

# 2015

Transportation Planning and Research:  
**ANNUAL WORK PROGRAM  
AND COST ESTIMATE**



Project – SPR Planning A012(524)  
Project – SPR Research A012(525)  
Project – Non SPR Planning and Research

Fiscal Year 2015  
October 1, 2014– September 30, 2015

Idaho Transportation Department  
10/29/2014



# **ANNUAL TRANSPORTATION RESEARCH WORK PROGRAM AND COST ESTIMATE**

**FISCAL YEAR 2015**

**October 1, 2014 – September 30, 2015**



**State Planning and Research (SPR)**

**Part A: Planning**

**Part B: Research**

**Strategic Highway Research Program (SHRP2)**

**Non SPR Planning and Research**

**In cooperation with the**



**US Department of Transportation  
Federal Highway Administration**

**APPROVED BY**

A blue ink signature of Blake Rindlisbacher, written in a cursive style.

**Blake Rindlisbacher**  
**Administrator, Division of Engineering Services**



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# **PART A: SPR PLANNING**

Key #12524





## ITEM 1.0 – PLANNING SERVICES (F15901A)

**ITD CONTACT:**    **Erika Bowen**  
Planning Services Engineer  
Division of Engineering Services  
(208) 334-8552

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### MISSION

Provide excellence in transportation planning through an inclusive and comprehensive planning process that provides products, services, and information to guide transportation decisions that balance safety, mobility, and economic opportunity needs.

Our mission is accomplished by:

- Working with internal and external customers to create plans that result in a comprehensive system of transportation options in coordination with state policies and local government and/or regional comprehensive plans;
- Coordinating specific short-, mid- and long-range transportation planning activities throughout ITD;
- Coordinating with district senior transportation and modal planners on statewide highway plans, corridor studies, etc.;
- Developing effective analytical tools to support informed programming decisions; and
- Developing effective approaches to communicate planning activities and results with our transportation partners and customers.

### ITEMS IN THIS SECTION

There are five sub-items in this section:

- Item 1.1 – Planning Administration and Coordination
- Item 1.2 – Statewide Transportation Planning
- Item 1.3 – Highway Classifications and System Adjustments
- Item 1.4 – Transportation Planning STIP Support
- Item 1.5 – Air Quality Conformity Management
- Item 1.6 – IPLAN Infrastructure Support

### TOTAL FY2015 HIGHWAY PLANNING BUDGET

<b>Federal Aid</b>	\$466,270	<b>Match</b>	\$116,567	=	<b>\$582,837</b>
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## ITEM 1.1 – PLANNING ADMINISTRATION AND COORDINATION (FP)

**ITD CONTACT:**     **Erika Bowen**  
Planning Services Engineer  
Division of Engineering Services  
(208) 334-8552

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### OBJECTIVES:

- Administer the overall statewide transportation planning process in an open and collaborate environment.
- Ensure ITD and MPO compliance with applicable provisions of Titles 23, 40, and 49 of the US Code and the Code of Federal Regulation that call for a continuing, comprehensive, and cooperative transportation planning process. This is also known as the 3-C planning process.
- Develop and track the Planning Services Work Program Items.
- Review planning program models at other state Departments of Transportation to see how they are structured for maximum success.

### METHODOLOGY:

#### 1.1.1 Program Administration (\$155,087 = \$145,087 Personnel + \$10,000 Operating)

Program administration includes ongoing Planning Services Section management and operations. Most tasks identified in this work program item are on-going and include, but are not limited to:

- General Staff Management – Staff time reporting of personnel budget. Distribution of personnel budget shall be shown in following task items, but accounted under Item 1.1 for ease of accounting. Staff development including trainings and conferences; computer hardware and software maintenance and purchases; etc.
- Fiscal and Work Program Management – Develop annual budget; review monthly financial reports; monitor SPR activity progress for Planning Services, GIS, and Transportation Performance; etc.
- Internal/External Communication and Coordination – Monitor and participate in relevant state, tribal and federal policy and/or funding matters; attend and present information at District and MPO meetings; update the Planning Services website as necessary to post current documents, plans and studies.
- National Planning Committees – Represent ITD’s interests and participate on national organizations and committees.

### FY2015 PRODUCTS:

- Develop Annual Report of SPR Work Program accomplishments for FY14.
- Develop FY16 SPR Work Program Items.
- Attend annual AASHTO Subcommittee on Planning (SCOP) meeting.

## STATEWIDE HIGHWAY PLANNING FY2015 BUDGET

<b>Federal Aid</b>	\$124,070	<b>Match</b>	\$31,017	=	<b>\$155,087</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**ITD CONTACT:**     **Sonna Lynn Fernandez**  
Planning Services Section  
Division of Engineering Services  
(208) 334-8209

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**OBJECTIVES:**

- Increase consistency and coordination in highway planning and statewide planning activities.
- Engage in discussions with local government and regional organizations to keep them informed of planning and policy changes at the state and federal levels.
- Establish the role of planning in the transportation development and management processes.

**METHODOLOGY:**

**1.2.1 – Corridor Planning Guidebook Update**

(\$31,000 Operating) + (\$21,763 Personnel, Item 1.1)

*\*Continued effort from FY14 Work Program. ITD is in the process of redefining ICAPS methodology.*

The ITD Corridor Planning Guidebook was developed and last updated in 2006. Since that time, changes in technology along with an emphasis of consistency in documentation reinforces the need to revisit this document and bring archaic planning philosophies into the 21<sup>st</sup> century. Paper document will be revised and recreated into interactive webpages. Tasks will include but are not limited to:

- Update processes, incorporate latest technologies and planning processes, and develop a repeatable, yet effective corridor planning process that can be used throughout the state by all Districts;
- Review and buyoff of content by the District planners;
- Creation of the interactive webpages to house plan components, templates, references; and
- Creation of an implementation plan with a prioritization and potential timetable identifying when new innovative ideas for integrating technology and planning will be implemented.

**1.2.2 – Public Involvement Process Plan Update**

(\$1,000 Operating) + (\$18,136 Personnel, Item 1.1)

The ITD Public Involvement Process Plan (PIPP) was last developed in 2010 when SAFETEA-LU Planning regulations were still under effect. CFR 23 Part 450.201 requires that the state have a plan to establish early and continuous public involvement opportunities that provide timely information about transportation issues and decision making processes specifically for the development of the long-range transportation plan and the Statewide Transportation Improvement Program (STIP). It also requires periodic review of the effectiveness of the process and revisions as appropriate. Several upcoming procedural changes in relation to the STIP development warrant a review of the plan. Tasks for FY15 will include but are not limited to:

- ITD Staff review of the PIPP and determination if expansion is needed to address key components that MPOs are advised to consider in the Public Participation plans.
- Review with MPOs for additional comment; revise as needed.

\*Efforts will continue into FY16 with final concluding activities consisting of the public review period, addressing comments, and posting on department's website.

### 1.2.3– Online Planning Database Development (\$28,750 Operating) + (\$10,882 Personnel, Item 1.1)

The majority of Idaho's transportation plans and related documents are prepared by various partner agencies. Most of these plans and documents are not on the internet and requires additional staff hours to locate digital or hard-copy versions. By providing these plans and planning related documents, as well as a method for submitting updates, the Planning Services Section is encouraging involvement by their business partners and local governments. This cooperative effort will provide timely information to ITD staff. These plans and documents will likely be used more often during plan and corridor planning development; impact analysis and project development work; improving coordination between ITD planning; and other divisions of ITD and local stakeholders. Tasks include but are not limited to:

- Conduct a Planning phase analysis to scope out the development of a spatially enabled planning document database, accessible for internal and external users that allow customers to review contact information, details of documents status and provides a method for updating both data and document portfolio.
- Research and compile a listing of Idaho statewide planning documents.
- Create a searchable interim solution that houses document information and hyperlinks.
- Make interim solution available to the public.

### 1.2.4 – Long Range Transportation Plan – Phase 0 (\$30,000 Operating) + (\$21,763 Personnel, Item 1.1)

The existing Long-Range Transportation Plan (LRTP) is a policy document and was adopted in December 2010. ITD's goal for the next iteration of the plan is to rethink its role in transportation development and management processes. The intent is to (1) ensure consistency with the MAP-21 mandate to create a streamlined and performance-based surface transportation program, and (2) provide sufficient fiscal resources to operate the state's transportation system on a long-term, sustainable basis. Phase 0 will focus on setting the initial framework for getting the LRTP develop process up and running. Tasks will include:

- Create and implement a statewide LRTP education plan to increase organizational knowledge on requirements; and
- Form technical, advisory and steering committees to develop a scope of work that is consistent with MAP-21 planning and programming requirements.

\*Efforts will continue into FY16 to potential include hiring a consultant to assist with the development of the plan, inventorying the state's transportation facilities and programs and analyzing the transportation implications for 10 and 20 year forecasts.

#### 1.2.5 – Non-Metropolitan Local Government Consultation and Coordination (\$4,000 Operating) + (\$21,763 Personnel, Item 1.1)

ITD interacts continually with non-metropolitan county, city, and highway districts across Idaho in relation to a full range of transportation issues. This effort needs to be coordinated to ensure all stakeholders have an opportunity to be heard. Tasks include:

- Engage Indian Tribal Nations, the Local Highway Technical Assistance Council (LHTAC), IAHD, IAC, AIC; and
- Reexamine environmental justice and make sure data surrounding this topic is available to all ITD planners and staff.
- Document a process for cooperating with non-metropolitan local officials that provides them an opportunity to participate in the development of a long range transportation plan and the STIP.

#### 1.2.6 –STIP Comment Collector Web App (\$30,000 Operating) + (\$14,509 Personnel, Item 1.1)

Complete development of a GIS web application for usage as a draft STIP Public Comment Tool for all program categories (i.e. state highways, local highways, transit and aeronautics). Once available, this tool will be accessible on IPLAN and display a point or line for each project as well as enable drill down capabilities to obtain costs and project information. A prototype of this tool is available at [http://gis.bio-west.com/STIP\\_app](http://gis.bio-west.com/STIP_app). Tasks will include:

- Development, testing and implementation of the tool.
- Registering tool on IPLAN and embedding in ITD's STIP webpage.
- Marketing and demonstration of tool.

#### **FY2015 PRODUCTS:**

- Update ITD's "Corridor Planning Guidebook", turn into interactive webpages, and publish for internal/external consumption.
- Update ITD's "Public Involvement Plan" and post on website.
- Planning phase analysis requirements and scoping documents to develop and implement an "Idaho Planning Online Database."
- Publically accessible "Idaho Planning Online Database" interim solution.
- Execute Phase 0 activities of the Idaho Long Range Transportation Plan development process.
- Report identifying District and HQ engagement of local government entities for FY15.
- Document identifying the process for cooperating with non-metropolitan local officials that provides them an opportunity to participate in the development of a long range transportation plan and the STIP.
- STIP Comment Tool available for usage with the FY16-FY20 STIP updates process.

**STATEWIDE HIGHWAY PLANNING FY2015 BUDGET**

<b>Federal Aid</b>	\$99,800	<b>Match</b>	\$24,950	=	<b>\$124,750</b>
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Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**ITD CONTACT:**     **Maranda Obray**  
Planning Services  
Division of Engineering Services  
(208) 334-8483

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**OBJECTIVES:**

- Review and submit to FHWA proposed updates, if any, to the functional classification systems by local jurisdictions and/or District planners.
- Ensure that approved changes are reflected on the official state map and within ITD's Linear Referencing System.
- Establish a universal understanding of the functional classification update process.
- Participate on the Idaho Transportation Board Subcommittee on State Highways System Adjustments as a staff resource to the Executive Team Members, District Engineers and ITD Board Members.

**METHODOLOGY:**

**1.3.1 – Functional Classification Updates**

(\$2,000 Operating) + (\$29,017 Personnel, Item 1.1)

*\*Continued effort from FY14 Work Program. Working with FHWA to finalize functional classification maps.*

State Highway System - The IT Board reviewed and submitted for recommendation to FHWA the 2025 Idaho State Highway System (SHS) Map. Planning Services staff will work with FHWA to address all comments and make changes as necessary. Primary lesson learned from this last update cycle is for the process to ensure a better coordinated effort and more communication between involved parties.

Tasks for this year to include but are not limited to:

- Revise and finalize any remaining data inputs for the 2025 SHS Functional Classification Map based off of FHWA comment.
- Visit each MPO and District to discuss the functional classification process and how it is to be driven from the District/local perspective.
- Review and submit any interim recommendations for SHS classification adjustments to FHWA for approval.

Local Road System - In spring of FY 2014, Planning Services coordinated and submitted local recommendations on functional classification changes to non-SHS roads. Planning Services staff will continue to work as a liaison between FHWA and local road agencies to address all comments and make changes as necessary. Primary lesson learned from this last update cycle is for the process to ensure a better coordinated effort and more communication between involved parties. Tasks for this year to include but are not limited to:

- Coordinate with local road agencies to revise and finalize any remaining data inputs for outstanding questions on the functional classification of local roads based off of FHWA comment.



- Review and submit any interim recommendations for local road classification adjustments to FHWA for approval.

MAP-21 Expansion of the NHS - On October 1, 2012, MAP-21 expanded the NHS to include additional principal arterials that were not yet part of the NHS. Errors have since been identified that indicate some of the newly expanded NHS does not meet the eligibility criteria and that there are other routes that qualify but were overlooked. Tasks for this year to include but are not limited to:

- Creation of a communication plan to explain the potential errors and discrepancies of the expanded NHS to local agencies, the process for correction, and timeline for moving forward to make corrective actions.
- Review and verification of all new expanded NHS routes against the eligibility criteria.
- Review of additional principal arterials (as classified on 10/1/2012) adjoining the existing NHS but not a part of the expanded NHS to verify eligibility.
- Execution of communication plan along with discussion findings.
- Creation and submittal to FHWA of two separate reports identifying errors and discrepancies for consideration of corrective actions.
- Update the statewide functional classification map as a result.
- Development of the process by which ITD and local road agencies will follow to propose changes to the NHS that are outside the bounds of errors and discrepancies.

### 1.3.2 – State Highway Systems Adjustments

(\$1,000 Operating) + (\$7,254 Personnel, Item 1.1)

Whenever a local highway jurisdiction proposes a change to the State Highway System (addition/removal/relocation/etc.), the Planning Services Section shall refer the request to the Board Subcommittee on State Highway System Adjustments. Upon board subcommittee concurrence, the highway's operating and network characteristics shall be determined using evaluation criteria that have been approved by the Idaho Transportation Board. Tasks for this year shall include but are not limited to:

- Seeking final approval of revised evaluation criteria by the Board subcommittee.
- Incorporating evaluation criteria into the ITD Systems Manuals and posting to the website.
- Generating evaluation reports on specified roadways as requested by the Board subcommittee.

### **FY2015 PRODUCTS:**

- Publish the 2025 Idaho State Highway System Functional Classification Map.
- Publish a revised statewide local roads functional classification map.
- Submittal to FHWA of two separate reports identifying errors and discrepancies for consideration of corrective actions to the expanded NHS.
- Development of a standard operating procedure to define the process for proposing changes to the NHS that are not either an error or discrepancy.
- Updated ITD Systems Manual to include revised evaluation criteria for systems adjustments.

## HIGHWAY CLASSIFICATIONS AND SYSTEMS FY2015 BUDGET

<b>Federal Aid</b>	\$2,400	<b>Match</b>	\$600	=	<b>\$3,000</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**ITD CONTACT:**     **Erika Bowen**  
Planning Services Engineer  
Division of Engineering Services  
(208) 334-8552

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**OBJECTIVES:**

- Improve department's ability to record, track and report on project and program level STIP Performance as it relates to ITD's strategic goals and MAP-21 Performance areas.

**METHODOLOGY:**

**1.4.1 – STIP Performance Tracking and Integration of PSS-OTIS**

(\$300,000 Operating) + (Personnel from Planning Services (ST Budget)

ITD has responsibility for maintaining, supporting and enhancing the STIP application (OTIS) to ensure that it meets the needs of the department. Section responsibilities within ITD are shifting to include more focus and effort by Planning Services staff to coordinate the development of the STIP. Efforts include coordination, consultation and cooperation with State, MPO, local and tribal officials. Current manual business processes are being redefined to find efficiencies in STIP development as well as investigating into the return on investment for automating these processes. Integration between OTIS and the PSS is desired to improve quality of planning level project scopes and delivery, eliminate duplicate entry in PSS and OTIS applications, and track and report on project and program level STIP performance to meet anticipated national performance areas. An integration project between the PSS and OTIS will achieve these desired results. Tasks for this year include but are not limited to:

- Planning Phase Activities – Business analyst assessment, requirements documentation, business process documentation, implementation plan for development.
- Manual Business Process Changes - Identifying and implementation of interim business process procedural changes to STIP development for the FY2016-2020 Draft STIP update.
- Development Phase Activities – Consultant development services to add additional fields to PSS/OTIS as necessary integrate systems and automate the transfer of data. Reporting Service functional added to track project and program level STIP performance.
- Implementation Phase Activities – Training for internal and external project managers on usage on new STIP entry point.

\*Bullets 1 and 2 will occur during FY15. Depending on the outcome of the Planning Phase activities to include scope, schedule and cost of subsequent phases, all or part of bullets 3 and 4 may occur during FY15 or be completed in FY16.

**FY2015 PRODUCTS:**

FY 2015 Planning and Research Work Program

- Requirements document, Business process document and implementation plan for the PSS-OTIS Integration Project.
- Procedural changes to the FY2016-2020 STIP development process.

## STATEWIDE PLANNING AND PROJECT MANAGEMENT FY2015 BUDGET

<b>Federal Aid</b>	\$240,000		<b>Match</b>	\$60,000	=	<b>\$300,000</b>
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## FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 1.5 – AIR QUALITY CONFORMITY MANAGEMENT (FT)

**ITD CONTACT:** Brian Shea  
Planning Services  
Division of Engineering Services  
(208) 334-8828

### OBJECTIVES:

- Fund a memorandum of understanding between ITD and the Department of Environmental Quality over the next three years.

### METHODOLOGY:

Item 1.5.1 – ITD/DEQ MOU for Air Quality Conformity and Modeling Services  
(\$263,910 – FY14 Budget Operating) + (Personnel included in Item 3.1/3.4.1)

- Fund two years of a three year memorandum of understanding between ITD and the Department of Environmental Monitoring for DEQ to provide the following services: Air quality conformity and transportation modeling services including the development and maintenance of Idaho-specific input databases for MOVES; and Assistance and training for ITD and the MPOs in their use of MOVES. Tasks include but are not limited to:
  - Process and fund invoices for work associated with the MOU with Department of Environmental Quality to perform air quality modeling/planning tasks related to fleet age projections and air quality impact analysis for nonattainment and/or maintenance areas, as needed.

\*Please see Item 3.4.1 for staff time and effort associated with managing and monitoring this effort.

### FY2015 PRODUCTS:

- MOU financial documentation as to progress and expenditures.

### STATEWIDE PLANNING AND PROJECT MANAGEMENT FY2015 BUDGET

<b>Federal Aid</b>	\$0	<b>Match</b>	\$0	=	<b>\$0</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

## ITEM 1.6 – IPLAN INFRASTRUCTURE SUPPORT (GO-G603)

**ITD CONTACT:** Wendy Bates  
GIS Section Manager  
Division of Engineering Services  
(208) 334-7889

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### OBJECTIVES:

- Complete remaining GIS infrastructure work needed to ensure IPLAN is automatically populating with current ITD data

### METHODOLOGY:

Item 1.6.1 – IPLAN Infrastructure Scripts  
(\$205,000 – FY14 Budget Operating) + (Personnel from Item 2.1)

Fund a GIS consultant to create scripts that automatically populate ITD's asset management systems into the GIS warehouse and then in turn populate selected data into IPLAN. This will ensure IPLAN contains the most current data being collected by ITD. Scripts will significantly reduce effort by HQ GIS and District GIS staff to manually populate the data as is being done currently. Tasks include but are not limited to:

- Process and fund invoices for work associated with the IPLAN infrastructure script contract.  
\*Please see Item 1 for GIS staff time and effort associated with managing and monitoring this effort.

### FY2015 PRODUCTS:

- IPLAN Infrastructure script contract financial documentation as to progress and expenditures.
- IPLAN automatically populated with ITD data.

### STATEWIDE PLANNING AND PROJECT MANAGEMENT FY2015 BUDGET

<b>Federal Aid</b>	\$0	<b>Match</b>	\$0	=	<b>\$0</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 2.0 – GEOGRAPHIC INFORMATION SYSTEMS (GIS)

**ITD CONTACT:**     **Wendy Bates**  
Geographic Information Systems Manager  
(208) 332-7889

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### MISSION

*To improve and expand ITD's Geographic Information System (GIS) by centralizing the program in the Division of Engineering Services to serve department wide needs.*

Our mission is accomplished by:

- Working with internal and external partners in development of data, tools and applications to improve efficiency and distribute GIS technology;
- Assisting internal customers in the development and maintenance of their GIS data;
- Ongoing work to maintain Agile Asset's Network Manager Linear Reference System;
- Developing an All-Roads Linear Referencing System (ARNOLD) to meet MAP-21 requirements and support HPMS;
- Working to implement the new Transportation Data Model;
- Maintaining the Local Highway Inventory System;
- Supporting implementation of GIS in ITD District offices;
- Working cooperatively with Department of Administration's Geospatial Office in the Transportation Technical Working Group and in partnership with Inside Idaho.

### ITEMS IN THIS SECTION

There are four sub-items in this section:

- Item 2.1 – Digital Mapping and GIS
- Item 2.2 – Linear Referencing System
- Item 2.3 – Local Highway Program
- Item 2.4 – GIS Program Development

### TOTAL GEOGRAPHIC INFORMATION SYSTEMS BUDGET

<b>Federal Aid</b>	<b>\$897,378</b>	<b>Match</b>	<b>\$224,344</b>	<b>=</b>	<b>\$1,121,722</b>
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## ITEM 2.1 – DIGITAL MAPPING AND GIS (CF-P233)

**ITD CONTACT:**     **Tom Marks**  
Senior GIS Analyst  
(208) 334-8225

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### OBJECTIVES

- To provide data and maps for use by ITD, other government agencies, the private sector, and the public.
- To implement GIS technology to support and enable ITD projects.

### METHODOLOGY

(\$146,484 personnel + \$77,860 operating = \$224,344 total budget for FY2015.)

The roadway base map is maintained to reflect the current road network based on information from highway plans, local highway district updates, imagery, or aerial photography. Special project maps are completed and specific training is conducted as necessary to meet department needs and customer requests.

### FY2015 PRODUCTS

- Maintain the transportation geospatial data layer for all roads functionally classified minor collector and above.
- Maintain a geospatial map and image online SDE database for internal access to state-level databases that support GIS analysis.
- Work with consultant to implement the new Transportation Data Model in our GIS architecture.
- Process special requests.
- Coordinate GIS software and data development training needs department-wide.
- Support All-Roads Linear Referencing (ARNOLD).
- Work with ITD Districts to provide GIS support and further implement GIS at the District level.

### DIGITAL MAPPING AND GIS BUDGET

<b>Federal Aid</b>	\$179,475	+	<b>Match</b>	\$44,869	=	<b>\$224,344</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



**ITD CONTACT:**     **Randy Rowell**  
Research Analyst, Principal  
(208) 334-8206

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### OBJECTIVES

- To provide ITD with a linear referencing system by which information systems with various road-related business data can be uniformly cross-referenced
- To provide an accurate and reliable method of identifying routes and features along the State Highway System, as well as all roads that receive state or federal aid
- To incorporate all public roads into ITD's linear referencing system
- To communicate to state and federal agencies, units of local government, and the public, information about state-maintained roads as well as locally maintained roads that receive state or federal aid.

### METHODOLOGY

(\$208,684 personnel + \$408,263 operating = \$616,947 total budget for FY2015.) *\$250,000 was added to this budget from prior year SPR funds that were approved by ITD management to be moved forward to FY2015. These funds will be used for LRS work in support of the ARNOLD mandate and HPMS requirements.*

ITD's previous linear referencing system (MACS) has been migrated to the Agile Assets Network Manager linear referencing system, on an enterprise environment for easier maintenance and access by the many systems currently being used or developed within the department that utilize a location reference. This system is the ITD standard for transportation feature location.

### FY2015 PRODUCTS

- Support road geometry for the State Highway System, Federal Aid and Functionally-classed roads using ITD's linear referencing system.
- Update the linear referencing system with new state highway system and federal-aid system projects.
- Provide quality control and assurance for attributing the geospatial data with MACS codes for all roads that receive state or federal aid.
- Incorporate into Network Manager 100% of the local roads that must be mapped as part of the ARNOLD effort. ITD has recently made and will continue to make a considerable effort to meet the FHWA mandate of mapping All Public Roads in Idaho and supporting such data in an LRS. ITD is closely monitoring the current requirements of the mandate and possible future additions to the mandate.
- Support HPMS requirements for ARNOLD.
- Revised technical documentation for administering and managing linear referencing at ITD.

**LINEAR REFERENCING SYSTEM BUDGET**

<b>Federal Aid</b>	\$493,558	<b>Match</b>	\$123,389	=	<b>\$616,947</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 2.3 – LOCAL HIGHWAY PROGRAM (BA-P221)

**ITD CONTACT:**     **James Hill**  
Local Road Inventory Program Information Coordinator  
(208) 334-8227

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### OBJECTIVES

- To compile the *Annual Local Highway Mileage Report*.
- To work directly with local road agencies in Idaho to manage local road data in linear referencing format, supporting HPMS and ARNOLD.

### METHODOLOGY

(\$56,586 personnel + \$78,021 operating = \$134,607 total budget for FY2015.)

Classification of roads and determination of mileage is submitted by local road authorities with provisions for annual updating. This classification serves as the basis for distributing state highway user revenues annually to local rural transportation agencies. Information submitted by local road authorities relative to location of roadway is the basis for the local roads database.

### FY2015 PRODUCTS

- Submit the Annual Highway Road Mileage Report.
- Prepare data and maps for public distribution to local highway authorities.
- Work with local highway authorities to update the local roads database and maps.
- Work to adjust the measurements to agree with the actual distance shown on the GIS data.
- Provide progress reports to LHTAC.
- Field verification of a portion of local improved road miles.
- Update technical documentation for governance and procedures.

### LOCAL ROAD PROGRAM BUDGET

<b>Federal Aid</b>	<b>\$107,686</b>	<b>Match</b>	<b>\$26,922</b>	<b>=</b>	<b>\$134,608</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**ITD CONTACT:**     **Wendy Bates**  
Geographic Information Systems Manager  
(208) 332-7889

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### OBJECTIVES

- To expand use of and implementation of GIS at ITD headquarters and district offices
- To review GIS program models in sister agencies and other state Departments of Transportation to see how they are structured for maximum success
- To develop strategy for application integration and deploying modular GIS components

### METHODOLOGY

(\$69,568 personnel + \$76,256 operating = \$145,824 total budget for FY2015.)

GIS is a long-term investment that matures over time. The turnaround for results may be longer term than initially expected. The GIS implementation plan will address the following technical, financial, and institutional considerations:

- Coordination with department strategic planning;
- System upgrade tactics and costs;
- Data requirements, standards and costs;
- Database design (road centerlines and cadastral land base);
- Initial data loading requirements and costs;
- System maintenance and upgrade tactics, timetable, and costs;
- System life cycle and replacement costs;
- Staffing requirements and costs;
- User training and costs;
- Education and skills development;
- Application development and integration timelines and costs – i.e. maintenance management system, pavement management system, Advantage system integrated with GIS capabilities; and
- Partnership with Department of Administration's Geospatial Office in the Transportation Technical Working Group and Inside Idaho.

### FY2015 PRODUCTS

- Staff and manage the GIS office in support of the department's needs.
- Work to complete the Transportation Data Model and associated GIS databases.
- Continue the implementation and support of Network Manager LRS in ARNOLD mandate.
- Work with business units to provide data and expertise for the ongoing GIS-related projects such as AVL, ProjectWise, Travel Demand Model and many others.
- Work to develop web-based application IPlan using ESRI's ArcGIS Online platform.
- Conduct outreach to ITD districts and divisions to assure department needs are identified, coordinated, and met over the mid-term horizon.

**GIS PROGRAM DEVELOPMENT BUDGET**

<b>Federal Aid</b>	\$116,659	<b>Match</b>	\$29,165	=	<b>\$145,824</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



## ITEM 3.0 – STATEWIDE PLANNING FUNCTIONS (F15901H)

**ITD CONTACT:**     **Erika Bowen**  
Planning Services Engineer  
Division of Engineering Services  
(208) 334-8552

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### MISSION

Provide excellence in statewide transportation planning through an inclusive and comprehensive planning process that provides products, services, and information to guide transportation decisions which balances safety, mobility, and economic opportunity needs.

Our mission is accomplished by:

- Providing mobility planning services that result in a comprehensive system of transportation options;
- Coordinating specific statewide long range transportation activities;
- Tracking and reporting statewide performance measures in alignment with MAP-21 goal areas.
- Management and coordination of transportation services/systems;
- Coordination and oversight with the metropolitan planning organizations and other local government agencies on transportation planning activities;
- Developing effective approaches to communicate planning activities and results with our transportation partners and customers.

### ITEMS IN THIS SECTION

There are 5 sub-items in this section:

- Item 3.1 – Statewide Planning Administration and Coordination
- Item 3.2 – Bicycle and Pedestrian Planning
- Item 3.3 – Performance Management
- Item 3.4 – Air Quality
- Item 3.5 – Metropolitan Planning Program

### TOTAL TRANSPORTATION PERFORMANCE BUDGET

<b>Federal Aid (SPR)</b>	\$256,134	+	<b>Match</b>	\$64,033	=	<b>\$320,167</b>
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## ITEM 3.1 – STATEWIDE PLANNING ADMINISTRATION AND COORDINATION (FP)

**ITD CONTACT:**     **Erika Bowen**  
Planning Services Engineer  
Division of Engineering Services  
(208) 334-8552

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### **OBJECTIVES:**

- Administer the overall statewide transportation planning process in an open and collaborate environment.
- Ensure ITD and MPO compliance with applicable provisions of Titles 23, 40, and 49 of the US Code and the Code of Federal Regulation that call for a continuing, comprehensive, and cooperative transportation planning process. This is also known as the 3-C planning process.
- Develop and track the Statewide Planning Work Program Items.
- Review planning program models at other state Departments of Transportation to see how they are structured for maximum success.

### **METHODOLOGY:**

#### **3.1.1 Program Administration** ((\$186,667 Personnel)

Program administration includes ongoing Statewide Planning management and operations. Most tasks identified in this work program item are on-going and include, but are not limited to:

- General Staff Management – Staff time reporting of personnel budget. Distribution of personnel budget shall be shown in following task items, but accounted under Item 3.1 for ease of accounting. Staff development including trainings and conferences.
- Fiscal and Work Program Management – Develop annual budget; review monthly financial reports; monitor SPR activity progress for Statewide Planning; etc.
- Internal/External Communication and Coordination – Monitor and participate in relevant state, tribal and federal policy and/or funding matters; attend and present information at District and MPO meetings; update the Planning Services website as necessary to post current documents, plans and studies.
- National Planning Committees – Represent ITD’s interests and participate on national organizations and committees.

### **FY2015 PRODUCTS:**

- Develop Annual Report of SPR Work Program accomplishments for FY14.
- Develop FY16 SPR Work Program Items.



**STATEWIDE HIGHWAY PLANNING FY2015 BUDGET**

<b>Federal Aid</b>	\$149,334	<b>Match</b>	\$37,333	=	<b>\$186,667</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 3.2 – BICYCLE AND PEDESTRIAN PLANNING (FI)

**ITD CONTACT:**   **Ted Vanegas**  
Planning Services  
Division of Engineering Services  
(208) 332-7823

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### OBJECTIVES

- Provide bicycle and pedestrian research, analysis and support to assist in the development of state and MPO level bicycle and pedestrian facility plans.

### METHODOLOGY

#### 3.2.1 – Statewide Bicycle & Pedestrian Facility Inventory (\$64,000 Operating) + (\$14,000 Personnel, Item 3.1)

Conduct a statewide bicycle and pedestrian facility inventory to develop baseline data for use in a statewide plan. Primary focus will be on roadways currently being inventoried for other purposes to minimize duplication of collection efforts and to capitalize on existing data maintenance schedules. Inventory will also focus on goal areas identified by the Bicycle Pedestrian Advisory Committee to provide data in support of measureable targets. Tasks to include but are not limited to:

- Consultant services to retrieve existing and/or collect new data sets
- Store data sets in a GIS database
- Publish data layers onto IPLAN

#### 3.2.2 – ITD and Local Community Coordination (\$1,500) + (\$4,667 Personnel, Item 3.1)

Provide technical assistance to local communities in conjunction with the Districts by conducting site specific corridor assessments to identify potential bike and pedestrian investments.

- Work with MPOs, cities and counties to encourage the development of local bicycle/pedestrian plans and networks as part of community planning efforts and transportation planning work programs.
- Develop a planning process to identify key bicycle and pedestrian corridors where more than minimum accommodation is appropriate. *An evaluation of the existing suitability of roadways for bicycle and pedestrian travel, identification of significant gaps in the existing system that could be improved)*

### FY2015 PRODUCTS

- Statewide Bicycle Inventory Map
- Bicycle/Pedestrian Website updates

## PROGRAM DEVELOPMENT, PLANNING, AND COORDINATION BUDGET

<b>Federal Aid</b>	\$52,400	+	<b>Match</b>	\$13,100	=	<b>\$65,500</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**ITD CONTACT:**     **Brian Shea**  
Planning Services  
Division of Engineering Services  
(208) 334-8828

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## **OBJECTIVES**

- Develop system recommendations, structures, processes, tools and reporting methods for meeting the strategic, operational and program goals and performance targets per MAP-21.
- Monitor and evaluate operations, programs, processes and practices for efficiency, effectiveness and improvement.
- Implement effective communication materials and tools to share performance information throughout the department and with external stakeholders.

## **METHODOLOGY**

### **Item 3.3.1 – Performance Management Reporting** (\$37,333 Personnel, Item 3.1)

Maintain and enhance ITD's external Dashboard and internal Scorecard for reporting strategic, program, and business sector performance measures. The quantitative data allows leadership to evaluate the organization's progress against specific goals and targets. This drives managers to improve the overall performance of programs and employees. It will create a greater ability to monitor performance, manage operations, adopt best practices and resolve challenges within our transportation system. These efforts provide a basis for more meaningful engagement to discuss and resolve transportation issues. Tasks include but are not limited to:

- Upgrading the Dashboard software application to allow for additional functionality.
- Managing the monthly or annual updates for each Dashboard item.
- Create and submit annual reports to the Division of Financial Management and Legislative Services Office (ITD Strategic Plan and ITD Performance Measurement Reports)
- Develop an implementation plan for tracking/reporting annual STIP performance as it relates to ITD strategic goals and MAP-21 performance areas.

### **Item 3.3.2 – MAP-21 Performance Requirements** (\$3,000 Operating) + (\$28,000 Personnel, Item 3.1)

The Federal Highway Administration and Federal Transit Administration are in the process of releasing a number of Notices of Proposed Rulemakings (NPRMs) relating to performance measures and targets under MAP 21 in 2014 and 2015. ITD is committed to having conversations with its local partners, Native American tribes, and stakeholders on the impacts of these proposed regulations in order to

provide effective feedback to the federal government on the final form the regulations should take.

Tasks include but are not limited to:

- Monitor/track all related FHWA, FTA, AASHTO, APTA activities
- Participate in all workshops/trainings/webinars as necessary
- Participate on the Transportation Performance Management (TPM) Team along with representatives from FHWA, FTA and the MPOs.
- Facilitate the exchange of comments on proposed rulemakings and coordinate submittal of ITD's comments with Matt Moore
- Help to coordinate ITD's planning and target setting with MPO's
- Begin to develop implementation plans for incorporating Performance-Based Planning into the STIP development process and for tracking/reporting STIP performance as it relates to ITD's strategic goals and MAP-21 based performance targets.

#### FY2015 PRODUCTS

- Enhanced functionality for the Dashboard and Scorecard software application
- Submittal of ITD's Strategic Plan and ITD's Performance Measurement Reports
- Report on the status of the Performance Indicators in ITD's Stewardship & Oversight Agreement with FHWA.
- Develop and post a MAP-21 informational page relating to Performance Management on ITD's website

#### PERFORMANCE MANAGEMENT BUDGET

<b>Federal Aid</b>	\$2,400	<b>Match</b>	\$600	=	<b>\$3,000</b>
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#### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>     			

**ITD CONTACT:**     **Brian Shea**  
                          Planning Services  
                          Division of Engineering Services  
                          (208) 334-8828

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## **OBJECTIVES**

- Facilitate ITD involvement in the Interagency Consultation Committee;
- Lead interagency consultation in non-attainment and/or maintenance areas outside MPO's
- Provide assistance to the affected MPO's for conformity determination on TIPs as prescribed under 23 CFR 450, including donut areas
- Guide conformity determination on individual projects in non-attainment and/or maintenance areas outside MPOs
- Provide an open and transparent process for accessing air quality impacts in planning efforts

## **METHODOLOGY**

### **Item 3.4.1 – Air Quality Conformity Coordination** (\$2,000 Operating) + (\$18,667 Personnel, Item 3.1)

Act as a liaison between DEQ and District staff to facilitate district attendance and participation at ICC meetings. Conduct interagency meetings, as necessary, for air quality technical review and for making conformity determinations in nonattainment and/or maintenance areas, outside of MPO boundaries. Coordinate with Transportation Systems to establish VMT projections for the Cache Valley area. Develop process, in concert with the districts, to assess air quality impacts on projects within nonattainment and/or maintenance areas outside MPOs. Tasks include but are not limited to:

- Manage and monitor work associated with the MOU with Department of Environmental Quality to perform air quality modeling/planning tasks related to fleet age projections and air quality impact analysis for nonattainment and/or maintenance areas, as needed.
- Distribute relevant draft and final project environmental documentation prepared by, or for ITD to air quality stakeholders including the ICC's.

### **Item 3.4.2 – Air Quality Training** (\$30,000 Operating) + (\$9,333 Personnel, Item 3.1)

ITD recognizes it generally lacks organizational knowledge and experience with the requirements of the Clean Air Act (CAA), related sections of 23 U.S.C., and with the Idaho Administration Code on Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01). This lack of knowledge and experience extends also to the fact there is no clear, internal understanding within ITD of the various roles and responsibilities of the various Divisions, Districts and sections with respect to air quality issues including the NEPA process. Furthermore, there is no clear, defined set of operating procedures outlining ITD's interactions with other key agencies in the air quality conformity process, i.e., DEQ and the MPOs. Given this situation, it is critically important that an organization-

wide education and training plan be developed so that ITD can effectively and efficiently meet its statutory requirements. It is also important that the plan starts to be implemented in FY 2015. Tasks include:

- Create a statewide air quality conformity education plan with objectives to increase organizational knowledge on requirements and to clarify roles and responsibilities. The elements of such a plan are anticipated to include:
    - Existing training resources (FHWA, U.S. EPA, Idaho DEQ, Interagency Consultation Committees, etc.) and materials will be used as much as possible.
    - ITD Target audiences: Idaho Transportation Board, Executive Team, Planning Services staff, Environmental Programs staff, Transportation Systems staff, District Engineers, District Planners. Other Target audiences: MPOs, local elective officials and planning staffs, local highway districts, etc.
    - Schedule and Milestones
- Implement the statewide plan.

#### FY 2015 PRODUCTS

- Air Quality fact sheets
- Air Quality Technical Review and Conformity Documents
- Transportation & Air Quality 101 (a presentation/course to potentially be developed jointly with the COMPASS Interagency Consultation Committee).
- DEQ/ITD to jointly prepare a presentation on the SIP process and the implications of non-attainment (will need to have on hand if/when Salmon is designated non-attainment for PM 2.5)
- Congestion Mitigation & Air Quality Program—Presentation outlining the potential savings to Idaho if CMAQ monies can be used to prevent areas like Salmon from going non-attainment.

#### AIR QUALITY BUDGET

<b>Federal Aid</b>	\$25,600	<b>Match</b>	\$6,400	=	<b>\$32,000</b>
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#### FY2014 CHANGES

<input type="checkbox"/> YES <input type="checkbox"/> NO	Date Amended:

**ITD CONTACT:**     **Ted Vanegas**  
Planning Services  
Division of Engineering Services  
(208) 332-7823

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**OBJECTIVES:**

- Provide administrative, planning, coordination, technical, and programming support to each of Idaho's Metropolitan Planning Organizations as prescribed under 23 CFR 450;
- Ensure that each MPO participates in state planning and programming efforts;
- Actively support MPO planning and coordination processes including the continuing, coordinated, and comprehensive (3C) planning process

**METHODOLOGY:**

Item 3.5.1 – MPO Program Oversight and Administration  
(\$3,000 Operating) + (\$37,333 Personnel, Item 3.1)

Responsible for the statewide coordination and oversight of the transportation planning process in Idaho's five MPO areas to ensure compliance with Federal and State program requirements. The oversight and coordination process includes but not limited to:

- Maintain a current Memorandum of Understanding between each MPO and ITD.
- Interpretation of Federal Planning Requirements.
- Timely processing of reimbursements.
- Provide regular coordination, participation, and technical assistance.
- Review, approve and monitor progress on the annual work programs.
- Ensure coordination and integration with statewide transportation planning activities.
- Routinely participate in Metropolitan Planning Organization policy board and technical advisory committees.

Item 3.5.2 – ITD/MPO Guidelines and Procedures Manual  
(\$30,000 Operating) + (\$28,000 Personnel, Item 3.1)

Consistency in communication and coordination is best served in the form of a comprehensive manual that provides guidance related to the planning processes and administrative requirements when facilitating transportation planning activities. Document shall clarify roles and responsibilities, improve efficiency among organizations and reduce questions and potential conflicts. Tasks to include but not limited to:

- Consultant services to draft content.
- Document review by District Planners and MPOs
- Publish and post guidance document to ITD's website

**FY2015 PRODUCTS:**

- Develop and execute Consolidated Planning Grant agreements

FY 2015 Planning and Research Work Program



- Revise current Memorandum of Understanding between each MPO and ITD.
- Execute a FY15 “punch list” to ensure better coordination and oversight of the MPO’s to address FHWA’s corrective action finding
- Host the MPO – ITD Partnership Meeting
- Publish and post an ITD/MPO Guidelines and Procedures Manual.

#### METROPOLITAN PLANNING PROGRAM BUDGET

<b>Federal Aid</b>	\$26,400	<b>Match</b>	\$6,600	=	<b>\$33,000</b>
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#### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>           			



## ITEM 4.0 –TRANSPORTATION SYSTEMS (F15901I)

**ITD CONTACT:**     **Tom Points, PE**  
Transportation Systems Engineer  
(208) 334-8253

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### MISSION

*To assist decision makers to reach cost-effective transportation system improvement decisions.*

Our mission is accomplished by providing accurate and timely information to internal customers, other government agencies, and the public by:

- Managing transportation-related databases;
- Integrating computer-assisted analysis with technical support;
- Using professional engineering and planning judgment; and
- Implementing the division's vision of transportation planning principles.

### ITEMS IN THIS SECTION

There are 5 items in this section:

- Item 4.1 – Assess Pavement Condition of the State Highway System
- Item 4.2 – Vehicle Volumes, Classification, Weight, and Characteristics
- Item 4.3 – Highway System Monitoring & Reporting
- Item 4.4 – ITD/Consultant Staff Capacity Analysis
- Item 4.5 - System Modeling

### TOTAL TRANSPORTATION SYSTEMS BUDGET

<b>Federal Aid</b>	<b>\$1,929,500</b>	<b>Match</b>	<b>\$482,375</b>	<b>=</b>	<b>\$2,411,875</b>
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## ITEM 4.1 – ASSESS PAVEMENT CONDITION OF THE STATE HIGHWAY SYSTEM (FH-P113)

**ITD CONTACT:**     **Tom Points, PE**  
Transportation Systems Engineer  
(208) 334-8253  
For Asset Management Engineer (vacant)

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### OBJECTIVES

- Assess the pavement condition of the State Highway System and other select roadways.
- Assess pavement projects programmed for the year and decide if they are complete and should be recorded in the construction history.
- Manage the Pavement Management module of Idaho Transportation Department's Transportation Asset Management System (TAMS).
- Provide statistical data for Idaho's highways, roads, and streets.
- Continue to calibrate the prediction modeling analysis engine in the PMS to predict accurate pavement deterioration or improvement.
- Provide a tool for districts to identify needed projects and related costs for transportation facilities improvement.
- Teach the Pathways® Profiler van Automated Crack Rating Software package to accurately and consistently find the cracks in our pavement and assign the same crack index rating to the pavement that the visual survey by the pavement management engineer would yield.
- Continue to refine and calibrate the Automated Crack Rating Software to better detect cracking and consistently replicate results.
- To provide a Quality Assurance check to the visual survey performed by the asset management engineer.

### METHODOLOGY

(\$425,304 Personnel) + (\$269,700 Operating)

The Highway Performance Monitoring System (HPMS) requires an inventory of roadway features and an assessment of pavement conditions for a sampling of all Idaho's roadways, both for state highways and off-state roads. The asset management engineer inventories Idaho's state highway system roadways each year for the districts and HPMS.

Additionally, ITD requires an annual pavement condition survey, by which the asset management engineer assesses the cracking, roughness and rutting of the entire State Highway System. The cracking assessment is performed by the asset management engineer and district materials engineers by a visual (windshield) survey. Roughness and rutting monitoring are performed by way of a Profiler van. The asset management engineer compiles the three data collection items into a comprehensive pavement condition. Construction history is confirmed and new projects are added to the history upon completion.

### FY2015 PRODUCTS

- Inventory of a sampling of the state's roadways.
- Updated pavement construction history file and assessment of pavement condition on the State Highway System.
- Analysis of the entire State Highway System's profile data, friction data and visual surface condition data.
- Provide a tool and training for the districts to provide recommendations for the next 5 years (updated ITIP).
- An accurate prediction of how spending will impact pavement condition in the future.
- Provide highway data to consultants authoring studies for the department.

- Prepare and release pavement management reports.
- Continue updating the division’s internet/intranet site with the most recent information
- Accurately answer inquiries from the Legislature, executive managers, and the public.
- Provide a more consistent system by which to rate pavement cracking
- Provide an improvement in the pavement data collected, and thus the accuracy of the pavement reporting, by applying software that can analyze images collected by the Profiler van

**ASSESS PAVEMENT CONDITION OF THE STATE HIGHWAY SYSTEM BUDGET**

<b>Federal Aid</b>	\$556,003	<b>Match</b>	\$139,001	=	<b>\$695,004</b>
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**FY2015 CHANGES**

Amendment Added:		<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b> <div></div>				

**ITD CONTACT:**     **Glenda Fuller**  
Roadway Data Manager  
(208) 334-8217

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## **OBJECTIVES**

- Obtain traffic volumes and vehicle-classification counts statewide and determine the proportion and type of vehicles in a sample traffic stream.
- Maintain historical traffic-characteristic files and make them available for current and forecasted traffic analysis.
- Process traffic data of all types in support of other data-management systems.
- Review vehicle classification data. Develop statistics and reports to be used for highway location and design, evaluation of program priorities, evaluation of highway accidents, rural and urban statistical traffic assignments, travel trends, highway finance, and land developments.
- Work with annual data from 221 permanently installed Automatic Traffic Recorders (ATRs) with 189 on the state highway system and 32 at off-system sites. Develop traffic segment flow conclusions and provide seasonal variation factors, design hour volumes, and reasonable sampling and screen line data.
- Develop relevant statistics from portable counters used as required for intersection turning movements and a broad range of other traffic data collection activities. Analyze vehicle classifications, and traffic-volume flow based on portable counter data.
- Collect vehicle weight, axle spacing, speed, classification, and bumper-to-bumper lengths from a representative sample portion of the traffic stream.
- Collect and distribute Equivalent Single Axle Loadings (ESAL) information as well as the newer Load Spectra Data. This data is used for pavement-management purposes, roadway design and location planning, traffic operations and regulations, and highway funding requests.

## **METHODOLOGY**

(\$727,371 Personnel) + (\$569,000 Operating)

The Roadway Data Section collects the traffic volume, vehicle classification, and truck weight data via the use of permanent and portable traffic recording equipment. Server and desktop applications allow for the analysis and development of necessary statistics and traffic flow patterns. Receive, review, analyze, and process the field data for use by the department and private sector. Interface with server support personnel to maintain ongoing applications.

Maintain and operate 26 permanent Weigh-In-Motion (WIM) systems to collect classification and axle-loading data throughout Idaho. Perform regular maintenance functions at these sites including system calibration, electronics and telecommunications troubleshooting, plus sensor and loop repairs. An office employee handles all data processing, analysis, and reporting, plus federal data submissions. We also maintain and constantly update a website containing current and historical traffic survey related monthly and annual reports.

## **FY2015 PRODUCTS**

- Generate reports and data sets from traffic counts including one-third of the HPMS and Principle Arterial System/National Highway System (PAS/NHS) sample sections.
- Review and collate classification data on selected HPMS sample sections for 48-hour periods.
- Analysis and reports related to equipment verification or in conjunction with other studies.
- Compile statistics and data sets to be used with FHWA submissions as part of ITD's annual program.

- Assist in equipment and data collection systems review to assess annual performance for accuracy.
- Install permanent WIM systems as replacements or to add new sites.
- Perform several major repairs and sensor installations on exiting SHRP/LTPP WIM systems.
- Continue the upgrading of the Roadway Data Section portion of ITD’s website.
- Complete the federally mandated data submittal to the SHRP/LTPP regional office and the FHWA in Washington, D.C.
- Assist in various WIM data-related studies involving permanent system data and reports in conjunction with FHWA, private contractors and several research institutions.
- Participate in field system equipment reviews and meet with vendors to review new data collection systems and evaluate performance, data accuracy, and software.
- Contribute to MEPDG pavement design models as requested with traffic load related data inputs.
- Improve communication with 136 of the ATRs by replacing the existing land lines with cellular modems and solar panels.

**VEHICLE VOLUMES, CLASSIFICATION, WEIGHT, AND CHARACTERISTICS BUDGET**

<b>Federal Aid</b>	\$1,037,097	<b>Match</b>	\$259,274	=	<b>\$1,296,371</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b> <div style="border: 1px solid black; height: 100px; margin-top: 5px;"></div>			



## ITEM 4.3 – HIGHWAY PERFORMANCE MONITORING SYSTEM(EB-P111)

**ITD CONTACT:**      **Margaret Pridmore**  
Mathematical Analyst  
(208) 334-8221

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### OBJECTIVES

- Inventory a statistical sampling of Idaho's roadways.
- Process roadway data using HPMS 8.0 online software.
- Improve data availability by implementing analysis and reporting tools.
- Submit an annual HPMS report to FHWA's Office of Highway Policy Information (OHPI). Plan and implement required changes to HPMS data items.
- Review data submittal annually and analyze gaps and improvements.
- Change current processes to improve data quality and quantity.
- Understand all FHWA and MAP-21 rulemakings that impact HPMS.

### METHODOLOGY

(\$75,000 Personnel) + (\$50,000 Operating)

The Highway Performance Monitoring System (HPMS) requires an inventory of roadway attributes related to condition, use, and geometry of a sampling of Idaho's roadways, as well as a Geographic Information System (GIS) representation of all public roads within the state required to meet the All Roads Network of Linearly Referenced Data (ARNOLD) mandate. The route and attribute data is coordinated from a multitude of offices inside and outside of ITD, including GIS, Bridges, Pavement, Traffic, the U.S. Census Bureau, FHWA, and others.

The information is compiled and submitted as a data set to FHWA's Office of Highway Policy Information (OHPI). The data is used in conjunction with other data sets to create the biennial Condition & Performance Report that is sent to the U.S. Congress. In addition, a multitude of other users request use of some of the data. These requests come from ITD, employees, legislators, consultants, and the general public. Finally, much of this data will be used to verify that the state is meeting performance measures established per MAP-21.

### FY2015 PRODUCTS

- Inventory a sampling of the state's roadways.
- Partially automate HPMS submittal and certification of public road mileage.
- Improve the HPMS data collection and management processes to increase the accuracy and reliability of the data.
- Maintain and make needed modifications to the data collection software used for field collection.
- Continue to refine the method of gathering HPMS data from local jurisdictions to make it more effective.
- Supply data to and furnish quality control for data in the TAMS system.
- Answer inquiries from the Legislature, executive managers, and the public.
- Work with GIS to implement a plan to meet MAP-21 requirements.
- Work with FHWA to handle Safety MAP-21 reporting changes affecting HPMS.
- Establish methods for ensuring existing traffic data is not removed from TAMS.
- Documentation on the methodology used in the development and utilization of adjustment factors and site specific D-factors.
- Documentation on how ITD develops and updates the single unit and combined unit truck volumes and percentages.

**HIGHWAY PERFORMANCE MONITORING SYSTEM BUDGET**

<b>Federal Aid</b>	\$100,000	<b>Match</b>	\$25,000	=	<b>\$125,000</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 4.4 – ITD/CONSULTANT STAFF CAPACITY ANALYSIS (EC)

**ITD CONTACT:**     **Tom Points, PE**  
Transportation Systems Engineer  
(208) 334-8253

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### OBJECTIVES:

Uniformly compare consultant efficiency and effectiveness rates for the delivery of projects and tasks in order for the Department to make informed planning decisions on internal staffing capacity and workforce composition for project delivery. This project is needed for ITD to forecast workflow and plan the use of staff consultant augmentation. The end result of this effort will be improved project delivery using resource loaded schedules.

- Establish baseline labor-hour delivery rates per task or project type to include in the Project Scheduling System (PSS) and be used by planners/project development engineers to better forecast overall ITIP project development staffing needs and internal staffing capacity
- Identify internal tasks consistently falling beneath the baseline and evaluate whether to increase staff skills, change staff skills (i.e. project management vs. technical based) or conclude that consultant usage is the more effective method of product delivery.
- Use information to develop better Evaluation Phase Project Charter schedule and cost estimates.

Uniformly compare consultant to consultant efficiency and effectiveness rates for the delivery of projects and tasks in order for the Department to make informed planning decisions on quality based consultant selection.

- Establish consultant efficiency performance metrics based on negotiated man-hour estimate vs. actual work performed.
- Provide searchable actual work estimates by task to assist project administrators in creating and evaluations consultant proposed man-hour estimates.

### METHODOLOGY:

(\$50,000 Operating for Consulting Services)

The Division of Engineering Services has researched and analyzed industry standards and ITD data for internal and consultant hours expended on project development activities. Research concluded that the industry has only performed cost comparisons, not time, and that our own internal tracking of data is not currently meeting the needs to answer this question. Tasks included in the planning phase of the project to include but are not limited to:

- Planning Phase Activities – Business analyst assessment, requirements documentation, business process documentation, implementation plan for development. The software development will be funded at a later date. This project is only a planning and business analyst, feasibility project.

### FY2015 PRODUCTS

- Staff Capacity Analysis Planning Phase (\$50,000)

**BRIDGE DATA**

<b>Federal Aid</b>	\$40,000	<b>Match</b>	\$10,000	=	<b>\$50,000</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b> \$			

## ITEM 4.5 – SYSTEM MODELING (FL)

**ITD CONTACT:**     **Tom Points, PE**  
Transportation Systems Engineer  
(208) 334-8253

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### OBJECTIVES

- The Highway Safety Corridor Analysis (HSCA) project will improve planning, prioritization and resource allocation to highway safety road projects by streamlining the creation of quality prioritization of high-risk locations. This will result in better use of resources, improved road safety, and reduced crashes based on a data-driven benefit/cost analysis approach.
- HSCA is a mathematical equation that assigns highways a corridor health score based on data inputs from fatality and serious injury numbers and rates.
- HSCA can also assign countermeasures to projects to determine the return on investment for specific improvements.
- The HSCA is a proven model and ITD would like to take the next step of developing software to automate the process.

### METHODOLOGY

(\$245,500 Operating)

The function of system modeling is to develop tools to assist Districts and the Transportation Systems office with decisions. The data is pulled from many sources and used in the modeling process. The HSCA model is one of three models that are used to select the (SI) Strategic Initiative (realignment, expansions) projects. The SI program is primarily funded with HSIP money. The HSCA is used to screen and focus the district nominations, while the Transportation System office uses Tredis (economic model) and Travel Demand (mobility model) to recommend projects with the highest return on investment to be funded in the ITIP.

### FY2015 PRODUCTS

- HSCA software

### SYSTEM MODELING

<b>Federal Aid</b>	\$196,400	<b>Match</b>	\$49,100	=	<b>\$245,500</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b> \$			



## ITEM 5.0 –MOBILITY SERVICES (FR)

**ITD CONTACT:**     **Mark Bathrick**  
Freight Coordinator  
(208) 334-8210

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### OBJECTIVES

- Support the goals of the Idaho Transportation Department’s Strategic Plan.
- Fulfill Idaho Freight Study Recommendation regarding the creation and adoption of an FHWA approved Freight Plan to position ITD to receive future funding benefits associated with such a Plan.
- Develop a statewide freight performance program.
- Expand and/or maintain existing partnerships with organizations that focus on freight activity.
- Create a system and methodology to monitor statewide needs for freight improvements.
- Identify potential freight projects and areas for improvement through innovative solutions.
- Provide for an intermodal and coordinated plan that includes other modal plans that touch freight.
- Identify and work to gather necessary data to continue to create a data-driven approach to freight movement in Idaho.
- An identification of significant freight system trends, needs, and issues
- A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State
- Consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve the safety and efficiency of freight movement
- An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the State, and a description of the strategies the State is employing to address those freight mobility issues

### METHODOLOGY

#### 5.1 – Freight Plan

(\$250,000 Contracting) + (31,111 Personnel)

Develop an FHWA approved Freight Plan through the contracting of services with an outside consultant. The Freight Plan will contain the following key components. A review of current research and planning documents both within Idaho (Freight Study, other modal plans that influence freight) and those states/areas that neighbor/fall within the freight network of Idaho. Identify and describe current freight policies, strategies, and performance measures that guide freight movement in Idaho. Conducts survey’s and outreach to identify significant freight system trends, needs, and issues. Assess the current inventory of freight facilities and condition of Idaho’s freight network. Identify projects for improvement or creation that can affect the safe and efficient movement of freight in Idaho. Identify performance measures that can be created and maintained to continually monitor freight performance and assist in data driven decision-making.

#### 5.2 Freight Program Development

(\$46,667 Personnel) + (\$5,000 Travel)

Provide for a framework for the creation of a state Freight Program that can continually engage in policy, stakeholder engagement, and problem solving to find innovative solutions and opportunities to grow Idaho’s freight capacity and economy.

### 5.3 Freight STIP Involvement (\$10,370 Personnel)

Development of an external and internal ITD process, that collects relevant information and data regarding freight movement in Idaho, allows for stakeholder input into high priority corridors and projects areas as identified by freight stakeholders and then passed on to ITD District leaders for consideration in the STIP project development and selection.

### 5.4 Freight Summit (\$5,185 Personnel) + (\$4,000 Intern)

In partnership with Boise State University, the creation and implementation of the second ever Freight Summit to foster relationships among freight stakeholders and use as a springboard for the Freight Plan. This Summit will focus on freight policies in Idaho, and regional and local trends that will affect Idaho's economy in the coming years.

### **FY2015 PRODUCTS**

- Development of Program Structure for ITD's first ever Freight Program, includes Freight Advisory Committee Deliverables, Legislative Engagement, and STIP Project Engagement
- ITD's first Statewide Freight Plan – FHWA approved parameters
- Creation of first ever Freight Performance Measures
- Creation of Freight Project Identification in the STIP process
- Creation of a coordinated and structured outreach program with the private sector to drive economic growth
- 2015 Freight Summit in partnership with Boise State University

#### **1 FTE - 100% Freight Projects listed above**

**Personnel** - \$93,333

**Contracting Services (Freight Plan)** - \$250,000

**Travel** - \$5,000

**Intern** - \$4,000



**Idaho Statewide Freight Program**

<b>Federal Aid</b>	\$281,866	<b>Match</b>	\$70,467	=	<b>\$352,333</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



## ITEM 6.0 – TRANSPORTATION INVESTMENT PROGRAMMING

**ITD CONTACT:**     **John Krause**  
Transportation Investment Program Manager  
(208) 334-8292

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### BACKGROUND

The Idaho Transportation Department's Office of Transportation Investments (OTI) is responsible for development and management of the Statewide Transportation Improvement Program (STIP). The approach followed by OTI has the following STIP planning components:

- I. **STIP Pre-planning** (\$33,461 Personnel + \$8,308 Operating Expenses)  
OTI analyzes and forecasts Federal and state funding levels for the five-year ITIP/STIP planning horizon; funding and eligibility guidelines are developed for performance programs contained within the STIP such as Pavement Preservation, Highway Safety, etc.; program definitions and STIP planning guidelines are documented in the annual Program Update Manual.
- II. **STIP Development Training** (\$3,480 = \$2,788 Personnel + \$692 Operating Expenses)  
OTI develops and delivers training to departmental and external planners involved in the update of the STIP so they are prepared to utilize planning tools such as OTIS and the Program Update Manual
- III. **Development of Initial Draft of STIP** (\$41,769 = \$33,461 Personnel + \$8,308 Operating Expenses)  
ITD planners representing the six highway districts along with program-specific ITD planners submit their selection of projects for the five-year ITIP/STIP planning horizon to OTI staff; these are merged with local program project submittals from the five Idaho metropolitan planning organizations and the Local Highway Technical Assistance Council.
- IV. **Preliminary Analysis of Draft Program** (\$20,884 = \$16,730 Personnel + \$4,154 Operating Expenses)  
OTI balances the draft STIP across all districts and program areas to ensure fiscal constraint by year; exhibits explaining program performance are developed for review by the Idaho Transportation Board
- V. **Review of Draft with Idaho Transportation Board.** (\$13,923 = \$11,154 Personnel + \$2,769 Operating Expenses)  
OTI reviews the process with which the Draft program was developed and presents analytical exhibits to the Board and responds to questions using system-developed reports and other materials; the Board is asked to direct proceeding to the public involvement step in the STIP Development process.
- VI. **Public Involvement - Review of Draft Program** (\$6,962 = \$5,577 Personnel + \$1,385 Operating Expenses)  
The public is provided multiple opportunities to review projects and programs contained within the draft STIP: OTI uses its OTIS software system and other means to develop different 'views' of the draft STIP such as a hard copy publication showing project scope, schedules and budgets for all projects, an electronic version of the hard copy publication is posted to the Department's website for downloading and review; a GIS-map interface is used to geographically locate all projects in the draft STIP; comments are solicited from the general public and anyone reviewing the draft program.
- VII. **Approval of Recommended Program** (\$27,846 = \$22,307 Personnel + \$5,539 Operating Expenses)  
OTI shares the final version of the draft program along with a listing of comments received during the public involvement review period with the IT Board for their approval.
- VIII. **Adjustments to the Prior Version of the STIP** (\$13,923 = \$11,154 Personnel + \$2,769 Operating Expenses)  
OTI amends or administratively modifies the previous version of the approved STIP to allow new fiscal year projects to obligate funds without depending on approval of the updated new STIP.

- IX. **Updated STIP submitted for federal approval** (\$27,846 = \$22,307 Personnel + \$5,539 Operating Expenses)  
OTI submits the final IT Board - approved program to the FHWA and FTA along with all supporting documentation.
- X. **STIP Implementation and Management** (\$153,153 = \$122,689 Personnel + \$30,464 Operating Expenses)  
OTI manages the FHWA/FTA approved STIP throughout the year including processing of changes to the approved program, processing obligation requesting and showing the status of these in the STIP project and program records, continuously maintaining fiscal constraint, providing reporting representing the status of projects in the STIP to program managers and project sponsors, generating STIP publications throughout the year for various audiences, and providing STIP performance information to all interested parties. OTI also is responsible to craft administrative and IT Board policies which address the STIP planning processes throughout the year.
- XI. **STIP/ITIP Process and System Integration** (\$69,615 = \$55,768 Personnel + \$13,847 Operating Expenses)  
OTI partners with other ITD section such as Planning Services to integrate its OTIS system into the workflow of other planning systems such as PSS along with other financial systems such as AMS and FMIS.
- XII. **STIP Archiving** (\$83,537 = \$66,919 Personnel + \$16,618 Operating Expenses)  
Ongoing planning tasks for projects in the approved STIP span multiple years outside the 4-5 year time horizon of the current ITIP/STIP require maintaining historical archive records and information for prior year projects; often, this is to check funding eligibilities for projects and fund sources from past years and prior highway funding bills.

## STAFFING

OTI has a manager and five staff consisting of transportation planners, financial planners and research analysts responsible for the performance of these tasks throughout the year. Staff involvement for the twelve planning areas is as follows:

STIP Planning Lifecycle Stage	OTI Staff Involvement
I. STIP Pre-planning	Mgr. plus 4 Staff
II. STIP Development Training	Mgr. plus 2 Staff
III. Development of Initial Draft of STIP	2 Staff
IV. Preliminary Analysis of Draft Program	3 Staff
V. Review of Draft with Idaho Transportation Board.	Mgr. plus 3 Staff
VI. Public Involvement - Review of Draft Program	Mgr. plus 3 Staff
VII. Approval of Recommended Program	Mgr. plus 3 Staff
VIII. Adjustments to Prior Version of STIP	Mgr. plus 2 Staff
IX. Updated STIP submitted for federal approval	Mgr. plus 2 Staff
X. STIP Implementation and Management	Mgr. plus 5 Staff
XI. STIP/ITIP Process and System Integration	Mgr. plus 5 Staff
XII. STIP Archiving	Mgr. plus 5 Staff

All OTI state staff have responsibilities among these twelve STIP/ITIP planning areas; other than administrative duties such as attending staff meetings and taking training, staff have negligible involvements outside the STIP/ITIP planning and implementation arena as described above.

## OBJECTIVES FOR FY2015

Besides completing the update of the FY15-FY19 STIP, and beginning the development of the FY16-FY20 STIP as defined in the twelve task areas defined above, OTI will focus on the following overarching objectives for the year:

- OTI will ensure that transportation project and program planning procedures and policies are developed and in place to guide internal and external transportation planners in the development of their portion of the STIP.
- OTI will partner with other ITD sections and other entities such as the FHWA to ensure that diverse transportation planning system are integrated in terms of process workflow and data.
- OTI will ensure that internal and external planners and their management have access to data information systems such as OTIS to improve planning efforts for their own transportation improvement programs (TIP's).
- OTI will encourage metropolitan planning organizations, especially those outside the Boise metropolitan areas y to utilize the OTIS planning system to assist them in developing and managing their own TIP's at no cost to their operation.
- OTI will maintain fiscal constraint of the STIP/ITIP throughout the lifespan of the STIP.

## **METHODOLOGY**

- OTI will complete the planning process for the annual update of the multi-modal STIP/ITIP for public review and FHWA/FTA approval.
- OTI will explore, research, and evaluate opportunities to integrate project and program planning/management tools invented and managed by OTI such as OTIS, with project and program planning and management tools developed elsewhere within the department such as Project Scheduling Server
- Through continuing improvements to its OTIS system, OTI will improve the department's capability to provide timely and accurate project planning, budgeting, funding, and financial performance information statewide to department project managers, and other transportation stakeholders, both inside and outside the department.
- OTI will improve ITD's public involvement process for the draft STIP/ITIP by inventing new ways to deliver project and program information using different media and communications channels.
- OTI will collaborate with other ITD GIS planning sections and resources to explore and implement ways to utilize on-line mapping resources to display information for projects managed in OTIS for the draft STIP to interested stakeholders and constituents.
- OTI will provide analysis and technical support along with content development in the creation and updating of ITD planning policies.
- OTI will respond nimbly to changes in transportation funding programs through the MAP-21 highway reauthorization bill.
- OTI Support the development and implementation of MAP-21 required performance measures utilizing data contained within OTIS.

## **FY2014-FY2015 PRODUCTS**

- OTI will develop highway-funding plans for the FY16-FY20 STIP/ITIP that reflects current transportation funding levels.
- OTI will develop and distribute transportation funding targets for use in planning efforts for the development of the FY16-FY20 draft program.
- OTI will develop and implement an updated multi-modal Idaho Transportation Investment Plan (ITIP) that meets the needs of stakeholders and statewide constituents and ensures optimal transportation program performance.
- OTI will develop and make available a variety of planning documents for use in reviewing and assessing the FY16-FY20 Draft Program:
  1. Idaho Transportation Investment Program Update Packet (February);
  2. Idaho Transportation Investment Program Board Presentation (June) and materials;
  3. Draft ITIP published for public review and comment (July);

4. Final Recommended & Board Approved ITIP (in September/October) along with updates as needed;
  5. Recommended STIP submittal in federal format for FHWA and FTA review and approval (late October);
  6. Final Board Approved ITIP in the "Five Year Plan" format used for legislative outreach in November;
  7. Approved ITIP in federal format
  8. Transportation program system user manuals and other system documentation.
- OTI will develop and deliver improved processes to streamline the handling of administrative modifications and amendments to the approved Statewide Transportation Investment Plan.
  - OTI will complete the integration between the Department's OTIS project and program planning system and the FHWA's upgraded Financial Management Information System (FMIS).
  - OTI will complete enhancements to the OTIS project and program planning to support the equitable distribution of resources such as obligation authority between the state and local highways systems.
  - OTI systems such as OTIS will be used by staff to provide access to information in support of the transportation planning function.
  - OTI will deliver training and workshops in transportation planning, use of planning support systems such as OTIS.

#### **OTIS ENHANCEMENTS**

Included in the budget for this item is an additional \$63,000 of SPR funds for contract staff for enhancements to the OTIS system as described above and which will improve the following STIP/ITIP planning, development, and implementation stages:

- STIP Pre-planning
- Development of Initial Draft of STIP
- Preliminary Analysis of Draft Program
- Public Involvement - Review of Draft Program
- Approval of Recommended Program
- Adjustments to Prior Version of STIP
- Updated STIP submitted for federal approval
- STIP Implementation and Management
- STIP/ITIP Process and System Integration

**TRANSPORTATION INVESTMENT BUDGET**

<b>Federal Aid</b>	\$403,766	+	<b>Match</b>	\$100,941	=	<b>\$504,707</b>
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**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			





# **Part B:**

# **SPR**

# **RESEARCH**

Key #12525



## ITEM 7.0 – RESEARCH (F15901R)

**ITD CONTACT: Ned Parrish**

Research Manager

(208) 334-8296

### OBJECTIVES

- To support research, development, and technology transfer activities addressing the department's strategic goals and initiatives.
- To enhance ITD's ability to deliver efficient and effective transportation services.
- To offer practical solutions for problems facing the Department.
- To develop new tools/technologies and facilitate their implementation.

### PROGRAM RESPONSIBILITIES

- To administer federal SPR (State Planning & Research) funds for ITD research, development, and technology transfer.
- To coordinate Department involvement in multi-state pooled fund projects.
- To identify ITD research needs and priorities.
- To help staff locate transportation research and information.
- To oversee ITD research projects performed by universities and consultants.
- To oversee Idaho Technology Transfer Center (T<sup>2</sup> Center) funding.
- To coordinate ITD involvement in national and regional transportation research with TRB, AASHTO, Region X Transportation Consortium, and other organizations.
- To coordinate, publish and maintain the annual work program for planning and research.

### ITEMS IN THIS SECTION

There are 21 sub-items in this section:

- Item 7.1 – National Cooperative Highway Research Program (NCHRP)
- Item 7.2 – AASHTO Programs, Partnerships and Groups
- Item 7.3 – National and Regional Pooled Fund Projects
- Item 7.4 – 2011 Cooperative Research Projects (Boise State University)
- Item 7.5 – 2011 Cooperative Research Projects (Washington State University)
- Item 7.6 – 2012 Cooperative Research Projects (Washington State University)
- Item 7.7 – 2012 Cooperative Research Projects (University of Idaho)
- Item 7.8 – 2012 Cooperative Research Projects (Boise State University)
- Item 7.9 – 2012 Cooperative Research Projects within ITD
- Item 7.10 – 2013 Cooperative Research Projects (University of Idaho)
- Item 7.11 – 2013 Cooperative Research Projects (Boise State University)
- Item 7.12 – 2013 Cooperative Research Projects (Texas A&M Transportation Institute)
- Item 7.13 - 2013 Cooperative Research Projects (Montana State University/Private Consultants)
- Item 7.14 - 2013 Cooperative Research Projects (ITD/United States Geological Survey/Federal Agencies)
- Item 7.15 - 2014 Cooperative Research Projects (University of Idaho)
- Item 7.16 - 2014 Cooperative Research Projects (Idaho State University)
- Item 7.17 – 2014 Cooperative Research Projects (Washington State University)
- Item 7.18 – 2015 Cooperative Research Projects (University of Idaho)
- Item 7.19 – 2015 Cooperative Research Projects (Idaho State University)
- Item 7.20 – 2015 Cooperative Research Projects (Montana State University)
- Item 7.21 – 2015 Cooperative Research Projects (To Be Determined)

### RESEARCH BUDGET

<b>Federal Aid</b>	\$1,214,173	+	<b>Match</b>	\$161,143	=	<b>\$1,375,316</b>
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FY 2015 Planning and Research Work Program



## ITEM 7.1 – NCHRP PROGRAM (2015)

### IDENTIFICATION: TPF-5(415)

Title: National Cooperative Highway Research Program (NCHRP)  
Research Agency: Various, coordinated by the Transportation Research Board  
Work Plan Approval: Annual Agreement

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### OBJECTIVE

- To provide for the annual NCHRP assessment to fund the national research program.

### PROPOSED ACTIVITY – FY2015

- Continue support for national highway research program and initiate new projects as approved by the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Research.
- Ned Parrish, Research Manager, is the ITD Project Manager.

### COST

- FY2015: \$290,000 (100% Federal SPR)

### NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP)

<b>Federal Aid</b>	\$290,000	+	<b>Match</b>	0	=	<b>\$290,000</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 7.2 – AASHTO PROGRAMS, PARTNERSHIPS, AND GROUPS (ONGOING)

### IDENTIFICATION:

Title: Support for AASHTO Technical Service Programs  
Research Agency: AASHTO  
Work Plan Approval: Ongoing Programs

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### OBJECTIVES

This item provides financial support for several AASHTO technical service programs, including:

- National Transportation Product Evaluation Program (NTPEP).
- Technology Implementation Group (TIG).
- Equipment Management Technical Services Program (EMTSP).
- Transportation System Preservation Technical Service Program (TSP<sup>2</sup>).
- Load and Resistance Factor Design (LRFD) Bridges and Structures Specification maintenance.
- Development of AASHTO Materials Standards (DAMS).
- Environmental Technical Assistance Program (ETAP)
- Census Transportation Planning Products (CTTP) Technical Service Program

### PROPOSED ACTIVITY – FY2015

Provide ITD continued support for NTPEP, TIG EMTSP, TSP<sup>2</sup>, LRFD, DAMS, and ETAP programs:

- Bryan Martin, Quality Product and Project Development Engineer, is the ITD Project Manager for NTPEP.
- Ned Parrish, Research Manager, is the ITD Project Manager for TIG.
- Steve Spoor, Maintenance Program Manager, is the ITD Project Manager for EMTSP.
- Mike Santi, Materials Engineer, is the ITD Project Manager for TSP<sup>2</sup>.
- Matt Farrar, State Bridge Engineer, is the ITD Project Manager for LRFD.
- Mike Santi, Materials Engineer, is the ITD Project Manager for DAMS.
- Sue Sullivan, Environmental Manager, is the ITD Project Manager for ETAP.
- Erika Bowen, Planning Services Engineer, is the ITD Project Manager for CTTP.

### COST

- FY2015: The cost for the Technical Service Programs, \$64,000 (\$51,200 Federal SPR (80/20)).

### AASHTO ENGINEERING TECHNICAL SERVICE PROGRAMS

<b>Federal Aid</b>	\$51,200	+	<b>Match</b>	\$12,800	=	<b>\$64,000</b>
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### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 7.3 – NATIONAL AND REGIONAL POOLED FUND PROJECTS (2015)

This item contains descriptions of active pooled fund projects that ITD is participating in for FY2015. A total of \$279,600 is budgeted for pooled funds costs, of which \$214,000 is committed to specific projects outlined in the sections below.

### ITEM 7.3.1 – TPF-5(035)

#### IDENTIFICATION: TPF-5(035)

Title: Pacific Northwest Snowfighters (PNS)  
Research Agency: Washington State Department of Transportation  
State Contact: Kim Willoughby, [willouk@wsdot.wa.gov](mailto:willouk@wsdot.wa.gov)  
Work Plan Approval: Approved  
ITD Key Number: 08786

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#### OBJECTIVE

- Develop specifications for chemicals related to snow and ice control. Support winter maintenance professionals with information on current technologies, supplier contacts, and networking opportunities. Conduct research on maintenance chemicals and activities.

#### PROPOSED ACTIVITY – FY2015

- The PNS is now being funded through Clear Roads, TPF-5(218). The -planned activities are that the PNS will do the testing for the Qualified Products List (QPL) for deicer chemicals, and update the QPL and website. The Qualified Products List (QPL) and deicer specifications can be viewed at <http://pnsassociation.org/>
- Ron Wright, Chemistry Lab Supervisor, is the ITD Project Manager.

#### COST

- FY2015: None anticipated. Funding commitment met.

#### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION:** TPF-5(064)

Title: Western Alliance for Quality Transportation Construction (WAQTC)  
 Research Agency: Utah Department of Transportation  
 State Contact: [\\_David Stevens](#) [davidstevens@utah.gov](mailto:davidstevens@utah.gov)  
 FHWA Contact: Bernie Kuta, [Bernie.kuta@fhwa.dot.gov](mailto:Bernie.kuta@fhwa.dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 09127

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**OBJECTIVE:**

- Support the development and refinement of a training and qualification program for construction inspection and materials testing technicians by WAQTC.

**PROPOSED ACTIVITY – FY2015:**

- Continue ongoing activities.
- Develop a marketing brochure.
- Evaluate existing training materials for needed improvements/updates.
- Develop Role and Responsibilities guide for QAC and EC members.
- Identify exam proctor and trainer qualification requirements.
- Develop a work plan for training of exam proctors.
- Develop a work plan for Reciprocity Audits of Member Agencies.
  - More information can be found on their website: [www.waqtc.org](http://www.waqtc.org).
  - Garth Newman, Training Specialist, serves as the ITD Project Manager.

**COST:**

- FY2015: Included to show pooled fund involvement. ITD's Training Program has provided funding for this pooled fund.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			



**IDENTIFICATION: TPF-5(145)**

Title: Western Maintenance Partnership  
 Research Agencies: Utah Department of Transportation  
 State Contact: David Stevens, [davidstevens@utah.gov](mailto:davidstevens@utah.gov)  
 FHWA Contact: Celso Gatchalian, [celso.gatchalian@fhwa.dot.gov](mailto:celso.gatchalian@fhwa.dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 10973

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**OBJECTIVE**

- Provide a partnering forum for promoting effective maintenance strategies to meet the following objectives: provide funds for multi-day annual workshop; define, support, and share technology of mutual interest; provide funds for formal training presentations; and provide funds for special studies, investigations, research, and training.

**PROPOSED ACTIVITY – FY2015**

- This project will be closing in calendar year FY2014. A new solicitation #1374 has been posted with a new scope of work and schedule that will run from July 2014 to June 2019. Each state is being asked for a commitment of \$15,000 for the first three years of the project.
- Provide travel reimbursement funds for an annual meeting and a multi-day annual workshop/scan tour, for discussion and exchange of information and knowledge about each state's maintenance program.
- Provide funds for formal training presentations during the annual workshop.
- Provide a forum to define, support and share technology of mutual interest.
- Implement task orders, as designated by the partnership members.
- Provide funds to manage the partnership's operations and to maintain a web site that would display meeting reports, state guidelines and specifications.
- Steve Spoor, Maintenance Services Manager, is the ITD Project Manager.

**COST**

- FY2015: Included to show pooled fund involvement. ITD's Maintenance Program has provided funding for this pooled fund.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(159)**

Title: Technology Transfer Concrete Consortium  
 Research Agency: Iowa Department of Transportation  
 State Contact: Linda Narigon, [linda.narigon@dot.iowa.gov](mailto:linda.narigon@dot.iowa.gov)  
 FHWA Contact: Not Available  
 Work Plan Approval: Approval Pending  
 ITD Key Number: TBD

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**OBJECTIVE**

The goal of the TTCC is to:

- Identify needed research projects
- Develop pooled fund initiatives
- Provide a forum for technology exchange between participants
- Develop and fund technology transfer materials
- Provide on-going communication of research needs faced by state agencies to the FHWA, industry and CP Tech Center
- Provide guidance as part of the Track Team for the CP Road Map Mix Design and Analysis Track
- Provide assistance as requested by the CP Road Map Executive Committee on other select tracks as needed

**PROPOSED ACTIVITY – FY2015**

- This project will be closing at the end of calendar year 2014. A new solicitation #1363 has been posted with a new scope of work and schedule that will run from January 2015 through December 2019. The budget has increased to \$8,000 a year with additional scopes of web tracking and technical transfer.
- ITD staff will attend Fall meeting of the National Concrete Consortium. The meeting includes research presentations, field visits, and updates on state practices. Specialized training is also offered through the pooled fund. In addition, the pooled fund may support small synthesis projects approved by the Technical Advisory Committee for the pooled fund.
- Clint Hoops, Concrete/Structures Engineer, is the ITD Project Manager.

**COST**

- FY2015: \$8,000 (100% Federal SPR)

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(174)**

Title: Construction of Crack-Free Concrete Bridge Decks  
 Research Agency: University of Kansas  
 State Contact: Rodney Montney [rodney@ksdot.org](mailto:rodney@ksdot.org)  
 FHWA Contact: Joey Hartmann, [joey.hartmann@fhwa.dot.gov](mailto:joey.hartmann@fhwa.dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 09065

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**OBJECTIVE**

- Considerable research has been done on the causes of cracking over the past years, but few of the findings have been implemented. The purpose of this study is to implement the most cost-effective techniques for improving bridge deck life through the reduction of cracking. The work involves cooperation between state departments of transportation, cement companies, contractors, and designers. Estimated completion date for this project is August 31, 2016.

**PROPOSED ACTIVITY – FY2015**

- Annual bridge deck crack surveys will continue.
- Lab tests of various low-cracking mixtures will be tested for shrinkage, scaling, freeze-thaw durability, and compressive strength.
- Test mixtures with synthetic or steel fibers to evaluate their settlement cracking performance.
- Retest Sika Control 40 SRA mixtures for free shrinkage, calling resistance, freeze-thaw durability, compressive strength, and air-void characteristics of hardened concrete.
- Matt Farrar, State Bridge Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. A total of \$70,000 was committed for this pooled fund from FY2008 – FY2012. Our commitment of \$70,000 is fulfilled.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>     			

**IDENTIFICATION: TPF-5(190)**

Title: Northwest Passage – Phase III  
 Research Agency: Minnesota Department of Transportation  
 State Contact: Cory Johnson, [Coryi.Johnson@state.mn.us](mailto:Coryi.Johnson@state.mn.us)  
 FHWA Contact: Raj Ghaman, [Raj.Ghaman@fhwa.dot.gov](mailto:Raj.Ghaman@fhwa.dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 11895

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**OBJECTIVE**

- Northwest Passage Corridor encompasses the states along I-90/I-94 from Wisconsin to Washington. The purpose of the pooled fund is to influence ongoing standards development and utilize effective methods for sharing, coordinating, and integrating traveler information across state borders. Improving coordination of traveler information is the initial focus, while coordinated maintenance, operations, planning, and programming are long-term visions.

**PROPOSED ACTIVITY – FY2015**

- The projects approved for FY 2015 include:
  - Operations Task Force
  - Rural incident Management
  - ITS Efficiencies
  - Rural Variable Speed Limits
  - Virtual Scanning Tour of “On the Road Technologies”
  - Freight /Operations Related Projects
  - Research Need for Corridor Performance Measures

Maintain and update webpage: [www.i90i94travelinfo.com](http://www.i90i94travelinfo.com)).

- Robert Koeberlein, Mobility Services Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. A total of \$125,000 was committed for this pooled fund from FY2009 – FY2014. Our commitment of \$125,000 is fulfilled.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(209)**

Title: Transportation Curriculum Coordination Council (TCCC) Training Management and Development

Research Agency: National Highway Institute

FHWA Contact: Jason Harrington, [jason.harrington@dot.gov](mailto:jason.harrington@dot.gov)

Work Plan Approval: Approved

ITD Key Number: 12275

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**OBJECTIVE**

- Provide leadership at a national level, develop and maintain a national curriculum for various transportation disciplines, identify training and certification requirements, and coordinate/facilitate training efforts. The TCCC currently has over 80 web-based courses available for the skill enhancement of the States' technical workforce. This is a five-year project.

**PROPOSED ACTIVITY – FY2015**

- Coordinate activities with various AASHTO subcommittees.
- Coordinate activities with the AASHTO-TC3 training center to insure current courses and past courses are not being duplicated.
- Maintain and update website continuously, <http://tccc.gov/>
- TCCC contract for course development runs till August 2015.
- Garth Newman, Training Specialist, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. A total of \$25,000 was paid in FY2010. This fulfilled our commitment for FY2010 – FY2014 at \$5,000 per year

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(218)**

Title: Clear Roads Winter Highway Operations Pooled Fund  
 Research Agency: Minnesota Department of Transportation  
 State Contact: Debra Fick, [deb.fick@dot.state.mn.us](mailto:deb.fick@dot.state.mn.us)  
 FHWA Contact: Not Available  
 Work Plan Approval: Yes, previously approved  
 ITD Key Number: 13338

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**OBJECTIVE**

- This new Clear Roads pooled fund project will maintain its focus on advancing winter highway operations nationally but will include a more pronounced emphasis on state agency needs technology transfer and implementation. Clear Roads will evaluate new tools and practices in both lab and field settings, develop industry standards and performance measures, provide technology transfer and cost benefit analysis, and support winter highway safety.

**PROPOSED ACTIVITY – FY2015**

- Clear Roads is supporting Pacific Northwest Snowfighters (PNS) pooled fund. This is being done to keep the specifications and the Qualified Product List (QPL) viable as a standard for other states and provinces to rely upon.
  - The seven research projects currently in progress include:
  - Snow and Ice Control Environmental Best Management Practices Manual
  - Cost Benefit Analysis of Various Winter Maintenance Strategies
  - Best Practices for the Prevention of Corrosion to DOT Equipment: A User's Manual
  - Understanding the Effectiveness of Non-Chlorine Liquid Agricultural By Products and Solid Complex Chloride/Mineral Products Used in Snow and Ice Control Operations
  - Establishing Effective Salt and Anti-icing Application Rates
  - Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements
  - Comparison of Materials Distributions Systems
  - Twelve more projects have been identified and funded and will be awarded during FY2015.
- Ron Wright, Chemistry Lab Supervisor, is the ITD Project Manager.

**COST**

- FY2015: \$25,000 (100% Federal SPR). ITD's Research Advisory Council voted to commit a total of \$175,000 (\$25,000 annually) for FY2012 through FY2018.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**IDENTIFICATION: TPF-5(229)**

Title: Characterization of Drainage Layer Properties for Mechanistic-Empirical Pavement Design Guide (MEPDG)

Research Agency: Virginia Department of Transportation

State Contact: Brian Diefenderfer, [Brian.Diefenderfer@VDOT.Virginia.gov](mailto:Brian.Diefenderfer@VDOT.Virginia.gov)

FHWA Contact: James Sherwood, [Jim.Sherwood@fhwa.dot.gov](mailto:Jim.Sherwood@fhwa.dot.gov)

Work Plan Approval: Approved

ITD Key Number: 12896

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**OBJECTIVE**

- Develop methods to characterize the elastic modulus and strength of drainage layers for MEPDG, perform analysis of the stability and failure of the drainage layer in the pavement structure, and develop specifications for required minimum porosity for effective drainage.

**PROPOSED ACTIVITY – FY2015**

- The research phase of the project, including testing of Idaho-specific materials, is now complete.
- The researchers have prepared and initial draft report that is currently under review by VDOT.
- A draft final report will be sent to participating states for review in November 2014
- Mark Wheeler, Pavement Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. A total of \$90,000 was paid, fulfilling our commitment for FY2010 – FY2012 at \$30,000 per year.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(231)**

Title: ITS Pooled Fund Program (ENTERPRISE)  
 Research Agency: Michigan Department of Transportation  
 State Contact: Andre' Clover, [clovera@michigan.gov](mailto:clovera@michigan.gov)  
 FHWA Contact: Ray Murphy, [ray.murphy@fhwa.dot.gov](mailto:ray.murphy@fhwa.dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 12897

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**OBJECTIVE**

- Investigate and promote Intelligent Transportation System (ITS) approaches and technologies that are compatible with other national and international ITS initiatives
- Support the individual ITS program plans of ENTERPRISE participants, provide a mechanism to support multistate and international project cooperation and technical information interchange
- Facilitate the formation of public-private partnerships for appropriate program activities
- Pursue emerging ITS project opportunities in areas of interest to the group
- Provide test beds in a variety of environments and locations for emerging ITS technologies
- Identify common needs within the group and proceed with appropriate technical activities

**PROPOSED ACTIVITY – FY2015**

- Develop work plan through a collaborative process for the upcoming phase of proposed projects:
  - ITS Warrants Review Support
  - Demonstrate and Evaluate Communications to Support rural ITS
  - Investigating Distribution Mechanisms for ENTERPRISE Technical Products
  - ITS Resources and Decision Tree for Planners
  - Maintenance of ITS Devices in Rural Areas
  - Intelligent Work Zones-Phase 2
- Robert Koeberlein, Mobility Services Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. A total of \$150,000 was paid, fulfilling our commitment for FY2010 – FY2014.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			



**IDENTIFICATION: TPF-5(237)**

Title: Transportation Library Connectivity  
 Research Agency: Missouri Department of Transportation  
 State Contact: Renee\_McHenry, [renee.mchenry@sos.mo.gov](mailto:renee.mchenry@sos.mo.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 14357

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**OBJECTIVE**

- Provide high level technical assistance to its members and implement library-focused projects to enhance technology transfer within partner agencies and increase access to online information and data resources through group subscriptions. Increase library connectivity through coordination among federal, state, academic and private sector libraries. Provide access to the Online Computer Library Center (OCLC), which will make it easier for ITD staff to obtain information about research and best practices in other states.

**PROPOSED ACTIVITY – FY2015**

- Develop and disseminate beneficial products and best practices through projects including: an interactive knowledge management calendar of events, (conferences, seminars, workshops); 3-4 cataloging projects; a marketing and outreach toolkit; and TKN website development.
- Demonstrate proof-of-concept value of strong, sustainable transportation library networks as a vital component of effective TKNs.
- Expand access to resources by leveraging pooled funds for more group subscriptions to valuable transportation information resources for researchers;
- Increase outreach and marketing to advocate for sustainable libraries and TKNs.

**IDAHO TASKS – FY2015**

- Finish cataloging publications in the ITD library by pooled fund contract cataloguer. This includes approximately 200 items.
- Inez Hopkins, Senior Research Analyst is the ITD Project Manager.

**COST**

- FY2015: \$15,000 (100% Federal SPR) ITD's Research Advisory Council voted to continue supporting this pooled fund with an additional commitment of \$30,000 (\$15,000 annually) for FY2014 and FY2015. The total commitment for this project is \$100,000 and covers FY2010-FY2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(238)**

Title: Design and Fabrication Standards to Eliminate Fracture Critical Concerns in Two Girder Bridge Systems

Research Agency: Indiana Department of Transportation

State Contact: Tommy Nantung, [tnantung@indot.in.gov](mailto:tnantung@indot.in.gov)

FHWA Contact: Justin Ocel, [justin.ocel@dot.gov](mailto:justin.ocel@dot.gov)

Work Plan Approval: Approved

ITD Key Number: 12900

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**OBJECTIVE**

- Establish guidance that provides a high level of bridge safety that can then form the basis for in-service inspection decisions. When considering the estimated projects' costs, it must be recognized that the results of this research will be transformative for the steel bridge industry. For the first time, material selection, design, and inspection will be rationally integrated to eliminate fracture concerns. This can result in significant cost savings for medium and long span bridges and facilitate introduction of modular concepts for short span bridges.

**PROPOSED ACTIVITY – FY2015**

- Compile a summary of results from the Virginia Tech testing. These tests are being utilized to establish validity of Master Curve applicability and typical  $T_0$  temperature for A709 bridge steels.
- Perform detailed finite element modeling of the large-scale test specimens. Additionally, a parametric study consisting of member geometries not included in the experimental program will be performed.
- Fabricate and test large-scale fracture test specimens.
- Perform material testing on large-scale test specimens.
- Develop material toughness requirements.
- Matt Farrar, State Bridge Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. ITD's Research Advisory Council voted to commit a total of \$60,000 (\$20,000 annually) for FY2010 – FY2012.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(255)**

Title: Highway Safety Manual Implementation  
 Research Agency: Federal Highway Administration  
 State Contact: Ray Krammes, [ray.krammes@dot.gov](mailto:ray.krammes@dot.gov)  
 FHWA Contact: Ray Krammes, [ray.krammes@dot.gov](mailto:ray.krammes@dot.gov)  
 Work Plan Approval: Yes, previously approved  
 ITD Key Number: 13336

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**OBJECTIVE**

- The objectives of the study are (1) to advance ongoing efforts by lead states to implement the Highway Safety Manual (HSM), and (2) to expand implementation to all states. This study will be coordinated with other ongoing and planned implementation activities sponsored by AASHTO, FHWA, and TRB. It will also be coordinated with projects that develop content for future editions of the Highway Safety Manual.

**PROPOSED ACTIVITY – 2015**

- The Safety Performance Function Clearinghouse Guides are posted on the FHWA Safety Data and Analysis and the Pooled Fund websites.
- Training for resource tool in the participating states.
- New project: Scale and Scope of HSM Application will begin.
- Brent Jennings, Highway Safety Manager, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. Our commitment of \$80,000 was fulfilled in FY2014.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>     			

**IDENTIFICATION: TPF-5(259)**

Title: Imaging Tools for Evaluation of Gusset Plate Connections in Steel Truss Bridges  
 Research Agency: Oregon Department of Transportation  
 State Contact: Joe Li, [Xiugang.Li@odot.state.or.us](mailto:Xiugang.Li@odot.state.or.us)  
 FHWA Contact: Justin Ocel, [justin.ocel@dot.gov](mailto:justin.ocel@dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 13350

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**OBJECTIVE**

There are four main objectives of the proposed research:

- Develop methods to collect dimensional gusset plate connection information including surface geometry and out-of-plane deformations on in-service gusset plates.
- Develop methods to automate identification and optimization of reference target points. Develop methods to automate extraction of gusset plate edge locations, fastener locations and their corresponding member affiliations, and member orientations.
- Develop finite element modeling and analysis techniques to directly rate gusset plates using extracted digital image data as the input source.
- Develop software tools to manage and organize images and image data to enhance bridge management and allow identification of condition changes over time.

**PROPOSED ACTIVITY – FY2015**

- Improve the beta version of the software of processing gusset plate's images for geometric information.
- Improve the beta version of the software of structure analysis of gusset plates.
- Develop methods to manage, categorize, organize, and query digital orthographs to enable mapping correspondences with bridge inspection records and enhance long-term bridge management.
- Use software developed for this project to conduct gusset plate analysis using the geometric information collected from the processed images to rate the connections.
- The project is scheduled to be completed in December 2014
- Matt Farrar, Bridge Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. Our \$10,000 commitment was fulfilled in FY2012.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>    			

**IDENTIFICATION: TPF-5(271)**

Title: Reorganization of Section 5, Concrete Structures, of the AASHTO LRFD Bridge Design Specifications

Research Agency: Kansas Department of Transportation

State Contact: Susan Barker, [SusanB@ksdot.org](mailto:SusanB@ksdot.org)

FHWA Contact: Reggie Holt, [Reggie.Holt@dot.gov](mailto:Reggie.Holt@dot.gov)

Work Plan Approval: Approved

ITD Key Number: 13372

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**OBJECTIVE**

- The purpose of this project is to reorganize Section 5, Concrete Structures, of the AASHTO LRFD Bridge Design Specification so that Section 5 is logically organized and philosophically and technically consistent. The entire LRFD Bridge Design Specification AASHTO Bridge Construction Specification must be reviewed and updated as necessary to maintain consistency.

**PROPOSED ACTIVITY – FY2015**

- Write interim report.
- Continue working on Task 5, Develop new revised and reorganized draft Section 5, Concrete Structures.
- Submit draft of Section 5 to panel.
- The project is scheduled for completion in December 2015.
- Matt Farrar, Bridge Engineer, is the ITD Project Manager.

**COST**

- FY2015: Funding commitment met – no additional funding needed. We fulfilled our \$30,000 commitment in FY2014.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

**IDENTIFICATION: TPF-5(276)**

Title: Full-Scale Shake Table Testing to Evaluate Seismic Performance of Reinforced Soil Walls  
 Research Agency: Washington State Department of Transportation  
 State Contact: Kim Willoughby, [willouk@wsdot.wa.gov](mailto:willouk@wsdot.wa.gov)  
 FHWA Contact: Not available  
 Work Plan Approval: Yes, previously approved  
 ITD Key Number: 13815

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**OBJECTIVE**

- Perform a unique experimental investigation of the dynamic response and performance of two full-scale (10 m) reinforced soil retaining walls constructed using realistic materials and methods. A key focus of the proposed research will be on the influence of wall height on overall system response (i.e., external stability/deformation response) and distribution of dynamic tensile forces (i.e., seismic demand) in soil reinforcement. Other focus areas will be dynamic earth pressure on facing elements, effects of dynamic loading on soil-reinforcement load transfer mechanisms and permanent deformations after dynamic loading.

**PROPOSED ACTIVITY – FY2015**

- The analysis of the first test wall will be finished. Because of scheduling problems with the large scale shake table, the pooled fund has decided to utilize the remaining funds to conduct six seismic tests on medium (6 foot) scale MSE bridge abutments instead of full-scale retaining walls.
- The project is expected to be completed in December, 2017
- Tri Buu, Geotechnical Engineer, is the ITD Project Manager.

**COST**

FY2015: Funding commitment met – no additional funding needed. We fulfilled our \$20,000 commitment in FY2014.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>           			

**IDENTIFICATION: TPF-5(288)**

Title: Western Road Usage Charging Consortium (WRUCC)  
 Research Agency: Oregon Department of Transportation  
 State Contact: Randal Thomas, [Randal.B.THOMAS@odot.state.or.us](mailto:Randal.B.THOMAS@odot.state.or.us)  
 FHWA Contact: Not Available  
 Work Plan Approval: Pending Approval  
 ITD Key Number:

**OBJECTIVE**

The objectives of the study are:

- Explore the technical and operational feasibility of a multi-jurisdictional road usage charge system.
- Investigate public and key decision maker criteria for acceptance; share experience and lessons learned to foster positive outcomes.
- Develop standards and protocols for how road use charges could best be collected and remitted among the various jurisdictions.
- Develop preliminary operational concepts for how a multi-jurisdictional road usage charge system would be administered.
- Develop a model for regional cooperation and interoperability that can be used in the Western region and potentially across North America.
- Engage the automotive manufacturing and technology sector to encourage the ability for mileage reporting to occur in conjunction with other products and services the sector provides in the marketplace.
- Share knowledge to maximize the preparedness for and efficiency of policy and program development for road usage charging among the members.

**PROPOSED ACTIVITY – FY2015**

- Critical examination of Oregon RUC program
- RUC Communications Task Force.
- Addressing out-of state drivers in a RUC system.
- Impacts of changing vehicle fleet fuel economy on state transportation funding.
- Web-based cost of transportation calculator. Online calculator lets consumers compare impacts of RUC vs. gas tax.
- Effects of a RUC on rural residents, examining urban/rural fiscal impact issues.
- The project is scheduled to be completed in December 2017
- Matthew Moore, Transportation Legislation/Policy Specialist, is the ITD Project Manager.

**COST**

- FY2015: \$25,000 (100% Federal SPR). ITD's Research Advisory Council voted to commit a total of \$75,000, (\$25,000 annually) for FY2014 through FY2016.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(296)**

Title: Simplified SPT Performance-Based Assessment of Liquefaction and Effects  
 Research Agency: Utah Department of Transportation  
 State Contact: David Stevens, [davidstevens@utah.gov](mailto:davidstevens@utah.gov)  
 FHWA Contact: Justice Maswoswe [Justice.Maswoswe@dot.gov](mailto:Justice.Maswoswe@dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 14355

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**OBJECTIVE**

The objectives of this project include:

- Developing a simplified performance-based procedures for the SPT modeled after recently published methods (Mayfield et al. 2010) to closely approximate the performance-based analysis results for liquefaction triggering, lateral spread displacement, post-liquefaction free-field settlement, and seismic slope displacement at select return periods (475, 1033, and 2475 years).
- Developing the tools and analysis necessary to validate and perform the new simplified liquefaction evaluation procedures in each of the participating states

**PROPOSED ACTIVITY – FY2015**

- Quarterly update reports for the technical advisory committee.
- Development of a draft spreadsheet for liquefaction analysis.
- Prepare an annual report.
- Prepare liquefaction parameter maps.
- Technical advisory committee meetings (web conferences) will be held in September 2014 and March 2015.
- The expected completion date for the project is November 2016
- Tri Buu, Geotechnical Engineer, is the ITD Project Manager.

**COST**

- FY2015: \$13,000 (100% Federal SPR) - ITD's Research Advisory Council voted to commit funding to the project in FY2014 and FY2015. The total committed to the project is \$26,000.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			



**IDENTIFICATION: TPF-5(297)**

Title: Improving Specifications to Resist Frost Damage in Modern Concrete Mixtures  
 Research Agency: Oklahoma Department of Transportation  
 State Contact: Ron Curb, [rcurb@odot.org](mailto:rcurb@odot.org)  
 FHWA Contact: Richard Meininger, [Richard.meininger@dot.gov](mailto:Richard.meininger@dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 14356

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**OBJECTIVE**

The goal of the research is to produce improved specifications, and test methods; while, improving the understanding of the underlying mechanisms of frost damage. Specifically, this work will seek to develop new test procedures that may be faster and/or more reliable than the existing methods. The objectives of this project are:

- Determine the necessary properties of the air-void system to provide satisfactory frost durability in laboratory testing of laboratory and field concretes with different combinations of admixtures, cements, and mixing temperatures in salt environments
- Determine the accuracy of a simple field test method that measures air void system quality with field and laboratory concrete
- Determine the critical combinations of absorption and the critical degree of saturation on the frost durability in accelerated laboratory testing in the presence of deicer salts
- Establish new test methods and specifications for fresh and hardened concrete to determine frost durability and field performance

**PROPOSED ACTIVITY – FY2015**

- During FY2015, researchers will continue literature review and development of the testing matrix, sample preparation and validation of the super air meter. Possible other activities would include use of x-ray tomography of air voids and frost damage and ASTM C 666.
- The project is scheduled for completion in February 2017.
- Clint Hoops, Concrete/Structures Engineer, is the ITD Project Manager.

**COST**

- FY2015: \$18,000 (100% Federal SPR) - ITD's Research Advisory Council voted to commit a total of \$52,500. \$18,000 in FY2014 and FY2015 and \$16,500 in FY2016 to support this 36-month project.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: TPF-5(302)**

Title: Modified Binder (PG+) Specifications and Quality Control Criteria  
 Research Agency: Wisconsin Department of Transportation  
 State Contact: Daniel Yeh [daniel.yeh@wi.us](mailto:daniel.yeh@wi.us)  
 FHWA Contact: Matt Corrigan [Corrigan.Matt@dot.gov](mailto:Corrigan.Matt@dot.gov)  
 Work Plan Approval: Approved  
 ITD Key Number: 14380

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**OBJECTIVE**

The main objectives include:

- Performing detailed assessment of current PG+ and modified binder quality control procedures in partnering states in terms of reliability, applicability, and relevance to performance and quality of modified asphalt binders.
- Using a range of modified binders to develop unified test procedures and specification criteria based on products placed in the field.
- Improving product quality and reliability through conduct of ruggedness studies and development of precision and bias statements for selected tests.
- Introducing consistency to current products supplied by elimination or reduction of differences in modified binder acceptance tests and criteria throughout member states.
- Validating and establishing relevance of suggested PG+ and quality control procedures in terms of mixture performance.

**PROPOSED ACTIVITY – FY2015**

- During 2014 an analysis of current modified asphalt characterization procedures will take place. Statistical analysis and reliability assessment on selected PG+ test will be conducted.

Mike Santi, Materials Engineer, is the ITD Project Manager.

**COST**

- FY2015: \$25,000 (100% Federal SPR) - ITD's Research Advisory Council voted to commit funding to the project in FY2014 through FY2016. The total committed to the project is \$75,000.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>    			

**IDENTIFICATION: TPF-5(309)**

Title: Partnership for the Transformation of Traffic Safety Culture  
 Research Agency: Montana Department of Transportation  
 State Contact: Susan Sillick [ssillick@mt.gov](mailto:ssillick@mt.gov)  
 FHWA Contact: Chimai Ngo [Chimai.Ngo@dot.gov](mailto:Chimai.Ngo@dot.gov)  
 Work Plan Approval: Pending Approval  
 ITD Key Number:

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**OBJECTIVE**

The main objectives include:

- Conduct research to solve specific culture-based traffic safety problems.
- Create training and education materials to enhance workforce understanding and application of traffic safety culture methods.
- Provide technology transfer of best practices in traffic safety culture methods to all stakeholders.

**PROPOSED ACTIVITY – FY2015**

- During 2015 pooled fund partners will determine priority issues and develop a work plan based on those issues. Research will focus on services and tools and traffic safety problems that have a common cultural component.
- Brent Jennings, Highway Safety Manager, is the ITD Project Manager.

**COST**

- FY2015: \$10,000 (100% Federal SPR) - ITD's Research Advisory Council voted to commit funding to the project in FY2015 through FY2018. The total committed to the project is \$40,000.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>    			

**IDENTIFICATION:** TPF-5( )

Title: Core Program Services for a Highway Research Development and Technology Program  
 Research Agency: Federal Highway Administration  
 FHWA Contact: Jean Landolt, [Jean.Landolt@dot.gov](mailto:Jean.Landolt@dot.gov)  
 Work Plan Approval: Annual Agreement  
 ITD Key Number: 14369

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**OBJECTIVE**

- To provide a mechanism for state transportation departments to support TRB core program services. This pooled fund study permits states to make their contributions to the TRB Core Programs through the pooled fund process instead of sending their contributions to TRB directly.

**PROPOSED ACTIVITY – FY2015**

- Continue annual support for TRB Core Services.
- Ned Parrish, Research Manager, is the ITD Project Manager.

**COST**

- FY2015: \$80,339 (100% Federal SPR).

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>     			

## ITEM 7.4 – 2011 COOPERATIVE RESEARCH PROJECTS (BOISE STATE UNIVERSITY)

### IDENTIFICATION: Research Projects 206

Title: Cooperative Transportation Research Program  
Research Agency: Boise State University  
Work Plan Approval: Yes, previously approved

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This section describes projects planned for FY2011 with Boise State University. The total cost of the projects is estimated at \$100,000. The total amount was encumbered and paid with FY 2011 and FY 2012 funds

### ITEM 7.4.1 – RESEARCH PROJECT 206

### IDENTIFICATION: Research Project 206

Title: Continued Laboratory and Field Investigation of Concrete Sealer Products to Extend Concrete Pavement and Bridge Deck Life  
Research Agency: Boise State University  
Work Plan Approval: Yes, previously approved

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### OBJECTIVE

- Under actual conditions in southwestern Idaho, this project will exam proper application and long-term field performance of concrete sealers and their effects on the projected longevity of concrete pavement and bridge decks. The study will test various sealers relating to their ability to effectively seal cracks that develop in concrete bridge decks. This will enable ITD personnel to monitor the concrete health and apply appropriate concrete sealers that will provide the extended life of pavements and minimize corrosion of rebar.
- The project objectives are:
  1. Based upon the evaluation of compounds utilized in Phase 1, the available Idaho specific data base on the efficacy of sealers will be expanded to include several types of sealers used more specifically on bridge deck surfaces through a series of laboratory and field tests.
  2. Several field sites on bridge decks in and around the Treasure Valley and/or the State of Idaho will be established with cores taken before and after the sealing process to monitor how well the selected sealers seal the cracks and establish parameter guidance as to effective selection criteria for future field application.
  3. Complete the testing of cores from the first four sealant field sites and correlate the tests of the cores with the laboratory data obtained during Phase One tests to continue the long-term monitoring of sealant performance.
- This project will begin in June 2011 and will be completed by December 2014. The estimated project cost is \$100,000 (\$80,000 Federal SPR (80/20)).
- Keith Nottingham, District 3 Geologist, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- Prepare and submit final report.

### COST

- Funding needed for the project was previously encumbered. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 7.5 – 2011 COOPERATIVE RESEARCH PROJECT (WASHINGTON STATE UNIVERSITY)

### IDENTIFICATION: Research Project 210

Title: Cooperative Transportation Research Program  
Research Agency: Washington State University  
Work Plan Approval: Yes, previously approved

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This section describes a project planned for FY2011 with Washington State University. The total cost for the project is estimated at \$125,700. FY2012 money was budgeted for acquisition of a TransTech Soil Density Gauge needed for the project at a cost of \$5,800. FY 2013 money was encumbered to allow for more field evaluation and evaluation of more products for a cost of \$20,750.

### ITEM 7.5.1 - Research Project 210

### IDENTIFICATION: Research Project 210

Title: Review of Non-nuclear Density Gauges as a Possible Replacement for ITD's Current Nuclear Density Gauges  
Research Agency: Washington State University  
Work Plan Approval: Yes, previously authorized

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### OBJECTIVE

- The use of non-nuclear gauges will offer ITD cost savings in training, monitoring, and repair costs associated with ITD's nuclear program. This project will identify a non-nuclear density gauge replacement for the existing aging gauges currently in use.
- The project objectives are:
  1. Look at non-nuclear density gauges used for HMA and unbound materials.
  2. Review density test data that ITD has collected.
  3. Perform side-by-side comparisons of the ITD non-nuclear and nuclear gauges with four- and six-inch cores.
  4. Write a report describing the findings of the comparisons.
  5. Compare ITD's nuclear density gauges and various types of non-nuclear gauges for use on unbound materials. This will be done on several construction projects in the districts and test bases, sub-bases, and soils under various conditions encountered in Idaho.
  6. Develop a recommendation for continued use of nuclear density gauges or recommend a replacement type of non-nuclear gauge.
- This project began in May 2011 and was extended to allow testing of additional gauges and testing on unbound materials. The report is currently undergoing final review. The estimated project cost is \$125,705 (\$100,564 Federal SPR (80/20)).
- Clint Hoops, Field Service Engineer, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- Finalize project report.

### COST

- Funds needed for the project were previously encumbered and no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



## ITEM 7.6 – 2012 COOPERATIVE RESEARCH PROJECT (WASHINGTON STATE UNIVERSITY)

### IDENTIFICATION: Research Project 213

Title: Cooperative Transportation Research Program  
Research Agency: Washington State University  
Work Plan Approval: Previously Approved

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This section describes a project planned for FY2012 with Washington State University. The total cost for the project is estimated at \$189,100.

### ITEM 7.6.1 - Research Project 213

### IDENTIFICATION: Research Project 213

Title: Performance Evaluation of Asphalt Pavement Mixes in Idaho Containing High Percentages for Recycled Asphalt Pavement (RAP)  
Research Agency: Washington State University  
Work Plan Approval: Previously Approved

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### OBJECTIVE

- This project will assess the effect of RAP on the performance of ITD's HMA and WMA pavements
- The project objectives are:
  1. To evaluate how varying the percentage of RAP used in Idaho HMA and WMA mix designs impacts pavement performance in terms of: a) fatigue cracking; b) thermal cracking; c) rutting; d) roughness.
  2. To identify the critical factors in RAP that affect HMA and WMA performance.
  3. To develop guidelines that ITD could consider updating its current RAP specification to improve HMA and WMA pavement performance.
- This project will begin in July 2012 and will be completed by January 2015. The estimated project cost is \$189,100(\$152,000 Federal SPR (80/20)).
- Mike Santi, Materials Engineer, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- Prepare and submit final report

### COST

Most of the funding needed for this project was previously encumbered. In FY2015, a budget of \$11,500 (\$9,200 Federal SPR funds (80/20)) will cover remaining project costs.

### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			



## ITEM 7.7 – 2012 COOPERATIVE RESEARCH PROJECT (UNIVERSITY OF IDAHO)

### IDENTIFICATION: Research Projects 216 and 222

Title: Cooperative Transportation Research Program  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

This section describes projects planned for FY2012 with the University of Idaho. The total cost for the projects is estimated at \$97,330. The projects were selected for funding by ITD's Research Advisory Council in July and December 2011 and March 2012. Because the projects were multi-year, \$108,700 in FY2013 funds were encumbered to pay final costs of these projects.

### ITEM 7.7.1 - Research Project 216

### IDENTIFICATION: Research Project 216

Title: Improving Safety at Signalized Intersections During Inclement Weather Conditions – A Real-Time Weather-Responsive System  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

### OBJECTIVE

- The goal of this project is to develop and pilot a real-time weather-responsive traffic signal control system that can improve safety during inclement weather by adjusting signal time to allow longer clearance intervals when roads are slick.
- The project objectives include:
  - Investigating methods to obtain accurate, location-specific information on weather and road conditions.
  - Defining appropriate system specifications.
  - Designing system hardware, the interfacing technology, system operational software, and contingency management systems.
  - Field testing of the system developed through this research.
  - Design and test weather responsive system based on data obtained from local sensors.
- This project will begin in April 2012 and will be completed by October 2014. The estimated project cost is \$91,920 (\$73,536 Federal SPR (80/20)). The budget for the project includes \$72,600 for the contract with the University of Idaho and \$1,200 for ITD purchase of needed equipment. The equipment will be used by the researchers and returned to ITD's Mobility Services Section at the completion of the project.
- Brent Jennings, Highway Safety Program Manager, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- Researchers will prepare and submit a final report.

### COST

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added:

☐ YES

☐ NO

Date Amended:

Comments:

**IDENTIFICATION:** Research Project 222

Title: Improving Passing Lane Safety and Efficiency  
 Research Agency: University of Idaho  
 Work Plan Approval: Previously Approved

**OBJECTIVE**

- The goal of this project is to evaluate low-cost alternatives that have the potential to improve the safety of passing lanes in Idaho's two-lane rural highways.
- The project objectives include:
  - Examining the effectiveness of improved signage on the safety and efficiency of the passing lane operations.
  - Examining the effectiveness of alternative striping and pavement marking on reducing the speed at passing lane locations.
  - Documenting the characteristics of passing lane crashes in Idaho's two-lane rural state highways.

This project began in January 2013 and will be completed in December 2014. The estimated cost is \$25,000 (\$20,000 Federal SPR (80/20)).

Brent Jennings, Highway Safety Program Manager, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

- During 2015, a final report will be prepared and submitted.

**COST**

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

## ITEM 7.8 – 2012 COOPERATIVE RESEARCH PROJECT (BOISE STATE UNIVERSITY)

### IDENTIFICATION: Research Project 219

Title: Cooperative Transportation Research Program  
Research Agency: Boise State University  
Work Plan Approval: Previously Approved

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This section describes a project planned for FY2012 with Boise State University. The total cost for the project is estimated at \$100,000, and is being funded by FY 2012 and FY 2014 encumbered funds.

### ITEM 7.8.1 - Research Project 219

### IDENTIFICATION: Research Project 219

Title: Development of a Real-Time Avalanche Detection System for High Risk Areas in Idaho  
Research Agency: Boise State University  
Work Plan Approval: Previously Approved

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### OBJECTIVE

- The goal of this project is to build on past research and develop a system that can be used to remotely monitor major avalanche paths and detect avalanche activity. The work will focus on developing and deploying a robust infrasound sensor array in the “Avalanche Alley” section of State Highway 21 and develop software.
- The project objectives include:
  - Installing an infrasound sensor array capable of detecting avalanche events occurring within the study area.
  - Analyzing and interpreting sensor data over two winter seasons.
  - Developing user-friendly software that ITD staff can use to monitor avalanche activity in real time.
  - Training ITD staff regarding the use of this software.
- This project will begin in September 2012 and finish in December 2014. The total cost of the project is estimated at \$100,000 (\$80,000 Federal SPR (80/20)).
- Bill Nicholson, Lead Avalanche Forecaster in District 3, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- A draft report has been submitted and is being reviewed. The project report will be finalized.

### COST

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:



## ITEM 7.9 – 2012 COOPERATIVE RESEARCH PROJECT (IDAHO TRANSPORTATION DEPARTMENT)

### **IDENTIFICATION:** Research Project 215

Title: Cooperative Transportation Research Program  
Research Agency: Idaho Transportation Department  
Work Plan Approval: Previously Approved

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This section describes a project planned for FY2012 with the Idaho Transportation Department. The total cost for the project is estimated at \$130,000. The Research Program provided \$21,300 for the project, with the remaining funding coming from ITD districts.

### ITEM 7.9.1 - Research Project 215

### **IDENTIFICATION:** Research Project 215

Title: Spring Breakup Study  
Research Agency: Idaho Transportation Department  
Work Plan Approval: Previously Approved

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### **OBJECTIVE**

- Using publicly available weather data, this project will develop a procedure to accurately predict roadbed conditions for specific road sections. This will be used to impose Spring Breakup load limits. The secondary objective is to determine the appropriate duration of spring breakup load limits using the roadbed moisture and Falling Weight Deflectometer (FWD) information collected during this project.
- The project objectives include:
  - Collecting and analyzing data on roadbed moisture and the structural capacity of pavements during the spring thaw period using sensor equipment and FWD testing.
  - Comparison of FWD data with moisture records to determine moisture content and average time after beginning of thaw at which load restrictions can be rescinded.
  - Determining whether weather information (daily high and low temperatures) for specific road sections can be used to accurately predict timing for imposition of Spring Breakup Load Limits.
  - Developing a defensible, data based policy for application of Spring Breakup Limits that can be applied to State and Local road sections in Idaho. Adoption of such a policy could decrease ITD costs for annual patching and other repairs, and extend pavement life.
- The project has been extended and is now expected to be completed in February 2014. . The total cost of the project is estimated at \$130,000, with the Research Program contributing \$21,300 (\$17,000 Federal SPR (80/20)) for purchase of sensor and data logging equipment that have been used on the project. Other project costs (primarily staff time for installation of sensors, performing FWD testing, data collection and data analysis) will be paid for with state dollars contributed by the districts.
- Thomas Haynes, District 3 Staff Engineer, is the ITD Project Manager.

### **PROPOSED ACTIVITY – FY2015**

- The research phase of the project was completed in FY2013. During FY2015, ITD staff involved in the study will prepare a final report summarizing study findings and recommendations

**COST**

- A total of \$21,300 in Research funds were expended for the project in FY 2012 to pay for sensors and data logging equipment. The remaining \$108,700 has been paid with state funds contributed by the districts.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



## ITEM 7.10 – 2013 COOPERATIVE RESEARCH PROJECT (UNIVERSITY OF IDAHO)

### IDENTIFICATION: Research Projects 225 and 236

Title: Cooperative Transportation Research Program  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

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This section describes two projects planned for FY2013 with the University of Idaho. The total cost for these projects is estimated at \$215,100. FY 2013 and FY2014 funds have been encumbered to pay the cost of these projects.

### ITEM 7.10.1 - Research Project 225

### IDENTIFICATION: Research Project 225

Title: Calibrating Highway Safety Manual Crash Prediction Models to Idaho Conditions  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

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### OBJECTIVE

- The goal of this project is to calibrate the crash prediction models in AASHTO's Highway Safety Manual (HSM) to Idaho conditions to more accurately assess the expected safety performance of different highway segments in Idaho and to assess the safety impact of different design alternatives.
- The project objectives include:
  - Calibrating the safety performance functions (SPFs) for three facility types based on their safety performance in Idaho using the state's crash data. These facility types include:
    - Rural two-lane roads
    - Rural multi-lane roads
    - Urban and suburban arterials
  - Evaluating crash severity distribution methods.
  - Preparing a report summarizing findings and recommendations.
- The project is expected to begin in January 2013 and will be completed by December 2014. The total cost of the project is estimated at \$65,200 (\$52,160 Federal SPR (80/20)).
- Brent Jennings, Highway Safety Manager, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, researchers will prepare and submit a final report.

### COST

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:

**IDENTIFICATION:** Research Project 236

Title: Traffic Detection Systems Performance Evaluation  
 Research Agency: University of Idaho  
 Work Plan Approval: Pending Approval

**OBJECTIVE**

The project objectives include:

- Testing commercially available traffic detection systems currently being used by ITD for accuracy.
- Quantify the best performers in terms of minimum delay and maximum safety
- Providing guidance regarding the development of a performance based specification for traffic detection equipment to eliminate poor performers from the state system
- The expected duration of the project is 24 months. The total cost of the project is estimated at \$150,000.
- Bruce Christensen, District 4 Traffic Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will

- Install detection equipment side by side at chosen site in District 2.
- Test devices for performance in all types of weather conditions, including snow, rain, and high wind.
- Data analysis.

**COST**

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added: ☐ YES ☐ NO

Date Amended: \_\_\_\_\_

Comments:

## ITEM 7.11 – 2013 COOPERATIVE RESEARCH PROJECT (BOISE STATE UNIVERSITY)

### IDENTIFICATION: Research Projects 226

Title: Cooperative Transportation Research Program  
Research Agency: Boise State University  
Work Plan Approval: Previously Approved

This section describes a project initiated in FY2013. The project is being led by Boise State University, but will also include researchers from Montana State University. All of the funds for this multi-year project were encumbered previously.

### ITEM 7.11.1 - Research Project 226

### IDENTIFICATION: Research Project 226

Title: Feasibility of Mitigating Barn Owl-Vehicle Collisions on Idaho Highways  
Research Agency: Boise State University  
Work Plan Approval: Previously Approved

### OBJECTIVE

- The goals of the study are to better understand barn owl mortality on interstate highways in southern Idaho and to identify and assess possible mitigation methods to reduce barn owl-vehicle collisions.
- The project objectives are:
  1. To determine rates of owl-vehicle collisions on interstates in southern Idaho.
  2. To develop a data-based tool to predict owl mortality 'hot spots'.
  3. To assess potential mitigation strategies in reducing owl-vehicle collisions.
  4. To reduce driver risk and strengthen ITD support of the Federal Migratory Bird Treaty Act by minimizing owl-vehicle collisions.
  5. To establish a public-private collaboration to work on owl-vehicle collision research and mitigation.
- The project is expected to begin in August 2013 and is expected to be completed in November 2015. The total cost of the project is estimated at \$89,000 (\$71,200 Federal SPR (80/20)).
- Melinda Lowe, Sr. Environmental Planner is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- During FY 2015, researchers will identify patterns in owl-vehicle collisions, prepare a GIS data file in a format compatible with ITD's GIS software to identify mortality hotspots, and conduct a desktop assessment of possible mitigation techniques. Prepare and submit a draft final report.

### COST

- The funds needed for the project were previously encumbered. As a result, no additional funds are budgeted for FY 2015. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:



## ITEM 7.12 – 2013 COOPERATIVE RESEARCH PROJECTS (Texas A & M Transportation Institute )

### IDENTIFICATION: Research Projects 228 and 230

Title: Cooperative Transportation Research Program  
Research Agency: Texas A & M Transportation Institute (TTI)  
Work Plan Approval: Previously Approved

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This section describes two research projects initiated in FY2013 with Texas A & M Transportation Institute. The total cost of these projects is \$135,000. FY 2013 and FY2014 funds have been encumbered to pay the cost of these projects.

### ITEM 7.12.1 - Research Project 228

### IDENTIFICATION: Research Project 228

Title: Development of Work Zone Positive Protection Guidelines for Idaho  
Research Agency: Texas A & M Transportation Institute (TTI)  
Work Plan Approval: Previously Approved

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### OBJECTIVE

- The goal of the study is to develop Work Zone Positive Protection Guidelines that are based on Idaho-specific data. The guidelines will assist staff who design work zone traffic management plans. The guidelines will help staff determine when positive protection devices, such as portable concrete barriers, shadow vehicles with truck-mounted attenuators, and vehicle arresting systems, are needed to protect road users and workers in work zones.
- The project objectives are:
  1. To review the Texas Transportation Institute's research and TX DOT implementation efforts.
  2. To review applicable literature review practices of other State DOTs.
  3. To analyze the benefits and costs of using positive protection devices in work zones using Idaho-specific data.
  4. To develop positive protection guidelines for ITD based on the Idaho data analysis.
- The project began in April 2013 and will be completed by December 2014. The total cost of the project is estimated at \$85,000 (\$68,000 Federal SPR (80/20)).
- Carl Main, Traffic Services Engineer, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, the researchers will prepare and submit a final report.

### COST

- Funds for this project were previously encumbered. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO

Date Amended:

Comments:

**IDENTIFICATION:** Research Project 230

Title: Light Emitting Diode (LED) Fixtures for Roadway Sign Illumination  
 Research Agency: Texas A & M Transportation Institute (TTI)  
 Work Plan Approval: Previously Approved

**OBJECTIVE**

- The goals of the study are to evaluate the feasibility of using Light Emitting Diode (LED) fixtures for road sign illumination on Idaho highways and to estimate the cost savings that ITD could achieve by using LED lighting.
- The project objectives are to:
  - Identify LED fixtures that would lend themselves to providing sign illumination with lower costs (operation and maintenance) and performance that equals or exceeds existing HPS fixtures; e.g. projected life, total power consumption, durability.
  - Identify physical LED fixture attributes that maximize LED benefits for roadway sign illumination as well as minimizing the chance for major specification adjustments as the technology matures; e.g. heat sink design, remote driver, included driver, drive current, color temperature, move from grid power to solar.
  - Evaluate the performance and costs of identified LED fixtures over a fixed period of time to verify improved safety, performance and cost savings compared to HPS fixtures; providing data to support improvements.
  - Make recommendations about how to implement LED technology now and how LED technology will continue to be used in the future with minimum impact on sign structure design or fixture mounting details.
- This project began in May 2013 and will be completed in May 2015. The total cost of the project is estimated at \$50,000 (\$40,000 Federal SPR (80/20)).
- Ethan Griffiths, Principal Technician in Traffic Services, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will complete field testing of LED fixtures on existing roadway signs comparison control group (HPS fixtures) and evaluate performance data to allow easy comparison between HPS and LED. Prepare and submit a final report.

**COST**

- Funds for this project were encumbered in FY 2013 and FY 2014. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added: <input type="checkbox"/> YES <input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>	

## ITEM 7.13 – 2013 COOPERATIVE RESEARCH PROJECT (MONTANA STATE UNIVERSITY/PRIVATE CONSULTANTS)

### IDENTIFICATION: Research Project 233

Title: Cooperative Transportation Research Program  
Research Agency: Montana State University (MSU), Management Development Inc.(MDI), Level Three Performance Solutions (L3PS)  
Work Plan Approval: Previously Approved

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This section describes a research project for FY2013 – FY2016 with Montana State University's Center for Health & Safety Culture, Management Development Inc., and Level Three Performance Solutions. The 48-month project will cost \$626,150. The project was approved for funding by ITD's Research Advisory Council in May 2013.

### ITEM 7.13.1 - Research Project 233

### IDENTIFICATION: Research Project 233

Title: ITD Leadership Development Initiative  
Research Agency: Montana State University (MSU), Management Development Inc.(MDI), Level Three Performance Solutions (L3PS)  
Work Plan Approval: Previously Approved

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### OBJECTIVE

- The goal of the study is to develop a comprehensive leadership development process for ITD that can foster a culture of constructive leadership and effective management that supports outstanding customer service both internally and externally.
- The project objectives include:
  1. Assessing ITD leadership competencies and their impact on organizational culture.
  2. Building the capacity of ITD managers in constructive leadership by developing and implementing a leadership development process.
  3. Using various communication strategies to capitalize on positive norms and grow a culture within ITD which fosters constructive leadership.
  4. Integrating constructive leadership development into existing ITD employee systems.
  5. Evaluating the effectiveness of the initiative and provide recommendations to sustain the process over time.
- The expected duration of the project is 48-months. The total cost of the project is estimated at \$626,150. Funding will be a combination of SPR dollars and funds from other sources.
- Ned Parrish, Research Program Manager, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, the researchers will:

- Conduct a survey of selected ITD managers and staff to assess the impact of leadership training and development efforts.
- Continue efforts to assess training, and coach agency supervisors and managers.
- Develop communication materials to assist ITD in growing values, attitudes and behaviors associated with a constructive organizational and leadership culture.
- Prepare an interim report summarizing efforts to date and the impact of project efforts.
- The project team will hold quarterly meetings to coordinate project work and discuss opportunities to foster a constructive culture through ITD's employee development activities (e.g., new employee orientation, training, the performance evaluation process).

FY 2015 Planning and Research Work Program

**COST**

- Funds to cover project costs for FY2015 were encumbered in FY2013 and FY2014. The remaining funds needed for the project will be budgeted in FY2016.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



## ITEM 7.14 – 2013 COOPERATIVE RESEARCH PROJECT (US GEOLOGICAL SURVEY)

### IDENTIFICATION: Research Projects 234

Title: Cooperative Transportation Research Program  
Research Agency: United States Geological Survey (USGS)  
Work Plan Approval: Previously Approved

This section describes a research project with United States Geological Survey (USGS) that was approved by ITD's Research Advisory Council in May 2013. ITD's portion of the 48-month project will be \$148,500.

### ITEM 7.14.1 - Research Project 234

### IDENTIFICATION: Research Project 234

Title: Revised Peak Flow Statistics and Regional Regression Equations for Idaho  
Research Agency: Idaho Transportation Department (ITD), United States Geological Survey (USGS) and other Federal Agencies  
Work Plan Approval: Previously Approved

### OBJECTIVE

- The goal of the study is to provide more accurate, updated information to the Idaho Transportation Department, Federal, and other state agencies, regional and local cooperators on peak flow levels for Idaho rivers. This information is needed for designing infrastructure, determining flood elevations and flood zones, and managing aquatic habitat in Idaho.
- The project objectives include:
  - To provide updated peak flow levels and frequency statistics.
  - To provide updated regional regression equations.
  - To develop and update associated web-based tools required for infrastructure design.
- To publish a Scientific Investigation Report.
- The expected duration of the project is 48 months. ITD's portion of the total cost of the project is estimated at \$148,500. Funding will be a combination of SPR dollars and funds from other agencies.
- Lotwick Reese, State Hydraulic Engineer, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

- During FY 2015, the researchers will:
  - Calculate final peak flow statistics for Idaho stream gages.
  - Develop or revise regional regression equations.
  - Begin development of project report.

### COST

- Funds to cover costs for this project in FY2015 were encumbered in FY2013 and FY2014. The remaining cost will be budgeted in FY2016.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:



## ITEM 7.15 – 2014 COOPERATIVE RESEARCH PROJECT (UNIVERSITY OF IDAHO)

**IDENTIFICATION:** Research Projects 235 and 237

Title: Cooperative Transportation Research Program  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

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This section describes two research projects with the University of Idaho that were approved by ITD's Research Advisory Council in May 2013.

### ITEM 7.15.1 - Research Project 235

**IDENTIFICATION:** Research Project 235

Title: Calibration of the MEPDG Performance Models for Flexible Pavements in Idaho  
Research Agency: University of Idaho  
Work Plan Approval: Previously Approved

---

**OBJECTIVE**

- The main objective of this research project is to develop local calibration (adjustment) factors for the MEPDG predictive models for flexible pavement design in Idaho. The local calibration factors will be incorporated into the AASHTOWare Pavement ME Design software currently being implemented at ITD.
- The expected duration of the project is 36 months. The total cost of the project is estimated at \$370,000.
- Mike Santi, State Materials Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will

- Review of the MEPDG flexible pavements distress prediction models.
- Evaluate the inputs required for the MEPDG for the design of new flexible pavement systems.
- Identify LTPP and other pavement sections in Idaho for performance calibration.
- Begin conducting Creep compliance and ITD testing.

**COST**

- \$200,000 was encumbered in FY 2014 for this project. In FY2015 we are budgeting an additional \$31,500 (25,200 Federal SPR funds (80/20)) to cover a portion of the cost for IDT and Creep compliance testing work.

**FY2015CHANGES**

Amendment Added: ☐ YES ☐ NO

Date Amended:

Comments:

**IDENTIFICATION:** Research Project 237

Title: Evaluation of Fiber-Reinforced Asphalt Pavements- Phase 1: Laboratory Study  
 Research Agency: University of Idaho  
 Work Plan Approval: Previously Approved

**OBJECTIVE**

- The overall goal of the project is to assess the effectiveness of using fibers in HMA to reduce cracking and improve rutting resistance.
- The project will include building four sections; three with fibers and one control section, on a 3.22 mile long pavement project on US-30 east of Montpelier City in Southeast Idaho (ITD Key No. 13104). The first phase of the project, covered by this research project, focuses on collection, analysis, and reporting of the laboratory and construction data. The second phase of the project will focus on monitoring, analyzing, and reporting on the field performance of the test sections.
- The expected duration of the project is 21 months. The total cost of the project is estimated at \$120,000.
- Dan Harelson, District 5 Resident Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will:

- Perform a variety of lab tests on pavement samples collected during the construction phase. These tests include:
  - Gyratory stability.
  - Dynamic Modulus.
  - Flow number testing.
  - Creep compliance.
  - Fatigue testing.
  - APP test.
- Predict performance using AASHTOWare ME Design Software.
- Begin preparation of final report.

**COST**

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

## ITEM 7.16 – 2014 COOPERATIVE RESEARCH PROJECT (IDAHO STATE UNIVERSITY)

### **IDENTIFICATION:** Research Project 238

Title: Cooperative Transportation Research Program  
Research Agency: Idaho State University  
Work Plan Approval: Previously Approved

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This section describes a research project with Idaho State University that was approved by ITD's Research Advisory Council in May 2013. .

### ITEM 7.16.1 - Research Project 238

### **IDENTIFICATION:** Research Project 238

Title: Durability, Ductility, and Bond Strength of Portland Cement with Recycled Asphalt Pavement  
Partial Replacement for Coarse Aggregate  
Research Agency: Idaho State University  
Work Plan Approval: Previously Approved

---

### **OBJECTIVE**

The objectives of the proposed research are:

- Determine the durability of the RAP mixture and compare the results to those obtained for normal concrete mixes.
- Determine the ductility of the RAP mixture and compare the results to those obtained for normal concrete mixes.
- Determine the bond strength between the RAP mixture and reinforcing steel and compare the results to those obtained for normal concrete mixes.
- The expected duration of the project is 13 months. The total cost of the project is estimated at \$38,312.
- Jesse Barrus, District 5 Design Engineer, is the ITD Project Manager.

### **PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will:

- Complete testing of specimens. Testing will include:
  - Strain rate of crushing.
  - Coefficient of thermal expansion.
  - Chlorine penetration.
  - Freeze/thaw evolution.
  - Testing of bond strength and ductility.
- Develop a draft standard of RAP inclusion in concrete mixes as a percentage replacement for coarse aggregate.

**COST**

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			

## ITEM 7.17 – 2014 COOPERATIVE RESEARCH PROJECT (WASHINGTON STATE UNIVERSITY)

### IDENTIFICATION: Research Projects 239 and 240

Title: Cooperative Transportation Research Program  
Research Agency: Washington State University  
Work Plan Approval: Previously Approved

---

This section describes two research projects with Washington State University that were approved by ITD's Research Advisory Council in May 2013.

### ITEM 7.17.1 - Research Project 239

### IDENTIFICATION: Research Project 239

Title: Performance-Measure Based Asset Management Tool for Rural Freight Mobility  
Research Agency: Washington State University  
Work Plan Approval: Pending Approved

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### OBJECTIVE

The objectives of the proposed research are:

- Identify the performance measurement gaps left by urban-centric measures.
- Identify a more appropriate set of mode neutral rural-centric freight multimodal performance measures.
- Utilize the developed data driven measures to develop an asset management tool using existing data, considering the interaction with the urban segments, and between modes.
- Provide recommendations for the selection of priority freight corridors and/ or a data collection plan.
- The expected duration of the project is 12 months. The total cost of the project is estimated at \$75,000.
- Mark Bathrick, Freight Program Manager, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, the researchers will:

- Complete development/adaption of relevant performance measures and mobility issues for the geography and modes under consideration
- Develop a set of asset management mechanisms and tools for selection of priority freight corridors and prioritization processes to systematically improve productivity and domestic and international economic competitiveness.
- Prepare and submit a final report.

### COST

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

### FY2015 CHANGES

Amendment Added:

☐

YES

☐

NO

Date Amended:

Comments:

**IDENTIFICATION:** Research Project 240

Title: U.S. 95 Freight Multi-Modal Corridor Supply Chain: A Pilot Study  
 Research Agency: Washington State University  
 Work Plan Approval: Previously Approved

**OBJECTIVE**

The objectives of the proposed research are to:

- Identify and examine the supply chain along the U.S. 95 corridor to better understand freight movement and multi-modal transportation needs on this key north-south freight corridor.
- Develop a methodology and process for examining the supply chain and freight movement on other corridors in Idaho.
- The expected duration of the project is 13 months. The total cost of the project is estimated at \$90,000.
- Mark Bathrick, Freight Program Manager, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015 the researchers will:

- Submit interim report on 1) data availability gaps; and 2) plans for stakeholder involvement and discussion with TAC.
- Develop a GIS-based data file with information about constraints to truck-traffic flow.
- Conduct in-depth interviews with stakeholders regarding constraints and freight needs on the U.S. 95 corridor.
- Prepare and submit a final report.

**COST**

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:

☐

YES

☐

NO

Date Amended:

Comments:



## ITEM 7.18 – 2015 COOPERATIVE RESEARCH PROJECT (University of Idaho)

**IDENTIFICATION:** Research Projects 243, 244, and 245

Title: Cooperative Transportation Research Program  
Research Agency: University of Idaho (NIATT and SSRU)  
Work Plan Approval: Pending Approval

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This section describes three research projects with University of Idaho that were approved by ITD's Research Advisory Council in June 2014.

### ITEM 7.18.1 - Research Project 243

**IDENTIFICATION:** Research Project 243

Title: Observed Scour Method  
Research Agency: University of Idaho  
Work Plan Approval: Pending Approved

---

**OBJECTIVE**

The objectives of the proposed research are:

- Test the accuracy of the observed scour method in a real field case study.
- Develop low maintenance, remotely accessible instrumentation, which transfers data directly to an office computer for data analysis.
- The expected duration of the project is 17 months. The total cost of the project is estimated at \$67,000.
- Lotwick Reese, State Hydraulic Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will:

- Set the current state of practice and background of the scour observation method.
- Select bridges with historically high changes in streambed elevation.
- Install the device at selected bridges during low flow.
- Collect continuous data via cellular phone to an office computer for data analysis.

**COST**

- \$67,000 (\$53,600 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

**FY2015 CHANGES**

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:

**IDENTIFICATION:** Research Project 244

Title: Safety Impacts of Using Wider Pavement Marking in Two-Lane Rural Highways in Idaho  
 Research Agency: University of Idaho  
 Work Plan Approval: Pending Approved

**OBJECTIVE**

The objectives of the proposed research are:

- Implement wider pavement marking in selected sites that represent the diverse geometric and operational characteristics throughout the state.
- Analyze and assess the safety impacts of implementing wider pavement markings on rural two-lane highways in Idaho.
- The expected duration of the project is 36 months. The total cost of the project is estimated at \$174,000.
- Brent Jennings, Highway Safety Manager, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will:

- Identify and select sites to be included in the study.
- Implement wider pavement markings on selected sites.
- Conduct driver simulations study.

**COST**

- \$82,000 (\$65,600 Federal SPR funds (80/20)) is budgeted for this project in FY 2015. The remaining funds needed for the project will be budgeted in FY2016 and FY2017.

**FY2015 CHANGES**

Amendment Added:

☐

YES

☐

NO

Date Amended:

Comments:

**IDENTIFICATION:** Research Project 245

Title: DMV Customer Satisfaction Survey  
 Research Agency: University of Idaho  
 Work Plan Approval: Pending Approved

**OBJECTIVE**

The objectives of the proposed research are:

- Assess the level of satisfaction of customers with DMV services.
- Compare and measure changes in customer satisfaction levels for driver and vehicle customers since the 2009 and 2011 surveys.
- Identify areas where DMV is doing well so that related delivery practices can be reinforced and sustained, and staff can be recognized.
- Identify areas where DMV services have not met expectations so that DMV may investigate, find causes, and address them for service delivery improvement.
- Identify potential new methods of service delivery customers' desire and/or expect from DMV.
- Obtain customer input for the design and development of DMV automated systems.
- The expected duration of the project is 8 months. The total cost of the project is estimated at \$58,000.
- Barry Takeuchi, Outreach/Titles Program Specialist, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, the researchers will:

- Develop a questionnaire.
- Select samples of landline and cell phone numbers for use in the survey.
- Work with survey consultant to refine the survey and complete the survey interviews.
- Analyze survey responses and prepare a report summarizing findings and recommendations.
- Present survey finding to ITD management, the Idaho Transportation Board, county assessors, and county sheriffs.

**COST**

- \$58,000 (\$46,400 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

**FY2015 CHANGES**

Amendment Added:

☐ YES

☐ NO

Date Amended:

Comments:



## ITEM 7.19 – 2015 COOPERATIVE RESEARCH PROJECT (Idaho State University)

### IDENTIFICATION: Research Projects 246

Title: Cooperative Transportation Research Program  
Research Agency: Idaho State University  
Work Plan Approval: Pending Approval

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This section describes a research project with Idaho State University that was approved by ITD's Research Advisory Council in June 2014.

### ITEM 7.19.1 - Research Project 246

### IDENTIFICATION: Research Project 246

Title: Seismic Performance of Grouted Couplers with no Pedestal (GCNP) Column-Footing Connections Used in Accelerated Bridge Construction Applications in Idaho  
Research Agency: Idaho State University  
Work Plan Approval: Pending Approved

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### OBJECTIVE

The objectives of the proposed research are:

- Perform literature review on the performance of grouted coupler with no pedestal (GCNP) type column-footing connections under Idaho conditions (seismic ranges).
- Determine ductility of GCNP connections.
- Develop sections for the Idaho Bridge Design Manual showing acceptable application of GCNP connections.
- The expected duration of the project is 14 months. The total cost of the project is estimated at \$40,805.
- Dan Gorley, Bridge Asset Management Engineer, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, the researchers will:

- Perform literature review.
- Perform research to assess performance of GCNP connections and determine ductility requirements for different seismic conditions.
- Prepare sections of Idaho Bridge Design Manual specifying acceptable GCNP connections.
- Present findings to facilitate use of recommended applications.
- Prepare and submit draft of final research report.

### COST

- \$40,805 (\$32,644 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

### FY2015 CHANGES

Amendment Added:

☐ YES

☐ NO

Date Amended:

Comments:



## ITEM 7.20 – 2015 COOPERATIVE RESEARCH PROJECT (Montana State University)

### IDENTIFICATION: Research Projects 247

Title: Cooperative Transportation Research Program  
Research Agency: Montana State University/Western Transportation Institute  
Work Plan Approval: Pending Approval

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This section describes a research projects with Montana State University that was approved by ITD's Research Advisory Council in June 2014.

### ITEM 7.20.1 - Research Project 247

### IDENTIFICATION: Research Project 247

Title: Dopler Radar Wildlife Detection System Reliability and Effectiveness Analysis  
Research Agency: Montana State University  
Work Plan Approval: Pending Approved

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### OBJECTIVE

The objectives of the proposed research are:

- Determining the reliability of Dopler Radar Wildlife Detections System in detecting large mammals (deer size and larger).
- Determining the effectiveness of the system in reducing the number of wildlife/vehicle collision and vehicle speed in the area of wildlife passage across a highway.
- The expected duration of the project is 9 months. The total cost of the project is estimated at \$75,000.
- Dan Davis, D1 P.E. Planner, is the ITD Project Manager.

### PROPOSED ACTIVITY – FY2015

During FY 2015, the researchers will:

- Verify basic system functioning and research equipment.
- Measure reliability in detecting large mammals (deer and larger).
- Measure effectiveness using crash and carcass data, vehicle speed data, and driver and deer behavior. .
- Prepare and submit final research report.

### COST

- \$75,000 (\$60,000 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

### FY2015 CHANGES

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:





## ITEM 7.21 – 2015 COOPERATIVE RESEARCH PROJECT (TBD)

**IDENTIFICATION:** Research Projects 248 and 249

Title: Cooperative Transportation Research Program  
Research Agency: TBD  
Work Plan Approval: Pending Approval

---

This section describes two research projects whose researchers are yet to be determined that was approved by ITD's Research Advisory Council in June 2014.

### ITEM 7.21.1 - Research Project 248

**IDENTIFICATION:** Research Project 248

Title: Ports of Entry (POE) Study  
Research Agency: TBD  
Work Plan Approval: Pending Approved

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**OBJECTIVE**

The objectives of the proposed research are:

- Define a POE investment program that can maximize limited state resources.
- Identify ways ITD can use current and expected future technologies to improve POE operations through a series of targeted Concepts of Operations.
- Create a targeted program of POE investments to achieve key functionality at each POE/District.
- Assess and track current and future trends of commercial truck/freight movement.
- Gain understanding of stakeholder experience and assessment of their mobility needs.
- The expected duration of the project is 12 months. The total cost of the project is estimated at \$100,000.
- Caleb Forrey, East Boise POE Senior Inspector, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, we will:

- Develop and RFP and select researchers for the project.
- Establish a contract for research service.
- Initiate work on the project including:
  - Assessing current POE infrastructure with current operations and expected traffic levels.

**COST**

- \$100,000 (\$80,000 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

**FY2015 CHANGES**

Amendment Added: ☐ YES ☐ NO Date Amended:

Comments:

**IDENTIFICATION:** Research Project 249

Title: Improving Quality Control of Asphalt Pavement with RAP with the use of Portable Infrared Spectroscopy

Research Agency: TBD

Work Plan Approval: Pending Approved

**OBJECTIVE**

The objectives of the proposed research are:

- Assess the effectiveness of a portable infrared (IR) device in measuring percent of RAP in new asphalt pavement mixes immediately after production.
- Develop a draft field procedure for use of the portable infrared spectroscopy on future ITD projects.
- The expected duration of the project is 12 months. The total cost of the project is estimated at \$90,000.
- Mike Santi, Materials Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY 2015, we will:

- Identify appropriate contractor to conduct the research.
- Establish a contract for the project.
- Initiate work on the project including:
  - Collect material samples from 5 active ITD projects.
  - Create a matrix of mixtures with varying RAP contents and initial PG grades from multiple climate zones.
  - Test each mixture with IT Spectroscopy and the conventional PG grade test series.
  - Create a calibration curve for the portable IR.
  - Evaluate all data and determine performance parameters of the portable device.

**COST**

- \$90,000(\$72,000 Federal SPR funds (80/20)) is budgeted for this project in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

# **SHRP 2 IMPLEMENTATION**



## ITEM 8.0 Strategic Highway Research Program (SHRP 2) Implementation

### ITEM 8.1 – SHRP 2 Implementation Railroad-ITD Mitigation Strategies

**ITD CONTACT:** Barbara Waite  
Railroad/Utility Manager  
(208) 334-8552

#### OBJECTIVES

- This project will expedite highway-rail project agreement processing and project delivery. Improved communication and coordination between transportation agencies and railroads will decrease project delays resulting in reduced project delay costs. Safer projects will be developed through standardized design and standard work requirements.

#### PROPOSED ACTIVITY – FY2015

- ITD received a \$25,000 SHRP2 grant to help the department work with its rail partners to identify recommended policy and programmatic changes that support consensus-based project delivery for construction projects involving highways at rail crossings. The grant funds plus \$20,000 in Research funds will be used to hire a consultant to create a Standardized Master Agreement (SMA) that will help the department and rail companies in Idaho work through construction projects and expedite project specific agreement ensuring collaboration, reduces project delay and establishes standardized business practices.

#### COST

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

<b>Federal Aid</b>	\$0	+	<b>Match</b>	\$0	=	<b>\$0</b>
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#### FY2015 CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
<b>Comments:</b>			



# **NON-SPR PLANNING AND RESEARCH**





## ITEM 9.0 NON SPR PLANNING AND RESEARCH

This item outlines the Non SPR planning and research projects administered by Research. Descriptions of each project are provided below.

### ITEM 9.1 – RESEARCH PROJECT 241

#### IDENTIFICATION: Research Project 241

Title: Economic Cost of Vehicle Crashes in Idaho  
Research Agency: TBD  
Work Plan Approval: Previously Approved

#### OBJECTIVE

- The objective of this research project is to determine and validate the costs of vehicular crashes and the impacts of these crashes on the Idaho economy.
- The expected duration of the project is 12 months. This project start date has been revised and a RFP will be issued in FY2015. The Research Program will support OHS with contractor selection and project oversight. The total cost of the project is estimated at \$100,000.
- Brent Jennings, Highway Safety Program Manager, is the ITD Project Manager.

#### PROPOSED ACTIVITY – FY2015

During FY 2014, the researchers will:

- Determine the estimates of payment distributions for motor vehicle crashes in Idaho borne by private insurers, governmental sources, individual crash victims, and other sources. The payments distributions include, but are not limited to, the categories of medical, emergency services, insurance administration, workplace costs, legal I court, travel delay, and property damage.
- Classify the types of crashes into fatal, serious injury, visible injury, possible injury and property damage only.
- Determine the proper association between the estimate of payment distributions and classification of the type of crashes.

#### COST

- The Office of Highway Safety is seeking approval to use other funding for the project. The remaining costs for the project will be paid with “Flex” funds contributed by the ITD Office of Highway Safety.

#### FY2014CHANGES

Amendment Added:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Date Amended:
Comments:			

**IDENTIFICATION: Research Project 242**

Title: Measures to Alleviate Congestion at Rural Intersections – Case Study: SH-55/Banks-Lowman Highway Intersection

Research Agency: University of Idaho

Work Plan Approval: Included for Information Purposes Only

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**OBJECTIVE**

- The objectives of the proposed research are to:
  - Outline existing traffic conditions and roadway geometric constraints including any operational safety challenges.
  - Deliver short, medium, and long term recommendations for improving intersection operations.
  - Develop basic concept-level roadway plans and cost estimates for intersection modifications for short medium and long term solutions.
  - Eliminate/minimize traffic congestion/delays at this intersection during summer and holiday weekends.
  - Recommend a set of measures to alleviate congestion at other rural intersections experiencing similar congestion as Sh-55/Banks-Lowman Highway intersection.
    - This project will begin in January 2014 and will be completed by October 2014. The estimated project cost is \$31,172, to be paid with state dedicated funds from District 3
    - Kevin Sablan, D3 Traffic Engineer, is the ITD Project Manager.

**PROPOSED ACTIVITY – FY2015**

During FY2015, researchers will:

- Develop and test a set of alternatives to alleviate the rural congestion.
- Develop a white paper to document proposed alternatives and their potential cost and impact.
- Update microscopic simulation analysis and results using field data.
- Prepare and submit final report.

**COST**

- Funds for this project were encumbered in FY 2014. The project is included in the Work Program to show program activity in FY 2015.

**FY2015 CHANGES**

Amendment Added:	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	Date Amended:
<b>Comments:</b>					

# **COST SUMMARY**



# PART 1: WORK PROGRAM PLANNING - Key # 12524

## TOTAL PROGRAM FUNDING SUMMARY

Item #	(FC)	Work Program Task	SPR/FED	State Match	FY15Work Program
<b>1.0</b>		<b>Planning Services (F15901A)</b>			
1.1	FP	Planning Administration and Coordination	\$124,070	\$31,017	\$155,087
1.2	FF	Statewide Transportation Planning	\$99,800	\$24,950	\$124,750
1.3	FB	Highway Classifications and System Adjustments	\$2,400	\$600	\$3,000
1.4	GA	Transportation Planning STIP Support	\$240,000	\$60,000	\$300,000
1.5	FT	Air Quality Conformity Management	\$0	\$0	\$0
1.6	GO	Iplan Infrastructure Support	\$0	\$0	\$0
		<b>Subtotal:</b>	<b>\$466,270</b>	<b>\$116,567</b>	<b>\$582,837</b>
<b>2.0</b>		<b>Geographic Information Systems (F15901G)</b>			
2.1	CF	Digital Mapping and GIS	\$179,475	\$44,869	\$224,344
2.2	BE	Linear Referencing System	\$493,558	\$123,389	\$616,947
2.3	BA	Local Highway Program	\$107,686	\$26,921	\$134,607
2.4	CG	GIS Program Development	\$116,659	\$29,165	\$145,824
		<b>Subtotal:</b>	<b>\$897,378</b>	<b>\$224,344</b>	<b>\$1,121,722</b>
<b>3.0</b>		<b>Statewide Planning Functions (F15901H)</b>			
3.1	FP	Statewide Planning Administration & Coordination	\$149,334	\$37,333	\$186,667
3.2	FI	Bicycle and Pedestrian Planning	\$52,400	\$13,100	\$65,500
3.3	FG	Performance Management	\$2,400	\$600	\$3,000
3.4	FQ	Air Quality	\$25,600	\$6,400	\$32,000
3.5	FO	Metropolitan Planning Program	\$26,400	\$6,600	\$33,000
		<b>Subtotal:</b>	<b>\$256,134</b>	<b>\$64,033</b>	<b>\$320,167</b>
<b>4.0</b>		<b>Transportation Systems (F15901I)</b>			
4.1	FH	Assess Pavement Condition of the State Highway System	\$556,003	\$139,001	\$695,004
4.2	DA	Vehicle Volumes, Classification, Weight and Characteristics	\$1,037,097	\$259,274	\$1,296,371
4.3	EB	Highway Performance Monitoring System	\$100,000	\$25,000	\$125,000
4.4	EC	ITD/Consultant Staff Capacity Analysis	\$40,000	\$10,000	\$50,000
4.5	FL	System Modeling	\$196,400	\$49,100	\$245,500
		<b>Subtotal:</b>	<b>\$1,929,500</b>	<b>\$482,375</b>	<b>\$2,411,875</b>
<b>5.0</b>		<b>Mobility Services (F15901J)</b>			
5.1	FR	Idaho Statewide Freight Plan	\$281,866	\$70,467	\$352,333
		<b>Subtotal:</b>	<b>\$281,866</b>	<b>\$70,467</b>	<b>\$352,333</b>
<b>6.0</b>		<b>Transportation Investment Programming (F15901K)</b>			
6.1	TI	Transportation Investment Programming	\$403,766	\$100,941	\$504,707
		<b>Subtotal:</b>	<b>\$403,766</b>	<b>\$100,941</b>	<b>\$504,707</b>
<b>Total SPR Planning:</b>			<b>\$4,234,914</b>	<b>\$1,058,727</b>	<b>\$5,293,641</b>



## PART II: WORK PROGRAM RESEARCH - (F15901R) KEY # 12525

### TOTAL PROGRAM FUNDING SUMMARY

Item #	Phase (FC)	Research Administration	SPR/FED	State Match	FY13 Work Program	Technical Contact
7.1	RB	<b>National Cooperative Highway Research Program</b> <i>ITD's contribution to support the NCHRP Program. Qualifies for 100% federal dollars.</i>	\$290,000	\$0	<b>\$290,000</b>	Ned Parrish
7.2	RE	<b>AASHTO Engineering Technical Service Programs</b> <i>Programs supported include: NTPEP, TIG, EMTSP, TSP2, LRFD, DAMS, ETAP, and CTPP. Total cost of these programs is \$64,000.</i>	\$51,200	\$12,800	<b>\$64,000</b>	Varies - See Section 5.2
7.3	RF	<b>Pooled Fund Studies</b> <i>ITD's contributions to various cooperative studies with other states and FHWA. Payments qualify for 100% federal dollars. \$214,000 of the total budget is currently committed to specific pooled funds.</i>	\$279,600	\$0	<b>\$279,600</b>	Varies - See Section 5.3
7.6	RL	<b>FY12 Contract Research with WSU</b> <i>Research Project 213 is a multi-year project with \$11,500, budgeted for FY15. Other funding needed was encumbered previously.</i>	\$9,200	\$2,300	<b>\$11,500</b>	Mike Santi
7.15	RL	<b>FY14 Contract Research with UI</b> <i>Research Project 235 is a multi-year project with \$31,500 budgeted for FY15. \$200,000 was encumbered previously.</i>	\$25,200	\$6,300	<b>\$31,500</b>	Mike Santi
7.18	RL	<b>FY15 Contract Research with UI</b> <i>Research Projects 243, 244, and 245.</i>	\$165,600	\$41,400	<b>\$207,000</b>	Lotwick Reese Brent Jennings Barry Takeuchi
7.19	RL	<b>FY15 Contract Research with ISU</b> <i>Research Project 246</i>	\$32,640	\$8,160	<b>\$40,800</b>	Dan Gorley
7.20	RL	<b>FY15 Contract Research with MSU</b> <i>Research Project 247</i>	\$60,000	\$15,000	<b>\$75,000</b>	Dan Davis
7.21	RL	<b>FY15 Contract Research with TBD</b> <i>Research Projects 248 and 249</i>	\$152,000	\$38,000	<b>\$190,000</b>	Caleb Forrey Mike Santi
7.22	RG	<b>Research Administration</b>	\$148,733	\$37,183	<b>\$185,916</b>	Ned Parrish
		<b>NCHRP and Pooled Funds (Items 7.1 &amp; 7.3)</b>	\$569,600	\$0	<b>\$569,600</b>	
		<b>Program Budget (excluding items 7.1 &amp; 7.3)</b>	\$644,573	\$161,143	<b>\$805,716</b>	
		<b>TOTAL SPR RESEARCH</b>	<b>\$1,214,173</b>	<b>\$161,143</b>	<b>\$1,375,316</b>	





## FY15 RESEARCH PLANNED WORK WITH PRIOR YEAR SPR FUNDS

Item #	Phase (FC)	Work Program Task	Technical Contact
7.4	RL	FY11 Contract Research with BSU - Research Projects 206 and 208 <i>Research Projects 206 and 208 were initiated in FY2011 and will be completed in FY2015. Total cost of the projects is \$135,000. Funding to complete the projects was previously encumbered.</i>	Keith Nottingham Robert Koeberlein
7.5	RL	FY11 Contract Research with WSU - Research Project 210 <i>Research Project 210 was initiated in FY2011 and will be completed in FY2015. Total cost of the project is \$125,700. Funding to complete the project was previously encumbered.</i>	Clint Hoops
7.7	RL	FY12 Contract Research with UI - Research Projects 216, and 222 <i>Research Projects 216 and 222 were initiated in FY2012 and will be completed in FY2015. Total cost of the projects is \$116,920. Funding to complete the project was previously encumbered.</i>	Brent Jennings
7.8	RL	FY12 Contract Research with BSU – Research Project 219 <i>Research Project 219 was initiated in FY2012 and will be completed in FY2015. Total cost of the project is \$100,000. Funding to complete the project was previously encumbered.</i>	Bill Nicholson
7.9	RL	FY12 Research within ITD – Research Project 215 <i>Research Project 215 was initiated in FY2012 and will be completed in FY2015. Total cost of the project is \$130,000. The Research Program provided \$21,300 for data logging and sensor equipment in FY2012. The remaining project costs will be paid with state funds contributed by ITD districts.</i>	Tom Haynes
7.10	RL	FY13 Contract Research with UI – Research Projects 225 and 236 <i>Research Projects 225 and 236 were initiated in FY2013 and will be completed in FY2015. Total cost of the two projects is \$215,000. Funding to complete the projects was previously encumbered.</i>	Brent Jennings Bruce Christensen
7.11	RL	FY13 Contract Research with BSU – Research Project 226 <i>Research Project 226 was initiated in FY2013 and will be completed in FY2015. Total cost of the project is \$89,000. Funding to complete the projects was previously encumbered.</i>	Melinda Lowe
7.12	RL	FY13 Contract Research with TTI – Research Projects 228 and 230 <i>Research Projects 228 and 230 were initiated in FY2013 and will be completed in FY2015. Total cost of the two projects is \$135,000. Funding to complete the projects was previously encumbered.</i>	Carl Main Ethan Griffiths
7.13	RL	FY13 Contract Research with MSU/Private Consultants – Research Project 233 <i>Research Project 233 was initiated in FY2013 and will be completed in FY2017. Total cost of the project is \$626,150. Funding for FY2015 was previously encumbered.</i>	Ned Parrish Tony Loomer
7.14	RL	FY13 Contract Research with USGS – Research Project 234 <i>Research Project 234 was initiated in FY2013 and will be completed in FY2017. Total cost of the project is \$148,500. Funding for FY2015 was previously encumbered.</i>	Lotwick Reese
7.15	RL	FY14 Contract Research with UI – Research Project 237 <i>Research Project 237 was initiated in FY2014 and will be completed in FY2015. Total cost of the project is \$120,000. Funding to complete the project was previously encumbered.</i>	Dan Harelson
7.16	RL	FY14 Contract Research with ISU – Research Project 238 <i>Research Project 238 was initiated in FY2014 and will be completed in FY2015. Total cost of the projects is \$38,312. Funding to complete the projects was previously encumbered.</i>	Jesse Barrus
7.17	RL	FY14 Contract Research with WSU – Research Projects 239 and 240 <i>Research Projects 239 and 240 were initiated in FY2014 and will be completed in FY2015. Total cost of the projects is \$165,000. Funding to complete the projects was previously encumbered.</i>	Mark Bathrick

**FY15 RESEARCH  
PLANNED WORK WITH PRIOR/CURRENT YEAR NON-SPR FUNDS**

Item #	Phase (FC)	Work Program Task	Technical Contact
9.1	RL	FY15 Contract Research TBD – RP241 <i>Research Project 241 will be initiated in FY2015. Total cost of the project is \$100,000. Funding will be provided by the Office of Highway Safety.</i>	Brent Jennings
9.2	RL	FY14 Contract Research with University of Idaho – RP 242 <i>Research Project 242 was initiated in FY2014 and will be completed in FY2015. Total cost of the project is \$31,172. Funding to complete the project was encumbered using District 3 funds.</i>	Kevin Sablan

## PART III: TOTAL PLANNING AND RESEARCH PROGRAM FUNDING SUMMARY

Work Program Task		Federal	State Match	FY15 Work Program
Part A	SPR Planning			
	Direct Program Cost	\$4,234,914	\$1,058,727	\$5,293,641
	Indirect Cost Estimate at 14.37%	\$608,557	\$152,139	\$760,696
	Total:	\$4,843,471	\$1,210,866	\$6,054,337
Part B	SPR Research			
	Direct Program Cost	\$1,214,173	\$161,143	\$1,375,316
	Indirect Cost Estimate at 14.37%	\$115,781	\$23,156	\$138,937
	Total:	\$1,329,954	\$184,299	\$1,514,253
TOTAL SPR WORK PROGRAM (12524/12525)		\$6,173,425	\$1,395,165	\$7,568,590
Work Program Task		Federal	State Match	FY15 Work Program
Research	Non SPR Planning and Research			
	Non SPR Research Projects	\$0	\$0	\$0
	Total:	\$0	\$0	\$0
TOTAL NON SPR WORK PROGRAM		\$0	\$0	\$0
Work Program Task		Federal	Match	FY15 Work Program
SPR AND NON SPR GRAND TOTAL:		6,173,425	1,395,165	7,568,590