TEXAS SPR WORK PROGRAM

Annual Performance and Expenditures Report (APER)

State Planning and Research (SPR) PART II

September 1, 2013 – August 31, 2014

Disclaimer Statement

The FHWA's approval of reports constitutes acceptance of such reports as evidence of work performed but does not imply endorsement of a report's findings or recommendations. This report is prepared for FHWA-funded work and includes appropriate credit references and disclaimer statements. The preparation of this report has been financed in part through grant(s) from the Federal Highway Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

State Planning and Research Program
Part II – Research

Texas Department of Transportation
Research and Technology Implementation Office
125 E. 11th Street
Austin, Texas 78701
Phone (512) 416-4730
Email: RTIMain@txdot.gov

In cooperation with:
U.S. Department of Transportation
Federal Highway Administration

Fiscal Year 2014
(September 1, 2013 – August 31, 2014)

TABLE OF CONTENTS

Disclaimer Statement	1
Section 1.0: Annual Report Summary and References	
1.1 Approval and Authorization process	4
1.2 Comparison of Actual Performance with Established Goals and Program Overview	4
1.2 RTI Contact Information	5
1.2 University Participating in Program	6
1.2.1 Comparison of Budget to Actual and Annual SPR Work Program Budget Summary	7
1.2.2 Actual Expenditures for FY 2014	8
1.3 Acronyms and Abbreviations	9
1.4 FHWA Approved Program Revisions	9
1.4.1 Programmatic Changes or Modification	9
1.5 Reasons for underruns and overruns when established goals were not met	9
1.5.1 Events and Conditions that significantly impacted projects	9
1.6 Accomplished Deliverables during the Fiscal Year 2014	9
Section 2.0: Accomplishments and Variances by Projects	
2.1. FY 2014 Terminated Projects	10
2.2 FY 2014 Active Project Listing	71
2.2.3 Pooled-Fund	122
Section 3.0: NON SPR Activities	
3.1 Research Management and Administration	134
Attachments	
Cooperative Research and Implementation Agreement (CRIA)	A

Section 1.0
Annual Report Summary and References

1.1 Approval and Authorization process

Per 23 CFR 420.115(b), authorization to proceed with the FHWA funded work in whole or in part is a contractual obligation of the Federal government pursuant to 23 U.S.C. 106 and requires that appropriate funds be available for the full Federal share of the cost of work authorized.

In TxDOT's Research and Implementation Program, all project agreements were executed by the TxDOT-Research and Technology Implementation (RTI) Office and Texas State Supported Universities who were conducting the Research or Implementation. The Texas FHWA Division Office was provided the FY 2014 SPR Part II work program for review and approval. The project agreements were executed concurrent after authorization was given by the FHWA Division Administrator for the SPR Program.

As required by 23 CFR 420.117, this report is provided, in part, to meet the requirements for FHWA approval and the continuation of the agreement between the Texas Department of Transportation and the Federal Highway Administration to carry out statewide transportation planning activities as authorized.

Per 23 CFR 420.117, the program monitoring and reporting requirements are the responsibility of Research and Technology Implementation (RTI) office of the Texas Department of Transportation (TxDOT). RTI assigns a team of project managers who monitor the activities and performances of all sub-recipients (state-supported universities) to assure that the work is being managed and performed satisfactorily and that time schedules are being met

1.2 Comparison of Actual Performance with Established Goals and Program Overview

Overall Performance

In accordance with 49 CFR 18.40, RTI is fully responsible for managing the day-to-day operations of the SPR Part II activities. RTI monitored Program activities to assure compliance with applicable Federal requirements and that performance goals are being achieved. Its monitoring covered each project, function or activity.

RTI monitored a total of 90 active research projects with 16 universities and one Government Agency (USGS) research centers. Each of these projects met specific agency's screening criteria and aligns with the organizational strategic goals: maintaining a safe system: connecting Texas communities: addressing congestion: and becoming a best in class agency. These projects impacted TxDOT's core transportation function/services, added value and benefit to TxDOT, participating agencies/external partners, and to the Texas citizens.

The Federal Funds appropriated to the Texas SPR II Program were obligated as follows:

Research Program (80/20) SPR 0511(214) - $11,113,941.60 State - $2,778,485.40

Implementation Program (80/20) SPR 2014(188) - $2,265,172.80 State - $566,293.20

We transferred to other contracting entities 100% SPR funds during 2014 as follows:

National Cooperative Highway Research Program (NCHRP) contribution - $3,474,634.21

Pooled-fund Projects, including TxDOT's TRB Dues - $462,000

RTI managed 112 Research and Implementation Projects in FY 2014. Of these 112, 61 projects terminated during this reporting period. TxDOT's RTI Office executes a Cooperative Research and Implementation Agreement (CRIA) with each university or university system to conduct research projects. Under this CRIA, the University Billings for an individual Project Agreements for Research and Implementation may exceed the UNIVERSITY's fiscal year budget for that individual Project Agreement by up to 10% or $20,000 (whichever is less) without modification of the Project Agreement. A copy of the CRIA is attached to this report. RTI also has published the Research Manual and the University Handbook. These two documents and the CRIA outline the provisions and processes TxDOT's Research and Implementation Program. As of the date of this report, The Research Manual and University Handbook are currently being revised and will provide a copy to FHWA once they are published.

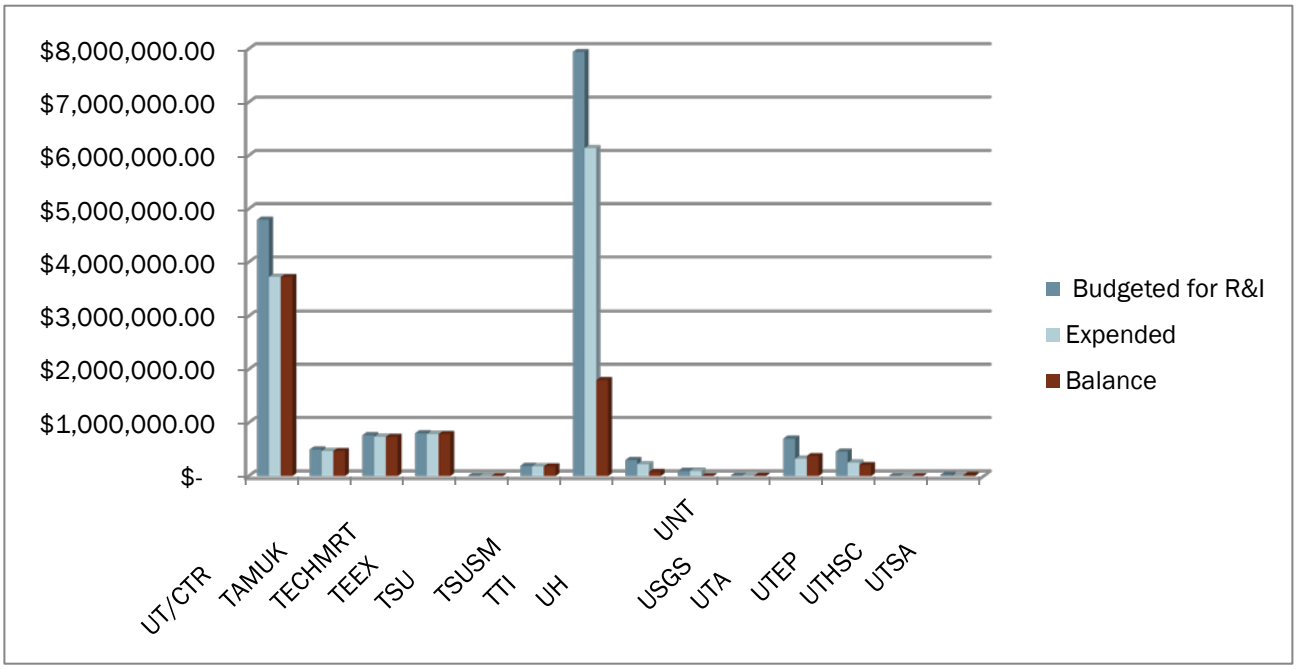
RTI Office Director, Section Director and Project Managers

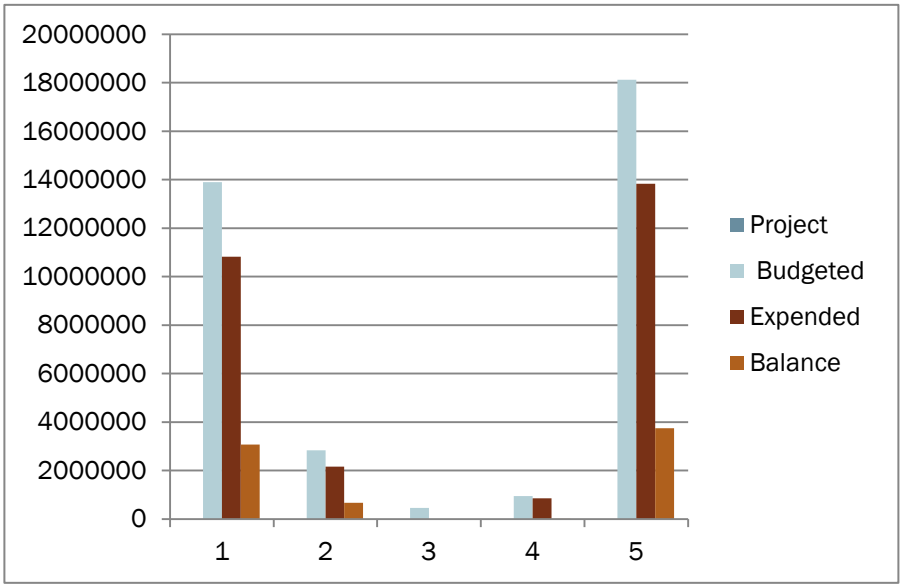
	Name	Phone#	Email
	RTI Office Director		
	Dana Glover	512-416-4730	Dana.Glover@txdot.gov
	RTI Section Director		
	Rocio Perez	512-416-4729	Rocio.Perez@txdot.gov
	Project Managers		
	Joe Adams	512-416-4748	Joe.Adams@txdot.gov
	Sonya Badgley	512-416-4657	Sonya.Badgley@txdot.gov
	Darrin Jensen	512-416-4728	Darrin.Jensen@txdot.gov
	Kevin Pete	512-416-4738	Kevin.Pete@txdot.gov
	Wade Odell	512-416-4737	Wade.Odell@txdot.gov

Universities Participating in Program

Name	University	Phone#	Email
Aaron LeMay	SHSU	936-294-3899	orsp@shsu.edu
Beverly Rymer	UH	713-743-5773	brymer@uh.edu
Arlene Horne	TAMUC	903-886-5159	Arlene.horne@tamuc.edu
Bert Little	TARL	254-968-9463	little@tarleton.edu
Tony Alotto	TEEX	979-458-3300	Tony.Alotto@teex.tamu.edu
Carrie Brown	SFASU	936-468-6606	brownch@sfasu.edu
Duane Rosa	WTAMU	806-651-2520	drosa@mail.wtamu.edu
Gail Davis	LAMAR	409-880-8389	gail.davis@lamar.edu
Ashley Williams	CTR	512-232-3085	CTRmain@engr.utexas.edu
Judy Perkins	PVAMU	936-261-1655	juperkins@pvamu.edu
Kim Harris	TECH	806-742-3503	kim.harris@ttu.edu
Kirstin Wilsey	UTSA	210-458-8589	KIRSTIN.WILSEY@UTSA.EDU
Krystal Toups	UTHealth-Houston	713-500-3091	Krystal.Toups@uth.tmc.edu
Mary Levien	TTI	979-458-1679	m-levien@tamu.edu
Mayra Hough	TAMUCC	361-825-3882	mayra.hough@tamucc.edu
Michael Odell	UT-TYL	903-566-7132	modell@uttyler.edu
Pei Lin Shi	UTB	956-882-7743	Pei.Shi@utb.edu
Rachell Reilly	UT-Dallas	972-883-2040	Rachell.Reilly@utdallas.edu
Randall Taylor	TAMUK	361-593-4815	Kurkt000@tamuk.edu
Sarah Panepinto	UTA	817-272-0243	ogcs@uta.edu
Scott Erwin	TSUSM	512-245-2102	grants@txstate.edu
Jose Grimaldo	UNT	940-369-5012	Jose.Grimaldo@unt.edu
Cory Brown	UTEP	915-747-5732	cjbrown5@utep.edu
Sadiq Shah	UTPA	956-665-3204	sadiq@utpa.edu
William H. Asquith	USGS	512-927-3580	wasquith@usgs.gov
Yi (Grace) Qi	TSU	713-313-6809	qiy@tsu.edu

1.2.1 Comparison of Budget to Actual and Annual SPR Work Program Budget Summary

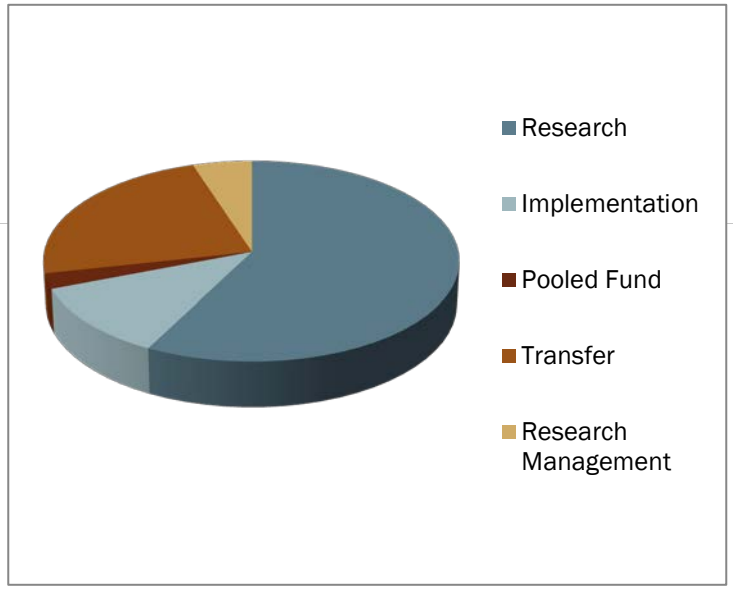




1.2.2 Actual Expenditures for FY 2014

Project	Budgeted	Expended	Balance
Research	$ 13,892,427.00	$ 10,820,974.15	$ 3,071,452.85
Implementation	$ 2,831,466.00	$ 2,166,104.19	$ 665,361.81
Pooled-Fund	$ 462,000.00	$ 462,000.00	$ -
MGMT and Admin	$ 1,000,516.00	$ 847,435.96	$ 153,080.04
	$ 18,186,409.00	$ 14,296,514.30	$ 3,889,894.70

University	Budgeted for R&I	Expended	Balance
UT/CTR	$ 4,798,419.00	$ 3,736,150.61	$ 3,736,150.61
TAMUK	$ 500,000.00	$ 472,400.91	$ 472,400.91
TECHMRT	$ 767,061.00	$ 739,158.27	$ 739,158.27
TEEX	$ 802,515.00	$ 789,285.07	$ 789,285.07
TSU	$ 660.00	$ -	$ 660.00
TSUSM	$ 190,442.00	$ 183,570.24	$ 183,570.24
TTI	$ 7,943,652.00	$ 6,142,529.37	$ 1,801,122.63
UH	$ 301,708.00	$ 223,858.26	$ 77,849.74
UNT	$ 97,598.00	$ 96,883.49	$ 714.51
USGS	$ 9,833.00	$ 9,826.55	$ 9,826.55
UTA	$ 702,867.00	$ 325,450.38	$ 377,416.62
UTEP	$ 459,449.00	$ 252,299.70	$ 207,149.30
UTHSC	$ 330.00	$ -	$ 330.00
UTSA	$ 21,140.00	$ -	$ 21,140.00



1.3 Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials	**TTI**	Texas A&M Transportation Institute
APER	Annual Performance and Expenditures Report	**UH**	University of Houston
CFR	Code of the Federal Regulation	**UNT**	University of North Texas
CTR	University of Texas, Austin's Center for Transportation Research	**USGS**	United States Geological Survey
TAMUK	Texas A&M University – Kingsville	**UTA**	University of Texas at Arlington
TECHMRT	Center for Multidisciplinary Research in Transportation	**UTEP**	University of Texas at El Paso
TEEX	Texas Engineering Extension Service	**UTHSC**	University of Texas Health Science Center
TSU	Texas Southern University	**UTSA**	University of Texas at San Antonio
TSUSM	Texas State University - San Marcos	**UH**	University of Houston

1.4 FHWA Approved Program Revisions

Beside the additional SPR funding request that was approved, there were no FHWA approved program revision.

1.4.1 Programmatic Changes or Modification

No Major Program Changes or Modification occurred. Only project level modifications were executed and those are detailed in the project information templates.

1.5 Reasons for underruns and overruns when established goals were not met

There is a 10% allowance for underrun and overruns for individual projects as long as they are within the total approved budget for a sub-recipient (university(ies). There were no underruns or overruns that affected the total Program Budget. All participants complied with the agreements and the budget.

1.5.1 Events and Conditions that significantly impacted projects

During the reporting year, there were no known events or condition that significantly impacted the projects.

1.6 Accomplished Deliverables during the Fiscal Year 2014

Project agreements required the sub-recipients to submit monthly progress reports. During the reporting year, RTI received monthly reports for each active project. Technical memorandums were also required after completion of work plan tasks for each active project. If a report or product were due at the end of the task,

then no technical memorandums were required. See terminated projects for completed projects and their results.

Section 2.0
Accomplishments and Variances by Projects

2.1. Terminated Projects

RTI is monitored a total of 61 active research projects during FY 2014 which terminated at the end of the fiscal year on August 31, 2014.

Among other things, objectives of these projects are for the development and application of advanced technology, new knowledge and improved methods and procedures are critical to future TxDOT service quality and operational cost-effectiveness, and university students working on TxDOT research projects may be attracted to TxDOT careers upon graduation, contributes to the high quality of Texas transportation facilities and services, assists the state in meeting needs created by growth and changing technologies, ensures that transportation research funds are available to Texas universities to maintain the high quality of education at those institutions, and ensures that high-quality transportation talent is available in Texas.

Project Number: 0-5722

Project Start Date: 9/1/2006 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Lap Splice and Development Length Performance in ASR and/or DEF Damaged Concrete Elements

Project objectives: This research will assess the influence of ASR/DEF on bond.

Project Status: Terminated

Accomplished project Deliverables: P1, Inspection/Reliability Manual. The product will be submitted with or without ASR results, depending on specimen findings.
P2, Updated Inspection/Reliability Manual with ASR and DEF Findings.
PSR, Summary of work performed, findings and conclusions.
R1, Documentation of work performed, methods used, and results achieved. Will include results of testing of the first 8 specimens for the first 5 years of the project.

Financials:	Budget	Expended	Balance
Contract Total	$48,026.00	$51,256.84	$(3,230.84) TTI

Project Number: 0-5997

Project Start Date: 9/1/2007 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Structural Assessment of "D" Region Affected by Premature Concrete Deterioration

Project objectives: The objective of project is to develop guidelines for applying strut-and-tie models to large structural elements subject to varying conditions of premature concrete deterioration.

Project Status: Terminated

Accomplished project Deliverables:

P1, Design Guidelines for determining the capacity of D-regions with premature concrete deterioration of ASR.

P2, Update Design Guidelines with ASR and DEF Findings.

PSR, Summary of work performed, findings and conclusions.

R1, Documenting work performed, methods used, & results achieved. Will include results of testing of the first 3 specimens for the first 4 years of the project.

R2, Description of the test results of specimen with severe deterioration due to ASR/DEF. Will include results of testing of the 4th specimen.

Financials:	Budget	Expended	Balance
Contract Total	$47,122.00	$48,673.66	$(1,551.68) TTI

Project Number: 0-6271-2

Project Start Date: 10/16/2008 **Project Termination Date:** 3/31/2011

RTI Project Manager: Darrin Jensen

Projects Title: FDR (Full-Depth-Reclamation) Performance-Based Design, Construction and Quality Control

Project objectives: The goal of this project is to develop comprehensive guidelines for the full-depth reclamation (FDR) rehabilitation process.

Project Status: Terminated

Accomplished project Deliverables:

P1, PowerPoint presentation of the steps in the evaluation, design and construction process.

R1, Summarizes prototype guidelines, evaluations, and recommendations.

TM1, Technical memorandum for Task 1.

TM2, Technical memorandum for Task 2.

Financials:

	Budget	Expended	Balance
Contract Total	$20,000.00	$21,403.63	$(1,403.63) TTI

Project Number: 0-6581-CT

Project Start Date: 10/23/2008 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: TxDOT Administration Research

Project objectives: This research project will evaluate numerous individual transportation issues and develop findings and/or recommendations based on results. This project has been structured to: 1) respond to transportation research needs that are identified in a manner that necessitates a quick response that does not fit into the normal research program planning cycle, and 2) individual transportation research needs that are not large enough to justify funding as a stand-alone research project, despite the fact that the issue may be an important one.

Project Status: Terminated

Accomplished project Deliverables: R7, Research Report – Documentation of work for FY14

Financials:	Budget	Expended	Balance
Contract Total	$180,000.00	$144,729.79	$35,270.21 CTR

Project Number: 0-6618

Project Start Date: 9/10/2010 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Mitigation of High Sulfate Soils in Texas

Project objectives: The main objective of this research is to determine ways to stabilize soils with sulfate concentration higher than 8000 ppm and if the soil mineralogy isa factor in this stabilization.

Project Status: Terminated

Accomplished project Deliverables: PSR, A 2 page summary of work accomplished, findings and conclusions.
R1, Comprehensive documentation of the research and findings. Appendices includes procedures for measuring alumina and silica and also design and field construction procedure for stabilizing high sulfate soils.
TM7, Technical Memorandum for Task 7
TM8, Technical Memorandum for Task 8

Financials:

	Budget	Expended	Balance
Contract Total	$75,065.00	$73,927.25	$1,137.75 UTA

Project Number: 0-6649

Project Start Date: 9/01/2010 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Development of Design Guidelines and Mitigation Strategies for Wind-Induced Traffic Signal Structure Vibrations

Project objectives: The research project will develop guidelines for the design, fabrication, and implementation of traffic signal structures, such as limitations on placement and sizes of items placed on signal pole arms, and develop mitigation strategies for reducing or eliminating wind induced vibrations.

Project Status: Terminated

Accomplished project Deliverables:

TM5, Technical Memorandum for Task 5
TM6, Technical Memorandum for Task 6
TM7A, Technical Memorandum for Task 7A
TM7B, Technical Memorandum for Task 7B
TM8, Technical Memorandum for Task 8

Financials:	Budget	Expended	Balance
Contract Total	$ 135,177.00	$130,600.57	$4,576.43 TechMRT

Project Number: 0-6651

Project Start Date: 9/1/2010 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Continuous Prestressed Concrete Girder Bridges

Project objectives: This project will review, evaluate, and recommend details for the design of durable and constructible connections that achieve structural continuity between specific precast, prestressed concrete girder sections.

Project Status: Terminated

Accomplished project Deliverables:

TM2, Task 2.2 Technical Memorandum.
TM3, Task 2.3 Technical Memorandum
TM4, Task 2.4 Technical Memorandum
TM5, Task 2.5 Technical Memorandum
TM6, 2.6 Technical Memorandum
P1, Seminar presentation and hand-out materials, which includes Instructor's and Students' Guide.
PSR, Summary of work performed, findings and conclusions.
R1, Complete documentation of Phase I tasks results.
R2, Complete documentation of work performed, methods used, and results achieved. Focuses on Phase 2 research tasks; Summarizes Phase I results; Includes design examples & guidelines.

Financials:	Budget	Expended	Balance
Contract Total	$175,425.00	$188,801.97	$(13,376.97) TTI

Project Number: 0-6675

Project Start Date: 8/17/2011 **Project Termination Date:** 2/28/2014

RTI Project Manager: Kevin Pete

Projects Title: Evaluation of Bonus/Penalty Pay Adjustment Systems for HMA and Ride Specifications of Concrete and Asphalt Pavements

Project objectives: The goal of this research is to address the following objectives: 1) evaluate the validity of PAFs for ride quality, 2) evaluate the validity of PAFs for HMA production, 3) evaluate the validity of PAFs for placement, and 4) modify existing PAFs based on performance considerations.

Project Status: Terminated

Accomplished project Deliverables: P1, Workshop, materials should include Instructor's and Student's Guide and a Power Point Presentation.

PSR, Summary of work performed, findings & conclusions.

R1, Comprehensive & detailed documentation of work. Includes revised pay adjustment specifications in the appendix.

Financials:	Budget	Expended	Balance
Contract Total	$54,478.00	$43,142.76	$11,335.24 CTR

Project Number: 0-6679

Project Start Date: 9/1/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Performance Life of Various HMA Mixes in Texas

Project objectives: The objective of this project is to define the service life of various HMA mixtures so that numbers can be used by planners designers, and maintenance personnel.

Project Status: Terminated

Accomplished project Deliverables:

P1, Guidelines for selecting performance lives of different mixes & a concise summary table (appendix).

PSR, Summary of work performed, findings & conclusions.

R1, Complete documentation of work performed, methods used, and results achieved. Includes guidelines for selecting performance lives of different mixes & a concise summary table (appendix).

TM5, Technical Memorandum for Task 5

TM6, Technical Memorandum for Task 6

TM7, Technical Memorandum for Task 7

Financials:	Budget	Expended	Balance
Contract Total	$105,000.00	$78,999.86	$26,000.14 UTEP

Project Number: 0-6682

Project Start Date: 4/11/2012 **Project Termination Date:** 4/30/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Validation of the Maximum Allowable Amounts of Recycled Binder, RAP & RAS Using Accelerated Pavement Testing

Project objectives: The key issues to be evaluated in this project include:
Validation that poor results on lab prepared RAP/RAS samples translates to poor field performance under load. (Industry groups claim the lab studies do not simulate plant produced mixes);
Validation of overlay design tools that have recently been developed by TTI to predict mix cracking and rutting of new overlays; these models need to be validated and calibrated for RAP and RAS mixes. Having a validated design system will then permit TxDOT designers to predict the performance of mixes containing different RAP/RAS levels for a range of existing pavement types with different pavement structures and different pre-existing cracking levels; and
To determine if the proposed balanced mix design procedures which incorporate both a cracking and rutting evaluation in the lab design phase can be used to design RAP/RAS mixes with performances comparable to virgin mixes.

Project Status: Terminated

Accomplished project Deliverables: P1, Recommendations on predicting the impact of RAP/RAS usage on overlay life will be presented in a one day workshop.

PSR, Summary of work performed, findings and conclusions

R1, Interim Research Report includes everything done up submission.

R2, Complete documentation of work performed, methods used, & results achieved. Includes guidelines that can improve the performance of flexible pavements constructed w/ mixes containing RAP and/or RAS.

Financials:

	Budget	Expended	Balance
Contract Total	$115,000.00	$18,347.76	$96,652.24 TTI
	$229,465.00	$125,005.16	$104,459.84 UTA

Project Number: 0-6697

Project Start Date: 12/8/2011 **Project Termination Date:** 12/31/2013

RTI Project Manager: Kevin Pete

Projects Title: Integration of Data Sources to Optimize Freight Transportation in Texas

Project objectives: The objectives of this study are (a) to develop a strategy for integrating and collecting available freight data, (b) explore the feasibility of entering into a data sharing partnership with the freight community for the collection of detailed and robust freight data that will satisfy the needs of transportation planning agencies, (c) develop prototype Freight Data Architecture Business Process, Logical Data Model and Physical Data Model documents supporting a separate IT project developing a database, and (d) advise TxDOT on the cost effectiveness of acquiring and maintaining a freight data sharing partnership to populate the Freight Data Architecture.

Project Status: Terminated

Accomplished project Deliverables:

P1, Freight Data Architecture Business Process, Logical Data Model and Physical Data Model documents

P2, Working prototype of the integrated freight database and companion Power Point presentation.

PSR, Summary of work performed, findings and conclusions.

R1, Comprehensive documentation of all research performed, methods used, and results achieved.

Financials:	Budget	Expended	Balance
Contract Total	$65,937.00	$59,682.20	$6,254.80 CTR

Project Number: 0-6717

Project Start Date: 9/1/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Investigation of Alternative Supplementary Cementing Materials (SCMs)

Project objectives: To identify, screen, and thoroughly test alternative sources of SCMs for use in Texas concrete.

Project Status: Terminated

Accomplished project Deliverables: PSR, Summary of work performed, findings, and conclusions

R1, Documentation of research findings and conclusions.

Financials:

	Budget	Expended	Balance
Contract Total	$132,000.00	$67,334.39	$64,665.61 CTR

Project Number: 0-6718

Project Start Date: 9/1/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Strength of Horizontal Shear Reinforcement with Limited Development

Project objectives: The objective of this project is to determine if adequate horizontal shear capacity is provided by the 5-inch concrete deck on slab and box beams, despite lack of reinforcement development. Horizontal cracks between the precast beams and the cast-in-place decks were noticed in several TxDOT bridges. Those cracks could be due to stresses induced by shrinkage or shear forces. In any case, this shows that that current TxDOT details might not provide sufficient horizontal shear resistance in those members.

Project Status: Terminated

Accomplished project Deliverables: PSR, Summary of work performed, findings and conclusions.

R1, Results of tasks 1-5. A concise report documenting progress and principal findings to date.

R2, Comprehensive and detailed documentation of all work tasks and results. It will contain recommended alternative details to improve the horizontal shear resistance.

Financials:

	Budget	Expended	Balance
Contract Total	$149,385.00	$71,378.33	$78,006.67 UTA

Project Number: 0-6720

Project Start Date: 8/12/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Shear Behavior of Thin Prestressed Slab Beams in Bridges

Project objectives: This research project will conduct the experimental and analytical investigation on the one-way shear behavior of PPC slab beams with respect to; i) shear span-to depth (a/d) ratio, ii) shear reinforcement (none/minimum per code/reduced), iii) concrete strength (normal/high), iv) alternate shear reinforcement (welded wire reinforcement), and v) effect of bearing pad (punching shear).

Project Status: Terminated

Accomplished project Deliverables: PSR, Summary of work performed, findings & conclusions.
R1, Comprehensive recording of all work performed. Recommendations for shear design sepcs & performance criteria forshear design of PPC slab, stand drawings. Design examples & standard drawings.

Financials:	Budget	Expended	Balance
Contract Total	$153,251.00	$103,632.54	$49,618.46 UH

Project Number: 0-6722

Project Start Date: 8/12/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Spread Prestressed Concrete Slab Beams

Project objectives: The project objectives will be met through a series of tasks. The research team will review the literature and the current state-of-the-practice, and develop preliminary designs to assess the potential of this system. Laboratory and field testing will provide important information on the in-service and ultimate performance of the spread slab beam system. In addition, the AASHTO LRFD approximate live load distribution factors for spread box beams will be reviewed for their applicability to spread slab beams, and new factors will be developed, if appropriate. Finally, the research team will develop design guidelines and examples, along with the final project reports.

Project Status: Terminated

Accomplished project Deliverables: PSR, Summary of work performed, findings, and conclusions.

R1, Complete documentation of work performed. Includes: 1) Comprehensive synthesis of literature & current state-of-the-practice, 2) preliminary designs for spread slab beam bridges, 3) results of the full-scale bridge field test.

Financials:	Budget	Expended	Balance
Contract Total	$156,100.00	$171,504.61	($15,404.61) TTI

Project Number: 0-6723

Project Start Date: 9/1/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Development of Rapid, Cement-Based Repair Materials for Transportation Structures

Project objectives: The focus of this research is to evaluate potential approaches (materials, mixture proportions, placement techniques, etc.) and to provide recommendations on the most efficient, economical, and durable repair materials and methodologies.

Project Status: Terminated

Accomplished project Deliverables: PSR, Summary of work performed, findings and conclusions
R1, Documentation of research results and work performed.

Financials:	Budget	Expended	Balance
Contract Total	$170,500.00	$168,249.04	$2,250.96 CTR

Project Number: 0-6734

Project Start Date: 5/31/2011 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Center for Transportation and Electricity Convergence (CTEC)

Project objectives: The Texas Department of Transportation (TxDOT) is providing support for operation of The Center to bring a state department of transportation perspective to the operations of the Center and to the selection of specific research projects for study by The Center.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: Various Reports:

- Maintaining Transportation Funding with Increasing PHEV/BEV Market Penetrations,
- Electrified vehicle technology trends, infrastructure implications, and cost comparisons
- Operations of a shared autonomous vehicle fleet for the Austin, Texas market
- Where are the electric vehicles? a spatial model for vehicle-choice count data

Financials:

	Budget	Expended	Balance
Contract Total	$88,000.00	$77,325.90	$10,674.10 CTR

Project Number: 0-6740

Project Start Date: 11/1/2012 **Project Termination Date:** 11/30/2013

RTI Project Manager: Darrin Jenson

Projects Title: Improvement of Construction Quality Control by Using Intelligent Compaction Technology for Base and Soil

Project objectives: The primary objective of this project is to improve the process of accepting compacted materials to ensure quality, performance and durability using IC technology.

Project Status: This project has terminated.

Accomplished project Deliverables: Technical Memorandum 1-6
R1 – A report that documents completely the work performed, methods used, and results achieved. Includes guidelines for use of IC and instrumented rollers for subgrade soils and base layers.
PSR – Project Summary Report – Summary of work performed, findings, and conclusions.

Financials:	Budget	Expended	Balance
Contract Total	$51,927.00	$48,182.09	$3,744.91 UTEP
	$15,015.00	$13,520.91	$1,494.09 UTA

Project Number: 0-6741

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Longer Lasting Permeable Friction Courses (PFCs)

Project objectives: An investigation is needed to explore the potential for better optimizing the design of PFCs to minimize the risk of these problems re-occurring.

Project Status: This project is terminated.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by August 31st.
Product 2 - Devices to Measure Splash and Spray
Product 1 - Test Protocols for PFC's in TxDOT Format
R1 - (Technical Report) - new laboratory design tools and field performance monitoring equipment for permeable friction courses
PSR - (summary report) new laboratory design tools and field performance equipment for permeable friction courses

Financials:	Budget	Expended	Balance
Contract Total	$154,295.00	$150,406.81	$3,888.19 TTI

Project Number: 0-6742

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell

Projects Title: Performance Tests for Thin Asphalt Layers

Project objectives: The work plan in this research involves evaluation of new and modified laboratory tests to improve mix acceptance/screening for rutting, cracking, and skid problems.

Project Status: This project has terminated.

Accomplished project Deliverables: Multiple tasks - Wrote up tech memos and revised several tech memos previously submitted as drafts. Task 11 - Write the final report and PSR

Financials:	Budget	Expended	Balance
Contract Total	$152,660.00	$133,315.68	$19,344.32 TTI

Project Number: 0-6744

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: New HMA Shear Resistance and Rutting Test for Texas Mixes

Project objectives: 1) To conduct computational modeling and shear stress-strain analysis pavement structures so as to determine the critical zones of shear deformation and the threshold for the maximum failure plastic strains.
2) To improve and/or modify the existing rutting-shear protocols.

Project Status: This project has terminated.

Accomplished project Deliverables:
1) Product 0-6744-P1
2) Product 0-6744 P2
3) "DRAFT" Project Summary Report (PSRD)
4) "DRAFT" Report 0-6744-2 (R2D)
5) Tech Memo Tasks# 09 & 10

Financials:	Budget	Expended	Balance
Contract Total	$145,065.00	$149,935.32	$(4,870.32) TTI

Project Number: 0-6747

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell

Projects Title: Seal Coat Quality: Does Low Cost Mean Low Quality?

Project objectives: The objective of this study is to evaluate the performance of seal coats and materials used statewide and develop guidelines based on cost and performance data regarding what materials should be used and where.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: Technical Memorandum 3-5
R1D – A draft report that documents completely the work performed, methods used, and results achieved. Includes guidelines for use of IC and instrumented rollers for subgrade soils and base layers.
PSRD – Project Summary Report Draft – Summary of work performed, findings, and conclusions.
P1 – Product 1

Financials:	Budget	Expended	Balance
Contract Total	$70,939.00	$52,049.54	$18,889.46 TechMRT
	$80,368.00	$84,260.32	$(3,892.32) TTI

Project Number: 0-6748

Project Start Date: 9/1/2012 **Project Termination Date:** 11/30/2013

RTI Project Manager: Darrin Jensen

Projects Title: Best Practice for Flexible Pavement Structure Widening Projects

Project objectives: The primary goal of this project is to identify best practices for improving pavement performance on projects involving widening of narrow pavement structures.

Project Status: This project has terminated. Schedule Modification – 09/26/2013. Extended task 5,6, and 7 to finish 11/30/2013. TxDOT was slow to supply plan sets that were required for the research project to achieve its objectives. The workshop held on July 2, 2013 was a huge success and a large amount of data was collected. Even if TxDOT had not delayed plan sets, an extension would have been asked for to incorporate all information and lessons learned.

Accomplished project Deliverables:

1) Product - P1
2) Product - P2
3) Project Summary Report (PSR) - Summary of work performed, findings, and conclusions.
4) R1 and R2 – A report that documents completely the work performed, methods used, and results achieved.
5) Tech Memo Tasks# 05 & 06

Financials:	Budget	Expended	Balance
Contract Total	$42,000.00	$28,402.38	$13,597.62 CTR

Project Number: 0-6752

Project Start Date: 9/6/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Study of Short Term Skid Improvements by Light Texturing with a Milling Machine

Project objectives: The objective of this research is optimize the light-texturing process by evaluating variables such as the number of teeth on drum, speed of the milling machine, the depth of milling, cutting pattern, pavement type, type of aggregate, climatic zone, traffic loading, etc.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by August 31st.
R1 (Technical Report) - Study of Short Term Skid Improvements by Light Texturing with a Milling Machine
PSR (Summary Report) - Study of Short Term Skid Improvements by Light Texturing with a Milling Machine

Financials:	Budget	Expended	Balance
Contract Total	$74,922.00	$19,856.51	$55,065.49 UH
	$72,583.00	$61,176.33	$11,406.67 CTR

Project Number: 0-6754

Project Start Date: 9/1/2012 **Project Termination Date:** 11/30/2013

RTI Project Manager: Wade Odell

Projects Title: Review of Tolling Approaches for Implementation within TxDOT's Travel Demand Models

Project objectives: The primary objective of this project is to evaluate and recommend to the Transportation Planning and Programming (TPP) Division of TxDOT (TxDOT-TPP) a menu of potential procedures to account for toll demand that could be selected for implementation in the current TxDOT modeling platform.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables:
1) Project Summary Report (PSR) and PSRD - Summary of work performed, findings, and conclusions.
2) R1D and R1 – A report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Tasks# 04 & 05

Financials:	Budget	Expended	Balance
Contract Total	$22,240.00	$21,252.15	$987.85 TTI
	$5,400.00	$5,329.53	$70.47 CTR

Project Number: 0-6756

Project Start Date: 9/1/2012 **Project Termination Date:** 6/30/2014

RTI Project Manager: Kevin Pete

Projects Title: Determine the Cost for TxDOT to Process/Review/Approve Utility and Driveway Permits

Project objectives: The research will study the time and costs for processing various types of utility and driveway permits; recommend a fee schedule to cover these costs if costs are significant; study feasibility of, and threshold for, transferring permitting functions to municipalities; and outline a process for TxDOT to ensure access management compliance if permit review is transferred to municipalities.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by June 30th.
R1 (Technical Report) - Evaluation of costs to process and manage utility and driveway permits.
PSR (Summary Report).

Financials:	Budget	Expended	Balance
Contract Total	$124,000.00	$126,188.06	$(2,188.06) TTI

Project Number: 0-6758

Project Start Date: 9/1/2012 **Project Termination Date:** 3/31/2014

RTI Project Manager: Wade Odell

Projects Title: Maintaining Project Consistency with Transportation Plans throughout the Project Life-cycle with an Emphasis on Maintaining Air Quality Conformity.

Project objectives: This study will provide TxDOT with a Project Consistency Guidebook including procedures and tools required for conducting a project consistency analysis and communications by different TxDOT units as part of the TxDOT Project Development Process.

Project Status: This project has terminated.

Accomplished project Deliverables:
1) Project Summary Report (PSR) and PSRD - Summary of work performed, findings, and conclusions.
2) R1D and R1 – A report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Tasks 03, 04, and 05
4) P1, P2, and P3.

Financials:	Budget	Expended	Balance
Contract Total	$54,452.00	$59,862.40	$(5,410.40) TTI

Project Number: 0-6760

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell

Projects Title: Improved Trip Generation Data for Texas Using Workplace and Special Generator Surveys

Project objectives: This project will utilize data from more than a decade of workplace and special generator travel surveys in Texas to develop a consistent set of attraction rates for small and medium-size Texas MPO's, to determine whether a generic attraction model can be used for different urban areas, and to establish an attraction rate manual for Texas that can be for modeling and local land development purposes.

Project Status: This project has terminated.

Accomplished project Deliverables:
1) Project Summary Report Draft (PSRD) - Summary of work performed, findings, and conclusions.
2) R1D– A draft report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Tasks# 04, 05, 06, 07, and 08.
4) P1 and P2

Financials:	Budget	Expended	Balance
Contract Total	$83,616.00	$59,228.02	$24,387.98 TTI
	$55,744.00	$52,418.40	$3,325.60 CTR

Project Number: 0-6762

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Maximizing Mitigation Benefits—Making a Difference with Strategic Inter-Resources Agency Planning

Project objectives: The objective of this research project is to assess current mitigation policies and practices in comparison to resource agency objectives, and identify mitigation strategies and priorities that provide greater cost-benefit potential and implementation speed through strategic inter-resource agency planning.

Project Status: This project has terminated.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, TM6, TM7, R1, P1, P2, PSRD, R2D, PSR, R2.

Financials:	Budget	Expended	Balance
Contract Total	$134,400.00	$123,601.98	$10,798.02 TTI
	$15,129.00	$14,713.77	$415.23 UNT

Project Number: 0-6763

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Accounting for Electric Vehicles in Air Quality Economy

Project objectives: The aim of this project is to provide TxDOT with a methodology and an application of incorporating EVs into MOVES emissions estimation relevant to Texas.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by August 31.
R1 (Technical Report) - Accounting for electric vehicles in air quality conformity—final report.
PSR (Summary Report)
Technical Memo 4
Technical Memo 5
Technical Memo 6

Financials:	Budget	Expended	Balance
Contract Total	$199,255.00	$197,320.04	$1,934.96 TTI

Project Number: 0-6766

Project Start Date: 11/1/2012 **Project Termination Date:** 12/31/2013

RTI Project Manager: Wade Odell

Projects Title: A Generic Mode Choice Model Applicable for Small and Medium

Project objectives: The focus of this project is to develop an operational stand-alone generic mode choice model for Texas urban regions.

Project Status: This project has terminated.

Accomplished project Deliverables:
1) Project Summary Report (PSR) and PSRD - Summary of work performed, findings, and conclusions.
2) R1D and R1 – A report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Task 04
4) P1 and P2

Financials:	Budget	Expended	Balance
Contract Total	$35,000.00	$34,989.76	$10.24 CTR

Project Number: 0-6767

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Evaluation of Existing Smartphone Applications and Data Needs for Traffic Surveys

Project objectives: The objective of this project is to evaluate existing smartphone applications for conducting travel surveys.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by August 31.
R1 (Technical Report) -
PSR (Summary Report)
Technical Memo 3
Technical Memo 5

Financials:	Budget	Expended	Balance
Contract Total	$82,469.00	$82,169.72	$299.28 UNT

Project Number: 0-6768

Project Start Date: 11/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell

Projects Title: Development of an Accessibility Evaluations Formulation to Measure Customers' of Demand Responsive Transit (DRT) Systems

Project objectives: In this project, we will classify the 38 DRT service providers into one of much fewer and distinct categories, and estimate models specific to each of these categories.

Project Status: This project has terminated, on schedule and on budget.

Accomplished project Deliverables:
1) Project Summary Report (PSR) and PSRD - Summary of work performed, findings, and conclusions.
2) R1D and R1 – A report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Tasks 4, 5, 6, and 7
4) P1, P2, and P3

Financials:	Budget	Expended	Balance
Contract Total	$95,000.00	$93,560.89	$1,439.11 CTR

Project Number: 0-6769

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Wrong Way Driving Countermeasures

Project objectives: The objectives of this research are to evaluate the effectiveness of wrong-way driving countermeasures and to develop recommendations regarding the implementation of wrong-way driving countermeasures.

Project Status: This project has terminated, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, PSRD, R1D, PSR, R1.

Financials:	Budget	Expended	Balance
Contract Total	$140,912.00	$144,736.60	$(3,824.60) TTI

Project Number: 0-6771

Project Start Date: 2/9/2014 **Project Termination Date:** 2/10/2014

RTI Project Manager: Kevin Pete

Projects Title: Developing Longitudinal Barriers for use on High-Speed Roadways

Project objectives: The scope of the project includes consideration of longitudinal barrier systems. Other devices such as crash cushions and guardrail end terminals are proprietary in nature and the upgrading of these systems for use on high-speed roadways can be accomplished by their respective manufacturers.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: No work tasks performed in FY14 at request of TxDOT

Financials:	Budget	Expended	Balance
Contract Total	$0.00	$0.00	$0.00 TTI

Project Number: 0-6772

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Development of New Delineator Material/Impact Testing Standard to Prevent Premature Failures Specific to Installation Application

Project objectives: By developing a categorical testing specification, delineator products can be better evaluated for each use application. This enhanced evaluation will lead to the proper selection of the best delineator for a certain application.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, TM6, PSRD, R1D, PSR, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$63,771.00	$45,347.40	$18,423.60 TTI

Project Number: 0-6775

Project Start Date: 10/22/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: NTCIP-Based Traffic Signal Evaluation and Optimization Toolbox

Project objectives: The specific objective is to develop and field-test a toolbox that uses NTCIP communications protocols and object definitions for online assessment of signal performance at intersections and diamond interchanges and for automating the transfer of outputs from popular signal timing optimization programs to traffic controllers

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, P1, P2, P3, PSRD, R1D, PSR, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$137,500.00	$139,201.49	$(1,701.49) TTI

Project Number: 0-6781

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Wade Odell

Projects Title: Improved Nighttime Work Zone Channelization in Confined Urban Projects

Project objectives: This project will identify alternative strategies for the design and placement of channelizing devices at decision points such as driveways or intersections, evaluate these strategies in controlled and field conditions, and develop guidance for the effective use of channelizing devices at these points.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables:
1) Project Summary Report Draft (PSRD) - Summary of work performed, findings, and conclusions.
2) R1D– A draft report that documents completely the work performed, methods used, and results achieved.
3) Tech Memo Tasks 03.

Financials:	Budget	Expended	Balance
Contract Total	$151,741.00	$156,147.64	$(4,406.64) TTI

Project Number: 0-6782

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Development of Design Standards for Mounting Temporary Large Guide Signs

Project objectives: The result of this research project will be three different sign support systems for temporary applications. The first will address mounting large signs (up to 128 square feet) on wood supports in temporary applications. The second will address the temporary relocation of large guide signs on steel supports without the use of large concrete foundations. The final design will address supporting large signs (up to 128 square feet) on skid systems where embedding the sign supports is not a feasible option.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, TM6, R1, TM7, TM8, TM9, PSRD, R2D, PSR, and R2.

Financials:	Budget	Expended	Balance
Contract Total	$149,658.00	$132,888.80	$16,769.20 TTI

Project Number: 0-6788

Project Start Date: 9/12/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP)

Project objectives: The goal of this study is to update Texas Department of Transportation (TxDOT) design guidance for deep foundations to reflect the reliability of the Texas Cone Penetration (TCP) based design method.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: Technical Memorandum 5
R1 – A report that documents completely the work performed, methods used, and results achieved. Includes guidelines for use of IC and instrumented rollers for subgrade soils and base layers.
PSR – Project Summary Report – Summary of work performed, findings, and conclusions.

Financials:	Budget	Expended	Balance
Contract Total	$129,713.00	$129,044.42	$668.58 TechMRT

Project Number: 0-6803

Project Start Date: 2/28/2013 **Project Termination Date:** 12/31/2013

RTI Project Manager: Darrin Jensen

Projects Title: Technology Task Force

Project objectives: Develop a list of the key emerging technologies the state should immediately address, and prepare a preliminary analysis of policy, economic and institutional barriers to be addressed in order to enable and encourage development and adoption of the emerging technologies while minimizing potential negative impacts

Project Status: This project has terminated.
Scope/Schedule/Budget Modification – 08/19/13 – Moved term date from 08/31/2013 to 12/31/2013 and established an FY14 budget of $71,250.00. Task 4 (Complete initial background work for the establishment of the Strategic Technology Business Plan) was added.

Accomplished project Deliverables: PSR2 – Summary of work performed for Strategic Plan, findings, and conclusions during the continuation period.
P5 – Work Plan for completion of Strategic Plan.

Financials:	Budget	Expended	Balance
Contract Total	$71,250.00	$71,217.06	$32.94 CTR

Project Number: 0-6805

Project Start Date: 5/30/2013 **Project Termination Date:** 6/30/2014

RTI Project Manager: Wade Odell

Projects Title: Stretch and Flex Program for TxDOT Operations

Project objectives: The goal of this project is to create a guidebook presenting a set of ergonomic recommendations for common TxDOT workplace tasks and a Stretch and Flex program designed to reduce strain/sprain-related incidents.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, Technical Memorandum for Task 3

Financials:	Budget	Expended	Balance
Contract Total	$74,598.00	$73,663.84	$934.16 CTR

Project Number: 0-6807

Project Start Date: 9/1/2013 **Project Termination Date:** 6/30/2014

RTI Project Manager: Kevin Pete

Projects Title: Texas Gulf Intracostal Waterway Master Plan

Project objectives: This research looks at what is needed to restore and sustain the GIWW to its optimum level, and how TxDOT might be able to play a more active role in the realization of this goal.

Project Status: This project is terminated, on schedule and on budget.

Accomplished project Deliverables: All tasks were completed and deliverables submitted by June 30

Financials:

	Budget	Expended	Balance
Contract Total	$150,096.00	$164,103.95	$(14,007.95) TTI

Project Number: 0-9802-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Reporting, Publications, and Information Services in Support of Research

Project objectives: Through this Support Project, which is a cost-reimbursable contract, the Communications Group at the Texas Transportation Institute (TTI-Com) will provide TxDOT with the services needed to facilitate the production and delivery of research results.

Project Status: This project has terminated. A new project for FY 2015-2016 was executed.

Accomplished project Deliverables: Task 1: Deliverables Preparation Assistance
Graphic design: Revise graphics for 0-6644-1
Task 2: Deliverables Quality Control Editorial services and formatting assistance for 7 deliverables.
Task 3: Deliverables Tracking and Processing Deliverables submitted - 8 Deliverables resubmitted - 1 Press Proofs - 4 Deliverables transmitted – 10 Task 4: Library Services Responded to 39 requests for library services and provided 39 documents for RMC research

Financials:	Budget	Expended	Balance
Contract Total	$390,000.00	$351,236.80	$38,763.20 TTI

Project Number: 0-9803-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Reporting, Publications, and Information Services in Support of Research

Project objectives: Through this Support Project, which is a cost-reimbursable contract, the Center for Transportation Research (CTR) will provide TxDOT with the services needed to facilitate the production and delivery of research results.

Project Status: This project has terminated. A new project for FY 2015-2016 was executed.

Accomplished project Deliverables:

Task 1: Deliverables Preparation Assistance
A. Special Assignments. Task 1A activity to report: N/A
B. Guiding and mentoring students and researchers. Task 1B activity to report: Consulted with researchers one-on-one about submitted deliverables in progress; mentored researchers on software use and document formatting.
Task 2: Deliverables Quality Control Task 2 activity to report: In July the production department began work on 11 preliminary drafts and final research deliverables. All items were proofed, formatted, and checked for required TxDOT elements. Graphics were reviewed for printing quality. All tables, figures, and front matter elements were reviewed for accuracy. Any final approved deliverables were distributed via the library and the Internet.
Task 3: Deliverables Tracking and Processing Task 3 activity to report: Consulted with researchers one-on-one about compliance with deliverables due dates. Sent out email reminders on items coming due/overdue. Documents in progress were tracked and monitored.

Financials:	Budget	Expended	Balance
Contract Total	$278,000.00	$242,188.40	$35,811.60 CTR

Project Number: 0-9903-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Coordination of Services in Support of TxDOT's Research Program

Project objectives: The Center for Transportation Research (CTR) will support the research program of the Texas Department of Transportation (TxDOT) by providing services that facilitate the management and coordination of university activities as they interact with TxDOT's research program.

Project Status: This project has terminated. A new project for FY 2015-2016 was executed.

Accomplished project Deliverables: For Contracts: Activated Mod 3 to 0-6663. Coordinated Mod 1 to 0-6675. Sent Mod 2 to 0-6804 to RTI for review. Coordinated release and assignment of FY14 Research Program Proposals with researchers. For Purchasing: Purchased supplies and equipment under $5000 for projects 0-6663, 0-6748, 0-6804, 5-9803, 0-6803, 0-9903, 0-6703, 0-9803. Prepared the following vouchers: VE5 - 14; VP5 - 10; VP1 - 1; VP2 - 11; PBU - 9; Procard purchases - 28. Finalized annual UT inventory. Continued annual Workspace certification. For Accounting: Provided accounting services to CTR research supervisors, and reviewed and approved all CTR purchasing documents. Provided billing reports for approx. 55 projects, and ensured all projects are in compliance with current RTI policies and procedures. Prepared and submitted required payrolls for approx. 100 CTR employees assigned to RTI projects. Conducted reconciliations of approx. 55 project accounts. Tracked status of previously submitted billings

Financials:	Budget	Expended	Balance
Contract Total	$589,000.00	$511,182.72	$77,817.28 CTR

Project Number: 0-9910-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Coordination of Services in Support of TxDOT's Research Program

Project objectives: The University of Texas at El Paso (UTEP) will support the research program of the Texas Department of Transportation (TxDOT) by providing services that facilitate the coordination of university activities as they interact with TxDOT's research program.

Project Status: This project has terminated. A new project for FY 2015-2016 was executed.

Accomplished project Deliverables: The objectives of this project are: Furnish clerical support and other work associated with the reproduction/publication and timely submission of all deliverables for TxDOT-sponsored projects conducted by UTEP. Facilitate the administration, coordination, and management of research and its resulting implementation activities for both ongoing and terminated TxDOT-sponsored projects conducted by UTEP.

Financials:	Budget	Expended	Balance
Contract Total	$29,000.00	$13,881.01	$15,118.99 UTEP

Project Number: 0-9911-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Coordination of Services in Support of TxDOT's Research Program

Project objectives: Texas Tech University, through its Center for Multidisciplinary Research in Transportation (TechMRT) will support the research program of the Texas Department of Transportation (TxDOT) by providing services that facilitate the coordination of university activities as they pertain to TxDOT's research program.

Project Status: This project has terminated. A new project for FY 2015-2016 was executed.

Accomplished project Deliverables: Task 1 - assisted with modifications to 5-5849-03; coordinated FY14 RFP information and proposal plans with researchers; Task 2, conducted inventory of equipment purchased from TxDOT projects; Task 3, reconciled and maintained project ledgers for research projects; Task 4, continued work with printer to achieve closure on 5-5230-01-2, 0-6549-1, 5-5849-03 appendices and 0-6493 appendices print jobs.
Task 2 – Assist with researchers' travel, purchasing, & A/P; track EOP forms. Research HR questions for researchers. Task 3 – Submit money moves and labor distribution forms; run Cognos reports; submit and track new hire paperwork, summer epafs, and background checks for new employees. Attend training for cost transfer system; submit cost transfer on new system.
Task 2 - Submit purchase orders, travel applications and vouchers, and reconcile procurement cards.

Financials:	Budget	Expended	Balance
Contract Total	$125,114.00	$124,787.00	$327.00 TECHMRT

2.1.1 Terminated Implementation Projects

Project Number:	5-0575-13		
Project Start Date:	9/01/2013	**Project Termination Date:**	8/31/2014
RTI Project Manager:	Joe Adams		
Projects Title:	Local Technical Assistance program (LTAP)		
Project objectives:	Provide training and technical assistance to local municipalities to promote their implementation of effective policies, procedure and technologies.		
Continuous work activities:	This project terminated 8/31/2014. The scope was modified 3/12/2013 to add LGPP classes top the planned training agenda. Total Project Budget was increased from $630,000 to $802,515. A new project agreement was executed for FY 2015.		
Accomplished project Deliverables:	This project provides multiple LTAP trainings and technical assistance sessions for (1) Safety, (2) Infrastructure Management, (3) Workforce Development, & (4) Organizational Excellence.		

Financials:	Budget	Expended	Balance
Contract Total	$802,515.00	$789,285.07	$13,229.93 TEEX

Project Number: 5-5253-03

Project Start Date: 12/17/2010 **Project Termination Date:** 2/28/2014

RTI Project Manager: Joe Adams

Projects Title: CTR - Monitoring Stresses and Placing Sweep Control System in Innovative Prestressed, Precast Concrete Arches

Project objectives: In addition to validating project 0-5253, data from the instrumentation will provide both an indicator and control that can be used to monitor the performance of the arch during fabrication, transport, and erection.

Project Status: This project terminated 2/28/2014.

Accomplished project Deliverables: (R1) Final report summarizing stresses and the five methodologies recommended for construction and analysis for future arches

Financials:	Budget	Expended	Balance
Contract Total	$50,000.00	$50,151.24	$(151.24) CTR

Project Number: 5-6005-01

Project Start Date: 1/7/2013 **Project Termination Date:** 10/31/2014

RTI Project Manager: Joe Adams

Projects Title: Statewide Implementation of Total Pavement Acceptance Device (TPAD)

Project objectives: In this project, CTR and TTI will maintain, operate, and store the TAPD system.

Project Status: Terminated

Accomplished project Deliverables:

P1, Updates to data acquisition and processing systems (internal only to the TPAD).

P2, Updates to RDD control systems and rolling sensors.

P3, Copies of project specific data. Provide RTI and the Requesting District with copies of all data collected on each project evaluated.

P4, Workshop materials which will include PowerPoint presentation, and Instructor and Student Guides.

R1, Summarizes results, evaluations, and includes recommendations.

Financials:

	Budget	Expended	Balance
Contract Total	$78,500.00	$77,603.18	$8,96.82 CTR
	$80,000.00	$70,935.65	$9,064.35 TTI

Project Number: 5-6022-01

Project Start Date: 10/21/2012 **Project Termination Date:** 10/31/2014

RTI Project Manager: Joe Adams

Projects Title: Pilot Implementation Using Geofoam for Repair of Bridge Approach Slabs and Adjoining Roadway

Project objectives: The scope of this Implementation Project is to collect data from the instrumented Geofoam embankment system for a period of no more than 24 months.

Project Status: Terminated

Accomplished project Deliverables: Technical Memorandum documenting work completed in Fiscal Year 2014

Financials:

	Budget	Expended	Balance
Contract Total	$52,060.00	$41,618.73	$10,441.27 UTA

Project Number: 5-6694-01

Project Start Date: 12/13/2013 **Project Termination Date:** 8/31/2014

RTI Project Manager: Joe Adams

Projects Title: Implementation Workshops for Best Practices for Managing Operating Costs for Ruraland Small Urban Transportation Systems

Project Status: The objectives of the implementation project are to conduct a series of workshops based on the results of the pilot workshop developed and tested in RMC 0-6694. The objectives of the workshops are to better equip public transportation provider staff in understanding, managing, and predicting operating costs.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables:

(P1) 3/31/2014 Submitted PowerPoint presentation, participant workbooks and handouts for Transit Cost Fundamentals and Allocating Cost to Services
(P2) 3/31/2014 Submitted Round table draft workshop materials
(P3) 3/31/2014 Submitted Finalized workshop materials and presentations
(TM1) 3/31/2014 Submitted Tech Memo for Task 1
(TM2) 3/31/2014 Submitted Tech Memo for Task 2
(TM3) 3/31/2014 Submitted Tech Memo for Task 3
(TM4.1) 4/30/2014 Submitted Tech Memo for Task 4
(TM4.2) 4/30/2014 Submitted Tech Memo for Task 4
(TM4.3) 5/31/2014 Submitted Tech Memo for Task 4
(P4) 6/30/2014 Submitted workshop flyers, contact list, registrants, workshop location dates and times, list of trainers and list of participants.
(TM5) 7/31/2014 Submitted Tech Memo for Task 5
(P5) 7/31/2014 Submitted Evaluation forms and summary of workshop participants

Financials:	Budget	Expended	Balance
Contract Total	$80,000.00	$78,055.95	$1,944.05 TTI

Project Number: 5-6735-01

Project Start Date: 11/18/2013 **Project Termination Date:** 8/31/2014

RTI Project Manager: Joe Adams

Projects Title: Implementation of Best Practices for TxDOT on Handling Wild land Fires

Project objectives: The purpose of this implementation project is to produce training workshop materials based upon findings from Project 0-6735, present a train-the-trainer workshop incorporating the enhanced training materials, and present eight training workshops in the four TxDOT regions.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables:

(P1)	12/31/2013	Submitted Student Manual
(P2)	12/31/2013	Submitted Instructors Manual
(TM1)	1/15/2014	Submitted Tech Memo for Task 1
(P3)	1/31/2014	Submitted Spiral Pocket Guide
(TM2)	2/15/2014	Submitted Tech Memo for Task 2
(TM3)	2/15/2014	Submitted Tech Memo for Task 3
(TM4)	7/15/2014	Submitted Tech Memo for Task 4
(P4)	7/31/2014	Submitted DVD of Workshop presentation
(TM5)	8/15/2014	Submitted Tech Memo for Task 4
(R1)	8/31/2014	Submitted Final Report
(PSR)	8/31/2014	Submitted Summary of worked performed, findings and recommendations

Financials:	Budget	Expended	Balance
Contract Total	$125,000.00	$123,786.26	$1,213.74 TechMRT

Project Number: 5-6758-01

Project Start Date: 8/22/2014 **Project Termination Date:** 11/30/2014

RTI Project Manager: Joe Adams

Projects Title: Project Consistency with Transportation Plans and Air Quality Conformity Workshops

Project objectives: This Implementation Project supports streamlined project delivery, one of the goals outlined by the TxDOT leadership to achieve an efficient and effective transportation system in Texas.

Project Status: Terminated

Accomplished project Deliverables: This project was only active for less than one-month in FY 14. The deliverables were submitted in FY 15.

Financials:	Budget	Expended	Balance
Contract Total	$1,300.00	$114.25	$1,185.75 TTI

Project Number: 5-9049-01

Project Start Date: 6/7/2013 **Project Termination Date:** 3/10/2014

RTI Project Manager: Joe Adams

Projects Title: Southbound Graphical Route Information Panel (GRIP) Sign Design Assistance for Austin

Project objectives: This scope of services outlines general task areas the Performing Agency will accomplish for the Receiving Agency to determine safe, optimal design features for one or more Graphical Route Information Panel (GRIP) signs appropriate for southbound I-35 motorists as they approach and pass through the Austin metropolitan area.

Project Status: This project is active, on schedule and on budget.

Accomplished project Deliverables: R3, R4, P1, P4, P5, R6, R7, P2, P3, R1, R2, and R5.

Financials:	Budget	Expended	Balance
Contract Total	$190,936.00	$177,023.67	$13,912.33 TTI

Project Number: 5-9802-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Reporting, Publications, and Information Services in Support of Implementation

Project objectives: Through this Support Project, which is a cost-reimbursable contract, the Communications Group at the Texas Transportation Institute (TTI-Com) will provide TxDOT with the services needed to facilitate the implementation of research results.

Project Status: A new project agreement for FY 2015-2016 was executed.

Accomplished project Deliverables:

Task 1: Reproduction Services Reproduced copies as directed and for processing/editorial services for 17 deliverables.

Task 2: Deliverables Distribution and Preservation Posted and linked published PDFs of deliverable on university web sites. 6 new transmittals posted. 9 PDFs made interactive and linked. Developed covers for other universities.

Task 3: Image Resource Management Services Photographer: June reported hours may be billed to the contract in July. Maintained the photo database.

Task 4: Services and Products to Support Research and Promote Implementation Technical writing of Researcher and web articles. Technical writing of abstracts (6) and project wrap-ups (3). Graphic design services: 8 hours reported in June for the purpose of designing and laying out TxDOT RMC research articles in Researcher Magazine (issue 49.2); billed to contract during July.

Financials:	Budget	Expended	Balance
Contract Total	$397,000.00	$187,686.78	$209,313.22 TTI

Project Number: 5-9803-13

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2014

RTI Project Manager: Sylvia Medina

Projects Title: Reporting, Publications, and Information Services in Support of Implementation

Project objectives: Through this Support Project, which is a cost-reimbursable contract, the Center for Transportation Research (CTR) will provide the services needed to facilitate the implementation of research results.

Project Status: This project on 8/31/14. A new project agreement for FY 2015-2016 was executed.

Accomplished project Deliverables: Task 1 – This month, the editorial production staff sent 3 approved research deliverables (including printed documents and CD/DVD products) to the CTR Library for distribution. Print documents were converted to PDF and were posted to the Internet, and CD/DVD products were also posted to the Internet. Task 2 – Deliverables Distribution and Preservation: CTR Library staff is responsible for distribution and preservation of both bound and electronic copies of TxDOT research deliverables. 3 CTR reports were distributed, posted in the CTR Library web catalog, archived and warehoused in this reporting period. 1 TechMRT report was distributed, posted in the CTR Library web catalog, archived and warehoused in this reporting period. 8 reports were sent to NTIS/TRID/NTL for archiving. Task 3 – Library Services: The CTR Library serves as TxDOT's official depository for all transportation-related reference materials. Library staff will perform the services described below, upon request, for any university researcher active in TxDOT's research program, or for any TxDOT employee. A. Literature Searches: 5 literature searches were completed for library patrons in this reporting period. B. Obtaining Library / Reference Material: 67 reference requests were completed in this reporting period. 13 items were checked out from the CTR Library. 36 PDFs were provided to patrons. Maintaining Library Collection at CTR: 1818 patrons visited the CTR Library website during this reporting period.100 new items were added to the CTR web catalog. 34 items were digitized this month. Digitization projects are ongoing and in development.

Financials:	Budget	Expended	Balance
Contract Total	$241,500.00	$220,405.74	$21,094.26 CTR

Project Number: 9-1001-14

Project Start Date: 9/1/2013 **Project Termination Date:** 8/31/2016

RTI Project Manager: Wade Odell, P.E.

Projects Title: Traffic Control Device Evaluation Program

Project objectives: This project will provide the Texas Department of Transportation a mechanism to quickly and effectively conduct high priority limited scope evaluations of traffic control devices (TCD).

Project Status: Active

Accomplished project Deliverables: R1, Annual Report summarizing all traffic control device issues studied in FY 2014.

Financials:	Budget	Expended	Balance
Contract Total	$320,000.00	$242,584.94	$77,415.06 TTI

Project Number: 9-1002-12

Project Start Date: 9/1/2011 **Project Termination Date:** 08/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Roadside Safety Device Crash Testing Program

Project objectives: This project provides TxDOT with a mechanism to quickly and effectively evaluate high priority issues related to roadside safety devices.

Project Status: Terminated

Accomplished project Deliverables: R9, Secure Mailbox Evaluation Reports.

Financials:	Budget	Expended	Balance
Contract Total	$500,000.00	$399,414.11	$100,585.89 TTI

Project Number: 9-1529

Project Start Date: 4/2/2010 **Project Termination Date:** 8/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Low-Cost Safety Solutions, Pavement Preservation and Maintenance Practices for Rural Highways

Project objectives: (Task 1) investigate innovative low-cost safety solutions that will provide nighttime visibility benefits for road users and (Task 2) demonstrate the latest pavement preservation and maintenance treatments in a controlled environment, including new crack sealants and crack and rut resistant very thin overlays.

Project Status: Terminated

Accomplished project Deliverables:

TM16, Technical Memorandum for Task 1.6
TM17, Technical Memorandum for Task 1.7
TM18, Memorandum for Task 1.8
TM19, Technical Memorandum for Task 1.9
TM24A, Memorandum for Task 2.4A
TM24B, Technical Memorandum for Task 2.4B
P1, Excel Spreadsheets with new mix designs, as discussed in Subtask 2.2.
PSR, Summary of work performed, findings and conclusions.
R1, Comprehensive and detailed documentation of work and findings from Subtasks 1.1 - 1.4.
R2, Comprehensive and detailed documentation of efforts and findings from Subtasks 2.1 - 2.4.

Financials:

	Budget	Expended	Balance
Contract Total	$170,892.00	$160,401.19	$10,490.81 TTI

2.2 FY 2014 Active Project Listing

RTI is monitored a total of 51 active research projects that are scheduled to continue beyond FY 2014.

Among other things, objectives of these projects are for the development and application of advanced technology, new knowledge and improved methods and procedures are critical to future TxDOT service quality and operational cost-effectiveness, and university students working on TxDOT research projects may be attracted to TxDOT careers upon graduation, contributes to the high quality of Texas transportation facilities and services, assists the state in meeting needs created by growth and changing technologies, ensures that transportation research funds are available to Texas universities to maintain the high quality of education at those institutions, and ensures that high-quality transportation talent is available in Texas.

Project Number: 0-6636

Project Start Date: 9/1/2010 **Project Termination Date:** 12/31/2016

RTI Project Manager: Wade Odell

Projects Title: Photocatalytic NOx /HRVOC/O3 Removal in Transportation Application

Project objectives: The focus of the proposed research is intensive and thorough testing of two commercial photocatalytic coatings applied to Portland cement concrete to provide accurate data that are representative of highway applications

Continuous work activities: This project is active, on schedule and on budget. A Scope, Schedules and Budget Modification was submitted on 04/24/2012 and approved on 05/01/2012. The termination date was revised from 08/31/2012 to 08/31/2014. FY13 budget established at $224,448 and FY14 budget established at $164,848. Task 3, 4, and 10 are revised and task 12,13,14,and 15 were added.
A second modification was submitted on 08/27/2014 and approved on 08/28/2014. FY15 budget was established at $187,419, FY16 budget was established at $127,957, and FY17 budget was established at $116,820.00. Project termination date revised from 08/31/2014 to 12/31/2016.

Accomplished project Deliverables: Tech Memo 12, TechMemo13, Tech Memo 3, Tech Memo 4, Tech Memo 14, R1, and PSR.

Financials:	Budget	Expended	Balance
Contract Total	$65,000.00	$48,119.53	$16,880.47 CTR

Project Number: 0-6652

Project Start Date: 9/1/2010 **Project Termination Date:** 2/28/2015

RTI Project Manager: Darrin Jensen

Projects Title: Spliced Texas Girder Bridges

Project objectives: The recent introduction of the TX girder series has sparked tremendous interest in low-cost spliced girder technology within the state of Texas. In anticipation of TxDOT's full-scale implementation efforts, Project 0-6652 will resolve two outstanding issues related to the strength and serviceability of spliced TX girder bridges: Shear Performance of Post-Tensioned TX Girders and Detailing of Cast-in-Place Splices.

Continuous work activities: This project is active, on schedule and on budget.
Modification – March 6, 2014 – Schedule and Budget. Termination date was extended from 08/31/201 to 02/28/2015; FY15 budget established at $17,738 (total budget remains at $999,923.00). The experimental program of Project 0-6652 requires prestressed concrete test girders to be fabricated at a precast plant. An incident that occurred in November 2013 at the precast plant that is being used for Project 0-6652 has resulted in scheduling difficulties for the fabrication of the Task 7 test specimens. The incident occurred a few days before the original date when the specimens were to be cast. Members of the Project 0-6652 research team had already traveled to the precaster to make preparations for the specimens when the incident occurred. The research team is now in the process of determining a new schedule with the precaster. The experimental program will proceed as planned when the scheduling difficulties are resolved.

Accomplished project Deliverables: Tech memo 5, Tech Memo 3, Tech Memo 6, Tech Memo 1, Tech Memo 4, Tech Memo 7, Tech Memo 8, PSR, R1, and R2.

Financials:	Budget	Expended	Balance
Contract Total	$232,682.00	$246,822.20	($14,140.20) CTR

Project Number: 0-6658

Project Start Date: 11/9/2010 **Project Termination Date:** 8/31/2015

RTI Project Manager: Kevin Pete

Projects Title: Collection of Materials and Performance Data for Texas Flexible Pavement and Overlays

Project objectives: The primary objective of this project is to collect materials and pavement performance data on a minimum of a 100 highway test sections around the State of Texas.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: FY14 deliverables submitted by August 31, 2014.
Product 5 – Data Collection and Population of the Database (DSS and RDSSP)

Financials:	Budget	Expended	Balance	
Contract Total	$250,590.00	$270,329.51	($19,739.51)	TTI
	$143,000.00	$111,236.74	$31,763.26	UTEP

Project Number: 0-6663

Project Start Date: 10/4/2010 **Project Termination Date:** 2/28/2015

RTI Project Manager: Wade Odell

Projects Title: Evaluation of Pavement Rutting and Distress Measurement

Project objectives: The Primary objective of this research project is the evaluation of new technologies to improve the accuracy and reliability of pavement distress measurements by TxDOT

Continuous Work activities: This project is active, on schedule and on budget. Modification was submitted on May 1, 2013 and approved May 29, 2013. FY14 budget set at $135,469. Task 10 and 11 added.

Accomplished project Deliverables: Tech Memo 5, Tech Memo 6, Tech Memo 10, Tech Memo 7, Tech Memo 8, R1, P2, R2, PSR, R3.

Financials:	Budget	Expended	Balance
Contract Total	$135,469.00	$102,031.37	$33,437.63 CTR

Project Number: 0-6665

Project Start Date: 9/1/2010 **Project Termination Date:** 8/31/2018

RTI Project Manager: Wade Odell

Projects Title: TxDOT Native Plant Integration Program for South, Central and West Texas

Project objectives: This project will work to collect, evaluate, and release native seed sources for use by TxDOT in Central, West, and South Texas.

Continuous Work activities: This project is active, on schedule and on budget.

Accomplished Project Deliverables: Tech Memo FY2013, Tech Memo 2014, Tech Memo 2015, Tech Memo 2016, Tech Memo 2017, P3, P4, PSR, R1, P1, and P2.

Financials:	Budget	Expended	Balance
Contract Total	$500,000.00	$472,400.91	$27,599.09 TAMUK

Project Number: 0-6674

Project Start Date: 12/5/2014 **Project Termination Date:** 8/31/2018

RTI Project Manager: Darrin Jensen

Projects Title: Improving Fracture Resistance Measurements in Asphalt Binder Specifications with Verification on Asphalt Mixtures Cracking Performance.

Project objectives: The major objectives of this project are to:

1. Continue monitoring the 11 field test sections constructed under project 0-6674 for the duration of 0-6674-01. This will provide the research team with a total of five years of performance data which should be adequate to validate the benefits of these softer binders in the colder areas of Texas;
2. Validate the statewide binder selection catalog building field test sections in West, South, and East Texas districts. The specific locations will be selected in coordination with the project team and TxDOT Districts;
3. Perform 40 year life cycle cost analysis with true cost and performance data on all field test sections to evaluate the benefit of using softer but highly modified binders;
4. Update the statewide binder selection catalog developed under previous Project 0-6674

Project Status: Active

Accomplished project Deliverables:

P1, Presentations for asphalt binder brainstorm workshop.

P2, Presentations for new binder tests and specification change workshop: Includes instructors and student's guides.

P3, A partially populated catalogue of the measured properties related to the constructed field sections.

PSR, Summary of work performed, findings and conclusions.

R1, Complete documentation of the laboratory work on asphalt binders and mastic, including test methods and results achieved.

R2, Complete documentation of work performed, methods used, and results achieved under this project.

Financials:

	Budget	Expended	Balance
Contract Total	$168,135.00	$174,533.07	$(6,398.07) TTI

Project Number: 0-6711

Project Start Date: 9/1/2011 **Project Termination Date:** 11/30/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Short Radius MASH TL-3 Guardrail Treatment

Project objectives: The objective of this project is to develop a MASH TL-3 compliant short radius design for TxDOT.

Project Status: Terminated

Accomplished project Deliverables: TM2, Technical Memorandum for Task 2
TM3, Technical Memorandum for Task 3

Financials:	Budget	Expended	Balance
Contract Total	$325,657.00	$307,180.36	$18,476.64 TTI

Project Number:	0-6715		
Project Start Date:	9/1/2011	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Kevin Pete		
Projects Title:	Interaction between Drilled Shafts and Mechanically Stabilized Earth (MSE) Walls		
Project objectives:	The objective of this project is to investigate this interaction and propose design guidelines. To do so, a field study of 3 sites and a series of numerical simulations will be performed.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	FY14 task was completed and deliverable submitted January 31, 2014. Technical Memo 4 – Numerical Modeling		
Amendment Description:	revised schedule, revised scope, and revised budget		

Financials:	**Budget**	**Expended**	**Balance**	
Contract Total	$39,003.00	$40,655.64 (University was not involved this this FY)	($1,652.64)	TTI UTSA

Project Number:	0-6719		
Project Start Date:	9/1/2011	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Darrin Jensen		
Projects Title:	Strengthening Continuous Steel Girders with Post-Installed Shear Connectors		
Project objectives:	This project will extend the concepts developed in Project 0-4124 to permit the use of post-installed shear connectors to strengthen continuous multi-span non-composite bridges with inadequate capacity in negative moment regions.		
Continuous Work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Tech Memo 2, Tech Memo 3, Tech Memo 5, Tech Memo 6, Tech Memo 3, Tech Memo 4, Tech Memo 6, Tech Memo 5, Tech Memo 7, Tech Memo 8, Tech Memo 9, PSRD, R1D, PSR, and R1.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$227,865.00	$227,837.77	$27.23 CTR

Project Number:	0-6731		
Project Start Date:	9/1/2011	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Wade Odell		
Projects Title:	Repair Systems for Deteriorated Bridge Piles		
Project objectives:	The objective of this project is to develop a durable repair system for deteriorated steel bridge piles that can be implemented without the need for dewatering.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Tech Memo 3, Tech Memo 4, TechMemo5, Tech Memo 6, Tech Memo 7, P1, PSR, and R1.		

Financials:	**Budget**	**Expended**	**Balance**	
Contract Total	$73,535.00	$55,958.07	$17,576.93	UH
	$53,383.00	$53,077.45	$305.55	TechMRT

Project Number: 0-6738

Project Start Date: 9/1/2012 **Project Termination Date:** 8/31/2015

RTI Project Manager: Darrin Jensen

Projects Title: Performance Studies and Future Directions for Mixes Containing RAP and RAS

Project objectives: As TxDOT moves into more and more RAP/RAS usage with different mix types it is necessary to learn from the experiences of the past 3 to 4 years, to determine what is working and what is not, and to study how variations in mix design options, plant production and construction process have impacted the performance life.

Continuous Work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: Tech Memo 1.1, Tech Memo 1.2, Tech Memo 1.3, Tech Memo 1, Tech Memo 1.4, Tech Memo 2, P1, R1, Tech Memo 5, Tech Memo 4, Tech Memo 6, Tech Memo 3, Tech Memo 7, PSRD, R2D, PSR, and R2.

Financials:	Budget	Expended	Balance
Contract Total	$157,060.00	$163,412.98	($6,352.98) TTI

Project Number:	0-6746		
Project Start Date:	11/9/2012	**Project Termination Date:**	12/31/2014
RTI Project Manager:	Kevin Pete		
Projects Title:	Validation of TxDOT Flexible Pavement Skid Prediction Model		
Project objectives:	Building upon the developments in project 0-5627, researchers will investigate and examine a large number of asphalt mixtures and surface treatment test sections. The test sections will be periodically tested to measure their texture and skid resistance.		
Continuous Work activities:	This project is active, off schedule. The research team missed schedule in Task 4 "Conduct Field and Laboratory testing" by two and a half months. As a result, Task 5 also got delayed in part by availability of the DFT and CT Meter being provided by TxDOT as well as available skid data. The project team will address and provide corrective actions.		
Accomplished project Deliverables:	Tech Memo 2, Tech Memo 3, Tech Memo 4, Tech Memo 5, P1, P2, R1, and PSR.		
Amendment Description:	none in FY14, modification is being planned.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$137,087.00	$106,749.97	$30,337.03 TTI

Project Number: 0-6764

Project Start Date: 9/12/2012 **Project Termination Date:** 11/30/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Contribution of Bridge Dwelling Birds to Bacterial Water Quality Impairments

Project objectives: We will quantitatively determine bacterial loads (all bacteria, and *Escherichia coli* as indicator for fecal contamination) up- and down-stream of bridges with nesting colonies of Cliff Swallows (*Petrochelidon pyrrhonota)* during dry weather and subsequent runoff conditions at four major sampling times during the year (with a repetition of the sampling and analysis scheme during the second year to account for inter-annual variation).

Project Status: Terminated

Accomplished project Deliverables:

TM1, Technical Memorandum for Task 1

TM2, Technical Memorandum for Task 2

TM3, Technical Memorandum for Task 3

TM4, Technical Memorandum for Task 4

Financials:

	Budget	Expended	Balance
Contract Total	$190,442.00	$183,570.24	$6,871.76 TSUSM

Project Number: 0-6783

Project Start Date: 9/1/2012 **Project Termination Date:** 12/31/2015

RTI Project Manager: Darrin Jensen

Projects Title: Bi-Directional Application of Carbon Fiber Reinforced Polymer (CFRP) with CFRP Anchors for Shear-Strengthening and Design Recommendations/Quality Control Procedures for CFRP Anchors

Project objectives: The objective of the study is to demonstrate the feasibility of using bi-directional CFRP for shear strengthening of large bridge I and U-beams.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: Tech Memo 1a, Tech Memo 1b, Tech Memo 1c, Tech Memo 1d, Tech Memo 2a, Tech Memo 2b, Tech Memo 2c, Tech Memo 1e, PSRD, R1D, PSR, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$368,948.00	$370,601.48	($1,653.48) CTR

Project Number:	0-6784		
Project Start Date:	9/12/2012	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Wade Odell		
Projects Title:	Creep Behavior of Soil Nail Walls in High Plasticity Index (PI) Soils		
Project objectives:	The objective of this project is to investigate the creep behavior of soil nail walls in high-plasticity clays.		
Continuous work activities:	This project is active, on schedule and on budget. Scope, schedule, and budget modification submitted on 07/23/2014 and approved on 08/28/2014. Termination date revised from 08/31/2014 to 08/31/2015. FY14 budget increased by $12,423 and FY15 budget established at $56,187. Task 3 through 7 revised and task 8 deleted.		
Accomplished project Deliverables:	Tech Memo 1, Tech Memo 2, Tech Memo 3, Tech Memo 4, Tech Memo 5, R1, and PSR.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$105,440.00	$115,502.58	($10,062.58) TTI

Project Number:	0-6785		
Project Start Date:	9/1/2012	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Darrin Jensen		
Projects Title:	Extending Use of Elastomeric Bearings to Higher Demand Applications		
Project objectives:	The primary objective of this research is to extend the knowledge of elastomeric bearing behavior and performance to high demand applications.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Tech Memo 1, Tech Memo 5, Tech Memo 2, Tech Memo 6, Tech Memo 7, Tech Memo 4, Tech Memo 8, Tech Memo 9, PSRD, R1D, PSR, and R1.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$227,889.00	$197,825.15	$30,063.85 CTR

Project Number: 0-6786

Project Start Date: 9/12/2012 **Project Termination Date:** 2/28/2015

RTI Project Manager: Darrin Jensen

Projects Title: Live Load Effects of Railroads on Retaining Walls and Temporary Shoring

Project objectives: The research will comprise three major thrusts: monitoring of instrumented cantilever sheet pile and soldier pile/lagging test sections constructed by the Union Pacific Railroad (UPRR), numerical modeling to extrapolate the results to other wall types and soil conditions, and evaluation/modification of existing design methodology.

Continuous work activities: This project is active, on schedule and on budget. Schedule and Budget Modification – 07/15/2014 – Project termination date revised from 08/31/2014 to 02/28/2015. FY15 budget established $37,967.00. The termination date of the project is requested to be extended from August 31, 2014, to February 28, 2015 to allow time to adequately process and analyze the site data. The modification will allow researcher's time to complete the analysis and reporting for this project. The UPRR installed the test wall 8 months behind the anticipated scheduled date. UPRR built the wall at their expense, as well as giving TTI access so close to their railroad alignment; however, their design-installation schedule was beyond the control of the research team and simply took longer than planned. In addition, the data seems to be showing biaxial bending in the piles. That was not anticipated, so we recently had to re-wire for more strain gauges to capture what is happening. Without the extension the contents of the final report would be a complete set of numerical studies with some limited comparisons/calibration to field measurements – any conclusions/recommendations regarding changes to existing practice would have to be tentative and subject to confirmation by ongoing field measurements. The extension will permit evaluations to a full set of fully processed field measurements.

Accomplished project Deliverables: Tech Memo 1, Tech Memo 2, Tech Memo 3, Tech Memo 4, Tech Memo 5, Tech Memo 6, PSRD, R1D, PSR, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$141,581.00	$95,032.67	$46,548.33 TTI
	$38,304.00	$9,980.00	$28,324.00 UTSA

Project Number: 0-6793

Project Start Date: 1/31/2012 **Project Termination Date:** 8/31/2015

RTI Project Manager: Kevin Pete

Projects Title: Snow and Ice Chemicals for Texas Roads

Project objectives: The objective of this task is to identify and classify the types of snow and ice control chemicals which can be used for Texas roads and winter weather conditions.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: FY14 task was completed and deliverable submitted January 31, 2014.
Technical Memo 5.1 - Identify and Establish Field Research Site
Technical Memo 5.2 - Storm Monitoring and Data Collection
Technical Memo 5.3 – Data Analysis and Reporting

Amendment Description: Revised schedule, revised scope, and revised budget
The site had been surveyed and a detailed field protocol developed including appropriate means of documenting results. However, the Lubbock area experienced an unduly dry and warm winter and no appropriate storm occurred for which the research team could execute the field trial. The modification includes a new test site and lab testing.

Financials:	Budget	Expended	Balance
Contract Total	$99,575.00	$99,866.80	$(291.80) TechMRT

Project Number:	0-6804		
Project Start Date:	1/29/2013	**Project Termination Date:**	8/31/2017
RTI Project Manager:	Wade Odell		
Projects Title:	Life Cycle Cost and Performance of Lightweight Noise Barrier Materials along Bridge Structures		
Project objectives:	This study will develop the comprehensive work plan needed to answer the issues raised and identify the research components integrate the research activities with the sound wall bidding, construction and maintenance activities which managed separately by the Dallas District.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	TM3, TM5, TM6, TM7, R1, TM9, TM10, TM11, TM12, R2, and PSR.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$88,231.00	$66,062.48	$22,168.52 CTR

Project Number:	0-6806-CTR		
Project Start Date:	9/1/2013	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Kevin Pete		
Projects Title:	TxDOT Administration Research		
Project objectives:	This research project will evaluate numerous transportation issues and develop findings and/or recommendations based on results.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Project progress reports and R1 technical report – no administrative work request initiated.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$125,000.00	$19,055.08	$105,944.92 CTR

Project Number:	0-6806-TTI		
Project Start Date:	9/1/2013	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Kevin Pete		
Projects Title:	TxDOT Administration Research		
Project objectives:	This research project will evaluate numerous transportation issues and develop findings and/or recommendations based on results.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Work request-1, Technical Report - "An Economic Analysis Of Four Options For Dealing With Low-Volume Roads In Energy-Impacted Areas of Texas".		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$125,000.00	$30,767.75	$94,232.25 TTI

Project Number:	0-6808		
Project Start Date:	7/29/2014	**Project Termination Date:**	6/30/2016
RTI Project Manager:	Wade Odell		
Projects Title:	Quantification of the Impact of a Road's Condition on Emissions		
Project objectives:	This project involves quantifying the impact of roadway conditions on vehicular emissions and developing detailed guidance to assist TxDOT in improving maintenance strategies to reduce these emissions.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	None at this time.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$21,122.00	$0.00	$21,122.00 UTEP
	$330.00	$0.00	$330.00 TSU

Project Number: 0-6809

Project Start Date: 7/1/2014 **Project Termination Date:** 8/31/2015

RTI Project Manager: Kevin Pete

Projects Title: The 2055 Freight Transportation System and the Impact of Near Term Rail Movements on TxDOT Planning

Project objectives: This research project develops parameters for a successful Texas Freight Transportation System four decades into the future and emphasizes the role of TxDOT in identifying and planning for changes in Texas' rail imports and exports and traffic volumes over the short term.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, P2, P3, R1, and PSR.

Financials:	Budget	Expended	Balance
Contract Total	$86,614.00	$41,123.12	$45,490.88 TTI
	$14,337.00	$12,666.04	$1,6701.96 CTR

Project Number: 0-6810

Project Start Date: 2/4/2014 **Project Termination Date:** 10/31/2014

RTI Project Manager: Darrin Jensen

Projects Title: Guidelines for Applying Right-Turn Slip Lanes

Project objectives: The aim of this synthesis research project is to adapt NCHRP 03-89 findings, as well as other guidance on the topic of right-turn slip lanes and the feedback of Texas roadway design engineers, to improve mobility and safety conditions in Texas for all transportation system users.

Project Status: Terminated

Accomplished project Deliverables: TM1, Technical Memorandum for Task 1

TM2, Technical Memorandum for Task 2

The report and project summary report were submitted in FY 15, when the project terminated.

Financials:

	Budget	Expended	Balance
Contract Total	$51,974.00	$51,697.18	$276.82 CTR

Project Number:	0-6811		
Project Start Date:	2/3/2014	**Project Termination Date:**	3/31/2015
RTI Project Manager:	Darrin Jensen		
Projects Title:	Reducing Lane and Shoulder Width to Permit an Additional Lane on a Freeway		
Project objectives:	This project will expand on previous research efforts related to lane and shoulder width configurations and specifically assess these implications as they relate to Texas freeway facilities.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	TM1, P1, PSRD, R1D, TM2, TM3, PSR, and R1.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$123,639.00	$33,621.14	$90,017.86 TTI

Project Number:	0-6812		
Project Start Date:	4/25/2014	**Project Termination Date:**	8/31/2016
RTI Project Manager:	Kevin Pete		
Projects Title:	Updated Testing Procedures for Long Life Heavy Duty Stabilized Bases		
Project objectives:	This project will focus on identification, evaluation and validation of a practical laboratory testing protocol that will be implemented by TxDOT to characterize fatigue performance of the pavement structures with cement stabilized base layers		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	FY14 work tasks began, Progress reports received. Technical Memo 1 Technical Memo 2		
Amendment Description:	revised scope and schedule. Updated tasks 3 and task 5 to better accomplish the objectives of the project and meet the needs of the Department.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$84,000.00	$0.00	$84,000.00 UTEP

Project Number: 0-6813

Project Start Date: 8/15/2014 **Project Termination Date:** 12/31/2015

RTI Project Manager: Sonya Bagley

Projects Title: Evaluation of ASTM C 494 Procedures for Polycarboxylate Admixtures used in Precast Concrete Elements

Project objectives: This project will provide TxDOT with revised tests, specifications, and recommended practices to use and inspect precast concrete (conventional and SCC) containing polycarboxylate admixtures (PC). An overarching objective of this project is to increase the understanding of the effect of polycarboxylate (PC) High-Range Water-Reducers (HRWR) on the performance of concrete mixtures, with a special focus on concrete mixtures that will be used in precast concrete beam applications.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM2

Financials:	Budget	Expended	Balance
Contract Total	$11,961.00	$4,211.08	$7,749.92 CTR

Project Number: 0-6814

Project Start Date: 5/8/2014 **Project Termination Date:** 11/30/2015

RTI Project Manager: Darrin Jensen

Projects Title: Performance Evaluation, Specifications and Implementation of Non-Tracking Tack Coat

Project objectives: The objectives of this study are to: 1) Understand the impact of different types and quantities of non-tracking tack on engineering properties of pavements, including bonding and cracking resistance. 2) Identify limits on the non-tracking tack stiffness and application rate that negatively impacts engineering properties. 3) Validate laboratory findings with field data from test sections. 4) Incorporate this work into a set of specifications that includes new test procedures and criteria. 5) Formulate plans to practically demonstrate and implement the new procedures with the industry.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: Technical Memorandum 1.

Financials:	Budget	Expended	Balance
Contract Total	$67,798.00	$35,104.60	$32,693.40 TTI

Project Number: 0-6815

Project Start Date: 6/302014 **Project Termination Date:** 6/30/2016

RTI Project Manager: Kevin Pete

Projects Title: Improved Overlay Tester for Fatigue Cracking Resistance of Asphalt Mixtures

Project objectives: The main goal of this project is to propose a modified test method and corresponding specifications for OT so that in a timely manner and with less technical complications not only rank the fatigue cracking potential of all HMA mixes but also provide fatigue properties.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: Progress reports received and Project Kickoff.

Financials:	Budget	Expended	Balance
Contract Total	$18,000.00	$0.00	$18,000.00 UTEP

Project Number:	0-6816		
Project Start Date:	7/11/2014	**Project Termination Date:**	12/31/2017
RTI Project Manager:	Wade Odell		
Projects Title:	Partial Depth Precast Concrete Deck Panels on Curved Bridges		
Project objectives:	The primary objective of this research is to extend the use of precast concrete panels (PCPs) to curved girder systems.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	TM1, TM2, TM7, TM3, TM4, TM8, TM%, TM6, TM9, P1, R1, PSR, and TM10.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$78,618.00	$78,229.68	$388.32 CTR

Project Number: 0-6817

Project Start Date: 7/29/2014 **Project Termination Date:** 2/29/2016

RTI Project Manager: Sonya Bagley

Projects Title: Review and Evaluation of Current Gross Vehicle Weights and Axle Load Limits

Project objectives: The researchers will review and extend the work done under Project 0-6736, Rider 36 OS/OW Vehicles Permit Fee Structure, and other similar efforts currently underway in Texas and other states and at the federal and international level to evaluate the effects of single, tandem, tridem, and quad-axle configurations on bridges and pavements, and develop guidelines for more infrastructure-friendly vehicle configurations.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: No Deliverables were due within FY14.

Financials:	Budget	Expended	Balance	
Contract Total	$101,498.00	$31,207.08	$70,290.92	CTR
	$5,291.00	$0.00	$5,291.00	UTSA

Project Number:	0-6818		
Project Start Date:	6/30/2014	**Project Termination Date:**	12/31/2015
RTI Project Manager:	Darrin Jensen		
Projects Title:	Dynamic Ride Sharing, Car-Sharing, Bike-Sharing and State--level Mobility		
Project objectives:	This project provides guidance for TxDOT in its planning and mobility efforts and in understanding the viability of various alternative mobility programs.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	TM1, TM2, TM3, GB, PSR, and R1.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$23,100.00	$18,587.91	$4,512.09 TTI

Project Number:	0-6819		
Project Start Date:	2/10/2014	**Project Termination Date:**	1/31/2016
RTI Project Manager:	Kevin Pete		
Projects Title:	Designing Quieter Pavement Surfaces		
Project objectives:	This project outlines a work plan for designing quieter asphalt and concrete pavements.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Technical Memo 1 – task 1 – Literature Review, Progress reports received		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$126,237.00	$37,801.39	$88,435.61 CTR

Project Number:	0-6820		
Project Start Date:	7/25/2014	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Sonya Bagley		
Projects Title:	A Process for Designating and Managing Overweight Truck Routes in Coastal Port Regions		
Project objectives:	A process is needed to evaluate, designate and manage routine permitted overweight truck corridors serving coastal ports in Texas.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	No Deliverables were due within FY14.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$61,230.00	$16,357.04	$44,872.96 CTR
	$1,561.00	$0.00	$1,561.00 UTSA

Project Number: 0-6821

Project Start Date: 2/13/2014 **Project Termination Date:** 10/31/2014

RTI Project Manager: Kevin Pete

Projects Title: Safety Impact of Texas Travel Information Center (TIC)

Project objectives: The purpose of this research is to quantify Texas Travel Information Center (TIC) impacts on driver and traveler safety, beyond serving as rest areas, and present a methodology to measure these impacts.

Project Status: Terminated

Accomplished project Deliverables:

TM1, Technical Memorandum for Task 1

TM2, Technical Memorandum for Task 2

TM3, Technical Memorandum for Task 3

Financials:	Budget	Expended	Balance
Contract Total	$83,063.00	$5,685.49	$77,377.51 UTSA

Project Number:	0-6822		
Project Start Date:	5/30/2014	**Project Termination Date:**	8/31/2017
RTI Project Manager:	Wade Odell		
Projects Title:	International Center for Partnered Pavement Preservation (ICP3)		
Project objectives:	This research project agreement governs research into innovative highway pavement preservation materials, technologies, and procedures conducted by the University of Texas at Austin component of the Center for Highway Pavement Preservation (CHP2), a USDOT-funded University Transportation Center (UTC).		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	None at this time.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$300,000.00	$0.00	$300,000.00 CTR

Project Number: 0-6823

Project Start Date: 7/25/2014 **Project Termination Date:** 12/31/2014

RTI Project Manager: Wade Odell, P.E.

Projects Title: Testing and Evaluation of RAP and RAS Experimental Pavement Sections

Project objectives: These Key issues will be evaluated in this project:

1. Validate that poor results on lab prepared RAP and RAS samples translates to poor field performance under axle loads. Industry groups claim the lab studies do not simulate plant produced mixtures.
2. Validate overlay design tools that have recently been developed by Texas A&M Transportation Institute (TTI) to predict mix cracking and rutting of new overlays. These models will be validated and calibrated for RAP and RAS mixes. Having a validated design system will then Permit TxDOT designers to predict the performance of mixes containing different RAP and RAS levels for a range of existing pavement types with different pavement structures and different pre-existing cracking levels.
3. Determine if the proposed balanced mix design procedures, which incorporate both a cracking and rutting evaluation in the lab design phase, can be used to design RAP and RAS mixes with performances comparable to virgin mixes.

Project Status: Terminated

Accomplished project Deliverables: TM1.1, Technical Memorandum for Task 1.1

Financials:

	Budget	Expended	Balance
Contract Total	$181,877.00	$0.00	$181,877.00 UTA
	$30,000.00	$8,580.79	$21,419.21 TTI

Project Number:	0-6824		
Project Start Date:	8/22/2014	**Project Termination Date:**	8/31/2015
RTI Project Manager:	Wade Odell		
Projects Title:	New Rainfall Coefficients		
Project objectives:	The objective of this project is to update the depth duration frequency (DDF) and intensity duration frequency (IDF) of annual maximum rainfall throughout Texas from previous research and implementation projects sponsored by TxDOT.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	None at this time.		

Financials:	**Budget**	**Expended**	**Balance**	
Contract Total	$9,412.00	$1,131.97	$8,280.03	TechMRT
	$9,833.00	$9,826.55	$6.45	USGS

Project Number: 0-6825

Project Start Date: 8/8/2014 **Project Termination Date:** 8/31/2015

RTI Project Manager: Darrin Jensen

Projects Title: Buffer Zones/Infill Development - Environmental and Public Health Effects of Traffic Congestion and Increased Vehicle Emissions Triggered by Infill Development

Project objectives: This project will characterize the environmental and public health effects of vehicle-emissions triggered by infill development.

Continuous work activities: This project was terminated.

Accomplished project Deliverables: Technical Memorandum 1

Financials:	Budget	Expended	Balance	
Contract Total	$330.00	$0.00	$330.00	TSU
	$330.00	$0.00	$330.00	UTHSC

Project Number:	0-6826		
Project Start Date:	7/11/2014	**Project Termination Date:**	1/31/2016
RTI Project Manager:	Kevin Pete		
Projects Title:	Research on Joint Seal Materials to Improve Installation and Performance		
Project objectives:	The objective of this task is to evaluate the performance of joint seals in PCC pavements in Texas.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	Project Kickoff and Progress reports received.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$18,748.00	$10,946.11	$7,801.89 TechMRT

Project Number: 0-6827

Project Start Date: 7/31/2014 **Project Termination Date:** 1/31/2015

RTI Project Manager: Darrin Jensen

Projects Title: Research on Joint Seal Materials to Improve Installation and Performance

Project objectives: This project evaluates technical methodologies to make data about ROW holdings more available to TxDOT personnel for analysis and decision making.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, PSR, and WP1.

Financials:	Budget	Expended	Balance
Contract Total	$15,838.00	$365.86	$15,472.14 CTR

Project Number: 0-6828

Project Start Date: 8/14/2014 **Project Termination Date:** 8/31/2015

RTI Project Manager: Kevin Pete

Projects Title: Develop Guidelines for New Vehicle Mast Illumination Poles (HMIPs) with Pre-Existing Cracks (CTR)

Project objectives: This research will investigate the performance characteristics of detectors designed for the stop line area and dilemma zone detection.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: Project Kickoff and Progress reports received.

Financials:	Budget	Expended	Balance
Contract Total	$12,859.00	$8,276.12	$4,582.88 TTI

Project Number:	0-6829		
Project Start Date:	8/22/2014	**Project Termination Date:**	3/31/2018
RTI Project Manager:	Wade Odell		
Projects Title:	Fatigue Resistance and Reliability of High Mast Illumination Poles (HMIPs) with Pre-Existing Cracks (CTR)		
Project objectives:	This project will generate data and information to support a probabilistic-based assessment of the remaining life of pre-cracked HMIPs.		
Continuous work activities:	This project is active, on schedule and on budget.		
Accomplished project Deliverables:	None at this time.		

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$21,285.00	$0.00	$21,285.00 CTR

Project Number: 0-6831

Project Start Date: 7/31/2014 **Project Termination Date:** 8/31/2017

RTI Project Manager: Wade Odell

Projects Title: End Region Behavior of Pretensioned Concrete Beams with 0.7-Inch Prestressing Strands

Project objectives: During the course of this project, the research team will exclusively and comprehensively study the end region behavior and ultimate strength implications of utilizing 0.7-inch prestressing strand in TX girders.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: None at this time.

Financials:	Budget	Expended	Balance
Contract Total	$25,011.00	$0.00	$25,011.00 CTR

Project Number: 5-5598-05

Project Start Date: 2/19/2014 **Project Termination Date:** 8/31/2016

RTI Project Manager: Joe Adams

Projects Title: Continued Implementation of high performance Thin Overlays in Texas Districts

Project objectives: Under research project 0-5598, guidelines and specifications were developed on how a District could design and construct long life overlays using the concept of the balance mix design. These new roadway surfaces must be designed to have a good combination of both rutting and cracking resistance.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: (TM1) 5/31/2014. Submitted Tech Memo for Task 1

Financials:	Budget	Expended	Balance
Contract Total	$20,000.00	$19,977.62	$22.38 TTI

Project Number: 5-6048-03

Project Start Date: 10/22/2013 **Project Termination Date:** 8/31/2016

RTI Project Manager: Joe Adams

Projects Title: Implementation of Centrifuge Technology for Pavement Design on Expansive Clays

Project objectives: The overall objective of this implementation project is to capitalize on the successful centrifuge characterization of expansive clays by implementing this data into a pavement design approach.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, TM6, P1, P2, and R2.

Financials:	Budget	Expended	Balance
Contract Total	$139,856.00	$142,506.65	$(2,650.65) CTR

Project Number:	5-6271-03		
Project Start Date:	7/11/2014	**Project Termination Date:**	10/31/2015
RTI Project Manager:	Joe Adams		

Projects Title: Using Small Sample Sizes in Full Depth Reclamation (FDR) Laboratory Mix Designs

Project objectives: This implementation project will utilize the small sample test procedures developed in research project 0-6271 to field test upcoming FDR projects and demonstrate these procedures can be used to select stabilizer contents that meet the strength criteria required in the specifications.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, P1, P2, P3, P4, P5, P6, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$4,000.00	$2,422.36	$1,577.64 TTI

Project Number:	5-6616-01		
Project Start Date:	10/8/2013	**Project Termination Date:**	8/31/2017
RTI Project Manager:	Joe Adams		

Projects Title: Statewide Implementation of the Surface Performance-Graded (SPG) Specification for Seal Coat Binders in Service

Project objectives: The objective of this project is to implement the SPG specification statewide.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: P1, P1, P1, P1, P1, P1, P1, P2, and P3.

Financials:	Budget	Expended	Balance
Contract Total	$221,617.00	$184,531.04	$37,085.96 TTI

Project Number:	5-6740-01		
Project Start Date:	7/2/2014	**Project Termination Date:**	6/30/2017
RTI Project Manager:	Joe Adams		

Projects Title: Implementation of Intelligent Compaction Technology for Improving Compaction Quality of Soil and Base in Texas

Project objectives:

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, P1, P2, P3, P4, P5, P6, R1, R1D.

Financials:	**Budget**	**Expended**	**Balance**
Contract Total	$7,400.00	$0.00	$7,400.00 UTEP

Project Number: 5-9046-03

Project Start Date: 8/15/2014 **Project Termination Date:** 8/31/2015

RTI Project Manager: Joe Adams

Projects Title: Pre-Construction and Next Generation Concrete Surface (NGCS) Noise Monitoring on US 290 in Harris County

Project objectives: The main objective of this project is to demonstrate the effectiveness of "Next Generation Concrete Surfaces" in reducing pavement noise at the interface between tires and pavements.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: TM1, TM2, TM3, TM4, TM5, and R1.

Financials:	Budget	Expended	Balance
Contract Total	$21,140.00	$0.00	$21,140.00 UTSA

Project Number:	5-9049-03		
Project Start Date:	6/23/2014	**Project Termination Date:**	5/31/2015
RTI Project Manager:	Joe Adams		

Projects Title: Construction and Installation of Travel Time and Graphical Route Information Panel (GRIP) Signs on Southbound I-35 in Austin

Project objectives: Through this project, the performing agency will facilitate the fabrication, installation, and onset of operations of up to three (3) dynamic travel time signs and one (1) GRIP sign on Interstate 35 near Austin, TX.

Continuous work activities: This project is active, on schedule and on budget.

Accomplished project Deliverables: P1, P2, P3, P4, P5, R1, R2, R3, R4, R5, R6, R7.

Financials:	Budget	Expended	Balance
Contract Total	$318,642.00	$0.00	$318,642.00 TTI

2.2.3 Pooled-Fund

Pooled-Fund are for planning, research, development, or technology transfer project activities administered by the FHWA that is supported by two or more participants and that addresses an issue of significant or widespread interest related to highway, public, or intermodal transportation. These researches are intended to address a new area or provide information that will complement or advance previous investigations of the subject matter.

Per CFR 23 §420.205, it is designed "To promote effective use of available resources, the State DOTs are encouraged to cooperate with other State DOTs, the FHWA, and other appropriate agencies to achieve RD&T objectives established at the national level and to develop a technology transfer program to promote and use those results. This includes contributing to cooperative RD&T programs such as the NCHRP, the TRB, and transportation pooled fund studies as a means of addressing national and regional issues and as a means of leveraging funds."

Pooled fund studies are a very effective means of leveraging precious research funds. Texas participates in the Pooled-fund studies listed below:

FY 2014 Current Pooled Fund Projects

	Project Name (Pooled-Fund)	Agencies	Start Date	End Date	Budget	FY 14 Budget
	SPR-2(207) - Transportation Management Center	FHWA	2002	2014	$550,000	$50,000
	TPF-5(114) - Roadside Safety Research Program	WASHINGTON	2006	2014	$125,000	$50,000
	TPF-5(231) - ITS Pooled Fund Program (ENTERPRISE)	MICHIGAN	2010	2014	$120,000	$30,000
	TPF-5(271) - Reorganization of Section 5, Concrete Structures, of the AASHTO LRFD Bridge Design Specifications	KANSAS	2013	2015	$30,000	$10,000
	Sol# 1335 - Web-based Traffic Data Visualization and Analysis Tools	FHWA	2013	2014	$40,000	$20,000
	SOL#1340, TPF-5(284) - 'Near Road Air Quality Research	WASHINGTON	2013	2016	$500,000	$250,000
	TPF-5(287) Application Tool for Assessing Wildlife Passage	WASHINGTON	2013	2015	$20,000	$10,000
	TPF-5(279) - High Performance Computational Fluid Dynamics (CFD) Modeling Services for Highway Hydraulics	FHWA	2013	2017	$75,000	$15,000
	SOL#1350 Assessing Roadway Traffic Count Duration Impacts on AADT DATA Estimation Quality (TPP will provide 20% match)	FHWA	2014	2015	$24,000	$12,000
	SOL#1357 Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis	FHWA	2013	2018	$90,000	$15,000
	Pooled-Fund Current Obligations Totals				**$1,574,000**	**$462,000**

The following are project descriptions of the Pooled-fund projects.

Number	Title	Status	Lead Agency
SPR-2(207)	Transportation Management Center Pooled Fund Study	Contract signed	Federal Highway Administration

Project Number: FHWA - SPR-2(207)

Project objectives: Objectives:
The goal of the TMC PFS is to assemble regional, state, and local transportation management agencies and the Federal Highway Administration (FHWA) to (1) identify human-centered and operational issues; (2) suggest approaches to addressing identified issues; (3) initiate and monitor projects intended to address identified issues; (4) provide guidance and recommendations and disseminate results; (5) provide leadership and coordinate with others with TMC interests; and (6) promote and facilitate technology transfer related to TMC issues nationally

Financials:	Year	Commitment
TxDOT	2014	$50,000.00

Number	Title	Status	Lead Agency
TPF-5(114)	Roadside Safety Research Program	Cleared by FHWA	Washington State Department of Transportation

Project objectives: Objectives:

This solicitation invites states to participate in the Roadside Safety Research Program that has the objective to continue a cooperative approach to conducting research on roadside safety features.

Financials:	Year	Commitment
TxDOT	2014	$50,000.00

Number	Title	Status	Lead Agency
TPF-5(231)	ITS Pooled Fund Program (ENTERPRISE)	Cleared by FHWA	Michigan Department of Transportation

Project objectives: Objectives:

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

Financials:	Year	Commitment
TxDOT	2014	$30,000.00

Number	Title	Status	Lead Agency
TPF-5(271)	Reorganization of Section 5, Concrete Structures, of the AASHTO LRFD Bridge Design Specifications	Contract signed	Kansas Department of Transportation

Project objectives: Objectives:

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

Financials:	Year	Commitment
TxDOT	2014	$10,000.00

Number	Title	Status	Lead Agency
Solicitation #1335	Web-based Traffic Data Visualization and Analysis Tools	Contract signed	Federal Highway Administration

Project objectives: Objectives:
The objective of this proposed project is to develop an on-line user friendly truck WIM data tool where it offers data quality review and control functions, data visualization capabilities and analysis, and data output controls to meet pavement design, freight analysis, and truck weight and load trend analysis.

Financials:	Year	Commitment
TxDOT	2014	$20,000.00

Number	Title	Status	Lead Agency
TPF-5(284)	Near Road Air Quality Research	Cleared by FHWA	Washington State Department of Transportation

Project objectives: Objectives:

The following are initial objectives of this pooled fund effort:

Create a "roadmap" that clarifies current state of the practice and outlines and prioritizes research needs.

To provide expertise and research that supports states with near-road and related air quality issues.

Provide a forum for states to collaborate on issues and develop strategies and research priorities for addressing critical near-roadway air quality issues. This forum will promote technology transfer between states and prevent duplication of research efforts.

Conduct priority near-road air quality research that benefits the state of knowledge and shares new information and technologies.

Augments limited resources to help state DOTs meet the new air quality regulations and promote project delivery.

Financials:	Year	Commitment
TxDOT	2014	$250,000.00

Number	Title	Status	Lead Agency
TPF-5(287)	Application Tool for Assessing Wildlife Passage	Cleared by FHWA	Washington State Department of Transportation

Project objectives:

Objectives:

Recent research resulted in a new tool called the Passage Assessment System (PAS). This tool is designed for highway staff to use to assess how well existing highway structures are likely perform at passing a wide range of wildlife. The result will help direct investments to the highest priority projects and identify opportunities for making modifications to existing structures to facilitate wildlife movements. The PAS was field tested and showed promising results.

This study seeks to develop a digital version of the PAS or application for use on a hand held device and a database structure for storing the data entered on hand held units. Accomplishing these objectives will make it easier to use PAS to evaluate existing transportation infrastructure and to store the information for easy access for multiple transportation planning purposes. Field verification of the PAS application would be completed in participating member states.

Financials:	Year	Commitment
TxDOT	2014	$20,000.00

Number	Title	Status	Lead Agency
TPF-5(279)	High Performance Computational Fluid Dynamics (CFD) Modeling Services for Highway Hydraulics	Cleared by FHWA	Federal Highway Administration

Project objectives: Objectives:

The objective of these pooled funds is to provide research and analysis for a variety of highway hydraulics projects managed or coordinated by State DOTs; to provide and maintain a high performance Computational Fluid Dynamics (CFD) computing environment for application to highway hydraulics infrastructure and related projects; and to support and seek to broaden the use of CFD among State Department of Transportation employees.

Financials:	Year	Commitment
TxDOT	2014	$15,000.00

Number	Title	Status	Lead Agency
Solicitation #1350	Assessing Roadway Traffic Count Duration and Frequency Impacts on AADT Estimations	Cleared by FHWA	Federal Highway Administration

Project objectives:

Objectives:
1: To gain a quantitative understanding on how various short term traffic count durations affect and relate to estimated AADT as compared with long term continuous counting program estimations. The ultimate goal is to enable the FHWA to provide the most feasible and technically sound guidance to States and other agencies on this issue.
2: To gain a quantitative understanding on how missing data from long term traffic monitoring data affects the AADT estimation and establish the critical threshold in terms of data usability. In other words, how much data can be missing and what type of data patterns missing can be tolerated in AADT estimation without any special consideration such these steps used in converting short term counts to AADT.
3: To gain a quantitative understanding on traffic monitoring methods from a given segment on an annual basis with a 24 hour traffic count program (counted on a frequency of every year) vs. monitoring the same segment on a once every three year (with every 2nd and 3rd year factored to bring them to current year) basis but with a minimum 48 or 72 hour count and how these three different methods can effect AADT data on an annual basis.

Financials:	Year	Commitment
TxDOT	2014	$12,000.00

Number	Title	Status	Lead Agency
SOL#1357	IMPROVING THE QUALITY OF PAVEMENT SURFACE DISTRESS AND TRANSVERSE PROFILE DATA COLLECTION AND ANALYSIS	Cleared by FHWA	Federal Highway Administration

Project objectives: Objectives:

The objective of these pooled funds is to provide research and analysis for a variety of highway hydraulics projects managed or coordinated by State DOTs; to provide and maintain a high performance Computational Fluid Dynamics (CFD) computing environment for application to highway hydraulics infrastructure and related projects; and to support and seek to broaden the use of CFD among State Department of Transportation employees.

Financials:	Year	Commitment
TxDOT	2014	$15,000.00

Section 3 – NON SPR Activities

3.1 Research Management and Administration

Operating Office: Research and Technology Implementation Office, TxDOT

Project Number: 0-50

Project Title: Research Management and Administration

Project objectives: RTI provides administrative oversight for support functions including budgeting, purchasing, contract administration, legislative analysis, mapping and the SPR Work Program.

Planned Activities: Develop, implement and monitor the division's biennium budget.

1. Develop, implement and monitor the SPR Work Program, ensuring that all requirements of 23 CFR 420, 49 CFR and other applicable federal and state statutes and regulations are followed.
    a. Prepare and submit the proposed 2014 SPR Work Program to FHWA
    b. Prepare and submit the 2014 Annual Performance and Expenditures Report (APER) to FHWA
    c. Hold quarterly status meetings with FHWA to report on the 2014 SPR Work Program
    d. Prepare and submit amendments to the 2014 SPR Work Program as needed
2. Administer and ensure that all division's agreements/contracts are approved, procured, monitored, and closed-out in accordance with the provisions of 49 CFR 18.36. In addition, this function ensures that program monitoring and reporting requirements of FHWA planning and research funds are in compliance with 23 CFR 420.117.

Financials:	Budget	Expended	Balance
RTI Office Program Management	$890,000.00	$83,6112.58	$53,887.42
Program Committee Support	$50,000.00	$11,323.38	$38,676.62
Total	**$940,000.00**	**$847,435.96**	**$92,564.04**

End of Report