

**STATE OF OKLAHOMA  
DEPARTMENT OF TRANSPORTATION**

**PLANNING & RESEARCH DIVISION**



**FY2008**

**State Planning and Research (SPR) Program**

Part 1 - Planning

Part 2 - Research

In Cooperation with the  
United States Department of Transportation  
Federal Highway Administration

**October 1, 2007**



## OKLAHOMA DEPARTMENT OF TRANSPORTATION

200 N. E. 21st Street

Oklahoma City, OK 73105-3204

---

September 11, 2007

Mr. Gary Corino  
Division Administrator  
Federal Highway Administration  
300 N. Meridian  
Oklahoma City, Oklahoma 73108

Attention: Elizabeth Romero

Dear Mr. Corino:

Enclosed for your review and approval is the Federal Fiscal Year 2008 State Planning and Research (SPR) Program, Part 1 - Planning, SPRY-0010(043)PL, and Part 2 - Research, SPRY-0010(044)RS. Please contact me at 521-2175 should you have any questions or need further information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jay B. Adams".

Jay B. Adams  
Acting Planning & Research Division Manager

JBA/ss

Enclosure

J Fuller  
D Streb  
S Adkins



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Oklahoma Division**

300 N. Meridian Avenue, Suite 105-S  
Oklahoma City, OK 73107-6560

October 1, 2007

**RECEIVED**

**OCT 02 2007**

In Reply Refer To:  
HRW-OK

**DIRECTOR'S OFFICE**

Mr. Gary M. Ridley, Director  
Oklahoma Department of Transportation  
Oklahoma City, OK

Dear Mr. Ridley:

The FHWA has reviewed the Fiscal Year 2008 State Planning and Research (SPR) Part I (Planning) and Part II (Research) work program and budget for the Oklahoma Department of Transportation (ODOT) as submitted by Mr. Jay B. Adams, Acting Planning Division Manager, on September 11, 2007. Part I (Planning) also includes the metropolitan planning (PL) program funds previously approved by the FHWA as part of the FY 2008 Unified Planning Work Programs (UPWP) and budget for Tulsa, Oklahoma City, and Lawton MPOs, as well as the Fort Smith, Arkansas, bi-state planning area.

According to 23 CFR 420.111, the SPR program is expected to outline the transportation planning and research activities to be undertaken in FY 2008, including a description of tasks to be accomplished and the costs associated with each task. The outline of ODOT's FY 2008 SPR program includes a "purpose and scope" statement, a list of the FY 2007 accomplishments, and the activities proposed in FY 2008. The work program also includes a summary of FY 2007 expenditures and the estimate of costs for FY 2008 activities.

We commend ODOT for including funding in the FY 2008 SPR program for air quality planning and the new planning emphasis areas of safety in transportation planning and visualization in transportation. Based on our review and our meeting with Ms. Dawn Sullivan, Mr. Jay Adams, and Ms. Siv Sundaram, we have determined that the FY 2008 SPR program complies with 23 CFR 420 subpart A and B, and adequately addresses the planning and research needs in Oklahoma.

We hereby approve the ODOT FY 2008 SPR program and budget as submitted. We thank you for your efforts in preparing the planning and research work program. Please contact Mr. Isaac N. Akem, Community Planner, at 405-605-6040 extension 324 if you have any questions or comments regarding our approval of the FY 2008 SPR work program and budget.

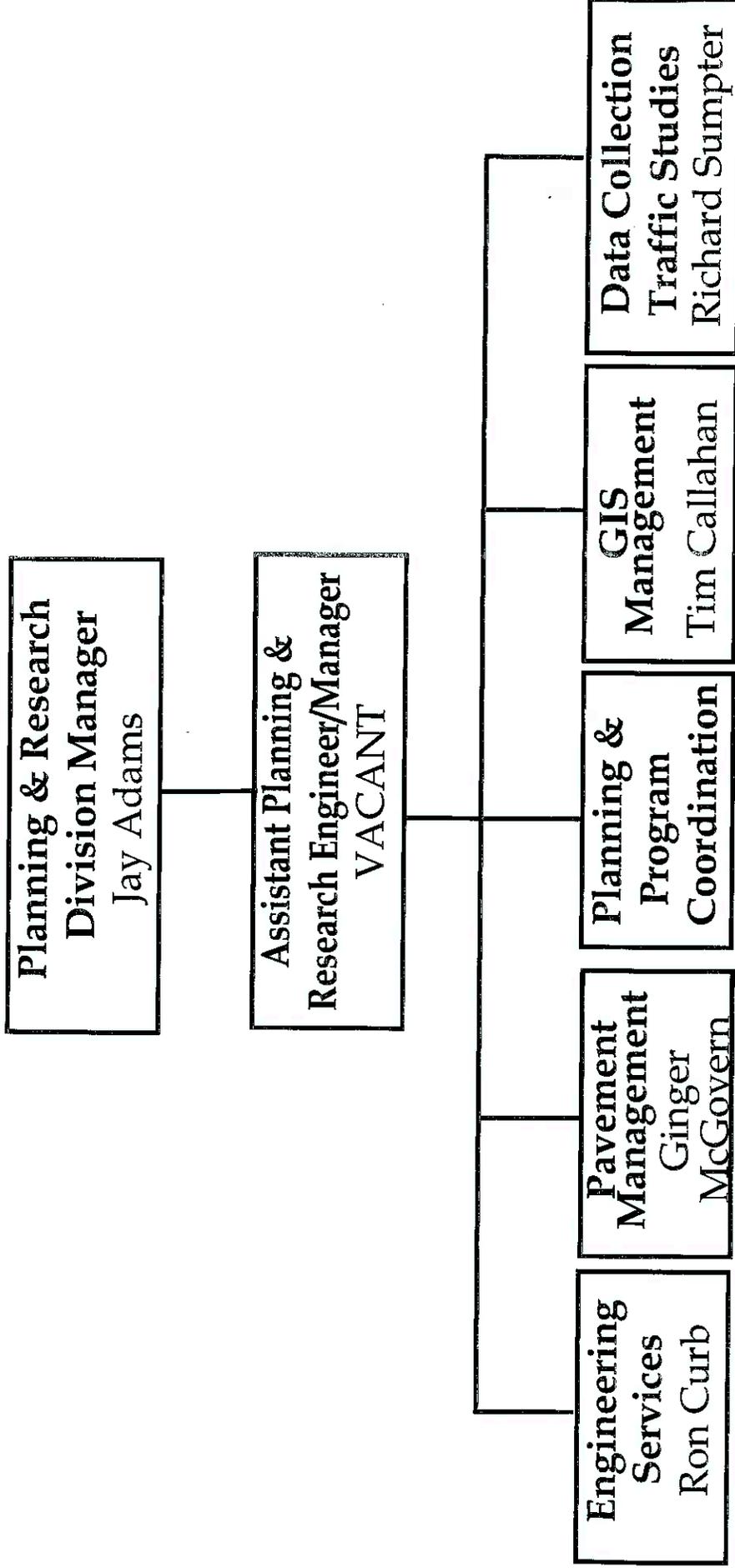
Sincerely yours,

Gary Corino  
Division Administrator

**MOVING THE  
AMERICAN  
ECONOMY**



# Planning & Research Division



OCTOBER 1, 2007

**DEPARTMENT OF TRANSPORTATION**  
**Financial Summary Sheet**

**Work Program Number SPRY 0010(43) PL, J/P 01946(49)**  
**Fiscal Year 2008**

**Program Period October 1, 2007 through September 30, 2008**

**A. Total Estimated Costs**

SPR-Part 1 Planning	\$7,452,200.00
Metropolitan Planning (PL)	<u>2,438,978.81</u>

**TOTAL ESTIMATED COSTS** \$9,891,178.81

**B. Available Federal Funds**

<u>Source</u>	<u>SPR Unobligated Balance</u>	<u>PL Unobligated Balance</u>
<b>TOTAL AVAILABLE FEDERAL FUNDS</b>	\$9,089,935.03	\$4,927,083.87

**C. Proposed Financing**

<u>Type</u>	<u>Federal</u>	<u>Ratio</u>	<u>State</u>	<u>Local</u>	<u>Total</u>
SPR	\$7,452,200.00	80%	\$0.00	\$0.00	\$7,452,200.00
PL	\$2,438,978.81	80%	\$0.00	\$240,000.00	<u>\$2,678,978.81</u>
<b>TOTAL PROPOSED FINANCING</b>					<u><u>\$10,131,178.81</u></u>

**Work Program Number SPRY 0010(44) RS, J/P 01946(50)**  
**Fiscal Year 2008**

**A. Total Estimated Costs**

SPR-Part 2 Research	\$2,210,000.00
---------------------	----------------

**B. Available Federal Funds**

<u>Source</u>	<u>SPR Unobligated Balance</u>
<b>TOTAL AVAILABLE FEDERAL FUNDS</b>	\$2,247,008.30

**C. Proposed Financing**

<u>Type</u>	<u>Federal</u>	<u>Ratio</u>	<u>State</u>	<u>Local</u>	<u>Total</u>
SPR	\$2,210,000.00	80%	\$0.00	\$0.00	\$2,210,000.80
Other FHWA	\$0.00				
<b>TOTAL PROPOSED FINANCING</b>					<u><u>\$2,210,000.80</u></u>

**TOTAL PART 1 AND PART 2** \$9,662,200.00

# Table of Contents

## PART 1

1101	Continuing Inventory Data Studies.....	6
1102	Highway Performance Monitoring System .....	7
1103	Geographical Information Management System for Transportation.....	9
1201	County, City and other Planning Maps.....	11
1301	Coverage Count Program.....	13
1302	Permanent Traffic Count Program.....	14
1304	Purchase of Traffic Counting Equipment .....	15
1305	Vehicle Classification Counting Program .....	16
1306	Weigh- in- Motion Program.....	18
1308	Traffic Monitoring System .....	19
1309	Traffic Analysis and Projections.....	20
1310	Skid Studies Program.....	21
1403	ODOT Manual Update.....	22
1404	Safety Planning .....	23
1440	Local Technical Assistance Program.....	24
1510	Justification Studies .....	25
1511	Project Reconnaissance Information.....	26
1601	Federal-aid Systems Coordination.....	27
1603	Highway Needs Study.....	28
1604	Pavement Management Systems.....	29
1700	General Urban Transportation Planning Activities.....	30
1701	Oklahoma City Area Regional Transportation Study (OCARTS) .....	31
1702	Tulsa Metropolitan Area Transportation Study .....	33
1703	Lawton Metropolitan Planning Organization (LMPO).....	35
1709	Ft. Smith Transportation Study.....	36
1719	Statewide Transportation Improvement Program (STIP).....	37
1901	Oklahoma Pollutant Discharge Elimination System (OPDES) Municipal Separate Storm Sewer System (MS 4) Permits .....	39
1902	Statewide Long Range Transportation.....	40
1903	Intelligent Transportation Systems Planning.....	41
1904	Air Quality Transportation Planning .....	42
1910	Visualization Techniques.....	43
1979	Environmental Studies (NEPA Compliance).....	44
1980	Environmental Studies (Environmental Affairs and Specialist Studies) .....	45

## PART 2

2100	Transportation Research Board.....	49
2102	Research Library Services .....	50
2115	LTPP/SHRP/SHRP II Long Term Pavement Performance .....	51
2120	Technical Assistance - Special Studies.....	52
2130	General Research Activity .....	53
2156	Roadside Vegetation Management .....	54
2157	Herbicide Research Program .....	55
2160	Oklahoma Transportation Center.....	56
2167	Effect of Suction and Moisture on Resilient Modulus of Subgrade Soils in Oklahoma 57	
2168	Scale Effects in Oedometer-Based Predictions of Fill Settlement.....	58
2172	Evaluation of ODOT’s Percent Within Limits (PWL) Construction Specifications ....	59
2177	Determination of Dynamic Modulus Master Curves for Oklahoma Hot Mix Asphalt (HMA) Mixtures .....	60
2178	Evaluation of Cold, In-Place Recycling for Rehabilitation of Transverse Cracking on US 412	61
2181	Resilient Modulus of Asphalt and its Correlation With Asphalt Pavement Analyzer Rut 62	
2182	Task Order Contract for Specified Research Items .....	63
2184	Creation of an ODOT Specification for Patching or Overlay of Bridge Decks .....	64
2185	Engineering Properties of Stabilized Subgrade Soils for the Implementation of the AASHTO 2002 Pavement Design Guide .....	65
2186	Rating Precast Prestressed Concrete Bridges for Shear.....	66
2187	Investigation of Automating Turning Movement Studies Using New Sensor Technology .....	67
2188	Vegetative Rehabilitation of Highway Cut Slopes .....	68
2190	A Real-Time Scour Risk Identification and Information Management System.....	69
2191	Degradation of Major Streams in Oklahoma.....	70
2192	Development of Field Correlation and Test Procedure for TransTech Systems’ Pavement Quality Indicator (PQI) 301 Non-Nuclear DensityGauge .....	71
2193	Degradation Stabilizing Methodology for Selected Broken-Back and Drop Box Culverts in Oklahoma Phase II .....	72
2195	Evaluation and Field Verification of Strength and Structural Improvement of Chemically Stabilized Subgrade Soil.....	73
2196	Stability and Permeability of Proposed Aggregate Bases in Oklahoma.....	74
2197	Longitudinal Joint Density and Permeability in Asphalt Concrete .....	75
2199	Optimizing Concrete Mix Designs to Produce Cost Effective Paving Mixes .....	76
2200	Instrumented Pavement Construction .....	77
2202	GIS Layer for Transportation and Economic Statistics .....	78
2203	Truck Weight Enforcement.....	79
2204	Advanced Voice and Multimedia Communications System for the ODOT ITS Network	80
2206	Development of an Improved System for Contract Time Determination – Phase II... 81	
2207	Validation and Refinement of Chemically Stabilization Procedures for Pavement Subgrade Soils in Oklahoma.....	82
2440	Local Technical Assistance Program.....	83
2700	Experimental Product and Evaluation Program.....	84

**FEDERAL FISCAL YEAR 2008**  
**OKLAHOMA PROJECT SPRY - 0010(042) PL, JP # 01946(49)**  
**Part 1**

<u>PROGRAM</u>	<u>SPR</u>	<u>STATE</u>	<u>PL</u>	<u>LOCAL</u>	<u>TOTAL</u>
<b>ROAD INVENTORY</b>					
1101 Continuing Inventory Data Studies	\$629,100.00	\$0.00			\$629,100.00
1102 Highway Performance Monitoring System	\$82,000.00	\$0.00			\$82,000.00
1103 Geographical Information Management System for Transportation	\$430,000.00	\$0.00			\$430,000.00
<b>Total Road Inventory</b>	<b>\$1,141,100.00</b>	<b>\$0.00</b>			<b>\$1,141,100.00</b>
<b>MAPPING</b>					
1201 County, City and other Planning Maps	\$272,300.00	\$0.00			\$272,300.00
<b>Total Mapping</b>	<b>\$272,300.00</b>	<b>\$0.00</b>			<b>\$272,300.00</b>
<b>TRAFFIC</b>					
1301 Coverage Count Program	\$667,100.00	\$0.00			\$667,100.00
1302 Permanent Traffic Count Program	\$388,400.00	\$0.00			\$388,400.00
1304 Purchase of Traffic Counting Equipment	\$208,300.00	\$0.00			\$208,300.00
1305 Vehicle Classification Counting Program	\$414,500.00	\$0.00			\$414,500.00
1306 Weigh- in- Motion Program	\$1,144,800.00	\$0.00			\$1,144,800.00
1308 Traffic Monitoring System	\$120,000.00	\$0.00			\$120,000.00
1309 Traffic Analysis and Projections	\$147,000.00	\$0.00			\$147,000.00
1310 Skid Studies Program	\$153,600.00	\$0.00			\$153,600.00
<b>Total Traffic</b>	<b>\$3,243,700.00</b>	<b>\$0.00</b>			<b>\$3,243,700.00</b>
1403 ODOT Manual Update	\$3,000.00	\$0.00			\$3,000.00
1404 Safety Planning	\$75,000.00	\$0.00			\$75,000.00
<b>Total Standards</b>	<b>\$78,000.00</b>	<b>\$0.00</b>			<b>\$78,000.00</b>
<b>LOCAL TECHNICAL ASSISTANCE PROGRAM</b>					
1440 Local Technical Assistance Program	\$70,000.00	\$47,775.00	\$277,247.81		\$395,022.81
	<b>\$70,000.00</b>	<b>\$47,775.00</b>	<b>\$277,247.81</b>		<b>\$395,022.81</b>
<b>ECONOMIC AND FISCAL</b>					
1510 Justification Studies	\$5,000.00	\$0.00			\$5,000.00
1511 Project Reconnaissance Information	\$5,000.00	\$0.00			\$5,000.00
<b>Total Economic and Fiscal</b>	<b>\$10,000.00</b>	<b>\$0.00</b>			<b>\$10,000.00</b>

**FEDERAL FISCAL YEAR 2008**

**OKLAHOMA PROJECT SPRY - 0010(043) PL, JP #01946(49)  
Part 1**

<u>PROGRAM</u>		<u>SPR</u>	<u>STATE</u>	<u>PL</u>	<u>LOCAL</u>	<u>TOTAL</u>
<b>SYSTEMS AND PROGRAMMING</b>						
1601	Federal-aid Systems Coordination	\$152,000.00	\$0.00			\$152,000.00
1603	Highway Needs Study	\$75,000.00	\$0.00			\$75,000.00
1604	Pavement Management Systems	\$885,600.00	\$0.00			\$885,600.00
	<b>Total Systems and Programming</b>	<b>\$1,112,600.00</b>	<b>\$0.00</b>			<b>\$1,112,600.00</b>
<b>URBAN TRANSPORTATION</b>						
1700	General Urban Transportation Planning Activities	\$33,500.00	\$0.00			\$33,500.00
1701	Oklahoma City Area Regional Transportation Study (OCARTS)	\$20,000.00	\$0.00	\$1,141,808.00	\$200,000.00	\$1,361,808.00
1702	Tulsa Metropolitan Area Transportation Study	\$25,000.00	\$0.00	\$764,755.00	\$0.00	\$789,755.00
1703	Lawton Metropolitan Planning Organization (LMPO)	\$15,000.00	\$0.00	\$233,168.00	\$35,000.00	\$283,168.00
1709	Ft. Smith Transportation Study	\$6,000.00	\$0.00	\$22,000.00	\$5,000.00	\$33,000.00
1719	Statewide Transportation Improvement Program (STIP)	\$65,000.00	\$0.00			\$65,000.00
	<b>Total Urban Transportation</b>	<b>\$164,500.00</b>	<b>\$0.00</b>	<b>\$2,161,731.00</b>	<b>\$240,000.00</b>	<b>\$2,566,231.00</b>
<b>LONG RANGE PLANNING/ENVIRONMENTAL STUDIES</b>						
	Oklahoma Pollutant Discharge Elimination System (OPDES)					
1901	Municipal Separate Storm Sewer System (MS 4) Permits	\$835,000.00	\$0.00			\$835,000.00
1902	Statewide Long Range Transportation	\$200,000.00	\$0.00			\$200,000.00
1903	Intelligent Transportation Systems Planning	\$10,000.00	\$0.00			\$10,000.00
1904	Air Quality Transportation Planning	\$12,000.00	\$0.00			\$12,000.00
1910	Visualization Techniques	\$3,000.00	\$0.00			\$3,000.00
1979	Environmental Studies (NEPA Compliance)	\$150,000.00	\$0.00			\$150,000.00
1980	Environmental Studies (Environmental Affairs and Specialist Studies)	\$150,000.00	\$0.00			\$150,000.00
	<b>Total Long Range Planning/Environmental Studies</b>	<b>\$1,360,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$1,360,000.00</b>
<b>PROJECT TOTALS</b>		<b>\$7,452,200.00</b>	<b>\$47,775.00</b>	<b>\$2,438,978.81</b>	<b>\$240,000.00</b>	<b>\$10,178,953.81</b>
<b>GRAND TOTALS SPRY-0010(043)PL</b>		<b>\$7,452,200.00</b>	<b>\$47,775.00</b>	<b>\$2,438,978.81</b>	<b>\$240,000.00</b>	<b>\$10,178,953.81</b>

# 1101

## Continuing Inventory Data Studies

**PURPOSE AND SCOPE:** To collect, record, and compile data on the physical characteristics for all statewide public roads and streets implementing established road inventory procedures. Catalogue cultural features used to update the Departments official County Highway Maps. Generate detailed maps used to conduct inventory meetings with County Commissioners pertaining to roadway modifications. Maintain current Electronic Data Processing (EDP) files of inventory data and update the Department's Central Data file. Write EDP program definitions necessary to extract needed summary data from the files. Produce and publish various mileage summary tables for the state, federal and public needs. Maintain necessary information for the National Network of Defense and NHS routes. Develop and maintain Control Section numbers and other unique identification systems for all public roads. Established AVMT to be used to calculate Annual Accident and Fatality Rates.

**ACCOMPLISHMENTS DURING FY 2007:** The County Road inventory procedures were continued with three county inventories completed; (Beckham, Logan, and Payne) and two (Kay and Oklahoma) in progress. Six counties were reassessed and coded; (Haskell, Hughes, Noble, Osage, Pottawatomie, and Woodward) and one (Beckham) in progress. All County Action Reports were verified and processed. All Functional Classified inventories were completed in conjunction with county inventories. All traffic count sites utilizing GPS technology were completed for 3 counties, including Tulsa County, and approximately 25 percent of the State Highway system. All Highway construction projects pertaining to the Department's Highway, Graphical Roadway Network (NLF), Reference Point, and Open to traffic databases were completed. The following annual publications and reports were completed; 2007 Statewide Mileage Table Book, 2006 Oklahoma Statewide Statistics Book, 2007 Certification of County Road Mileage, and 2007 HPMS mileage, and Travel Summary Tables.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue coding and updating the Department's Central Database files. Incorporate on technology advancements in data collecting to insure the process of efficient information. Continue to improve on all procedural inventory operations. Five of the following ten counties are scheduled to be inventoried; (Beaver, Carter, Canadian, Cimarron, Garvin, Johnston, McClain, Ottawa, Pontotoc, and Seminole). Six of the following fourteen counties are scheduled to be reassessed and coded; (Beaver, Carter, Canadian, Cimarron, Garvin, Johnston, Kay, Logan, McClain, Oklahoma, Ottawa, Payne, Pontotoc, and Seminole). Continue monitoring all County Action Reports, and Highway Construction projects. Continue collecting HPMS data items. Continue identifying traffic count sites statewide using GPS technology. Compile and publish various state and federal reports including the 2008 Control Section Map Book, 2007 Oklahoma Statewide Statistics Book, 2008 Certification of County Road Mileage, and 2008 HPMS Mileage and Travel Summary Tables. Keep abreast of the latest technological advances through attendance of seminars, conferences and workshops.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$614,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$599,700	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$629,100	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Tim Callahan
TITLE	Transportation Manager II
PHONE	405-521-2728

**PURPOSE AND SCOPE:** To collect, process and compile data and information as needed to prepare and submit an accurate and timely HPMS submission to the Federal Highway Administration (FHWA) according to the reporting requirements established in the HPMS Field manual, using the FHWA HPMS software.

**ACCOMPLISHMENTS DURING FY 2007:** The HPMS submittal was created using adjusted urban/urbanized areas based on the 2000 census and authorized smoothing techniques. Summer help was utilized to review videolog for HPMS sample sections and continue to build a HPMS database populated with At-Grade intersection and left/right turn lane information. This database will be used to generate the 2008 submittal. Oklahoma continues to include native linear reference system (LRS) information as part of its submittal. All LRS data required to perform dynamic segmentation has been included. The HPMS submittal process uses a web based graphical user interface known as the HPMS Console and is very effective in managing the entire life cycle of the HPMS submittal process. The HPMS Console is intranet based and was designed to support the sharing of tasks with the appropriate HPMS data owners and personnel responsible for each of the six different phases of HPMS submittal development. Additional training was conducted to allow data owners to be responsible for their phase of the HPMS submittal process. ODOT continued to review and re-author the online HPMS Console help system. The 2006 HPMS data was made available to anyone having access to the OKDOT computer network through the GRIP Version 2 browser application. The HPMS data was also made available through an Internet web site known as GRIPLite. The web site was opened to Consultants hired to conduct Project Reconnaissance for the '18 Month Ahead' project. All data submitted to the FHWA in the 2006 HPMS submittal was formatted as defined by the HPMS field manual. The 2006 submittal was created using the FHWA supported HPMS software version 6.0.1 although all data domain and cross-check validation was done in Oracle before inserting the data into Microsoft Access through the HPMS software.

**PROPOSED ACTIVITIES FOR FY 2008:** HPMS data collection needs will be addressed by improving the coordination of all current and future data collection efforts within OKDOT. Data collection needs will also be addressed by improved communication and data sharing between OKDOT and other external entities such as city and county governments, metropolitan planning organizations, Indian tribes and the Oklahoma Turnpike Authority. Data collection needs will be addressed by utilizing videolog obtained by the Pavement Management data collection contract. OKDOT will work with our local FHWA office to address high priority areas. HPMS 2007 data will be made available to anyone having access to the OKDOT computer network by publishing all HPMS 2007 universe and sample data through the Geographical Resource Intranet Portal (GRIP) Version 3 web browser application. The data will also be made available through the Internet application known as GRIPLite. The GIS Management Branch of the Planning and Research Division will conduct HPMS computer based training as provided by the FHWA. The GIS Management Branch will conduct continuing formal in-house training on how to use the HPMS Console to generate, validate and submit a HPMS submittal. The linear referencing system (LRS) component of HPMS will be provided to the FHWA in an ESRI Personal GeoDatabase format. The HPMS 2007 submittal will be delivered to FHWA no later than June 15, 2008. OKDOT will keep abreast of the latest technological advances to include the most recent HPMS Reassessment through attendance of seminars, conferences, workshops and online meetings. Oklahoma will review and/or comment on the new web based HPMS reporting and validation tools made available by FHWA headquarters. We will continue to prepare a plan for addressing the impacts of the HPMS reassessment.

## 1102 Highway Performance Monitoring System (cont)

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$75,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$82,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$82,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Tim Callahan
TITLE	Transportation Manager II
PHONE	405-521-2728

**1103**

## **Geographical Information Management System for Transportation**

To design, develop, implement and maintain a Geospatial Information Management System for Transportation (GIMS-T). The system supports transportation related decision making by producing high quality map products and reports generated from Enterprise data. The maps convey specifics topics of interest that require customer input and the use of complex GIS software. GIM-T staff also support GIS projects initiated by other ODOT Divisions. GIS services are offered to ODOT staff and customers outside the Department. An intranet GIS enterprise-wide portal is available to anyone having access to the ODOT network. The web portal is known as the Geographical Resource Intranet Portal (GRIP). An internet application known as GRIP-Lite is also supported and is made available to the general public. The efficient use of resources require a considerable investment in training for GIMS-T staff. The system utilizes aerial photography, global positioning data and other sources of data. The data provided includes but is not limited to Road Characteristic Inventory, Highway Needs Study Reports, Construction and Transportation Improvement Programs, Projects under Construction, Crashes and Speed Limits, Pontis Bridge Inventory and Rating Systems, Pavement Management International Roughness Indexes and Structural History, Highway Performance Monitoring System (HPMS), Rail Crossing Inventory, Videolog Inventory and Environmental Information.

### **ACCOMPLISHMENTS DURING FY 2007:**

Using state-of-the-art GIS software and custom scripts a series of maps known as the 2007-2014 Construction Work Plan and State Transportation Improvement Plan (STIP) maps were generated. The GIS Team executed a new contract for maintenance and enhancements to GRIP Version 3, Some of the improvements included the ability to turn on and off shields and route text, access to the General Highway and City maps and the integration of the Department's VideoLog system providing a map interface to the videolog images and our Linear Referencing System (LRS). The user is not required to know how the images are indexed and/or referenced. By clicking on a point in the map the user begins viewing videolog at the selected point on the highway system. Some navigation and printing capabilities are also supported. The team generated numerous custom maps such as Bridge Vertical Clearance and Posted Load/Design Load maps used for routing oversize/overweight trucks, a series of maps based on the 2006 Needs Study Report, updates to the Posted Load Bridge Maps, wetland maps, updates to both the rural and urban functional classification maps. The Team continues to develop a foundation for an Environmental business layer in the GRIP browser application. A routable road network was created that will be sufficient to support the Department's routing needs to include but not limited to the routing and permitting of oversize / overweight trucks. The GIS Team is in the process of developing a pilot for Oversize-Over Weight (OSOW) Truck Routing and Point to Point mileages between various populated places within the State. A Schema (GM Users), Workflows, and Templates for the non GIS Team GeoMedia Users within OKDOT was created and we have begun to provide limited GeoMedia user support. The GIS Team is developing a workflow for accurately reproducing the County Maps using features stored within an Oracle Database. The GIS Team received certified training in Intergraph's Geomedia Professional V6 ,Transportation Manager and Oracle Database 10G, which we use to create GIS map products and provide other quality GIS based analytical services. The training was comprehensive and designed to continue over several years giving employees the opportunity to develop and improve skill sets through hands-on application development.

### **PROPOSED ACTIVITIES FOR FY 2008:**

Continue in the creation of the OSOW Truck Routing and Point to Point Mileage Applications. Continue working with the consultants on the enhancements to the GRIP Family of products, including the continued integration and improvement of the video log and the integration of the OSOW Truck Routing, and Environmental Business Layers into the GRIP Product(s). Using GIS software design and create updated County/Urban Functional Classification Atlas's. Utilizing GIS techniques and software develop a

# 1103 Geographical Information Management System for Transportation (cont)

workflow for the County Action Report System (CARS) which will allow for increased speed, efficiency, and accuracy in the addition/deletion of roads to/from the Certified County Road Mileage Report. In coordination with the OKDOT Environmental Branch, continue to identify needs and develop solutions that will enable them to efficiently and accurately perform their mission. Use existing software (RoboHelp) to create an Index of Workflows for the various products and applications created by the GIS Team. Develop an application for accurately locating and mapping Off System Bridge locations. Begin a major initiative aimed at CADD integration into the GIS environment.

Continue to conduct certified training to personnel in the software products required for the GIS Team to continue to provide efficient and high quality GIS products to customers.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$443,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$443,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$430,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Tim Callahan
TITLE	Transportation Manager II
PHONE	405-521-2728

## 1201

## County, City and other Planning Maps

**PURPOSE AND SCOPE:** The purpose and scope is to produce county and city CADD maps showing reliable, accurate, legible and current information for roads, drainage features, street names, city limits, boundaries and man made culture. The scope also includes the creation of other special purpose planning maps and supporting graphics.

**ACCOMPLISHMENTS DURING FY 2007:** Six counties and 48 cities were completed using CADD software from the latest available information, aerial photography and digital data. Counties completed were Choctaw, Cotton, Nowata, Okmulgee, Pawnee and Wagoner. The Cartographic Design Section continues to review all workflows with particular emphasis placed on implementing changes that will boost productivity. The Cartographic Design Section has completed improvements using the Microstation V-8 environment that is presently being integrated into the G.I.S. database.

The 48 following incorporated city maps, listed by county, were drafted using CADD software: (Cities formats have been revised so that they are also geospatially referenced within the Oklahoma Coordinate System.)

### **Choctaw County**

Boswell          Ft. Towson          Hugo          Sawyer          Soper

### **Cotton County**

Devol          Randlett          Temple          Walters

### **Nowata County**

Delaware          Lenapah          New Alluwe          Nowata          South Coffeerville          Wann

### **Okmulgee County**

Beggs          Bryant          Dewar          Grayson          Henryetta          Hoffman          Morris  
Okmulgee          Winchester

### **Pawnee County**

Blackburn          Cleveland          Hallett          Jennings          Lone Chimney          Maramec          Oak  
Pawnee          Quay          Ralston          Shady Grove          Skedee          Terlton          Grove  
Westport

### **Wagoner County**

Coweta          Bixby          Broken Arrow          Fair Oaks          New Tulsa          Okay          Porter  
Redbird          Tullahassee          Wagoner

Special map graphics were revised for Need Study's -Top 25 Projects by Division - and other special graphics were produced as needed for the Planning & Research Division's reports and for other ODOT personnel.

**PROPOSED ACTIVITIES FOR FY 2008:** The Cartographic Design Section will continue drawing all county and city maps in a geospatially referenced format that will boost future usage compatibility and accuracy. Five county maps in progress are ; Cleveland, Coal, Garfield, Lincoln, Murray and Tulsa with a goal to complete nine or more counties in the coming year. All maps currently in CADD format will be updated as highway system revisions are completed and opened to traffic. All map design file features will be integrated into the Oracle Spatial database. This facilitates the ongoing integration of map features from Cartographic Design to GIS Development Sections and other governmental agencies.

**1201 County, City and other Planning Maps (continued)**

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$286,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$250,200	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$272,300	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Tim Callahan
TITLE	Transportation Manager II
PHONE	405-521-2728

# 1301

## Coverage Count Program

**PURPOSE AND SCOPE:** To collect traffic data on state highways, interstates and the National Functional Classified System for establishing average daily traffic volumes. Approximately 3,300 locations are counted on the highway systems and 8,500 on the secondary system that includes the county road coverage and urban city street coverage in cities over 5,000 population. State highway and interstate locations are counted on a two-year cycle along with the county and city system coverage.

Counts collected on the highway system are incorporated into an Annual Average Daily Traffic (AADT) map printed annually for distribution. Counts collected on the county and city system are recorded and retained for office use. Highway traffic maps are published for public distribution.

**ACCOMPLISHMENTS DURING FY 2007:** All state and county city systems were counted in the 38 counties scheduled for the 2006 count cycle. The contract with the University of Oklahoma Computer Science Department for development of the Traffic Count Map Web Page for public access was renewed for a third year and the Oklahoma Traffic Count Information web page was activated for public use on the ODOT web site. A contract for the collection of short-term traffic counts in Tulsa County will be solicited for bids

**PROPOSED ACTIVITIES FOR FY 2008:** Continue to analyze all road systems for areas where coverage is deficient, establish new count stations as needed and delete locations that are no longer of value. Count all state, county and city systems in the 39 counties scheduled for the 2007 count cycle. Attend seminars, conferences and workshops to keep abreast of the latest technological advances. The contract for the collection of short-term traffic counts in Tulsa County will be administered.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$643,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$443,100	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$667,100	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Richard Sumpter
TITLE	Transportation Manager II
PHONE	405-319-3030

# 1302

## Permanent Traffic Count Program

**PURPOSE AND SCOPE:** To collect hourly traffic data by lane for traffic monitoring design needs. There 62 Automatic Vehicle Classification (AVC) station locations and 22 Weigh-in-Motion (WIM) station locations in Oklahoma. The traffic data obtained are the basis for seasonal and axle factor variation as recommended for traffic monitoring in FHWA’s Traffic Monitoring Guide. A biennial traffic characteristic report is generated from the data collected at these sites. Utilities provided for operational support are maintained for all permanent stations through accounts with 16 different electric power companies and 13 different telephone companies.

**ACCOMPLISHMENTS DURING FY 2007:** The conversion of Automatic Traffic Recorder (ATR) sites to Automatic Vehicle Classifier (AVC) sites was completed during FY 2007. All of the state’s permanent traffic monitoring stations now have classification capability which has significantly enhanced the visibility of truck traffic volume statewide. Efforts to reduce costs of power and communications utilities continued with the conversion from AC electric power to solar energy at selected traffic monitoring stations. In FY 2007 we experienced a 16% reduction in electric power costs, as a direct result of solar power conversion. Telephone service utilities requirements have continued to increase as a result of the installation of new traffic monitoring stations. The Department has been pursuing alternative solutions to land line telephone support in an effort to reduce communications. Initial study by telecommunications experts at the University of Oklahoma has demonstrated that a digital wireless solution is a viable option. The University established a functional prototype, digital wireless supported traffic monitoring station utilizing the Department’s data recording hardware.

**PROPOSED ACTIVITIES FOR FY 2008:** Site surveys conducted in FY 2007 and subsequent traffic analysis have resulted proposals for the construction of five new traffic monitoring stations in FY 2008. As operational costs will proportionally increase, our efforts to identify and implement solutions for reducing the costs of station utilities, particularly communications support, will continue with expanding the scope of research and deployment activities with the University of Oklahoma. The University, having established a prototype digital wireless traffic monitoring station, has demonstrated a viable, cost effective solution for replacing land line telephone communications with a system that (1) enhances the quality and volume of data collection capability and (2) provides for significant savings in utility costs. In FY 2008, the university in coordination with the Department will deploy and evaluate the digital wireless communications support package at 35 active traffic monitoring stations throughout the state. On going conversion to solar energy will continue to reduce power costs. All new site constructions will provide for installation of solar power facilities.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$203,400	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$204,400	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$388,400	SPR
	0	STATE

<b>Contact Information</b>	
<b>NAME</b>	Richard Sumpter
<b>TITLE</b>	Transportation Manager II
<b>PHONE</b>	405-319-3030

# 1304

## Purchase of Traffic Counting Equipment

**PURPOSE AND SCOPE:** To improve the efficiency of the traffic counting operation by systematic replacement of older outdated equipment and stolen or damaged equipment as well as support of increased equipment requirements resulting from expanded operations.

**ACCOMPLISHMENTS DURING FY 2007:** Equipment purchases executed in FY 2007 primarily supported actions to provide for (1) extensive traffic monitoring station conversion from AC power to solar energy which required additional 80 watt solar panels, voltage regulators, and supporting connectors, (2) the newly implemented program to conduct GPS location data collection for the short duration count sites which required purchase of new receiver units with antennas and supporting software; and (3) the replenishment of equipment and material stockage supporting the short duration count program comprising replacement traffic counters, turning movement boards, and additional road tubes and supporting accessories. Additional expenditures provided for replacement of tools and specialized materials utilized by the field personnel to include distance measuring instrument sensors for the Road Data Section.

**PROPOSED ACTIVITIES FOR FY 2008:** The proposed construction of new traffic monitoring stations and the expanded program for collection GPS location data at 15,000 short duration count sites traffic monitoring systems operations will require the purchase of additional hardware for FY 2008. Normal wear and tear on the junior counter units (TT-4's) will result in expenditures to replace 200 of the units which are deployed at the temporary count sites. Anticipated consumption of serviceable road tubes will require replacement materials in excess of that consumed during FY 2007. The proposed construction requirements will require new data recorders at the new AVC and WIM stations. As these new sites are to be supported by solar energy facilities, replenishment supply of solar panels, voltage regulars, batteries, etc will be required. This will be supplemented with the purchase of wind turbine powered equipment to be deployed at selected sites, as this power source has proven to be a successful, cost effective, alternative at one of the metro area stations.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$265,900	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$106,600	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$208,300	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Richard Sumpter
TITLE	Transportation Manager II
PHONE	405-319-3030

# 1305

## Vehicle Classification Counting Program

**PURPOSE AND SCOPE:** To gather vehicle classification data and develop estimates of the composition of traffic on the various Functional Classifications of roadways in the state and to collect complex traffic data required for planning, traffic and design studies. Data gathered and used to facilitate these studies includes machine counts, vehicle classification counts and turning movement studies with pedestrian counts.

**ACCOMPLISHMENTS DURING FY 2007:** Data gathered will be incorporated into the “2007 Oklahoma Traffic Characteristics Report”. All 2-lane highway classification sites were classified for 24 hours using Peek ADR-1000 machines. A contract was issued with Progressive Engineering Technologies for the collection of multi-lane urban and rural classification data. Progressive Engineering Technologies collected vehicle classification data at 21 Tulsa Metro sites as well as 58 even year Rural classification sites in excess of two lanes.

Data for numerous special studies were collected as follows:

(A) For the Data Collection Branch	(C) For the Traffic Engineering Division
0 - Turning movements with pedestrian counts	39 - Turning movements with pedestrian counts
0 - (24 hour) Hourly Machine Counts	41 - (24 hour) Hourly Machine Counts
0 - (24 hour) Cumulative Machine Counts	9 - (24 hour) Cumulative Machine Counts
136 - (24 hour) Vehicle Classification Counts	0 - (24 hour) Vehicle Classification Counts
(B) For the Engineering Services Branch	(D) For other Divisions
22 - Turning movements with pedestrian counts	0 - Turning movements with pedestrian counts
326 - (24 hour) Hourly Machine Counts	4 - (24 hour) Hourly Machine Counts
9 - (24 hour) Cumulative Machine Counts	3 - (24 hour) Cumulative Machine Counts
8 - (24 hour) Vehicle Classification Counts	0 - (24 hour) Vehicle Classification Counts
	0 - (24 hour) Vehicle Gap Study

**PROPOSED ACTIVITIES FOR FY 2008:** Vehicle classification data will continue to be collected by machine from either state forces or by contract. A contract with Roadway Data Systems Corporation, formerly known as Progressive Engineering Technologies, will be administered for the collection of multi-lane urban and rural classification data which include to Oklahoma City Metro area and the odd year Rural classification sites in excess of two lanes. AVC (Automatic Vehicle Classification) and WIM (Weigh-in-Motion) sites will continue to be polled and statewide axle factors computed for traffic monitoring and pavement design needs and special studies data will be collected as requested. Attend seminars, conferences, and workshops and set up demonstrations to keep abreast of the latest technological advances.

## 1305 Vehicle Classification Counting Program (continued)

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$408,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$370,400	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$414,500	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Richard Sumpter
TITLE	Transportation Manager II
PHONE	405-319-3030

## 1306

## Weigh- in- Motion Program

**PURPOSE AND SCOPE:** To collect and conduct preliminary analysis of data describing vehicle characteristics and vehicle weight trends. The Department uses this data as an intricate part of the traffic monitoring system. These data collection systems provide axle weight factors used in design and pavement management studies and to fulfill FHWA requirements for the Strategic Highway Research Program (SHRP) and the Long Term Pavement Performance (LTPP) program. The Department operates 22 permanent weigh- in- motion (WIM) data collection sites and 62 Automatic Vehicle Classifier (AVC) sites located throughout the state.

**ACCOMPLISHMENTS DURING FY 2007:** The Department executed the 3rd year renewal of the Traffic Monitoring Systems (TMS) Maintenance Contract with International Road Dynamics of Saskatoon Canada. The contract, which provides for maintenance and calibration of the Automatic Vehicle Classifier (AVC) sites as well as the Weigh-in-Motion (WIM) sites, includes traffic monitoring station renovation and installation of new facilities. The successful completion of conversion of ATR sites to new AVC sites has provided for permanent classification capability at all 84 traffic monitoring stations. The dynamic preventive maintenance and calibration schedule has significantly enhanced the systems operational rate. The scope of the work completed during the second year of the contract encompassed:

- 1) Construction of two (2) new AVC sites and one (1) new WIM site
- 2) Conversion of the remaining eight (8) ATR sites to AVC sites
- 3) Renovation of ten (14) existing sites (8 WIM and 6 AVC)
- 4) Scheduled maintenance and calibration for 21 WIM sites and 60 AVC sites
- 5) On-call repair/services for 21 WIM sites and 60 AVC sites

**PROPOSED ACTIVITIES FOR FY 2008:** The Department will award a new contract for FY 2008. The scope of the new contract enhances the current support provided in that it encompasses the requirement for management of data collection and systems validation, in addition to the function of site construction / renovation and preventive maintenance / calibration. The new contract will have an “operations & maintenance” orientation, emphasizing systemic analysis and diagnosis, as opposed to relying on on-call services and repairs. The program is designed to sustain efficient traffic monitoring station performance supporting the collection of valid data. The scope of work to be accomplished in FY 2008 is as follows:

1. Daily data collection and systems validation at 89 traffic monitoring stations
2. Construction of three (3) new AVC sites and two (2) new WIM sites
3. Renovation of six (6) AVC sites and five (5) WIM sites
4. Scheduled maintenance and calibration for 24 WIM sites and 65 AVC sites

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$845,400	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$835,600	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$1,144,800	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Richard Sumpter
TITLE	Transportation Manager II
PHONE	405-319-3030

# 1308

# Traffic Monitoring System

**PURPOSE AND SCOPE:** The Traffic Monitoring System (TMS) is a comprehensive statewide traffic data gathering, editing and reporting system created to fulfill the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The purpose of TMS is to computerize traffic estimation and reporting, including data from public and private non - state government entities.

**ACCOMPLISHMENTS DURING FY 2007:** Annual processing was completed for the traffic year 2007 and the data was checked for accuracy. The annual publication of the AADT map was completed.

**PROPOSED ACTIVITIES FOR FY 2008:** Revise and restructure of existing traffic count programs. Revise and streamline process of recording and compiling short-term counts. Cross train personnel in daily, monthly and annual data processing. Streamline and simplify the process of editing and reporting data for HPMS and the Traffic Characteristics Report. Continue gathering data and prepare for the production of the Annual Average Daily Traffic Map.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$135,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$95,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$120,000	SPR
	\$0	STATE

<b>Contacts</b>	<b>PROGRAM MANAGER</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Daryl G. Johnson, P.E.	Mike Woodhams
<b>TITLE</b>	Professional Engineer	Transportation Manager
<b>PHONE</b>	405-522-6719	405-522-3793

# 1309

## Traffic Analysis and Projections

**PURPOSE AND SCOPE:** Traffic forecasts provide the basis for geometric and structural design of new highways and improvement of existing highways. The existing or assigned traffic volumes are projected twenty (20) years into the future for design purposes. Also, the factors for determining Design Hourly Volume (DHV) of the Annual Average Daily Traffic (AADT), percent of trucks of the DHV, and the percent of heavy trucks are prepared for each request of design traffic information.

**ACCOMPLISHMENTS DURING FY 2007:** Design traffic was furnished to the city and county governments and various divisions within ODOT. Information prepared for the larger population areas was based on the comprehensive area and regional transportation studies in those cities. Information for rural communities and small cities was prepared utilizing historical data, such as traffic volumes, vehicle use, population trends, special traffic counts and other related traffic information gathered through special studies. Approximately 68 requests for design traffic were completed. Several consultant traffic analyses were overseen and edited.

**PROPOSED ACTIVITIES FOR FY 2008:** Design traffic data will continue to be furnished for cities, counties and to ODOT divisions upon approved requests. Traffic analysis and projections will be completed, as requested for all programmed construction projects. Project Planning Reports and other required special studies will be developed. Remain informed of technological advances through attendance of seminars, conferences and workshops.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$135,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$135,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$147,000	SPR
	\$0	STATE

Contacts	<b>PROJECT ENGINEER</b>	<b>PROJECT MANAGER</b>
NAME	Daryl G. Johnson, P.E.	Paul T. Hagar
TITLE	Professional Engineer	Transportation Manager
PHONE	405-522-6719	405-522-6713

# 1310

## Skid Studies Program

**PURPOSE AND SCOPE:** To assess the skid resistance for pavement surfaces of Oklahoma's highway system in accordance with the guidelines of the Highway Safety Improvement Program and ASTM standards. The scope of the program includes: scheduled testing of all roadways comprising the National Highway System in a three-year test cycle, annual testing of all interstate highways and Strategic Highway Research Program (SHRP) sites, and special testing conducted as required.

**ACCOMPLISHMENTS DURING FY 2007:** The field deployment of the new Pavement Friction (Skid) Testing System during FY 2007 has provided enhanced operational capability in the conduct of the annual test cycle. The increasing water storage capacity has allowed for a more efficient utilization of time, as significantly fewer stops are required for the replenishment of water during the normal daily test schedule. The new system's streamlined software has improved data collection operations and reporting requirements. By the end of calendar year 2007, approximately 10,625 miles of highway will have been tested in the Division 5, 6 & 7 areas. The also includes statewide interstate highway requirements. Highway mileage with less than adequate skid resistance continues to register between 8 and 9 per cent.

**PROPOSED ACTIVITIES FOR FY 2008:** The annual test cycle is planned for the highways in Divisions 4 and 8 and scheduled to be tested through to completion by the end of calendar year 2008 (December 31). This encompasses all state, federal and interstate highways totaling approximately 7,100 miles. In addition during FY 2008, the Pavement Friction Testing System (Truck & Trailer) will be scheduled to undergo formal calibration at the Central Field Test and Evaluation Center, Texas Transportation Institute (operated by FHWA) in College Station Texas.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$143,500	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$137,800	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$153,600	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Richard Sumpter
TITLE	Transportation Manager II
PHONE	405-319-3030

# 1403

# ODOT Manual Update

**PURPOSE AND SCOPE:** To revise and update the various Manuals used by ODOT according to Department, AASHTO, FHWA, and other appropriate Agencies' design criteria, policies, and procedures

**ACCOMPLISHMENTS DURING FY 2007.** Led and took part in Specifications Committee reviews. Started developing ODOT construction manual as a pilot project partly funded by FHWA. Construction manual fund was transferred back to FHWA.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue participation in Specifications Committee (23659(04)) to review consultant's work.

<b>ESTIMATED TOTAL COST CONTINUING</b>	<b>Amount</b>	<b>Fund</b>	<b>Job Piece No.</b>	<b>Project No.</b>
<b>Programmed Amount for FY 2007</b>	\$65,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2007</b>	\$65,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2008</b>	\$3,000	SPR		
	0	STATE		

<b>Contact Information</b>	
NAME	Siv Sundaram, P.E.
TITLE	Assistant Division Engineer
PHONE	405-522-3791

**1404****Safety Planning**

**PURPOSE AND SCOPE:** To review Oklahoma's Strategic Highway Safety Plan being prepared by a consultant and incorporate the plan in the development of Oklahoma's Statewide Transportation Improvement Program and Statewide Long Range Transportation Planning Activities.

**ACCOMPLISHMENTS DURING FY 2007:** Reviewed and provided input for the Oklahoma's Strategic Highway Safety Plan being developed by a consultant.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue review and provide input for the Oklahoma's Strategic Highway Safety Plan being developed by a consultant.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$20,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$10,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$75,000	SPR
	0	STATE

<b>Contact Information</b>	
<b>NAME</b>	Jay Adams
<b>TITLE</b>	Transportation Manager III
<b>PHONE</b>	405-521-2175

## 1440 Local Technical Assistance Program

**PURPOSE AND SCOPE:** The Local Technical Assistance Program (LTAP) is a training program contracted through Oklahoma State University's Center for Local Government Technology to provide technical maintenance training and assistance to Oklahoma's 77 county's personnel in the areas of road and bridge construction, repair and maintenance and other transportation related issues. This is accomplished by (1) conducting workshops, seminars and other training opportunities; (2) providing on-site technical assistance; (3) maintaining a lending library for publications, videotapes, DVDs and other technology resource documents; (4) providing information on new and existing technology; (5) coordinating with faculty and staff at OSU and ODOT to provide technical expertise and support; and (6) publishing a quarterly newsletter and (7) maintaining a database of rural, local and state transportation officials and other resources in Oklahoma and nationwide.

**ACCOMPLISHMENTS DURING FY 2007:** This was funded under Item Number 2440 in 2007.

**PROPOSED ACTIVITIES FOR FY 2008:** Conduct at least ten training sessions of the Roads Scholar Program's subjects statewide. Continue to publish and distribute to county commissioners various newsletters, papers technical literature and video materials through the LTAP Library and coordinate with ODOT's Technical Library. Develop and conduct new training courses as requested by the LTAP Advisory Board and counties, with emphasis on Safety. Continue to develop hands on training through cooperation efforts with industry.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Estimated Cost for FY 2008</b>	\$70,000	SPR
	\$47,750.00	STATE
	\$277,247.81	FHWA

<b>Contact Information</b>	
<b>NAME</b>	Terry Jessup
<b>TITLE</b>	Transportation Manager
<b>PHONE</b>	405-521-2705

# 1510

# Justification Studies

**PURPOSE AND SCOPE:** To study the economic, environmental and other effects of design features such as interchanges, grade separations, bypasses, utility structures, pedestrian structures, etc., for the purpose of determining the economic and engineering feasibility of such proposals.

**ACCOMPLISHMENTS DURING FY 2007:** None.

**PROPOSED ACTIVITIES FOR FY 2008:** Consultant studies will be overseen as needed. Keep informed of technological advances through attendance of seminars, conferences and workshops.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$6,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$0	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$5,000	SPR
	\$0	STATE

Contacts	<b>PROJECT ENGINEER</b>
<b>NAME</b>	Daryl G. Johnson, P.E.
<b>TITLE</b>	Professional Engineer
<b>PHONE</b>	405-522-6719

# 1511

## Project Reconnaissance Information

**PURPOSE AND SCOPE:** To implement the new “18 Month Ahead of Schedule Program” authorized by the Director, the study team has developed a list of Project Reconnaissance Data needed to get these projects underway in a more timely fashion. This includes coordination between multi-disciplinary divisions within ODOT to gather preliminary data for project development.

**ACCOMPLISHMENTS DURING FY 2007:** Revisited the 18 Month Ahead checklist to refine it based on the experience of the Load Posted Bridge data collection. Worked with Project Management to incorporate the list into the scoping process for all projects in the 8 Year Construction Work Plan.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue work with Project Management to incorporate the list into the scoping process for all projects in the 8 Year Construction Work Plan and develop a Project Initiation/NEPA Checklist. Incorporate any resulting changes to the scoping process in the Environmental Procedures Manual.

<b>ESTIMATED TOTAL COST CONTINUING</b>	<b>Amount</b>	<b>Fund</b>	<b>Job Piece No.</b>	<b>Project No.</b>
<b>Programmed Amount for FY 2007</b>	\$14,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2007</b>	\$3,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2008</b>	\$5,000	SPR		
	0	STATE		

<b>Contact Information</b>	
NAME	Siv Sundaram, P.E.
TITLE	Assistant Division Engineer
PHONE	405-522-3791

# 1601

## Federal-aid Systems Coordination

**PURPOSE AND SCOPE:** To be responsible for the coordination of the State and United States Highway System, Federal-aid Highway System (includes the Interstate System and National Highway System) and the Functional Classification System. To prepare and coordinate any highway and classification revisions pertaining to these systems. To record, maintain, research and provide any documents and historical data relating and pertaining to these systems. To communicate, inform and coordinate with city, county, state and federal officials pertaining to these systems.

**ACCOMPLISHMENTS DURING FY 2007:** Addition of US 59/US 271 from I-40 in Oklahoma to I-540 in Arkansas to the National Highway System. Completed highway revision for the relocation of US 266 in Okmulgee County. Reviewed the Functional Classification System of 20 counties for improper routing resulting in 5 necessary revisions making a total of 14 functional classification revisions completed for the year. Published the *Highway Functional Classification Within the State of Oklahoma* booklet and distributed to the Board of County Commissioners.

**PROPOSED ACTIGITES FOR FY 2008:** Make highway revision for the relocation of US 77 in Pauls Valley. Make approximately 4 to 6 other highway revisions that would be necessary within the State. Work with city and county officials to remove or adjust old proposed routes and incorrect connections on the Functional Classification System within 14 counties with 25 needed revisions and 3 Urban areas with 7 needed revisions. Review 57 more counties for improper classified routes that would need to be revised. Do necessary on-site reviews of revisions. Reclassified US 60 between Vinita, Oklahoma and the State of Missouri to a principal arterial. Complete the proposed reclassification of North McClain, Northeast Grady, and Southeast Canadian Counties for SH 4, SH 9, SH 37 and US 62 to become a principal arterial or a minor arterial with other upgrades of local roads in the area. Update and publish the *Highway Functional Classification Within the State of Oklahoma* booklet and the *Oklahoma's Memorial Highways & Bridges* book.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$170,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$170,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$152,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Tim Callahan
TITLE	Transportation Manager II
PHONE	405-521-2728

# 1603

# Highway Needs Study

**PURPOSE AND SCOPE:** To maintain up-to-date software and techniques to estimate the current and future needs of the state highway system. To publish a Needs Study and Sufficiency Report biennially showing the physical and financial needs of the state highway system over a twenty-year period for construction, maintenance, and administration. To identify the Top 25 Priority List of critical projects by Commission District. To maintain a geometric deficiency file of the state highway system. To maintain a maintenance and construction log of highway projects. To develop, maintain, and recommend a list of highway segments for removal from the state highway system and its associated cost.

**ACCOMPLISHMENTS DURING FY 2007:** Updated the Sufficiency and Maintenance Manuals. Updated the state highway subsections, inventory, and improvement data for the Sufficiency file prior to field collection of pertinent data. Updated geometric data contained in the Deficiency file. Completed field revision of the Needs Study and Sufficiency Rating Report. Began revisions of the Needs Study Report, Volumes 1 & 2. Reviewed, revised, and published the State Highway Removal Report. Began conversion of mainframe programs to Windows-based programs.

**PROPOSED ACTIVITIES FOR FY 2008:** Assemble Top 25 Priority List of critical highways by Commission District. Publish and distribute the 2007 Needs Study and Sufficiency Rating Report, Volumes I & II and the Top 25 Priority List. Continue conversion of mainframe programs to Windows-based programs.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$73,200	SPR
	0	STATE
Estimated Cost for FY 2007	\$73,200	SPR
	0	STATE
Estimated Cost for FY 2008	\$75,000	SPR
		STATE

<b>Contact Information</b>	
<b>NAME</b>	Wayne Barber
<b>TITLE</b>	Transportation Manager
<b>PHONE</b>	(405) 522-6705

**PURPOSE AND SCOPE:** To develop and implement the Department's Pavement Management System (PMS); maintain a computer database of pavement distresses and other roadway characteristics used for the analysis of pavement condition and performance and as an aid to pavement design; maintain application software necessary to analyze roadway information for pavement management; and supply data for inclusion in the Highway Performance Monitoring System (HPMS).

**ACCOMPLISHMENTS DURING FY 2007:** Continued refinement of PMS procedures by updating performance curves, treatment costs, and triggers. Performed a twenty-year assessment of Oklahoma's non-toll interstate pavement, bridge, and capacity reconstruction needs. Provided video log technical support to field divisions. Kept informed of the latest technological advances and practices by attending the Southeast Pavement Management Conference. Provided data and support for Pavement Preservation Program (3P) and Construction Work Plan project selection. Began pavement condition data collection on the following:

- Non-NHS routes in Divisions 1, 2, 3, 5, 6, and 7
- HPMS non-highway sample sections in those divisions

**PROPOSED ACTIVITIES FOR FY 2008:** Incorporate additional relevant data elements into analysis as they become available. Begin integration of pavement management systems with other ODOT management systems. Provide technical support for the Intranet Analysis Tool and the video log software. Complete current round of condition data collection and begin new round. Perform PMS analysis of non-toll National Highway System in Oklahoma. Implement web-based version of video log and coordinate integration with GRIP. Keep informed of the latest technological advances and practices through seminars, conferences, and workshops.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$1,105,300	SPR
	0	STATE
Estimated Cost for FY 2007	\$1,105,300	SPR
	0	STATE
Estimated Cost for FY 2008	\$886,600	SPR
		STATE

<b>Contact Information</b>	
<b>NAME</b>	Ginger McGovern, P.E.
<b>TITLE</b>	Pavement Management Engineer
<b>PHONE</b>	(405) 522-1447

**1700**

## **General Urban Transportation Planning Activities**

**PURPOSE AND SCOPE:** This item includes managing staff members in Planning & Program Coordination and the conduct of those general planning and research activities which cannot be ascribed to specific transportation studies contained in the unified planning work programs or the SPR Report. These activities include; a) coordination with appropriate ODOT staff members and Field Divisions, b) coordination with and among local, state, and federal officials, c) dissemination of social and economic data and traffic counts to the public and private sector on request, d) providing technical assistance on planning and research activities/studies at request, e) tracking federal and state legislation and regulations affecting the Department and f) keeping abreast with the latest technological advances and federal regulations in transportation planning, ITS, etc. through seminars, workshops and reading materials.

**ACCOMPLISHMENTS DURING FY 2007:** Coordination work was continued with appropriate ODOT staff members and Field Divisions. Socioeconomic data and traffic counts were provided, at request, to local and state officials and to citizens. Staff attended various seminars and workshops related to management, transportation planning, homeland security and policies in order to maintain, upgrade and develop needed expertise, proficiency and professionalism. Assistance related to Planning & Program Coordination functions was provided. Coordination with and among local, state and federal officials was continued. Monitored federal and state legislation and regulations affecting the Department.

**PROPOSED ACTIVITIES FOR FY 2008:** Coordination with appropriate ODOT staff members, Field Divisions and local, state and federal officials will be continued. Special attention will be focused on the statewide and urban planning sections in the federal transportation bill, SAFETEA-LU, and its effects on statewide and urban transportation planning. Dissemination of pertinent planning data and information will be accomplished on request. Technical assistance will be provided on request concerning transportation planning and the SAFETEA-LU legislation. Professional enrichment of Planning & Program Coordination members will be pursued through attendance at workshops, seminars and conferences.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$33,500	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$33,500	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$33,500	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Jay Adams
TITLE	Transportation Manager III
PHONE	405-521-2175

## Oklahoma City Area Regional Transportation Study (OCARTS)

**PURPOSE AND SCOPE:** To maintain up-to-date socioeconomic and land use data and a viable Long Range Transportation Plan in compliance with the provisions of existing federal regulations and SAFETEA-LU.

**ACCOMPLISHMENTS DURING FY 2007:** MPO conducted and successfully completed the Congestion Management Process, as required by SAFETEA LU, for the OCARTS area. MPO continued to work with ODEQ on monitoring CO and Ozone levels. Financially assisted in the development of the statewide air quality model, State Implementation Plan (SIP), to maintain compliance with Federal Clean Air Act Provisions and National Ambient Air Quality Standards (NAAQS). Participated in development of 8-Hour Ozone Flex Program with the Oklahoma Department of Environmental Quality and United States Environmental Protection Agency to maintain compliance with Federal Clean Air Act provisions and enhance public awareness of the dangers and implications of attainment and non-attainment of the 8 hour air quality standards in the Oklahoma City metropolitan area. The Clean Air Committee promoted an extensive public education campaign “A Let’s Clear the Air@” and “A Get Your Own Square of Clean Air@”. Continued coordinating services with COTPA for transportation of the Elderly and Disabled and assisted in the preparation of the Coordinated Public Transit-Human Services Transportation Plan, required by SAFETEA-LU, being prepared by COTPA. MPO prepared the FY 2008-2011 OCARTS Area Transportation Improvement Program (TIP). The FY 2008 UPWP was prepared and approved by FHWA & FTA. The FY 2008 Agreement was executed. Federal process review was completed for ACOG transportation planning process. ACOG - ODOT certification process completed. Assisted ACOG staff with obtaining new software for updating the OCARTS. Assisted ACOG staff in completion of the 2030 OCARTS Long-Range Transportation Plan and attended public involvement efforts associated with the 2030 Plan. Participated in the development of MPO, State, and FHWA procedures for use of In-Kind@ funds by MPOs.

**PROPOSED ACTIVITIES FOR FY 2008:** Begin preparation for the 2035 OCARTS Long-Range Transportation Plan. Review of demographic areas in the OCARTS area for assessing high growth areas in the Oklahoma City metropolitan area. Continued development and refinement of the transit model for OCARTS. Participate in the ongoing process to implement strategies recommended in the COTPA Fixed Guideway study. Continued coordination with collection and assessment of socioeconomic data and transportation data. Continue coordination with air quality efforts in implementation of the 8-Hour Ozone Flex Program and implementation of ozone control measures relating to transportation sources. Continue Program Coordination and Local Technical Assistance for OCARTS area. Maintain staff training and dissemination of planning documents. Continue management of the planning process and updating of socioeconomic and traffic data for the Oklahoma City area.

# 1701 Oklahoma City Area Regional Transportation Study (OCARTS) (cont.)

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>	<b>Job Piece</b>
<b>Programmed Amount for FY 2007</b>	\$20,000	SPR	
	\$0	STATE	
	\$1,172,776	PL Funds	
	\$150,000	Local	
	\$150,000	In-Kind	
<b>Estimated Cost for FY 2007</b>	\$20,000	SPR	
	\$0	STATE	
	\$1,071,967	PL Funds	
	\$149,731	Local	
	\$150,000	In-Kind	
<b>Estimated Cost for FY 2008</b>	\$20,000	SPR	
	\$0	STATE	
	\$1,141,808	PL Funds	11767(22)
	\$0	Local	
	\$200,000	In-Kind	

<b>Contact Information</b>	
NAME	Joe Khatib
TITLE	Transportation Manager I
PHONE	405-522-1410

**PURPOSE AND SCOPE:** To maintain up-to-date socioeconomic and land use data and a viable Long Range Transportation Plan in compliance with the provisions of existing federal regulations and new SAFETEA-LU provisions and all applicable transportation planning regulations and requirements for the Tulsa urbanized area.

**ACCOMPLISHMENTS DURING FY 2007:** The preparation for the 2035 Mobility Plan (LRTP) initiated. Preparation and finalization of the FY 2008 UPWP was completed. The FY 2008 Agreement was executed and authorization to expend federal funds effective July 1, 2007 through June 30, 2008 was granted by FHWA. A new Public Participation Process was developed and activities were greatly enhanced during the planning year to more involve the public, particularly, in the LRTP and air quality processes. Technical support continued to be provided to the Oklahoma Department of Environmental Quality (DEQ) and the Tulsa City-County Health Department to maintain compliance with Federal Clean Air Act provisions and the National Ambient Air Quality Standards (NAAQS) for ozone and particulate matter. An Emergency Action Compact with the Environmental Protection Agency continued to insure methods followed to insure public awareness of the dangers and implications of attainment and non-attainment of the 8 hour air quality standards in the Tulsa area. Continued support of Ozone Alert programs. Conducted many broad based public involvement activities in support of the planning process, air quality and transit programs.

**PROPOSED ACTIVITIES FOR FY 2008:** Implementation of the FY 2008 UPWP: continued development of the LRTP for 2035; modeling refinements will continue to be developed and incorporated in the planning process; a scientific public opinion survey will be initiated for the LRTP for 2035; assist several member's governments with incorporating the goals and actions of the Destination 2035 in the development of land use plans or comprehensive plans. Transportation Improvement Program: with the cooperation of the member governments, develop and maintain the regional Transportation Improvement Program for FFY 2008-2011. Air Quality Planning and Management: continue to coordinate the Ozone Alert Programs, the Clean Cities Programs and the Commuter Choice Rideshare programs in the region's efforts to maintain attainment of the air quality standards. INCOG will continue to work with ODEQ and ODOT to successfully achieve the overall provisions of the Early Action Compact. Congestion Management: support the implementation of the Incident Management Manual, work toward implementing ITS components throughout the region and rewrite the Congestion Management System Plan as appropriate. Bicycle/Pedestrian System Implementation: continue assisting member governments in the planning, funding and implementation of the Bicycle/Pedestrian Trail system as well as planning, developing and funding on-street bicycle routes. Educate the public on bicycle/trails issues.

## 1702 Tulsa Metropolitan Area Transportation Study (cont.)

ESTIMATED TOTAL COST	Amount	Fund	Job Piece No.
<b>Programmed Amount for FY 2007</b>	\$26,000	SPR	
	\$0	STATE	
	\$710,062	PL Funds	
	\$177,516	Local Funds	
<b>Estimated Cost for FY 2007</b>	\$26,000	SPR	
	\$0	STATE	
	\$730,079	PL Funds	
	\$177,516	Local Funds	
<b>Estimated Cost for FY 2008</b>	\$25,000	SPR	
	\$0	STATE	
	\$764,755	PL Funds	11768(22)
	\$0	Local	

<b>Contact Information</b>	
NAME	Terry Jessup
TITLE	Transportation Manager II
PHONE	405-521-2705

# 1703 Lawton Metropolitan Planning Organization (LMPO)

**PURPOSE AND SCOPE:** To maintain up-to-date socioeconomic and land use data and a viable Long Range Transportation Plan in compliance with the provisions of existing federal regulations and SAFETEA-LU.

**ACCOMPLISHMENTS DURING FY 2007:** Transportation Planning for the Lawton Metropolitan Area was carried out as described in the Unified Planning Work Program (UPWP) FY 2007. In addition a number of other essential transportation projects were completed including: FY 2006-2007 Unified Planning Work Program, FY 2006-2007 Data Report, Development and maintenance of LMPO website, Audit of LMPO's finances, Request for Proposal for Development of Bicycle and Pedestrian Plan, Preparation and submission of FTA 5307 and 5309 grants, FY 2006-2007 TIP, Update of LMPO's Public Participation Process, Request for Proposal for Air Quality Education and Public Information Campaign and Adoption of the 2030 Long Range Plan.

**PROPOSED ACTIVITIES FOR FY2008.** Management and monitoring of the transportation planning process – compliance with administrative, financial and legal requirements for maintaining a continuous, cooperative and comprehensive process. Monitor changes in demographic characteristics and land use to ensure transportation projections are compatible with current patterns, local land use policies and provide required data for the transportation model. Undertake planning activities leading to the development and implementation of the short-range (5 year) elements of the 25 year Long Range Transportation Plan. Develop policies and plans regarding transportation areas such as air quality, reducing congestion and preserving street network capacity. Develop, prioritize and schedule a transportation projects program. Support the Air Quality Education program and public awareness campaign.

ESTIMATED TOTAL COST	Continuing	Fund	Job Piece No.
<b>Programmed Amount for FY 2007</b>	\$ 15,900	SPR	
	0	STATE	
	\$120,000	PL Funds	
	\$ 32,500	Local	
<b>Estimated Cost for FY 2007</b>	\$ 15,900	SPR	
	0	STATE	
	\$143,434	PL Funds	
	\$ 32,500	Local	
<b>Estimated Cost for FY 2008</b>	\$ 15,000	SPR	
	0	STATE	
	\$233,168	PL Funds	11769(22)
	\$ 35,000	Local	

Contact Information	
NAME	Dawn Borelli
TITLE	Transportation Manager I
PHONE	405-521-6433

# 1709

## Ft. Smith Transportation Study

**PURPOSE AND SCOPE:** To maintain up-to-date socioeconomic and land use data and a viable Long Range Transportation Plan in compliance with the provisions of existing federal regulations and SAFETEA-LU and all applicable transportation planning regulations and requirements for the Fort Smith urbanized area.

**ACCOMPLISHMENTS DURING FY 2007:** The tasks listed in the FY 2007 UPWP were completed. Continued analysis of the transportation and socioeconomic elements of the Long Range Transportation Plan was completed. Staff continued to collect data on proposed corridors for a controlled-access facility into the Oklahoma portion of the Bi-State metropolitan planning area. General administrative functions and coordination among the local, state, and federal agencies were continued. The FY 2008 Agreement was completed and authorized; The FY 2008 UPWP was prepared and approved. The MPO was updating its operating and administrative documentation and is adding new members to its membership by revision of its boundaries. Work on the development of a coordinated area transit plan was initiated.

**PROPOSED ACTIVITIES FOR FY 2008:** The Oklahoma Department of Transportation will continue coordination with the Bi-State Metropolitan Planning Organization and the Arkansas DOT in maintaining the 3-C planning process in the Fort Smith area. Complete the reorganization effort to become fully functional and operational. Initiate the provisions of the 2035 LRTP. Continue staff education, training and attendance at workshops and seminars. Continue work on the development of the area transit plan.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>	<b>Job Piece No.</b>
<b>Programmed Amount for FY 2007</b>	\$6,600	SPR	
	0	STATE	
	\$13,826	PL Funds	
	\$3,457	Local	
<b>Estimated Cost for FY 2007</b>	\$6,600	SPR	
	0	STATE	
	\$13,826	PL Funds	
	\$3,457	Local	
<b>Estimated Cost for FY 2008</b>	\$6,000	SPR	
	0	STATE	
	\$22,000	PL Funds	11770(21)
	\$5,000	Local	

<b>Contact Information</b>	
NAME	Terry Jessup
TITLE	Transportation Manager II
PHONE	405-521-2705

# 1719      **Statewide Transportation Improvement Program (STIP)**

**PURPOSE AND SCOPE:** To develop, maintain and amend a financially-constrained federally funded transportation construction program for the State of Oklahoma in compliance with SAFETEA-LU and in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), four Metropolitan Planning Organizations (MPO): ACOG - Association of Central Oklahoma Governments, INCOG - Indian Nations Council of Governments, LMPO - Lawton Metropolitan Planning Organization and Bi-State Metropolitan Planning Organization, Bureau of Indian Affairs (BIA) and Tribal Governments.

**ACCOMPLISHMENTS DURING FY 2007:** Began development of the SAFETEA-LU compliant FFY 2008-2011 Statewide Transportation Improvement Program (STIP) for approval and implementation. Attained the federal approval of the FFY 2007 – 2010 STIP which was developed in accordance with the *Procedures for Developing and Amending the STIP and TIP* as approved by the Department of Transportation, Federal Highway Administration, Federal Transit Administration, ACOG, INCOG, LMPO and Bi-STATE. Maintained the STIP through the following amendment process:

All amendments to the FFY 2007-2010 STIP and TIPs were in accordance with the federally approved Criteria for Amending the Extended STIP. The Process includes publication of proposed amendment for a minimum of 14 days for review and comment. The public involvement process was completed in accordance with TEA 21 and SAFETEA-LU, regarding publication of project amendments.

The FFY 2007 - 2010 STIP contains an Executive Introduction of the Transportation; Explanation of STIP; Balancing Process including Clarification, Projected Revenues and Expenditures Summary as well as SAFETEA-LU Special Projects; FFY 2007 - 2010 Construction Program Maps with Project List; MPO TIPs; Indian Reservation Roads TIP; Federal Lands Application; Sub-state Organization Map; Tribal Jurisdiction Map; ODOT Certification; STIP/TIP Development and Amendment Procedures and Federal Joint Memorandum of Understanding.

Completed the Joint Process Review on the STIP Development Process. Documented the STIP process and attained approval from both FHWA and ODOT.

**PROPOSED ACTIVITIES FOR FY 2008:** Areas of special emphasis in FY 2008: Development of the FFY 2008 - 2011 Statewide Transportation Improvement Program for implementation. Maintaining the FFY 2007 portion of the STIP through the approved *STIP/TIP Amendment Procedures*. Continue to comply with the procedures for consultation with non-metropolitan local officials. Update the STIP/TIP Development Procedures based upon the revision of the ODOT 8 Year Construction Work Plan schedule.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$65,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$65,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$65,000	SPR
	0	STATE

**1719 Statewide Transportation Improvement Program  
(STIP) (cont.)**

<b>Contact Information</b>	
NAME	Dawn Borelli
TITLE	Transportation Manager I
PHONE	405-521-6433

# 1901 Oklahoma Pollutant Discharge Elimination System (OPDES) Municipal Separate Storm Sewer System (MS 4) Permits

**PURPOSE AND SCOPE:** The United States Environmental Protection Agency (EPA) has promulgated regulations in 40 CFR 122 requiring DOT' to obtain a permit for their separate storm sewer systems. ODOT is required under this regulation to obtain a permit for its storm water runoff system within the boundaries of regulated cities of Oklahoma. ODOT selected the option to be a co-permittee with the City of Oklahoma City and Tulsa in obtaining an OPDES Phase I permit and is required to be permitted under Phase II of the same regulation. ODOT requires assistance to develop and implement the Storm water Program required under this permit to cover ODOT under Phase II.

**ACCOMPLISHMENTS DURING FY 2007:** Started development of Phase II permit and program. Reviewed and coordinated consultant work. The consultant was hired in FY 2006 to develop ODOT 's MS4 Storm water program within urbanized areas as required by the MS4 permits issued by Department of Environmental Quality. The benefit of this project will help ODOT maintain compliance with the MS4 permit through implementation of program mandates in the permit and included in ODOT's Storm Water Management Plan. .

**PROPOSED ACTIVITIES FOR FY 2008:** Continue development of Phase II permit and program. Review and coordinate consultant work. Complete inventory required for Phase II program.

ESTIMATED TOTAL COST CONTINUING	Amount	Fund	Job Piece No.	Project No.
<b>Programmed Amount for FY 2007</b>	\$185,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2007</b>	\$185,000	SPR		
	0	STATE		
<b>Estimated Cost for FY 2008</b>	\$835,000	SPR		
	0	STATE		

Contact Information	
NAME	Dawn Sullivan, P.E.
TITLE	Division Engineer
PHONE	405-521-2927

# 1902

## Statewide Long Range Transportation

**PURPOSE AND SCOPE:** To update the Statewide Intermodal Transportation Plan (The Plan@) and other associated statewide planning activities in accordance with the provisions of SAFETEA-LU. To conduct and/or participate in the development of plans relating to Transportation Improvement Corridors and other corridors identified in The Plan.

**ACCOMPLISHMENTS DURING FY 2007:** Completed the US 81 Transportation Improvement Corridor Study from I-40 to SH 19 in Canadian and Grady Counties.

Prepared an updated Public Participation Plan for the Statewide Intermodal Transportation Plan and the Statewide Transportation Improvement Program to conform with SAFETEA-LU requirements. Updated the Public Participation Plan for consulting with non-metropolitan area local officials to conform with SAFETEA-LU requirements. Preliminary discussion, planning and data gathering for the 2010-2035 Statewide Intermodal Transportation Plan was initiated.

**PROPOSED ACTIVITIES FOR FY 2008:** Begin process of developing and initiating consultant contract for public involvement and intermodal elements for the 2010-2035 Statewide Intermodal Transportation Plan. Continue to monitor transportation, legislative and demographic trends relative to SAFETEA-LU. Initiate, participate and/or complete corridor studies on Transportation Improvement Corridors or other corridors in the State. Continue to attend conferences and training courses related to Statewide and Corridor planning and grant applications.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$25,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$20,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$200,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Joe Khatib
TITLE	Transportation Manager I
PHONE	405-522-1410

# 1903

## Intelligent Transportation Systems Planning

**PURPOSE AND SCOPE:** Incorporate Intelligent Transportation Systems (ITS) into the transportation planning process in compliance with the provisions of the transportation bill re-authorization, Use an ITS integration strategy by defining roles, responsibilities and shared operational strategies to address key policy and operational issues creating and / or updating the conceptual design for ITS within the planning area. Ensure the interoperability and institutional / technical integration of ITS efforts through compliance with ITS Statewide / Regional Architectures and related ITS standards.

**ACCOMPLISHMENTS DURING FY 2007:** Assisted Edmond in ITS deployment plan needs. Assisted with CVISN contracts and administration.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue to process ITS funded contracts / invoices for the systems analysis / design and deployment of Oklahoma's CVISN Program plan projects. Maintain the Statewide ITS / CVISN Plans and architectures. Assist MPOs and individual cities in maintenance of their regional ITS and architecture. Coordinate ITS and other technology based transportation research contracts and activities.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$75,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$0	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$10,000	SPR
	\$0	STATE

Contacts	<b>PROGRAM MANAGER</b>
<b>NAME</b>	Ron F. Curb, P.E., CPM
<b>TITLE</b>	Engineering Manager
<b>PHONE</b>	405-522-3795

# 1904

## Air Quality Transportation Planning

**PURPOSE AND SCOPE:** Monitor and participate in air quality transportation planning developments relating to requirements of the Clean Air Act Amendments and SAFETEA-LU. Represent the Department in air quality nonattainment and transportation conformity developments and actions, if necessary. Analyze and comment on air quality nonattainment and transportation regulations and law. Maintain information flow to and from decision-makers regarding air quality/transportation issues, developments, regulations and laws. Develop staff personnel to participate in air quality/transportation planning. Enable the Department to be a progressive participant in reducing the impacts of transportation-related pollution.

**ACCOMPLISHMENTS DURING FY 2007:** Participation in the air quality/transportation planning activities of the Lawton, Oklahoma City, and Tulsa Metropolitan Planning Organizations (MPO). These activities included participation in the development and implementation of 8-Hour Ozone Flex Agreements for the Oklahoma City and Tulsa Metropolitan areas.

Other accomplishments: Research and development of resource materials on air quality/transportation issues; and review and comment on MPO air quality education programs. Coordinate the planning process for air quality modelling funding and actions between the States, MPOs, ODOT, and the ODEQ; monitoring air quality regulations on new ozone and particulate matter standards proposed by the Environmental Protection Agency (EPA) for NAAQS. Attended conferences on air quality planning and regulations.

**PROPOSED ACTIVITIES FOR FY 2008:** Maintain participation in the development of the 8-Hour Ozone Flex Agreements for the Oklahoma City and Tulsa Metropolitan Planning Organizations with ODEQ and EPA to help maintain air quality attainment status if high ozone readings persist through the next fiscal year. Maintain research and participation in air quality/transportation issues, developments, regulations and laws.. Participate in Memorandum of Agreement and other requirements (transportation conformity) of nonattainment status if any area of the State becomes nonattainment through possible 8-hour ozone flex agreements with ODEQ and EPA. Provide data for air quality modelling efforts. Continue to develop education materials and courses for Department personnel regarding air quality and transportation. Participate in MPO and ODEQ air quality/transportation initiatives, educational programs, and efforts to reduce pollution. Continue staff education through FHWA, EPA, NHI, NTI and other agency courses, seminars, and conferences.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$10,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$9,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$12,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Joe Khatib
TITLE	Transportation Manager I
PHONE	405-522-1410

# 1910

## Visualization Techniques

**PURPOSE AND SCOPE:** To provide visual aides for the Public Involvement for Statewide Transportation Improvement Plan (STIP) and NEPA Process. Section 6001of SAFETEA-LU specifically states that the State shall employ visualization techniques to describe plans for the public comment in the development of STIP. In addition, the visualization techniques will be useful in the Public Involvement required under 23 CFR 771.111 for Environmental Impact Procedures, 40 CFR 1500-1508 for implementation of NEPA, 36 CFR 800 for the Section 106 of National Historic Preservation Act, and Section 4(f) of the Department of Transportation Act.

**ACCOMPLISHMENTS DURING FY 2007:** No activity. The position was not filled.

**PROPOSED ACTIVITIES FOR FY 2008:** Provide visualization of proposed projects for the STIP. Provide visualization of existing and proposed conditions for presentation to public and other agencies at public and stakeholders meetings for Planning purposes.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$6,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$3,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Jay Adams
TITLE	Transportation Manager III
PHONE	405-521-2175

# 1979

## Environmental Studies (NEPA Compliance)

**PURPOSE AND SCOPE:** This item includes all coordination required to complete Environmental Impact Statements (EIS), Environmental Assessments (EA) and Categorical Exclusions (CE) required to obtain federal funding authority for ODOT’s construction program as well as local government projects funded with federal funds and special projects such as enhancement project and safe routes to school projects, including necessary reevaluation and consultation with FHWA regarding existing environmental clearances. It also includes coordination with the Department’s public involvement specialist, Planning & Research environmental specialists, other ODOT Divisions, the interested public, stakeholders, elected officials, FHWA, NEPA service providers, and others as necessary to ensure compliance with NEPA in the development of ODOT’s work plan. Major issues considered in the NEPA process include, historic and archaeological resources, endangered species and other habitat concerns, hazardous materials, wetlands, farmland, noise, air quality, and social and economic impacts, especially any disproportionate impacts to minorities and low income communities. The input of appropriate federal and state agencies, Native American tribes, and other entities is solicited, necessary environmental studies are requested or contracted, plans for public involvement developed when necessary, and findings presented. Preparation of documents is accomplished in-house and by consultants retained for this purpose. Draft NEPA documents are reviewed jointly by in-house Coordinators and FHWA and finalized for presentation to the public and other review entities. Following all comments, final documents are provide to FHWA for execution of appropriate concurrences, FONSI’s and ROD’s.

**ACCOMPLISHMENTS DURING FY2007:** The NEPA review process was completed for a total of 120 state and local projects (118 CEs and 2 EA’s). Public meetings have been held on 10 projects, and 5 stakeholder meetings held. Formal NEPA reevaluations have been undertaken on 5 projects, and informal update consultation completed for another 30. Another 515 projects or so are in various stages of environmental review. Managed on-call engineering service contracts which have been executed with 6 consultants to provide expedited NEPA review. Continued to improve communication with FHWA and other federal/state agencies to streamline NEPA process and improve compliance. Worked with FHWA Oklahoma Division to implement assumption of federal NEPA authority embodied in Sections 6004 and 6005 of SAFETEA-LU. Participated in workshops, conferences, and meetings to keep abreast of best practices and regulatory changes; where appropriate, assume leadership roles in work-related professional organizations and committees

**PROPOSED ACTIVITIES FOR FY2008:** Develop process to link Planning an NEPA. NEPA studies will be funded with other funding sources

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$423,300	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$430,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$150,000	SPR
	0	STATE

<b>Contact Information</b>	
NAME	Siv Sundaram, P.E.
TITLE	Assistant Division Engineer
PHONE	405-522-3791

## 1980 Environmental Studies (Environmental Affairs and Specialist Studies)

**PURPOSE AND SCOPE:** This includes detailed studies required to ensure ODOT compliance with all applicable state and federal laws and regulations protecting all aspects of the human and natural environment. A principal focus is providing studies and reviews to support NEPA documents assembled under Item 1979 and consultation on FHWA's behalf with a variety of state and federal resource protection agencies and Tribes. Environmental specialists also provide assessments and reviews as needed for long-range planning and corridor studies, mitigation of impacts identified during NEPA review, ongoing coordination with regulatory agencies and other ODOT Divisions to ensure implementation of special environmental protection measures during construction, maintenance, and operation, and provide expert interpretations to ODOT and FHWA regarding current and proposed legislation/regulation protecting the environment. Special environmental reviews are also undertaken for other ODOT traffic, construction, maintenance, and enhancement activities. In addition to undertaking in-house studies, environmental specialists review, approve, and submit consulted studies to appropriate resource agencies. Expertise is maintained in wetland biology, plant ecology, endangered species protection, Corps permitting requirements, archaeology, architectural history, tribal coordination and cultural anthropology, historic preservation policy, environmental health and hazardous waste issues, noise evaluation and mitigation, social and economic impacts, and general NEPA policy. As needed, additional expertise is retained through consultant contracts.

**ACCOMPLISHMENTS DURING 2007:** 243 Phase I cultural resources surveys, 1 Phase II archaeological testing project, 5 MOAs and 5 Section 4(f) evaluations were completed in-house thru an Interagency Agreement with the University of Oklahoma for cultural resources studies. This also included 153 off-project file reviews and 2 borrow pit surveys, 4 meetings and MOU/PA negotiations with Tribal officials, 5 MOU/PA with Tribal officials have been executed, and 2 project specific tribal meetings regarding cultural resources issues. A total of 35 archaeological sites and 27 standing historic buildings have been reviewed and documented. Phase I of the new historic bridge survey has been completed and submitted to SHPO. The field work for Phase II of the Oklahoma Historic Bridge Survey was initiated. 144 projects were subjected to initial biological/wetland assessments through an Interagency Agreement with the University of Oklahoma for biological studies, and another 84 consulted biological studies have been reviewed. Informal Section 7 consultation has been completed or is underway for 150 projects and 1 formal consultation is underway. Surveys and evaluations for the American Burying Beetle (ABB) are completed or underway for 57 projects. Programmatic agreements are being developed for the ABB surveys and wetland banking programs. Initial site assessments and LUST reviews have been completed for 180 projects inhouse and 14 consulted out, with follow up site investigations on approximately 10. A total of 7 TNM noise studies were undertaken in-house, 7 others done by consultants, and several citizen noise inquiries were addressed. Continued to improve and expedite tribal consultation processes through programmatic agreements with FHWA and tribes. Continued aggressive ABB survey and trap/relocate processes, completed final report on Phase I historic bridges resurvey and initiated Phase II documentation of bridges not included in initial study. Continued to explore possible programmatic ABB consultation/treatment, and MBTA compliance with USFWS. Implemented Interagency Cooperative funding agreement with USFWS to retain dedicated reviewers for ODOT projects and expedite review processes. Continued working toward establishment of wetland and hardwood forest banks. Participated in workshops, conferences, and meetings to keep abreast of best practices and regulatory changes; where appropriate, assume leadership roles in work-related professional organizations and committees. Held a Section 4(f) Training Workshop for ODOT and Consultants through FHWA.

**PROPOSED ACTIVITIES FOR 2008:** Continue Interagency Cooperative funding agreement with USFWS to retain dedicated reviewers for ODOT projects and expedite review processes. Continue working toward establishment of wetland and hardwood forest banks. Participate in workshops, conferences, and meetings to keep abreast of best practices and regulatory changes; where appropriate, assume leadership roles in work-related professional organizations and committees. The interagency agreement with University of Oklahoma and all Specialist Studies will be funded with other funding sources

**1980**

**Environmental Studies (Environmental Affairs  
and Specialist Studies) (Cont.)**

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$1,770,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$1,500,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$150,000	SPR
	\$0	STATE

<b>Contact Information</b>	
NAME	Siv Sundaram, P.E.
TITLE	Assistant Division Engineer
PHONE	405-522-3791

**FEDERAL FISCAL YEAR 2008  
OKLAHOMA PROJECT SPRY -0010(044) RS, JP # 01946(50)**

**Part 2**

<u>PROGRAM</u>	<u>SPR</u>	<u>STATE</u>	<u>FHWA</u>	<u>TOTAL</u>
2100 Transportation Research Board	\$5,000.00	\$0.00		\$5,000.00
2102 Research Library Services	\$254,000.00	\$0.00		\$254,000.00
2115 LTPP/SHRP/SHRP II Long Term Pavement Performance	\$20,000.00	\$0.00		\$20,000.00
2120 Technical Assistance - Special Studies	\$75,000.00	\$0.00		\$75,000.00
2130 General Research Activity	\$50,000.00	\$0.00		\$50,000.00
2700 Experimental Product & Technology Evaluation Program	\$20,000.00	\$0.00		\$20,000.00
<b>Total General Activities</b>	<b>\$424,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$424,000.00</b>
2156 Roadside Vegetation Management	\$182,000.00	\$0.00		\$182,000.00
2157 Herbicide Research Program	\$70,000.00	\$0.00		\$70,000.00
2160 Oklahoma Transportation Center	\$505,000.00	\$0.00		\$505,000.00
2167 Effect of Suction and Moisture on Resilient Modulus of Subgrade Soils in Oklahoma	\$0.00	\$0.00		\$0.00
2168 Scale effects in Oedometer-Based Predictions of Fill Settlement	\$0.00	\$0.00		\$0.00
2172 Evaluation of ODOT's Percent Within Limits (PWL) Construction Specifications	\$0.00	\$0.00		\$0.00
2177 Determination of Dynamic Modulus Master Curves for Oklahoma Hot Mix Asphalt (HMA) Mixtures	\$0.00	\$0.00		\$0.00
2178 Evaluation of Cold, In-Place Recycling for Rehabilitation of Transverse Cracking on US 412	\$0.00	\$0.00		\$0.00
2181 Resilient Modulus of Asphalt and its Correlation With Asphalt Pavement Analyzer Rut	\$0.00	\$0.00		\$0.00
2182 Task Order Contract for Specified Research Items	\$25,000.00	\$0.00		\$25,000.00
2184 Creation of an ODOT Specification for Patching or Overlay of Bridge Decks	\$65,000.00	\$0.00		\$65,000.00
2185 Engineering Properties of Stabilized Subgrade Soils for the Implementation of the AASHTO 2002 Pavement Design Guide	\$95,700.00	\$0.00		\$95,700.00
2186 Rating Precast Prestressed Concrete Bridges for Shear	\$13,000.00	\$0.00		\$13,000.00
2187 Investigation of Automating Turning Movement Studies Using New Sensor Technology	\$0.00	\$0.00		\$0.00
2188 Vegetative Rehabilitation of Highway Cut Slopes	\$60,000.00	\$0.00		\$60,000.00
2190 A Real-Time Scour Risk Identification and Information Management System	\$150,000.00	\$0.00		\$150,000.00
2191 Degradation of Major Streams in Oklahoma	\$0.00	\$0.00		\$0.00
2192 Development of Field Correlation and Test Procedure for TransTech Systems' Pavement Quality Indicator (PQI) 301 Non-Nuclear DensityGauge	\$0.00	\$0.00		\$0.00
2193 Degradation Stabilizing Methodology for Selected Broken-Back and Drop Box Culverts in Okla. Phase II	\$91,000.00	\$0.00		\$91,000.00
2195 Evaluation and Field Verification of Strength and Structural Improvement of Chemically Stabilized Subgrade Soil	\$118,300.00	\$0.00		\$118,300.00
2196 Stability and Permeability of Proposed Aggregate Bases in Oklahoma	\$80,000.00	\$0.00		\$80,000.00
2197 Longitudinal Joint Density and Permeability in Asphalt Concrete	\$60,000.00	\$0.00		\$60,000.00
2199 Optimizing Concrete Mix Designs to Produce Cost Effective Paving Mixes	\$0.00	\$0.00		\$0.00
2200 Instrumented Pavement Construction	\$169,000.00	\$0.00		\$169,000.00
2202 GIS Layer for Transportation and Economic Statistics	\$0.00	\$0.00		\$0.00
2203 Truck Weight Enforcement	\$0.00	\$0.00		\$0.00
2204 Advanced Voice and Multimedia Communications System for the ODOT ITS Network	\$0.00	\$0.00		\$0.00
2206 Development of an Improved System for Contract Time Determination – Phase II	\$0.00	\$0.00		\$0.00
2207 Validation and Refinement of Chemically Stabilization Procedures for Pavement Subgrade Soils in Oklahoma	\$102,000.00	\$0.00		\$102,000.00
2440 Local Technical Assitance Program	\$0.00	\$0.00		\$0.00
<b>Total Projects</b>	<b>\$1,786,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$1,786,000.00</b>
<b>Total SPRY-0010(044) RS</b>	<b>\$2,210,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$2,210,000.00</b>
<b>Grand Total</b>	<b>\$2,210,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$2,210,000.00</b>

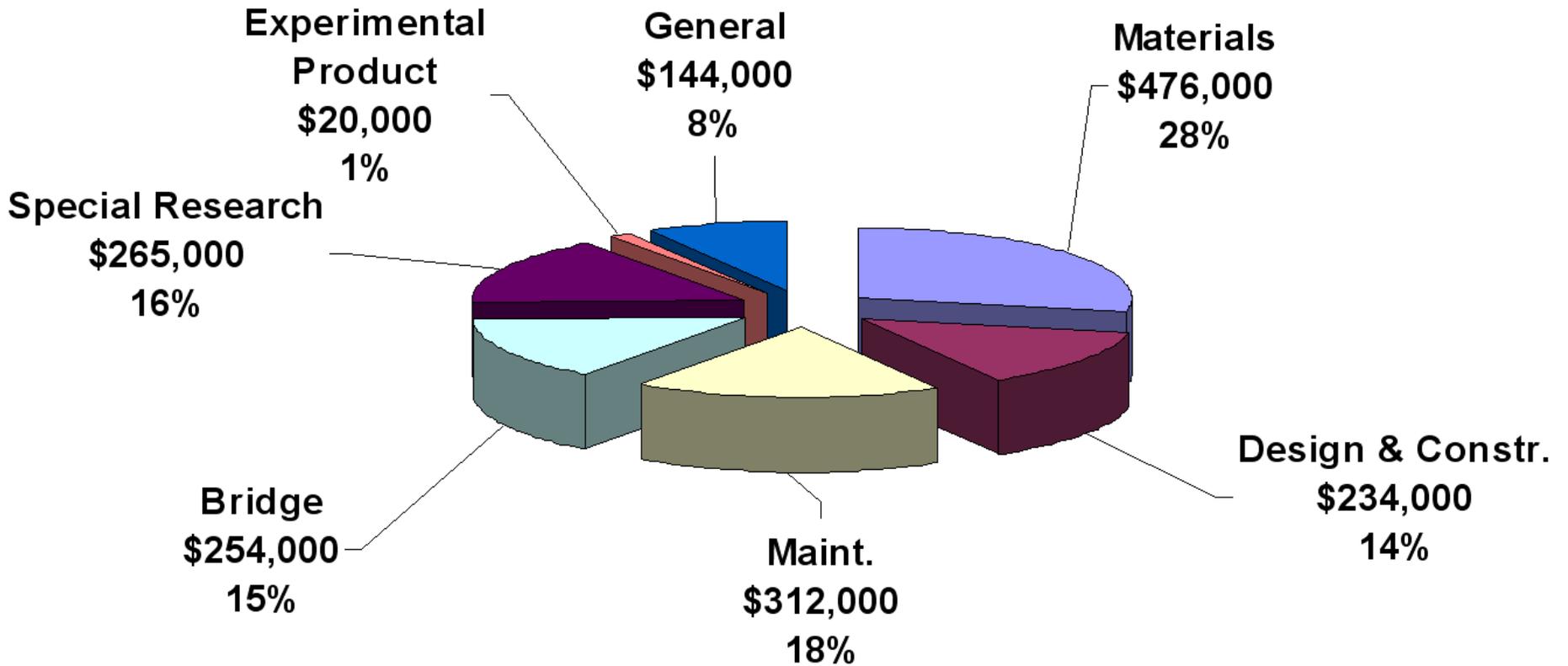
**FEDERAL FISCAL YEAR 2008  
POOLED FUND COMMITMENTS**

**POOLED FUND PROJECTS**

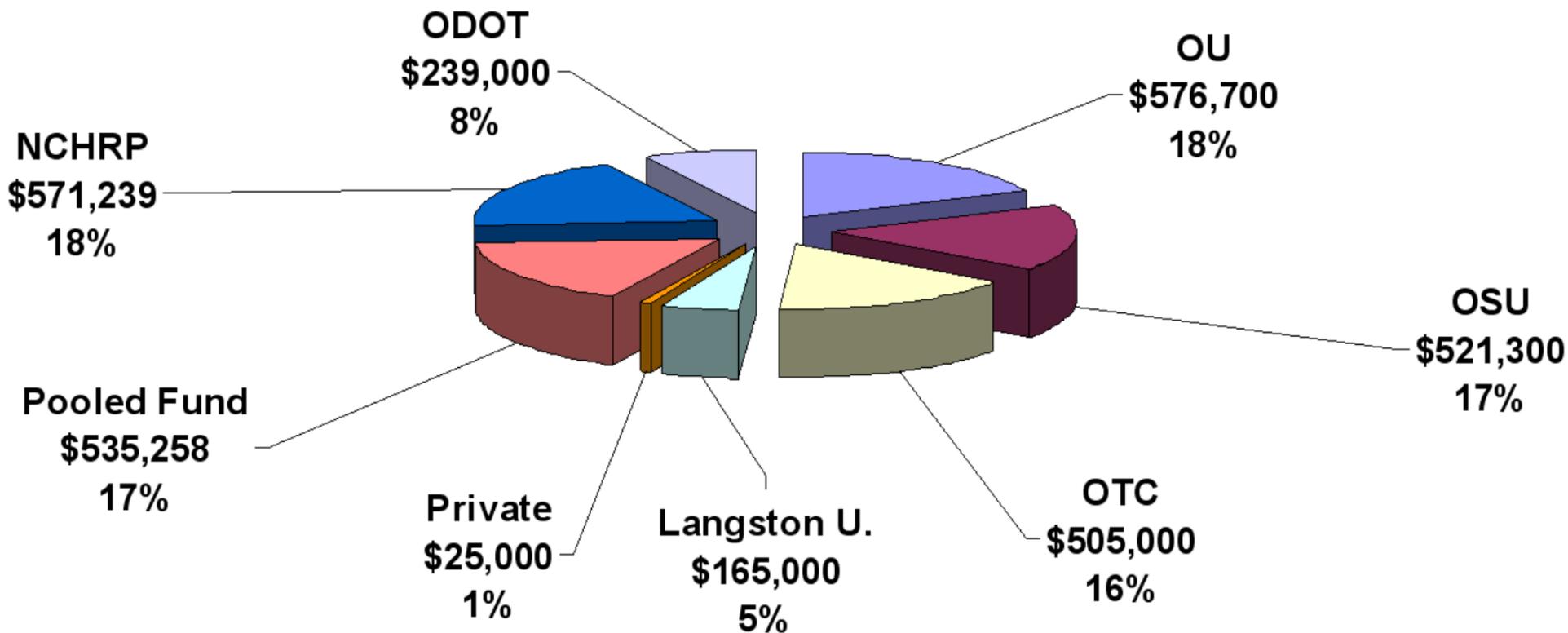
Project Number	J/P Number	Contact		Project From	Period To	Estimated ODOT Total Cost to Project	FFY 2007	FFY 2008	FFY 2009	FFY 2010	FFY 2011	FFY 2012
TPF-5(124)	23934(04)	Bryan Hurst	NCAT Track	2006	2008	\$900,000.00	\$300,000.00	\$300,000.00	\$0.00	\$0.00	\$0.00	\$0.00
TPF-5(117)		Kenny Seward	Development of Performance Properties of Ternary Mixes	2006	2011	\$75,000.00	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00	\$0.00
TPF-5(099)	22992(04)	Faria Emamian	Evaluation of Low Cost Safety Improvements	2005	2008	\$90,000.00	\$30,000.00	\$30,000.00	\$0.00	\$0.00	\$0.00	\$0.00
TPF-5(069)	22903(04)	David Girdner	TRB: Core Program Services for a Highway Research, Development, and Technology Program (1)	2007	CONTINUING	\$128,250.00	\$234,655.00	\$128,250.00	\$128,250.00	\$128,250.00	\$128,250.00	\$128,250.00
TPF-5(068)	20708(04)	Bob Rusch	Long Term Maintenance of LRFD Specs	2003	2006	\$40,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TPF-5(066)	21998(04)	Kenny Seward	Material & Construction Optimization for Prevention of Premature Pavt. Distress in PCCP (3)	2005	2007	\$45,000.00	\$15,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TPF-5(063)	20556(04)		Improving the Quality of Pavement Profiler Measurement	2003	2006	\$81,600.00	\$20,400.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TPF-5(051)	20558(04)	Bob Rusch	Construction of Crack-Free Concrete Bridge Decks	2003	2010	\$100,000.00	\$0.00	\$20,000.00	\$0.00	\$20,000.00	\$0.00	\$0.00
TPF-5(046)	20559(04)	Steve Sawyer	Transportation Curriculum Coordination Council Training Management & Dev.	2003	2009	\$80,000.00	\$0.00	\$20,000.00	\$20,000.00	\$0.00	\$0.00	\$0.00
TPF-5(017)	20026(04)	David Girdner	WASHTO-X Technology Transfer Initiative		CONTINUING	\$30,000.00	\$30,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$0.00	\$0.00
TPF-5(145)	24732(04)	Kevin Bloss	Western Maintenance Partnership (2)	2007	2009	\$15,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$0.00
TPF-5(408)	09030(36)		NCHRP		CONTINUING	\$550,000.00	\$571,239.00	\$571,239.00	\$571,239.00	\$571,239.00	\$571,239.00	\$571,239.00
TPF-5(159)			Technology Transfer Concrete Consortium	2008	2012	\$25,000.00	\$0.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00

- Notes:  
(1) JP 22903(04) TRB: Core Program Services for a Highway Research, Development, and Technology Program: FFY 2007 Authorization included amounts for 2006 and 2007.  
(2) JP 24732(04) Western Maintenance Partnership is a 3 Year Commitmen - First year funds taken out in FFY 2007  
(3) JP 21998(04) Material & Construction Optimization for Prevention of Premature Pavt. Distress in PCCP: First 2 Year Funds taken out in FFY 2006

**ODOT Research by Category FFY 2008**  
**Total = \$1,705,000**



**Research by Organization FFY 2008**  
**Total = \$3,142,000**



## 2100

## Transportation Research Board

**PURPOSE AND SCOPE:** Beginning with FFY07, this project will only cover travel expenses and time for ODOT personnel to attend the annual TRB meeting. The TRB subscription costs are covered under a pooled fund study.

**ACCOMPLISHMENTS DURING FY 2007:** Attended TRB annual meeting.

**PROPOSED ACTIVITIES FOR FY 2008:** Attend TRB annual meeting.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$15,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$5,000	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$5,000	SPR
	\$0	STATE

	<b>PROGRAM MANAGER</b>	<b>PROGRAM CONTACT</b>
<b>NAME</b>	Jay Adams	Ron F. Curb, P.E., CPM
<b>TITLE</b>	Transportation Manager III	Engineering Manager
<b>PHONE</b>	405-521-2175	405-522-3795

## 2102

## Research Library Services

**PURPOSE AND SCOPE:** Provide the Oklahoma Department of Transportation (ODOT) and customers with an information clearinghouse. The primary goals of this Technology Transfer Office are to provide a sound, progressive, flexible library available to ODOT and Oklahoma Transportation Center's university personnel statewide and to keep them informed of recent innovations in transportation technology, methodologies and programs as soon as information becomes available. Aligning with this is the goal of providing proficient systematic searches of all resources when needed and knowing where to reference the needed information. The Transportation Information Retrieval Service (TRIS) database will be accessed by ODOT and the Research In Progress (RIP) database will be maintained by ODOT respectively. Additional services are aimed at providing ODOT with editing and publishing capabilities to assist the Planning & Research Division in generating and distributing reports and publications. Langston University (the University) has developed the Transportation Center of Excellence to assist government entities and others in the transportation industry in the conduct of research and to provide technical assistance and training services in the resolution of transportation issues. Contract with the University to provide information, services and updates to ODOT and the state universities.

**ACCOMPLISHMENTS DURING FY 2007:** Continued service expansion to update national and state database administration and information. Software and application capabilities to enhance services and accessibility to library by ODOT personnel have been maintained. Enhanced methods were used to inform personnel of WASHTO-X video conferences.

**PROPOSED ACTIVITIES FOR FY 2008:** Contract with the University to provide transportation information, services and updates to ODOT and the state universities. Access the Transportation Information Retrieval Service (TRIS) database and maintain the Research In Progress (RIP) database. Develop procedures to enhance services and accessibility to Transportation Library resources by ODOT and Oklahoma Transportation Center's university personnel. Inform all transportation professionals of WASHTO-X video conferences. Maintain software and application capabilities to enhance services and accessibility to library by ODOT and local university personnel.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$66,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$50,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$254,000	SPR
	\$0	STATE

	<b>PROGRAM MANAGER</b>	<b>PROGRAM CONTACT</b>
<b>NAME</b>	Rudy Brocklesby	Dave Girdner
<b>TITLE</b>	Transportation Manager I	CADD Specialist
<b>PHONE</b>	405-522-0171	405-522-5904

## 2115 LTPP/SHRP/SHRP II Long Term Pavement Performance

**PURPOSE AND SCOPE:** The purpose of this project is to maintain LTPP test sites, markings and current status, report maintenance to Southern Region Contract Office (SRCO), assist SRCO with data gathering as necessary, act as general liaison between SRCO and the Department. Maintain working knowledge related to SHRP product implementation, act as general liaison between FHWA and the Department for product implementation activities. Represent the Department in SHRP II Program.

**ACCOMPLISHMENTS DURING FY 2007:** SRCO met with ODOT to discuss further LTPP testing and monitoring; discussed maintenance rehabilitation plans for targeted test sites; provided a list of the current Oklahoma “in-study” and “out-of-study” test locations.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue monitoring LTPP active sites in Oklahoma; maintain signing and markings for all active sites; report to SRCO other activities regarding maintenance of sites.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$30,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$20,000	SPR
	\$0	STATE

<b>Contacts</b>	<b>PROGRAM CONTACT</b>
NAME	Bryan K. Hurst
TITLE	Transportation Manager
PHONE	405-522-3794

**2120****Technical Assistance - Special Studies**

**PURPOSE AND SCOPE:** Provide ongoing technical support, or special investigations, to the Department when a full-scale research project is not warranted or when a quick turnaround is required.

**ACCOMPLISHMENTS DURING FY 2007:** Provided support for the Department with assistance and equipment in: special investigations, and other activities when needed. Specific investigations: I-235 Storm Drain Inspection, Oklahoma County;

**PROPOSED ACTIVITIES FOR FY 2008:** Provide support for the Department with assistance and equipment in: core drilling, traffic control, special investigations, bridge deck testing and any other activities when needed. Purchase, calibrate and test new equipment for analysis of documentation of bridge deck conditions.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$123,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$5,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$75,000	SPR
	\$0	STATE

	<b>PROGRAM MANAGER</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Bryan K. Hurst	Vacant
<b>TITLE</b>	Transportation Manager	Transportation Specialist
<b>PHONE</b>	405-522-3794	

## 2130

## General Research Activity

**PURPOSE AND SCOPE:** This activity covers various research activities which are necessary for the operation of a research section but which cannot be accurately included in other projects. Examples of this type of activity include: attending quality task force meetings, writing work plans for emerging research projects which have not been assigned an item number when the work plan is written, reviewing research reports, meeting with university and private researchers, regarding proposed projects, attending industry seminars, conferences, etc. This project also covers costs of various professional services contracts for research projects which fill needs of the Department, but were not foreseen when the SPR budget was written, and therefore were not included as separate items. This may include special technical assistance on multiple projects, and providing matching funds for leveraging research program funds, such as OCAST/IDEA programs, for research significant to the Department.

**ACCOMPLISHMENTS DURING FY 2007:** Attended meetings, wrote work plans, reviewed reports, discussed proposed work with researchers and ODOT personnel, as described above. Contracted for Langston University services in the areas of library, asphalt training, future research services study.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue work on general research for ODOT. Setup Langston University research and training services under Item 2102.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$320,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$260,000	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$50,000	SPR
	\$0	STATE

<b>PROGRAM MANAGER</b>	
<b>NAME</b>	Ron F. Curb, P.E., CPM
<b>TITLE</b>	Engineering Manager
<b>PHONE</b>	405-522-3795

## 2156

## Roadside Vegetation Management

**PURPOSE AND SCOPE:** The purpose of this project is to provide ODOT with certified training related to Roadside Vegetation Management (RVM), consultation to ODOT field divisions, and development of manuals of practice for ODOT.

**ACCOMPLISHMENTS DURING FY 2007:** Begin Annual Certified Pesticide Applicator Training for all ODOT field divisions and maintain Pesticide Applicator Training Records for ODOT Certified Pesticide Applicators; Provide consultation to ODOT field personnel as requested and produce monthly activity reports; Conduct Sprayer Equipment inspection and calibration workshops; Assist ODOT in maintaining and producing an Approved Herbicide and Adjuvants List; Assist ODOT in Statewide Herbicide Contract review; Conduct and produce an Annual ODOT Herbicide Program Survey and Divisional Report; Produce Annual Roadside Vegetation Management Herbicide Technologies Report and Annual Equipment Report; Begin 4th Edition of the Roadside Vegetation Management Guidelines; Begin the production of Sprayer Equipment Assessment Guide.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue selected activities mentioned above, as well as, produce an updated Approved Herbicide and Adjuvants List; Produce an updated Annual Divisional Herbicide Report, and an updated Annual Equipment Report; Begin preliminary meeting and scheduling with ODOT P&R Division personnel for the fiscal year 2009 Roadside Vegetation Management Implementation Tour.

<b>ESTIMATED TOTAL COST</b>	<b>\$560,000 (3 Years)</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year1)</b>	\$191,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$130,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 2)</b>	\$182,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Dennis L. Martin, Ph.D.	Bryan K. Hurst
<b>TITLE</b>	Turfgrass Extension Specialist, OSU	Transportation Manager
<b>PHONE</b>	405-744-5419	405-522-3794

## 2157

## Herbicide Research Program

**PURPOSE AND SCOPE:** The purpose of the project is to conduct field investigations which evaluate herbicide products, applications and equipment.

**ACCOMPLISHMENTS DURING FY 2007:** Begin the evaluation of new and generic herbicide formulations for integration into the ODOT Roadside Vegetation Management Programs; implement findings in winter CEU Training Workshops; produced Annual Report; Begin the evaluation of adjuvants and recommended herbicides for tank mix compatibility; produce monthly reports; execute the first of two summer Roadside Research Van Tours.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue selected activities mentioned above, as well as, completing field experiments; completing data collection and analysis; updating the Annual Report; implement new findings in winter CEU Training Workshops; execute the second of two summer Roadside Research Van Tours; produce Annual Report on Product Compatibility; implement findings in winter CEU Training Workshops.

<b>ESTIMATED TOTAL COST</b>	<b>\$215,000 (3 Years)</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$67,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$47,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 2)</b>	\$70,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Dennis L. Martin, Ph.D.	Bryan K. Hurst
TITLE	Turfgrass Extension Specialist, OSU	Transportation Manager
PHONE	405-744-5419	405-522-3794

**2160**

**Oklahoma Transportation Center**

**PURPOSE AND SCOPE:** The Oklahoma Transportation Center (OTC) is a research organization made up of researchers employed by the University of Oklahoma (OU), Oklahoma State University (OSU), and Langston University (LU). Research personnel in this organization have expertise and experience covering a wide range of transportation-related topics. The purpose of this item is to coordinate and contract research activities covering various topics on behalf of ODOT and to provide matching funds to UTC designated OTC.

**ACCOMPLISHMENTS DURING FY 2007:** Contributed \$500,000 towards OTC matching funds. Participated in board meetings. Took part in project selections for OTC research by coordinating ODOT expert review and rating proposals.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue support of OTC. A mix of transportation research projects, similar to those listed above, will be completed. Also, the OTC plans to conduct training for ODOT employees on subjects related to the research projects.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$500,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$515,000	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$505,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROGRAM MANAGER</b>
NAME	Dennis Howard	Jay Adams
TITLE	Langston University	Transportation Manager III
PHONE	405-466-6102	405-521-2175
	<b>PROGRAM CONTACT</b>	
NAME	Ron F. Curb, P.E., CPM	
TITLE	Engineering Manager	
PHONE	405-522-3795	

## 2167      **Effect of Suction and Moisture on Resilient Modulus of Subgrade Soils in Oklahoma**

**PURPOSE AND SCOPE:** The purpose of this project is to generate data and recommendations, which will benefit ODOT in design of pavements on unsaturated subgrades. Subgrade moisture plays an important role in the in-service performance of a pavement. Resilient Modulus (Mr) is an important parameter in pavement design under AASHTO guidelines, which ODOT has implemented.

**ACCOMPLISHMENTS DURING FY 2007:** Completed testing and analysis, produced and published Final Report.

**PROPOSED ACTIVITIES FOR FY 2008:** None.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

<b>PRINCIPAL INVESTIGATOR</b>	
<b>NAME</b>	Musharraf Zaman, Ph.D
<b>TITLE</b>	Associate Dean for Research, OU
<b>PHONE</b>	405-325-2626

## 2168      **Scale Effects in Oedometer-Based Predictions of Fill Settlement**

**PURPOSE AND SCOPE:** This project will use both large and small oedometer test procedures to predict settlement behavior of compacted Oklahoma soils in embankments. The project activities include examining scale effects associated with using oedometer samples and examine fabric-induced scale effects in the field. Recommendations regarding laboratory and settlement analysis of compacted fills will be included.

**ACCOMPLISHMENTS DURING FY 2007:** Distributed final report.

**PROPOSED ACTIVITIES FOR FY 2008:** None.

<b>ESTIMATED TOTAL COST</b>	<b>\$122,631</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>
NAME	Gerald Miller, Ph.D., P.E.
TITLE	Associate Professor, OU
PHONE	405-325-4253

**2172**

**Evaluation of ODOT’s Percent Within Limits (PWL) Construction Specifications**

**PURPOSE AND SCOPE:** The Department will implement new “Percent Within Limits” (PWL) specifications on four highway construction projects during FY2007. These projects will consist of two asphalt concrete (AC) and two Portland Cement Concrete (PCC) roadway construction projects. Three researchers, an AC specialist, a PCC specialist, and a statistician will evaluate the application of the PWL specifications during the construction of the projects. The researchers will observe construction operations and Quality Control (QC) testing during construction and review all construction test records. Analysis of this information will be used to determine if there are any deviations from the PWL specifications regarding actual testing during construction. All aspects of the project will be analyzed to determine whether or not use of the PWL specifications resulted in an improvement in quality. The above information will be presented in a Final Report, which will include an evaluation of the PWL specifications and will include recommendations and conclusions.

**ACCOMPLISHMENTS DURING FY 2007:** Produced Final Report for PCC projects in April 2007.

**PROPOSED ACTIVITIES FOR FY 2008:** Distribute Final Report for PCC.

<b>ESTIMATED TOTAL COST</b>	<b>\$75,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR, PCC</b>	<b>PRINCIPAL INVESTIGATOR, AC</b>	<b>PROJECT MANAGER</b>
NAME	Bruce Russell, Ph.D., P.E.	Dr. Steve Cross	Ron F. Curb, P.E., CPM
TITLE	Associate Professor, OSU	Associate Professor, OSU	Engineering Manager
PHONE	405-744-9301	405-744-7200	405-522-3795

## 2177                    **Determination of Dynamic Modulus Master Curves for Oklahoma Hot Mix Asphalt (HMA) Mixtures**

**PURPOSE AND SCOPE:** The currently used “1993 NCHRP HMA Design Guide for Asphalt Mixtures” assigns asphalt mixtures an “A” coefficient based on resilient modulus. The 2002 Design Guide uses the elastic properties of dynamic modulus and Poisson’s Ratio as the materials characterization parameters for asphalt mixtures (ASTM-3496 -7). Detailed analysis is required to arrive at these properties. Time, and other constraints, often makes it difficult or impossible to do the detailed analysis.

The purpose of this research project is to develop a procedure where ODOT can approach “level one” reliability for HMA design using master curves from which the design parameters can be obtained without performing detailed dynamic modulus testing for each mix in a pavement system.

**ACCOMPLISHMENTS DURING FY 2007:** Produced and published Final Report.

**PROPOSED ACTIVITIES FOR FY 2008:** Distribute Final Report.

<b>ESTIMATED TOTAL COST</b>	<b>\$140,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Dr. Steve Cross	Ron F. Curb, P.E., CPM
TITLE	Associate Professor, OSU	Engineering Manager
PHONE	405-744-7200	405-522-3795

## 2178 Evaluation of Cold, In-Place Recycling for Rehabilitation of Transverse Cracking on US 412

**PURPOSE AND SCOPE:** Successful rehabilitation of transverse cracked Hot Mix Asphalt (HMA) pavement has been a challenge for state DOT's. HMA overlays generally permit the return of reflective cracks, despite various crack filling measures. The reflective eventually become as severe as the cracks existing prior to the overlay placement. Cold In-Place Recycling (CIR) has shown to be a cost effective procedure for rehabilitation as reported by other state DOT's, including some from states surrounding Oklahoma. Two rehabilitation projects on US 412 in Beaver County will be used to evaluate the CIR process, applied with slurry crack injection as a rehabilitation technique for transverse cracking.

**ACCOMPLISHMENTS DURING FY 2007:** Produce and publish Final Report.

**PROPOSED ACTIVITIES FOR FY 2008:** Distribute Final Report.

<b>ESTIMATED TOTAL COST</b>	<b>\$130,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Dr. Steve Cross	Ron F. Curb, P.E., CPM
TITLE	Associate Professor, OSU	Engineering Manager
PHONE	405-744-7200	405-522-3795

## 2181            **Resilient Modulus of Asphalt and its Correlation With Asphalt Pavement Analyzer Rut**

**PURPOSE AND SCOPE:** The purpose of this project is to conduct resilient modulus and Asphalt Pavement Analyzer (APA) rut tests on selected asphalt mixes and cores from completed projects. The investigation will determine if the resilient modulus values can be correlated with the APA rut values. At least three new mixes that are commonly used by ODOT will be used in the study. Field cores from sites that have used either these or similar mixes will be obtained and tested for both APA rut and resilient modulus. A comparison between the two properties of laboratory compacted and field compacted specimens will be made.

**ACCOMPLISHMENTS DURING FY 2007:** Distributed Final Report.

**PROPOSED ACTIVITIES FOR FY 2008:** None

<b>ESTIMATED TOTAL COST</b>	<b>\$103,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>
NAME	Musharraf Zaman, Ph.D
TITLE	Associate Dean for Research, OU
PHONE	405-325-2626

## 2182 Task Order Contract for Specified Research Items

**PURPOSE AND SCOPE:** The purpose of this project is to allow ODOT to (quickly) contract to have research done on items specified by the Department. Items specified for research under this project typically are construction, design, or materials problems, which require specialized expertise or equipment. This project was previously listed under the title “Evaluation of Concrete Bridge Deck Overlays Using the Bond Test”.

**ACCOMPLISHMENTS DURING FY 2007:** Currently investigating failures of latex - modified concrete bridge overlays and ODOT PCC mixes using two types of pull - off test equipment and Air Void Analyzer (AVA). Beginning an investigation on testing problems on a pilot project for Percent Within Limits (PWL) specifications.

**PROPOSED ACTIVITIES FOR FY 2008:** Complete investigations described above and any others as specified by ODOT.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$68,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$73,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$25,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Steve Trost, Ph.D., P.E.	Ron F. Curb, P.E., CPM
<b>TITLE</b>	Director, Research & Development, Strategic Solutions International, LLC	Engineering Manager
<b>PHONE</b>	405-412-7879	405-522-3795

## 2184                    **Creation of an ODOT Specification for Patching or Overlay of Bridge Decks**

**PURPOSE AND SCOPE:** This project builds upon the work done under a previous research project on patching materials (SPR Item Number 2174, “Patching Materials for PCC Pavements”) where commonly used patching materials were evaluated with regard to their performance. This project will consider patching materials identified as demonstrating good performance under the previous project, materials identified by ODOT Maintenance personnel for showing good field performance, and other (new) materials recommended by ODOT personnel. The materials will be tested for chemical, electric and permeability compatibility with existing deck material, drying shrinkage, thermal expansion, creep and modulus of elasticity. Those showing superior will be identified, along with patching procedures, which have proven to produce patches with good performance in the field. Information gathered under this project will be used to write a specification (or modify existing specifications) for patching and overlaying bridge decks. A Final Report, with conclusions and recommendations, will be written and submitted to ODOT when the research work is completed.

**ACCOMPLISHMENTS DURING FY 2007:** Phase III started late FFY2007.

**PROPOSED ACTIVITIES FOR FY 2008:** Phase III continuing and to be completed in FFY2008.

<b>ESTIMATED TOTAL COST</b>	<b>\$285,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$100,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$35,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$65,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Chris Ramseyer, Ph.D., P.E.	Ron F. Curb, P.E., CPM
TITLE	Associate Professor, O.U.	Engineering Manager
PHONE	405-325-1415	405-522-3795

# 2185      **Engineering Properties of Stabilized Subgrade Soils for the Implementation of the AASHTO 2002 Pavement Design Guide**

**PURPOSE AND SCOPE:** This project will determine engineering properties of cementitiously stabilized common subgrade soils in Oklahoma for design of roadway pavements in accordance with the AASHTO 2002 Pavement Design Guide (PDG). These properties include resilient modulus, modulus of elasticity, moisture susceptibility and permeability. A computerized database of this information will be developed based on laboratory test results. No such database is currently available, making implementation of the new AASHTO PDG problematic for use in Oklahoma.

The following tasks will be included in this study. Determine moisture - density relationships for common subgrade soils mixed with lime, cement kiln dust, and class C fly ash, using different percentages of each additive. Determine the resilient modulus (Mr) of stabilized specimens, Determine the Modulus of elasticity of specimens already tested for Mr. Determine the moisture susceptibility of stabilized specimens. Conduct suction tests on selective specimens. Develop statistical models based on the laboratory data. Develop a database based on the laboratory tests. Propose modifications to current ODOT specifications for implementation of AASHTO 2002 PDG for cementitiously stabilized subgrade soils.

**ACCOMPLISHMENTS DURING FY 2007:** Performed literature search, selected soils and additives, began laboratory testing.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue laboratory testing. Begin development of database

<b>ESTIMATED TOTAL COST</b>	\$285,000	Fund
<b>Programmed Amount for FY 2007</b>	\$92,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$97,300	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$95,700	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Musharraf Zaman, Ph.D.	Rudy Brockelsby
TITLE	Associate Dean for Research, OU	Transportation Manager
PHONE	405-325-2626	405-990-0258

## 2186 Rating Precast Prestressed Concrete Bridges for Shear

**PURPOSE AND SCOPE:** This project will investigate shearing capacity of several types of existing precast prestressed concrete beams designed according to the AASHTO Standard Specifications prior to the 1979 Interim. Oklahoma was one of the earliest states to make the change to the Load and Resistance Factor Design (LRFD Specification for highway bridge design. However, before the LRFD was applied in design practice, AASHTO Standard Specifications differing in various ways from the LRFD had been applied to the design. Since the AASHTO Standard Specifications have been evolving with time, and many bridges built according to earlier specifications are still in use, there is a need for rating these bridges in accordance with the current AASHTO manual. Studying shearing capacity is important because shear failure is catastrophic in nature, and concrete has a considerably lower strength in tension than in compression. This project will focus on the load carrying capacity in shear of Type II beams designed prior to 1979. The ODOT bridge plans to design information on selected bridges to the investigator. Beams in these bridges will be studied using hand calculation. An entire bridge system will be studied using numerical modeling. Laboratory testing will be conducted on a Type II beam. Type III and IV beams will also be analyzed, primarily using hand calculation.

**ACCOMPLISHMENTS DURING FY 2007:** Completed analysis of Type II, Type III and Type IV. Completed numerical study of Type II.

**PROPOSED ACTIVITIES FOR FY 2008:** Complete lab testing of Type II. Prepare and publish Final Report.

<b>ESTIMATED TOTAL COST</b>	<b>\$201,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$113,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$100,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$13,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Jinsong Pei, Ph.D.	Walt Peters, P.E.
TITLE	Assistant Professor	Assistant Bridge Engineer
PHONE	405-325-4272	405-521-2606
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		David Girdner
TITLE		CADD Specialist
PHONE		405-522-5904

## 2187 Investigation of Automating Turning Movement Studies Using New Sensor Technology

**PURPOSE AND SCOPE:** To investigate the feasibility and accuracy of automating intersection turning movement studies utilizing a new portable segmented axle sensor technology. This will include the development of software capable of simulating traffic patterns through a stop sign controlled intersection and performing analysis of the vehicle movements.

**ACCOMPLISHMENTS DURING FY 2007:** None.

**PROPOSED ACTIVITIES FOR FY 2008:** No activity planned. Sensor equipment still under development in Florida. Plan to resume research in Oklahoma in FFY2009. The following will be completed during FY2009:

Task 1: Develop a simulation module that produces traffic through a multi-lane intersection. This simulation module will allow for different traffic rates at various times of the day.

Task 2: Develop an algorithm to determine TMC's from the sensor strike time vectors. This algorithm takes into account the sensors, location and the distance from other sensors. The algorithm will be continuously fine tuned to reduce error rates.

Task 3: Using the simulation module, develop a set of simulated "sensor strikes" and use this information to get TMC's.

Task 4: Get the sensor strike times for the chosen intersection, apply the proposed algorithm and compare the results with AADT and field observations. The algorithm will be fine tuned appropriately.

<b>ESTIMATED TOTAL COST</b>	<b>CONTINUING</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Sridhar Radhakrishnan, Ph.D	Daryl G. Johnson, P.E.
TITLE	Associate Professor, OU	Professional Engineer
PHONE	405-325-1867	405-522-6719

## 2188      **Vegetative Rehabilitation of Highway Cut Slopes**

**PURPOSE AND SCOPE:** The purpose of this project is to develop improved vegetation specifications to be used on relatively steep slopes. Areas of moderate to severe erosion are occurring on highway rights of way in Eastern Oklahoma. Silt resulting from this erosion is filling ditch bottoms causing drainage problems. The answer to these recurring problems is to vegetate the erosive areas so that the soil remains on the slope and out of the drainage system. This is intended to be a five-year research project during which time, soil amendments, plant species, planting methods, planting dates, planting rates, mulches, mulch rates and application methods which demonstrate the most success will be identified. These will then be incorporated into improved vegetation specifications

**ACCOMPLISHMENTS DURING FY 2007:** 3 Eastern Oklahoma test slope locations identified; Experimental plant species selected; Collected soil samples and began soil classification; Hydro-seeding and Mulching of two test slopes on US-59 in LeFlore Co.; Planned procedures and executed fiscal year 2008 Supplemental Agreement #2 for third slope location for Fall 2007 hydro-seeding and mulching; Maintained monthly photo records of US-59 slope location; Conducted project panel member meetings as needed.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue maintaining monthly photo records for US-59 slope; Execute Hydro-seeding and mulching of SH-128 slope location and begin monthly photo record maintenance; Generate ODOT mowing procedures for the duration of the project for both US-59 and SH-128 slope locations; Conduct project panel meetings as needed.

<b>ESTIMATED TOTAL COST</b>	<b>\$257,500 (5 Years)</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$50,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$42,500	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 2)</b>	\$60,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Randy King	Bryan K. Hurst
TITLE	USDA/NRCS Project Manager	Transportation Manager
PHONE	479-675-5182	405-522-3794

## 2190 A Real-Time Scour Risk Identification and Information Management System

**PURPOSE AND SCOPE:** Develop design requirements and evaluate the effectiveness of a real-time scour risk identification system that can be used as a countermeasure for scour-critical bridges. Identify elevated risk conditions. Document agency responses to the elevated conditions in a real-time GIS database.

**ACCOMPLISHMENTS DURING FY 2007:** Phase II: Hydrologic model completed. Completed the setup of the rapid prototype for operation with radar input and flow monitoring of the three scour critical bridges. Addressed the refinements and definition of the workflow process for scour inspection at scour critical bridges.

**PROPOSED ACTIVITIES FOR FY 2008:** Phase III: Develop and incorporate watershed models for remaining scour-critical bridges, Monitor and evaluate the system performance and operational status/statistics, Refine the system interface, database, and functionality requirements, and Prepare system documentation for operations and train personnel on its use and operation.

<b>ESTIMATED TOTAL COST</b>	<b>\$395,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 2)</b>	\$147,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$146,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 3)</b>	\$150,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Baxter E. Vieux, Ph. D., P.E.	Leslie Lewis, P.E., CFM
TITLE	Director, CNHDR; Professor, OU	Bridge Hydraulics Engineer, ODOT
PHONE	405-325-3600 or 4217	405-521-6500
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		Rudy Brockelsby
TITLE		Transportation Manager
PHONE		405-990-0258

## 2191 Degradation of Major Streams in Oklahoma

**PURPOSE AND SCOPE:** Conduct a research investigation as follows:

- Collect flowline data from the ODOT files on five major streams in Oklahoma
- Locate ODOT bridges on Excel platform to manage the database
- Analyze the available flowline data at all bridges
- Prepare the longitudinal profiles of flowline with time along the five streams
- Identify deficiency in flowline data collection and suggest improvements on the data collection
- Prepare a final report incorporating database analyzed and newly generated information from tasks above

**ACCOMPLISHMENTS DURING FY 2007:** Collected flowline data. Located ODOT bridges on Excel platform. Analyzed the available flowline data. Prepared the longitudinal profiles. Identified deficiencies.

**PROPOSED ACTIVITIES FOR FY 2008:** Prepare and distribute the five volume final report.

<b>ESTIMATED TOTAL COST</b>	<b>\$78,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$78,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$75,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Avdhesh K. Tyagi, Ph. D., P.E.	Leslie Lewis, P.E., CFM
TITLE	Director, Oklahoma Infrastructure Consortium, OSU	Bridge Hydraulics Engineer, ODOT
PHONE	405-744-9307	405-521-6500
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		David Girdner
TITLE		CADD Specialist
PHONE		405-522-5904

## 2192      **Development of Field Correlation and Test Procedure for TransTech Systems' Pavement Quality Indicator (PQI) 301 Non-Nuclear DensityGauge**

**PURPOSE AND SCOPE:** Develop and correlate a calibration and testing procedure for TransTech Systems' Pavement Quality Indicator (PQI) 301 Non-Nuclear Density Gauge.

**ACCOMPLISHMENTS DURING FY 2007:** Final Report distributed.

**PROPOSED ACTIVITIES FOR FY 2008:** None.

<b>ESTIMATED TOTAL COST</b>	<b>\$20,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>CO-PRINCIPAL INVESTIGATOR</b>
NAME	. Musharraf Zaman, Ph.D	Sesh Commuri, Ph.D
TITLE	Associate Dean for Research, OU	Associate Professor, OU
PHONE	405-325-2626	405-325-4721

## 2193      **Degradation Stabilizing Methodology for Selected Broken-Back and Drop Box Culverts in Oklahoma Phase II**

**PURPOSE AND SCOPE:** Develop a methodology to analyze drop box culverts in Oklahoma such that the energy is dissipated within the culverts or just downstream in order to minimize downstream scour.

**ACCOMPLISHMENTS DURING FY 2007:** Obtained and reviewed ODOT's list of broken-back and drop box culverts both existing and proposed.

**PROPOSED ACTIVITIES FOR FY 2008:** Locate and place each culvert on an ArcGIS managed database platform. Evaluate energy dissipation in existing drop box culverts and determine modifications to minimize scour. Compute the efficiency of energy dissipation data. Prepare a final report.

<b>ESTIMATED TOTAL COST</b>	<b>\$100,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$67,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$8,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 1 Extended)</b>	\$91,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Avdhesh K. Tyagi, Ph. D., P.E.	Leslie Lewis, P.E., CFM
TITLE	Director, Oklahoma Infrastructure Consortium, OSU	Bridge Hydraulics Engineer
PHONE	405-744-9307	405-521-6500
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		Rudy Brockelsby
TITLE		Transportation Manager
PHONE		405-990-0258

## 2195 Evaluation and Field Verification of Strength and Structural Improvement of Chemically Stabilized Subgrade Soil

**PURPOSE AND SCOPE:** Develop relationships between chemically stabilized subgrade soil strength and structural numbers and refine input values for soil improvements to be used in the AASHTO pavement design equations.

**ACCOMPLISHMENTS DURING FY 2007:** Performed Literature Searches; Monitored progress of ongoing projects; Collected soil samples and completed lab and field testing program procedures; Selected field testing sites to identify potential construction projects by literature search; Generated Draft and Final Interim Report; Sampled soils with lime and flyash; Collected kiln dust sample for testing with local soil samples; Continued correspondence with Resident Engineers on selection of field construction projects. (Task #'s 1, 2 & 3)

**PROPOSED ACTIVITIES FOR FY 2008:** Task #3: Continue collection of Representative Soil Samples for processing and testing; Task #4: Collection of Field Mixed Subgrade Soil Samples for curing and testing and comparison to assess differences in Laboratory vs. Field conditions; Task #5: Field Testing of Stabilized Subgrade Soil Layers; Task #6: Perform Comparative Studies between Laboratory Results and Field Testing Procedures.

<b>ESTIMATED TOTAL COST</b>	<b>\$250,000 (2 Years)</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$150,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$10,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 1 Extended)</b>	\$118,300	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>CO-PRINCIPAL INVESTIGATOR</b>
NAME	Donald R. Snethen, Ph.D., P.E.	Amy B. Cerato, Ph.D.
TITLE	Professor	Assistant Professor, OU
PHONE	405-744-6328	405-325-5625
	<b>CO-PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Gerald A. Miller, Ph.D., P.E.	Bryan K. Hurst
TITLE	Professor, OU	Transportation Manager
PHONE	405-325-4253	405-522-3794

## 2196      **Stability and Permeability of Proposed Aggregate Bases in Oklahoma**

**PURPOSE AND SCOPE:** Assess the permeability of unbound aggregates that are widely used as pavement bases in Oklahoma. Laboratory results will be used to develop statistical models. Field samples will be tested for comparison. The models will be available to the pavement designers to facilitate implementation of the new AASHTO 2002 pavement design guide.

**ACCOMPLISHMENTS DURING FY 2007:** Determined the moisture-density relationship for each selected aggregate. Assessed the effect of compaction efforts on aggregate breakage. Conducted grain size distribution tests. Measured the vertical coefficients of permeability (k) of unbound aggregate bases. Determined the resilient modulus (Mr) values for each aggregate type near optimum moisture content.

**PROPOSED ACTIVITIES FOR FY 2008:** Collect and test field samples to compare with lab results. Develop regression correlations between k and Mr values. Select the appropriate gradation(s) that provide(s) a desired aggregate base with adequate permeability and acceptable stability.

<b>ESTIMATED TOTAL COST (3 Years)</b>	<b>\$250,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$75,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$75,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 2)</b>	\$80,000	SPR
	\$0	STATE

Contacts	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Naji N. Khoury, Ph. D., F.E.	David Girdner
<b>TITLE</b>	Research Professor, OU	CADD Specialist
<b>PHONE</b>	405-325-4236	405-522-5904

## 2197 Longitudinal Joint Density and Permeability in Asphalt Concrete

**PURPOSE AND SCOPE:** Perform field investigation and laboratory analysis of test data to facilitate the development of a test method and/or specification for the control of longitudinal joint density and permeability of asphalt pavements.

**ACCOMPLISHMENTS DURING FY 2007:** Completed literature review. Obtained and tested field and lab equipment.

**PROPOSED ACTIVITIES FOR FY 2008:** ODOT to identify pavement locations for testing. Perform field sampling and testing. Perform laboratory testing and data analysis. Complete final report.

<b>ESTIMATED TOTAL COST</b>	<b>\$70,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$70,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$16,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$60,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Dr. Steve Cross	Danny Gierhart, P.E.
<b>TITLE</b>	Associate Professor, OSU	Bituminous Engineer
<b>PHONE</b>	405-744-7200	405-522-4986
		<b>RESEARCH CONTRACT MANAGER</b>
<b>NAME</b>		Rudy Brockelsby
<b>TITLE</b>		Transportation Manager
<b>PHONE</b>		405-990-0258

## 2199      **Optimizing Concrete Mix Designs to Produce Cost Effective Paving Mixes**

**PURPOSE AND SCOPE:** Determine best methods of manipulating aggregate gradations in order to optimize the designs of concrete mix which are cost effective.

**ACCOMPLISHMENTS DURING FY 2007:** Conducted a survey of current ODOT concrete mix designs and compare with other state DOT designs. Conducted research on various mixes via manipulation of aggregate gradations. Optimized concrete mix designs which are cost effective. Prepared Final Report.

**PROPOSED ACTIVITIES FOR FY 2008:** Distribute Final Report.

<b>ESTIMATED TOTAL COST</b>	<b>\$64,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$64,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$64,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
<b>NAME</b>	Chris Ramseyer, Ph.D., P.E.	David Girdner
<b>TITLE</b>	Associate Professor, O.U.	CADD Specialist
<b>PHONE</b>	405-325-1415	405-522-5904

## 2200 Instrumented Pavement Construction

**PURPOSE AND SCOPE:** Conduct instrumented pavement research to collect and analyze mechanistic-empirical pavement design data on I-35 in McClain County, Oklahoma in an accelerated manner. Field Division 3 will construct an 800' flexible pavement test section. The National Center for Asphalt Technology (NCAT) will purchase equipment and install pavement monitoring instrumentation of test section. The University of Oklahoma (OU) will conduct monitoring and modeling of the test section over a five year period.

**ACCOMPLISHMENTS DURING FY 2007:** Postponed Interstate 35 project construction to Spring of FY08; Auburn University Produced January thru April Progress Report; Instrumentation equipment purchased and tested in the lab by OU.

**PROPOSED ACTIVITIES FOR FY 2008:** Install and calibrate monitoring instrumentation in conjunction with construction of flexible pavement test section; Collect data and begin setup of modeling algorithms.

<b>ESTIMATED TOTAL COST</b>	<b>\$619,000 (5 Years)</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007 (Year 1)</b>	\$371,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$91,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008 (Year 2)</b>	\$169,000	SPR
	\$0	STATE

Contacts	<b>PRINCIPAL INVESTIGATOR</b>	<b>PRINCIPAL INVESTIGATOR</b>
NAME	Musharraf Zaman, Ph.D., P.E.	Dr. David H. Timm, P.E.
TITLE	Associate Dean for Research, OU	Assistant Professor, Auburn U.
PHONE	405-325-2626	334-844-6282 (Harbert Engr. Ctr.)
Contacts	<b>Co-PRINCIPAL INVESTIGATOR</b>	<b>AUBURN SITE ENGINEER</b>
NAME	K. K. Muraleetharan, Ph.D.	Brian Waller
TITLE	Professor, OU	Lab Engineer
PHONE	405-325-4247	334-844-6228
Contacts	<b>SUBJECT MATTER EXPERT</b>	<b>RESEARCH CONTRACT MANAGER</b>
NAME	Wilson Brewer	Bryan K. Hurst
TITLE	Asst. Dir. Research, Langston U.	Transportation Manager
PHONE	405-618-8854	405-522-3794
Contacts		<b>ROADSIDE CONNECTIVITY</b>
NAME		Mike Brutsche
TITLE		Transportation Specialist
PHONE		405-990-7186

## 2202 GIS Layer for Transportation and Economic Statistics

**PURPOSE AND SCOPE:** This research activity will involve obtaining and reviewing the current GIS base map and transportation information from ODOT and converting it to an ArcGIS system. Economic and census information will be obtained from the Oklahoma Department of Commerce, Oklahoma State University and the Census Bureau. In addition, hydrologic information will be gathered from the Oklahoma Water Resources Board. A spatial data overlay related to transportation, population, demographics, hydrologic and other socioeconomic factors will be created for use with the ODOT base map. Transportation related spatial statistics will be generated. Composite maps for long range planning needs will be created. A final report will be prepared and submitted along with the related data in a Geomedia Pro compatible format.

**ACCOMPLISHMENTS DURING FY 2007:** Reviewed ODOT base map. Obtained data. Created spatial data overlay. Generated transportation related spatial statistics. Create composite maps. Prepared interim report and transferred data.

**PROPOSED ACTIVITIES FOR FY 2008:** Prepare final report for work completed in FY 2007 and transfer data.

<b>ESTIMATED TOTAL COST</b>	<b>\$86,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$86,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$55,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Avdhesh K. Tyagi, Ph. D.	Tim Callahan
TITLE	Director, Oklahoma Infrastructure Consortium; Professor, OSU	GIS Branch Manager
PHONE	405-325-3600 or 4217	405-521-2728
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		Rudy Brockelsby
TITLE		Transportation Manager
PHONE		405-990-0258

## 2203 Truck Weight Enforcement

**PURPOSE AND SCOPE:** Research and recommend the best methods and deployments to enforce Oklahoma's current size and weight limits which would provide the best deterrent to violations and therefore decrease damage to Oklahoma's roads and bridges. Survey other state departments of transportation to determine what may be the least expensive, yet cost effective mix of fixed weigh/inspection stations, mobile enforcement, weigh in motion, virtual enforcement and other technologies to provide optimum monitoring of oversize and/or overweight vehicles. Investigate the feasibility of using Oklahoma's bridges as weigh in motion detectors, linking the violation data collected with a camera system to create a type of virtual enforcement.

**ACCOMPLISHMENTS DURING FY 2007:** Completed Survey of other DOTs. Submitted "best-mix" recommendations based on the survey data. Researched feasibility of using Oklahoma's bridges in virtual enforcement. Final Report distributed.

**PROPOSED ACTIVITIES FOR FY 2008:** None.

<b>ESTIMATED TOTAL COST</b>	<b>\$85,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$85,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$85,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>CO-PRINCIPAL INVESTIGATOR</b>
NAME	Chris Ramseyer, Ph.D., P.E.	Kyran Mish, Ph.D.
TITLE	Research Professor, OU	Presidential Professor, OU
PHONE	405-325-1415	405-325-1010
	<b>PROJECT MANAGER</b>	<b>RESEARCH CONTRACT MANAGER</b>
NAME	Bob Hale	Rudy Brockelsby
TITLE	CVO Weigh Station Manager	Transportation Manager
PHONE	405-522-0561	405-990-0258

## 2204      **Advanced Voice and Multimedia Communications System for the ODOT ITS Network**

**PURPOSE AND SCOPE:** Research and develop a versatile voice, text and video communications capability for the ODOT ITS Network console operators and provide an in-depth study of future extensions of these capabilities for additional media types, as well as central control and routing of voice and other data traffic between emergency responder agencies from both state and local levels.

**ACCOMPLISHMENTS DURING FY 2007:** Evaluate off-the-shelf solutions and determine the applicability of the software for integration into the ITS console. Integrate an off-the-shelf product into the ITS console or adapt voice-over-IP and video software for peer-to-peer and conference calling capabilities. Develop a text based instant messaging capability between consoles that supports peer-to-peer and broadcast messages. Develop an integrated document delivery capability permitting operators to send documents of various types to selected consoles. Integrate, test and deploy the new functionality within the existing ITS console software. Document and provide user instructions for these capabilities. Conduct an extended study and deliver a complete and detailed report for the newly developed communications capabilities.

**PROPOSED ACTIVITIES FOR FY 2008:** Prepare and publish final report.

<b>ESTIMATED TOTAL COST</b>	<b>\$86,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$86,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$85,000	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Monte P. Tull, Ph.D.	Alan R. Stevenson, P.E.
TITLE	Associate Professor, OU	Engineering Manager, ITS
PHONE	405-325-4278	405-521-6460
		<b>RESEARCH CONTRACT MANAGER</b>
NAME		Rudy Brockelsby
TITLE		Transportation Manager
PHONE		405-990-0258

## 2206 Development of an Improved System for Contract Time Determination – Phase II

**PURPOSE AND SCOPE:** Phase I of this research was funded by the Oklahoma Turnpike Authority in close collaboration with the Oklahoma Department of Transportation and the Federal Highway Administration. A draft report was submitted for review by all three organizations in June of 2007. The tasks were to review the contract time determination procedures currently in use by ODOT and other DOTs, develop modules or templates that represent different types of highway construction projects performed by ODOT contractors, determine the controlling items and their interrelationships for each type of ODOT construction project module/template, estimate reasonable production rates for each controlling items or activities and determine various factors affecting the production rate of each construction activity and to develop a manual system for contract time determination for ODOT highway projects.

Phase II research and development tasks will determine the effectiveness of the ODOT software currently in use, which is Microsoft Project, and use it to calculate project time and develop a computer system for ODOT personnel to use when estimating contract time for highway construction projects. Phase II work will validate the developed computer system with previously completed ODOT highway projects. A user manual will be developed and used to train ODOT personnel in the use of the new system in August of 2007. A final report will be produced to include findings, output and conclusions. The report will include a program flowchart, computer program, program manual, software verification process / results and computer software source codes.

**ACCOMPLISHMENTS DURING FY 2007:** Evaluated current software. Developed computer system. Validated computer system. Developed user manual. Trained ODOT personnel.

**PROPOSED ACTIVITIES FOR FY 2008:** Distribute Final Report and Training materials.

<b>ESTIMATED TOTAL COST</b>	<b>\$40,000</b>	<b>Fund</b>
Programmed Amount for FY 2007	\$40,000	SPR
	\$0	STATE
Estimated Cost for FY 2007	\$40,000	SPR
	\$0	STATE
Estimated Cost for FY 2008	\$0	SPR
	\$0	STATE

Contacts	<b>PRINCIPAL INVESTIGATOR</b>	<b>SUBJECT MATTER EXPERT, PROJECT MANAGER</b>
NAME	Dr. Hyung Seok (David) Jeong	Phil Loafman / Brian Schmitt, P.E.
TITLE	Assistant Professor, OSU	Program Manager / Office Engineer
PHONE	405-744-7073	405-522-1959 / 405-521-2625
Contacts	<b>CO-PRINCIPAL INVESTIGATOR</b>	<b>RESEARCH MANAGER</b>
NAME	Dr. Garold D. Oberlender, P.E.	Rudy Brockelsby
TITLE	Professor, OSU	Transportation Manager
PHONE	405-744-5260	405-990-0258

## 2207 Validation and Refinement of Chemically Stabilization Procedures for Pavement Subgrade Soils in Oklahoma

**PURPOSE AND SCOPE:** The goal of this research project is to assist the state in validating and improving the recommendations of OHD L-50 “Soil Stabilization Mix Design Procedure.” The proposed research will primarily focus on AASHTO Soil Group Classifications falling under the fine-grained soil category (i.e. A-4 to A-7). It is expected that the results of testing on fine-grained soils may be intuitively extended to address variability found in fines of the A-2 soil class. Granular soils in the A-1 category and fine sandy soils of the A-3 category are not included in this proposal. In addition to the exclusions mentioned above, soils containing appreciable levels of sulfate will be excluded as these soils are not recommended for stabilization using calcium-based chemical additives. Note: a current research project at OU, funded through OTC, is focused on determining threshold levels of soluble sulfates that cause adverse behavior in chemically treated Oklahoma soils. Soils used in the currently proposed research will be subjected to soluble sulfate testing and current research on sulfate soils will help to guide the selection of suitable soil candidates for the proposed research.

**ACCOMPLISHMENTS DURING FY 2007:** New project.

**PROPOSED ACTIVITIES FOR FY 2008:** Examine the variability of surficial geologic materials using available published information. Interview personnel from ODOT headquarters and residencies across the state to identify soil behaviour and case histories. Collect three to five samples representing different soils within the same AASHTO classification groups. Determine the number and location of all approved additive sources used in construction of OK highways. Obtain existing chemical data and measure additional properties of additives and obtain samples for stabilization and select and obtain one to three sources for each additive type. Determine testing schedule to optimize resources, time and extents of soil variability across Oklahoma. Begin determination of basic physical and engineering index properties with standard laboratory tests.

<b>ESTIMATED TOTAL COST</b>	<b>\$115,000</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2007</b>	\$0	SPR
	\$0	STATE
<b>Estimated Cost for FY 2008</b>	\$102,000	SPR
	\$0	STATE

	<b>PRINCIPAL INVESTIGATOR</b>	<b>CO-PRINCIPAL INVESTIGATOR</b>
NAME	Amy B. Cerato, Ph.D.	Donald R. Snethen, Ph.D., P.E.
TITLE	Assistant Professor, OU	Professor
PHONE	405-325-5625	405-744-6328
	<b>CO-PRINCIPAL INVESTIGATOR</b>	<b>PROJECT MANAGER</b>
NAME	Gerald A. Miller, Ph.D., P.E.	Bryan K. Hurst
TITLE	Professor, OU	Transportation Manager
PHONE	405-325-4253	405-522-3794

## 2440 Local Technical Assistance Program

**PURPOSE AND SCOPE:** The Local Technical Assistance Program (LTAP) is a training program contracted through Oklahoma State University's Center for Local Government Technology to provide technical maintenance training and assistance to Oklahoma's 77 county's personnel in the areas of road and bridge construction, repair and maintenance and other transportation related issues. This is accomplished by (1) conducting workshops, seminars and other training opportunities; (2) providing on-site technical assistance; (3) maintaining a lending library for publications, videotapes, DVDs and other technology resource documents; (4) providing information on new and existing technology; (5) coordinating with faculty and staff at OSU and ODOT to provide technical expertise and support; and (6) publishing a quarterly newsletter and (7) maintaining a database of rural, local and state transportation officials and other resources in Oklahoma and nationwide.

**ACCOMPLISHMENTS DURING FY 2007:** The LTAP Program continued its positive interaction with the county personnel with increasing attendance at training sessions throughout the state. The Roads Scholar Program continued to be successful with 23 graduates of the program, through continued enhancement and enlargement of the training program. Four (4) welding classes were held with 63 county personnel attending. LTAP has successfully implemented a Welder's Certification Program. In addition, over a thousand county personnel were trained through attendance at the Roads Scholar and other training programs. Also, seven (7) hands on demonstrations with maintenance equipment sponsored and furnished by national companies were successfully held. LTAP offices continued to serve as the American Public Works Association State Chapter office and assisted with the April 2006 regional meeting. Newsletters were published and various literature, tapes, DVD, etc., were distributed.

**PROPOSED ACTIVITIES FOR FY 2008:** This will be funded under Item 1440 in 2008.

<b>ESTIMATED TOTAL COST</b>	<b>Amount</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$160,000	SPR
	0	STATE
	\$140,000	FHWA
<b>Estimated Cost for FY 2007</b>	\$167,000	SPR
	0	STATE
	\$140,000	FHWA
<b>Estimated Cost for FY 2008</b>	\$0	SPR
	0	STATE
	\$0	FHWA

<b>Contact Information</b>	
NAME	Terry Jessup
TITLE	Transportation Manager
PHONE	405-521-2705

## 2700 Experimental Product and Evaluation Program

**PURPOSE AND SCOPE:** This project was established to provide ODOT with a means of providing for the (experimental) use, monitoring, evaluation and implementation of products for highway and bridge construction where the products do not meet current ODOT standards and specifications.

**ACCOMPLISHMENTS DURING FY 2007:** Maintained records of new products where manufacturers provided literature or made presentations; Met with company representatives who were presenting new products; Provided information on products to applicable ODOT divisions; Evaluated new products as required.

**PROPOSED ACTIVITIES FOR FY 2008:** Continue maintaining records on products submitted to ODOT. Meet with vendor's representations, circulate product literature and conduct product evaluations as necessary.

<b>ESTIMATED TOTAL COST</b>	<b>Continuing</b>	<b>Fund</b>
<b>Programmed Amount for FY 2007</b>	\$38,000	SPR
	0	STATE
<b>Estimated Cost for FY 2007</b>	\$20,000	SPR
	0	STATE
<b>Estimated Cost for FY 2008</b>	\$20,000	SPR
		STATE

<b>Contact Information</b>	
NAME	Bryan Hurst
TITLE	Transportation Manager
PHONE	405-522-3794