



Work Program And Cost Estimate

Highway Planning, Research,
Development and Implementation

Fiscal Year 2014

Kansas Department of Transportation
June 2013

KANSAS DEPARTMENT OF TRANSPORTATION
REPORT
OF THE FUTURE
STATE PLANNING AND RESEARCH,
DEVELOPMENT & IMPLEMENTATION PROGRAM
PROJECTS

SPR-P010(037) Statewide Planning
SPR-R010(037) Statewide Research

for the 2014 Fiscal Year
July 1, 2013 through June 30, 2014

and a

SUMMARY OF THE RELATED
STATE PLANNING AND RESEARCH,
ACTIVITIES
WHICH ARE NOT FUNDED WITH SPR FUNDS

In cooperation with the
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

June 2013

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FOREWORD

This State Planning and Research, Development and Implementation Work Program and Cost Estimate has been prepared for submittal in compliance with Section 505 of Title 23, United States Code (23 USC 505), as amended, and Part 420 of Title 23 of the Code of Federal Regulations (23 CFR 420).

This program describes the State Planning and Research, Development and Implementation activities of the Kansas Department of Transportation proposed for state fiscal year 2014 (July 1, 2013 through June 30, 2014) to meet the needs of the Kansas Department of Transportation and the Federal Highway Administration.

This program is divided into four parts. Part I describes the State Planning and Research (SPR) participating planning projects (SPR-P010 (037)). The SPR participating research, development and implementation projects are described in Part II (SPR-R010 (037)). Related planning activities, which are not funded with SPR funds are described in Part III. Additional research, development and implementation projects funded with state funds are described in Part IV.

INTRODUCTION

The highway-planning program was initiated by the Hayden-Cartwright Act of 1934. The planning activities were later expanded to include research, development and implementation activities. The Federal-Aid Highway Act of 1962 expanded the planning activities to include a continuing, comprehensive and cooperative (3C) planning process in each of the urbanized areas. The Federal-Aid Highway Act of 1973 provided special funding for the planning activities in the urbanized areas. The 1973 Act and other acts have expanded the State Planning and Research (SPR) activities to include safety activities and public transportation planning activities. The Intermodal Surface Transportation Act of 1991 (ISTEA) contained provisions for the SPR funding that have largely been retained in the last several Transportation Acts.

The current law, Moving Ahead for Progress in the 21st Century Act (MAP-21) provides that two percent (2%) of each State's total apportionment of four programs: National Highway Performance Program (NHPP); Surface Transportation Program (STP); Highway Safety Improvement Program (HSIP); and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program must be used as SPR funds. In addition, a minimum of twenty-five percent of that amount must be used for research purposes. The balance of the funds for the planning and research activities comes from the State Highway Fund, including the required matching funds.

This proposed work program has been prepared to provide for the continuation of the State Planning and Research activities in accordance with the transportation needs and goals of the State of Kansas, to provide for the fulfillment of State Statutory and Legislative requirements and needs, to provide for the fulfillment of the requirements of the United States Code and associated regulations, and to provide the necessary information for the continued development and maintenance of a safe, efficient and convenient transportation network for the State of Kansas.

The KDOT Bureaus of Transportation Planning, Program and Project Management, Research along with ITS Section in the Bureau of Transportation Safety and Technology and the Materials Section of the Bureau of Construction and Materials (new) are responsible for accomplishing the majority of the activities in the SPR work program.

PART I: WORK PROGRAM PLANNING FY2014

TOTAL PROGRAM FUNDING SUMMARY

Item #	Work Program Task	Project #	SPR/FED	State Match	Work Program
1.0	Administration and Control				
1.1	Administration	P-0219-14	\$280,000	\$70,000	\$350,000
1.2	Strategic Highway Research Program 2 (SHPR2)		\$215,000	\$0	\$215,000
	Subtotal:		\$495,000	\$70,000	\$565,000
2.0	Roadway Inventory				
2.1	Mapping and Road Characteristics	P-0002-14	\$96,000	\$24,000	\$120,000
2.2	Pavement Inventory	P-0275-14	\$128,000	\$32,000	\$160,000
2.3	Videolog	P-0431-14	\$80,000	\$20,000	\$100,000
	Subtotal:		\$304,000	\$76,000	\$380,000
3.0	Geographic Information Systems				
3.1	Cartographic Services	P-0737-14	\$240,000	\$60,000	\$300,000
3.2	Geospatial Intelligence Support	P-0740-14	\$240,000	\$60,000	\$300,000
3.3	Geospatial Data Development and Collaboration	P-0739-14	\$160,000	\$40,000	\$200,000
	Subtotal:		\$640,000	\$160,000	\$800,000
4.0	Traffic Monitoring				
4.1	Traffic Volume Counting	P-0004-14	\$440,000	\$110,000	\$550,000
4.2	Vehicle Classification	P-0346-14	\$160,000	\$40,000	\$200,000
4.3	Truck Weight & Characteristics	P-0094-14	\$120,000	\$30,000	\$150,000
4.4	Speed Studies	P-0195-14	\$16,000	\$4,000	\$20,000
4.5	Purchase of Traffic Monitoring Equipment	P-0008-14	\$64,000	\$16,000	\$80,000
	Subtotal:		\$800,000	\$200,000	\$1,000,000
5.0	Highway Systems and Programming				
5.1	Highway Classification & Systems	P-0200-14	\$96,000	\$24,000	\$120,000
5.2	Highway Statistics	P-0006-14	\$40,000	\$10,000	\$50,000
5.3	Planning Data Base Management	P-0007-14	\$440,000	\$110,000	\$550,000
5.4	Database System Reporting	P-0365-14	\$200,000	\$50,000	\$250,000
5.5	Highway Performance Monitoring System	P-0207-14	\$96,000	\$24,000	\$120,000
5.6	Construction Program Development	P-0204-14	\$680,000	\$170,000	\$850,000
5.7	Accident Data Collection	P-0364-14	\$160,000	\$40,000	\$200,000
5.8	Pavement Management System	P-0433-14	\$560,000	\$140,000	\$700,000
	Subtotal:		\$2,272,000	\$568,000	\$2,840,000
6.0	Metropolitan Planning & Land Use Coordination				
6.1	MPO Administration and Support	P-0218-14	\$280,000	\$70,000	\$350,000
6.2	Transportation-Land Use Planning Coordination	P-0213-14	\$80,000	\$20,000	\$100,000
6.3	Small Urban Area Support	P-0278-14	\$40,000	\$10,000	\$50,000
	Subtotal:		\$400,000	\$100,000	\$500,000
7.0	Statewide Transportation Studies				
7.1	Long-Range Transportation Plan	P-0760-14	\$80,000	\$20,000	\$100,000
7.2	Rural Traffic Studies & Forecasts	P-0005-14	\$40,000	\$10,000	\$50,000
7.3	Rail and Freight Planning	RA-0320-14	\$240,000	\$60,000	\$300,000
7.4	Corridor Studies	P-0320-14	\$40,000	\$10,000	\$50,000
7.5	Bicycle & Pedestrian Programs	P-0758-14	\$64,000	\$16,000	\$80,000
7.5	Intelligent Transportation Systems	P-0763-14	\$240,000	\$60,000	\$300,000
	Subtotal:		\$704,000	\$176,000	\$880,000
TOTAL PART I - PLANNING			\$5,615,000	\$1,350,000	\$6,965,000
Total Part I (without SHPR2 - 100% FHWA)			\$5,400,000	\$1,350,000	\$6,750,000

PART II: WORK PROGRAM RESEARCH FY2014**TOTAL PROGRAM FUNDING SUMMARY**

Item #	Work Program Task	KDOT#	FHWA#	SPR/FED	State Match	Work Program
1.0	Research Work Program					
1.1	Research and Development Administration	RE-0274-14	67-1	\$220,000	\$55,000	\$275,000
1.2	Implementation of Research and Development Findings	RE-0259-14	73-1	\$784,000	\$196,000	\$980,000
1.3	Technology Transfer	RE-0001-14	93-1	\$280,000	\$70,000	\$350,000
1.4	Technology Transfer Training Course Fees	RE-0265-14		\$132,000	\$33,000	\$165,000
	Subtotal:			\$1,416,000	\$354,000	\$1,770,000
2.0	Local Transportation Assistance Program (LTAP)	RE-0255-14	R025(512)	\$140,000	\$0	\$140,000
3.0	Pool Fund Studies			\$700,000	\$0	\$700,000
4.0	National Research Programs					
4.1	National Cooperative Highway Research Program (NCHRP) Dedicated 5.5%	RE-0257-14	TPF-5(412)	\$400,000	\$0	\$400,000
4.2	Transportation Research Board (TRB) Core Support	RE-0260-14	TPF-5(261)	\$105,000	\$0	\$105,000
4.3	Strategic Highway Research Program 2 (SHPR2)			\$75,000	\$0	\$75,000
	Subtotal:			\$580,000	\$0	\$580,000
TOTAL PART II - RESEARCH				\$2,836,000	\$354,000	\$3,190,000
GRAND TOTAL - PLANNING AND RESEARCH				\$8,451,000	\$1,704,000	\$10,155,000

Bureau of Transportation Planning

The functions and responsibilities of the Bureau of Transportation Planning can be divided into five sections. These sections are Traffic and Field Operations, Geometric and Accident Data, Cartography/GIS (Geographical Information Systems), Multi-Modal Planning including Public Transit, Freight/Rail, Safe Routes to School, Bicycle/Pedestrian and Transportation Enhancements; and State Transportation Planning which includes Metropolitan Planning, Models and Forecasting and Access Management. Transportation Planning along with the Research Unit of the Bureau of Materials and Research and the Bureau of Program and Project Management are responsible for accomplishing the majority of the activities in the SPR work program. Management of these activities is included in the administrative sections of the work program.

The activities of the Bureau include the performance of needs analysis; collection, maintenance and analysis of traffic, accident and inventory data; preparation of State, district, county and city maps; conducting local, State and national transportation studies, metropolitan planning studies, and sub-state planning studies that include all modes within the particular region; "Statewide" planning where the emphasis is on a particular mode or combination of all modes involved in the movement of persons and goods; monitoring and coordinating railroad activities; administration of public transit programs; and many other analytical aspects of transportation planning. The information developed through these transportation planning activities provides the basis for administrative and legislative decisions and actions concerning the development and management of the transportation system. Because of the important role of planning data in the decision-making process, it is essential that many types of accurate and reliable data be maintained on a current basis. In addition, it is essential that the capability exists, including having adequate personnel, to provide the planning data in a timely manner, especially when requested by the management, the administration or the legislature.

Bureau of Program and Project Management

The Bureau of Program and Project Management consists of three sections – the Program Management Section, the Project Management Section, and the WinCPMS Administration Section.

The Program Management Section has the following responsibilities:

- Developing the agency's multi-year highway improvement program
- Maintaining the Priority Formulas (Interstate, Non-Interstate, Priority Bridge) used in project selection
- Federal Funds Management

The Project Management Section has the following responsibilities:

- Preparing and processing Project Authorization documents – which outline the project scope, cost, and funding
- Developing and monitoring project schedules
- Ensuring projects undergo a Plans, Specifications, & Estimates (PS&E) process before letting
- Developing and submitting the annual Statewide Transportation Improvement Program (STIP).

The Win-CPMS Administration Section is responsible for maintaining, improving, and conducting training for the Windows-based Comprehensive Program Management System, which tracks a project's activities, resources used, project schedules, project estimates, and project funding.

Bureau of Research

Research, Development, and Technology Transfer (RD&T) are service-oriented staff operations that include field and laboratory analytical and experimental activities, which primarily seek to increase the understanding and usefulness of fundamental phenomena. Basic research looks at phenomena whose use may not yet be known. KDOT primarily does applied research on specific needs of the State's road system. This can include development of experimental hardware, but usually the output is a report for management to decide whether or not to use the research results. To be cost effective, RD&T must do one or more of several things: Increase safety, lower costs, reduce waste, increase personnel efficiency or production, eliminate unneeded work, improve working conditions, methods or equipment, improve operations or extend service life. KDOT Research has been shown to be highly cost effective.

Much Research Unit effort goes toward implementation, demonstration, or evaluation of experimental construction features that take many weeks of before, during, and after construction activities. The monitoring often requires several years of field and lab evaluations of the experimental feature before it can be accepted for standard practice or rejected if found unsatisfactory. Kansas signed a basic agreement with FHWA on November 15, 1974 to expedite and coordinate the evaluation of implementable research under the Federally Coordinated Implementation Program (FCIP). This was updated on January 1, 1985 (9DTFH61-85-C-00020).

Since the Research Unit is also a service unit, researchers are asked by various organizations and individuals to participate in solving construction problems, prepare experimental feature statements, complete questionnaires, serve on state and national task forces, technical panels, committees, councils, workshops, schools, etc. and make presentations about research findings at those and other group meetings. Researchers publish papers in national and state journals in addition to reports printed by KDOT. KDOT maintains membership in TRB, NCHRP, AASHTO, ASTM, AAPT and ACI and researchers serve on various committees and panels associated with these organizations. One researcher serves as the SHRP Long Term Pavement Performance (LTPP) liaison. The Engineer of Research was appointed as the KDOT SHRP 2 Coordinator. Several other KDOT employees have been appointed to serve on project panels or expert tasks groups.

The KDOT Library is now affiliated with the Online Computer Library Center (OCLC) and the Midwest Transportation Knowledge Network (MTKN). The KDOT Electronic Library Catalog became operational during January 2003. Essentially all KDOT publications have now been scanned and are available as full text documents to KDOT staff via the intranet. Work continues to enter information on all older publications held by the Library and new incoming publications. Over 53,000 documents including nearly all AASHTO, TRB, FHWA and other state DOT publications held in the library collection are now available to staff through the KDOT Electronic Library. While all publications will not be scanned full text for the Electronic Library, the catalog is being used to document all holdings of the KDOT library. Only citation information and an image of the cover are being entered for some publications.

KDOT certified that it is in compliance with all requirements of 23 U.S.C. 307 and its implementing regulations with respect to the RD&T program on June 30, 1995. The RD&T Procedures Manual that documents the RD&T process was revised and updated. After FHWA review of the revised manual with a publication date of December 2008, KDOT recertified that it is in compliance with all requirements of 23 U.S.C. 505 and its implementing regulations with respect to the RD&T program.

Research peer exchanges were held during calendar years 1996, 2000, 2004 and 2008.

**Bureau of Transportation Safety and Technology
Intelligent Transportation Systems (ITS) Section**

The ITS Section is responsible for Planning, Design, and Implementation of the ITS infrastructure, and remains involved with system operation to provide input into future implementation. They assist with legislative issues and new laws related to ITS. The section also manages the contract for maintaining the fiber infrastructure across the state, including planning for future expansion.

They initiate research and evaluations for new materials, techniques and equipment related to ITS operations. This process establishes expertise to prepare for operational ITS installations.

The ITS Section typically initiates the operations projects either through their own funding source or by mainstreaming them into a planned highway project. At that point they are responsible for oversight of the design for the ITS elements in the project. Once the project goes to construction, they act as a resource for our field staff in answering questions related to the ITS infrastructure that is being deployed and integrated into current systems. Then once the system is deployed they establish operational metrics with the assistance of field staff, neighboring states, and local units of government. They oversee the operating budgets that have been reserved for the ITS infrastructure.

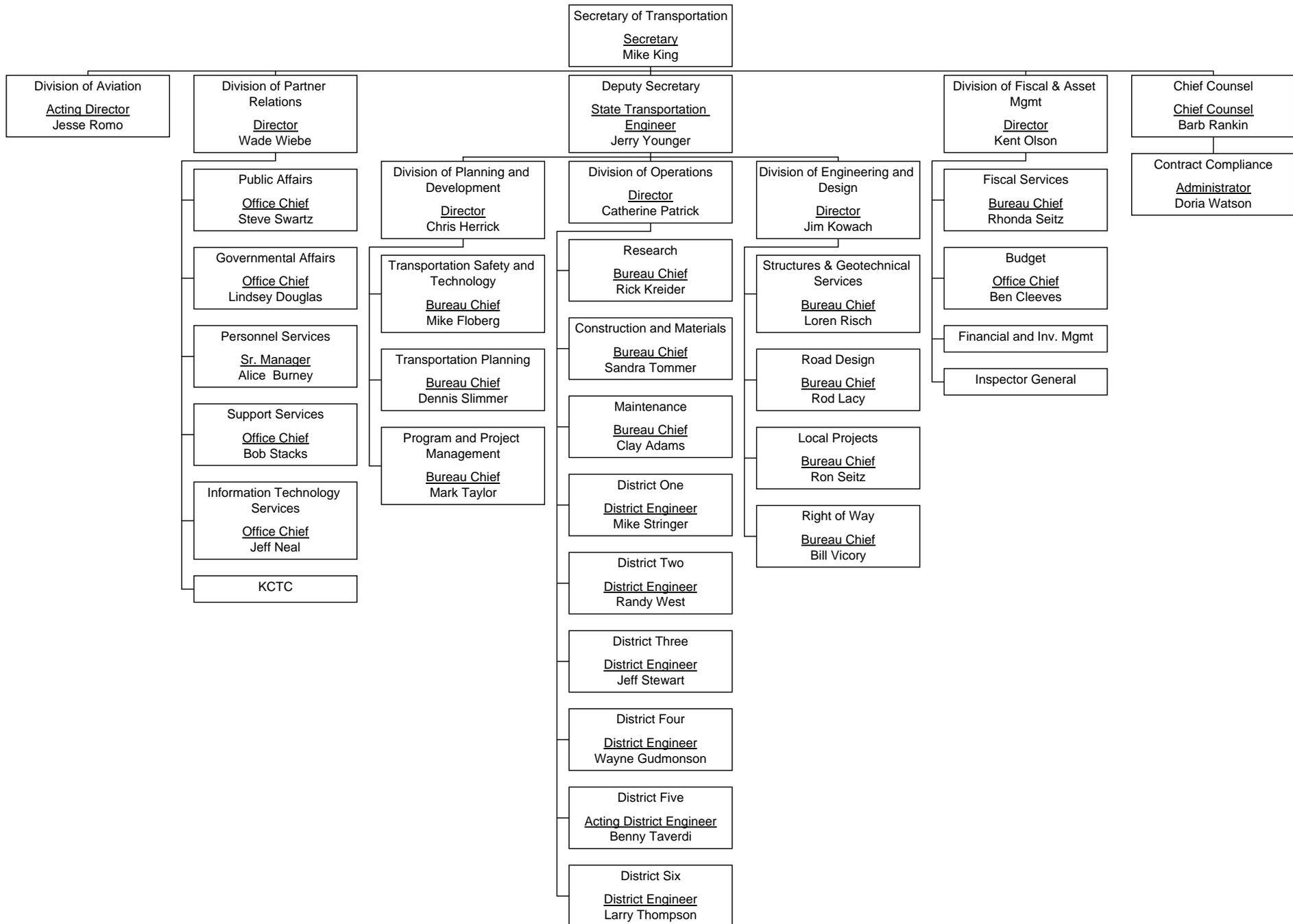
TITLE VI/NONDISCRIMINATION PROVISIONS

Compliance with the requirements of Title VI of the Civil Rights Act of 1964 in conducting the Highway Planning and Research, Development and Implementation Activities is assured by the "Affirmative Action" program of the Kansas Department of Transportation. This program is administered in the following manner.

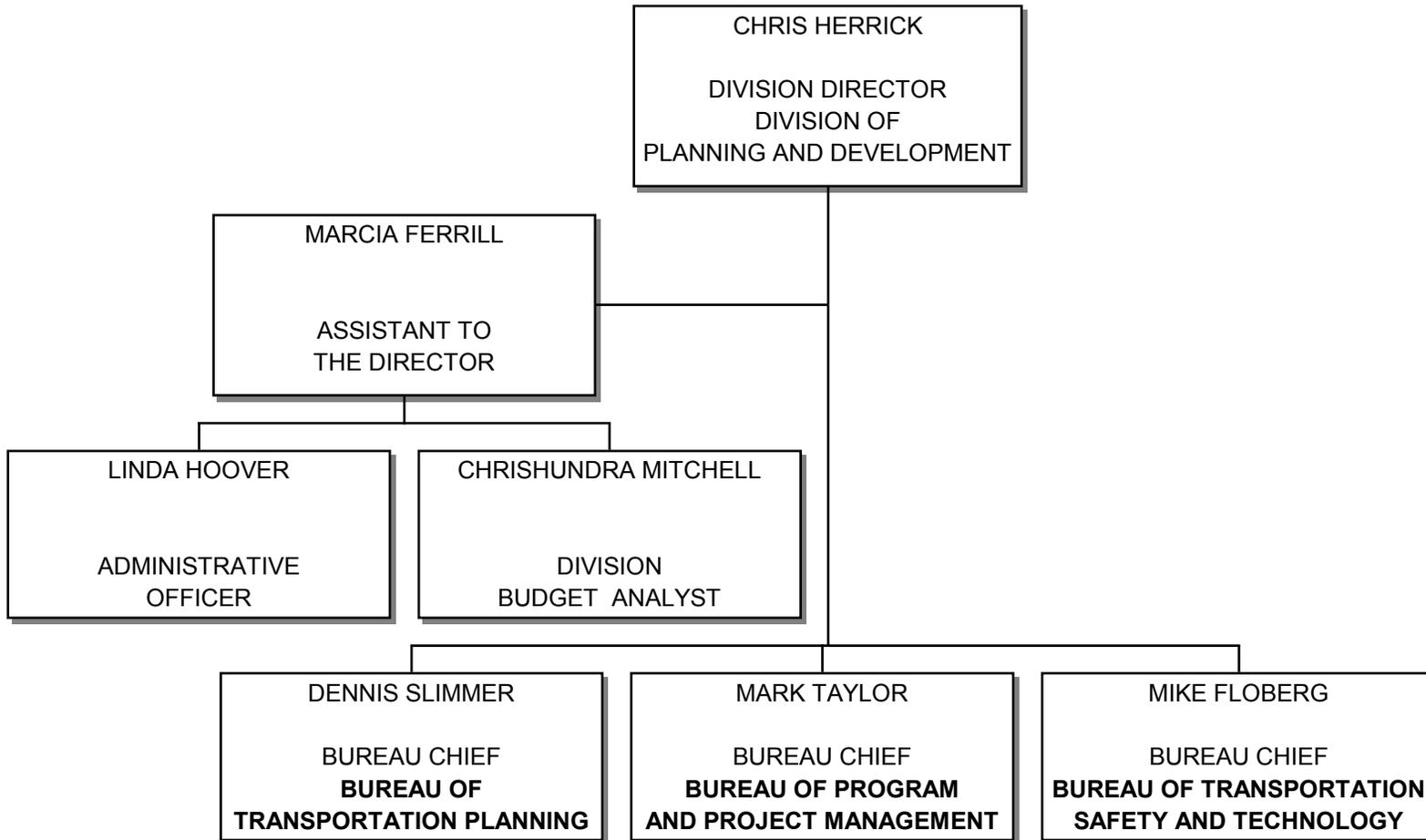
1. All internal EEO responsibilities within KDOT are assigned to the Office of Contract Compliance. KDOT's EEO officer processes internal civil rights complaints and conducts Title VI/Nondiscrimination training as a part of other classes. The EEO officer also prepares the annual affirmative action plan for the agency.
2. The external EEO activities are managed by the Office of Contract Compliance. The activities include processing Title VI complaints, services for minority and women owned businesses, contract compliance and the trainee program. Assistance is provided to contractors, consultants, local governments and KDOT bureaus to achieve Title VI/Nondiscrimination compliance.
3. The Prequalification procedure used in the selection of consultants includes Title VI assurance provisions.

In addition, the process described in the "Action Plan" includes procedures to obtain public involvement, including minority involvement, in the various aspects of the planning and project development activities.

Secretary of Transportation



KDOT - DIVISION OF PLANNING AND DEVELOPMENT



BUREAU OF PROGRAM AND PROJECT MANAGEMENT



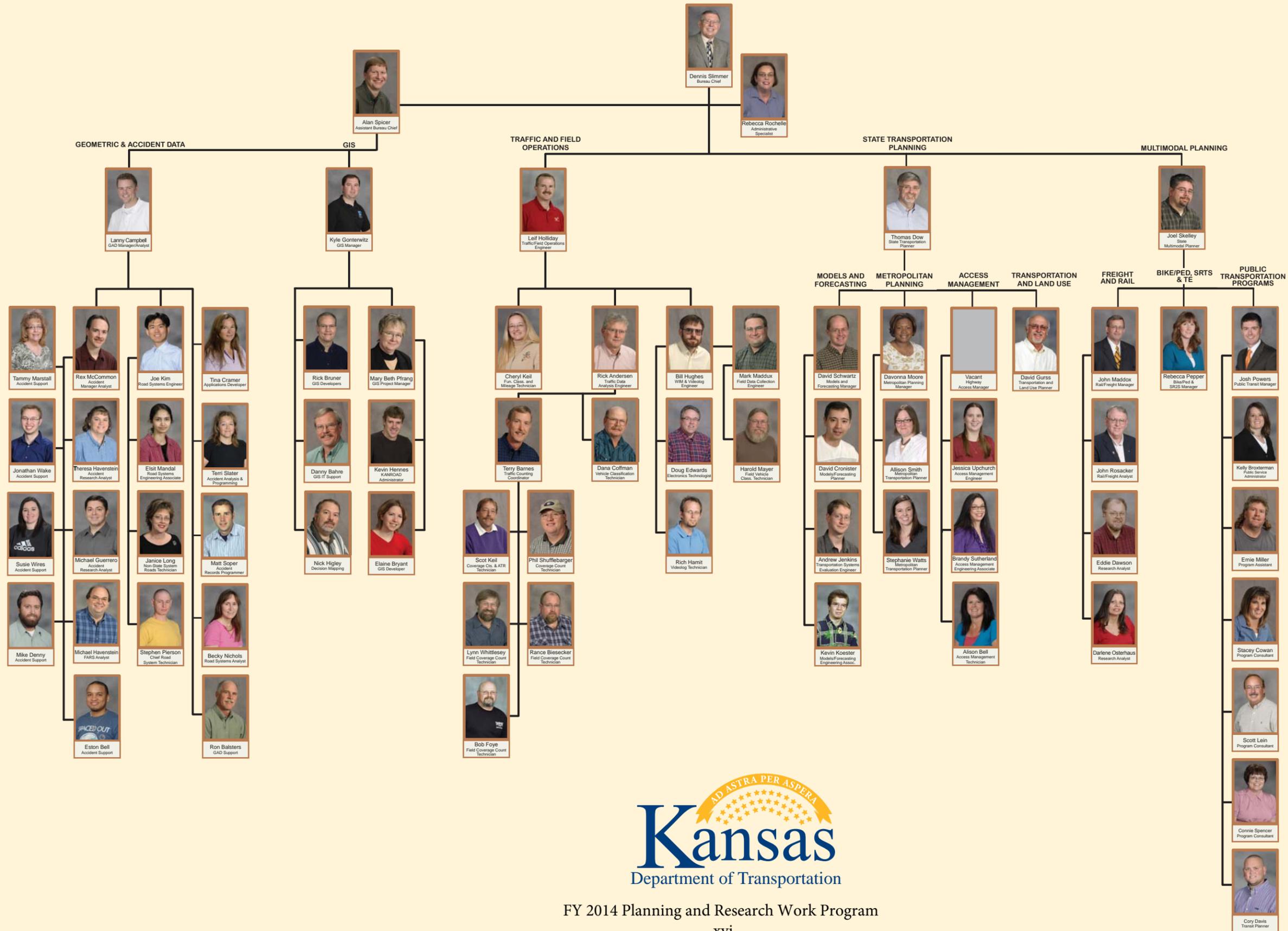
PROGRAMS

PROJECTS

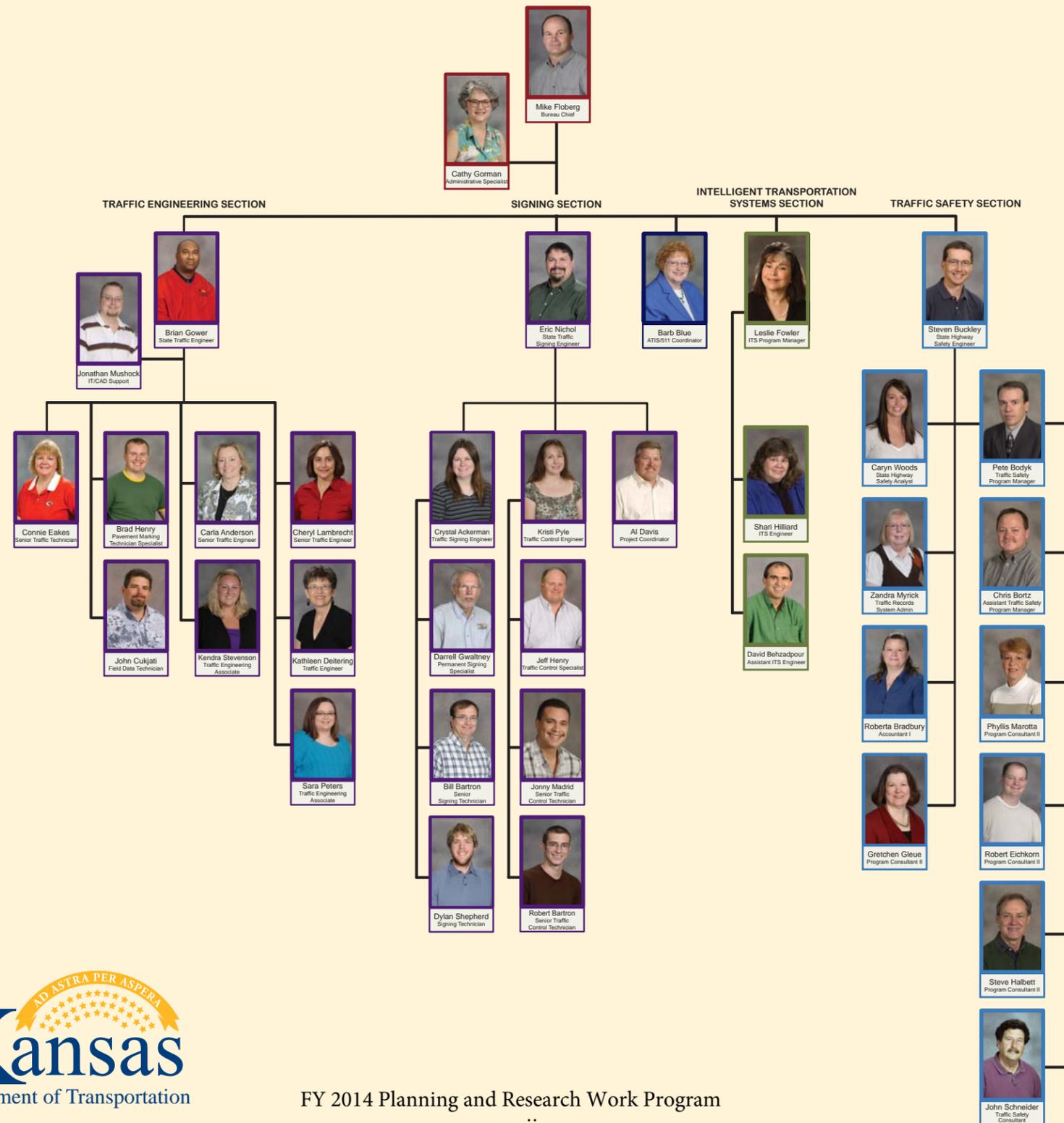
WinCPMS

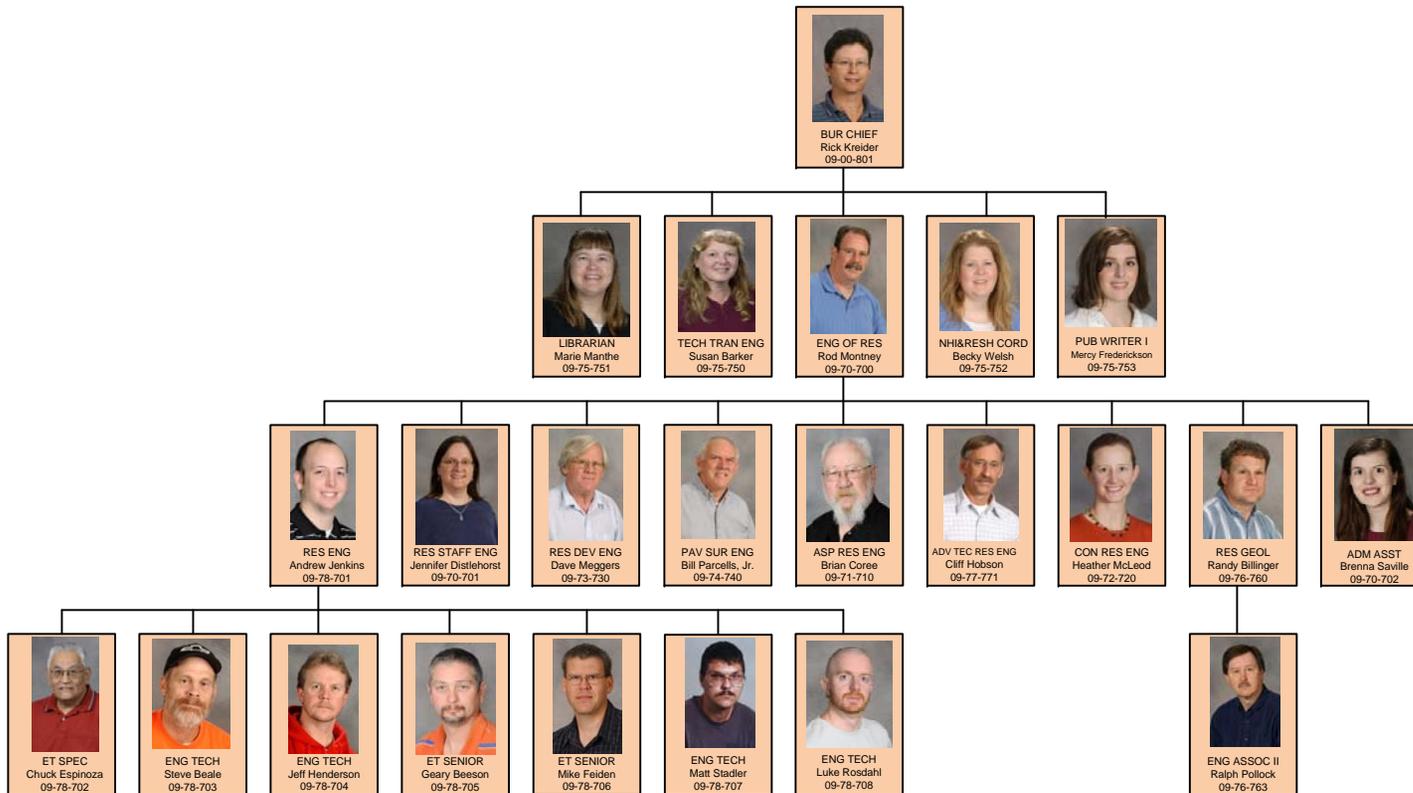


Bureau of Transportation Planning



Bureau of Transportation Safety & Technology





Bureau of Research

PART I: SPR PLANNING

1.0 – ADMINISTRATION AND CONTROL

KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

MISSION

Provide for the organization and direction of the State Planning and Research (SPR) program.

ITEMS IN THIS SECTION

There are two sub-items in this section:

1.1 – Administration

1.2 – Strategic Highway Research Program 2

TOTAL ADMINISTRATION AND CONTROL BUDGET

Federal Aid	\$495,000	+	Match	\$70,000	=	\$565,000
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KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

OBJECTIVES

Provide for the planning, organizing, direction, supervision, record keeping, auditing and general office work necessary for the administration of the planning work performed with participating State Planning and Research (SPR) funds.

METHODOLOGY

The salaries and authorized expenses of the Chief of Transportation Planning, Assistant Chief, Section Heads, administrative assistants and anyone else doing administrative work will be charged to administration when the activities involved were fully attributable to administration of Part A of the Work Program.

Administrative activities not fully attributable to the administration of Part A of the Work Program are charged to State funded activities.

FY2014 PRODUCTS

- Administration activities related to Part A of State Planning and Research Program
- Completed FY2013 Performance and Expenditure Report
- Completed FY2015 SPR Work Program document

ADMINISTRATION BUDGET

Federal Aid	\$280,000	+	Match	\$70,000	=	\$350,000
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1.2 – STRATEGIC HIGHWAY RESEARCH PROGRAM 2 (SHRP 2)

KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

OBJECTIVES

Provide 4% of the State Planning and Research (SPR) program funds to the Federal Highway Administration to fund the national Strategic Highway Research Program 2 (SHARP2).

METHODOLOGY

In Kansas, 75% of the SHARP2 funding will come from SPR Part I (Planning) funds and 25% will come from SPR Part II (Research) funds. KDOT will transfer the 4% contribution for SHRP2 implementation back to FHWA. No State match will be used on this project.

FY2014 PRODUCTS

Funding for the Strategic Highway Research Program 2.

STRATEGIC HIGHWAY RESEARCH PROGRAM 2 BUDGET

Federal Aid	\$215,000	+	Match	\$0	=	\$215,000
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2.0 – ROADWAY INVENTORY

KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

MISSION

Obtain roadway and roadside information required for several different work products.

ITEMS IN THIS SECTION

There are three sub-items in this section:

2.1 – Mapping and Roadway Characteristics

2.2 – Pavement Inventory

2.3 – Videolog

TOTAL FY2013 ROADWAY INVENTORY BUDGET

Federal Aid	\$304,000	+	Match	\$76,000	=	\$380,000
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KDOT CONTACT: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

OBJECTIVES

Obtain roadway information required for several different work products, including maps; non-state roadway fiscal oversight, HPMS reporting, and railroad crossing management. These products require statistical tabulations of such roadway characteristics as mileage, dimensions, surface type; such structure (bridge) characteristics as type, dimensions and load postings; photographs and track information at crossings; and verification of items in the HPMS sample data set.

METHODOLOGY

Field staff were trained to collect railroad crossing data and road characteristics data. Training sessions in December 2012 and January 2013 provided the basis of inspection procedures to approximately 40 KDOT staff. They then proceeded to collect the information required to maintain the railroad crossing inventory and to collect the road characteristics for HPMS reporting on the non-state urban and rural road system. The five year field inventory cycle implemented in January of 2012 was modified to enable the different staff to collect the required data.

FY2014 PRODUCTS

Road characteristics inventory for 21 counties will be completed during calendar year 2013 - Chautauqua, Greenwood, Bourbon, Coffey, Osage, Shawnee, Washington, Saline, Marion, Rice, Ellis, Rawlins, Cheyenne, Graham, Hodgeman, Ford, Gray, Seward, Grant, Morton and Greeley.

Railroad crossing inventory will be completed for 21 counties during calendar year 2013 - Nemaha, Brown, Osage, Marion, Saline, Cheyenne, Ellis, Rawlins, Sheridan, Wallace, Bourbon, Wilson, Coffey, Franklin, Harvey, Rice, Cowley, Haskell, Seward, Gray Hodgeman and part of Sedgwick Counties.

Road characteristics inventory for 21 counties will be completed during calendar year 2014 – Brown, Chase, Cloud, Ottawa, Norton, Decatur, Sheridan, Allen, Cowley, Butler, Sedgwick, Harvey, Barton, Barber, Kiowa, Clark, Ness, Lane, Scott, Kearny and Haskell.

Railroad crossing inventory will be completed for 16 counties during calendar year 2014 – Shawnee, Leavenworth, Riley, Douglas, Cloud, Washington, Ottawa, Chase, Norton, Decatur, Linn, Montgomery, Sedgwick (part) , Barber, Ford and Morton

MAPPING AND ROAD CHARACTERISTICS BUDGET

Federal Aid	\$96,000	+	Match	\$24,000	=	\$120,000
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KDOT CONTACT: Rick Miller, Pavement Management Engineer
(785) 291-3842

OBJECTIVES

Surface friction inventory testing supplies the frictional data necessary to recommend pavement and material types that will provide adequate safety and reduce accidents. It also provides a means of locating sections of pavement that may require immediate attention.

METHODOLOGY

The pavement friction values are collected annually in both directions on the interstate routes, and on a two-year cycle on the rest of the state highway system. Pavement surface friction is an indication of safety for vehicles on highways because it is a measure of the force that resists the sliding of vehicle tires on the pavement

FY2014 PRODUCTS

Collect, process, and store pavement surface friction values for the interstate highways and half of the remaining state highway system.

PAVEMENT INVENTORY BUDGET

Federal Aid	\$128,000	+	Match	\$32,000	=	\$160,000
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KDOT CONTACT: Rich Hamit, Videolog Technician
(785) 296-4884

OBJECTIVES

Maintain and provide user accessibility to a pictorial record of numerous characteristics of the State Highway System, which will reduce the need for time consuming, costly field trips and provide a historical record of these characteristics.

METHODOLOGY

Bureau and District personnel will be supported in the use of dual digital videolog. Other technological advances will be monitored and new or updated hardware and software will be purchased if applicable using state funding.

Access and support for the digital videolog system will be provided. Editing and reproduction of digital videolog will be accomplished.

FY2014 PRODUCTS

Dual image digital videologging in Districts One and Four will be completed. Ramps in the Kansas City area will be updated.

The processing and editing of the videolog data for Districts One and Four will be completed. Videologging in District Three and Six will start in the spring of 2014.

VIDEOLOG BUDGET

Federal Aid	\$80,000	+	Match	\$20,000	=	\$100,000
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3.0 – GEOGRAPHIC INFORMATION SYSTEMS

KDOT CONTACT: Kyle Gonterwitz, GIS Manager
(785) 296-4899

MISSION

Develop and distribute a user-friendly Geographic Information System environment that can advance data sharing and decision making throughout the Department to improve quality and timeliness of services.

ITEMS IN THIS SECTION

There are three sub-items in this section:

Item 3.1 - Cartographic Production

Item 3.2 - Geospatial Intelligence Support

Item 3.3 - Geospatial Data Development and Collaboration

GEOGRAPHIC INFORMATION SERVICES BUDGET

Federal Aid	\$640,000	+	Match	\$160,000	=	\$800,000
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KDOT CONTACT: Kyle Gonterwitz, GIS Manager
(785) 296-4899

OBJECTIVES

Provide maps for use by internal DOT customers and the general public in a timely and cost-efficient manner.

METHODOLOGY

Use Commercial Off-The-Shelf COTS GIS technology to manage base maps of current and future road networks, major rail networks, bikeway and airports.

FY2014 PRODUCTS

2014-2015 State Bicycle Map

Produce maps and data for communication with Local Public Authorities for City Connecting Link and Rural Highway resolutions, AASHTO for US Route Changes, and various standard and special-request maps for a variety of other transportation planning and transit stakeholders.

CARTOGRAPHIC PRODUCTION BUDGET

Federal Aid	\$240,000	+	Match	\$60,000	=	300,000
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KDOT CONTACT: Kyle Gonterwitz, GIS Manager
(785) 296-4899

OBJECTIVES

Enhance geospatial expertise and improve geospatial transportation data sharing and access.

METHODOLOGY

Focus GIS efforts on the core function of maintaining and sharing Transportation GIS data by making additional data holdings accessible via a standardized GIS platform. Provide staff assistance for Agency GIS implementations using Planning data holdings.

Improve communication and the timeliness of service by presenting data on-line in a secure, administrated environment. This includes making datasets available for ad-hoc mapping and data analysis, as well as providing a centralized map portal for more general uses.

Improve internal data collection processes for roadway and construction data reporting systems.

Continue to implement a single-vendor environment using ESRI ArcGIS tools in the desktop production, desktop analysis, and web map portal platforms.

Coordinate GIS software and training needs for the Agency to equip employees with map presentation and GIS skills to use KDOT's data holdings and spatially-related datasets to produce accurate and consistent maps.

FY2014 PRODUCTS

Developed training program in the use and functions of ArcGIS web and desktop software.

GEOSPATIAL INTELLIGENCE SUPPORT BUDGET

Federal Aid	\$240,000	+	Match	\$60,000	=	\$300,000
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KDOT CONTACT: Kyle Gonterwitz, GIS Manager
(785) 296-4899

OBJECTIVES

Improve the efficiency of workflows for developing geospatial data for planning purposes.

Improve the accessibility and timeliness of service by embracing geospatial data collaboration and data sharing.

METHODOLOGY

Define workflow processes for management of current and planned geospatial data, and identify improvements in workflows through the use of well-planned data models and well-defined governance procedures

Provide information technology and project management planning and resources for projects involving geospatial data development or locational reference

Update technology for producing dynamic maps on the internet facilitating collaboration with public for planning initiatives involving difference sources of dynamically changing geospatial data.

Investigate processes to harvest and redistribute real-time weather information from government weather providers for use in short term planning efforts.

FY2014 PRODUCTS

ArcGIS online for Organizations planning maps and data collaboration.

Provide Online Maps for sheriffs and local police to support accident coding.

Addition of weather radar or other relevant geospatial systems to 511 maps

Implementation of a reference network for locating roadway features including bridges, accident locations, and interchange ramps to meet the requirements of the FHWA ARNOLD initiative.

Publicly accessible online collaboration platforms that facilitate planned realignment highway projects, planned airports, planned passenger rail using data (raw or value-added) from multiple agencies and sources.

GEOSPATIAL DATA DEVELOPMENT AND COLLABORATION BUDGET

Federal Aid	\$160,000	+	Match	\$40,000	=	\$200,000
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4.0 – TRAFFIC MONITORING

KDOT Contact: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

MISSION

Efficient collection of valid statewide vehicle data. Collect, analyze, report, and retain traffic data to comply with the requirements of AASHTO and FHWA, and in support of HPMS and other national and State programs within KDOT..

ITEMS IN THIS SECTION

There are five sub-items in this section:

- 4.1 - Traffic Volume Counting
- 4.2 - Vehicle Classification
- 4.3 - Truck Weight and Characteristics
- 4.4 - Speed Studies
- 4.5 - Purchase of Traffic Monitoring Equipment

TOTAL TRAFFIC MONITORING BUDGET

Federal Aid	\$800,000	+	Match	\$200,000	=	\$1,000,000
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KDOT CONTACT: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

OBJECTIVES

Collect traffic data to meet Federal and State reporting requirements and for other uses including traffic studies, traffic forecasting, pavement design, and estimating travel on all roads in Kansas.

METHODOLOGY

Continuous traffic counters operate at 103 locations throughout the state. Accuracy checks are made at all continuous traffic counters. Almost all locations transmit data by telemetry, 58 of which have cellular-IP addressable modems.

Portable traffic counters are deployed throughout the State on roadways of all functional classification. These collect simple count data for a period of 24-hours. On HPMS sample sections, 2 periods are collected. Data is transmitted to the central office for data entry and analysis. The annual survey covers all state highways and their city connecting links in one half of the State, and a sample of the county-owned portion of the Major and Minor Collector Systems and Local roads.

FY2014 PRODUCTS

Continuous counts will be provided to FHWA. Factors based on these counts will be produced.

Coverage counting of State System roads in Districts Four, Five and Six will be completed; as well as Non-State roads in Districts Two and Three.

The 2014 State Traffic Flow Map (CY 2013 data) will be completed and distributed. City count maps for the urban cities and selected small cities in Districts One and Four will be completed. The district Major Collector maps for Districts One and Four will be completed.

All count maps are made available on the internet.

TRAFFIC VOLUME COUNTING BUDGET

Federal Aid	\$440,000	+	Match	\$110,000	=	\$550,000
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KDOT CONTACT: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

OBJECTIVES

Provide truck volume data for the State Flow Map and State System database to support pavement design, HPMS and other State and national programs.

METHODOLOGY

Vehicle Classification data is collected in accordance with requirements of the Traffic Monitoring Guide (TMG), 13 vehicle classes, by hour, by lane. The two basic types of vehicle classification counts are short-term (48-hour) and continuous vehicle classification. Short term vehicle classification data is collected by contractors at up to 165 sites throughout the state. Continuous vehicle classification data is collected at 10 sites throughout the state.

FY2014 PRODUCTS

Collection of 48-hour vehicle classification data will be completed for the locations scheduled for CY 2013, data will be compiled, reports will be published and data will be submitted to FHWA. Collection of 48-hour vehicle classification data for CY 2014 will commence.

VEHICLE CLASSIFICATION STATE STAFF BUDGET

Federal Aid	\$64,000	+	Match	\$16,000	=	\$80,000
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VEHICLE CLASSIFICATION CONSULTANT BUDGET

Federal Aid	\$96,000	+	Match	\$24,000	=	\$120,000
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KDOT CONTACT: Bill Hughes, Weigh in Motion/Videolog Engineer
(785) 296-6863

OBJECTIVES

Provide information on the weight, size, and load patterns of commercial vehicles. In conjunction with traffic volume and vehicle classification surveys, this data will provide measures of usage and demand upon the highway system.

METHODOLOGY

Weigh-In-Motion data is obtained by sampling locations on Urban and Rural roads functionally classified higher than Local. A portable weighing system is used at 30 locations annually to collect axle weight of the commercial vehicles as they travel at normal operating speeds. Currently, 5 continuous Weigh-In-Motion sites are maintained throughout the state.

FY2014 PRODUCTS

Weight surveys on the 30 sites selected for the CY2013 sample will be completed. A report of the weight data collected at the sites surveyed in CY2013 will be prepared and distributed. Data collection for the CY2014 sample sites will begin. Maintenance activities will occur at the permanent weigh sites as needed.

TRUCK WEIGHT AND CHARACTERISTICS BUDGET

Federal Aid	\$120,000	+	Match	\$30,000	=	\$150,000
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KDOT CONTACT: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

OBJECTIVES

Provide speed summaries for state highways.

METHODOLOGY

Speed data is collected during one week per calendar quarter at 24 monitoring sites (permanent traffic counters) throughout the state. The data is compared with previous data to monitor changes in speed on the state highway system.

FY2014 PRODUCTS

Data was analyzed and provided to KDOT staff as requested.

SPEED STUDIES BUDGET

Federal Aid	\$16,000	+	Match	\$4,000	=	\$20,000
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KDOT CONTACT: Leif Holliday, Traffic and Field Operations Engineer
(785) 296-2906

OBJECTIVES

Replace, maintain, and update traffic monitoring equipment used to collect traffic counts, vehicle classification data and truck weight data.

METHODOLOGY

Select and obtain traffic monitoring equipment that meets accuracy and quality requirements of Federal Highway's Traffic Monitoring Guide.

FY2014 PRODUCTS

It is planned to purchase the following equipment during the year:

- 20 Class 1 piezoelectric traffic sensors at a cost of \$30,000.
- 3 portable weigh-in-motion systems at a cost of \$10,000
- 20 permanent traffic count data collectors at a cost of \$40,000.

PURCHASE OF TRAFFIC MONITORING EQUIPMENT BUDGET

Federal Aid	\$60,000	+	Match	\$20,000	=	\$80,000
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5.0 – HIGHWAY SYSTEMS AND PROGRAMMING

KDOT Contact: Dennis Slimmer, Bureau Chief of Transportation Planning
(208) 334-8217

MISSION

Manage data related to safety, geometry, performance, construction program development, and system infrastructure

ITEMS IN THIS SECTION

There are eight sub-items in this section:

- 5.1 – Highway Classification and Systems
- 5.2 – Highway Statistics
- 5.3 – Planning Database Management
- 5.4 – Database System Reporting
- 5.5 – Highway Performance Monitoring System
- 5.6 – Construction Program Development
- 5.7 – Accident Data Collection, Coding and Processing
- 5.8 – Pavement Management System

TOTAL HIGHWAY SYSTEMS AND PROGRAMMING BUDGET

Federal Aid	\$2,272,000	+	Match	\$568,000	=	\$2,840,000
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KDOT CONTACT: Alan Spicer, Assistant Chief of Transportation Planning
(785) 296-3470

OBJECTIVES

Develop, monitor and update the federal functional classification systems for all roads and the National Highway System.

METHODOLOGY

After release of decennial Census data, KDOT reviews and adjusts the Urban Area Boundaries and functional classification of all roads in Kansas by coordinating with city and county officials, MPOs and FHWA. After approval by the city, county or MPO the proposed recommendations are sent to FHWA for their approval.

With the passage of MAP-21, all principal arterial are considered to be on the National Highway System. KDOT will work in urban cities and MPOs to review the 487 miles of non-state roads that are principal arterials.

FY2014 PRODUCTS

- Updated functional classification network geometry for all 105 counties
- Updated functional classification network geometry and revised urban area boundaries for the 33 urban areas
- Updated functional classification network geometry and revised urban area boundaries for the 6 urbanized areas
- Updated National Highway System network geometry

HIGHWAY CLASSIFICATION AND SYSTEMS BUDGET

Federal Aid	\$96,000	+	Match	\$24,000	=	\$120,000
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KDOT CONTACT: Alan Spicer, Assistant Chief of Transportation Planning
(785) 296-3470

OBJECTIVES

- Maintain and report mileage statistics on all roads and streets. Data covered includes road types, surface widths, traffic volumes and administrative systems.
- Maintain and report data on motor vehicle registrations, motor fuel usage, highway-user tax revenue and licensed drivers.
- Maintain and report estimates of revenue and expenditures for highway construction, maintenance and operations for all units of government on Kansas.

METHODOLOGY

Summarize mileage and travel data from inventories, construction records, traffic count data, and external agency records.

FY2014 PRODUCTS

- Produce the annual certification of public road mileage.
- Produce the annual Mileage and Travel reports. These reports summarize mileage and travel information by county, functional classification and National Highway System.
- Produce the annual series of FHWA reports on motor vehicle registrations, motor fuel usage, highway-user tax revenues and license drivers.
- Produce the annual FHWA 534 reporting capital outlay finance.

HIGHWAY STATISTICS BUDGET

Federal Aid	\$40,000	+	Match	\$10,000	=	\$50,000
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KDOT CONTACT: Lanny Campbell, Geometric/Accident Data Manager
(785) 296-7406

OBJECTIVES

- Provide KDOT with a linear referencing system (LRS) by which information systems with various road-related business data can be uniformly cross-referenced
- 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
- 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
- Inventory all the geometric data needed for HPMS on/off the state highway system

METHODOLOGY

CANSYS is the KDOT repository for transportation feature locations. The road network is updated from plans or field surveys. As the central repository of geometrics and features, this database system can provide location references among the various types and forms of data.

FY2014 PRODUCTS

- CANSYS Upgrade 4.4 is scheduled to be completed December 31, 2013. This process includes testing, data validation, and application validation.
- Update the location referencing system for new state highway system and federal-aid system construction projects
- Provide quality control and assurance for attributing the geospatial data with LRS coding for all roads that receive state or federal aid

PLANNING DATABASE MANAGEMENT BUDGET

Federal Aid	\$440,000	+	Match	\$110,000	=	\$550,000
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KDOT CONTACT: Lanny Campbell, Geometric/Accident Data Manager
(785) 296-7406

OBJECTIVES

- Provide accurate, consistent and objective information for use in making cost-effective decisions regarding pavement rehabilitation and reconstruction
- Provide automated reports from CANSYS for other systems to obtain data quickly and accurately
- Provide information to decision makers about network-level transportation systems
- Maintain and update accident safety and network maintenance publications

METHODOLOGY

Maintain and manage data interconnects with other KDOT systems.

Create reports to answer inquiries about KDOT's transportation systems: the State Highway System, local agencies' roadways, and other transportation modes.

Coordinate with division personnel to obtain the most current information, prepare it in internet format, and post it to our site.

FY2014 PRODUCTS

- Provide highway data to consultants authoring studies for the department
- Prepare and release network asset 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.

DATABASE SYSTEM REPORTING BUDGET

Federal Aid	\$200,000	+	Match	\$50,000	=	\$250,000
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KDOT CONTACT: Elsit Mandal, HPMS/Non-State Road Systems Engineer
(785) 296-5130

OBJECTIVES

- Inventory a statistical sampling of Kansas' roadways.
- Process roadway data using HPMS software.
- Improve data availability by implementing analysis and reporting tools.
- Submit an annual HPMS report to the FHWA for further processing and production of national highway statistical reports and other special reports to Congress and the public.
- Add new documents, reports, and plans to the division's internet/intranet sites as they are published.

METHODOLOGY

Highway Performance Monitoring System (HPMS) requires an inventory of roadway features and an assessment of pavement conditions for a sampling of all Kansas' roadways. This data is then assembled into a report for the FHWA. Based on feedback from FHWA, changes in the data collection or reporting procedures may be initiated.

FY2014 PRODUCTS

- HPMS annual submittal
- Inventory of a sampling of the state's roadways.
- Updates to data collection software used for field collection.
- Quality control for data in the CANSYS application.

HIGHWAY PERFORMANCE MONITORING SYSTEM BUDGET

Federal Aid	\$96,000	+	Match	\$24,000	=	\$120,000
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KDOT CONTACT: Mark Taylor, Bureau Chief of Program and Project Management
(785) 296-2058

OBJECTIVES

Tracking progress in the various construction and funding programs to provide current status of agency infrastructure initiatives and financial condition. Publish the federally-mandated State Transportation Improvement Program (STIP), and status reports required under programs such as the American Recovery and Reinvestment Act (ARRA). Develop projects and monitor progress in the T-WORKS Program.

METHODOLOGY

- Monitor, review, and update FY 2014 T-Works construction projects (79 projects totaling \$707 million construction \$) to reflect changes in cost, project scope, schedule, rate of inflation, funding, and/or anticipated letting dates. Monitor the environmental effort, design, right-of-way acquisition, and utility relocation associated with identified FY 2015 and FY 2016 projects. Selection of FY 2015 T-WORKS projects based on Long-Range Plan policy recommendations and T-Works legislation.
- Continue refining business practices to institutionalize the series of T-LINK recommendations, such as: choosing transportation projects using engineering, regional priorities, and economic impact factors; implementing practical improvement approaches; creating regional transit approaches; and using a rolling program approach. Regional consultation and partnership efforts will be on-going.
- Continue staff effort for the extensive, mandated reporting on economic stimulus transportation infrastructure projects for ARRA and TIGER II & III rail grant projects.
- Continue training and the refinement of the WinCPMS project/fund/production/program management system to accommodate business practices, specific information requests, and new requirements.
- Implement projects management initiatives to ensure timely, cost-effective project lettings.
- Coordinate with FHWA on publication of annual STIP to comply with MAP-21 changes.

FY2014 PRODUCTS

- Publish FY15 construction projects and progress reports on current projects.
- Publish 2015-2018 STIP, including new segments to comply with MAP-21 changes.
- Publish 2014 ARRA status reports, documenting economic stimulus transportation infrastructure projects and TIGER II & III rail grant projects.

CONSTRUCTION PROGRAM DEVELOPMENT BUDGET

Federal Aid	\$680,000	+	Match	\$170,000	=	\$850,000
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KDOT CONTACT: Rex McCommon, Accident Manager/Analyst
(785) 296-5916

OBJECTIVES

- Inventory all data from the Kansas Motor Vehicle Accident Report
- Improve data availability by implementing analysis and reporting tools
- Maintain and update crash-related documents
- Provide accurate, consistent and objective information to decision makers about crash data

METHODOLOGY

All Kansas Motor Vehicle Accident Reports are delivered to KDOT, either electronically or in paper format. An electronic image of the report is produced and stored in our document management system. The data items contained within the reports are validated and stored in a relational database..

FY2014 PRODUCTS

- Ad hoc crash data reports
- Publish the annual Kansas Traffic Accident FACTS Book
- As-requested data sets

ACCIDENT DATA COLECTION BUDGET

Federal Aid	\$160,000	+	Match	\$40,000	=	\$200,000
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KDOT CONTACT: Rick Miller, Pavement Management Engineer
(785) 291-3842

OBJECTIVES

Assist highway engineers and managers in making consistent and cost-effective decisions that maximize benefits achieved from expenditures for preservation and rehabilitation of State Highway System roadway surfaces.

METHODOLOGY

In the summer of 2012, KDOT purchased a new Pavement Condition Data Collection System. The vehicle and field data collection system was delivered in December 2012. The data collection system includes two wheelpath profile, a lane-width, downward 3-D imaging and transverse profiling system, and two camera forward imaging system. Processing software and hardware was also delivered and implemented. The strategy in the purchase of this equipment and development of the software was to use current AASHTO and HPMS standards "exactly" as written. Thus, the software uses the images (including range images of the transverse profiles) to automatically detect rutting and cracking. Faulting is determined automatically from the profile data. International Roughness Index values are computed from the profile data as well.

This methodology is significantly different than previous methods in that it uses national standards instead of state specific criteria, the sample moves from 5% for distress to nearly 100% for distress, and the method is automated using computer processes instead of using trained (but subjective) raters. It also has the advantage of a single pass to collect both profile and distress data. Non-state HPMS locations will also be collected using this same equipment.

The pavement condition data is fed into the pavement management system (Enhanced PMS) for optimized recommendation of project locations and scopes to meet system performance requirements within budget and other constraints.

FY2014 PRODUCTS

This is accomplished through the yearly production of the Substantial Maintenance mileage allotments by District and the Candidate Project List, which serves as the basis for developing the yearly Kansas highway rehabilitation program, and providing pavement condition data - both present and historical - in several formats for use in evaluating alternative pavement preservation actions.

The annual condition survey of the State Highway System and non-state HPMS location pavement condition data will be collected.

Provide pavement performance measures to help make and explain decisions related to funding and project programming.

PAVEMENT MANAGEMENT SYSTEM BUDGET

Federal Aid	\$560,000	+	Match	\$140,000	=	\$700,000
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6.0 – METROPOLITAN PLANNING AND LAND USE COORDINATION

KDOT Contact: Michael Moriarty, State Transportation Planner
(785) 296-8864

MISSION

Support for the transportation activities of urban areas.

ITEMS IN THIS SECTION

There are three sub-items in this section:

- 6.1 – MPO Administration and Support
- 6.2 – Transportation Land-Use Planning Coordination
- 6.3 – Small Urban Area Support

TOTAL METROPOLITAN PLANNING AND LAND USE COORDINATION BUDGET

Federal Aid	\$400,000	+	Match	\$100,000	=	\$500,000
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KDOT CONTACT: Davonna Moore, Metropolitan Planning Manager
(785) 296-0346

OBJECTIVES

Facilitate the coordination and oversight of Metropolitan Planning Organization (MPO) transportation planning activities.

METHODOLOGY

Administer the Consolidated Planning Grant (CPG) to the MPO's that funds their metropolitan planning process.

Establish partnerships and oversight roles with each MPO through the committee participation, applying federal rules and legislation to day to day operations, and providing needed information and guidance to sustain the 3C (Continuous Comprehensive Cooperative) process by:

- Attending regularly scheduled MPO meetings;
- Participating in the development of MPO work products (i.e., LRTP, TIP, UPWP, public involvement plans, etc);
- Reviewing and commenting on MPO draft work products, and advocating on behalf of the metropolitan viewpoint within the KDOT decision-making process.
- Providing clear guidance based on federal and state rules.

Identify areas of concern that affect the daily operations and work with staff to develop and evaluate those solutions.

FY2014 PRODUCTS

Planning Certification and Reviews of the Kansas City and Lawrence MPO's.

Report on Consolidated Planning Grant (CPG) funds.

Update of the MPO Manual that outlines the roles and responsibilities of the MPO's and KDOT as it relates to the 3C process.

Comments on MPO-related products such as the MARC Creating Sustainable Places project, the KDOT 5-County Transportation Study Phase II; update Cooperative Agreements, new MPO TIPs and Unified Public Works Program (UPWP).

MPO ADMINISTRATION AND SUPPORT BUDGET

Federal Aid	\$280,000	+	Match	\$70,000	=	\$350,000
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KDOT CONTACT: David Gurss, Transportation and Land Use Planner
(785) 296-3267

OBJECTIVES

Coordinate statewide transportation planning with local land use planning, with particular emphasis on the Kansas City Region.

METHODOLOGY

- Assist communities in the KC metro region to promote the coordination of transportation and land use, to improve the quality of local plans and land development, such as in southwest Johnson County near the BNSF Intermodal facility.
- Adjust plans, programs, policies and spending priorities as appropriate to develop mutual understanding of land use and transportation issues.
- Collect city and county comprehensive plans and develop professional relationships with the planning and transportation-related staffs in rapidly growing cities and/or priority corridors.
- Share information about development activities, particularly for areas adjacent to major modification or system enhancement projects.
- Monitor proposed land development activities in the KC metro area and assist with KDOT response.

FY2014 PRODUCTS

- Implement of the K-7, US-56, and US-24/40 (LV County) corridor management plans.
- Completion and implementation of the SW Johnson County Area Plan.
- Completion and implementation of downtown masters plans for two Main Street cities in Kansas.

TRANSPORTATION – LAND USE PLANNING COORDINATION BUDGET

Federal Aid	\$80,000	+	Match	\$20,000	=	\$100,000
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KDOT CONTACT: David Schwartz, Models and Forecasting Manager
(785) 296-7441

OBJECTIVES

Provide support as-needed in the form of traffic forecasting and travel demand modeling for urban areas with a population under 50,000.

METHODOLOGY

Provide traffic forecasts to the Bureau of Design for projects located in small urban areas. Forecasts usually utilize a regression analysis based on available traffic count history.

Travel demand modeling may be required for a comprehensive plan update or another discretionary program such as a TIGER application or Kansas Main Street plan. In those cases, staff usually builds a model in-house and runs whatever scenarios are required by the local officials. Models are constructed using Census and American Community Survey data as well as commercially-produced business data.

Create micro-simulation models to evaluate the operational characteristics of roadways.

Review traffic analysis zones (TAZs) in non-metro areas as delineated for the Census' American Community Survey.

FY2014 PRODUCTS

- Produce traffic forecasts.
- Produce travel demand models.
- Apply for Break-in-Access on the Interstate Highway System.
- Break in access applications will be reviewed as needed.

SMALL URBAN AREA SUPPORT BUDGET

Federal Aid	\$40,000	+	Match	\$10,000	=	\$50,000
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7.0 – STATEWIDE TRANSPORTATION STUDIES

KDOT Contact: Dennis Slimmer, Bureau Chief of Transportation Planning
(208) 334-8217

MISSION

To provide efficient collection of valid statewide transportation data in support of other systems within the department. Collect, analyze, report, and retain statewide traffic and roadway data.

ITEMS IN THIS SECTION

There are six sub-items in this section:

- 7.1 – Long-Range Transportation Plan
- 7.2 – Rural Traffic Studies and Forecast
- 7.3 – State Rail and Intermodal Planning
- 7.4 – Corridor Studies
- 7.5 – Bicycle and Pedestrian Program
- 7.6 – Intelligent Transportation Systems

TOTAL STATEWIDE TRANSPORTATION STUDIES BUDGET

Federal Aid	\$704,000	+	Match	\$176,000	=	\$880,000
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KDOT CONTACT: Michael Moriarty, State Transportation Planner
(785) 296-8864

OBJECTIVES

Support statewide transportation planning through the Statewide Long Range Transportation Plan, T-LINK and TWORKS.

METHODOLOGY

Begin the process of developing the updated Long-Range Transportation Plan using the updated requirements of MAP-21, the goals established through T-LINK, and projects begun under TWORKS.

FY2014 PRODUCTS**LONG-RANGE TRANSPORTATION PLAN BUDGET**

Federal Aid	\$80,000	+	Match	\$20,000	=	\$100,000
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KDOT CONTACT: David Schwartz, Models and Forecasting Manager
(785) 296-7441

OBJECTIVES

Fulfill requests for traffic analysis, traffic forecasts, and special studies. Develop factors and assumptions for projecting future needs analysis.

METHODOLOGY

The majority of requests are for location or design related activities. To fulfill these requests, considerable effort is spent in gathering, tabulating, and analyzing data relating to traffic flow and travel patterns. Regression analysis of local traffic count history, along with a review of future land use, when available, are used to develop 20-year forecasts of traffic and axle loads. Capacity and/or level of service studies are performed using the 2010 Highway Capacity Manual.

FY2014 PRODUCTS

Traffic forecasts will be prepared along with any additional traffic information requested. Special traffic studies will also be conducted as requested.

HIGHWAY STATISTICS BUDGET

Federal Aid	\$40,000	+	Match	\$10,000	=	\$50,000
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KDOT CONTACT: John Maddox, Rail/Freight Manager
(785) 296-3228

OBJECTIVES

Provide a framework for short and long range decision making regarding multimodal freight and passenger rail trends and issues; disseminate relevant information to rail users and local governments faced with loss or change in freight rail service; administer the State Rail Service Improvement Fund (SRSIF) to assist short line railroads, port authorities, shippers and local units of government with rail infrastructure improvements; and administer any federal grants for short line or passenger rail infrastructure improvements.

METHODOLOGY

Collect and analyze detailed data about freight movements via truck and rail. This includes truck freight data from the KTRIPS system regarding permits issued by type, commodities hauled, routes traveled (by truck count and annual ton miles). Data collected from rail operators includes monthly carloadings, commodity types, and equipment (types of locomotives and types of rail cars; owned or leased), potential rail line abandonments and sales. This information supplements the data collected from other state DOTs, regional and national freight transportation organizations, local MPOs, shippers, state and federal agencies and other industry groups. This data is used to assess the impact of freight service on the transportation network, administer federal and state rail loan/grant programs, monitor the condition of various segments of the short line rail network, identify areas in need of the most improvement, and better integrate freight rail, motor carrier, intermodal freight and passenger rail issues into the planning process and rail policies.

Monitor federal legislation dealing with issues of short line railroad funding, passenger and commuter rail service, railroads in general, and motor carriers in order to evaluate the viability of continued rail operations.

Identify and address highway geometric issues as they pertain to the movement of OSOW loads

Participate in AASHTO SCORT, AASHTO SCOHT, MAASHTO, States for Passenger Rail, Midwest Interstate Rail Compact, and MAFC activities.

Implementing additional recommendations from the Kansas Statewide Freight Study and Commodity Flow Analysis.

FY2014 PRODUCTS

KDOT will submit applications, for eligible projects, for any federal grant programs that may be announced.

Annual FHWA motor carrier reports will be submitted on or before deadline.

The Trucking through Kansas handbook will be updated.

KDOT, along with its partners from KDOR, KHP and KCC, will work with ProMiles to implement the new web based, interactive routing and permitting system.

Refine the Freight Corridors of Significance map.

STATE RAIL AND INTERMODAL PLANNING BUDGET

Federal Aid	\$240,000	+	Match	\$60,000	=	\$300,000
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KDOT CONTACT: David Gurss, Highway Access Manager
(785) 296-3267

OBJECTIVES

Identify and coordinate the scope and needs of potential projects and policies, with regional or statewide significance, that promote safe and efficient traffic flow.

METHODOLOGY

Corridor studies are typically MIS-like studies between regional activity centers, along corridors or around growth areas within the state and may or may not include a metropolitan area. These investigations are conducted with significant public involvement and in cooperation with units of local government together with affected resource agencies and private entities. Results of these studies are used to help prioritize competing activities within a corridor or area to meet anticipated transportation demand.

FY2014 PRODUCTS

KDOT, in cooperation with the City of Ottawa, will update the City's existing K-68 Transportation Plan to a KDOT Corridor Management Plan. The K-68 corridor through Ottawa continues to see significant development and this trend is expected to continue. The end result of this planning process will be a rationale, consensus-based plan that will balance mobility with accessibility, and, meet the needs of the various corridor stakeholders, both public and private. Anticipated completion date is May of 2014.

KDOT, in cooperation with the City of Emporia, will complete a Corridor Management Plan for the Highway 50 corridor near the Kansas Turnpike. This area is experiencing significant industrial growth and transportation improvements are necessary to support increased traffic volumes. Emphasis will be placed on land use planning and transportation improvements and access management guidelines necessary to accommodate existing and projected traffic volumes in this growing area. Retrofits for existing deficiencies will also be identified and particular interest will be paid to preservation of existing highway facilities, including interchanges. Anticipated completion is May of 2014.

CORRIDOR STUDIES BUDGET

Federal Aid	\$40,000	+	Match	\$10,000	=	\$50,000
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KDOT CONTACT: Rebecca Pepper, Statewide Bicycle and Pedestrian Coordinator
(785) 296-8593

OBJECTIVES

Continue the bicycle and pedestrian program at the state level, including State initiatives and Federal requirements of the Moving Ahead for Progress in the 21st Century Act (MAP-21).

METHODOLOGY

- Community outreach presentations to community groups, interested citizen and professional groups;
- Active membership on the planning committee for the 6th annual Built Environment and the Outdoors Summit; updating, distributing, and implementing various planning documents such as the Kansas Byways Bicycle and Pedestrian Plan, and disseminating information to the public about bicycle and pedestrian transportation efforts at KDOT and in Kansas..
- Manage awards and oversee projects for the Safe Routes to School Program (SRTS). This was the 5th application round for this program. Opened the 6th SRTS application cycle and continued to manage the program by providing assistance and reimbursements to current grantees, promoting the program to interested applicants, and meeting with grantees to discuss the timely progression of their projects.
- Manage awards and oversee projects for the Transportation Enhancement program from candidate applications.
- Work with consultants and the Kansas Byway Committee to complete the creation of the State Byways Bicycle and Pedestrian Plan.
- Work with various KDOT staff and external agencies to help meet bicycle and pedestrian accommodation needs on the Kansas State Highway System.
- Meet with bicycle and pedestrian organizations to provide assistance, and work with various groups to help promote health and wellness.

FY2014 PRODUCTS

- Kansas Bicycle and Pedestrian Transportation Plan update. Topics within the updated plan include current conditions for bicycle and pedestrian transportation in Kansas, and the policies, goals, and strategies needed to adequately address these forms of transportation.
- Update the Bicycle and Pedestrian Transportation Plan and the Transportation Alternatives Program TAP web pages on the KDOT website.
- Update the Kansas Bicycle Map for years 2014-2015

BICYCLE AND PEDESTRIAN PROGRAM BUDGET

Federal Aid	\$64,000	+	Match	\$16,000	=	\$80,000
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KDOT CONTACT: Leslie Spencer Fowler, ITS Program Manager
(785) 296-5652

OBJECTIVES

Improve safety, traffic flow and environment by providing leadership and support for the development, standardization, deployment, and update of ITS and Advanced Traveler Information System (ATIS) programs and projects.

METHODOLOGY

Provide budgeting, contract administration, technology evaluation and oversight for planning and development of Traffic Management Centers (TMCs.) State TMCs include WICHway in Wichita, KC Scout in Kansas City in cooperation with Missouri DOT, and a virtual statewide TMC. On-going projects include planning the expansion of monitoring areas with additional vehicle detection, cameras and message signs, managing the fiberoptic communications system to promote integration of additional data feeds, coordination with traffic signal systems such as Operation Greenlight, and development of performance measures for TMC statewide operations.

Develop and evaluate state policies and programs to meet the goal of monitoring real-time traffic and travel conditions on major highways in Kansas, with the goal of sharing this information with the traveling public and other partners for the Federal Real-Time System Management Information Program.

Develop evaluation measures for the Motorist Assistance program administered by the Kansas Highway Patrol.

Support ITS project research. The ITS set-aside funds activities/projects such as traffic signal coordination, rural transit regionalization, and flood warning systems. Pooled fund studies provide implementable techniques. Participate in the SHRP2 program as a committee member in the Reliability track. KDOT just received a SHRP2 grant to work on designing business processes to implement strategies developed in L01 and L06. Once we have completed this development, we will promote it at other locations within KDOT.

Participate with KDOT's Metropolitan Planning groups, FHWA and other service groups to update regional ITS Architectures. The State of Kansas currently has six regional architectures completed. The Statewide ITS Architecture will be coordinated with all of the regional architectures.

Provide a clearinghouse in the agency for major ITS/ATIS activities to promote the fullest use of technologies such as smart work zones and road weather systems.

Develop and establish standards, specifications, special provisions, plans and design guidelines for ITS/ATIS and promote the use of systems engineering analysis in the selection of technologies and processes.

Provide planning/coordination input as a Planning Committee Member for the Conference that will be hosted by ITS Heartland.

Plan the implementation, evaluation criteria and budgeting for various traveler information products and systems including statewide and regional 511 systems, and rest area wifi.

FY2014 PRODUCTS

9 regional webinars and workshops to disseminate the results of Enterprise and TMC Pooled Fund Studies.

Update to the Statewide ITS Architecture plan.

Data and accuracy information plan for available for Real-Time System Management Information Program.

Update Operation Greenlight Strategic Plan.

Update FY14 application process and plan of ITS set-aside program.

INTELLIGENT TRANSPORTATION SYSTEMS BUDGET

Federal Aid	\$240,000	+	Match	\$60,000	=	\$300,000
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Part II: SPR RESEARCH

1.0 – RESEARCH WORK PROGRAM

KDOT Contact: Rodney Montney, Engineer of Research
(785) 291-3841

MISSION

The mission of the Bureau of Research is to support and encourage innovation throughout the Department by promoting research, development and implementation (RD&T) activities by working with the Districts, other Bureaus in KDOT and the Universities. Research evaluates problems as they arise during standard construction and maintenance field operations and provides timely responses. The Bureau serves as an information resource for agency management.

While in-house RD&T activities of the Bureau are primarily focused on highway construction and maintenance materials, products and procedures, the Bureau supports all functional areas through general administration of the K-TRAN Research Program and provides technical information to management.

A goal of the Bureau is to be service oriented and provide timely responses to the wide array of questions and requests.

ITEMS IN THIS SECTION

There are four sub-items in this section:

- 1.1 – Research and Development Administration
- 1.2 – Implementation of Research and Development Findings
- 1.3 - Technology Transfer
- 1.4 – Technology Transfer Training – Training Course Fees

TOTAL RESEARCH WORK PROGRAM BUDGET

Federal Aid	\$1,416,000	+	Match	\$354,000	=	\$1,770,000
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KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Provide general administrative control of SPR Research activities.

METHODOLOGY

Prepare of the annual work program and cost estimate, research problem statements, proposals, and work plans for proposed studies.

Attend administrative or technical meetings and schools or workshops associated with research, development, implementation, and technology transfer.

Prepare progress reports or other special reports associated with the research, development, implementation and technology transfer administration.

Fund salaries and expenses associated with administering and auditing contract research or cooperative research conducted by persons other than personnel of the research unit. Funds will also be used for attendee travel and related costs associated with conducting an in-state peer exchange meeting every three to five years.FALL2013

FY2014 PRODUCTS

Research Annual Reports provided to FHWA each April.

SP&R Work Program provided to FHWA each year.

Research Final Reports provided to FHWA when projects are completed.

KDOT Specifications provided to Bureau of Construction for publication and reviewed by FHWA.

Support research documentation and outreach.

Attend TRB Meetings in January and July of each year.

Attend RAC Meetings in January and July of each year.

Attend Industry meetings for preparations of KDOT Specifications.

RESEARCH AND DEVELOPMENT ADMINISTRATION BUDGET

Federal Aid	\$220,000	+	Match	\$55,000	=	\$275,000
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KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Bring the results of various research and development projects into operating practice.

METHODOLOGY

KDOT will partner with contractors, suppliers, producers, districts, other bureaus, and the universities to evaluate products and procedures and implement those that will be most beneficial to KDOT. The Bureau of Research will assist in the writing of specifications for the use of these products and procedures in KDOT projects.

IMPLEMENTATION OF RESEARCH AND DEVELOPMENT FINDINGS BUDGET

Federal Aid	\$784,000	+	Match	\$196,000	=	\$980,000
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A Listing of continuing studies follows.

CRACK REDUCTION STUDIES: Cliff Hobson / Brian Coree

Strata Sand Anti-Fracture Interlayer/Saw and Seal:

US-75 Osage Co. (Constructed 2000)

Reflective Crack Interlayer Evaluation:

- I-435 Johnson Co. (Constructed 2004)
- US-50 Harvey Co. (Constructed 2005)
- I-70 Sherman Co. (Constructed 2006)

Cold In-Place Recycling vs. Mill & Inlay Evaluation:

- K-23 Sheridan Co. (Constructed 2005)
- US-24 Osborne Co. (Constructed 2005)

Surface Recycling:

- K-9 Nemaha Co. (1-inch)(Constructed 2007)
- US-59 Jefferson Co. (2-inch)(Constructed 2007)

Hot In-Place Recycling with Nova Chip

US-75 Shawnee County (Constructed 2008)

NEW BITUMINOUS MIXES: Cliff Hobson / Brian Coree

Superpave Mixes:

- US-75 Osage Co. (Constructed 1998)
- US-281 Pratt Co. (Constructed 1998)
- K-254 Butler and Sedgwick Cos. (Constructed 1998)

Mixes with and without Anti-Strip Agent:

US-24 Mitchell Co. (Constructed 1999)
K-28 Jewell Co. (Constructed 1999)
K-96 Sedgwick and Reno Cos. (Constructed 1997)
Pomona State Park Roads Osage Co. (Constructed 1998)
K-27 Stanton Co. (Constructed 1998)
K-25 Rawlins Co. (Constructed 1998)
US-83 Logan Co. (Constructed 1999)

NovaChip Evaluation:

US-54 Woodson Co. (Constructed 2004)

Permeable Friction Course Evaluation:

US-50 Finney Co. (Constructed 2005)

Stone Matrix Asphalt Evaluation:

US-69 Crawford Co. (Constructed 2005)

Perpetual Pavement:

US-75 Brown Co. (Constructed 2005)

Evaluation of Lignin as an Antioxidant in Asphalt Binders and Bituminous Mixes:

Spray Paver Technology

US-36 Washington County (Constructed 2009)

LABORATORY EVALUATION OF NEW BITUMINOUS PAVEMENT MIXES AND EQUIPMENT: Brian Coree

Evaluation of Equipment, Bituminous Mixes and Procedures

TREATED BASE STUDIES: Cliff Hobson

Evaluation of Portland Cement Treated Base and Asphalt Treated Base Study

BRIDGE DECK PROTECTIVE SYSTEMS: David A. Meggers

Polymer Concrete-Two Coat Broom and Seed: David A. Meggers

I-470 WB ramp over I-70 in Topeka (Constructed 1999, repaired 2000)
K-96 in Hutchinson (Constructed 2000)
Viaduct in Hutchinson (Constructed 2003)
US-54 Butler Co. (Constructed 2003)
I-70 Dickinson Co. (Constructed 2003)
US-24 Clay Co. (Constructed 2003)

Cathodic Protection of Bridges: David A. Meggers

Active System: US-75 over 101st St., Shawnee Co. (Constructed 2000)

Passive System: I-470 over I-70, Shawnee Co. (Constructed 2002)

EXPERIMENTAL FEATURES FOR NEW BRIDGE DECKS:

Hycrete Concrete Anticorrosion Additive for Bridge Decks: Heather McLeod, Jennifer Distlehorst

K-99 Elk Co. (Constructed 2004)

Development and Implementation of Ternary Concrete Mixes: David A. Meggers

Previously Titled :Development and Implementation of High Performance Concrete:

Evaluation and Implementation of Fiber Reinforced Polymer (FRP) Materials for Use as Bridge Decks: David A. Meggers (Final Report FHWA-KS-7-11 will be published during the next year.) 4th report coming

Evaluation and Implementation of Fiber Reinforced Polymer (FRP) Materials for Use as Bridge Railing Attachment Systems : David A. Meggers

Evaluation and Implementation of Fiber Reinforced Polymer (FRP) Materials for Use as Temporary Bridges: David A. Meggers

Full Depth Ternary Mix (with 14-day cure): David A. Meggers

US-59 Franklin Co. (Constructed 2008)

Full Depth Optimized Mix (with 3# fibers and 14-day cure): David A. Meggers

US-59 Franklin Co. (Constructed 2008)

Lightweight Concrete Mixtures for Bridges: David A. Meggers

Big Blue River on Riley and Pottawatomie County Line (Constructed 2010)

PORTLAND CEMENT CONCRETE PAVEMENT STUDIES: Heather McLeod and Jennifer Distlehorst

Contaminated Crushed Limestone Coarse Aggregate in PCCP:

I-35, US-50 Lyon Co. NEPT KS 9601 (Constructed 1993, 1994)

High Performance Concrete Pavement (HPCP) Two-lift Construction (initially funded as DTFH 71-96TE30-KS-22):

K-96, Reno Co. (Constructed 1997)

Ternary Mix PCCP:

US-24/K-7, Wyandotte County (Constructed 2008)

10 Year Evaluation of the AVA Specification:

The first 3 years of projects with AVA test results will be evaluated for performance. Hardened Air samples will also be taken to compare to the AVA results.

Resipod:

Working to correlate the use of the Resipod to determine surface resistivity of concrete and comparing those results to current KDOT procedures of Rapid Chloride Testing and the Boil Test.

ACTIVITIES:

Analysis of Aggregates for AC and PCC Pavement: Randy Billinger

Repair of Corroded Corrugated Metal Pipe Culverts: David A. Meggers

Evaluation of Metal, PCC and Plastic Pipe Culverts: David A. Meggers

Monitor Progress on University (K-TRAN and other) Research Projects and serve as Technical Advisory Committee Members on Transportation Pooled Fund Projects: Randy Billinger, David A. Meggers, W. H. Parcels, Jr., Heather McLeod, Cliff Hobson, Brian Coree, and Jennifer Distlehorst

Coordination of Strategic Highway Research Program (SHRP) Long Term Pavement Performance (LTPP) Activities: W. H. Parcels, Jr.

Textural and Mineralogical Characterization of Kansas Limestone Aggregates in Relation to Physical Test Results: Randy Billinger and Ralph Pollock

Special Investigations and Studies of PCC and AC Pavements and Materials: Heather McLeod, David A. Meggers, Randy Billinger, W. H. Parcels, Jr., Cliff Hobson, Andrew Jenkins, Brian Coree, and Jennifer Distlehorst

Noise Studies: David A. Meggers and W. H. Parcels, Jr.

I-135 Canal Route Bridges, Wichita, Sedgwick Co. (Polymer Concrete Overlay, Constructed 2007, 2008)

I-70, Saline Co. (Exposed aggregate/new generation milled surface PCCP, two-lift construction, Constructed 2008)

Advanced Technology Research: Cliff Hobson

Magnetic Tomography – Assessing Tie Bar and Dowel Bar Placement Accuracy
Driver Notification of Delay during Pilot Car Operations

KDOT CONTACT: Susan Barker, Technology Transfer Engineer
(785) 291-3847

OBJECTIVES

Identify research of specific interest to KDOT and coordinate dissemination of research results to researchers and implementers.

METHODOLOGY

Fund the operation of the KDOT Library.

Edit technical reports for publication.

Assist in the coordination of research efforts, review publication to identify areas of specific interest to KDOT.

Develop implementation plans to transfer technology advances into the field and/or design with internal and external partners.

Serve as a liaison to Midwest Transportation Knowledge Network, University of Kansas Transportation Center; Monitor the LTAP program, etc.

FY2014 PRODUCTS

- Offer at least twenty webinars to KDOT staff
- Publish and Implement KDOT research reports and findings
- Continue to provide a valuable research Library to KDOT staff and our local partners, catalog new acquisitions and notify respective staff on new research available.

TECHNOLOGY TRANSFER BUDGET

Federal Aid	\$280,000	+	Match	\$70,000	=	\$350,000
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KDOT CONTACT: Susan Barker, Technology Transfer Engineer
(785) 291-3847

OBJECTIVES

Provide training courses that lead to the adoption of new technologies and products, and keep personnel current on methodologies and design procedures.

METHODOLOGY

- Offer at least four NHI (or similar) classes in Kansas
- Fund the KDOT's Field Personnel's Certified Inspection and Testing Training (CIT2)
- Provide funding to send selected KDOT individuals to NHI courses offered in other states-these would be courses that only a few individuals from KDOT need to attend
- Provide KDOT's Certified Inspection and Testing Training

TECHNOLOGY TRANSFER TRAINING BUDGET

Federal Aid	\$132,000	+	Match	\$33,000	=	\$165,000
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BUDGET	Training Course Fees NHI (RE-0265)	\$95,000
	Training Course Fees CIT2 (RE-0639)	\$40,000
	Travel Expenses to attend courses (RE-0265)	\$30,000

KDOT Contact: Susan Barker, Technology Transfer Engineer
(785) 291-3847

MISSION

Provide Local authorities access to training and information, workforce development services; resources to enhance safety and security; solutions to environmental, congestion, capacity and other issues; technical publications; and training videos and materials.

METHODOLOGY

Provide technical hands-on information as it pertains to roadway/ bridge design, construction and materials topics and state-of-the art/practice.

Assist with information and training as it pertains to program implementation, administration and oversight/stewardship matters. KDOT provides the LTAP Work Plan annually to FHWA for acceptance.

Funding for this Program comes from Federal Aid SPR (\$140,000), Federal Aid LTAP Funding (\$140,000) and the local match is provided by Kansas University whom is contracted by KDOT to provide these services.

LOCAL TRANSPORTATION ASSISTANCE PROGRAM (LTAP) BUDGET

Federal Aid	\$140,000	+	Match	\$0	=	\$140,000
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3.0 – POOL FUND STUDIES

KDOT Contact: Susan Barker, Technology Transfer Engineer
(785) 291-3847

MISSION

Support national research and development addressing KDOT's strategic goals and initiatives, and offer practical solutions for problems facing the Kansas DOT.

METHODOLOGY

When significant or widespread interest is shown in solving transportation-related problems, research, planning, and technology transfer activities may be jointly funded by several federal, state, regional, and local transportation agencies, academic institutions, foundations, or private firms as a pooled fund study. Studies of this nature often extend over many years, the budget includes on-going studies as well as reserved funds to participate as new studies are initiated.

POOL FUND STUDIES BUDGET

Federal Aid	\$700,000	+	Match	\$0	=	\$700,000
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FY 2014 (As of April 1, 2013)

FHWA NO.	KDOT NO.	TITLE	FFY 2014 FUNDS PLEDGED
SPR-2(207)	RE-0228-01	Transportation Management Center (Leslie Fowler)	\$ 25,000
TPF-5(021)	RE-0163-01	North Central States Superpave Center Operation and Support (Brian Coree)	\$ 25,000
TPF-5(065)	RE-0334-01	Traffic Control Device Consortium (Steven Buckley)	\$ 15,000
TPF-5(081)	RE-0360-01	Smart Work Zone Deployment Initiative (Kristina Pyle)	\$ 50,000
TPF-5(156)	RE-0458-01	Mississippi Valley Freight Coalition Pooled Fund (John Maddox)	\$ 25,000
TPF-5(193)	RE-0516-01	Crash Testing of Highway Safety Appurtenances and Obstacles (Scott King)	\$ 65,500
TPF-5(209)	RE-0619-01	TCCC – Transportation Curriculum Coordination Council	\$ 25,000
TPF-5(218)	RE-0584-01	Clear Roads Winter Highway Operations (Troy Witworth)	\$ 25,000
TPF-5(231)	RE-0562-01	Enterprise (ITS) (Leslie Fowler)	\$ 50,000
TPF-5(237)	RE-0566-01	Transportation Library Connectivity and Development (Marie Manthe)	\$ 10,000
TPF-5(255)	RE-0588-01	Highway Safety Manual Implementation (Howard Lubliner)	\$ 20,000
TPF-5(269)	RE-0607-01	Improved Design Procedure for Unbonded concrete Overlays (Greg Schieber)	\$ 20,000
TPF-5(278)	RE-0617-01	KS--Real-Time Quality Control Monitoring and Characterization of Aggregate Materials in Highway Construction using Laser Induced Breakdown Spectroscopy	\$75,000
TPF-5(281)	RE-0620-01	IN-Center for the aging Infrastructure: Steel Bridge Research, Inspection, Training, and Education Engineering Center SBRITE	\$ 50,000
1336		WA-Development of an SPS-2 Pavement Preservation Experiment	\$ 20,000

2014 Research Work Program

1338		Improving Specification to Resist Frost Damage in Modern concrete Mixtures	\$ 17,500
1324		Specifications and Tolerances for PCP Tie Bar Placement	\$ 25,000
TOTAL			\$543,000

The Following Are Active or Recently Completed With No Funds Committed by KDOT for the Current Fiscal Year:

SPR-3(020)	RE-0215-01	Enterprise (ITS)
TPF-5(048)	RE-0328-01	Midwest States Accelerated Testing Program (Kansas was Lead State.)
TPF-5(054)	RE-0426-01	Development of Maintenance Decision Support System (Ron Hall)
TPF-5(063)	RE-0333-01	Smoothness Criteria for LWP and Van Profilometers
TPF-5(068)	RE-0354-01	Development and Maintenance of LFRD Specifications
TPF-5(071)	RE-0332-01	Evaluation FRP Temporary and Permanent Structures (Kansas is Lead State.)(Dave Meggers)
TPF-5(079)	RE-0339-01	Implementation of the 2002 AASHTO Design Guide for Pavement Structures(Kansas is Lead State.) (Greg Schieber)
TPF-5(090)	RE-0386-01	Pavement Tools Consortium
TPF-5(098)	RE-0394-01	Self Consolidating Concrete – Applications for Slip Form Paving
TPF-5(105)	RE-0396-01	Transportation Library Connectivity
TPF-5(106)	RE-0425-01	Guidelines for Designing Bridge Piers and Abutments for Vehicle Collisions
TPF-5(117)	RE-0424-01	Development of Performance Properties of Ternary Mixes (Dave Meggers)
TPF-5(127)	RE-0448-01	Consortium of Accelerated Pavement Testing (CAPT) & Technical Exchange Partnerships
TPF-5(128)	RE-0449-01	Accelerated Implementation of Intelligent Compaction Technology for Embankment Subgrade Soils, Aggregate Base and Asphalt Pavement Materials
TPF-5(159)	RE-0480-01	Technology Transfer Concrete Consortium
TPF-5(161)	RE-0475-01	Transportation Security and Emergency Preparedness Professional Capacity Building
TPF-5(174)	RE-0483-01	Construction of Crack Free Bridge Decks-Phase II (Kansas is lead state.)
TPF-5(178)	RE-0505-01	Implementation of Asphalt Mixture Performance Tests for Superpave Validation (Greg Schieber)
TPF-5(179)	RE-0507-01	Evaluation of Test Methods for Permeability (Transport) and Development of Performance Guidelines for Durability
TPF-5(182)	RE-0515-01	FHWA-Safety Analyst Support (Steven Buckley)
TPF-5(187)	RE-0509-01	Updating US Precipitation Frequency Estimates for the Midwestern Region (Jim Richardson)
TPF-5(188)	RE-0517-01	Evaluation of Fiber Reinforced Composite and Stainless Steel Dowel Bars
TPF-5(189)	RE-0508-01	Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue (John Jones) (KS is lead state.)
TPF-5(194)	RE-0518-01	Policy on Highway Drainage and Drainage Design Manual (Jim Richardson)
TPF-5(205)	RE-0538-01	Implementation of Concrete Pavement Mixture Design (MDA)
TPF-5(207)	RE-0539-01	Novice Teen Drivers: Million Mile Study
TPF-5(210)	RE-0561-01	In Situ Scour Testing Device
TPF-5(232)	RE-0563-01	Study of the Impacts of Implements of Husbandry on Bridges

TPF-5(271)	RE-0611-10	KS--Reorganization of Section 5, Concrete Structures, of the AASHTO LRFD Bridge Design Specifications
TPF-5(272)	RE-0615-01	Utah-Evaluation of Lateral Pile Resistance Near MSE Walls at a Dedicated Site

4.0 – NATIONAL RESEARCH PROGRAMS

KDOT Contact: Rodney Montney, Engineer of Research
(785) 291-3841

MISSION

Provide funds to national research programs as required by Federal Highway Administration

ITEMS IN THIS SECTION

- 4.1 - National Cooperative Highway Research Program (NCHRP)
- 4.2 - Transportation Research Board (TRB) Core Program
- 4.3 - Strategic Highway Research Program 2 (SHRP 2)

TOTAL OTHER STUDIES PROGRAM BUDGET

Federal Aid	\$580,000	+	Match	\$0	=	\$580,000
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4.1 – NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) RE-0257-14

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Provide Kansas' annual assessment to NCHRP to fund the National research program

METHODOLOGY

Continue 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.

FY2014 PRODUCTS

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) BUDGET

Federal Aid	\$400,000	+	Match	\$0	=	\$400,000
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KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Support the mission of TRB to promote innovation and progress in transportation through research.

METHODOLOGY

Help TRB to facilitate the sharing of information on transportation practice and policy by researchers and practitioners; stimulate research and offer research management services that promote technical excellence; provide expert advice on transportation policy and programs; and disseminate research results broadly and encourage their implementation.

- Conduct and promote knowledge creation and dissemination, especially on innovative practices and technologies in the transportation sector.
- Promote collaboration on transportation research, education, and technology transfer at international, national, regional, state, and local levels; across public and private sectors; and with transportation providers, customers, and other stakeholders.
- Contribute to the professional development of individuals currently working in transportation and to the education and enhanced diversity of the pool of individuals who will work in the field in the future.
- Conduct and promote communications efforts to enhance the awareness of transportation research and its contributions to innovation and progress in transportation.
- Contribute to the public's understanding of transportation and its significance to the nation.

TRANSPORTATION RESEARCH BOARD (TRB) BUDGET

Federal Aid	\$105,000	+	Match	\$0	=	\$105,000
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4.3 – STRATEGIC HIGHWAY RESEARCH PROGRAM 2 (SHRP 2)

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Provide 4% of the State Planning and Research (SPR) program funds to the Federal Highway Administration to fund the national Strategic Highway Research Program 2 (SHARP2).

METHODOLOGY

In Kansas, 75% of the SHARP2 funding will come from SPR Part I (Planning) funds and 25% will come from SPR Part II (Research) funds. KDOT will transfer the 4% contribution for SHRP2 implementation back to FHWA. No State match will be used on this project.

FY2014 PRODUCTS

STRATEGIC HIGHWAY RESEARCH PROGRAM 2 BUDGET

Federal Aid	\$75,000	+	Match	\$0	=	\$75,000
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**PART III:
PLANNING
NON-SPR
ACTIVITIES**

1.0 – GENERAL NON-PARTICIPATING PLANNING ACTIVITIES – STATE FUNDED

KDOT CONTACT: Chris Herrick, Director of Planning and Development
(785) 296-3090

MISSION

Provide for the general support for the organization, leadership and administration of the Division of Planning and Development.

ITEMS IN THIS SECTION

There are three sub-items in this section:

- 1.1 – Division of Planning and Development Office Administration
- 1.2 – Transportation Planning Administration
- 1.3 – Program and Project Management Administration

TOTAL GENERAL NON-PARTICIPATING PLANNING ACTIVITIES BUDGET

Federal Aid	\$0	State	\$1,200,000	=	\$1,200,000
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1.1 – DIVISION OF PLANNING AND DEVELOPMENT OFFICE ADMIN.**P-0473-14**

KDOT CONTACT: Chris Herrick, Director of Planning and Development
(785) 296-3865

1.2 – BUREAU OF TRANSPORTATION PLANNING ADMINISTRATION**P-0245-14**

KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

1.3 – BUREAU OF PROGRAM AND PROJECT MANAGEMENT ADMIN.**P-0474-14**

KDOT CONTACT: Mark Taylor, Bureau Chief of Program and Project Management
(785) 296-2058

OBJECTIVES

Provide for the planning, organizing, training, supervision, administrative support and office work necessary for the general operations of the Division of Planning and Development.

METHODOLOGY

Selected highway planning activities and expenditures are not eligible for funding with SPR funds. The general administration activities related to the general operation of the Division. Items included are general communication services, general office supplies, personnel work and organizational training and conference.

DIVISION OF PLANNING AND DEVELOPMENT OFFICE ADMINISTRATION BUDGET

Federal Aid	\$0	+	State	\$280,000	=	\$280,000
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BUREAU OF TRANSPORTATION PLANNING ADMINISTRATION BUDGET

Federal Aid	\$0	+	State	\$900,000	=	\$900,000
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BUREAU OF PROGRAM AND PROJECT MANAGEMENT ADMINISTRATION BUDGET

Federal Aid	\$0	+	State	\$20,000	=	\$20,000
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2.0 – OTHER PLANNING ACTIVITIES FUNDED WITH STATE FUNDS

KDOT CONTACT: Dennis Slimmer, Bureau Chief of Transportation Planning
(785) 296-3865

MISSION

Support processes to implement programs of State importance.

ITEMS IN THIS SECTION

There are two sub-items in this section:

2.1 – Official State Map

2.2 – Accident Data Keying

TOTAL ADMINISTRATION AND CONTROL BUDGET

Federal Aid	\$0	+	State	\$162,000	=	\$162,000
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KDOT CONTACT: Kyle Gonterwitz, GIS Manager
(785) 296-4899

OBJECTIVES

Provide reliable, accurate, legible and reasonably current general state and bicycle transportation map.

METHODOLOGY

Prepare and print the statewide maps for distribution.

FY2014 PRODUCTS

Print and distribute the Kansas Bicycle Map. Cost of the printing is state funded.
(The 2013-14 Official State Map was printed using FY13 state funds)

OFFICIAL STATE MAP BUDGET

Federal Aid	\$0	+	State	\$30,000	=	\$30,000
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KDOT CONTACT: Rex McCommon, Accident Data Manager
(785) 296-5169

OBJECTIVES

Process motor vehicle accident forms to support accident data analysis and reporting.

METHODOLOGY

Under an agreement with the Kansas Department of Correction (KDOC), the inmates at KDOC receive about 65,000 accident reports annually for processing. For accident reports submitted on paper forms, key information from the redacted form is used to create an electronic record for analysis and reporting. The inmates also review and provide a geo-reference location for each accident.

FY2014 PRODUCTS

Electronic accident records with locations.

ACCIDENT DATA KEYING BUDGET

Federal Aid	\$0	+	State	\$132,000	=	\$132,000
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**PART IV:
RESEARCH
NON-SPR
ACTIVITIES**

1.0 – STATE FUNDS – UNIVERSITY RESEARCH

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

MISSION

To support transportation research, development and technology transfer activities (RD&T) in State Universities.

ITEMS IN THIS SECTION

There are two sub-items in this section:

1.1 – K-TRAN Program

1.2 – Undesignated University Research Program

TOTAL ADMINISTRATION AND CONTROL BUDGET

Federal Aid	\$0	+	State	\$880,000	=	\$880,000
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1.1 – KTRAN PROGRAM

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

To address transportation needs of the State utilizing academic and research resources from Kansas State University and the University of Kansas in an on-going cooperative research program called the Kansas Transportation Research and New-Developments (K-TRAN) Research Program.

METHODOLOGY

The projects included in the research program are jointly developed by transportation professionals in KDOT and the universities.

Below is the approximate timeline for K-TRAN project selection:

Solicit Research Ideas from KDOT staff	June 15
Deadline for Ideas	August 15
Research Program Council Review	September 1
Request for K-TRAN Research Project Statements	November 1
Deadline for Research Project Statements	December 1
Categorize and Assign RPS to Area Panels	December 15
Area Panel Evaluations Completed	February 1
Research Technical Committee Formulates Recommended Research Program	February 15
Research Program Council Approves K-TRAN Program and Budget	March 1
Detailed Proposals and Agreements Prepared and Signed for Projects Beginning Prior to July 1	May 15

FY2014 PRODUCTS

The following is the Approved FY 2014 K-TRAN Program.

K-TRAN Project No.	Estimated Cost	Study Duration (Months)	Title
KSU 14-01	\$69,000	24	Gravel Road Paving Guidelines
KSU 14-02	\$68,000	24	Best Practices for Concrete Pumping
KSU 14-03	\$65,000	18	Calibrating the HSM Rural Multi-lane Model for Kansas Highways
KSU 14-04	\$61,000	24	Ultimate Shear Capacity of Circular Columns using the Modified Compression Field Theory
KSU 14-05	\$78,000	24	Friction Management on KDOT Highways
KSU 14-06	\$68,000	18	Durable Recycled Superpave Mixes in Kansas
KU 14-01	\$54,000	18	Developing a Bridge Scour Warning System, Phase I
KU 14-02	\$57,000	15	Testing of Soil Saver Wall Alternatives
KU 14-03	\$44,000	24	Leveraging multiple teen-driver safety programs to reduce distracted driving, increase seat belt use and improve safety culture
KU 14-04	\$82,000	24	Establishing a Design Procedure for Buried Steel-Reinforced HDPE Plastic Pipes - A Field Study (Phase II)
KU 14-05	\$35,000	17	Freight Stakeholder Input on Cost-Based Overweight Fees
KU 14-06	\$60,000	12	Develop Performance Specifications for Portable Rumble Strips
KU 14-07	\$58,000	18	Pullout Resistance of MSE Wall Strip Reinforcement in Uniform Aggregate

KTRAN PROGRAM BUDGET

Federal Aid	\$0	+	State	\$800,000	=	\$800,000
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1.2 – UNDESIGNATED UNIVERSITY RESEARCH PROGRAM

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

OBJECTIVES

Provide funding and management to allow for critical or complex agency problems to be quickly assigned to appropriate university staff.

METHODOLOGY

When problems arise throughout the year, KDOT seeks proposals from the Universities for quick assessment and solution of complex problems. Proposals are then forwarded to the State Transportation Engineer for approval.

FY2014 PRODUCTS

UNDESIGNATED UNIVERSITY RESEARCH PROGRAM BUDGET

Federal Aid	\$0	+	State	\$80,000	=	\$80,000
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2.0 – STATE FUNDS – INTERNAL RESEARCH PROGRAM

KDOT CONTACT: Rodney Montney, Engineer of Research
(785) 291-3841

MISSION

Provide administrative, budgetary, clerical, computer, training, and other support activities related to the general operation of the bureau or unit and not specifically related to the administration or accomplishments of the annual SPR Work Program. Included are research laboratory operation expenses such as inventory, telephone, freight, equipment repair, new equipment, supplies, repair or replacement parts, computer charges, field expenses, contractual services, etc. that spread over all research projects and are not fully chargeable to any particular one.

TOTAL ADMINISTRATION AND CONTROL BUDGET

Federal Aid	\$0	+	State	\$312,000	=	\$312,000
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