were present along with representatives from the Federal Highway Administration (FHWA).

IMPACT: The peer exchange concluded WisDOT's traffic forecasting processes and tools are similar to peer states. However, the group determined several areas where existing traffic forecasting methodologies could be improved or enhanced. Methods and processes should be made consistent across forecasts and forecasters by documenting the processes, assumptions and data used in detail. Socio-economic growth projections in travel demand models should share consistent control totals for accuracy and consistency across Wisconsin. Existing tools for traffic forecasting could be improved to be more user friendly and use the most current data available. Participate in the National Household Travel Survey (NHTS) would enhance the agency's understanding of the uncertainties and changes in both economic and transportation environments.

Accountability

SPR-2(207)

Transportation Management Center Pooled Fund Study

LEAD AGENCY – FEDERAL HIGHWAY ADMINISTRATION:
http://www.pooledfund.org/Details/Study/106

The Traffic Management Center (TMC) Pooled Fund Study (PFS) is an assembly of local, state, regional and federal transportation management agencies focused on a number of common goals. These goals include: 1) identifying human-centered and operational issues that are common among TMC operators and managers; 2) suggesting approaches to addressing identified issues; 3) initiating and monitoring projects intended to address identified issues; 4) providing guidance and recommendations and disseminate results; 5) providing leadership and coordinating with others with TMC interests; and 6) promoting and facilitating technology transfer related to TMC issues nationally. Projects may involve conducting research projects, operational tests, preparing technical guidance and recommended practices, developing software and training, or pursuing technology transfer initiatives. Members meet quarterly via teleconference or web conference. Members also meet in-person annually to select new initiatives and projects to pursue. Some examples of recent research projects lead by the TMC PFS include: Next Generation Traveler Information Systems: A 5-Year Outlook, TMC Video Recording and Archiving Practices, and Effects on ITS Planning and Deployment in a Connected Vehicle Environment.

IMPACT: Traffic Management Centers are the nerve centers for most freeway and arterial traffic management systems. Traffic data is collected, organized, leveraged and disseminated. Traffic management infrastructure is managed and controlled from these centers with the goals of increasing safety and reliability, while decreasing user delay.

Featured Research

Preservation

0092-12-03

Lateral Deflection Contribution to Settlement Estimates

FINAL REPORT AND BRIEF:
http://wisdotresearch.wi.gov/project?id=808

Construction of tall embankments or retaining walls on soft soils typically requires staged construction, a technique used to allow compressible and weak soil to consolidate and gain strength over time. However, tall embankments are not fully constrained, contributing to potential global failure of foundation soil and generation of lateral movements that magnify vertical settlements of the embankments. Contribution of lateral deflection on the magnitude of the settlement is currently not well defined, requiring a need to evaluate data from a project where settlement and lateral movement have been recorded to estimate the amount of vertical settlement due to lateral deflection. Data collected from WI 29 and US 41 projects in Howard, WI, were used to evaluate lateral spreading and settlement. The data was applied to the development of finite element based models to obtain further understanding of how field conditions affect the contribution of lateral deflection to settlement estimates.

IMPACT: Field measurements, numerical modeling and parametric study in this research help explain the effects of soil properties and geometry conditions on settlement of tall embankments and retaining walls. Vertical settlement of an embankment over heavy, over-consolidated soils can be estimated from one-dimensional consolidation tests. However, for normally-consolidated soils, strip footing analysis must be used to estimate the settlement. Due to slow pore water pressure dissipation of soft soils, installation of draining systems such as wick drains is recommended to reduce the construction time and improve embankment performance.

MAPSS
Performance
Improvement

0092-12-02

Development of Guidelines and Specifications for Use of WMA Technology in Delivering HMA Products Inclusive of Non-conventional Mixtures such as SMAs and Mixtures with High RAP and RAS Content

FINAL REPORT AND BRIEF:
http://wisdotresearch.wi.gov/project?id=806

Recent national research efforts have focused on the development and evaluation of warm mix asphalt (WMA) technologies as a means to reduce environmental impact and enhance performance of conventional hot mix asphalt (HMA). Current WisDOT mix design specifications allow for a variety of non-conventional products, including high recycled asphalt pavement (RAP), recycled asphalt shingle (RAS) and stone matrix asphalts (SMAs). In order to fully realize potential environmental and performance related benefits of WMA, mix design criteria that is applicable to both conventional and non-conventional mix types is needed. In addition, use of WMA as a viable alternative to HMA has presented states with the challenge of discerning between products for acceptance testing. This research project was intended to develop recommended specifications for asphalt concrete covering all types of mixtures included in Section 460 of the Wisconsin Standard Specifications.

IMPACT: Completed project work has shown promise in using performance related tests for the design and acceptance of asphalt concrete mixtures. Specimen fabrication and testing time severely limit the frequency that Asphalt Thermal Cracking Analyzer tests can be conducted for the flow number. WisDOT should consider investigating other performance related tests which require less time, specifically the high temperature IDT test for rutting resistance and an acoustic emission test to characterize the embrittlement temperature of asphalt concrete mixtures. Both of these tests can be conducted on the gyratory specimens that are fabricated for normal volumetric quality control. The primary recommendation concerning draft specifications developed in this project is that additional validation work is needed before either specification can be considered for implementation. A wider range of projects should be considered, particularly high recycle content mixtures produced at reduced temperatures using various WMA processes. Wider testing will provide additional data to further refine draft specifications and important data on mixture composition that can lead to performance improvement of asphalt mixtures.

Featured Research

Safety

0092-12-11

Establishing a Methodology to Evaluate Teen Driver Training Programs

FINAL REPORT AND BRIEF:
http://wisdotresearch.wi.gov/wp-content/uploads/WisDOT-Policy-Research-0092-12-11-final-report.pdf

The crash risk in Wisconsin is similar to other states. In 2010, Wisconsin teen drivers from (16 to 19 years of age) represented 4.8 percent of total Wisconsin licensed drivers but accounted for 10 percent of total crashes. A clear need existed for programs to be objectively evaluated for effectiveness. With the variety of driver education programs, there is a need to develop a methodology for program assessment. While WisDOT has an exhaustive process to license driver-training schools, the department does not have established methods to analyze the entire statewide construct of how young drivers are trained. The goal of this research effort was to develop a means of analyzing the current young-driver training efforts within Wisconsin to better understand the effectiveness of the state's different driver-training programs and the tools and approaches used.

IMPACT: Five data areas of information which could be used to assess components of effective driver-training programs were identified: guardian involvement, education and training, coordination with graduated driver licensing (GDL), instructor qualification and program administration. A Program Assessment Tool User Guide was developed to serve as a step-by-step set of instructions for completing the program assessment. Activities related to increased guardian involvement have the potential to make the most difference in the education and GDL process. GDL programs have been proven effective in reducing the crash risk for teen drivers, especially when GDL requirements are combined with parental or guardian involvement efforts.

Service

TPF-5(237)

Library Connectivity and Development Pooled Fund

LEAD AGENCY – MISSOURI DEPARTMENT OF TRANSPORTATION:
http://www.pooledfund.org/Details/Study/466

WisDOT participates in the Library Connectivity and Development Pooled Fund. The major goal of this effort includes providing technical guidance to member transportation libraries and information producers participating in a national effort to better connect transportation information and data to the people who need it. Special projects of this effort include promoting the value of transportation library and information services through the creation of products geared toward demonstrating this value to transportation administrators, American Association of State Highway and Transportation Officials (AASHTO) and Transportation Research Board (TRB) Committees. Products included a guidebook for return on investment calculations and other aspects of a transportation library's value along with better documentation and dissemination of research program technical reports. Another major project involved identifying best practices for the creation of a digital archival repository for transportation organizations. WisDOT personnel had leadership roles in two of these projects. For more information, please visit http://libraryconnectivity.org/.

IMPACT: WisDOT employed the best practices formulated in this pooled fund for the creation and continuing maintenance of its digital archive. This archive preserves and creates access to the department's historical documents, ephemera and photographs. These include forerunner agencies such as the State Highway Commission of Wisconsin. WisDOT uses shared resources and group subscriptions made available by the pooled fund to better catalog departmental information and obtain items for staff from other state transportation agencies.

Library and Technology Transfer

Technology Transfer

The Research & Library Unit provides information services for WisDOT staff and supports implementation of research results. Here are some highlights of the services provided in FFY 2014.

Peer Exchange

In May 2014, the WisDOT Division of Transportation Investment Management, with funding and organizational support provided by the WisDOT Research Program, hosted a peer exchange to address the topic of traffic forecasting methods. Six states were represented at the peer exchange.

Transportation Synthesis Reports

TSRs are annotated reports that allow WisDOT technical staff and managers to learn from the experiences of other state DOTs. Twelve TSRs were completed in FFY 2014.

WisDOT Library

The library staff handled 1,548 customer inquiries and completed 18 literature searches. The library also circulated over 4,000 items (books, reports, periodicals and articles) and added 1,672 records to the library database.

The library recently published a series of digital documents detailing the opening of original segments of Interstate highways in the 1950s and 1960s in Wisconsin. Published as part of a partnership with the Milwaukee Public Library and Recollection Wisconsin, *http://recollectionwisconsin.org/*, a statewide online digital archive, the Highway Dedication Programs Collection, *http://content.mpl.org/cdm/search/collection/WDTL/searchterm/Highway Dedication Programs*, provides a detailed look into the resources and ceremony associated with each highway project completion and ribbon cutting half a century ago.

Completed Research Projects

Program	Project ID	Performing Organization	Principal Investigator	Project Budget	WisDOT Project Manager	Project Title	Actual Completion Date
Policy	0092-11-16	University of Wisconsin–Platteville	Samuel Owusu-Ababio	$125,000	Laura Fenley	Evaluation of Impacts of Allowing Heavier Log Loads in Northern Wisconsin during Spring Thaw	5/7/2014
Policy	0092-12-11	Virginia Tech University	Tammy Trimble	$85,000	Alison Lebwohl	Establishing a Methodology to Evaluate Teen Driver Training Programs	11/26/2013
Policy	0092-13-14	Christensen Associates	Philip Schoech	$118,080	Mitchell Warren	Vehicle Registration Compliance in Wisconsin	8/18/2014
Policy	0092-13-15	USDA Forest Products Laboratory	Stan Lebow	$29,345	Matt Rauch	Wood Species and Wood Preservatives for use in WisDOT Signage Posts	11/1/2013
WHRP–Flexible Pavement	0092-11-01	University of Wisconsin–Platteville	Robert Schmitt	$120,000	Judie Ryan	Investigation and Development of a Non-Destructive System to Evaluate WI Asphalt Pavement Compaction Efforts and Properties	12/3/2013
WHRP–Flexible Pavement	0092-12-01	Advanced Asphalt Technologies, LLC	Donald Christensen	$79,997	Judie Ryan	Refinement of Current WisDOT HMA Mixture App Guidelines Related to NMAS and Aggregate Characteristics	2/20/2014
WHRP–Flexible Pavement	0092-12-02	Advanced Asphalt Technologies, LLC	Ramon Bonaquist	$139,995	Tom Browkaw	Development of Guidelines and Specifications for Use of WMA Technology in Delivering HMA Products Inclusive of Non-Conventional Mixtures Such as SMA's, and Mixtures with High RAP and RAS Content	9/16/2014
WHRP–Flexible Pavement	0092-13-02	University of Wisconsin–Madison	Hussain Bahia	$70,000	Tom Brokaw	Field Evaluation of Wisconsin Modified Binder Selection Guidelines	12/27/2013
WHRP–Geotech	0092-13-03	University of Wisconsin–Madison	Dante Fratta	$41,998	Jeff Horsfall	Lateral Deflection Contribution to Settlement Estimates	7/2/2014
WHRP–Rigid Pavement	0092-12-04	Michigan Tech University	Lawrence Sutter	$144,958	Jim Parry	Laboratory Study for Comparison of Class C Versus Class F Fly Ash for Concrete Pavement	9/29/2014

Active Research Projects

Program	Project ID	Performing Organization	Principal Investigator	Project Budget	WisDOT Project Manager	Project Title
Policy	0092-14-14	WisDOT		$12,500	Matt Rauch	Copper Naphthenate Treatment Usage in Wood Sign Posts
WHRP–Geotech	0092-08-11	University of Wisconsin–Madison	Dante Fratta	$103,914	Robert Arndorfer	Effective Depth of Soil Compaction in Relation to Applied Compactive Energy
WHRP–Geotech	0092-09-05	University of Wisconsin–Madison	Dante Fratta	$109,893	Robert Arndorfer	Evaluation of the Foundation Movements of Transportation Structures
WHRP–Geotech	0092-11-03	University of Wisconsin–Madison	Dante Fratta	$74,000	Jeff Horsfall	Evaluating the Methodology and Performance of Jetting and Flooding Granular Backfill Materials
WHRP–Geotech	0092-11-04	University of Wisconsin–Platteville	Mark Meyers	$63,951	Jeff Horsfall	Analysis of Trends/Correlations of Historical WisDOT Soil Lab Test Results Through Dev of an Electronic Database
WHRP–Rigid Pavement	0092-11-05	University of Wisconsin–Madison	Steven Cramer	$252,000	James Parry	Laboratory Study of High Performance Curing Compounds for Concrete Pavement Phase I & II
WHRP–Structures	0092-11-07	University of Wisconsin–Milwaukee	Al Ghorbanpoor	$184,999	Bill Dreher	Aesthetic Coatings for Bridge Components
WHRP–Flexible Pavement	0092-12-02	Advanced Asphalt Technologies, LLC	Ramon Bonaquist	$139,995	Judie Ryan	Dev of Specs for use of WMA Tech in Delivering HMA Products Inclu of Non-Conven Mixt Such as SMAs, High RAP and RAS Content
WHRP–Rigid Pavement	0092-12-04	Michigan Tech University	Lawrence Sutter	$144,958	Barry Paye	Laboratory Study for Comparison of Class C Versus Class F Fly Ash for Concrete Pavement
WHRP–Structures	0092-12-06	University of Wisconsin–Milwaukee	Habib Tabatabai	$166,992	David Bohnsack	Evaluation of Thin Polymer Deck Overlays and Deck Sealers
WHRP–Geotech	0092-12-07	University of Wisconsin–Milwaukee	Hani Titi	$94,989	Daniel Reid	Predicting Scour of Bedrock in Wisconsin
WHRP–Geotech	0092-12-08	University of Illinois	James Long	$95,000	Jeff Horsfall	Static Pile Load Tests on Driven Piles into Intermediate-Geo Materials

Active Research Projects

Program	Project ID	Performing Organization	Principal Investigator	Project Budget	WisDOT Project Manager	Project Title
WHRP–Flexible Pavement	0092-13-01	AMEC Environment & Infrastructure, Inc.	Gonzalo Rada	$205,000		Evaluation of Design Criteria and Field Performance of Rubblized Concrete Pavement Systems in WI–Phase 1 & 2
WHRP–Geotech	0092-13-03	University of Wisconsin–Milwaukee	Qian Liao	$74,998	Jeff Horsfall	Understanding and Complying with Storm Water Mitigation Guidelines from the EPA
WHRP–Rigid Pavement	0092-13-04	University of Wisconsin–Milwaukee	Konstantin Sobolev	$199,185	Andrea Breen	Laboratory Study of Optimized Concrete Pavement Mixtures
WHRP–Structures	0092-13-05	University of Wisconsin–Milwaukee	Al Ghorbanpoor	$120,000	Bill Dreher	Aesthetic Coatings for Concrete Bridge Components
WHRP–Structures	0092-13-06	Michael Baker, Incorporated	Jose Aldayuz	$174,984	Shiv Gupta	Development and Implementation of the Next Generation Bridge Management System for Wisconsin–Phase 1 & 2
WHRP–Structures	0092-14-01	Western Michigan University	Upul Attanayake	$84,999	William Oliva	Reflective Cracking between Precast Prestressed Box Girders
WHRP–Geotech	0092-14-02	University of Missouri	Andrew Boeckmann	$99,999	Jeff Horsfall	Performance of Pile Supported Sign Structures
WHRP–Geotech	0092-14-03	Iowa State University	Pavana Vennapusa	$150,000	Jeff Horsfall	Permeability Performance and Lateral Load for Granular Backfill behind Abutments
WHRP–Rigid Pavement	0092-14-04	Iowa State University	Brent Phares	$79,974	Barry Paye	Performance and Design of Bridge Approach Panels in Wisconsin
WHRP–Rigid Pavement	0092-14-05	University of Wisconsin–Madison	Steven Cramer	$99,998	Kevin McMullen	Comparison of Fresh Concrete Air Content Test Methods & Analysis of Hardened Air Content in Wisconsin Pavements
WHRP–Flexible Pavement	0092-14-06	Advanced Asphalt Technologies, LLC	Ramon Bonaquist	$175,000	Carl Johnson	Critical Factors Affecting Asphalt Concrete Durability

Pooled Fund Research Projects

Project Number	Title	Funding Amount Recommendation	Technical Representative	Lead Agency
Sol 1338 TPF-5 (297)	Improving Specification to Resist Frost Damage in Modern Concrete Mixtures	$17,500.00	Mark Lloyd	Oklahoma
SPR-2(207)/ TPF-5(052)	Transportation Management Center Pooled Fund Study	$50,000.00	Paul Keltner Bureau Hwy Ops	FHWA
TPF-5(021)	Base Funding for the North Central Superpave Center	$25,000.00	Tom Brokaw Bureau Tech Srvs	Indiana
TPF-5(063)	Improving the Quality of Pavement Profiler Measurement	$15,000.00	Bill Duckert Bureau State Hwy Progs	FHWA
TPF-5(065)	Traffic Control Device (TCD) Consortium	$20,000.00	Travis Feltes	FHWA
TPF-5(099)	Evaluation of Low Cost Safety Improvements	$5,000.00	John Bridwell Bureau Project Development	FHWA
TPF-5(153)	Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in HMA Pavements (MnROAD Study)	$0.00	Tom Brokaw Bureau Tech Srvs	Minnesota
TPF-5(159)	Technology Transfer Concrete Consortium	$5,000.00	Jim Parry Bureau Tech Srvs	Iowa
TPF-5(183)	Improving the Foundation Layers for Concrete Pavements	$0.00	Jeff Horsfall Bureau Tech Srvs	Iowa
TPF-5(193)	Midwest States Pooled Fund Crash Test Program	$66,000.00	Erik Emerson Bureau Project Development	Nebraska
TPF-5(206)	Research Program to Support the Research, Development, and Deployment of System Operations Applications of Vehicle Infrastructure Integration	$50,000.00	John Corbin Bureau of Traffic Operations	Virginia
TPF-5(210)	In-situ Scour Testing Device	$15,000.00	Najoua Ksontini Bureau Structures	FHWA
TPF-5(215)	Transportation Engineering and Road Research Alliance	$10,000.00	Steve Krebs and Rory Rhinesmith	Minnesota
TPF-5(218)	Clear Roads (Test and Evaluation of Materials, Equipment and Methods for Winter Highway Maintenance)	$25,000.00	Mike Sproul Bureau Hwy Ops	Minnesota
TPF-5(219)	Structural Health Monitoring System	$0.00	Scot Becker Bureau Structures	Iowa
TPF-5(225)	Validation and Implementation of Hot-Poured Crack Sealant	$0.00	Paulette Hanna Bureau Tech Srvs	Virginia
TPF-5(227)	Continued Advancements in Load and Resistance Factor Design (LRFD) for Foundations, Substructures and Other Geotechnical Features	$20,000.00	Jeff Horsfall Bureau Tech Srvs	FHWA

Pooled Fund Research Projects

Project Number	Title	Funding Amount Recommendation	Technical Representative	Lead Agency
TPF-5(232)	Study of the Impacts of Implements of Husbandry on Bridges	$15,000.00	Travis McDaniel Bureau Structures	Iowa
TPF-5(233)	Technology Transfer Intelligent Compaction Consortium (TTICC)	$9,000.00	Judie Ryan Bureau Tech Srvs	Iowa
TPF-5(237)	Transportation Library Connectivity And Development	$15,000.00	John Cherney ORPO	Missouri
TPF-5(238)	Design and Fabrication Standards to Eliminate Fracture Critical Concerns in Two Girder Bridge Systems	$0.00	Joshua Dietsche Bureau Structures	Indiana
TPF-5(242)	Traffic and Data Preparation for AASHTO MEPDG Analysis and Design	$16,667.00	Laura Fenley Bureau Tech Srvs	Louisiana
TPF-5(243)	Motorcycle Crash Causation Study	$15,000.00	Greg Patzer Transportation Safety Programs Unit	FHWA
TPF-5(247)	Field Testing Hand-held Thermographic Inspection Technologies Phase II	$0.00	Travis McDaniel Bureau of Structures	Missouri
TPF-5(253)	Member-level Redundancy in Built-up Steel Members	$25,000.00	Joshua Dietsche Bureau of Structures	Indiana
TPF-5(254)	Bulb_T Beam As Alternate ABC to Side-By-Side Box- Beam	$20,000.00	Dave Kiekbush Bureau of Structures	Michigan
TPF-5(255)	Highway Safety Manual Implementation	$10,000.00	Rebecca Szymkowski and Angela Adams, Bureau of Traffic Operations	FHWA
TPF-5(259)	Imaging Tools for Evaluation of Gusset Plate Connections in Steel Truss Bridges	$0.00	Joshua Dietsche Bureau of Structures	Oregon
TPF-5(268)	Regional Sustainable Pavement Consortium	$25,000.00	Jed Peters	Virginia
TPF-5(270)	Recycled Materials Resource Center	$25,000.00	Steve Krebs	Wisconsin
TPF-5(290)	Aurora Program	$25,000.00	Mike Adams Bureau Hwy Ops	Iowa
TPF-5(292)	Assessing Roadway Traffic Count Duration and Frequency Impacts on AADT Estimations	$6,000.00	Rhonda McDonald	FHWA
TPF-5(295)	Smart Work Zone Deployment Initiative	$40,000.00	Travis Feltes	Iowa
TPF-5(264)	Passive Forced Displacement Relationships for Skewed Abutments	$15,000.00	James Luebke	Utah
	Total	$585,167.00		

Wisconsin Highway Research Program* (WHRP)

WHRP Steering Committee

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WisDOT Research & Communication Services Section

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Wisconsin Earthmovers Association

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GEOTECHNICS

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BARRY PAYE
WisDOT Northeast Region

STRUCTURES

BILL OLIVA
WisDOT Bureau of Structures

**Rosters as of June 1, 2014.*
The FFY 2015 Annual Report will provide updated rosters including staff changes effective with the reorganization.

Wisconsin Department of Transportation* (WisDOT)

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JONANNE WALTERS
Librarian – Operations & Reference

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