LTRC Annual Research Program

Fiscal Year July 1, 2016 - June 30, 2017

FHWA Part II SPR Research Program FAP Number SPR-0010(34) & FHWA Funded Research Program & FHWA LTAP Funded Program & FHWA STP Funded Program & Federal & Self-Generated Funded Research Program & Other DOTD Funded Projects



Conducted by: Louisiana Department of Transportation and Development Louisiana Transportation Research Center

In cooperation with United States Department of Transportation Federal Highway Administration June 2016





Research, Technology Transfer, Education & Training

May 13, 2016

Mr. Charles W. Bolinger Division Administrator Federal Highway Administration 5304 Flanders Drive, Suite A Baton Rouge, Louisiana 70808

Attention: Ms. Mary Stringfellow

RE: FY 2016-2017 Louisiana Transportation Research Center Work Program

Dear Mr. Bolinger:

Enclosed please find the FY 2016-2017 Louisiana Transportation Research Center (LTRC) Annual Work Program for your review and approval. You will note that the program is divided into multiple sections reflecting all funding sources.

As delegated by the Secretary, Louisiana Department of Transportation and Development (LADOTD), I, Samuel B. Cooper, Jr., Director, Louisiana Transportation Research Center, of the State of Louisiana, do hereby certify, that the State is in compliance with all requirements of 23 U.S.C. 505 and its implementing regulations with respect to the research, development, and technology transfer program, and contemplate no changes in statutes, regulations, or administrative procedures which would affect such compliance.

If I can provide additional information, please advise.

Sincerely,

Samuel B. Cooper, Jr., P.E., Ph.D. Director

Enclosure

c: Ms. Janice Williams Mr. Tyson Rupnow Mr. Brandon Buchner



Louisiana Division Office

June 29, 2016

5304 Flanders Drive, Suite A Baton Rouge, LA 70808 225.757.7600 225.757.7601 (fax)

> In Reply Refer To: HDA-LA

Shawn D. Wilson, Ph.D.SecretaryLouisiana Department of Transportation and DevelopmentBaton Rouge, LA

Subject: FY 2016-2017 State Planning & Research (SPR) Work Program Part II

Attention: Eric Kalivoda Deputy Secretary, LDOTD

Dear Mr. Wilson:

This letter is in response to Mr. Sam Cooper's letter, regarding the review and approval of the FY 2016-2017 SPR Work Program Part II. We have reviewed the subject work program and find it to be satisfactory. Please furnish this office with three copies of the final printed work program.

A separate request from your federal-aid section will be required to process the fiscal documents necessary to obligate the SPR funds.

Should you have any questions regarding this matter, please feel free to contact Mr. Brandon Buckner, FHWA at (225) 757-7622.

Sincerely yours,

Willinger Date: 2016.06.30 08:11:46 -05'00'

Charles W. Bolinger Division Administrator

cc: Tyson Rupnow, LDOTD

Abbreviations and Acronyms

<u>Funding</u>

SPR	State Planning and Research
NCHRP	National Cooperative Highway Research Program
TRB	Transportation Research Board
IBRD	Innovative Bridge Research Deployment
LTAP	Local Technical Assistance Program
STP	State Transportation Program
NSF	National Science Foundation
TT-Fed	Transportation Trust – Federal
TT-State	Transportation Trust – State

Project Types

ADM	Administrative
RS	Research Support
GT	Geotechnical
Р	Pavements
В	Bituminous
SA	Safety
SS	Special Studies
С	Concrete
ST	Structures
TT	Technology Transfer
LTAP	Local Technical Assistance Program
PF	Pooled Fund (Louisiana Lead)

Project Status

A	Active
Р	Proposed
RFP	Request for Proposal

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FHWA SPR Work Program Part II

FAP Number SPR-0010(34)



FHWA Funding

SPR Research Budget Recap	Total
Administrative Budget	\$747,949
Research Support Studies Budget	\$1,772,000
Active Studies Budget	\$4,127.131
Proposed Studies Budget	\$3,494,641
Pooled Fund Lead State Studies Budget	\$211,513
Total SPR Budget	\$10,353,234

SPR External Collaboration Budget Recap	Total
TRB Correlations	\$134,316
NCHRP	\$759,500
Total SPR External Collaboration Budget	\$893,816

LTAP Budget Recap	Total
LTAP	\$570,644
LTAP Program Total	\$570,644

STP: Technology Transfer Program Budget Recap	Total
Technology Transfer Program and Operations	\$1,258,875
Workforce Development Program	\$5,787,145
Student Support Programs	\$210,000
Total STP Budget	\$7,256,020

STP: Technology Transfer Program to be funded from apportioned funds (NHPP, STP, HSIP, and/or CMAQ)

Federal Funding

Federal Budget Recap	Total
Active Studies Budget	\$0
Proposed Studies Budget	\$1,500,000
Total Federal Budget	\$1,500,000

Self-Generated Funding

Self-Generated Budget Recap	Total
Active Studies Budget	\$61,520
Proposed Studies Budget	\$0
Total Self-Generated Budget	\$61,520

Other DOTD Sections Funding

Other DOTD Sections Budget Recap	Total
Active Studies Budget	\$797,509
Proposed Studies Budget	\$438,440
Total Other DOTD Sections Budget	\$1,235,949

Administrative

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Admi	inistra	ative											
SPR: TT-Fed/TT-Reg	Ч	ADM	DOTLT100 0125	17-1 PM	\$747,949	\$748,000	LTRC	Tyson Rupnow	Program Management	7/1/2016	6/30/2017		C-2
					\$747,949	\$748,000	ADMINISTR#	ATIVE BUDGET TOTALS					
Project Type: Rese	arch	Suppor	Ŧ	•									
SPR: TT-Fed/TT-Reg	٩	RS	DOTLT100 0128	17-1TTRI	\$425,000	\$425,000	LTRC	Tyson Rupnow	Technology Transfer and Research Implementation	7/1/2016	6/30/2017		C-3
SPR: TT-Fed/TT-Reg	Ч	RS	DOTLT100 0131	17-1TRS	\$400,000	\$400,000	LTRC	Tyson Rupnow	Technical Research Surveillance	7/1/2016	6/30/2017		C-5

			DTALS	SUPPORT BUDGET TC	RESEARCH	\$1,772,000	\$1,772,000					
C-11	6/30/2017	7/1/2016	Equipment Management	Tyson Rupnow	LTRC	\$375,000	\$375,000	17-1EQM	DOTLT100 0129	RS	Р	SPR: TT-Fed/TT-Reg
C-10	6/30/2017	7/1/2016	Research Laboratory and Field Test Support	Tyson Rupnow	LTRC	\$30,000	\$30,000	17-1LFT	DOTLT100 0126	RS	Р	SPR: TT-Fed/TT-Reg
C-9	6/30/2017	7/1/2016	New Products Evaluation	Tyson Rupnow	LTRC	\$72,000	\$72,000	17-1NPE	DOTLT100 0130	RS	٩	SPR: TT-Fed/TT-Reg
C-8	6/30/2017	7/1/2016	DOTD Staff Support for Research	Tyson Rupnow	ОТО	\$100,000	\$100,000	17-1SSR	DOTLT100 0132	RS	Р	SPR: TT-Fed/TT-Reg
C-6	6/30/2017	7/1/2016	Technical Assistance	Tyson Rupnow	LTRC	\$370,000	\$370,000	17-1TA	DOTLT100 0127	RS	Р	SPR: TT-Fed/TT-Reg
C-5	6/30/2017	7/1/2016	Technical Research Surveillance	Tyson Rupnow	LTRC	\$400,000	\$400,000	17-1TRS	DOTLT100 0131	RS	Р	SPR: TT-Fed/TT-Reg
с- з	6/30/2017	7/1/2016	Technology Transfer and Research Implementation	Tyson Rupnow	LTRC	\$425,000	\$425,000	17-1TTRI	DOTLT100 0128	RS	Р	SPR: TT-Fed/TT-Reg

SPR: TT-Fed/TT-Reg

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Geote	echni	cal											
SPR: TT-Fed/TT-Reg	A	GТ	DOTLT100 0112	16-6GT	\$193,000	\$476,813	LTRC	Murad Abu-Farsakh	Incorporating the Site Variability and Laboratory/In-situ Testing Variability of Soil Properties in Geotechnical Engineering Design	7/1/2016		12/31/2018	C-13
SPR: TT-Fed/TT-Reg	A	GT	DOTLT100 0094	16-5GT	\$30,000	\$49,999	LTU	Sanjay Tewari	Corrosion Map for Metal Pipes in Coastal Louisiana	1/25/2016	4/25/2017		C-14
SPR: TT-Fed/TT-Reg	А	GТ	DOTLT100 0049	15-2GT	\$16,800	\$48,493	LSU	Mostafa Elseifi	Lime Utilization in the Laboratory, Field, and Design of Pavement Layers	2/16/2015	2/15/2016	7/31/2016	C-15
SPR: TT-Fed/TT-Reg	A	GТ	DOTLT100 0048	15-1GT	\$50,000	\$200,000	Dataforensics , LLC	Scott Deaton	pLog Enterprise - Enterprise GIS-Based Geotechnical Data Management System Enhancements	7/31/2015	8/1/2017		C-16
SPR: TT-Fed/TT-Reg	A	GТ	30001220	13-7GT	\$9,217	\$90,000	LTRC	Murad Abu-Farsakh	Support Study to ITRS proposal on "An Integrated Computational and Experimental Study of Pile Setup in Soft Clays"	2/18/2013	2/17/2016	6/30/2017	C-17
SPR: TT-Fed/TT-Reg	A	GТ	30000981	13-5GT	\$54,895	\$302,200	LTRC	Murad Abu-Farsakh	Monitoring of In-Service Geosynthetic Reinforced Soil (GRS) Bridge Abutments in Louisiana	10/1/2014	9/30/2016		C-18
SPR: TT-Fed/TT-Reg	А	GТ	DOTLT100 0103	13-3GT	\$82,160	\$260,368	LTRC	Murad Abu-Farsakh	Finite Element Analysis of the Lateral Load Test on Battered Pile Group at I-10 Twin Span Bridge	3/1/2016		5/31/2018	C-20
SPR: TT-Fed/TT-Reg	A	GТ	30000135	11-3GT	\$37,398	\$656,370	LTRC	Murad Abu-Farsakh	Accelerated Load Testing of Geosynthetic Base Reinforced Pavement Test Sections	12/1/2010	5/31/2012	6/30/2016	C-22
SPR: TT-Fed/TT-Reg	٨	GТ	30000661	11-1GT	\$41,523	\$354,679	LTRC	Murad Abu-Farsakh	In Situ Evaluation of Design Parameters and Procedures for Cementitiously Treated Weak	3/18/2013	9/17/2015	12/31/2016	C-23
SPR: TT-Fed/TT-Reg	۲	GT	30000111	10-1GERL	\$224,051	\$13,991,168	LTRC	Murad Abu-Farsakh	LTRC Support for Geotechnical Research at the Geotechnical Engineering Research Laboratory (GERL)	7/1/2010	6/30/2015	6/30/2018	C-25
					\$739,044	\$16,430,090	GEOTECHNI	CAL BUDGET TOTALS					

Project Type: Pavements

Froject Type: Faver	sillelli												
SPR: TT-Fed/TT-Reg	A	٩	DOTLT100 0107	16-6P	\$94,500	\$170,588	LTRC	n W gnordZ	Quality Management of Cracking Distress Survey in Flexible Pavements Using LTRC Digital Highway Data Vehicle	4/1/2016	3/31/2018		C-26
SPR: TT-Fed/TT-Reg	A	٩	DOTLT100 0009	14-2P	\$82,000	\$170,213	LSU	Mostafa Elseifi	Assessment of Structural Capacity Indicators from Rolling Wheel Deflectometer Data Collection in Louisiana	7/1/2014	12/31/2015	6/30/2017	C-27
SPR: TT-Fed/TT-Reg	A	٩	30000682	12-7P	\$8,200	\$476,270	LTRC	Zhong Wu	Roller Compacted Concrete Over Soil Cement Under Accelerated Loading	5/1/2012	4/30/2014	7/31/2016	C-28
SPR: TT-Fed/TT-Reg	A	٩	30000729	12-3P	\$58,500	\$275,773	LTRC	Zhong Wu	Minimizing Shrinkage Cracking in Cement-Stabilized Bases Through Micro-Cracking	11/1/2012	4/30/2016	10/31/2017	C-29
SPR: TT-Fed/TT-Reg	A	٩	30000425	12-2P	\$90,414	\$529,685	LTRC	Kevin Gaspard	Assessment of Environmental, Seasonal and Regional Variations in Pavement Base and Subgrade Properties	9/1/2011	8/31/2013	6/30/2018	C-30
SPR: TT-Fed/TT-Reg	A	٩	30000607	12-1P	\$81,279	\$341,459	LTRC	Kevin Gaspard	Assessment of Pavement Distresses caused by Trees on Rural Highway	2/1/2012	7/1/2014	6/30/2018	C-31

B-2

SPR: TT-Fed/TT-Reg

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Funding	A/P	Project Type	SIO No.	Kesearch No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
	<	0	20000610	0110	COC 103	COC 700	U T D C	Mark Martinez	Field Validation of Equivalent Modulus for Stabilized	6/1/2012	100/06/1	E14 10047	, c, c

						S BUDGET TOTALS	AVEMENTS	\$18,933,890 F	\$1,101,190					
33	3/2018 C-	5 6/3(6/30/2015	7/1/2009	Management and Operation of the Pavement Research Facility	Zhong Wu	LTRC	\$16,682,103	\$662,000	10-1ALF	30000141	٩	A	SPR: TT-Fed/TT-Reg
32	/2017 C-	t 5/1	4/30/2014	5/1/2012	Field Validation of Equivalent Modulus for Stabilized Subgrade Layer	Mark Martinez	LTRC	\$287,799	\$24,297	12-11P	30000610	٩	А	SPR: TT-Fed/TT-Reg

Project Type: Bituminous

		,											
SPR: TT-Fed/TT-Reg	A	В	DOTLT100 0095	16-4B	\$55,500	\$85,797	LTRC	Samuel Cooper, III	Evaluation of Non-SBS Modified Binders using the Multiple Stress Creep Recovery Test	9/30/2015	9/30/2016	11/30/2016 C	C-34
SPR: TT-Fed/TT-Reg	A	В	DOTLT100 0059	15-2B	\$93,400	\$160,866	LSU	William Daly	Support Study for Evaluation of Crumb Rubber Modification of Louisiana Mixtures	4/15/2015	7/14/2017	0	C-35
SPR: TT-Fed/TT-Reg	A	В	DOTLT100 0054	15-1B	\$61,500	\$186,408	LTRC	Samuel Cooper, III	Evaluation of Crumb Rubber Modification of Louisiana Mixtures	4/15/2015	4/14/2017	0	C-36
SPR: TT-Fed/TT-Reg	A	В	DOTLT100 0008	14-1B	\$65,000	\$352,662	LTRC	Louay Mohammad	Effects of Temperature Segregation on the Quality of Asphalt Mixtures	8/5/2014	8/4/2016	0	C-37
SPR: TT-Fed/TT-Reg	A	В	DOTLT100 0007	12-1B	\$50,000	\$219,476	LTRC	Louay Mohammad	Evaluation Of Asphalt Mixtures Containing Recycled Asphalt Shingles	4/8/2014	4/7/2016	4/7/2017 0	C-39
SPR: TT-Fed/TT-Reg	A	В	30000112	10- 1EMCRF	\$143,000	\$14,801,811	LTRC	Louay Mohammad	Pavement Materials Research Using Special Equipment at the Engineering Materials Characterization Research Facility	7/1/2009	6/30/2015	6/30/2018 C	C-41
					\$468,400	\$15,807,020	BITUMINOU:	S BUDGET TOTALS					

Project Type: Structures

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ALV. II-LEMIII.NA	٢	0	0043	100-01	000,084	000,000 0	University		Reinforced Polymer (FRP) Composites	CI 07/C/0	01212011	2	ł
SPR: TT-Fed/TT-Reg	۷	ST	30001123	13-2ST	\$60,000	\$172,209	LSU	Steve Cai	Live Load Monitoring of the I-10 Twin Span Bridge	8/4/2014	8/3/2016	0 -4	43
					\$150,000	\$322,209	STRUCTURE:	S BUDGET TOTALS					

Project Type: Special Studies

Froject Type: Spet		cainn											
SDD: TT_Fod/TT_Dog	<	U U	DOTLT100	16-200	¢76 600	¢157 077		Kirk Zerinaue	Cost and Time Benefits for using Subsurface Utility	1/72/2016	6/30/2016	9100/30/1	11
OLN. II-LEU/II-NEY	٢	00	0046	007-01	φ, 0,000	\$107,322			Engineering in Louisiana	01/20/2/10	0107/00/0	01/20/2/10	5
	<	00	DOTLT100	300.11	¢116 207	¢100 E11		Charter Willmot	Development of a Mode Choice Model to Estimate	9100/11/6		0100/00/0	15
OFA. II-FEW II-NEY	٢	0	0104	000-+-	100,0110	\$200,014			Evacuation Transit Demand	01/17/1/0		2/20/2010	54-0
SDD: TT Cod/TT Dog	<	00	0110000	10 600	¢170 705	6701 000			Establishing an Intelligent Transportation Systems (ITS)	0100/00/0	1100/01/11	6/20/2010	U AG
	٢	5	04100000	000-01	φ, ι σ, z συ	41 04,300	LOO		Lab at LTRC (Phase II)	0107/07/0	11/13/2011	0107/00/0	0+-0
	<	00	30000125	10 101 AN	¢670 101	¢¢ 077 074		Chactor Willmot	LTRC Proposal for the Support of Research and	0106/1/2	e/20/2015	6/20/2010	10
OLN. II-LEW II-NEY	٢	5	02100000		104,0704	40,311,04			Development in Transportation Planning	0107/1/1	0107/00/0	0107/00/0	04-0
					\$899,593	\$8,069,340	SPECIAL ST	UDIES BUDGET TOTAL	S				

Б-3

SPR: TT-Fed/TT-Reg

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ge	
, Paç No.	
End Date (Rev)	
End Date	
Start Date	
Project Title	
Principal Investigator	
Agency	
Total Cost	
FY Budget	
Research No.	
SIO No.	
Project Type	
A/P F	
Funding	

Project Type: Concrete

SPR: TT-Fed/TT-Reg	A	ပ	30001663	14-4C	\$125,000	\$269,183	LTRC	Tyson Rupnow	Evaluation of Bonded Concrete Overlays over Asphait under Accelerated Loading	4/8/2014	4/7/2016	12/31/2017	C-49
					\$125,000	\$269,183	CONCRETE I	BUDGET TOTALS					
Project Type: Othe	şr												
SPR: TT-Fed/TT-Reg	A	Other	30000169	11-1AD	\$270,000	\$2,780,222	LTRC	Vijaya Gopu	Administration of LTRC External Funding Programs	1/1/2008	6/30/2009	6/30/2018	C-50
	ļ				\$270,000	\$2,780,222	CONCRETE I	BUDGET TOTALS					

Project Type: Safety

				3ET TOTALS	/TT-REG ACTIVE BUDG	SPR: TT-FED	\$63,421,130	\$4,127,131					
					JGET TOTALS	SAFETY BUD	\$809,176	\$373,904					
C-55		12/31/2017	7/1/2014	Louisiana Center for Transportation Safety	Dortha Cummins	LTRC	\$250,000	\$103,790	12-1SA	30001501	SA	A	SPR: TT-Fed/TT-Reg
C-54	2/15/2017	8/15/2016	2/16/2015	Exploring Naturalistic Driving Data for Distracted Driving Measures	Sherif Ishak	LSU	\$124,321	\$53,000	15-1SA	DOTL1000 053	SA	A	SPR: TT-Fed/TT-Reg
C-53		5/30/2017	6/1/2015	Development of a Simulation Test Bed for Connected Vehicles using the LSU Driving Simulator	Sherif Ishak	ΓSU	\$149,865	\$42,000	15-2SA	DOTLT100 0088	SA	A	SPR: TT-Fed/TT-Reg
C-52	4/30/2017	4/7/2016	5/1/2015	Investigating Safety Impacts of Centerline Rumble Strip, Lane Conversion, Roundabout and J-turn Features on Louisiana Hichwavs	Xiaoduan Sun	NLL	\$129,876	\$80,000	15-3SA	DOTLT100 0087	SA	A	SPR: TT-Fed/TT-Reg
C-51	7/31/2017	12/31/2016	5/1/2016	Evaluating Cell Phone Data for AADT Estimation	Julius Codjoe	LTRC	\$155,114	\$95,114	16-3SA	DOTLT100 0110	SA	A	SPR: TT-Fed/TT-Reg

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SPR: TT-Fed/TT-Reg

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Geote	echnic	al											
SPR: TT-Fed/TT-Reg	٩	GТ	DOTLT100 0097	16-1GT	\$85,000	\$85,000			LADOTD Geotechnical Design Manual	7/1/2016			C-57
SPR: TT-Fed/TT-Reg	٩	GТ			\$90,000	\$180,000			Data Collection and Analysis of Driven Pile Behavior within Pre-bored Soil	8/1/2016	6/30/2018		C-59
SPR: TT-Fed/TT-Reg	٩	GТ			\$48,146	\$250,000	LTRC	Murad Abu-Farsakh	Development of a Design Methodology for Geosynthetic Reinforced Pavement using Finite Element Numerical Modeling	9/1/2016			C-60
SPR: TT-Fed/TT-Reg	٩	GT			\$110,600	\$250,000	LTRC	Murad Abu-Farsakh	Development of Software Solutions for Pile Design in Louisiana	7/1/2016			C-62
SPR: TT-Fed/TT-Reg	۵	GТ			\$31,545	\$100,000	LTRC		Quality Control/Assurance on Base Course and Embankment with the Dynamic Cone Penetrometer	7/1/2016			C-64
SPR: TT-Fed/TT-Reg	٩	GТ			\$34,500	\$40,000	LTRC	Murad Abu-Farsakh	Develop a Synthesis on the Application Of PCPT Technology for Geotechnical Engineering Design	9/1/2016	8/31/2017		C-65
SPR: TT-Fed/TT-Reg	٩	GТ			\$69,494	\$150,000	LTRC	Murad Abu-Farsakh	Implementation of Pile Set-up Analytical Models in Design	7/1/2016	6/30/2017		C-66
					\$469,285	\$1,055,000	GEOTECHNI	CAL BUDGET TOTALS					

Project Type: Pavements

					S BUDGET TOTALS	PAVEMENT	\$624,482	\$377,082					
				Operations in Louisiana									
11	<u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>			Transportation Infrastructure Asset Damage Cost Recovery Correlated with Shale Gas/Oil Recovery	Zhong Wu	LTRC	\$125,000	\$67,600	16-2P		٩	٩	SPR: TT-Fed/TT-Reg
02	C-1	7/31/2018	8/1/2016	Improving the Use of Crack Sealing to Asphalt Pavement in Louisiana			\$180,000	\$90,000			٩	٩	SPR: TT-Fed/TT-Reg
39	č			Development and Implementation of a Shadow Specification that utilizes the Localized Roughness Index (LRI) to Locate Bumps on Louisiana Highways		LTRC	\$36,954	\$36,954			۵	٩	SPR: TT-Fed/TT-Reg
38	C-(Implementation of a Localized Roughness Specification for use on Louisiana Bridges	Mark Martinez	LTRC	\$82,528	\$82,528			٩	٩	SPR: TT-Fed/TT-Reg
37	ŏ	6/30/2018	7/1/2016	Cost Effectiveness of Mitigating Reflective Cracking when Asphalt Surface Treatment Interlayers are Utilized on Soil Cement Base Courses	Mohammad Khattak		\$200,000	\$100,000	16-5P	DOTLT100 0089	٩	٩	SPR: TT-Fed/TT-Reg
											0		LIOJOCI I JPC. L AVC

Project Type: Bitumi	snou										
SPR: TT-Fed/TT-Reg	٩	В	\$116,500	\$233,000	LTRC	Louay Mohammad	Implementation of Semi Circular Bend Test for QC/QA of Asphalt Mixtures	7/1/2016	6/30/2018	0	C-72
SPR: TT-Fed/TT-Reg	Ъ	В	\$71,000	\$143,000	LTRC	David Mata	Development of a 4.75mm Asphalt Mixture Design	7/5/2016	7/5/2018	0	C-73
SPR: TT-Fed/TT-Reg	٩	8	\$110,000	\$220,000	LTRC	Louay Mohammad	Develop a Fracture Mechanic Based Test for the Evaluation of Moisture Sensitivity in Asphalt Mixtures			0	C-74

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SPR: TT-Fed/TT-Reg

FISCAL YEAR 2016-2017

Funding	AP	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
SPR: TT-Fed/TT-Reg	٩	۵			\$131,000	\$234,000	LTRC	Louay Mohammad	Develop a Cost Effective Perpetual Pavement Design	7/1/2016	6/30/2018		C-75
SPR: TT-Fed/TT-Reg	٩	В			\$95,000	\$190,000	LTRC	Louay Mohammad	Evaluation of Non-destructive Test Methods for Asphalt Pavement Density Measurements	7/5/2016	7/5/2018		C-76
SPR: TT-Fed/TT-Reg	٩	В			\$100,000	\$200,000			Field Implementation of Handheld FTIR Spectrometer for Polymer Content Determination and for Quality Control of RAP Mixtures	7/5/2016	7/5/2018		C-77
					\$623,500	\$1,220,000	BITUMINOUS	S BUDGET TOTALS					

Project Type: Structures

SPR: TT-Fed/TT-Reg	٩	ST	DOTLT100 0099	16-1ST	\$21,000	\$169,172			Retrofit of Existing Statewide Louisiana Safety Walk Bridge Barrier Railing Systems	10/1/2015		C-78
SPR: TT-Fed/TT-Reg	٩	ST			\$252,886	\$264,484	LSU	Ayman Okeil	Live Load Rating of Cast-In-Place Concrete Box Culverts in Louisiana	5/2/2016	7/31/2017	C-79
					\$273,886	\$433,656	STRUCTURE	ES BUDGET TOTALS				

Project Type: Special Studies

			R	UDIES BUDGET TOTAI	SPECIAL ST	\$725,000	\$480,000				
C-86	8/31/2018	9/1/2016	Highway Evacuation Modeling Package	Chester Wilmot	LSU	\$200,000	\$75,000	6	S:	g	SPR: TT-Fed/TT-Re
C-84	 2/28/2018	9/1/2016	Evaluation and Guidance of Planning-Level Cost Estimation			\$125,000	\$75,000		S	g	SPR: TT-Fed/TT-Re
C-83		9/1/2015	Louisiana Highway Construction Work Zone Mobility Impact Assessment Tool			\$125,000	\$90,000	6	SS SS	g	SPR: TT-Fed/TT-Re
C-82	 1/31/2018	8/1/2016	Louisiana Trip Generation Manual			\$125,000	\$90,000	(0	Sc	ġ Ŀ	SPR: TT-Fed/TT-Re
C-81		9/1/2015	Dredging Louisiana's Ports			\$75,000	\$75,000		S S	g	SPR: TT-Fed/TT-Re
0-80	6/30/2017	7/1/2016	Evaluating the Effectiveness of Regulatory and Warning Signs on Driver Behavior near Highway/Rail crossings	Julius Codjoe	LTRC	\$75,000	\$75,000		Ň	р р	SPR: TT-Fed/TT-Re

otete Project T

				BUDGET TOTALS	CONCRETE	\$1,186,206	\$763,550				
C-92	6/29/2018	7/1/2016	Effect of Clay Content on Alkali-Carbonate Reactive (ACR) Dolomitic Limestone	Amar Raghavendra	LTRC	\$600,000	\$500,000		ပ	٩	SPR: TT-Fed/TT-Reg
C-91	6/30/2017	7/1/2016	Reliable Early Opening Strength for Concrete Pavements and Patch Work	Zachary Collier	LTRC	\$40,894	\$40,894		ပ	٩	SPR: TT-Fed/TT-Reg
C-90	6/30/2017	7/1/2016	Feasibility and Advantages of Acceptance of Concrete Beyond 28 Days	Zachary Collier	LTRC	\$30,000	\$30,000		ပ	٩	SPR: TT-Fed/TT-Reg
C-89	6/30/2018	7/1/2016	Development of Prediction Models and Design Guides for RCC Pavements	Amar Raghavendra	LTRC	\$100,000	\$47,000		ပ	٩	SPR: TT-Fed/TT-Reg
C-88	6/30/2018	7/1/2016	Evaluation of CFRCP: Phase II Accelerated Loading	Amar Raghavendra	LTRC	\$250,000	\$33,000		ပ	٩	SPR: TT-Fed/TT-Reg
C-87	4/30/2018	5/1/2016	Radio-frequency Identification (RFID) Tagging for Material Tracking and Future Asset Management	Amar Raghavendra	LTRC	\$165,312	\$112,656	16-1C	ပ	٩	SPR: TT-Fed/TT-Reg
										alar	LI OJECL I SPE. COIN

в-6

SPR: TT-Fed/TT-Reg

FISCAL YEAR 2016-2017

Page No.	
End Date (Rev)	
End Date	
Start Date	
Project Title	
Principal Investigator	
Agency	
Total Cost	
FY Budget	
Research No.	
SIO No.	
A/P Project Type	
Funding	

Project Type: Other

SPR: TT-Fed/TT-Reg	٩	Other		\$50,000	\$150,000	LTRC	Louay Mohammad	Establishment of the Center for Sustainable Pavement Materials and Technologies	7/1/2016	6/30/2018	Ŏ	-93
				\$50,000	\$150,000	OTHER BUD	GET TOTALS					
Project Type: Safe	ty											1
SPR: TT-Fed/TT-Reg	٩	SA	16-5SA	\$151,232	\$280,900	rsu	Sherif Ishak	A State-of-the-Art Virtual Environment for Highway Work Zone Construction Safety Research, and Training	4/1/2016	9/30/2018	Ó	-95
SPR: TT-Fed/TT-Reg	٩	SA	16-4SA	\$100,000	\$150,000			Pedestrians and Bicyclists Count	1/18/2016		Ó	-96
SPR: TT-Fed/TT-Reg	٩	SA	16-1SA	\$56,148	\$112,300	LSU	Helmut Schneider	Highway Construction Work Zone Safety Performance and Improvement in Louisiana	9/1/2015	4/30/2018	Ó	-97
				\$307,380	\$543,200	SAFETY BU	DGET TOTALS					
Project Type: TIRE												
SPR: TT-Fed/TT-Reg	Р	TIRE [[]	17-5TIRE	\$29,968	\$29,968	NLL		Failure Prevention for Sensitized Structural Alloys used	7/1/2016	6/30/2017	Ó	-98

Project Type: TIRE													
SPR: TT-Fed/TT-Reg	٩	TIRE	DOTLT100 0139	17-5TIRE	\$29,968	\$29,968	NLL		Failure Prevention for Sensitized Structural Alloys used in Coastal Transportation	7/1/2016	6/30/2017	C-98	~
SPR: TT-Fed/TT-Reg	٩	TIRE	DOTLT100 0138	17-4TIRE	\$30,000	\$30,000	ΓSU		A Data-driven Framework for Damage Diagnosis and Prognosis of Coastal Bridges	7/1/2016	6/30/2017	C-99	6
SPR: TT-Fed/TT-Reg	٩	TIRE	DOTLT100 0137	17-3TIRE	\$29,990	\$29,990	NLL		Design and Investigation of a Fuel-Flexible Injection System for Low-Emission Vehicles	7/1/2016	6/30/2017	C-100	0
SPR: TT-Fed/TT-Reg	٩	TIRE	DOTLT100 0136	17-2TIRE	\$30,000	\$30,000	ΓSU	Supratik Mukhopadhyay	Drones for Automatic Pothole Detection and Road Construction Monitoring	7/1/2016	6/30/2017	C-101	-
SPR: TT-Fed/TT-Reg	٩	TIRE	DOTLT100 0135	17-1TIRE	\$30,000	\$30,000	LSU		Advanced Modeling of Piezocone Penetration Test Using Cavity Expansion Theory and Interpretation Simulator Development	7/1/2016	6/30/2017	C-102	2
					\$149,958	\$149,958	TIRE BUDG	ET TOTALS				-	
					\$3,494,641	\$6,087,502	SPR: TT-FEI	D/TT-REG PROPOSED	BUDGET TOTALS				

SPR: Pooled Fund: TT-Fed

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	PageN o.
Project Type: Poole	d Fun	ā											
SPR: Pooled Fund: TT- Fed	A	ΡF	DOTLT100 0090	16-1PF	\$78,400	\$150,000	West Virginia University	Yoojung Yoon	Development of a Guidebook for Determining the Value of Research Results	1/4/2016	3/30/2017	1/3/2018	C-104
SPR: Pooled Fund: TT- Fed	A	ΡF	DOTLT100 0057	15-1PF	\$23,113	\$91,953	Oklahoma State	Joshua Li	Prep-ME Software Implementation and Enhancement	8/1/2015	12/31/2016	10/31/2016	C-105
SPR: Pooled Fund: TT- Fed	A	ΡF	DOTLT100 0002	14-5PF	\$100,000	\$306,812	LTRC	Louay Mohammad	Design and Analysis Procedures for Asphalt Mixtures Containing High-RAP Contents and/or RAS	11/1/2014	10/31/2017		C-107
SPR: Pooled Fund: TT- Fed	A	ΡF	30000281	09-1PF	\$10,000	\$300,000	LTRC	Tyson Rupnow	Southeast Transportation Consortium	9/1/2009	8/30/2012	8/30/2018	C-109
					\$211,513	\$848,765	SPR: POOLE	D FUND: TT-FED ACI	TIVE BUDGET TOTALS				

\$848,765 POOLED FUND BUDGET TOTALS

\$211,513

LTAP: TT-Fed/TT-Reg

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: LTAP													ĺ
LTAP: TT-Fed/TT-Reg	٩	LTAP ^[]	00114 00114	17-LTAP	\$570,644	\$570,644	LTRC	Marie Walsh	Local Technical Assistance Program (LTAP)	1/1/2016	12/31/2017		D-2
					\$570,644	\$570,644	LTAP BUDGI	ET TOTALS					

\$570,644 LTAP: TT-FED/TT-REG PROPOSED BUDGET TOTALS

\$570,644

STP: TT-Fed

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Techr	nolog	ly Trans	ifer and Tr	aining									
STP: TT-Fed	A	Ħ	DOTLT100 0026	15-1WDSC	\$93,790	\$250,000	LTRC	Dortha Cummins	Workforce Development Support For Safety Center		12/31/2017		E-2
STP: TT-Fed	A	F	30000241	10-4AD	\$10,000	\$110,000	LTRC	Tyson Rupnow	Technology Transfer & Research Implementation Support for Louisiana Universities	1/1/2010	12/31/2013	3/30/2016	E-3
STP: TT-Fed	A	Ħ	30000320	08-1TSQ	\$353,833	\$353,904	LTRC	Sam Cooper, Jr.	Technology Transfer Program and Operations (LSU)	7/1/2015	6/30/2018		E-4
					\$457,623	\$713,904	TECHNOLOC	3Y TRANSFER AND TR	AINING BUDGET TOTALS				
STP: TT-Fed	٩	Ħ	DOTDLT10 00117	17-TTRF	\$100,000	\$100,000	LTRC	Sam Cooper, Jr.	Technology Transfer Registration Fees	7/1/2016	6/30/2017		E-6
STP: TT-Fed	٩	F	DOTDLT10 00122	17-PONTIS	\$125,000	\$125,000	LTRC	Sam Cooper, Jr.	AASHTO PONTIS Agreement	7/1/2016	6/30/2017		E-7
STP: TT-Fed	٩	Ħ	DOTDLT10 00118	17-COOP	\$200,000	\$200,000	LTRC	Sam Cooper, Jr.	LADOTD CO-OP Program	7/1/2016	6/30/2017		E-8
STP: TT-Fed	٩	Ħ	DOTDLT10 00116	17-2TT	\$147,000	\$147,000	LTRC	Sam Cooper, Jr.	LTRC Student Program	7/1/2016	6/30/2017		E-9
STP: TT-Fed	٩	Ħ	DOTDLT10 00115	17-1WDC	\$3,177,806	\$3,177,806	LTRC	Sam Cooper, Jr.	Workforce Development Contracts	7/1/2016	6/30/2017		E-10
STP: TT-Fed	٩	Ш	DOTDLT10 00113	17-1WD	\$995,549	\$995,549	LTRC	Sam Cooper, Jr.	Workforce Development	7/1/2016	6/30/2017		E-13
STP: TT-Fed	٩	Ц	DOTDLT10 00121	17-1TT	\$37,500	\$37,500	LTRC	Sam Cooper, Jr.	Support for Senior Project Courses	7/1/2016	6/30/2017		E-14
STP: TT-Fed	٩	Ц	DOTDLT10 00119	17-1TSQ	\$495,542	\$495,542	LTRC	Sam Cooper, Jr.	Technology Transfer Program and Operations (DOTD)	7/1/2016	6/30/2017		E-15
STP: TT-Fed	٩	Ц	DOTDLT10 00123	17-1SWD	\$1,520,000	\$1,520,000	LTRC	Sam Cooper, Jr.	DOTD Staff Support for Workforce Development	7/1/2016	6/30/2017		E-17
					\$6,798,397	\$6,798,397	TECHNOLO(3Y TRANSFER AND TR	AINING BUDGET TOTALS				
					\$7,256,020	\$7,512,301	STP: TT-FEC	ACTIVE BUDGET TOT	ALS				
LTRC ANNUAL RESEARCH PROGRAM

100% Federal

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Safety	~												
100% Federal	٩	SA			\$1,500,000	\$1,500,000		Dortha Cummins	Safety Center Management of Traffic Records Projects	4/1/2016	9/30/2016		F-2

SA	\$1,500,000	\$1,500,000	Dortha Cummins	Safety Center Management of Traffic Records Projects	4/1/2016	9/30/2016	4	F-2
	\$1,500,000	\$1,500,000		SAFETY BUDGET TOTALS				
	\$1,500,000	\$1,500,000		100% FEDERAL PROPOSED BUDGET 1	TOTALS			

LTRC ANNUAL RESEARCH PROGRAM

Self-Generated

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Bitum	ninou	S											
NCHRP	A	В	30001505	14-2B	\$40,000	\$186,407	LTRC	Louay Mohammad	Field Implementation of the Louisiana Interface Shear Strength Test	8/9/2013	8/8/2015	12/31/2016	G-2
					\$40,000	\$186,407	BITUMINOUS	BUDGET TOTALS					
Project Type: Geote	echni	cal		ſ									
CALTRANS	A	GT	DOTLT100 0055	15-3GT	\$21,520	\$70,598	LTRC	Murad Abu-Farsakh	Calibration of LRFD Geotechnical Axial (Tension and Compression) Resistance Factors (ϕ) for California	1/16/2015	1/15/2017		G-3

\$257,005 SELF-GENERATED ACTIVE BUDGET TOTALS

\$21,520 \$61,520

\$70,598 GEOTECHNICAL BUDGET TOTALS

LTRC ANNUAL RESEARCH PROGRAM

Other DOTD Sections

FISCAL YEAR 2016-2017

Funding	A/P	Project Type	SIO No.	Research No.	FY Budget	Total Cost	Agency	Principal Investigator	Project Title	Start Date	End Date	End Date (Rev)	Page No.
Project Type: Geote	schnie	cal											
Emergency Fund	A	GТ	30000980	13-9GT	\$4,000	\$474,380	LSU	Joshua Kent	CORS 911: Continuously Operating Reference Stations for the Bayou Corne Sinkhole	3/18/2013	3/17/2014	9/30/2016	Н-2
					\$4,000	\$474,380	GEOTECHN	CAL BUDGET TOTALS					
Project Type: Safety	>			r									
Safety	٨	SA	DOTLT100 0111	16-1STFS	\$793,509	\$1,263,287	LTRC	Dortha Cummins	FHWA Safety Transfer Fund Support for LCTS		12/31/2017		Н-3
					\$793,509	\$1,263,287	SAFETY BUL	DGET TOTALS					
					\$797,509	\$1,737,667	отнек рот	D SECTIONS ACTIVE B	UDGET TOTALS				
Project Type: Speci	al Sti	udies											
Highway/Rail Safety	d	SS			\$50,000	\$100,000	LTRC	Julius Codjoe	Exploring the Use of Pavement Markings in the Dynamic Envelope of a Railroad Crossing to Enhance Safety	7/1/2016	6/30/2018		H-4
Port Priority Program	Р	SS			\$50,000	\$75,000	rsu	James Richardson	Economic Evaluation of Applicants to the Port Construction and Development Priority Program	7/1/2016	12/31/2017		H-5

Project Type: Other

LINER INDE. OILE												
Safety	٩	Other ^E	00120 00120	16-LRSP	\$338,440	\$338,440	LTRC	Marie Walsh	Louisiana Local Road Safety Program	1/1/2016	12/31/2017	9-H
			k.		\$338,440	\$338,440	OTHER BUD	GET TOTALS				
					\$438,440	\$513,440	OTHER DOTI	D SECTIONS PROPOSI	ED BUDGET TOTALS			

\$175,000 SPECIAL STUDIES BUDGET TOTALS

\$100,000

FHWA

Part II SPR Funded Research Program

ADMINISTRATIVE LINE ITEMS AND RESEARCH SUPPORT STUDIES

Title:	Progr	am N	lanagemei	nt				Project S	tatus:	Proposed
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
				[]		1				
SIO:				DOTLT1000125		Project Start	Date:	1		7/1/2016
Resear	rch Proj	ect N	umber:	17-1PM		Completion	Date	(original)		6/30/2017
Resear	rch Age	ncy:		LTRC		Completion	Date	(revised)		
Princip	al Inves	tigate	or:	Tyson Rupnow						
				Budg	ET	STATUS				
		1	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$748,000		Total				\$747,949
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$737,949
	I	TY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fur	nds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				\$10,000
Est. FY	' Expen	diture	9			Other				
				PURPOS	ΕA	ND SCOPE				
To cov Progra includir	er admi m. This ng the e	nistra item xpen	ative costs of will cover a se of the Po	of the staff members all general expenditu olicy committee and f	invo res Pro	olved in the pla incurred in the ject Review Co	anning e mana ommitt	and supervis agement of the ees.	sion of th	ne SPR Program,
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENT	S		
Manag adminis -Updat -Partici -Partici -Partici -Manag -Admin	ed the L strative ed LTR(pated ir pated ir pated ir ged the istered	Louis dutie C Ma n Tran n LAE n regi Sout the L	iana Transp s, business nual of Res nsportation OOTD comr onal and na heast Trans Iniversity Tr	oortation Research C activities, and finance search Procedures Research Board (TR nittees; ational RAC task grou sportation Consortium ransportation Center	ent cial B)a up a n ao Fui	er's (LTRC) re responsibilities activities; activities; and ctivities; and nding.	search	n program ind	cluding	
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S		
-Contin -Contin -Staff p -Contin -Contin -Contin -Contin -Start t	nue to m nued imp participa nued sup nued sup nued sup nued sup nued sup	anagoleme tion i oport oport oport oport oport ' RPI	e and adm entation the n External I for Transpo for regiona for Southea for AASHT C process.	inister the SPR Rese 2015 RPIC results; Peer Exchanges; ortation Research Bo I and national RAC ta ast Transportation Co O RAC activities; and	ard ask ons	h Program; activities; group activitio ortium;	es;			

Title:	Techno	olog	y Transfer	and Research Impl	lem	entation		Project S	tatus:	Proposed
Funding	g Sourc	e:	SPR: TT-I	Fed/TT-Reg		E	Budget	Category:	FHWA	
810:				DOTI T1000128		Droigot Start	Doto			7/1/2016
Bosoard	h Projo	ot Ni	umbor:	17 1TTPI			Date.	(original)		6/20/2017
Posoar		51 IN	umper.			Completion	Date			0/30/2017
Principa		agto	vr.			Completion	Dale	(Tevised)		
тппора		gaic	<i>/</i> 1.	Bung	FT	Status				
		т	otal Budget				Estimat	ed 2016-201	7 Budae	<u>.</u>
Total Co	ost	(oriai		\$425.000		Total			. Daage	\$425.000
	531		and)	φ+23,000		Total				ψ423,000
Fet Fyr	ended t					Salaries				\$410.000
	F)	(20	15 - 2016 Bi	Idaet		Fauinment	(expen	dable)		φ+10,000
EY Euro	19		inal)			Equipment	(non-e)	(pendable)		
		(revis	sed)			Travel	(11011-0)			\$15,000
Fet FV	Evnendi	ituro				Other				φ13,000
	стрени			Puppos					[
Confere	ation in e	and R	rnal researc esearch Re	ch / training activities eview Committees)	(N	CHRP, FHWA	, Panel	s, TRB Mee	tings, Te	echnical

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS
-Developed strategies for implementation of research projects;
-Developed distribution of Research Implementation Impacts brochure;
-Developed and submitted projects to AASHTO High Value Research solicitation;
-Tracked implementation progress on completed research projects for previous five years;
-TRB committee AFD60 Unsaturated Soils, committee attendance and paper reviews;
-TRB Committee AFD80 Strength and Deformation Characteristics of Pavement Sections, committee
-TRB committee AFD90 (Surface properties and Vehicle Interaction) paper reviews:
-TRB Committee AFS10 Transportation Earthwork, committee member and paper review:
-TRB Committee, AFS30 Foundations of Bridges and Other Structures, committee member and paper
reviews.
-TRB Committee AFS30 Committee Communication Coordinator
-TRB Committee, AFN30 and AFN10 - Paper reviews and committee member
-NHI Training course. Soil and Foundations workshop:
-Grant proposal writing workshop:
-Implementation of New Asphalt Test procedures:
-Developed workshops and training seminars:
-Participated and presented at SEAUPG Annual Meeting:
-Participated and presented at ACPA National Convention;
-Participated and presented at Texas Cement Council / TXDOT
2016 Concrete Conference;
-Presented and participated at TRB Annual meeting;
-Participated and presented at LAPA Annual Meeting;
–Participated in AAPT Annual Meeting;
-Participated at Binder ETG meeting;
-Participated at precast Pavement ETG meeting;
-Participated in RPIC, PRC meetings;
-Tested masters PE review classes;
–LADOTD training and CPTP classes;
-Various Other Webinars;
-NAPA Sustainability Conference;
-NCHRP Panel Participation (D18-17); and
-TTCC/NCC Fall (Milwaukee, WI) and Spring (Columbus, OH) Meetings;
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES
-Continue research implementation activities;
-Develop and host Technology Transfer Seminars;

-Participate in external research / training activities: (NCHRP Panels, TRB Meetings, Meetings, and Technical Conferences; and

-Continue to seek venues for our presentations that effectively communicate the Louisiana Transportation Research center's (LTRC) vision.

Title: Techi	nical	Research	Surveillance			Project S	tatus:	Proposed	
Funding Sou	ce:	SPR: TT-	Fed/TT-Reg	В	Budget	Category:	FHWA		
SIO:			DOTLT1000131	Project Start	Date:			7/1/2016	
Research Proj	ect N	lumber:	17-1TRS	Completion I	Date	(original)		6/30/2017	
Research Age	ncy:		LTRC	Completion I	Date	(revised)			
Principal Inves	tigate	or:	Tyson Rupnow				•		
			Budge	T STATUS					
	٦	Fotal Budge	t		Estimat	ted 2016-201	7 Budge	t	
Total Cost	(orig	jinal)	\$400,000	Total				\$400,000	
	(revi	ised)							
Est. Expended	l to D	ate		Salaries				\$400,000	
	FY 20	15 - 2016 B	udget	Equipment	(expen	dable)			
FY Funds	(orig	jinal)		Equipment	(non-e	xpendable)			
	(revi	ised)		Travel					
Est. FY Expen	diture	Э		Other					
			PURPOSE	AND SCOPE			-		
To cover costs (LTRC) Resea Review Comm assistance to I	incu irch F ittees TRC	rred in prov Project Cont s and partic contract re	viding Administration o tracts, preparation of re sipation on LTRC Repo esearchers on projects	f the Louisiana T esearch proposa ort Review Comr funded by LTR(⊺ranspo als, par nittees C.	ortation Rese ticipation on . To provide	earch Ce LTRC F laborat	enter Project ory and field	
FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS									
-Published 23 final reports; -Managed research projects with a contract budget of 5 million; -Initiated 22 new research projects; and -Project management for 64 on-going research projects.									
			FISCAL YEAR 2016-20	17 PROPOSED A	CTIVITIE	S			
-Provide mana -Prepare new projects as ap -Participation o -Participation o	igem resea provi on LT on LT	ent of LTRO arch propos ed in this A RC Project RC Report	C research project con als for initiation of new nnual Work Program o Review Committees; Review Committees.	tracts; / projects in acco locument; and	ordance	e with propo	sed in-h	ouse	

Title:	Techr	ical	Assistance	9				Project S	tatus:	Proposed
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:				DOTLT1000127		Project Star	t Date:			7/1/2016
Resear	ch Proje	ect N	umber:	17-1TA		Completion	Date	(original)		6/30/2017
Resear	ch Ager	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	Tyson Rupnow						
				Budge	ET S	STATUS				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget	1
Total C	ost	(orig	inal)	\$370,000		Total				\$370,000
		(revi	sed)							
Est. Ex	pended	to Da	ate			Salaries				\$362,000
	F	Y 20	15 - 2016 Bı	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				\$8,000
Est. FY	Expend	diture)		-	Other				
				PURPOSE	E AN	ID SCOPE			•	
To cove to depa (LADO univers Transp	er costs irtmenta TD) proj ity requ ortation	incu l inqu ects ests Rese	rred in prov uiries for as which are r for laborato earch Cente	iding laboratory, field sistance on the Louis not related to formal re ry or field testing on re er (LTRC).	tes ian: ese ese	ting, and fore a Departmen arch studies. earch projects	ensic te: t of Tra To pro not fur	sting analysi nsportation ovide assista nded by the	s in dire and Dev nce to s Louisian	ct response elopment tate a

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS
-Batch ticket analysis on I-49 footing, column, and bridge segments (H.011111);
-Compression testing of concrete from I-49 segments (H.011111);
-ACR/ASR investigation for control section on Jefferson highway;
-ACR/ASR investigation for control section on interstate 10 near Acadian thruway;
-Coring on I-10 on the approach to the MRB in WBR parish for suspected voids beneath pavement (H.011955.6).
Literature review on Reinforced Concrete Pipe for the DOTD construction group;
-Rapid Chloride Permeability tests (4 sets) for Route US 80 in
District 04 (H.000101.6);
-Rapid Chloride Permeability tests (2 sets) for Luling bridge in District 02:
-Surface resistivity tests for Luling bridge overlay (2 mixes);
-Implemented and tested beam specimens (ASTM C1609) for the Luling bridge overlay (H.010498);
-Fatigue testing on RCC beams for the 12-7P project:
-Verification of fine and coarse aggregate specific gravities for the materials laboratory;
-Compression testing and absorption on CMUs for FHWA (H.002132.6):
-Attended meetings/on-site visit for the new Precast Concrete Pavement specification:
-ASTM C1260 for source approval of material obtained from the materials laboratory:
-Actuator re-sealing for Murad's MTS plate load tester at ALE:
-LSU studies:
- A 413, H 010435.:
-Cane mill to LA 416. Pointe Coupee Parish:
-Assessment of Pavement depressions on H.011464 Fourchon Road:
-H.011137 & H.011152 I-12 Widening (I A 21 to I A 59) Friction Number Request:
-1-20 SP 451-08-0078
-1-10 West Baton Rouge Parish PCC slab issues:
- A 454: Avovelles Parish: H:011068:
-West Baton Rouge Parish line to Rama (CS 450-07):
-1-10.450-08:
-Mile Post 149 to 144
-CSI M 7.080 to 2.080:
-Transportation Infrastructure Asset Damage Cost Recovery Correlated with Shale Oil Recovery Operations in
l ouisiana:
-New Orleans Submerged Roads:
-Repairs to the Waylink Computer:
-Attempts to repair the Darwin computer:
-Attempts to repair the Payement Unit's High Speed Laser Profiler: and
-l oction of Voids over drainage pipes
- Cvelic Load Testing SIL.longwon.lung
OCP Testing District 61 Marta Vasquez
DCP loan [S] Sogand Karbalajeali
I arge Direct Shear Testing, District 04 John Holley
- Large Direct Shear testing SIL longwon lung
Lightweight Embankment Section follow-up, District 02
Material Testing, LSU Natalie Desrosiers/ Marwa Hassan
Material Testing, LSU Sogand Karbalaieali/Jongwon Jung
Suborade Treatment Testing, District 61 Keith Palermo
• Vane Shear loan, LSU Jongwon Jung
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES
-Respond to requests for laboratory, field work, and forensic analysis on LADOTD projects not related to a
formal research project;

-Field testing (Skid, FWD, Profiler, etc.) in support of District requests; -Respond to requests for laboratory, field work, and analysis for university requests not related to a LTRC formal research project; and

-Provide general assistance to other public entities not related to research.

Title:	DOTD	Staf	ff Support	for Research		Project S	tatus:	Proposed			
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO.				DOTI T1000132		Project Start	Date:			7/1/2016	
Resear	ch Proi	ect N	umber:	17-1SSR		Completion	Date	(original)		6/30/2017	
Resear	ch Age	ncv:		DOTD		Completion	Date	(revised)		0,00,2011	
Princip	al Inves	tigato	or:	Tyson Rupnow				, <i>,</i>			
				BUDG	ЕΤ	STATUS					
		Т	otal Budge	t			Estima	ted 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$100,000		Total				\$100,000	
		(revi	sed)						1		
Est. Ex	pended	to D	ate			Salaries				\$100,000	
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Fun	FY Funds (original) Equipment (non-expendable)										
	(revised) Travel										
Est. FY	'Expen	diture	e			Other					
				Purpos	ΕA	ND SCOPE			<u>I</u>		
To cove staff pa advisor (RPIC) for dev particip This sh	PURPOSE AND SCOPE To cover the costs incurred by the Louisiana Department of Transportation and Development (LADOTD) staff participating in the Louisiana Transportation Research Center (LTRC) support committees and advisory panels such as Project Review committees (PRC), Research Project Identification Committee (RPIC), and LTRC Policy Committee. These committees and panels provide technical and policy support for development of the LTRC work program, development and conduct of specific research projects, of the participation of LADOTD staff on strategic planning functions for the research program conducted by LTRC. This shall not be used by LTRC/LADOTD employees (i.e. Section 19 and Section 33 employees)										
				FISCAL YEAR 2015 -	20′	16 ACCOMPLIS	HMENT	s			
LADOT on-goir •Atten •Defin •Ident •Assis •Revie	ADOTD Participation in the project review committees to provide technical review and direction on new, on-going and completed research studies: •Attend PRC meetings; •Define the objective and scope; •Identify potential research teams; •Assist in the development of the RFP for those problem statements selected for contract research; •Review and suggest improvements to proposals;										
				FISCAL YEAR 2016-20	017	PROPOSED A	CTIVITIE	S			
-Partici -Partici	-Participate in Project Review Committees to provide technical direction to research projects; and -Participate in LTRC Policy Committee meetings to provide strategic direction to the research program.										

Title:	New P	Produ	ucts Evalua	ation		Project St	tatus:	Proposed			
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA		
SIO:				DOTLT1000130		Project Start	Date:			7/1/2016	
Resear	ch Proje	ect N	umber:	17-1NPE		Completion I	Date	(original)		6/30/2017	
Resear	ch Ager	ncy:		LTRC		Completion I	Date	(revised)			
Principa	al Invest	tigato	or:	Tyson Rupnow							
				Budg	ЕТ \$	Status					
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	t	
Total C	ost	(orig	inal)	\$72,000		Total				\$72,000	
(revised)											
Est. Ex	pended	to Da	ate			Salaries				\$72,000	
	F	Y 20	15 - 2016 Bi	(expen	dable)						
FY Fun	ds	(orig	inal)			Equipment (non-expendable)					
		(revi	sed)			Travel					
Est. FY	Expend	diture)			Other					
				PURPOS	e ai	ND SCOPE					
To sup (LADO technol	port eva TD) Nev ogies no	luatio v Pro ot as:	on of produ oducts Eval sociated wi	cts for the Louisiana uation Committee. To th a research project.	Dep o pi	partment of Tr rovide general	anspor evalua	tation and D ation of new	evelopm product:	nent s or	
				FISCAL YEAR 2015 -	20 1	6 ACCOMPLIS	HMENT	6			
				FISCAL YEAR 2016-20	017	PROPOSED A	CTIVITIE	S			
Continue managing the necessary evaluations of new products submitted to the Louisiana Transpor Research Center (LTRC) by the LADOTD New Products Evaluation Committees including on-going evaluations.						sportation bing					

Funding Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA SIO: DOTLT1000126 Project Start Date: 7/1/20 Research Project Number: 17-1LFT Completion Date (original) 6/30/20 Principal Investigator: Tyson Rupnow Completion Date (revised) 6/30/20 Principal Investigator: Tyson Rupnow Estimated 2016-2017 Budget Total \$30,00 (revised) (original) \$30,000 Equipment (revised) \$30,00 FY Su15 - 2016 Budget Equipment (expendable) Equipment \$30,00 FY Funds (original) \$30,000 Equipment (revised) Tavel \$30,00 Est. Expendet to Date Salaries \$30,00 Equipment (revised) Tavel Tavel \$30,00 FY Funds (original) Equipment (non-expendable) Tavel Tavel \$30,00 Est. FY Expenditure Other Other Other \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,00 \$30,0	Title: R	Resear	ch L	aboratory	v and Field Test Supp	ort		Project St	tatus:	Proposed
SIO:DOTLT1000126Project Start Date:7/1/20Research Project Number:17-1LFTCompletion Date(original)6/30/20Research Agency:LTRCCompletion Date(revised)(revised)Buber StatusTotal BudgetTotal BudgetTotal BudgetTotal SuggetTotal SuggetTotal Cost(original)\$30,000TotalTotalSalaries\$30,000Est. Expended to DateGorginal)SalariesSalaries\$30,000FY Funds(original)Corpetion DateSalariesSalaries\$30,000FY Funds(original)Corpetion DateCorpetion DateSalariesSalaries\$30,000Fy Funds(original)SalariesSalariesSalariesSalaries\$30,000Fy Funds(original)Corpetion DateCorpetion DateSalariesSalariesSalaries\$30,000Fy Funds(original)Corpetion DateCorpetion DateCorpetion DateSalariesSalari	Funding	Source	e:	SPR: TT-	Fed/TT-Reg	E	Budget	Category:	FHWA	
Stor DOTE H1000120 Project Start Date: 17/12C Research Project Number: 17-1LFT Completion Date (original) 6/30/20 Research Agency: LTRC Completion Date (revised) 6/30/20 Principal Investigator: Tyson Rupnow Estimated 2016-2017 Budget 6/30/20 Total Budget Estimated 2016-2017 Budget Total Cost (original) \$30,000 70 tal \$30,000 (revised) Est. Expended to Date Salaries \$30,000 FY 2015 - 2016 Budget Equipment (expendable) 9 FY Funds (original) Travel 0 9 Est. FY Expenditure Other 17/12C 17/12C PurPose AND Scope Fiscal YEAR 2015 - 2016 Accomplishments Fiscal YEAR 2015 - 2016 Accomplishments -AC rutting on 1-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	810:				DOTI T1000126	Project Start	Data			7/1/2016
Research Agency: LTRC Completion Date (original) 0:30/20 Principal Investigator: Tyson Rupnow Completion Date (revised) BUDGET STATUS Total Budget Total Cost (original) \$30,000 (revised) (revised) Total \$30,000 Est. Expended to Date Salaries \$30,000 FY 2015 - 2016 Budget Equipment (revised) FY Funds (original) (revised) Equipment (revised) Image: Colspan="2">Completion Date FY Funds (original) Salaries \$30,000 Est. FY Expenditure Image: Colspan="2">Other Funds (revised) Image: Colspan="2">Travel Est. FY Expenditure Image: Colspan="2">Other PurPose AND Scope Travel Image: Colspan="2">Travel The broad objectives of this study are to provide general assistance to other Louisiana public research engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompListmetrs -AC rutting on 1-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants	SIU. Bosoarch	Projoc	st Nu	imbor:	17 11 ET	Completion	Date.	(original)		6/20/2017
Principal Investigator: Tyson Rupnow BUDGET STATUS Total Budget Total Cost (original) \$30,000 (revised) Total \$30,000 Est. Expended to Date Salaries \$30,00 FY 2015 - 2016 Budget Equipment (expendable) Equipment (non-expendable) FY Funds (original) Travel Other Est. FY Expenditure Other PURPOSE AND SCOPE The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineerie education in the field of transportation. Such support is not related to a Louisiana Transportation Researc Center (LTRC) funded research study. FiscaL YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	Research					Completion	Date	(revised)		0/30/2017
Budget Status Budget Status Estimated 2016-2017 Budget Total Cost (original) \$30,000 (revised)	Principal I	Investio	oato	r.		Completion	Date			
Total Budget Total Budget Total Cost (original) \$30,000 (revised) (revised) Est. Expended to Date Salaries \$30,00 FY 2015 - 2016 Budget Equipment (expendable) FY Funds (original) Equipment (expendable) [revised] (revised) Travel [revised] Est. FY Expenditure Other [revise] Other PurPose AND Scope Fuedod objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Researd Center (LTRC) funded research study. Fiscal Year 2015 - 2016 AccompLisHments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);			9410	<u></u>	BUDGE	T STATUS				
Total Cost (original) \$30,000 (revised) (revised) Est. Expended to Date Salaries FY 2015 - 2016 Budget Equipment (revised) Equipment (revised) Equipment (revised) Travel Est. FY Expenditure Other PURPOSE AND SCOPE The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Researd Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompLISHMENTS -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);			T	otal Budget	t		Estimat	ed 2016-2017	7 Budget	t
Image: constraint of the study of the s	Total Cost	t ((origi	nal)	\$30.000	Total				\$30,000
Est. Expended to Date Salaries \$30,0 FY 2015 - 2016 Budget Equipment (expendable) FY Funds (original) Equipment (non-expendable) (revised) Travel Travel Travel Est. FY Expenditure Other Other Travel The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research center (LTRC) funded research study. Fiscal YEAR 2015 - 2016 AccompListments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);			(revis	ed)						
FY 2015 - 2016 Budget Equipment (expendable) FY Funds (original) Equipment (non-expendable) (revised) Travel Travel Est. FY Expenditure Other Other PURPOSE AND SCOPE The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Researd Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	Est. Expe	nded to	o Da	ate		Salaries				\$30,000
FY Funds (original) Equipment (non-expendable) (revised) Travel Travel Est. FY Expenditure Other Other PURPOSE AND SCOPE The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. Fiscal YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);		FY	(201	5 - 2016 Bu	udget	Equipment	(expend	lable)		
(revised) Travel Est. FY Expenditure Other PURPOSE AND Scope The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	FY Funds									
Est. FY Expenditure Other PURPOSE AND SCOPE The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	(revised) Travel									
Purpose AND Scope The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 AccompLishments -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	Est. FY Ex	xpendi	ture			Other				
The broad objectives of this study are to provide general assistance to other Louisiana public research entities such as laboratory testing, field work, and analysis for Louisiana universities to promote engineeri education in the field of transportation. Such support is not related to a Louisiana Transportation Research Center (LTRC) funded research study. FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);		-			PURPOSE	AND SCOPE				
FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);	The broad entities su education Center (L	d objec uch as i in the TRC) f	tives labo fielo unde	s of this stu pratory test d of transpo ed researc	udy are to provide gene ing, field work, and ana ortation. Such support h study.	eral assistance t alysis for Louisia is not related to	to other ana univ a Loui	Louisiana p versities to p siana Trans	oublic resoromote portation	search engineering n Research
-AC rutting on I-20 near Minden, LA.; -Providing lab support for local high school science fair project; -Science fair mentor (participants are headed to two international science fairs);					FISCAL YEAR 2015 - 2	016 ACCOMPLIS	HMENTS	;		
-Extreme rutting and distress of I-10 requiring FWD and AC core testing; -Long term monitoring of US 90 Embankments with various light-weight fills and fabrics; and -Jefferson Highway and I-10 PCC distress.	-AC rutting -Providing -Science f -Extreme -Long term -Jefferson									
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
Continue to provide general assistance to other Louisiana public research entities as requested in accordance with the mission and founding legislation of LTRC.	Continue f accordanc									

Title:	Equip	men	t Managen	nent		Project S	tatus:	Proposed		
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
SIO:				DOTLT100012		Project Start	Date:			7/1/2016
Resear	ch Proj	ect N	umber:	17-1EQM		Completion I	Date	(original)		6/30/2017
Resear	ch Age	ncy:		LTRC		Completion I	Date	(revised)		
Principa	al Inves	tigato	or:	Tyson Rupnow				I	1	
				Budge	ET S	TATUS				
		Т	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$375,000		Total				\$375,000
		(revi	sed)						-	
Est. Ex	pended	to D	ate			Salaries				\$325,000
	F	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		\$50,000
FY Fun	FY Funds (original) Equipment (non-expendable)									
	(revised) Travel									
Est. FY	Expen	diture	e			Other				
				PURPOSE	e an	D SCOPE				
To cove rolling e in stand	er costs equipme dardized	incu ent, s d test	rred to prov pecial equi ing progran	ride support for the pur pment, and instrument ns for laboratory certifi	ircha tatio icat	ase, fabrication on for researce ion (Co-Op, A	on, eva ch proje AMRL,	aluation, and ects. To prov CCRL).	mainter /ide for p	nance of participation
				FISCAL YEAR 2015 - 2	201	6 ACCOMPLIS	HMENT	S		
-Profici -Partici -Genera -Vehick -Calibra -CCRL -Equip -Installa	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -Proficiency testing within the AASHTO Materials Reference Library (AMRL and CCRL); -Participation in LADOTD State Cooperative Testing Program; -General Equipment Calibration and Maintenance; -Vehicle Inspection Reports; -Calibration of United Testing System; -CCRL round robin testing and certification program; -Equipment maintenance to maintain accreditation; -Installation of new Materials Testing System (MTS) for Concrete lab; and -Installation of chiller to connect MTS.									
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Perforn -Develo the-ar -Partici -Safety -Calibra -Calibra -Perforn	 -Perform routine and unscheduled maintenance of LTRC research laboratory and field equipment; -Developed plans, prepared specifications and purchase lab equipment as necessary to maintain state-of-the-art laboratory facilities; -Participate in State Coop and CRRL testing programs; -Safety Training and Reporting Duties; -Calibration of Profiler, FWD, Dynaflect, and Friction Tester; -Calibration of Profiler, FWD, Dynaflect, and Friction Tester; and -Perform routine and unscheduled maintenance of LTRC research laboratory and field equipment. 									

FHWA

Part II SPR Funded Research Program

CONTINUING RESEARCH

Title:	Incorp Testin Engine	orat g Va erir	ing the Sit riability of ng Design		Project S	tatus:	Ongoing				
Fundin	ng Sourc	e:	SPR: TT-	Fed/TT-Reg		Budget	Category:	FHWA	Ň		
210.					Draiget Star	t Data:			7/4/2040		
SIU.	ch Proio	ot N	umbor:	16 6CT	Completion	Date.	(original)		7/1/2016		
Posoar			umber.		Completion	Date	(Unginal)		12/31/2018		
Princin	al Invest	icy. iaato)r.	Murad Abu-Earsakh	Completion	Dale	(Tevised)		12/31/2010		
		igait	<i>.</i>	BUDGE	T STATUS						
		т	otal Budge	t		Estima	ted 2016-201	7 Budae	t		
Total C	ost	(orig	inal)	\$476.813	Total				\$193.000		
		(revi	sed)	÷ - ,					• ,		
Est. Ex	pended	to Da	ate		Salaries				\$193,000		
	F	Y 20	15 - 2016 Bi	udget	Equipment	(exper	dable)				
FY Fun	nds	(orig	inal)		Equipment	(non-e	xpendable)				
	(revised) Travel										
Est. FY	Est. FY Expenditure Other										
	-			PURPOSE	AND SCOPE			1			
PURPOSE AND SCOPE The main objective of this research is to evaluate the different sources of geotechnical variability and quantify the variability of soil properties for inclusion in the analysis and design of different geotechnical engineering systems. This generally includes: -Evaluating operator-induced variations on design soil properties; -Evaluating equipment-induced variations on design soil properties; -Evaluating site/spatial variations of design soil properties; -Developing QA/QC guidelines for laboratories; and -Incorporating site variability and measurement error into LRFD geotechnical design.											
				FISCAL YEAR 2015 - 2	2016 ACCOMPLIS	SHMENT	s				
N/A											
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES											
-Start the a comprehensive literature review on relevant published works on laboratory and site variability; -Start evaluating the measurement error of lab and in-situ tests from existing lab test database; -Start performing laboratory tests to study measurement variation of specific lab tests (i.e., water content, total and dry unit weight, UU test, consolidation test, direct shear test, resistivity, CBR); -Start performing in-situ tests to study measurement variation of specific in-situ tests (i.e., LFWD, DCP, DSPA, NDG, VST and SASW); -Start evaluating site variability from lab and in-situ measurements; and -Start evaluating the QC/QA guidelines for lab tests.											

Title:	Corro	sion	Map for M	etal Pipes in Coast		Project S	tatus:	Ongoing			
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		B	Budget	Category:	FHWA		
						-					
SIO:				DOTLT1000094		Project Start	Date:	<i>.</i>	1/25/2016		
Resear	ch Proj	ect N	umber:	16-5G I		Completion I	Date	(original)		4/25/2017	
Resear	ch Agei	ncy:				Completion Date (revised)					
Principa	ai inves	tigato	or:	Sanjay Tewari							
				. Budd	SET (STATUS	-		7 Decidence		
T () O		I	otal Budge	t		Tatal	Estimat	ed 2016-201	/ Budge	t *00.000	
Total C	ost	(orig	inal)	\$49,999		Total				\$30,000	
		(revi	sed)	• • • • • • • •						.	
Est. Ex	pended	to D	ate	\$19,999		Salaries				\$30,000	
	F	FY 20	15 - 2016 Bi	(expend	dable)						
FY Fun	ds	(orig	inal)	\$19,999		Equipment	(non-ex	(pendable)			
		(revi	sed)			Travel					
Est. FY Expenditure \$19,999 Other											
				PURPOS	SE A	ND SCOPE					
District enough necess	Metal culverts can corrode over time and at various rates based on their environmental conditions (corrosive nature of coastal soils, high water table, salt water intrusion, subsidence, tidal flows and frequent hurricane surge issues). The salinity and likelihood of flooding in the Louisiana Department of Transportation and Development (LADOTD) coastal parishes has led to a policy of disallowing the use of metal pipes for new drainage installations. District 02 is mostly coastal. Other districts (07, 03, 61, and 62) have some coastal edges, but extend far enough north where environmental issues are less corrosive. Delineating a break point boundary line is necessary to promote competition in the north, and provide/ensure durable material for our coastal pipes.										
				FISCAL YEAR 2015	201	6 ACCOMPLIS	HMENTS	5			
This pro districts update	This project began in January of 2016. The Principal Investigator is collecting information from the coastal districts, and conducting his research and review. A Project Review Committee meeting will be held to update all on the status of the project.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
The pro meeting 2017.	The project will continue and support will be provided to the researcher. A Project Review Committee meeting will be held to update all on the status of the project. The project is scheduled to end on April 27, 2017.										

Title:	Lime Utilization in the Laboratory, Field, and Design of Pavement Layers Project Status: Ongoing									
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO				DOTI T1000049		Project Start	t Date:			2/16/2015
Resear	ch Proie	ect N	umber:	15-2GT		Completion	Date	(original)	2/15/201	
Resear	ch Ager	ncy:		LSU		Completion	Date	(revised)		7/31/2016
Principa	al Inves	tigato	or:	Mostafa Elseifi				· · ·		
				Budo	SET :	STATUS				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$48,493		Total				\$16,800
		(revi	sed)							
Est. Ex	pended	to D	ate	\$31,683		Salaries				\$16,800
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	inal)	\$48,493		Equipment	(non-e>	(pendable)		
		(revi	sed)	\$48,493		Travel				
Est. FY	Expend	diture	9	\$31,683		Other				
				PURPOS	SE A	ND SCOPE				
The obj tables, paveme assess can be	ective c and in p ent desi the qua used by	of this paver gn in llity o v the	s study is to nent applic other state of field cons Departmen	o review and report the ations. The project a es as well as test me truction. Based on t at to modify and impr	ne b also thoc his i ove	est practices of aimed to revie ds, field applica review, this stu current state s	of using ew the ation, a udy will specific	lime to dry incorporation nd evaluation provide a kn ations	soil, in v n of lime n techni nowledg	vorking in iques to e base that
				FISCAL YEAR 2015	· 20′	16 ACCOMPLIS	HMENTS	6		
Tasks 1 Commi The Fin	Tasks 1 to 5 have been successfully completed. A meeting was scheduled with the Project Review Committee on March 8, 2016 to present the findings of this study and to discuss offered recommendations. The Final Report is currently being prepared by the research team (Task 6).									
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
This pro 2016 ar	oject is and the F	scheo Projec	duled to be ct Review C	completed on July 3 Committee comments	81, 2 s wil	2016. The Fina Il be addresse	al Repo d by the	ort will be su e research te	bmitted eam.	in May,

Title: pLog Manag	Title: pLog Enterprise - Enterprise GIS-Based Geotechnical Data Project Status: Ongoing Management System Enhancements Image: Comparison of Com										
Funding Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA			
SIO:			DOTLT1000048		Project Start	Date:			7/31/2015		
Research Proje	ect N	umber:	15-1GT		Completion	Date	(original)		8/1/2017		
Research Ager	ncy:		Dataforensics, LLC		Completion	Date	(revised)				
Principal Invest	tigato	or:	Scott Deaton								
			Budgi	ET	STATUS						
	Т	otal Budge	t		I	Estimat	ed 2016-201	7 Budge	t		
Total Cost	(orig	inal)	\$200,000		Total				\$50,000		
	(revi	sed)									
Est. Expended	to D	ate	\$150,000		Salaries				\$42,000		
FY 2015 - 2016 Budget Equipment (expendable)											
FY Funds (original) \$150,000 Equipment (non-expendable)											
	(revised) Travel \$8,000										
Est. FY Expend	diture	9	\$150,000		Other						
			PURPOSI	E A	ND SCOPE						
Ine research w under the initial shallow soil sub boring informat and added to th There will likely Information Ma data. Pile load also be added system/templat addressed. Se addressed.	PURPOSE AND SCOPE The research will address the needs of HQ Pavement and Geotechnical and expand on work developed under the initial and Phase 2 projects. The research would add modules to the system. Specifically: shallow soil subgrade survey data, including Dynamic Cone Penetrometer (DCP) data, and district auger boring information. This data should be incorporated into the database; and like deep borings, be plotted and added to the plans, via a standardized template accessible to districts and designers for analysis. There will likely be some linkage to ongoing work by the Materials Lab on Materials Manager/ Laboratory Information Management System (LIMS) in order to access the data without replication or duplication of data. Pile load test data, driving records, Ground Penetrating Radar (GPR), and other information could also be added to the database and be made digitally available and accessible via GIS systems. A tracking system/template, incorporated with SharePoint (software already within the department) will also be addressed. Security issues within IT regarding public access to geotechnical borings logs will also be addressed.										
FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS											
Meetings were Design and the comprehensive	Meetings were held with critical/experienced personnel within the Districts, the Materials Lab, Geotechnical Design and the Pavement Management Groups. Information was collected and will be formulated into a comprehensive interim report that will outline several options on how to proceed.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
The project will completion of the second s	impl he G	lement the eotechnica	activities recommend I Database.	ed	by the Project	Reviev	w Committee	e, toward	d the		

Title:	Support Study to ITRS proposal on "An Integrated Fitle: Computational and Experimental Study of Pile Setup in Soft Project Status: Ongoing Clays" Clays Clays									
Funding	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
SIO				30001220		Project Start	Date [.]			2/18/2013
Researc	h Proie	ect N	umber:	13-7GT		Completion	Date	(original)		2/17/2016
Researc	h Agen	ncv:		LTRC		Completion I	Date	(revised)		6/30/2017
Principa	l Invest	tigato	or:	Murad Abu-Farsakh	۱	, i		. ,		
				Budg	ЕТ 🖁	STATUS				
		Т	otal Budge	t		I	Estima	ted 2016-201	7 Budge	t
Total Co	ost	(orig	inal)	\$50,000		Total				\$9,217
		(revi	sed)	\$90,000						
Est. Exp	ended	to D	ate	\$53,137		Salaries				\$9,217
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Func	FY Funds (original) \$8,668 Equipment (non-expendable)									
	(revised) \$11,804 Travel									
Est. FY	Est. FY Expenditure \$11,804 Other									
				PURPOS	E A	ND SCOPE				
during th and Exp proposa -To deve fundam phenom -To form transfer -To esta comme	PURPOSE AND SCOPE This support study is setup to provide the additional support fund for the CO/PI: Dr. Murad Abu-Farsakh during the three years duration of the Board of Regents funded proposal on "An Integrated Computational and Experimental Study of Pile Setup in Soft Clays". The objectives of the research project, as stated in the proposal, are: -To develop, via laboratory testing, field instrumentation and testing, and numerical modeling, a fundamental understanding of the physical and scientific mechanisms underlying the pile setup phenomenon; -To formulate an analytical model/equation for estimating and predicting pile setup with time, which can be transferred to various private sectors for the design and construction of driven pile foundations; and -To establish the plans and mechanisms for transforming the research findings into exploitable, commercially feasible technologies to enhance the economic development in Louisiana and the nation.									
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENT	S		
 Installed instrumentations for the test piles at Baton Rouge site; Conducted in-situ and laboratory tests to characterize the soil type at Baton Rouge site; and Conducted finite element numerical modeling. 										
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Install ir -Install tl -Start te -Conduc	 Install instrumentations in the surrounding soils for the Baton Rouge site; Install the test piles at the Baton Rouge site; Start testing the piles at Baton Rouge site; and Conduct in-situ and laboratory tests to characterize the soil type at New Orleans site. 									

Title:	Monite Bridge	nitoring of In-Service Geosynthetic Reinforced Soil (GRS) Ige Abutments in Louisiana								
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
SIO:				30000981		Project Start	Date:			10/1/2014
Resear	rch Proje	ect N	umber:	13-5GT		Completion I	Date	(original)		9/30/2016
Resear	rch Ager	ncy:		LTRC		Completion I	Date	(revised)		
Princip	al Invest	tigato	or:	Murad Abu-Farsakh	۱					
				Budg	ET	STATUS				
		Т	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total C	Cost	(orig	inal)	\$232,200		Total				\$54,895
		(revi	sed)	\$302,200					-	
Est. Ex	pended	to D	ate	\$206,300		Salaries				\$54,895
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Funds (original) \$103,277 Equipment (non-expendable)										
	(revised) \$135,000 Travel									
Est. FY	/ Expend	diture	9	\$137,600		Other				
				PURPOS	ΕA	ND SCOPE			-	
Admini the FH design their co System probler of bridg under s Maree	Purpose AND Scope Traditional bridge construction can be slow, expensive, and complex. Researchers at the Federal Highway Administration (FHWA) recognized that bridges could be built better, faster, and for less money. In 2010, the FHWA introduced an initiative "Every Day Counts" (EDC) to promote technologies that speed up the design and construction of highway projects such as bridge abutments, while at the same time reducing their costs. One promising technology is to use Geosynthetic Reinforced Soil (GRS) in the Integrated Bridge Systems (IBS). The use of GRS can also help in eliminating/minimizing the roadway and bridge "bump" problem. The purpose of this research study is to apply the GRS technology in the design and construction of bridge abutments in Louisiana; and evaluate the performance of GRS abutments during construction and under service loads. The project will include instrumenting and monitoring selected GRS bridge abutment at Maree Michel Bridge.									
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENT	S		
-Condu abutm -Prepa GRS a -Installe at the -Condu cone t -Starte monito	 -Conducted literature review relevant to the geosynthetic reinforced soil and its application for bridge abutments; -Prepared an instrumentation plan for monitoring the GRS bridge abutment at the Maree Michel Bridge GRS abutment; -Installed the instrumentations (e.g., pressure cells, piezometers, SAA, strain gauges) in the GRS abutment at the critical locations to obtain reliable and meaningful important measurements; -Conducted static load tests on the GRS-IBS abutment using a heavy weight dump truck and the 20 ton cone truck, stationed at different locations along the bridge and from the centerline; -Started monitoring the performance of the GRS-IBS abutment at Maree Michel Bridge; and -Started analyzing the data collected during the static load tests and measurements of instruments during monitoring. 									

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue literature review relevant to the geosynthetic reinforced soil and its application for bridge abutments;

-Continue monitoring and collecting data for the Maree Michel GRS Bridge abutment site;

-Continue analyzing the collected field data;

-Plan for another loading on the GRS bridge abutment; and

-Start the finite element parametric study.

Title:	Finite Pile G	Finite Element Analysis of the Lateral Load Test on Battered Project Status: Ongoing Pile Group at I-10 Twin Span Bridge Description Description Description									
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	udget	Category:	FHWA		
				1		I					
SIO:				DOTLT1000103		Project Start	Date:			3/1/2016	
Resear	ch Proje	ect N	umber:	13-3GT		Completion I	Date	(original)			
Resear	ch Agei	ncy:		LTRC		Completion I	Date	(revised)		5/31/2018	
Principa	al Inves	tigato	or:	Murad Abu-Farsakh							
				BUDGE	ET \$	STATUS					
		Т	otal Budge	t		I	Estimat	ed 2016-2017	7 Budget	:	
Total C	ost	(orig	inal)	\$260,368		Total				\$82,160	
		(revi	sed)								
Est. Ex	pended	to D	ate	\$20,000		Salaries				\$79,160	
	F	TY 20	15 - 2016 Bu	udget		Equipment	(expend	dable)			
FY Funds (original) \$20,000 Equipment (non-expendable) \$3,									\$3,000		
(revised) Travel											
Est. FY	Expen	diture	9	\$20,000		Other					
				PURPOSE	E A	ND SCOPE					
A unique Pontcha evaluate can prov calculati methods which so (assume MultiPie describe of soil, s desirable elastic o loading.	Purpose AND Scope A unique full-scale lateral load test was conducted at M19 pier of the new I-10 Twin Span Bridge over Lake Pontchartrain to assess the current methodology used in the design and analysis of batter pile group foundations and to evaluate their performance under lateral loading. Measurements obtained from instrumentations (inclination and strains) can provide valuable information for use in the analysis of lateral behavior of battered pile foundations and for back- calculating the soils' p-y curves. Two approaches can be used to analyze the lateral behavior of piles: simplified p-y methods and continuum-based FE methods. The simplified methods are based on the theory of subgrade reaction, in which soils surrounding piles are simplified as a set of linear or nonlinear springs resenting the soils' resistances (assumed p-y curves) to lateral movement of piles. With the development of computer softwares, such as LPile and FB- MultiPier, this approach has been widely used for design of laterally loaded piles. However, the p-y method cannot describe the three dimensional nature of the problem, pile geometry, different boundary conditions, continuum behavior of soil, soil-structure interface effect and soil-porewater pressure interaction. The continuum-based FE analysis is desirable for a better understanding of the problem. The continuum-based methods treat the soils surrounding piles as elastic or elasto-plastic continuums using constitutive models that can describe the actual behavior of soils under any loading.										
In order develop finite ele The pile continuu the elast Coulomh Once the evaluate results fi of latera soil type design o	In order to better understand the behavior of batter pile group foundations subjected to lateral loading, we propose to develop a three-dimensional finite element model to analyze the lateral load test that was conducted at M19 pier. The finite element technique is a powerful tool that can simulate the behavior of complex soil-structure interaction problems. The piles and foundation (pile cap) will be simulated as solid elements. The surrounding soils will be treated as a continuum media (instead of springs), representing the actual soil properties and their behavior will be described using the elasto-plastic anisotropic modified cam clay model. The soil-pile interaction will be also simulated using Mohr Coulomb frictional criteria. The finite element model will be first calibrated using the results of full-scale test at M19 pier. Once the model is calibrated, it will then be used to conduct a comprehensive finite element parametric study to evaluate the effect of different variables and parameters on the lateral performance of batter pile group foundations. The results from parametric study will be used to evaluate the group effect of piles (p-multipliers), evaluate the contribution of lateral loads transferred to battered piled in axial direction, and develop p-y curve models that represent the different soil type and conditions in Louisiana for implementing in the FB-MultiPier and other programs for future analysis and design of batter pile group foundations.										

LTRC Annual Research Program

Fiscal Year 2016-2017

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

-Started literature review relevant to the lateral behavior of single and group of piles;

-Started the development of three-dimensional finite element numerical models to simulate the lateral behavior of vertical and battered pile group foundations; and

-Started Verifying the finite element model using the results of a full-scale static lateral load test that was conducted at I-10 Twin Span Bridge.

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue literature review relevant to the lateral behavior of single and group of piles;

-Complete the development of three-dimensional finite element numerical models to simulate the lateral behavior of vertical and battered pile group foundations;

-Verify the finite element model using the results of a full-scale static lateral load test that was conducted at I-10 Twin Span Bridge; and

-Start the finite parametric study to evaluate the lateral behavior of battered pile group foundations as compared to vertical pile group foundations and single vertical pile.

Title:	Accel Paven	Accelerated Load Testing of Geosynthetic Base Reinforced Project Status: Ongoing Pavement Test Sections								
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
SIO:				30000135		Project Start	Date:			12/1/2010
Resear	ch Proje	ect N	umber:	11-3GT		Completion I	Date	(original)		5/31/2012
Resear	ch Ager	псу:		LTRC		Completion I	Date	(revised)		6/30/2016
Principa	al Inves	tigato	or:	Murad Abu-Farsak	n					
				Budo	SET (STATUS				
		Т	otal Budge	t		l	Estimat	ed 2016-2017	7 Budget	t
Total C	ost	(orig	inal)	\$297,579		Total				\$37,398
		(revi	sed)	\$656,370						
Est. Exp	pended	to Da	ate	\$631,369		Salaries				\$37,398
	F	Y 20	15 - 2016 Bu	ıdget		Equipment	(expend	lable)		
FY Fun	ds	(orig	inal)	\$95,800		Equipment	(non-ex	pendable)		
		(revi	sed)	\$95,000		Travel				
Est. FY	Est. FY Expenditure \$95,000 Other									
				PURPOS	SE A	ND SCOPE			<u>.</u>	
The ma reinforc effect o perform unpave geotext parame Guide a site con	PURPOSE AND SCOPE The main objective of this research study is to evaluate the benefits of geosynthetics stabilization and reinforcement of subgrade/base aggregate layer in flexible pavements build on weak subgrades, and the effect of pre-rut of pavement sections prior to the construction to HMA layer on geosynthetics benefits and performance. This will be achieved through conducting accelerated load testing on geosynthetic reinforced unpaved and pavement test sections to be constructed at the ALF site. Different types of geogrids and geotextiles will be considered for base reinforcements. Another objective is to evaluate the design parameters of geosynthetic reinforced flexible pavement in terms of the 1993 AASHTO Pavement Design Guide and possibly the MEPDG that can provide a more suitable pavement structure design responsive to									
				FISCAL YEAR 2015	20′	16 ACCOMPLIS	HMENTS	;		
-Condu 360,00 -Compl -Compl -Compl -Compl -Worke -There repairs	-Conducted accelerated load tests on the paved test lane sections. Completed 210,000 passes on lane 1, 360,000 passes on lanes 2, 3, and 4, 410,000 passes on lane 5, and 75,000 passes on lane 6; -Completed all the six field cyclic plate load tests on the test lane sections at ALF; -Completed the laboratory resilient modulus tests on subgrade and base materials; -Completed the dynamic test on asphalt material; -Worked on analyzing the experimental test results; -There were several delays on accelerated load testing due to the need for machine maintenance and repairs; and -The criteria for accelerated load testing were increased from 0.75 inch to 1 inch rut depth.									
	Fiscal Year 2016-2017 Proposed Activities									
-Contin 1 inch -Contin -Study 1 -Prepar	Continue performing accelerated load testing on the paved test lane sections to achieve the new criteria of 1 inch rut depth; Continue analyzing the experimental test results; Study the cost benefit of geosynthetic reinforced pavements; and Prepare a draft final report.									

Title:	In Situ Cemer Load T	Eva ntitic fests	aluation of ously Treat s	Design Parameters ed Weak Subgrade	Project S	Project Status:				
Funding Source: SPR: TT-Fed/TT-Reg						В	FHWA			
SIO:				30000661		Project Start	Date:			3/18/2013
Resear	Research Project Number:			11-1GT		Completion	Date	(original)		9/17/2015
Resear	ch Agen	cy:		LTRC		Completion	Date	(revised)		12/31/2016
Principa	al Invest	igato	or:	Murad Abu-Farsakh	٦					
				Budg	ET	STATUS				
		Т	otal Budge	t		I	Estima	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$294,679		Total				\$41,523
		(revi	sed)	\$354,679						
Est. Ex	pended	to D	ate	\$222,400		Salaries				\$39,523
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)	\$2,000	
FY Fun	nds	(orig	inal)	\$83,000		Equipment	(non-e	xpendable)		
		(revi	sed)	\$22,500		Travel				
Est. FY	' Expend	liture	e	\$22,400		Other				
				PURPOS	E A	ND SCOPE				
treated modulu the pay of the p soils is subgrad Therefo subgrad projecto resilien box wit tests, ro sample Geogan conduc	The purpose of this research study is to evaluate the design parameters and procedures for cementitious treated soft subgrade soil using cyclic plate load tests. This includes evaluating the composite resilient modulus (Mr)of various cementitious (cement, lime, flyash)treated soft subgrade materials for inclusion in the pavement design. A treated subgrade soil has many characteristics that contribute to the performance of the pavement structure. As such, an adequate evaluation of the design parameters of treated subgrade soils is necessary in pavement analysis and design. The resilient modulus is a key input parameter for subgrade soil in both the 1993 AASHTO and the Mechanistic-Empirical Pavement Design Guide (MEPDG). Therefore, the determination and use of the "composite" resilient modulus of cementitious treated soft subgrades can provide a more suitable pavement structure design responsive to site conditions and projected loading is crucial in pavement design process. The work program includes conducting in-box resilient and permanent deformation tests using cyclic plate load tests on sections build inside a steel test box with dimensions of 6.5 ft (length) × 6.5 ft (width) × 5.5 ft (height. Laboratory unconfined compression tests, resilient mod repeated plate load tests will be also conducted on cementatious treated soft subgrade samples. In addition, Dynamic Cone Penetrometer (DCP), Light Falling Weight Deflectometer (LFWD), Geogauge, Portable Seismic Pavement Analyzer (PSPA) tests, and repeated triaxial load tests will be									
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENT	S		
 -Completed phase 1 of the study. Evaluated the resilient modulus of cementitious treated hauled soil for phase 1; -Completed the laboratory repeated load triaxial tests to evaluate the resilient modulus and permanent deformation of treated in-situ wet soils for phase 2; -Completed the shrinkage and tube section tests; -Prepared an interim report for the laboratory testing of phase 1 & 2; -The Phase II cyclic plate load testing of this project was temporary on hold due to the use of this facility in another research project; and -Repaired the oil leak of the cyclic plate load testing facility. 										

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Purchase the instrumentations needed for phase II cyclic plate load tests; -Construct eight cementitious treated subgrade soil sections at ALF site; and -Conduct cyclic plate load tests on cementitious treated subgrade soil sections.

Title:	LTRC Engin	Sup eerir	port for Ge	eotechnical Research at the Geotechnical Project Status: Ongoin the Context of th						
Fundin	Funding Source: SPR: TT-Fed/TT-Reg					E	Budget	Category:	FHWA	
						I				
SIO:				30000111		Project Start	: Date:			7/1/2010
Resear	ch Proje	ect N	umber:	10-1GERL		Completion	Date	(original)		6/30/2015
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		6/30/2018
Principa	al Inves	tigato	or:	Murad Abu-Farsakl	n					
				Budg	SET (STATUS				
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budge	t
Total C	ost	(orig	inal)	\$523,000		Total				\$224,051
		(revi	sed)	\$13,991,168					r	
Est. Ex	pended	to D	ate	\$1,060,000		Salaries				\$156,051
	F	FY 20	15 - 2016 Bu	udget		Equipment	(expend	dable)	\$50,000	
FY Fun	ds	(orig	inal)	\$170,000		Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				\$18,000
Est. FY	Expen	diture	9	\$170,000		Other				
				Purpos	SE A	ND SCOPE			•	
The obj -Perforn technic -Advan -Provid advanc -Develc	ectives m suppo cal assis ce the s e develo cing the pp probl	of th ort stanc state- opme perfe em s	is research udies to me e and resea of-the-art ir ent, support ormance of tatements a	are to: eet the beneficiary re- arch; a geotechnical and ge and training of new the transportation sy and research propose	quir eosy and /ste als.	ements for ge ynthetic resea l innovative tee m, and	otechni rch; chnique	cal and geo es, software	synthetio and equ	c testing, ipment for
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENTS	;		
 Provided geotechnical testing support and technical assistance for the Louisiana Department of Transportation and Development (LADOTD); Published several technical papers/proceedings/reports on findings of the Louisiana Transportation Research Center (LTRC) research projects; Developed potential ideas and problem statements for future LTRC research projects; Developed research proposal on "Finite Element Analysis of the Lateral Load Test on Battered Pile Group at I-10 Twin Span Bridge", "Incorporating the Site Variability and Laboratory/In-situ Testing Variability of Soil Properties in Geotechnical Engineering Design", and "Verification and Implementation of Pile Set-up Analytical Estimation Methods"; and Maintained software's related to CPT application. 										
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S		
 Provide geotechnical and geosynthetic testing support and technical assistance for LADOTD; Provide support and training for implementation of research results; Develop research proposals and problem statements for future activities; Publish research findings on technical papers and reports; and Maintain and upgrade CPT software's. 										

Title:	itle: Quality Management of Cracking Distress Survey in Flexible Pavements Using LTRC Digital Highway Data Vehicle						Project S	tatus:	Ongoing	
Funding Source: SPR: TT-Fed/TT-Reg						Budget Category: FHWA				
SIO: DOTLT1000107						Project Start	Date:			4/1/2016
Resear	ch Proje	ect N	umber:	16-6P		Completion	Date	(original)		3/31/2018
Resear	ch Ager	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Invest	tigato	or:	Zhong Wu		-		I		
				Budg	ET	STATUS				
		Т	otal Budge	t			Estimat	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$170,588		Total				\$94,500
		(revi	sed)							
Est. Ex	pended	to D	ate	\$9,000		Salaries				\$94,500
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)	\$64,324		Equipment	(non-e:	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expend	diture	9	\$28,333		Other				
			-	PURPOS	E A					
The Louisiana Department of Transportation and Development (LADOTD) is currently implementing the AASHTO's new Mechanistic-Empirical pavement design software- Pavement ME, which was locally calibrated based on the PMS database. The objectives of this research are to compare and validate cracking survey results on selected flexible pavements obtained from the Louisiana Transportation Research Center (LTRC) data collection system and from the Louisiana current contracted application; to investigate the feasibility of converting the existing PMS cracking data to comply with the MEPDG definition of cracking; and to recommend a cracking analysis procedure for flexible pavements using LTRC's Digital Highway Data Collection System.										
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENT	S		
-Conducted literature review; and -Selected asphalt pavement test sections.										
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Collect Pavement Images Using LTRC's Digital Highway Data Vehicle; and -Validate the Cracking Distress from LTRC's Data Collection System and LADOTD Current Contracted Pavement Distress Analysis Application.										

Title: Asse Whee	ssme I Def	ent of Struc lectometer	ctural Capacity Indic	ral Capacity Indicators from Rolling Project St Project St					
Funding Sou	Funding Source: SPR: TT-Fed/TT-Reg				Budget Category:			FHWA	
					1				
SIO: DOTLT1000009					Project Start	Date:			7/1/2014
Research Proj	ect N	umber:	14-2P		Completion	Date	(original)		12/31/2015
Research Age	ncy:		LSU		Completion	Date	(revised)		6/30/2017
Principal Inves	stigate	or:	Mostafa Elseifi						
			Budg	SET (STATUS				
	1	Total Budge	t			Estimat	ed 2016-201	7 Budge	t
Total Cost	(orig	jinal)	\$103,287		Total				\$82,000
	(revi	sed)	\$170,213						
Est. Expended	l to D	ate	\$88,280		Salaries				\$82,000
	FY 20	15 - 2016 Bu	udget		Equipment	(expend	dable)		
FY Funds	(orig	jinal)	\$33,220		Equipment	(non-ex	pendable)		
	(revi	sed)	\$33,220		Travel				
Est. FY Expen	diture	e	\$33,220		Other				
			PURPOS	SE A	ND SCOPE			-	
This project evaluated structural capacity indicators in predicting pavement structural deficiency based on RWD measurements. Based on this evaluation, the research team introduced modifications to improve prediction of pavement structural deficiency. This project will develop a methodology to integrate the most promising structural capacity indicators into the Louisiana Pavement Management System (PMS). In addition, this project will assess the cost-efficiency of RWD testing in identifying and repairing structurally-deficient sections prior to reaching very poor conditions. A project modification was approved by the Project Review Committee (PRC) to complement the research activities currently conducted under LTRC Project 14-2P by investigating the feasibility of determining the subgrade modulus from RWD data and by analyzing deflection measurements that will be conducted in the near future using the TSD in the State.									
			FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENTS	5		
A meeting was the proposed p new methodol study will be p	A meeting was held with the PRC on February 23, 2016 to present the results of the study and to discuss the proposed project modification. During this meeting, the cost efficiency of RWD was presented and a new methodology to implement RWD into PMS and the design of overlays was discussed. Findings of the study will be presented in an interim report, which will be submitted in early May to the PRC.								
			FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s		
 -Develop a methodology for predicting the Subgrade modulus from RWD Data; -Analyze TSD measurements to be collected in Louisiana; -Establish the relationship between TSD and FWD measurements -Develop a methodology to back calculate layer moduli from TSD; and -Investigate the rate of deterioration for selected pavement sections from the original testing program in 2009 to the new testing program to be conducted in summer 2016; 									

Title: R	Roller Compacted Concrete Over Soil Cement Under Accelerated Loading							Project Status:	
Funding Source: SPR: TT-Fed/TT-Reg					Budget Category: FHWA				
SIO:			30000682		Project Start	Date:			5/1/2012
Research	Project	Number:	12-7P		Completion	Date	(original)		4/30/2014
Research	Agency	:	LTRC		Completion	Date	(revised)		7/31/2016
Principal Ir	nvestiga	ator:	Zhong Wu						
			Budo	SET :	STATUS				
		Total Budge	t			Estimat	ted 2016-201	7 Budge	t
Total Cost	t (o	riginal)	\$363,959		Total				\$8,200
	(re	evised)	\$476,270					1	
Est. Exper	nded to	Date	\$437,000		Salaries				\$8,200
	FY 2	2015 - 2016 B	udget		Equipment	(expen	dable)		
FY Funds	(o	riginal)	\$100,283		Equipment	(non-e)	xpendable)		
	(re	evised)			Travel				
Est. FY Ex	kpenditu	ire	\$91,000		Other				
			PURPOS	SE A	ND SCOPE				
The object new RCC- (LADOTD) cement ba sections (e	tive of th -surface) and ev ase pave each of	his research d pavement raluate the st ements unde 71.7-ft long a	is to document the ex type for the Louisian ructural performance r accelerated pavem and 13-ft wide) will be	kper a De and ent e co	ience of mix d epartment of T d load carrying testing. Six RC nstructed for th	lesign a Transpo g capao CC acc his reso	and construc ortation and I city of RCC s elerated pav earch study.	ction pra Develop surfacing ement to	ctice of a ment g soil esting (APT)
			FISCAL YEAR 2015	· 20′	16 ACCOMPLIS	HMENT	S		
-Completed the accelerated loading of 4" RCC over 12" cement treated soil section (Section 3); -Completed the accelerated loading of 6"RCC over 12" cement treated soil section (Section 2); and -Partially loaded the accelerated loading of 8"RCC over 12" cement treated soil section(Section 1).									
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Prepare th	he final	report.							

Title:	Minim Throu	izing gh N	g Shrinkag licro-Cracl	hrinkage Cracking in Cement-Stabilized Bases Project Status: Ongoi							
Fundin	Funding Source: SPR: TT-Fed/TT-Reg					Budget Category:			FHWA		
									1		
SIO:				30000729		Project Start	Date:			11/1/2012	
Resear	ch Proje	ect N	umber:	12-3P		Completion	Date	(original)		4/30/2016	
Resear	ch Ager	ncy:				Completion	Date	(revised)		10/31/2017	
Principa	al Inves	tigato	or:	Zhong Wu							
				BUDG	ET	STATUS					
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$200,000		Total				\$58,500	
		(revi	sed)	\$275,773					1		
Est. Ex	pended	to D	ate	\$190,600		Salaries				\$58,500	
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	dable)			
FY Fun	ds	(orig	inal)	\$33,132		Equipment	(non-ex	pendable)			
		(revi	sed)			Travel					
Est. FY	Expend	diture	;	\$33,000		Other					
				PURPOS	SE A	ND SCOPE			•		
Micro-c associa reporte reducin great po The ma effectiv paveme identifie layer, it perform paveme	racking ated with d that m g the to otential ain purpo eness of ents thro ed and s should ned befor ents afte	is a pav nicro- tal le to re ose c f usin be r be m ore an	construction rements that cracking im ngth, or bo duce the ris of this study ng micro-cr field test set ted for this noist-cured nd after the e year in-set	n process used to real thave cement-treated proves the performa th. Through these me sk of reflective crackin v is to document the r acking to reduce shri ections. Several new study. After placeme 2 or 3 three days before micro-cracking to me ervice will be collected	duc ed o ince echa ng c micr inka cer nt a fore onit d ar	e the severity or stabilized ba e of soil cemer anisms, the m on soil cement ro-cracking pro age/reflective of ment-stabilized and satisfactor and after mic or the base st nd compared.	of shrin ises. Se icro-cra t pavem ocess in cracking d base of y comp ro-crac rength o	akage cracki everal resea s by reducin- acking proce bents in Loui to Louisiana g problems of construction action of cel king. In situ changes. Re	ng probl rch stud g the cra ss poss isiana. and eva on soil co projects ment sta deflectio eflective	ems ies have ack width, esses a luate the ement s will be abilized on tests will cracking of	
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENTS	5			
-Monitored ALF Micro-cracking test sections: Performed NDT testing (FWD, and LFWD) at different curing times, and Conducted visual crack-mapping for the ALF sections; -Constructed another field Micro-cracking test section including five sub test sections: control of cement stabilized design, or CSD, Micro-cracking CSD, CSD with Double-layer AST, Control of Cement Treated Design, or CTD, and Micro-cracking CTD; and -Performed FWD on field test sections.											
Contin			a the ALE	FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S			
-Contin -Analyz	-Continue monitoring the ALF and two field Micro-cracking test sections; and -Analyze the collected pavement performance data.										
Title:	Assessment of Environmental, Seasonal and Regional Variations in Pavement Base and Subgrade Properties Project Status: Ongoing Inding Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA										
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Funding	g Sour	ce:	SPR: TT-	Fed/TT-Reg	E	Budget	Category:	FHWA			
SIO:				20000425	Project Start	Data:			0/1/2011		
SIU.	h Proic	oct N	umbor:	12.20	Completion	Date.	(original)	8/31/2013			
Posoaro			umber.		Completion	Date			6/30/2018		
Principa		icy.	or:	Kevin Gaspard	Completion	Dale	(Tevised)		0/30/2010		
		iguit	JI.	Bunge	T STATUS						
		т	otal Budge	t		Estimat	ed 2016-201	7 Budge	ł		
Total Co	ost	(oria	inal)	\$262,210	Total			. Daage	\$90 414		
	501	(revi	sed)	\$529,685	lotai				<i>\</i> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
Est Exp	ended	to D	ate	\$400,000	Salaries				\$85 414		
	F	Y 20	15 - 2016 Bi	udget	Equipment	(expend	dable)		<i>\</i> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
FY Fund	ds	(orig	inal)	\$118.956	Equipment	(non-ex	(pendable)				
		(revi	sed)	·····	Travel	,	, ,				
Est. FY	Est EX Expenditure \$130,000 Other \$5,000										
			-	PURPOSE	AND SCOPE			<u> </u>	+-,		
The purp and sub- from Soi (LADOT data fror study wi model a	pose of grade, il Unit M D) Geo m the F ill be co nd build	this valid Japs otech alling onduc d nev	project is to late MEPDO a, link soil un nical data b g Weight D cted through w future clir	o validate the prediction G provided soil properti- nit maps with the Louis base, document water eflectometer (FWD) an h the Southeast Super- natic models to be utiliz	n of seasonal va ies and strength iana Department table depths, ar ad Dynamic Cor pave Pool Fund zed in the MEP	ariation ns, valic nt of Tra nd obtai ne Pene I Study DG.	strengths in late soil prop ansportation in Level 2 m strometer (D to refine the	the bas perties a and De odulus i CP). A c historic	se course and locations evelopment nputs with companion al climatic		
				FISCAL YEAR 2015 - 2	016 ACCOMPLIS	HMENTS	3				
-Finish la -Write in	-Finish laboratory testing on the 14 research sites; and -Write interim report.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Finish la -Collect -Finish ii	-Finish laboratory testing on 14 research sites; -Collect FWD and DCP data on research sites seasonally; and -Finish installing TDRS and suction gauges.										

Title:	Assessment of Pavement Distresses caused by Trees on Rural Highway Project Status: Ongoing Funding Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA										
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		B	Budget	Category:	FHWA	L	
				1							
SIO:				30000607		Project Start	Date:	[2/1/2012	
Resear	rch Proj	ect N	umber:	12-1P		Completion I	Date	(original)		7/1/2014	
Resear	rch Agei	ncy:		LTRC		Completion I	Date	(revised)		6/30/2018	
Princip	al Inves	tigato	or:	Kevin Gaspard							
				Budgi	ЕТ 🕄	STATUS					
		٦	Total Budge	t		I	Estimat	ted 2016-201	7 Budge	t	
Total C	Cost	(orig	inal)	\$341,459		Total				\$81,279	
		(revi	sed)						-		
Est. Ex	pended	to D	ate	\$190,000		Salaries				\$76,279	
	F	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Fun	nds	(orig	jinal)	\$81,181		Equipment	(non-ex	xpendable)		\$5,000	
		(revi	sed)	\$130,000		Travel					
Est. FY	Est. FY Expenditure \$100,000 Other										
				PURPOSI	E A	ND SCOPE			<u></u>		
Pavem Louisia change Water particul swelling sometin state of evapoti assista	Purpose AND Scope Pavement surface and foundation distresses due to shrinking and swelling soils are an issue on certain Louisiana Highways which is the focus of this study. Desiccation is a common phenomenon due to diurnal changes in soil moisture content and can be caused by three primary sources (Evaporation, Transpiration, Water Table Fluctuations), hereafter referred to as Evapotranspiration . Expansive clay soils (PI>20) are particularly vulnerable to changes in moisture content; shrinking during the drying cycles (desiccation) and swelling during wetting cycles (recharge). While research has been conducted in these areas, though sometimes sparingly, assessment guidelines for soil characterization, environmental factors, and the stress state of the pavement system coupled with appropriate cost effective mitigation methods for evapotranspiration distresses on Highways will be provided through a comprehensive report and technical assistance to the Districts.										
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENT	S			
Instrum section loggers imaging	Instrument the six test sections on LA 493 and complete soil laboratory testing on the soils. Monitor the test sections seasonally, (January, March, June, and September.) In addition to collect data from the data loggers, elevations will be taken on the sections, and the pavement will be monitored for cracking with our imaging and profiling vehicle.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Monito -Comp	Monitor LA 493 and LA 454 instrumentation and survey every 3 months; and Complete soil testing on LA 493 and LA 454.										

Title:	Field Validation of Equivalent Modulus for Stabilized Project Statu Field Validation of Equivalent Modulus for Stabilized Project Statu Subgrade Layer Budget Category:									Ongoing	
Fundin	g Sourc	ce:	SPR: TT-I	Fed/TT-Reg		В	Budget	Category:	FHWA		
SIO				30000610		Project Start	Date:			5/1/2012	
Resear	ch Proie	oct N	umber:	12-11P			Date	(original)	4/30/2014		
Resear	ch Agen		unber.			Completion	Date	(revised)		5/1/2017	
Principa	al Invest	ioy.	or:	Mark Martinez		Completion	Buto	()		0, 1/2011	
- 1 -		<u> </u>	-	Budg	ET	STATUS					
		т	otal Budget	t			Estima	ted 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$263.502		Total	\$24,297				
		(revi	sed)	\$287.799					1	. ,	
Est. Exi	pended	to D	ate	\$250.411		Salaries				\$24.297	
	F	Y 20	15 - 2016 Bı	Jdget		Equipment	(expen	idable)		. ,	
FY Fun	ds	(orig	inal)	\$40,840		Equipment	(non-e	xpendable)			
		(revi	sed)	. ,		Travel		. ,			
Est. FY Expenditure \$26,413 Other											
Est. FY Expenditure \$20,413 Purpose									L		
through updated future p specific (LADOT subgrad	The central objective of the research is to validate the newly developed Modulus Analysis spreadsheet through comparison to field collected data so that current pavement design strategies and policies can be updated and modified in an effort to improve long-term performance and increase benefit-cost ratios on future pavement projects. It is also an objective of this research to develop a subgrade stabilization specification (lime and\or cement) of the Louisiana Department of Transportation and Development (LADOTD) that will allow the Department to take design advantage of the structural improvements that subgrade treatment applications provide.										
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENT	S			
-Task 2 hampe HWD c -Task 3 results -Task 4	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS Task 2: Continued HWD and DCP testing on relevant projects. Progress in this area was severely hampered by a chronic long-term problem with the FWD. As a result, FWD was replaced with an HWD. HWD compatibility with FWD checked. Testing resumed; Task 3: Continued compilation of empirical data and continued estimate projections made. Comparison of results attempted and ongoing; and Task 4: Continued development of usage model based on data already collected.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Task 2 -Task 3 continu -Task 4	Task 2: Continued HWD and DCP testing on relevant projects; Task 3: Continued compilation of empirical data and continued projections. Comparison of results to continue; and Task 4: Continued development of usage model based on data already collected.										

Title:	Management and Operation of the Pavement Research Project Status: Ongoing g Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA									Ongoing
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Sudget	Category:	FHWA	1
SIO:				30000141		Project Start Date:				7/1/2009
Resear	ch Proj	ect N	umber:	10-1ALF		Completion Date (original)			6/30/2015	
Resear	ch Agei	ncy:		LTRC		Completion I	Date	(revised)		6/30/2018
Principa	al Inves	tigato	or:	Zhong Wu		1				
				Buda	SET :	STATUS				
		Г	Total Budget	t			t			
Total C	ost	(orig	inal)	\$1,730,000		Total				\$662,000
		(revi	sed)	\$16,682,103						
Est. Ex	pended	to D	ate	\$655,000		Salaries				\$450,000
	F	TY 20	15 - 2016 Bu	udget		Equipment (expendable)				
FY Fun	ds	(orig	jinal)	\$746,000		Equipment (non-expendable)				\$100,000
		(revi	sed)			Travel			\$12.000	
Est. FY Expenditure \$740,000 Other \$100								\$100,000		
	PURPOSE AND SCOPE									
The Pa paveme Center' alternat The obj perform A mana the faci instrum	PURPOSE AND SCOPE The Pavement Research Facility (PRF) is a full scale test facility site designed to test any and all types of pavements using the Australian designed ALF. The purpose of the Louisiana Transportation Research Center's (LTRC's) Pavement Research Facility is to investigate and evaluate economic and practical alternatives to current design and construction practices. The objective of this study is to provide for the management and operation structure of the PRF site in performing full-scale accelerated pavement testing. A manager and two operators will be funded in this study. The scope of the work includes management of the facility, maintenance and operation, preparations of plans for individual experiments, construction and instrumentation activities and planning.									
				FISCAL YEAR 2015 -	· 20 [·]	16 ACCOMPLIS	HMENTS	6		
-Compl -Contin -Constr	Completed the loading on RCC test sections; Continued the ALF loading on Geo-grid reinforced test sections; and Constructed three test sections of bonded concrete overlay and started the ATLaS30 loading.									
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-ATLaS -Compl -Prepar	ATLaS30 loading of the bonded overlay sections; Completion of ALF loading on Geo-grid reinforced test sections; and Prepare new concrete test sections.									

Title:	Evalu Stres	Evaluation of Non-SBS Modified Binders using the Multiple Stress Creep Recovery Test Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA								
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
						1			ı T	
SIO:				DOTLT1000095		Project Start	Date:			9/30/2015
Resear	ch Proj	ect N	lumber:	16-4B		Completion I	Date	(original)		9/30/2016
Resear	ch Age	ncy:		LTRC		Completion I	Date	(revised)		11/30/2016
Principa	al Inves	tigate	or:	Samuel Cooper, III						
				Budg	ET	Status				
			Fotal Budget	t		Estimated 2016-2017 Budget				
Total C	ost	(orig	jinal)	\$84,065		Total				\$55,500
		(revi	ised)	\$85,797						
Est. Ex	pended	to D	ate	\$24,500		Salaries				\$55,500
•	I	FY 20	15 - 2016 Bu	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	jinal)	\$68,000		Equipment	(non-ex	(pendable)		
		(revi	ised)			Travel				
Est. FY Expenditure \$24,500 Other										
	•			PURPOS	EA				<u></u>	
Latex m asphalt will be o force du state. F be colle	The objective of the research is to characterize the elastic response of Crumb Rubber Modified (CRM) and Latex modified binders used in the Louisiana Department of Transportation and Development (LADOTD) asphalt mixtures using the MSCR. Additionally, force ductility and DSR phase angle data of unaged binders will be collected and used to verify the DSR phase angle or MSCR recovery criteria for the replacement of force ductility with. CRM and Latex modified binders will be obtained from asphalt contractors around the state. For each binder type Force Ductility, Elastic Recovery and other sample verification test results will be collected and compared with MSCR test result for binder characterization.									
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	6		
-Condu -Develo -Began	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS Conducted literature review; Developed the test factorial; and Began laboratory testing and data analysis.									
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Contin -Compa -Prepar	Continued collection, evaluation, and analyses of non-sbs modified asphalt cement binders; Compare binder performance to laboratory mixture performance testing; and Prepare draft report.									

Title:	Support Study for Evaluation of Crumb Rubber Modification of Louisiana Mixtures Project Status: Ongoing ing Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA										
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
							<u> </u>			4/4 5/00 4 5	
SIO:		(NI		DOIL11000059		Project Start	Date:		4/15/2015		
Resear			umber:	15-2B		Completion	Date	(original)		//14/2017	
Princip	al Inves	tigato	or:	William Daly		Completion	Date				
		igate		BUDGI	ЕΤ	STATUS					
		т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$160,866		Total				\$86,500	
		(revi	sed)								
Est. Ex	pended	to D	ate	\$83,000		Salaries				\$82,000	
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	lable)		\$4,500	
FY Fun	nds	(orig	inal)	\$85,000		Equipment	(non-ex	pendable)			
		(revi	sed)			Travel					
Est. FY	/ Expend	diture	9	\$68,000		Other					
				PURPOSI	E A	ND SCOPE			•		
The ob of Crun quality include blends assess	jective c nb Rubb control/ standal and cer ed using	of this per M qualit rd SF nents g FTI	s research i lodification ty assuranc IRP Super s will be lab R , DTA an	s to provide chemical of Louisiana Mixtures e (QC/QA) of binders bave rheometer testin oratory aged, the bind d SEM techniques.	su ". 1 g a der	pport to LTRC This research v odified with cr and comprehen will be extrac	C Project will also umb rui nsive cl ted, and	t No. 15-18 evaluate po bber. The bi nemical ana d the extent	entitled otential nder eva lysis, CF of ageir	"Evaluation methods for aluation will RM binder ng will be	
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENTS	;			
-Contin -Contin -Begin	-Continue compiling relevant literature; -Continue material collection; and -Begin laboratory evaluation.										
				FISCAL YEAR 2016-20)17	PROPOSED A	CTIVITIE	S			
-Compl -Contin -Evalua -Begin	Complete literature review; Continue material collection and testing; Evaluate the impact of aging on crumb rubber modified binders; Begin draft final report.										

Title:	Evalu Mixtu	Evaluation of Crumb Rubber Modification of Louisiana Project Status: Ongoing Mixtures Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA										
Fundin	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		B	Budget	Category:	FHWA			
SIO:				DOTI T1000054		Project Start	Data			4/15/2015		
SIU. Resear	ch Proi	oct N	umber:	15-1B			Date.	(original)	4/13/2013			
Resear	ch Age					Completion I	Date	(revised)		2011		
Principa	al Inves	tigato	or:	Samuel Cooper, III			- 0.10	(/				
<u> </u>		<u> </u>		BUDG	ET	Status						
		т	otal Budget	t l			Estimat	ed 2016-2017	7 Budge	t		
Total C	ost	(orig	inal)	\$186,408		Total				\$61,500		
		(revi	sed)									
Est. Ex	pended	to Da	ate	\$102,500		Salaries \$61,				\$61,500		
	F	FY 20	15 - 2016 Bu	ıdget		Equipment	(expen	dable)				
FY Fun	ds	(orig	inal)	\$90,000		Equipment	(non-e)	(pendable)				
		(revi	sed)			Travel						
Est. FY	Expen	diture)	\$78,500		Other						
				PURPOS	EA	ND SCOPE			•			
The obj asphalt perform This res modifie testing,	ective of mixture aance, a search d with of chemio	of this es. T and S will al crumb cal ev	s research i he evaluati CB perform so evaluate o rubber. Th raluation, ar	s to evaluate the effe on will include impac nance. Dense grade potential methods f he binder evaluation nd extraction.	ect o ts o d ar or q will	of using Crumb f modification nd gap graded uality control/ include stand	o Rubb on des I mixtur quality ard SH	er Modified (sign volumeti es will be ev assurance (RP Superpa	(CRM) o ric, LWT /aluated QC/QA) ave Rheo	n Louisiana of binders ometer		
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	6				
-Finaliz -Contin -Contin	-Finalized mixture designs; -Continued compiling relevant literature; and -Continued specimen preparation and laboratory evaluation.											
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES											
-Continue evaluation of various crumb rubber sources; -Continue mixture testing and analysis; and -Begin draft report generation.												

Title:	Effects Mixtur	ts of Temperature Segregation on the Quality of Asphalt Ires Project Status: Ongoing rce: SPR: TT-Fed/TT-Reg Budget Category: FHWA									
Fundin	ng Souro	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:				DOTLT1000008		Project Star	t Date:		8/5/2014		
Resear	ch Proje	ect N	umber:	14-1B		Completion Date (original)				8/4/2016	
Resear	ch Ager	icy:		LTRC		Completion	Date	(revised)			
Principa	al Invest	igato	or:	Louay Mohammad							
				Budgi	ЕТ 🖁	Status					
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$352,662		Total				\$65,000	
		(revi	sed)								
Est. Ex	pended	to D	ate	\$287,662		Salaries				\$55,000	
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Fun	lds	(orig	inal)	\$109,000		Equipment	(non-ex	(pendable)			
		(revi	sed)	\$118,000		Travel					
Est. FY	'Expend	liture)	\$118,000		Other				\$10,000	
				PURPOSI	e ai	ND SCOPE			•		
segreg mass, i tend to differen constru density such as determ mixture scannir section for den tracking	PURPOSE AND SCOPE Segregation in asphalt mixtures is a non-uniform distribution of coarse and fine aggregates all through its mass, i.e., concentration of coarse materials in some area and fine materials in others. Coarse materials tend to cool more rapidly than fine materials, causing temperature segregation, i.e. temperature differentials. Excessive temperature differentials cause variation in the density levels of pavements during construction. These variations in pavement temperature lead to inconsistent compaction levels. A lack of density in the cooler areas of the pavement can cause premature deterioration of those pavement areas such as moisture damage, fatigue cracking, rutting, raveling, pothole, etc. The objective of this study is to determine the effects of temperature segregation on densification and mechanistic properties of asphalt mixtures in Louisiana. Asphalt paving projects across the State will be selected for mat temperature scanning for a reliable analysis on various contributing factors to the temperature segregation. Three test sections from each project will be identified. Cores across the mat from each test section will be secured for density measurements and mechanistic properties from tests such as the Hamburg type loaded wheel tracking and semi-circular bending.										
	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS										
-Condu -Ascert -Collec -Perforu -Condu -Delive -Delive	Conducted thermal profile scanning for three field projects (LA 1053, LA 411, LA 940/939); Ascertained areas of thermal segregation; Collected field cored from non-segregated and thermally segregated areas; Performed density and mechanistic tests; Conducted preliminary data analysis; Delivered presentation at the 2016 TRB Annual Meeting; and Delivered invited presentation at National Asphalt Pavement Association Talks Webinar.										

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue thermal profile scanning for selected field projects as per test factorial;

-Ascertain areas of thermal segregation; -Collect field cored from non-segregated and thermally segregated areas;

-Perform density and mechanistic tests; and

-Conduct data analysis; and

-Prepare draft final report.

Title: Evaluation Of Asphalt Mixtures Containing Recycled Asphalt Project Statu Shingles Project Statu										Ongoing
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:				DOTLT1000007		Project Star	t Date:			4/8/2014
Resear	ch Proj	ect N	umber:	12-1B		Completion	Date	(original)		4/7/2016
Resear	ch Age	ncy:		LTRC		Completion	Date	(revised)		4/7/2017
Principa	al Inves	tigato	or:	Louay Mohammad						
				Buda	SET :	STATUS				
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	t
Total C	ost	(orig	inal)	\$219,476		Total				\$50,000
		(revi	sed)						1	
Est. Ex	pended	to D	ate	\$151,447		Salaries				\$48,500
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	FY Funds (original) \$65,000 Equipment (non-expendable)									
		(revi	sed)			Travel				\$1,500
Est. FY	'Expen	diture)	\$65,000		Other				
				Purpos	SE A	ND SCOPE			Ļ	
mixture ground aggreg mechai Recycle binder Rheolo contras mixture	PURPOSE AND SCOPE The objective of this research project is to evaluate the potential use of roofing shingle in asphalt concrete mixtures. The roofing shingles may be blended with asphalt binder through a wet process, in which the ground recycled material is blended with a virgin binder at high temperature prior to mixing with the aggregates. To achieve this objective, this research will measure experimentally the rheological and mechanical properties of asphalt binders and aggregates extracted from three contrasting sources of Recycled Asphalt Shingles (RAS). The ground recycled material will then be blended with virgin asphalt binder at high temperature and at different RAS content levels. The chemical and physical interaction mechanisms taking place in the blending process will be characterized using rheological testing and GPC. Rheological and mechanical characterization of asphalt binders and aggregates extracted from three contrasting sources of RAS will be performed. In addition, the mechanical properties of asphalt/aggregate mixtures with and without RAS will be evaluated at high, intermediate and low temperatures.									
	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS									
-Charae four co -Prepai -Perfori -Perfori -Delive 2016 A	-Characterized the rheological and mechanical properties of asphalt binders and aggregates extracted from four contrasting sources of RAS and/or RAP; -Prepared asphalt mixtures containing RAS and/or RAP; -Performed chemical and rheological tests on asphalt binders extracted from the above mixtures; -Performed the mechanical tests (LWT, SCB, TSRST) on asphalt mixtures containing RAS and/or RAP; and -Delivered presentations at FHWA Asphalt Mixture Expert Task Group, 2016TRB Annual meeting, and 2016 AAPT Annual Meeting.									

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue the evaluation of recycling agents as per the test factorial;

-Perform chemical and rheological characterization of the extracted binders as per the test factorial; -Perform high, intermediate, and low-temperatures mechanical tests on asphalt mixtures containing RAS and/or RAP;

-Perform data analysis; and

-Prepare draft final report.

Funding Sourd SIO: Research Proje Research Agen Principal Invest Total Cost Est. Expended Est. Expended FY Funds Est. FY Expend Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research projec and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in -Participated in	ce: ect N ncy: tigation (orig (revi to D =Y 20	SPR: TT- Number: tor: Total Budger iginal) vised) Date	Fed/TT-Reg 30000112 10-1EMCRF LTRC Louay Mohammad BUDG t \$345,000	ET {	Project Start Completion I Completion I	Budget Date: Date Date	Category: (original) (revised)	FHWA	7/1/2000				
SIO: Research Proje Research Agen Principal Invest Total Cost Est. Expended FY Funds Est. FY Expended FY Funds Est. FY Expend Similar Strategies for the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in -Participated in	ect N ncy: tigati (orig (revi to D	Number: tor: Total Budge iginal) vised) Date	30000112 10-1EMCRF LTRC Louay Mohammad BUDG t \$345,000	ET {	Project Start Completion I Completion I	: Date: Date Date	(original) (revised)		7/1/2000				
Research Proje Research Agen Principal Invest Total Cost Est. Expended FY Funds Est. FY Expended Est. FY Expended The Engineerin expertise and s materials used of the engineer addition, EMCF research projec and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in	ect N ncy: tigato (orig (revi to D	Number: tor: Total Budge iginal) vised) Date	10-1EMCRF LTRC Louay Mohammad BUDG t \$345,000	ET \$	Completion I Completion I STATUS	Date Date Date	(original) (revised)		7/1/2009				
Research Agen Principal Invest Principal Invest Est. Expended Est. Expended FY Funds Est. FY Expend Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in	tigat (orig (revi to D	tor: Total Budger iginal) vised) Date	LTRC Louay Mohammad Bubg t \$345,000	ET \$	Completion I Completion I	Date	(revised)		6/30/2015				
Principal Invest Principal Invest Principal Invest Total Cost Est. Expended FY Funds Est. FY Expended The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in	(orig (orig (revi	tor: Total Budge ginal) vised) Date	Louay Mohammad Bubg t \$345,000	ET \$	STATUS	Date	(ICVISCO)		6/30/2013				
Total Cost Est. Expended FY Funds Est. FY Expended The Engineerin expertise and s materials used of the engineer addition, EMCF research projec and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in -Participated in	(oriç (revi to D	Total Budge iginal) vised) Date	Bubg t \$345,000	ET \$	STATUS				0/00/2010				
Total Cost Est. Expended F FY Funds Est. FY Expend Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in -Participated in	(oriç (revi to D -Y 20	Total Budge ^(ginal) vised) Date	t \$345,000	_	STATUS								
Total Cost Est. Expended FY Funds Est. FY Expended Est. FY Expended Est. FY Expended The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in -Participated in	(oriç (rev to D -Y 20	iginal) vised) Date	\$345,000	Total Cost (original) \$345,000 Total \$143,000									
Est. Expended FY Funds Est. FY Expended Est. FY Expended The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Developed and -Participated in	(rev to D -Y 20	vised) Date	Total Cost (original) \$345,000 Total \$143,000 (revised) \$14,801,811 ••••••••••••••••••••••••••••••••••••										
Est. Expended FY Funds FY Funds Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in	to D •Y 20	Date	\$14,801,811						÷ · · · · · · · · · · · · · · · · · · ·				
FY Funds FY Funds Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research projec and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in	-Y 20	FY 2015 - 2016 Budget Equipment (expendable)											
FY Funds Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of La Investigators (F -Participated in -Participated in -Participated in -Participated in	Equipment (expendable)												
Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Participated in -Participated in	(oric	ginal)	\$345.000		Equipment	(non-e)	(pendable)		\$10.000				
Est. FY Expend The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Developed and -Participated in	(rev	vised)			Travel		/		\$6.000				
The Engineerin expertise and s materials used of the engineer addition, EMCF research projec and analysis; p for the purpose operations of L Investigators (F -Participated in -Participated in -Developed and -Participated in	ditur	re	\$345,000		Other				<i></i>				
The Engineerin expertise and s materials used of the engineer addition, EMCF research project and analysis; p for the purpose operations of L. Investigators (F	PURPOSE AND SCOPE												
-Participated in -Participated in -Developed and -Participated in	The Engineering Materials Characterization and Research Facility (EMCRF) provides a multi-disciplinary expertise and state-of-the-art research capabilities to assess the fundamental engineering properties of materials used in the transportation industry in Louisiana. EMCRF plays an important role in the evaluation of the engineering properties of materials used in the LTRC's regional pavement testing facility, ALF. In addition, EMCRF provides specialized analytical expertise for on-going as well as newly initiated in-house research projects; develops new software to be used by DOTD engineers; provides experimental design and analysis; provide training for the Department of Transportation and Development (LADOTD) employees for the purpose of adopting newly developed technology and implementation methodology into the daily operations of LADOTD, and, assists in-house Louisiana Transportation Research Center (LTRC) Principal Investigators (PI's) to develop thorough research programs.												
-Participated in -Participated in -Developed and -Participated in			FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENTS	3						
	Participated in the Louisiana LADOTD Parts five and ten Specification Committee; Participated in the organization of the Dynamic Shear Rheometer (DSR) Workshop; Developed and submitted proposals to NCHRP; and Participated in several technical assistance projects.												
		FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES											
-Continue partie -Continue partie -Develop and s -Conduct works		Continue participation in the LADOTD Asphaltic Concrete Specification Committee; Continue participation in technical assistance projects; Develop and submit proposals for external funding; and Conduct workshops and seminars.											

Title:	Rehab Reinfo	oilitat	tion of Det d Polymer	on of Deteriorated Timber Piles using Fiber Polymer (FRP) Composites Project Status: Ongoing								
Fundin	ng Sourc	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA			
				ГГ					1			
SIO:				DOTLT1000043		Project Start	Date:	1	8/3/2015			
Resear	ch Proje	ect N	umber:	15-3ST		Completion	Date	(original)		8/2/2017		
Resear	ch Agen	icy:		West Virginia University		Completion	Date	(revised)				
Principa	al Invest	igato	or:	Hota-WVU GangaR	ao							
				Budg	ET	STATUS						
		Т	otal Budge	t			Estimat	ted 2016-201	7 Budge	t		
Total C	ost	(orig	inal)	\$150,000		Total				\$90,000		
		(revi	sed)						· ·			
Est. Ex	pended	to D	ate	\$30,000		Salaries				\$75,000		
	F	Y 20	15 - 2016 Bi	udget		Equipment (expendable) \$			\$10,000			
FY Fun	lds	(orig	inal)	\$40,000		Equipment	(non-ex	xpendable)				
		(revi	sed)			Travel			\$3,000			
Est. FY	'Expend	liture	9	\$28,300		Other				\$2,000		
				PURPOS	ΕA	ND SCOPE			-			
Timber piles typ approve a long-t to reinfor method enhanc The obj -Detern review -Develor the LA	bridge p pically re ed appro- term solu- orce the for repa- cement the jectives nine the and lab op simpli DOTD.	olles equir bach ution deca air of hrou of th best orato	are highly s res cutting o , certain str a as the exp ayed area w f timber pile gh FRP rep is research t materials a ory testing. design met	susceptible to decay but the damaged sect ingent restrictions are losed heart wood ten- with filler materials to s. However, the insta- bair of piles are sever project are: and rehabilitation tech shods for rehabilitating	in ti tion e in ds t arr illat ely hnic	he vicinity of the and replacing order. This pre- to rot. Using F est future rot of ion methods a lacking. ques to be use eteriorated tim	e wate with n ocess iber Re can be and des ed for F	RP repair these using FRI	eplacem ven for t complet lymer (F ive and es for los rough lit P wraps	ent of these his code re and is not RP) wraps long-lasting ad rerature for use by		
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENT	8				
-Task 1 -Task 2	Task 1: Literature Review; and Task 2: Axial Load Carrying Capacity.											
				FISCAL YEAR 2016-20	017	PROPOSED A	CTIVITIE	S				
-Task 2 -Task 3 -Task 4 -Task 5	2: Axial L 3: Filler S 4: Desigr 5: Guide	oad Selec Me Doc	Carrying C ction; thodology; ument.	apacity; and								

Title:	: Live Load Monitoring of the I-10 Twin Span Bridge Project Status: Ongoing Jing Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA										
Funding	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		В	ludget	Category:	FHWA		
						D 1 4 O 4 4					
SIO:				30001123	_	Project Start	Date:	(· · · · · · · · · · · · · · · · · · ·		8/4/2014	
Researc	ch Proje		umber:	13-251	-	Completion I	Date	(original)		8/3/2016	
Researc	ch Ager	ncy:		LSU Stove Cei		Completion I	Date	(revised)			
Principa	armves	ligato	אנ.		6-	TATUC					
			otal Rudgat	BUDGE	=13		Ectimat	od 2016 201	7 Rudgo		
Tatal Ca	t	(aria		¢170.000	-	Totol	Estimat	ed 2016-201	г Биадеі		
Total Co	ost	(orig	inai)	\$172,209	_	lotal				\$60,000	
Ect Evr	ondod	(revis	sed)	000.002	_	Salarias				\$45,000	
			41E 2016 P	\$90,000	_	Salaries	(0)/0000			\$45,000	
	r do	- 1 20	13 - 2010 BL		-		(expend				
FTFUN	us	(ong		\$65,000	-		(non-ex	pendable)		¢1.000	
	(revised) Travel \$1,000										
ESt. FY	Expend	aiture	<u> </u>	\$50,000		Other			-	\$14,000	
The pro Louisiar Corpora on the I- live loac The obje OSMOS formats;	posed na Depa ation, ha -10 Twi J. ective c S WIM; ; and (3	work artme as ins n Sp of this (2) d 3) det	is a continuent of Trans stalled a contrans an Bridge. s of this pro- evelop a da ermine the	uation of previous worl sportation and Develop mprehensive health m The system is instrum ject is to: (1) validate t ata interface tool to ea effects of traffic loads	the pasily	one on the I-1 ent (LADOTD toring system ed from deck performance produce data instrumented	0 Twin),throug at Pier to piles of the r a downl d compo	Span Bridg gh its contra r M19 of the s to capture monitoring s loads in tabl pnents of the	e where ctor Geo eastbou bridge r ystem a e and gr e structu	the bcomp und lanes esponse to nd the raphical re.	
				FISCAL YEAR 2015 - 2	2016	6 ACCOMPLIS	HMENTS	;			
-Unders -Collecto -Develo -Assess	-Understood the instrumentation details and assessed the performance of the instrumentation system; -Collected field measurement data and made recommendation to improve the system; -Developed strategies to utilize the data to assess vehicle information; and -Assessed the performance of bridge components and system.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Since the instrum -Further -Further -Further -Prepare	-Since the BWIM is not working currently, we will further assess the performance of the other instrumentation system; -Further collect field measurement data; -Further develop strategies to utilize the data to assess vehicle information; -Further assesse the performance of bridge components and system; and -Prepare and complete the final report.										

Title: C	Cost and Time Benefits for using Subsurface Utility Engineering in Louisiana										
Funding §	Source	e :	SPR: TT-	Fed/TT-Reg		B	ludget	Category:	FHWA		
SIO:				DOTLT1000046		Project Start	Date:			1/28/2016	
Research	Projec	t Nu	umber:	15-2SS		Completion Date (original)			6/30/2016		
Research	Agenc	y:		LTRC		Completion I	Date	(revised)		1/28/2018	
Principal I	nvestig	gato	r:	Kirk Zeringue							
				Budg	ET \$	Status					
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget		
Total Cost	t (origi	nal)	\$75,000		Total				\$76,600	
	(revis	sed)	\$152,922							
Est. Exper	nded to	o Da	ate	\$16,000		Salaries				\$55,600	
	FY	201	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Funds	Y Funds (original) \$70,000 Equipment (non-expendable)										
	(revis	sed)	\$32,000		Travel					
Est. FY Ex	xpendit	ture		\$16,000		Other				\$21,000	
				PURPOS	E A	ND SCOPE					
The purpo services; (Highway A greatest a	ose of tl (2) com Adminis and the	he p npar strat typ	broject is to re the retur tion (FHW) e of service	o : (1) establish a rec n on investment of a A), (Purdue) study; a es that provide the gr	ord pply nd (eat	of all major pr ving SUE servi 3) identify pro est savings in	ojects f ices in ject typ time a	that DOTD h Louisiana to les where the nd cost.	as utilize that of t e net be	ed SUE he Federal nefits ar the	
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	6			
The projec Louisiana QL A/B pro	ct starte Depart ojects (ed i tme (Ta:	n February int of Trans sk 1).	2016. A literature resportation and Develo	evie opm	w is underway ent (LADOTD	/ and w) Utilitie	ve have beer es section to	n workin identify	g with the ⁄categorize	
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S			
-Complete -Complete -Complete -Begin Tas	e Task e Task : e Task : sk 4: D	1: Io 2: D 3: S 9ete	dentify/Cat Determine ⁻ Sample LAI rmine Time	egorize QL A and B Time/Cost for identify DOTD projects using e/Cost for identifying	oroj ving QL utili	ects; utilities in Tas C and D; and ties in Task 1.	k 1;				

Title:	Develo Transi	opm t De	ent of a Mo mand	ode Choice Model to	lel to Estimate Evacuation Project Status: Ongoing							
Fundin	ig Sourc	e:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA			
SIO:				DOTLT1000104		Project Start	Date:			3/1/2016		
Resear	ch Proje	ct N	umber:	14-3SS		Completion	Date	(original)				
Resear	ch Agen	су:		LTRC		Completion	Date	(revised)		2/28/2018		
Principa	al Invest	igato	or:	Chester Wilmot								
				Budg	ET	STATUS						
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	ł		
Total C	ost	(orig	inal)	\$182,742		Total				\$116,307		
		(revi	sed)	\$233,614								
Est. Ex	pended	to D	ate	\$25,000	5,000 Salaries \$114,207							
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	lable)		\$100		
FY Fun	ds	(orig	inal)	\$117,307		Equipment	(non-ex	pendable)		\$1,000		
		(revi	sed)			Travel				\$1,000		
Est. FY	Expend	liture	9	\$40,000		Other						
				PURPOS	ΕA	ND SCOPE			-			
Orleans	s, Louisia	ana.	choice mo	der of numcane evac	ual	ion benavior a	na aem		use in M	lew		
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENTS	i				
-Prepar -Literati -Acquis	ration of ure revie sition of c	prop ew; data	oosal; from hurric	ane Irene.								
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S				
-Prepar hurrica emerg -Reviev -Estima	-Prepare data bases including the acquisition of data from hurricane Sandy and supplemental data to both hurricane Irene and hurricane Sandy that describes dynamic storm characteristics, transportation supply, emergency manager actions, and social characteristics of the population; -Review alternative model formulations; and -Estimate models on data.											

Title:	Establ at LTF	lishiı RC (F	ng an Intel Phase II)	ligent Transportatio	tion Systems (ITS) Lab Project Status: Ongoing								
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA				
SIO:				30000140		Project Star	t Date:			8/20/2010			
Resear	ch Proje	ect N	umber:	10-6SS		Completion	Completion Date (original)			11/19/2011			
Resear	ch Ager	ncy:		LSU		Completion	Date	(revised)		6/30/2018			
Principa	al Invest	tigato	or:	Julius Codjoe									
				Budgi	ET	Status							
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t			
Total C	ost	(orig	inal)	\$87,474		Total				\$178,285			
		(revi	sed)	\$704,983									
Est. Ex	pended	to D	ate	\$248,792	\$248,792 Salaries \$118,778								
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		\$3,000			
FY Fun	ds	(orig	inal)	\$179,726		Equipment	(non-e>	pendable)		\$20,000			
		(revi	sed)	\$179,726		Travel				\$2,000			
Est. FY	Expend	diture)	\$100,000		Other				\$34,507			
				PURPOSI	ΕA	ND SCOPE			_				
The print (ITS) La and rep intentio transfor Departr The lab system	mary go ab at the ported as n to ser rmed int ment of o is a val s for stu	al of E Lou s par ve as o us Tran luabl	this resear lisiana Trar t of the ITS s a central r eful informa sportation a e tool to ret s in Louisia	ch project is to establ hsportation Research effort in Louisiana. T repository for traffic da ation that is instrumen and Development (LA cain, recruit, and inspir una as well as potentia	ish Ce he ata tal DC re i al c	a state-of-the enter (LTRC), ITS Lab was collected in th to procedures DTD), the loca nterest in the graduate stude	e-art Inte where c establis ne state s and ap I govern field of ents from	elligent Tran data will be o hed at LTR(of Louisian oplications the ment, and t advanced tr moutside Lo	isportation collected C in 201 a. The d nat bene the gene caffic ma puisiana	on Systems I, analyzed, 2 with the ata can be offit the eral public. nagement			
				FISCAL YEAR 2015 -	20 [,]	16 ACCOMPLIS	HMENTS	3					
 -Managed the ITS lab; -Developed a draft Strategic Plan for the ITS Lab; -Conducted transportation engineering research projects; -Developed a research problem statement and proposal; -Supervised a Graduate Research Assistant; -Performed and provided traffic and ITS technical advice in response to requests from LADOTD; and -Disseminated research results via conference presentations. 													

LTRC Annual Research Program

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue to manage the ITS lab;

-Finalize and implement the Strategic Plan for the ITS Lab, in conjunction with the Project Review Committee. Specifically, for the East Baton Rouge parish, (i) Identify all archived data user systems; (ii) Establish a data collection system with all archived data user systems; (iii) Establish data needs of potential end users; and (iv) Develop a workforce to meet data needs;

-Continue to conduct transportation engineering research projects as Principal Investigator or Co-Principal Investigator;

-Continue to develop research problem statements and proposals as necessary;

-Continue to supervised Graduate Research Assistants in the execution of research;

-Continue to perform and provide traffic and ITS technical advice in response to requests from LADOTD; and

-Continue to disseminate research results.

Title:	LTRC in Tra	Proj nspo	oosal for th ortation Pla	ne Support of Resea Inning	earch and Development Project Status: Ongoing						
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:				30000125		Project Start	Date:			7/1/2010	
Resear	ch Proj	ect N	umber:	10-1PLAN		Completion	Date	(original)		6/30/2015	
Resear	ch Age	ncy:		LTRC		Completion	Date	(revised)		6/30/2018	
Principa	al Inves	tigato	or:	Chester Wilmot							
				Budg	ET	STATUS					
		1	otal Budget	t			Estimat	ed 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$358,462		Total				\$528,401	
		(revi	sed)	\$6,977,821							
Est. Ex	pended	to D	ate	\$5,194,113		Salaries				\$524,401	
	I	FY 20	15 - 2016 Bu	udget	Equipment (expendable) \$2,00						
FY Fun	lds	(orig	inal)	\$519,453		Equipment	(non-ex	pendable)			
		(revi	sed)			Travel				\$2,000	
Est. FY	' Expen	diture	Э	\$293,594		Other					
				PURPOS	E A	ND SCOPE					
This pro- Develo the Dep case bat the Lou to supp the Dire request	oject pro pment (partmer asis dep lisiana port the ector, L ts from	ovide LAD oendi Frans enha TRC. LAD	is long-term OTD) on tra Divil and En ng on the w sportation R ncement of Research i OTD, and e	n professional assista insportation planning vironmental Enginee vork schedule. Such e research Center (LTF higher education. Th is conducted on topic xternal research solid	ince and ering exp RC) ne F cs fr	to the Louisia d other matter g at Louisiana osure encoura research prog Principal Inves rom LTRC's re tions.	ana Dep s, and p State U ages gra gram an tigator (search	partment of permits teac Iniversity (LS aduate stude d affords LT (PI)of this pr program, te	Transpo hing of (SU) on a ents to p RC the ojector i chnical a	ortation and courses in a case by participate in opportunity reports to assistance	
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENTS	5			
-Taugh -Taugh -Prepar the futu -Prepar Transit -Assiste Enviro	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -Taught CE 7640, Transportation Policy and Planning, at LSU in Fall 2015; -Taught CE 7641, Urban Transportation Planning Models, at LSU in Spring 2016; -Prepared draft final report on project 15-3SS, Investigation into legislative action needed to accommodate the future safe operation of autonomous vehicles in the state of Louisiana; -Prepared proposal for project 14-3SS, Development of a Mode Choice Model to Estimate Evacuation Transit Demand; and -Assisted in the preparation of the ABET report for accreditation of the Department of Civil and Environmental Engineering at LSU										
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s			
-Teach CE 7621, Mass Transit Systems, in Fall 2016; -Teach CE 7600, Data Collection Methods, in Spring 2017; -Prepare proposal on a highway evacuation modeling package incorporating all the evacuation models developed at LTRC into a computer package that facilitates the application of the individual models.											

Title:	Evaluation of Bonded Concrete Overlays over Asphalt under Accelerated LoadingProject Status:Ongoing									Ongoing
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:				30001663		Project Start	t Date:			4/8/2014
Resear	ch Proj	ect N	umber:	14-4C		Completion Date (original)		(original)		4/7/2016
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		12/31/2017
Principa	al Inves	tigato	or:	Tyson Rupnow						
				Budge	ЕТ \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	
Total C	ost	(orig	inal)	\$269,183		Total				\$125,000
		(revi	sed)							
Est. Ex	pended	to D	ate	\$68,000		Salaries				
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	inal)	\$144,792		Equipment	(non-ex	pendable)		
		(revi	sed)	\$23,346		Travel				
Est. FY	Expen	diture	9	\$25,000		Other				\$125,000
				PURPOSE	e ai	ND SCOPE			-	
This pro Thickne all three progres implem	oject will esses to e sectio ssively u ent the	l inve be in ns ar Intil fa selec	estigate cor nvestigated nd includes ailure to sho cted design	ncrete overlays of varie I include 2 inch, 4 inch a 3 inch dense graded ow performance and in thicknesses across th	ous n, a d H dei ne S	s thicknesses nd 6 inches. IMA over crus ntify, based or State.	under a The bas shed sto n ESAL	accelerated se course wi one. The sec S or load to	loading. Il be ide ctions wi failure,	ntical under Il be loaded locations to
				FISCAL YEAR 2015 - 2	201	6 ACCOMPLIS	HMENTS	5		
Section	s have	starte	ed being te	sted as of April 1, 201	6.					
				FISCAL YEAR 2016-20	17	PROPOSED A	CTIVITIE	S		
-Contin -Start d	ue and ata ana	fail a Iysis	Il sections; and develo	and op a draft final report.						

Title:	Admiı	nistra	ation of LT	RC External Fundir	ng F	g Programs Project Status: Ongoing						
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA			
SIO:				30000169		Project Start	Date:			1/1/2008		
Resear	ch Proje	ect N	umber:	11-1AD		Completion	Date	(original)		6/30/2009		
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		6/30/2018		
Principa	al Inves	tigato	or:	Vijaya Gopu								
				Budo	SET \$	Status						
		Т	otal Budge	t		I	Estimat	ed 2016-2017	7 Budget	i i		
Total C	ost	(orig	inal)	\$211,428		Total				\$270,000		
		(revi	sed)	\$2,780,222								
Est. Ex	pended	to Da	ate	\$272,000	00 Salaries \$199,80							
	F	TY 20	15 - 2016 Bu	udget	Equipment (expendable)							
FY Fun	ds	(orig	inal)	\$287,821		Equipment	(non-ex	pendable)				
		(revi	sed)			Travel				\$10,000		
Est. FY	Expen	diture	9	\$272,000		Other				\$60,200		
				PURPOS	SE A	ND SCOPE						
To cove technol	er admii ogy trar	nistra nsfer	tive costs h expansion	nandled under contra funding programs.	ict to	o support the I	LTRC re	esearch, dev	velopme	nt and		
				FISCAL YEAR 2015	· 20′	6 ACCOMPLIS	HMENTS	5				
-Collabe -Coordi headq -Manag and m -Coordi -Serveo Nation -Preser and int -Coordi two ta	orated i nated the uarters ded the atch co nated the g as the d on sev nated sev ernation nated/c lks at th	n sub ne fui ; certifi mmit ne TI e PI o veral nal m haire nal m haire ne LT	omission of nding of thr ication of th ments.; RE Prograr in a NSF av NSF propo esearch Er technical pa ieetings; an id three tec C.	three UTC-Tier 1 pro- ee new projects with ne overall matching for m and managed the ward dealing with FN sal review panels an ngineering Infrastruct apers dealing with tir d hnical sessions at th	opos sup or th four IM e d si ure mbe e Lo	sals; oplemental fur te UTC award TIRE projects ducation; te visit teams of Program; r bridge issues ouisiana Trans	nding fro by revi s award dealing s and a sportatio	om NCITEC ewing indivi ed in 2015; with MRI pr utonomous on Conferen	our UT dual pro ogram a vehicles ce and p	C ject budgets and the at national presented		
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s				
 -Coordinate new UTC projects that are likely to be awarded; -Coordinate all activities on the NSF project on FMM education; -Continue coordination of TIRE program and TIRE projects; -Hold LTRC town hall meetings at all state universities with engineering programs; -Review and submit IDEA proposal for the upcoming cycle; -Coordinate submission of NSF MRI proposal; and -Initiate work on NDE of capacity of deteriorated timber piles. 												

Title:	Evaluati	ng Cell Pho	ne Data for AADT Est	T Estimation Project Status: Ongoing						
Funding	g Source	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO [.]			DOTI T1000110		Project Start	Date:			5/1/2016	
Researc	h Proiect	Number:	16-3SA		Completion	Date	(original)		12/31/2016	
Researc	h Agency	/:	LTRC		Completion	Date	(revised)		7/31/2017	
Principal	I Investig	ator:	Julius Codjoe		-					
			BUDGE	ET S	Status					
		Total Budge	t			Estimate	ed 2016-201	7 Budget	t	
Total Co	st (c	riginal)	\$100,000		Total				\$95,114	
	(r	evised)	\$155,114							
Est. Exp	ended to	Date			Salaries				\$60,000	
	FY	2015 - 2016 B	udget	Equipment (expendable) \$1,00						
FY Fund	ls (c	riginal)	\$60,000		Equipment	(non-ex	pendable)			
	(r	evised)	\$60,000		Travel				\$1,000	
Est. FY I	Expenditu	ıre	\$60,000		Other				\$33,114	
			PURPOSE		ND SCOPE					
The purp using Ba AADT (fi authority valid. W differenc provide a	bose of the aton Roug rom eithe r), the stu r), the stu r), the st	is study is to ge Metropolita r the Louisian dy will condu hificant differe ccessful, the available too	validate the Annual A an Area (BRMA) as a t na Department of Tran let a calibration analysi ences exist, the study of research findings may I that will ensure accur	ver test isp is t will v re ate	age Daily Tra t case. For se ortation and D o verify wheth seek to ident commend a s AADTs acros	thic (AA lect roa Developin ify patte ify patte tatewid ss all ro	D1) reporte dways in BI ment (LADC etlytics' corr erns to acco e adoption o adways.	d by Stra RMA with DTD) or 1 respondi unt for th of Street	eetlytics, by h available local ng AADT is ne lytics and	
-Purchas	se 1-vear	Streetlytics	subscription; and							
-Begin lit	terature r	eview.	, ,							
			FISCAL YEAR 2016-20	17	PROPOSED A	CTIVITIE	S			
-Comple -Develop -Obtain t -Retrieve -Underta -Submit	-Complete literature review; -Develop sample list of roadways to be used for the analysis; -Obtain traditional traffic count data for the developed sample list of roadways; -Retrieve Streetlytic's traffic data for the developed sample list of roadways; -Undertake comparative analysis between the traditional and Streetlytic's data; and -Submit final report.									

Title: Conv Highv	Investigating Safety Impacts of Centerline Rumble Strip, Lane Title: Conversion, Roundabout and J-turn Features on Louisiana Project Status: Ongoing Highways Ongoing Ongoing Ongoing											
Funding Sour	ce:	SPR: TT-	Fed/TT-Reg		Buc	dget	Category:	FHWA				
SIO:			DOTLT1000087		Project Start Da	ate:			5/1/2015			
Research Proj	ect N	umber:	15-3SA		Completion Da	te	(original)					
Research Age	ncy:		ULL		Completion Da	te	(revised)		4/30/2017			
Principal Inves	tigato	or:	Xiaoduan Sun									
			Budg	ET \$	Status							
	Т	otal Budge	t		Est	timat	ed 2016-2017	7 Budget	:			
Total Cost	(orig	inal)	\$130,000		Total				\$80,000			
	(revi	sed)	\$129,876									
Est. Expended	to D	ate	\$50,000		Salaries				\$55,000			
I	FY 20	15 - 2016 Bu	udget		Equipment (e	expend	lable)					
FY Funds	Y Funds (original) \$60,000 Equipment (non-expendable)											
	(revi	sed)			Travel				\$100			
Est. FY Expen	diture	9	\$50,000		Other				\$24,900			
			PURPOS	E A	ND SCOPE							
The goal of thi including the c lane), and the two-lane highv Department of	s proj enter restri /ays, Tran	ject is to ev line rumble ctive media urban and sportation a	aluate few relatively r strip, lane conversion in opening on high sp suburban roadways a and Development (LA	new n (f eeo and .DC	v crash counterm our to three and d corridors. This high speed corri)TD) system.	ieasu addit stud <u>y</u> idors	ires on Loui ional analys y focus on th within the L	siana hig sis on foi ne Louis .ouisiana	ghways ur to five iana rural a			
			FISCAL YEAR 2015 -	201	16 ACCOMPLISHM	IENTS	;					
-The team has countermeasu -The data anal lane conversio	-The team has finished information review and project identification on all four selected crash countermeasures; and -The data analysis for center line rumple strip for rural 2-lane highways was 80% completed, for J-turn 50%, lane conversion 30% and roundabout 30%.											
			FISCAL YEAR 2016-20	017	PROPOSED ACT	VITIE	S					
-Complete all o -Prepare the fi	crash nal re	data analy: eport.	sis and Benefit-cost a	ina	lysis; and							

Title:	Devel Vehic	opm les u	ent of a Sii Ising the L	mulation Test Bed f SU Driving Simulate	ed for Connected Project Status: Ongoing							
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA			
						1						
SIO:				DOTLT1000088		Project Start	Date:			6/1/2015		
Resear	ch Proj	ect N	umber:	15-2SA		Completion	Date	(original)		5/30/2017		
Resear	ch Age	ncy:		LSU		Completion	Date	(revised)				
Principa	al Inves	tigate	or:	Sherif Ishak								
				Budg	ET	STATUS						
		1	Total Budge	t			Estimat	ted 2016-201	7 Budge	t		
Total C	ost	(orig	jinal)	\$150,000		Total				\$42,000		
		(revi	sed)	\$149,865								
Est. Ex	pended	to D	ate	\$6,935		Salaries				\$42,000		
	F	FY 20	15 - 2016 Bu	udget		Equipment	(expen	dable)				
FY Fun	nds (original) \$80,000 Equipment (non-expendable)											
		(revi	sed)	\$80,000		Travel						
Est. FY	'Expen	diture	Э	\$42,000		Other						
				PURPOS	E A	ND SCOPE						
researce simulat applica and blir environ benefits	tion test tions in and spot ment su	area bed the c warn uch a h spe	as of operat using a driv driving simu ing applicat is eco-appro- ecific applic	tion and safety. The s ving simulator; create lator environment su tions; create some of oach and eco-depart ation on drivers' beha	sin spec so ch a the ure avic	training of the contract of th	are to nected move elated interse	develop cor vehicle safe ment assist, applications ctions; and t	ty relate DO NO in the si est the in	vehicle d T PASS, mulator mpacts and		
				FISCAL YEAR 2015 -	20′	16 ACCOMPLIS	HMENT	S				
-Task 1 -Task 2 -Task 3	: Litera 2: Devel 3: Create	ture I op a e Col	Review is 1 Virtual Driv nnected Ve	00% complete; ing Simulator Scenar hicles in Driving Simu	rio, ulat	70% complete or Network, 10	e; and 00% co	omplete;				
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S				
-Compl fulfill th -Start T will be -Start T connec -Start T	 -Complete Task 2. The realistic network development will be completed in the simulator environment to fulfill the requirements of the connected vehicle applications' simulation; -Start Task 4: The required procedures to collect data from the connected vehicle type will be in real time will be developed in order to present it to the simulator's drivers; -Start Task 5: Licensed drivers will be recruited to perform the required experiments on the selected connected vehicle applications; and -Start Task 6: The research effort will be reported in the final report as all the work is finished. 											

Funding Source: SPR: TT-Fed/TT-Reg Budget Category: FHWA SIO: DOTLT1000053 Project Start Date: 2/16/2015 Research Agency: LSU Completion Date (original) 8/15/2016 Principal Investigator: Sherif Ishak Completion Date (original) 8/15/2017 Total Budget Budget STATUS Estimated 2016-2017 Budget Total Cost (original) \$99,521 [(revised)] \$124,321 Salaries \$38,000 FY Funds (original) \$70,282 Salaries \$38,000 FY Funds (original) \$70,282 Salaries \$38,000 FY Expenditure \$53,000 Other \$15,000 PurPose AND Score Arceont study funded by the Louisiana Transportation Research Center (LTRC) and University Travel gerformance based on demographics and road facility type because on the diriding son the driving performance based on demographics and road facility type basecause of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Study on the crash risks of alcoluted that texting Sudita is availabile. Sudititype, age,	Title: Expl	oring sures	Naturalisti	ic Driving Data for I	for Distracted Driving Project Status: Ongoing								
SIO: DOTLT1000053 Research Project Number: 15:1SA Research Agency: LSU Principal Investigator: Sherif Ishak Support of the state stat	Funding Sou	irce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA				
SIO: DOT L11000033 Project Start Date: 2/16/2015 Research Project Number: 15-15A Completion Date (original) 8/15/2016 Research Agency: LSU Completion Date (original) 8/15/2017 Principal Investigator: Sherif Ishak Estimated 2016-2017 Budget 2/16/2015 Total Budget Estimated 2016-2017 Budget Total Cost (original) \$99,521 (revised) \$124,321 Est. Expended to Date \$6,280 Salaries \$38,000 FY 2015 - 2016 Budget Equipment (non-expendable) Equipment FY Funds (original) \$70,282 Image: \$31,000 (revised) \$88,882 Completion Date \$15,000 PurPose And Score Very Score Very Score \$15,000 PurPose And Score Very Score Salaries \$16,000 PurPose And Score Very Score Salaries \$16,000 Pureoration Consortium (UTC), 'Distracted Driving and Associated Crash Risks', concluded that texting and taking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to mak	212		• •							0/10/00/17			
Research Agency: LSU Completion Date (revised) 2/15/2017 Principal Investigator: Sherif Ishak Completion Date (revised) 2/15/2017 Principal Investigator: Sherif Ishak Buoget STATUS Completion Date (revised) 2/15/2017 Total Cost (original) \$99,521 Completion Date \$53,000 Total \$53,000 FY 2015 - 2016 Budget Salaries \$38,000 Equipment (revised) \$124,321 Est. Expended to Date \$6,280 Salaries \$38,000 Equipment (revised) \$124,321 FY Funds (original) \$70,282 Salaries \$38,000 Equipment (non-expendable) Travel Total Salaries \$38,000 PurPOSE AND SCOPE PurPOSE AND SCOPE Other \$15,000 Salaries \$38,000 Equipment (non-expendable) Travel Salaries \$38,000 Salaries \$38,000 PurPOSE AND SCOPE PurPOSE AND SCOPE Total total to passengers while driving performance but failings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent savailability of data from the Strategi	SIO:			DOTLT1000053		Project Starl	Date:	(ani ai a a D		2/16/2015			
Research Agency. Loc Completion Date Tension 2/16/2017 Principal Investigator: Sherif Ishak BUDGET STATUS Estimated 2016-2017 Budget Total Cost (original) \$99,521 Total (revised) \$124,321 Est. Expended to Date \$6,280 \$startes \$338,000 FY 2015 - 2016 Budget Total (expendable) Equipment (expendable) Equipment (expendable) FY Funds forginal) \$70,282 Other \$15,000 (revised) \$88,882 Travel Equipment (expendable) Travel Est. FY Expenditure \$53,000 Other \$15,000 Travel Salaries \$38,000 PurPose AND Scope PurPose AND Scope Other \$15,000 Travel Salaries \$38,000 Performance based on demographics and road facility type because of the limited sample utilized. With the travel Salaries \$38,000 Performance based on demographics and road facility type because of the limited sample utilized. With the treent valiability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statisical conclusions to be	Research Pro		lumber:	15-1SA		Completion	Date	(original)		8/15/2016			
Finicipal investigator. Subset Status Budget Estimated 2016-2017 Budget Total Cost (original) \$99,521 (revised) \$124,321 Est. Expended to Date \$6,280 FY 2015 - 2016 Budget Equipment (revised) \$70,282 Est. FY Expenditure \$53,000 PURPOSE AND SCOPE Travel A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance bused on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allo onclude an outline for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data needs for the development of a distraction index which will be based on the crash risk potential of several identified distraction factors as well as the combined effect of several performance measures (surrogate measures of distracted of inving. This analysis will also include an ou	Principal Inve	ency.	or:	LOU Sharif Ishak		Completion	Dale	(Tevised)		2/15/2017			
Total Budget Estimated 2016-2017 Budget Total Cost (original) \$99,521 (revised) \$124,321 Est. Expended to Date \$6,280 FY 2015 - 2016 Budget Equipment (revised) \$70,282 (revised) \$88,882 Travel Equipment (revised) \$88,882 Travel \$15,000 PURPOSE AND Scope A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 Naturalistic Driving Stata including gender, road facility type, age, and time of day. However, the SHRP 2 ND data with the view of identifying if it can provide the data required for an enhanced study on the erst nisks of distracted of riving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction, analysis will also include an outline for the development of a distraction index which wil		siyat	<u> </u>	Bung	2FT	STATUS							
Contractory Total Cost (original) \$99,521 Total Status Deget Total \$		-	Fotal Budge	t		STATUS	Estimat	ed 2016-201	7 Budget	,			
Indication (revised) \$124,321 Est. Expended to Date \$6,280 FY Funds (original) \$70,282 (revised) \$88,882 Est. FY Expenditure \$53,000 Est. FY Expenditure \$53,000 PURPOSE AND Score Equipment A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Travel Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 Mast and with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction factors as well as the combined effect of several performance measures (surrogate measures of distraction). Fiscal Year 2016-2017 Propose Activities - Complete Task 3: Identification of Surrogate Measures of Distraction; - Task 1: Literature Review, 100% complete;	Total Cost	(orio		\$99.521		Total			Duugo	\$53,000			
Est. Expended to Date \$6,280 FY Funds (original) \$70,282 [revised] \$88,862 Est. FY Expenditure \$53,000 PURPOSE AND SCOPE A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Travel and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 data is relatively new and it is not clear whether the data needs for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several dentified distraction. Fiscal Year 2015 - 2016 Accomplete: Task 2: Data Exploration, 100% complete; and		(rev	ised)	\$124 321						400,000			
FY 2015 - 2016 Budget FY Funds (original) \$70,282 (revised) \$88,882 Est. FY Expenditure \$53,000 Other \$15,000 PurPose AND Scope A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 data is relatively new and it is not clear whether the data needs for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction. Fiscal YEAR 2015 - 2016 AccompListments -Task 1: Literature Review, 100%	Est. Expende	ed to D	ate	\$6.280		Salaries				\$38.000			
FY Funds (original) \$70,282 (revised) \$88,882 Est. FY Expenditure \$53,000 PurPose AND Scope A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 atta is relatively new and it is not clear whether the data needs for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction. Fiscal YEAR 2015 - 2016 AccompListments -Task 1: Literature Review, 100% complete; -Task 3: Identification of Surrogate Measures of Distraction;		FY 20)15 - 2016 Bi	udget		Equipment	(expen	dable)		+,			
(revised) \$88,882 Est. FY Expenditure \$53,000 PurPose AND Scope A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 data is relatively new and it is not clear whether the data needs for the quirter of a distraction index which will be based on the crash risk potential of several identified distraction factors as well as the combined effect of several performance measures (surrogate measures of distraction factors as well as the combined effect of several performance measures (surrogate measures of distraction factors as well as the combined effect of several performance measures (surrogate measures of <tr< td=""><td>FY Funds</td><td>(orig</td><td>ginal)</td><td>\$70,282</td><td colspan="9">0,282 Equipment (non-expendable)</td></tr<>	FY Funds	(orig	ginal)	\$70,282	0,282 Equipment (non-expendable)								
Est. FY Expenditure \$53,000 Other \$15,000 PurPose AND Scope A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 ADS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction factors as well as the combined effect of several performance measures (surrogate measures of distraction). FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -Task 1: Literature Review, 100% complete; -Task 3: Identification of Surrogate Measures of Distraction; -Complete Task 3: Identification of Surrogate Measures of Distraction; -Complete Task 3: Id		(rev	ised)	\$88,882		Travel							
PURPOSE AND SCOPE A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 data is relatively new and it is not clear whether the data needs for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction? FISCAL YEAR 2015 - 2016 AccompLishmeNTS -Task 1: Literature Review, 100% complete; -Task 3: Identification of Surrogate Measures of Distraction, 30% complete. -EISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Complete Task 3: Identification of Surrogate Measures of Distraction;	Est. FY Expe	nditur	е	\$53,000		Other				\$15,000			
A recent study funded by the Louisiana Transportation Research Center (LTRC) and University Transportation Consortium (UTC), "Distracted Driving and Associated Crash Risks", concluded that texting and talking to passengers while driving impaired driving performance but failed to find any significant effects for cell phone conversation. The study was however unable to make any statistical findings on the driving performance based on demographics and road facility type because of the limited sample utilized. With the recent availability of data from the Strategic Highway Research Program (SHRP 2) Naturalistic Driving Studies (NDS), there may be ample opportunity to utilize a bigger sample size in a further study that will allow statistical conclusions to be drawn on various strata including gender, road facility type, age, and time of day. However, the SHRP 2 data is relatively new and it is not clear whether the data needs for the further study can be met solely from what is available. Therefore, this study proposes a comprehensive exploration of the SHRP 2 NDS data with the view of identifying if it can provide the data required for an enhanced study on the crash risks of distracted driving. This analysis will also include an outline for the development of a distraction index which will be based on the crash risk potential of several identified distraction factors as well as the combined effect of several performance measures (surrogate measures of distraction).				Purpos	SE A	ND SCOPE			<u>.</u>				
FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS -Task 1: Literature Review, 100% complete; -Task 2: Data Exploration, 100% complete; and -Task 3: Identification of Surrogate Measures of Distraction, 30% complete. FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Complete Task 3: Identification of Surrogate Measures of Distraction; -Start task 4: Distraction Index; and -Start Task 5: Prepare Final Report.	A recent stuc Transportatio and talking to for cell phone performance recent availa Studies (NDS allow statistic of day. Howe further study exploration o enhanced stu development distraction fa distraction).	y func n Con passe conve basec bility o bal con can be f the S idy on of a d ctors a	Isortium (UT engers while ersation. The lon demogration of the re may be a clusions to the SHRP 2 met solely SHRP 2 NDS the crash r istraction in as well as the	Constant Transportat (C), "Distracted Drivi e driving impaired driving the study was however raphics and road faci- the Strategic Highwar ample opportunity to the be drawn on various data is relatively new of from what is available S data with the view of isks of distracted driving the combined effect of	ion a ng a iving er u ility ay R utiliz stra v an of ic of ic sed	Action Cell and Associated g performance nable to make type because tesearch Prog ze a bigger sat ata including g ad it is not clea Therefore, thi dentifying if it c . This analysi on the crash veral performa	d Crash but fai any st of the I ram (SI mple si jender, ir wheth s study an pro- s will al risk pot ince me	RC) and or n Risks", cor led to find an atistical findi imited samp HRP 2) Natu- ze in a furth- road facility ner the data proposes a vide the data so include a ential of sev easures (sur	ncluded in ny signif ngs on t le utilize iralistic I er study type, ag needs for compre a require n outling eral ider rogate n	that texting icant effects he driving d. With the Driving that will le, and time or the hensive d for an e for the htified heasures of			
-Task 1: Literature Review, 100% complete; -Task 2: Data Exploration, 100% complete; and -Task 3: Identification of Surrogate Measures of Distraction, 30% complete. FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Complete Task 3: Identification of Surrogate Measures of Distraction; -Start task 4: Distraction Index; and -Start Task 5: Prepare Final Report.				FISCAL YEAR 2015 -	· 20′	16 ACCOMPLIS	HMENTS	8					
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Complete Task 3: Identification of Surrogate Measures of Distraction; -Start task 4: Distraction Index; and -Start Task 5: Prepare Final Report.	-Task 1: Liter -Task 2: Data -Task 3: Iden	ature Explo tificati	Review, 100 pration, 100 on of Surrog	0% complete; % complete; and gate Measures of Dis	strac	ction, 30% cor	nplete.						
-Complete Task 3: Identification of Surrogate Measures of Distraction; -Start task 4: Distraction Index; and -Start Task 5: Prepare Final Report.				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S					
	-Complete Ta -Start task 4: -Start Task 5	ask 3: Distra : Prep	Identificatio ction Index are Final Re	n of Surrogate Meas ; and eport.	ure	s of Distraction	ז;						

Title: Louis	Title: Louisiana Center for Transportation Safety							tatus:	Ongoing	
Funding Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:			30001501		Project Start	t Date:			7/1/2014	
Research Proj	rch Project Number: 12-1SA Completion Date (original)			(original)		12/31/2017				
Research Age	ncy:		LTRC		Completion	Date	(revised)			
Principal Inves	tigato	or:	Dortha Cummins							
			Budg	SET \$	Status					
	Т	Fotal Budge	t			Estimat	ed 2016-2017	7 Budget	1	
Total Cost	(orig	jinal)	\$250,000		Total				\$103,790	
	(revi	ised)								
Est. Expended	Est. Expended to Date \$106,617 Salaries \$72,137									
I	FY 20	15 - 2016 B	udget		Equipment	(expen	dable)			
FY Funds	(orig	jinal)	\$112,617		Equipment	(non-ex	(pendable)	\$10,000		
	(revi	ised)	\$136,149		Travel				\$1,500	
Est. FY Expen	diture	Э	\$81,510		Other				\$20,153	
			PURPOS	SE A	ND SCOPE			<u>t</u>		
The Louisiana universities to technology trai transportation training and ec curriculum bein transportation Development (Training and E activities.	Cent collal nsfer agen lucati ng de profe LAD0 duca	ter for Trans borate on s , the LCTS cies and wi ion progran eveloped by essionals or OTD), Louis tion Center	sportation Safety (LC afety related projects will provide enhance Il be available to wor which includes the the Transportation F a a national basis. Th siana Transportation (TTEC) in Baton Ro	TS) and d te k to new Rese e Lo Res uge)will provide a d leverage res chnical assist meet other st multi-disciplin earch Board (puisiana Depa search Center , Louisiana wi	a structo sources ance to cate and nary hig TRB) w artment (LTRC ill serve	ure for Louis 5. Supported 6 federal, sta d regional ne ghway safety ill be made a of Transport c), and the Transport as the nucle	iana's re by rese te and lo eeds. An profess available tation ar ransport eus for t	esearch arch and ocal expanded sional e to ad ation hese	
			FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	3			
-Fully staffed th -Develop a dra -Began market	ne LC ift Str ting a	CTS; ategic and and outreac	Work Plan for the LC h of LCTS across sta	CTS ate.	; and					
			FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S			
-Finalize the S -Develop work -Expand marke	trateo force eting	gic and Wo developme and outrea	rk Plan; ent/training plan; and ch of LCTS across st	tate	and region.					

FHWA

Part II SPR Funded Research Program

PROPOSED RESEARCH

Title: LADOTD Geotechnic	al Design Manual		Project Status: Propo							
Funding Source: SPR: TT-	Fed/TT-Reg		E	Budget	Category:	gory: FHWA				
010							=///22/2			
SIO:	DOTLT1000097	Projec	t Star	t Date:	(· · · · ·)		7/1/2016			
Research Project Number:	16-1GT	Comp	etion	Date	(original)					
Research Agency:		Comp	etion	Date	(revised)					
Principal investigator:	Buba	ET STATUS	T STATUS							
Total Budget	BODG			Estimat	ed 2016-2017	7 Budae	t			
Total Cost (original)	\$85.000	Total	Total \$85.000							
(revised)	· · · · · · · · · · · · · · · · · · ·									
Est. Expended to Date		Salarie	es				\$85,000			
FY 2015 - 2016 Bu	ıdget	Equipr	nent	(expen	dable)					
FY Funds (original)		Equipr	nent	(non-e)	kpendable)					
(revised) Travel										
Est. FY Expenditure Other										
 Organization and recording of reg and Development (LADOTD) Geo staff to discuss the various subject Submittals and electronic drafts of comment by the LADOTD Geotect with the schedule to be determined. Independent research and recorntices and recorntices of durate incorporation if necessary, of AAS with Pavement and Geotechnical independent research as requested added or updated within the manual Minimum Personnel Requirements: Registered Professional Civil Eng - A minimum of ten years' experient - Prior experience in the developmed - Working knowledge of the AASHT - Proven project management skills Technical writing skills including the Minimum Content Requirements: Table of Contents Subsurface Investigation Guidelint - Field and Laboratory Testing Proto- - Geotechnical LRFD Design Geotechnical Constructures Geosynthetic Design; Plan Preparation Construction QA-QC Geotechnical Design Section Form - Reinforced Soil Slopes Geotechnical Template Plans 	ularly scheduled techni otechnical Design staff. tr/chapters to be included f each chapter based of thical staff. Interim dra- ad by the Project Manage mendations on select s and electronic linkable h ion of the contract. This SHTO LRFD Bridge des Services Section to reve ed by LADOTD Pavement al. s: At least one Principal ineer in the State of Lo ce in geotechnical desi ent of a Geotechnical desi ent of a Geotechnical D FO LRFD Bridge Design s; and he capability of produci The manual shall includ -Project Cool es -Embankmer cedure; -Shallow Fou -Ground Impr -Geotechnica -Material Des -Geotechnica -Specification -Construction ms -Project Specification	cal sessions The consulta ad in the mar in technical of fts shall be s ger; ubject matte ypertext form s will include. ign specification iew and disc ent and Geot I or a Respo uisiana; gn; esign Manua in Specification in Specification in the docur e at least the rdination Pro- its indations ovement I Performand coription-Class al Software al Reports is and Specification in Monitoring is cific Specification	with the ant shate and shate shate and line ations at long at	he Louis all meet all meet all meet is include day not b evisions, visions of cal Servi Member Member -Const -Cons	siana Departm with the LADC d in all previo eview and con pe limited to, p attendance a or updates to ces Section o r of the Prime ecified formats ics: ultant Service Foundations Mechanics ging tation	nent of Tr DTD Geo us session nment in beriodic ro t technic the Manu n subjec Consulta	ransportation technical ons for accordance eview, and al meetings ual, and ts to be ant must meet			

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

The Project Review Committee has met and reviewed the proposals. The winning proposal was selected. Once awarded, the Project Review Committee will meet with the researcher to begin the project.

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

Develop the Design Manual.

Title:	itle: Data Collection and Analysis of Driven Pile Behavior within Pre-bored Soil							Project St	tatus:	Proposed	
Funding Source: SPR: TT-Fed/TT-Reg						Budget Category: FHWA					
SIO:					Project Start	Date:		8/1/2016			
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)	6/30/2018		
Resear	ch Ager	ncy:				Completion I	Date	(revised)			
Principa	al Invest	igato	or:								
				Budg	ЕТ \$	Status					
		Т	otal Budget			I	Estimat	ed 2016-2017	7 Budget	:	
Total C	ost	(orig	inal)	\$180,000		Total				\$90,000	
		(revis	sed)								
Est. Ex	pended	to Da	ate			Salaries			\$90,000		
	F	Y 20	15 - 2016 Bı	ıdget		Equipment	Equipment (expendable)				
FY Fun	ds	(orig	inal)			Equipment (non-expendable)					
		(revi	sed)			Travel					
Est. FY	Expend	diture	•			Other					
				PURPOS	E AI	ND SCOPE					
It is exp will hav will grea boring, foundat	It is expected that the relative strength of the soil as well as the diameter of the pilot hole relative to the pile will have an impact on pile drivability and its long-term load carrying capacity. Quantifying such an impact will greatly help geotechnical design engineers to understand the interactions among the factors of pre- boring, pile size, soil conditions, pile driving, etc. and improve the design and construction qualities of pile foundations in hard/dense soils.								e to the pile an impact of pre- ies of pile		
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	6			
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
Start re	search	activi	ties.								

Title:	Development of a Design Methodology for Geosynthetic Reinforced Pavement using Finite Element Numerical Modeling						Project St	Project Status:		
Funding Source: SPR: TT-			SPR: TT-I	Fed/TT-Reg			Budget Category:		FHWA	
SIO						Project Start	Date:			9/1/2016
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)	3/1/2010	
Resear	ch Ager	ncy:		LTRC		Completion I	Date	(revised)		
Principa	al Inves	tigato	or:	Murad Abu-Farsak	n			L		
				Budg	ET \$	STATUS				
		Т	otal Budget	t		l	Estima	ted 2016-2017	7 Budget	t
Total C	ost	(origi	inal)	\$250,000		Total			\$48,146	
		(revis	sed)						1	
Est. Ex	pended	to Da	ate			Salaries				\$45,146
	F	Y 20 ⁻	15 - 2016 Bi	udget		Equipment	(expen	dable)	\$3,000	
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
(revised)			sed)			Travel				
Est. FY	Expen	diture)			Other				
				PURPOS	SE A	ND SCOPE				
unpaved the pave soft sub- reinforce that nee reinforce of geosy Two exp Center (the purp subgrad thick bas methode different	unpaved roadways. Although the benefits of geosynthetics reinforcement have been well-realized in terms of increasing the pavement's service life, reducing the thickness of base course layer, and stabilizing and allowing construction over soft subgrade layer, unfortunately, there is no nationally acceptable design method until now for geosynthetic reinforcement/stabilization of pavement. There is several design methods proposed by the geosynthetic manufacturers that need to be verified, modified and/or develop new design methods. The MEPDG did not consider geosynthetic reinforced pavement due to the lack of understanding the geosynthetic mechanism and lack of quantifying the benefits of geosynthetic. Two experimental research projects (05-5GT, 11-3GT) had been conducted at the Louisiana Transportation Research Center (LTRC) using cyclic plate load testing and accelerated load testing on geosynthetic reinforced test sections for the purpose of evaluating the benefits of geosynthetic reinforcement in flexible pavements constructed over weak subgrades. However, the tested sections in these studied included only 2 and 3 inch thick AC layers and 12 and 18 inch thick base course layers build over weak subgrade, which will make it difficult to develop a generalized design methodology for geosynthetic reinforced pavement involved sections with different AC and base layers thicknesses, and									
The finit paveme geosynt experim on the e paveme location element method and MEI	The finite element method is a powerful technique that can be used to simulate and model difficult geotechnical and pavement engineering problems. The objective of this study is to develop a finite element numerical model to study geosynthetic reinforced pavement. The numerical model will be first verified and calibrated using the results of experimental test sections conducted at LTRC. The model will then be used to perform comprehensive parametric study on the effect of different variables and parameters contributing to the benefits of geosynthetic reinforcement of pavement including stiffness and thickness of AC layer, stiffness and thickness of base layer, tensile modulus and location of geosynthetics and strength of subgarde layer (for low volume to high volume roads). The results of finite element parametric study can be used to quantify the geosynthetic benefits and develop a comprehensive design method for geosynthetic reinforced pavement that can be incorporated into the context of AASHTO 1993 Design Guide and MEPDG.									

LTRC Annual Research Program

Fiscal Year 2016-2017

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Conduct literature review relevant to experimental, analytical and finite element analysis of geosynthetic reinforced pavements;

-Develop a finite element numerical model to simulate geosynthetic reinforcement of pavements; -Verify the model using the results of in-box and field accelerated load testing on geosynthetic reinforced pavements; and

-Start the parametric study.

Title:	Development of Software Solutions for Pile Design in Louisiana							Project St	Project Status:	
Funding Source: SPR: TT-Fed			Fed/TT-Reg	ed/TT-Reg			Budget Category: FI		FHWA	
SIO:					Project Start	Date:		7/1/2016		
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		
Research Agency:			LTRC		Completion	Date	(revised)			
Principa	al Inves	tigato	or:	Murad Abu-Farsak	h					
				Budo	SET \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	:
Total C	ost	(orig	inal)	\$250,000		Total				\$110,600
		(revi	sed)							
Est. Ex	pended	to Da	ate			Salaries			\$106,600	
	F	Y 20	15 - 2016 Bi	udget		Equipment	Equipment (expendable)		\$4,000	
FY Fun	ds	(orig	inal)			Equipment	(pendable)			
		(revi	sed)			Travel				
Est. FY	Expen	diture)			Other				
				PURPOS	SE AI	ND SCOPE				
A resea method into visu resistar frictiona been de load tes method CPT tes incorpo There is for estir driven p researco needed (overbui implem data (an specific default enhanc	A research project (FHWA/LA.99/334) was completed in 1999 to evaluate eight different direct CPT methods for estimating the pile resistance in Louisiana, which resulted in implementing three CPT methods into visual basic software (LPD-CPT). However, the evaluation was based on estimating the total pile resistance using scanned CPT data (no electronic files), which recently showed discrepancy in estimating frictional and end bearing components of instrumented piles. Since 1999, many new CPT methods have been developed (Eslami & Fellenius, Almeida et al., Powell et al., UWA-05, UF, etc.), and a lot of new pile load tests with electronic CPT data are available that warrant re-evaluating the CPT – pile estimation methods. The effect of scour on pile resistance was not considered. In addition, it is to use data from multi- CPT tests (spatial variation) to estimate the nominal resistance of all piles in the specific project and incorporating the LRFD resistance factors for pile design in the LPD-CPT software. There is a need to re-evaluate the CPT methods including previously evaluated and recent developments for estimating the nominal end bearing resistance, nominal side friction resistance and total resistance of driven piles in Louisiana using the updated pile load test -CPT databases including instrumented piles. The research study will identify the best CPT method, modifications or developing a different CPT method, if needed, to best estimate the pile resistance in Louisiana. The effect of scour depth on pile resistance (overburden pressure) will be incorporated into the selected/developed CPT methods that will be implemented into the LPD-CPT. The LPD-CPT will be modified to include the capability of using multi-CPT data (and possibly soil borings and SPT data) to estimate the nominal pile resistances of all piles in a specific project considering site variation. The LPD-CPT method will also be updated to incorporate the default and user selectable resistance factors for LRFD design of piles. Other software usa									

LTRC Annual Research Program

Fiscal Year 2016-2017

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Conduct literature review relevant to the application of CPT technology and available direct CPT methods for estimating the nominal tip and side resistances of driven piles;

-Start collecting available pile load test data and CPT data from all previous and new sites in Louisiana to establish a database for evaluating the Pile-CPT methods;

-Start modifying the LPD-CPT software to incorporate LRFD design methodology and scour effect; and -Start evaluating the newly developed pile-CPT methods and re-evaluate previously implemented pile-CPT methods.

Title:	Quality Control/Assurance on Base Course and Embankment with the Dynamic Cone Penetrometer							Project Status: F		Proposed
Funding Source: SPR: TT-Fed/TT-Reg					Budget Category:				FHWA	
				I		1				
SIO:						Project Start	Date:		7/1/2016	
Resear	ch Proj	ect N	umber:			Completion	Date	(original)		
Resear	ch Age	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Inves	tigato	or:			_				
				Budo	SET :	STATUS				
		1	Total Budge	t			Estimat	ed 2016-201	7 Budget	:
Total C	ost	(orig	jinal)	\$100,000		Total				\$31,545
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$31,545
	F	FY 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	jinal)			Equipment	(non-e>	(pendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture	9			Other				
				PURPOS	SE A	ND SCOPE			4	
Current obtaine moistur relative cannot. while th The DC Current assess	Current QA/QC processes on base courses and subgrades are based on densities and moisture contents obtained from the nuclear gauge. Nuclear gauges utilize radioactive materials to determine the density and moisture contents. These gauges are expensive to maintain and dispose of. The DCP is a simple tool, relatively inexpensive compared to nuclear devices, and can be used in areas where nuclear devices cannot. Furthermore, nuclear gauges produce average values for the layer that the probe is inserted to while the DCP produces the entire stiffness profile. The DCP has been utilized in both research and construction projects for over 10 years in Louisiana. Currently, DCP readings are required on certain subgrade soil surveys and on all projects which are assessed for rubblization.								e contents density and ple tool, vices erted to iana. are	
				FISCAL YEAR 2015	· 20′	16 ACCOMPLIS	HMENTS	3		
This pro	This project is proposed.									
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
Begin th	he rese	arch.								

Title:	Implen	nent	ation of Pi	n of Pile Set-up Analytical Models in Design					tatus:	Proposed	
Funding	Funding Source: SPR: TT-Fed/TT-Reg					Budget Category: FHWA					
SIO:					Project Start	Date:			7/1/2016		
Research Project Number:					Completion	Date	(original)		6/30/2017		
Research	h Agen	cy:				Completion	Date	(revised)			
Principal	Invest	igato	or:	Murad Abu-Farsak	n	-					
				Budo	SET :	STATUS					
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget		
Total Cos	st	(orig	inal)	\$150,000		Total				\$69,494	
		(revis	sed)								
Est. Expe	ended	to Da	ate			Salaries				\$49,494	
	F	Y 20 ⁻	15 - 2016 Bu	udget		Equipment	nt (expendable)		\$20,000		
FY Fund	s	(orig	inal)			Equipment	(non-ex	pendable)			
		(revi	sed)			Travel					
Est. FY E	Expend	liture)			Other					
				PURPOS	SE A	ND SCOPE			-		
(LTRC P driven int (PSC) te were per (side res up of ind propertie over con develope the propo project o evaluate set-up ar models a phase of	A research project was recently conducted at the Louisiana Transportation Research Center (LTRC), (LTRC Project 11-2GT) to study the set-up phenomenon (i.e., increase of pile resistance with time) of piles driven into Louisiana soils. The project involved instrumenting and testing twelve pre-stressed concrete (PSC) test piles driven in different soil conditions of Louisiana soils. Several dynamic and static load tests were performed at different times after EOD to quantify the amount of increase in side resistance with time (side resistance set-up) as compared to EOD resistance. The focus was to quantify the side resistance set-up of individual soil layers along the pile length. The set-up parameter "A" was correlated with different soil properties such as undrained shear strength, plasticity index, coefficient of consolidation, sensitivity and over consolidation ratio (OCR). Based on results of field measurements, several empirical models were developed to estimate the magnitude of pile set-up with time for individual soil layers. The main objective of the proposed research project is to verify, validate and re-calibrate the findings of the previous research project on evaluating pile set-up (LTRC Project 11-2GT). This includes: (1) pile instrumenting and testing to evaluate pile set-up at LA-1 Phase 2c site and other possible sites, (2) compare between the measured pile set-up and set-up predicted using the empirical models for verification, (3) re-calibrate the set-up empirical models as needed, and (4) develop an analytical model to estimate the time frame for the consolidation phase of pile set-up.										
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S			
-Conduct literature review on pile set-up; -Prepare instrumentation plan for test piles at LA-1 Phase 2c site; -Purchase the instrumentations for LA-1 Phase 2c project; and -Start working on developing a model to estimate the time frame for the consolidation phase of pile set-up.											
Title:	Devel for Ge	Project Sector Contract Contra								Proposed	
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Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:						Project Star	t Date:			9/1/2016	
Resear	ch Proj	ect N	umber:			Completion	Date	(original)	8/31/2017		
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)			
Principa	al Inves	tigato	or:	Murad Abu-Farsaki	n						
				Budg	SET (STATUS					
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	t	
Total C	ost	(orig	inal)	\$40,000		Total				\$34,500	
		(revi	sed)								
Est. Expended to Date Salaries										\$34,500	
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expend	dable)			
FY Fun	ds	(orig	inal)			Equipment	(non-ex	(pendable)			
		(revi	sed)			Travel					
Est. FY	Expen	diture	e			Other					
				PURPOS	SE A	ND SCOPE			-		
The Pie situ tes reliable piezoco pressur or behin identific soils, ar resistar technol undrain constra and fric bearing	PURPOSE AND SCOPE The Piezocone Penetration Tests (PCPT) has been widely considered for many years as the most useful in itu testing device for subsurface investigation and soil characterization. The CPT is a robust, simple, fast, eliable, and economical test that can provide continuous soundings of subsurface soil with depth. The iezocone penetrometer is capable of measuring the cone tip resistance (qc), sleeve friction (fs), and pore ressures at different locations, depending on the location of the pressure transducer (at the cone face (u1) r behind the base (u2)). These measurements can be effectively utilized for soil stratification and dentification, evaluation of different soil properties such as strength and consolidation design parameters of oils, and direct applications to geotechnical engineering design such as the estimation of ultimate pile esistance. The main objective of this research project is to synthesize the various applications of the CPT echnology for geotechnical engineering analysis and design. This includes evaluating soil classification, ndrained shear strength, preconsolidation pressure (or OCR), coefficient of lateral earth pressure (ko), onstrained modulus (M), small-strain shear modulus (Go), coefficient of consolidation (Cv), relative density nd friction angle of sand, direct methods for estimating of ultimate pile resistance, and evaluating the earing capacity of shallow foundations.										
	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS										
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s			
Start th	art the project.										

Title:	Cost I Aspha Ceme	Effec alt Su nt Ba	tiveness o urface Trea ase Course	Project S	tatus:	Proposed				
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		В	ludget	Category:	FHWA	4
						Ducie et Cteut	Data			7/4/2040
SIU:	ch Droi	o ot N	umbori			Project Start	Date:	(original)	6/20/2015	
Resear	ch Proj		umber:	10-5P		Completion		(original)		6/30/2018
Princip		tigate	or:	Mohammad Khattak	,	Completion	Date	(Tevised)		
Тппсір		iigait	JI.	Bung	、 FT S	T STATUS				
		т	otal Budge	1			Estima	ted 2016-201	7 Budae	t
Total C	ost	oria	inal)	\$200,000		Total				\$100.000
Total O		(revi	sed)	\$200,000		Total				<i><i><i></i></i></i>
Est. Ex	pended	to D	ate			Salaries				\$100.000
	<u>ه د ده م</u>	TY 20	15 - 2016 Bi	Jdget		Equipment	(expen	dable)		<i></i>
FY Fun	nds	(oriq	inal)	0		Equipment	(non-e	xpendable)		
		(revi	sed)			Travel	,	, ,		
Est. FY	'Expen	diture	9			Other				
			-	Purpos	E A					
Louisia Concre asphalt Though The pu using d and unt	na has ete (AC) t surface this tre rpose o lata fron treated	used pave trea atme f this n the soil c	many diffe ements with atment (AST ent has bee project is a pavement cement base	rent types of treatmen soil cement base cour interlayer over the son used on many projet so certain the benefits management system e courses.	nts urse soil ects of to	attempting to es. One popu cement prior s, the benefit o using AST into compare the c	mitigat lar trea to plac of doing erlayer lifferen	e reflective of atment methol ing AC pave g so has not s. This will I ces in distre	cracking od is to p ment ov been qu be accor ss betwo	in Asphaltic blace an er it. antified. nplished een treated
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENT	S		
Otort t	0 100	roh -		FISCAL YEAR 2016-20	017	PROPOSED A	CTIVITIE	S		
Siart in										

Title:	Imple use o	ment n Lo	tation of a uisiana Bri	Localized Roughne	for	Project S	tatus:	Proposed		
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
			•	Ι		1				
SIO:						Project Start	Date:			
Resear	ch Proj	ect N	umber:			Completion	Date	(original)		
Resear	ch Age	ncy:		LTRC		Completion	Date	(revised)		
Princip	al Inves	tigato	or:	Mark Martinez						
				Budo	ЭЕТ					
		Г	Total Budge	t	Estimated 2016-2017 Budget					
Total C	ost	(orig	jinal)	\$82,528		Total				\$82,528
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$82,528
	F	FY 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		
FY Fun	nds	(orig	inal)			Equipment	(non-ex	pendable)		
		(revi	sed)			Travel	L			
Est. FY	'Expen	diture	Э			Other				
				PURPOS	SE AI	ND SCOPE			•	
This pro- the new compoi smooth assess the dra	oposal i vly deve nents to ness. T es bridg ft specif	the solution of the solution o	sents an at d bridge rou specification econd comp calized roug on on pilot p	tempt to develop a s ughness specification n. The first comprise prises a localized IRI phness (bumps, faults projects so as to refir	peci n for s a s con s, sl ne th	ification and in use on Louis standard IRI c nponent utilizi ope changes, ne draft and to	npleme iana bri ompone ng a 25 etc.). T assess	ntation strat dges. there ent that ass foot basis (his proposa its strength	egy that are to b esses ov (IRI25-ft) I seeks to as and w	assesses e two verall bridge) that to assess eaknesses.
				FISCAL YEAR 2015	· 201	6 ACCOMPLIS	HMENTS	5		
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Task 1 -Task 2 -Task 3 -Task 4 -Task 5 -Task 6	-Task 1 – Select Field Projects; -Task 2 – Assess Roughness; -Task 3 – Conduct Statistical Analysis; -Task 4 – Prepare Summary of Findings; -Task 5 – Prepare Final Report; and -Task 6 – Prepare Benefit/Cost Analysis.									

Title:	Develo that ut Bump	opm tilize s on	ent and Im s the Loca Louisiana	plementation of a S lized Roughness In Highways	bhac ide>	dow Specifica ((LRI) to Loc	ation ate	Project St	tatus:	Proposed
Fundin	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Start	Date:			
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		
Resear	ch Ager	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Invest	tigato	or:							
				Budg	ET \$	Status				
		Т	otal Budget	t		I	Estimat	ted 2016-2017	7 Budget	:
Total C	ost	(orig	inal)	\$36,954		Total				\$36,954
		(revi	sed)							
Est. Ex	Est. Expended to Date Salaries \$36,954									
	F	Y 20	15 - 2016 Bi	udget	Equipment	(expen	dable)			
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)		Travel					
Est. FY	Expend	diture	;			Other				
				PURPOS	SE A	ND SCOPE				
This pro utilizes Index (I	oposal r the Lou _RI) for	epre: isian use (sents an att a Transpor on Louisian	tempt to develop a s tation Research Cen a roads.	had ter':	ow specificatio s (LTRC's) ne	on and wly dev	implementat /eloped Loca	tion strat alized Ro	tegy that bughness
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	S		
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S		
-Task 1 -Task 2 -Task 3 -Task 4 -Task 5 -Task 6 -Task 7 -Task 8 -Task 9 -Task 1	Task 1 – Develop LRI Software; Task 2 – Develop a Draft LRI Specification; Task 3 – Identify Field Projects; Task 4 – Conduct Field Assessment of traditional grinding methods without use of LRI; Task 5 – Conduct Field Assessment of non-traditional grinding methods incorporating LRI; Task 6 – Carry out Comparative Analysis and Conduct Follow-up Testing; Task 7 – Prepare Interim Report and/or Hold PRC Meeting; Task 8 – Develop a Roughness Specification utilizing LRI Task 9 – Prepare Final Report; and Task 10– Prepare Benefit/Cost Analysis.									

Title:	Impro [.] Louisi	ving ana	the Use of	Crack Sealing to A	halt Pavemen	t in	Project S	tatus:	Proposed		
Fundin	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		B	Budget	Category:	FHWA		
SIO:						Project Start	Date:			8/1/2016	
Researd	ch Proje	ect N	umber:			Completion I	Date	(original)) 7/31/2018		
Researd	ch Ager	ncy:				Completion I	Date	(revised)			
Principa	al Invest	igato	or:								
				Budg	ET \$	STATUS					
		Т	otal Budget	t			Estimat	ed 2016-201	7 Budget	t	
Total Co	ost	(orig	inal)	\$180,000		Total				\$90,000	
		(revi	sed)						r		
Est. Exp	pended	to Da	ate			Salaries				\$90,000	
	F	Y 20	15 - 2016 Bi	ıdget		Equipment	(expend	dable)			
FY Fund	ds	(orig	inal)			Equipment	(non-e>	(pendable)			
		(revis	sed)			Travel					
Est. FY	Expend	diture)			Other					
				PURPOS	E A	ND SCOPE					
The ma indirectl researc establis selectin	in objec ly sealin h will er h the se g prope	tive ng cra ntail l ervice r roa	of the propo acks in AC ocating pro e life extens idways for o	osed research is to d pavements as well a jects where direct an sion of each method. crack sealing or simil	ete s pe id ir the arly	rmine the serv erform cost-be ndirect crack s final product s treatment.	rice life enefits a ealing l should	extension o analyses on has been pe include the	f directly each me rformed guideline	or ethod. The and ∋ of	
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENTS	3			
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s			
Start the research activities.											

Title:	Trans Corre Louis	porta lated iana	ation Infras	structure Asset Dam e Gas/Oil Recovery	very	Project St	tatus:	Proposed		
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
SIO:						Project Start	Date:			
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)		
Resear	ch Ager	ncy:		LTRC		Completion I	Date	(revised)		
Principa	al Inves	tigato	or:	Zhong Wu						
				Budgi	ЕТ \$	Status				
		Т	otal Budge	t		I	Estimat	ed 2016-2017	7 Budget	
Total Co	ost	(orig	inal)	\$125,000		Total				\$67,600
(revised)										
Est. Expended to Date \$1,000 Salaries \$67,60									\$67,600	
	F	Y 20	15 - 2016 B	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				
Est. FY	Expend	diture)			Other				
				PURPOSI	e ai	ND SCOPE				
The obj the sha fiscal re Louisiar	ectives le oil/ga medies na road	of th as de ; anc ways	is study are velopment I (3) to fore and valida	(1) to quantify the pa activities; (2) to estim cast the impact of the ite the strategy of fisc	ave ate fut al r	ment damage the damage o ture shale oil/g emedies.	cause costs ai gas dev	d by the extr nd recomme relopment ac	a truck t and a stra ctivities o	rips due to ategy of on the
				FISCAL YEAR 2015 -	20 1	6 ACCOMPLIS	HMENTS	6		
-Condu -Develo in Hayr	Conducted literature review; and Developed a research plan to quantify the extra truck trafficking due to shale oil/gas development activities n Haynesville Shale play in Louisiana.									
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Traffic -Transp -Pavem	Traffic Data collection; Transportation modeling for identified damaged roads in Haynesville Shale play in Louisiana; and Pavement life and cost analysis on damaged roads.									

Title:	Imple Aspha	ment alt M	tation of So ixtures	Project S	tatus:	Proposed				
Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
						Droiget Start	Datas			7/1/2016
SIU:	ch Proi	oct N	umbor			Completion	Date:	(original)	6/30/2018	
Resear			umber.	LTRC		Completion	Date	(revised)		0/30/2018
Princip	al Inves	tioato	or:	Louav Mohammad		Completion	Duit	(1011000)		
		<u> </u>	-	Budo	SET \$	STATUS				
		т	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total C	ost	(orig	jinal)	\$233,000		Total				\$116,500
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$91,500
	F	FY 20	15 - 2016 B	udget		Equipment	(expen	dable)		
FY Fun	lds	(orig	jinal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	'Expen	diture	Э			Other				\$25,000
				PURPOS	SE A	ND SCOPE			-	
Louisia constru include roadwa recycle pavem Develo circular resistai several	na's Qu iction is gradati y densi d mater ent (RA pment (bend (bend (nce of th pilot pr	iality mair on ar ty. T ials i P), ar LAD SCB) ne de oject	Control and hly based o nd asphalt o hese physi n asphalt m nd recycled OTD) has m test at inte signed mix s selected	a Quality Assurance n controlling physica content, voids filled v cal properties have s nixtures such as crun a sphalt shingles, th ecently proposed spe ermediate temperatur tures. The objective for the implementatic	(QC l pro vith serve nb ru e Lo e cific e (L e of on of	(QA) practice operties of plan asphalt, air vo ed Louisiana v ubber modified ouisiana Depa cation change A DOTD TR 3 this study is to f the new spec	for asp ids, mo vell, ho d asph rtment s to ino 330) in o evalu cificatio	bhalt mixture uced asphal bisture susce wever, with alts, reclaime of Transport corporate the order to ens ate the SCB ons.	s in pave t mixture eptibility the incre ed aspha ation an e use of ure crac test res	ement es that tests, and ease use of alt d the semi- king ults from
				FISCAL YEAR 2015	· 201	16 ACCOMPLIS	HMENT	S		
-Task 1 -Task 2 -Task 3	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Task 1 – Conduct Literature review; -Task 2 – Identify Field Projects and Material Collection; and -Task 3 – Conduct of Laboratory Investigation.									

Title:	Devel	opmo	ent of a 4.7	75mm Asphalt Mixtu		Project S	tatus:	Proposed		
Funding	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
							_			_ /_ /
SIO:						Project Start	Date:		7/5/2016	
Researc	h Proje	ect N	umber:			Completion Date (original)				7/5/2018
Researc	h Ager	ncy:		LTRC		Completion	Date	(revised)		
Principa	I Inves	tigato	or:	David Mata						
		_		BUDG	SET :	STATUS				
		Т	otal Budge	t .		Estimated 2016-2017 Budget				
Total Co	ost	(orig	inal)	\$143,000		Total				\$71,000
		(revi	sed)						1	
Est. Exp	ended	to Da	ate			Salaries				\$71,000
	F	Y 20	15 - 2016 Bu	udget		Equipment	(expen	dable)		
FY Func	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expend	diture	9			Other				
				PURPOS	SE A	ND SCOPE			-	
The obje targeted and dus (LWT) te will be e are grav Louisian	ective c l in the t-to-bin est, Sei valuate rel and na stand	of this researed der r mi-Ci ed to limes dard	s research i arch will be atio) and m ircular Bend determine stone becau specificatio	s to develop a mix de gradation controls, v hechanical tests. The d (SCB) test, and Dy the most economical use of their prevalence ons which include PG	esig volu me nam mix ce ir 64	n criteria for 4 metric propert chanical tests nic Modulus. L k. The primary n Louisiana. A -22, PG 76-22	.75 mn y requi includ ocal ag aggre sphalt , and F	n NMAS mix irements (air e the Loaded ggregates ar gate types th binder grade PG 82-22crm	tures. C voids, \ d Wheel nd aspha nat will b as tested n.	riteria /MA, VFA, Track It cements e examined will follow
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENT	S		
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Develop proposal; -Conduct literature review; -Collect local aggregate and asphalt cement; and -Begin design and reporting.										

Title:	Devel Moist	op a ure S	Fracture M Sensitivity	lechanic Based Tes	ion of	Project S	tatus:	Proposed		
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		В	Budget	Category:	FHWA	
				I	1	1				
SIO:						Project Start	Date:			
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)		
Resear	ch Ager	ncy:		LTRC		Completion I	Date	(revised)		
Principa	al Inves	tigato	or:	Louay Mohammad						
				Budo	GET (STATUS				
		T	Total Budge	t		Estimated 2016-2017 Budget				t
Total C	ost	(orig	jinal)	\$220,000		Total				\$110,000
		(revi	sed)						I	
Est. Ex	pended	to D	ate			Salaries				\$100,000
	F	FY 20	15 - 2016 Bu	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	jinal)			Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture	Э			Other				\$10,000
				PURPOS	SE A	ND SCOPE			•	
perform extensive the moi Test for used m specime reliable of the n moistur based l	vely for sture se r Resista ethods, en to ev indicate nodified re dama aborato	f asp deca ensiti ance whic valua or of Lotti ige in ory te	halt pavem ades by nun vity of asph of Compac ch uses the te the mois moisture se man test ha field. The st procedur	ents, but also the sa nerous researchers) alt mixtures. The mo ted Asphalt Mixtures Tensile Strength Ra ture sensitivity. Seve ensitivity of asphalt n is been also criticize objective of this stud e to evaluate the mo	fety , and odifie s to tio (eral s nixtu d fo y is bistu	of traveling pu d standard tes ed Lottman tes Moisture-Induc TSR) of moist studies indicat ures. Moreover r the impractic to develop a n re of asphalt n	t method t method t (AAS ced Da ure cor ed that r, the m ality an new sta nixtures	he issue has ods have be HTO T283 mage) is on aditioned spo the TSR is noisture con- id incapabili ndardized fr	s been s en used Standard e of the ecimen t not a co ditioning ty of sim racture n	tudied to evaluate d Method of most widely o dry nsistent and procedure ulating the nechanics-
				FISCAL YEAR 2015	- 20 ′	16 ACCOMPLIS	HMENTS	6		
	-4 Pt	4		FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	S		
-Condu -Evalua -Develo -Develo -Perforr	-Conduct literature review; -Evaluate existing moisture damage test methods; -Develop laboratory test procedure for moisture da -Develop laboratory experimental plan; and -Performing laboratory tests.				mag	e;				

Title:	Devel	op a	Cost Effec	tive Perpetual Pave		Project S	tatus:	Proposed			
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		B	Budget	Category:	FHWA	<u> </u>	
						•					
SIO:						Project Start	Date:		7/1/2016		
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)		6/30/2018	
Resear	ch Agei	ncy:		LTRC		Completion I	Date	(revised)			
Principa	al Inves	tigato	or:	Louay Mohammad							
				Buda	SET (STATUS					
		Т	otal Budget	t		Estimated 2016-2017 Budget					
Total C	ost	(orig	inal)	\$234,000		Total				\$131,000	
		(revi	sed)								
Est. Ex	pended	to D	ate			Salaries				\$131,000	
	F	Y 20	15 - 2016 Bu	udget		Equipment	(expen	idable)			
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)			
-		(revi	sed)			Travel	`	. ,			
Est FY	Expen	diture	2 2			Other					
200.11	Ехроп	antare	,	Puppos					l		
Perpetu in the s Develop reporte major s reporte selection perpetu hydrate Further Constru	ual pave ervice li pment (d that th tructura d to be on, desig ual pave ed lime, , the de uction te	emen fe of LADO ne us I reh prohi gn ar men elast sign echni	ts are used the pavem OTD) assig e of perpeti abilitation. I bitive. The nd construct t structures omeric poly process wo ques utilize	to reduce maintenal ent structures. Curre n 15 to -20 years des ual pavements can in objective of this reset tion methods in the co . Potential materials mer modification, cr buld incorporate mec d will ensure that a u FISCAL YEAR 2015 -	nce ntly sign ncre tial earc leve inc umb han unifc • 20	cost and reha the Louisiana life for asphal ase the perfor costs of curren h is to examine elopment of as lude: high RAF o rubber modif istic evaluation orm, increased	bilitatic Depar It mixtu mance nt perp e poter phalt n P, use ication n to op surfac	on activities t rtment of Tra- ire in a pave e life up to 30 etual pavem ntial cost sav nixture speci of mineral fil s, and warm timize mixture ce density.	through ment str years v ient desi vings in t fications lers suct mix ado re design	the increase tion and ucture. It is with no gns are he material for h as ditives. h.	
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Condu -Develo -Condu -Perforr -Develo Pavem -Prepar	Conduct Literature Review; Develop Test Factorial; Conduct Laboratory Experiment; Perform Data Analysis; Develop specification for the LADOTD specifications for Roads and Bridges for the Use of Perpetual Pavements; and Prepare Final Report.										

Title:	Evalu Paver	ation nent	of Non-de Density M	estructive Test Meth easurements		Project St	atus:	Proposed			
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO						Project Start	Date:			7/5/2016	
Resear	ch Proie	ect N	umber:			Completion	Date	(original)	inal) 7/5/2018		
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		.,,,_,,	
Principa	al Inves	tigato	or:	Louay Mohammad		·					
				Budg	GET STATUS						
		т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	:	
Total C	ost	(origi	inal)	\$190,000		Total				\$95,000	
		(revis	sed)								
Est. Ex	pended	to Da	ate			Salaries				\$95,000	
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Fun	ds	(orig	inal)			Equipment	(non-e)	(pendable)			
		(revis	sed)			Travel					
Est. FY	Expen	diture)			Other					
				PURPOS	E A	ND SCOPE					
Non-de than co reliabilit availab Departr	structiv nventio ty and a le non-o nent of	e test nal de locura destru Trans	ting of asph estructive r acy of non- uctive dens sportation a	nalt pavement density nethods. Advancem destructive density m ity measurement opti and Development (LA	/ ha ents leas lons \DC	s the potentia s in non-destru surements. Th s to be potentia DTD).	I to be uctive to is rese ally imp	safer and les echnologies arch will inve blemented by	ss time of have im estigate / the Lou	consuming proved the the uisiana	
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	6			
FISCAL YEAR 2016-2					017	PROPOSED A	CTIVITIE	S			
-Develop proposal; -Conduct literature review; -Develop experimental factorial; and -Identify field projects.											

Title: Field RAP	Imple ner C Mixtu	ementation ontent Det res	r of	Project St	tatus:	Proposed				
Funding Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:					Project Start	Date:		7/5/2016		
Research Proj	ect N	umber:			Completion	Date	(original)	7/5/2018		
Research Age	ncy:				Completion	Date	(revised)			
Principal Inves	tigato	or:			I					
			Budgi	ЕТ \$	Status					
	Т	otal Budge	t			Estimat	ed 2016-2017	7 Budget	1	
Total Cost	(orig	inal)	\$200,000		Total				\$100,000	
	(revi	sed)								
Est. Expended	l to D	ate			Salaries				\$100,000	
I	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Funds	(orig	inal)			Equipment	(non-ex	kpendable)			
	(revi	sed)			Travel					
Est. FY Expen	diture	9			Other					
			PURPOSI	e ai	ND SCOPE					
The purpose of polymer conte advantage of k further research effectiveness v	f this nt det being hing versu	research p termination faster, easi of its capat s the other	roject is to determine and for quality contro er to handle, and inex ilities. The FTIR will r asphalt binder testing	if ti xpe nee J de	he FTIR can b f recycled mixi ensive than cu ed to be tested evices.	e imple tures. 7 rrent te for pre	emented in L The FTIR spo esting metho ecision, testir	Louisiana ectrome ds, but r ng time,	a for ter has the equires and cost	
			FISCAL YEAR 2015 -	20 1	6 ACCOMPLIS	HMENT	6			
-Develop prop -Conduct litera -Develop expe -Identify field p	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES Develop proposal; Conduct literature review; Develop experimental factorial; and Identify field projects.									

Title:	Retro Barrie	rofit of Existing Statewide Louisiana Safety Walk Bridge rier Railing Systems Proposed									
Fundin	ig Sour	ce:	SPR: TT-I	Fed/TT-Reg		Budget Category: FH					
									T		
SIO:				DOTLT1000099		Project Start Date:			10/1/2015		
Resear	ch Proje	ect N	umber:	16-1ST		Completion	Date	(original)			
Resear	ch Agei	ncy:				Completion	Date	(revised)			
Principa	al Inves	tigato	or:								
				BUDG	ET	STATUS					
		Т	otal Budget	t		I	Estimat	ed 2016-201	7 Budget	t	
Total C	ost	(orig	inal)	\$169,172		Total				\$21,000	
		(revi	sed)								
Est. Ex	pended	to D	ate			Salaries				\$17,000	
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expend	dable)		\$100	
FY Fun	ds	(orig	inal)			Equipment	(non-ex	pendable)			
		(revi	sed)			Travel					
Est. FY	Expen	diture	9			Other			\$3,900		
				PURPOS	ΕA	ND SCOPE			<u>.</u>		
The purcommon Transpr Specific will be a crash p project The ret propose of the s	rpose of in types ortation cations. enginee erforma will imp rofit opt ed retro afety w	f this of vi (LAE For t red, ance rove ions fits d alk fo	research p ntage conci DOTD). The the common design and of the barrie the crash p will be desig eveloped foo or maintena	roject is to evaluate t rete safety walk barri rete safety walk barri rese designs will be even n rail types that do no detailed. These retro er systems with respe- performance of the br gned to be cost effect or the safety rails selen nce activities or eme	he ers valu of m ofit o ect idgo tive cte rge	current streng currently in us ated with resp neet the requir options will be to MASH TL-4 e rail systems to fabricate a ed for this proje ncy vehicular	th and p se by th ect to N ements develo The ro and ma nd insta ect will stoppag	performance le Louisiana MASH TL-3 s, retrofit bric ped to impre etrofit option aintain the s all. We unde consider the ges.	e of the r Departr and 4 dge railin ove the s is develo afety wa erstand t e us(cont	nost ment of g options strength and oped for this lk areas. he inued use)	
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENTS	;			
FISCAL YEAR 2016-2 -Task 2: Literature Review of LADOTD Database of -Task 3: Bridge Rail Analyses, Design & Detailing (017 Bri Sys	7 PROPOSED A idges with Saf tem Developm	CTIVITIE ety Wa hent).	s lk Barriers; a	and		

Title: Liv	e Load uisiana	Rating of (Project S	tatus:	Proposed					
Funding Se	ource:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:					Project Start Date:			5/2/2016		
Research P	roject N	lumber:			Completion	Date	(original)		7/31/2017	
Research A	gency:		LSU		Completion	Date	(revised)			
Principal Inv	vestigat	or:	Ayman Okeil		•					
			Budo	GET (STATUS					
	1	Fotal Budge	t			Estimat	ed 2016-201	7 Budget	t	
Total Cost	(orig	jinal)	\$264,484		Total				\$252,886	
	(rev	ised)								
Est. Expend	led to D	ate			Salaries				\$84,210	
	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		\$43,900	
FY Funds	(orig	ginal)			Equipment	(non-ex	(pendable)		\$90,000	
	(rev	ised)			Travel	1		\$3,500		
Est. FY Exp	enditure	Э			Other				\$31,276	
			PURPOS	SE A	ND SCOPE					
The objectiv testing of th after instrur as to how th	re of this e culver nenting le live lo	s study is to rts selected to monitor t bads are ac	assess live load eff by the Louisiana De heir response. Unde tually distributed as	ects part rsta well	on cast-in-pla ment of Trans nding the resp as the actual	ace con sportatio oonse c rigidity	Icrete box cu on (LADOTE of the culvert of the box co	ulverts. F D), will be s will pro orner co	ield load e conducted ovide insight nnections.	
			FISCAL YEAR 2015	- 20 ⁻	16 ACCOMPLIS	HMENT	6			
-Task 2: Se -Task 3: De -Task 4: Pro -Task 5: Ins	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES Task 2: Select Representative Culverts (Coordinated by LADOTD Bridge Design Section); Task 3: Develop Instrumentation Plan and Specifications; Task 4: Procurement of Monitoring System; and Task 5: Inspect, Instrument, and Conduct Load Test.									

Title:	Evalu Signs	ating on D) the Effect Driver Beha	tiveness of Regulato avior near Highway/		Project Status:		Proposed		
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		B				
SIO:						Project Start Date:			7/1/2016	
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)		6/30/2017
Resear	ch Agei	ncy:		LTRC		Completion I	Date	(revised)		
Principa	al Inves	tigato	or:	Julius Codjoe		I				
				Budg	ЕТ 🖁	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$75,000		Total				\$75,000
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$50,000
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e	(pendable)		\$24,000
		(revi	sed)			Travel			\$1,000	
Est. FY	Expen	diture	9			Other				
				PURPOS	E A	ND SCOPE				
Regulat that ma traversi study so the rese highway and allo	y not be ng a cro eeks to earch ha y/rail cro ow for o	ns ar e rea ossin quar as the ossin ptima	d warning s dily appare g. These si tify their ef e potential f gs. The res al utilization	signs are tools design nt or to elicit certain of gns are widely used a fectiveness. While th to impact if and when sults will give designe of the signs.	ners Irive and ie re Wa rs a	s use to relay i er behavior tha l are believed esults of the re arning or Regu a better unders	nforma at will in to be e esearch ulatory standin	ation to drive mprove the p ffective; how n will not res signs are us g of the imp	rs about probabili vever, th ult in a r ed near acts of th	thazards ty of safely e proposed new device, he signs
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	6		
-Identify	/ crossi	nas v	where the T	raffic Safety group or	Hi	ohway/Rail Sa	fety L Ir	 nit would like	to insta	ll signage: -
-Install -Install -Record -Analyz	-Install cameras and record the vehicles/drivers before the signs are deployed; -Install the signs, allow for a short adjustment period for drivers; -Record any changes in drivers' behavior; and -Analyze data to determine if there is any change in drivers' behavior.									

Title: Dredç	jing Louisiar		Project Status:		Proposed			
Funding Sour	ce: SPR: T	T-Fed/TT-Reg	В	Budget Category: FHWA				
		1						
SIO:			Project Start	Date:			9/1/2015	
Research Proj	ect Number:		Completion I	Date	(original)			
Research Age	ncy:		Completion I	Date	(revised)			
Principal Inves	tigator:							
		BUDGE	T STATUS					
	Total Bud	get	E	Estimat	ed 2016-201	7 Budget	t	
Total Cost	(original)	\$75,000	Total				\$75,000	
	(revised)					1		
Est. Expended	to Date		Salaries				\$75,000	
	FY 2015 - 2016	Budget	Equipment	(expend	dable)			
FY Funds	(original)		Equipment	(non-ex	(pendable)			
	(revised)		Travel					
Est. FY Expen	diture		Other					
		PURPOSE	AND SCOPE			<u>.</u>		
The purpose of Development (effort to adequ research will ir ownership cos out the dredgir legislation.	f the study is (LADOTD), (o ately maintain nclude: (1) a r ts (i.e. purcha ng operations;	o investigate the feasibility other agencies) purchas navigable channels to a eview of available dredgin sing, permitting, mainten and (4) a review of exist	ity of the Louisia sing, owning, an uthorized dimen ng equipment/te ance, operation, ing legislation ar	na Dep d opera isions. chnolog etc.); (nd reco	partment of ating a dredg It is anticipa gy; (2) an as (3) a compa mmendation	I ranspo ge to ass ated that ssessme rison to ns for re	rtation and sist in the the nt of contracting quired	
		FISCAL YEAR 2015 - 2	016 ACCOMPLIS	HMENTS	3			
The Project Re was conducted development p	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS The Project Review Committee has met to begin developing the Request for Proposal (RFP). A site visit was conducted at the Port of Morgan City and on a working dredge near the port to help inform the RFP development process.							
		FISCAL YEAR 2016-20	17 PROPOSED AC	CTIVITIE	S			
To be determin	ned.							

Title:	Louisi	ana	Trip Generation Manual Project Status: Propose							
Fundin	g Sourc	e:	SPR: TT-	Fed/TT-Reg		Budget Category: FHWA				
				1						
SIO:						Project Start	Project Start Date:			8/1/2016
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		1/31/2018
Resear	ch Agen	cy:				Completion	Date	(revised)		
Principa	al Invest	igato	or:							
				Budo	SET	STATUS				
		Т	otal Budge	t			Estima	ted 2016-201	7 Budge	:
Total C	ost	(orig	inal)	\$125,000		Total				\$90,000
		(revi	sed)						-	
Est. Ex	pended	to D	ate			Salaries				\$90,000
	F	Y 20	15 - 2016 B	udget		Equipment	(expen	idable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expend	liture	9			Other				
				PURPOS	SE A	ND SCOPE	<u>I</u>			
decision the ITE conside sufficien Louisia conserv take ma confirm Manual improve	ns about TGM fro eration. V nt, usefu na mano vative or ajor cate the num . A Loui ements o	t futu om s While I sau dates dates gorie nber isian due t	s the use of multiple using loca mple size. Is the use of number of es out of th s in the boo na-specific to the large	tation investment and rtation investment and le sizes or may not b al data in the plannin f the ITE Trip Generation trips that occur at de e ITE Trip Generation bk. If need be, contir TGM could result in out trip generation.	ation ation n M nue	Manual (TGM opments durin anual and do this to create a elopers not ha	<i>a</i> , som size of able, it <i>I</i>). The og peak real co a Louis ving to	TGM appea TGM appea c hours. This unts around siana-specific make so ma	ates are under cult to ob ars to be s project Louisiar c Trip Ge any majo	derived in otain a very proposes to ha to eneration r
				FISCAL YEAR 2015	· 20 [·]	16 ACCOMPLIS	HMENT	s		
The Pro	oject Rev	view	Committee	e has met and is dev	elop	oing the Reque	est for	Proposal (RF	⁻ P).	
				FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	ES		
To be c	letermin	ed.								

Title:	Louisi Asses	ana sme	Highway C nt Tool	Construction Work	Project Status:		Proposed			
Fundin	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		B	Budget	Category:	FHWA	
SIO:						Project Start	Date:			9/1/2015
Resear	ch Proje	ect N	umber:			Completion I	Date	(original)		
Resear	ch Ager	ncy:				Completion I	Date	(revised)		
Principa	al Invest	tigato	or:							
				Budo	SET \$	Status				
		Т	otal Budget	:			Estimat	ed 2016-201	7 Budget	
Total C	ost	(orig	inal)	\$125,000		Total				\$90,000
		(revi	sed)						r	
Est. Ex	pended	to Da	ate			Salaries				\$90,000
	F	Y 20	15 - 2016 Bi	ıdget		Equipment	(expend	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				
Est. FY	Expend	diture)			Other				
				PURPOS	SE AND SCOPE					
The pur mobility Develop queues	rpose of impact pment's using v	this on a (LA[ideo	proposed p regional rc DOTD's) ex camera foc	project is to develop bad network. In addi isting queue estimat btage.	a me tion ion	ethod and tool , the Louisiana procedures wi	for est a Depai Il be ev	imating high rtment of Tra aluated and	iway wo ansporta compar	rk zone tion and red to actual
				FISCAL YEAR 2015	201	6 ACCOMPLIS	HMENTS	5		
The Pro develop	FISCAL YEAR 20 The Project Review Committee has met and the development.					est for Proposa	al (RFP) is currently	/ under	
				FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	S		
To be determined upon proposal selection.										

Title: Ev	aluatio	on and Guid	ance of Planning-Le	vel	I Cost Estimation Proje			tatus:	Proposed		
Funding S	ource:	SPR: TT-	Fed/TT-Reg		Budget Category: FHWA						
010								0///00/0			
SIO:	<u> </u>				Project Start	Date:	(· · ·))	9/1/2016			
Research F	roject	Number:			Completion I	Date	(original)		2/28/2018		
Research A	Agency				Completion	Date	(revised)				
г ппсіраї п	vestiga		Budg	ET \$	Status						
		Total Budge	t		1	Estimat	ed 2016-201	7 Budget	:		
Total Cost	(0)	riginal)	\$125,000		Total				\$75,000		
	(re	evised)									
Est. Expend	ded to	Date			Salaries				\$75,000		
	FY 2	2015 - 2016 Bu	udget		Equipment	(expen	dable)				
FY Funds	(0)	riginal)			Equipment	(non-e)	(pendable)				
	(re	evised)			Travel						
Est. FY Exp	penditu	ire			Other						
			PURPOS	e ai	ND SCOPE			-			
Transportati transportati the state go program an meet the tra affect if and to become manageme match the a statewide p agency and funds not b to collect ad This study i transportati synthesize and other S throughout	tion ag on plato bals. Pl on the ansport d how a a part of actual b orogram d may r eing us dditional is to su on pro the best of A's w the sta	encies begin nning is to ide anning-level he ability of th tation needs a project will h of the Statew poophy towar budget and can for planning result in proje sed efficiently al public fund rivey the curr jects. Further st practices u vill then be fo ate.	planning projects as entify a set of the most cost estimates can have for the state. The accord be built and the amou- ide Transportation Im ds cost estimation ne- ost of a project once of plevel cost estimation cts utilizing more pub- or can have a negative ing in the future. ent practices that LAI to this study will invest sed for planning leve rmulated into a resource	mu st ci ave lent ura int co proceeds con o ca blic e an DO tiga I es rrce	ch as 25 years ost-effective p a significant e of Transporta cy of planning of other project ovement Plan s to be consist struction begin in hinder the a funds than the d lasting impa	s into the rojects effect of ation ar g-level of the that (STIP). tent so ns. The abilities by shou act, male anning transport collect n be ut	he future. Th and approa in the overal ind Developm or conceptua can be fund . The overall that estimate lack of a co of the state ild. The public king it difficu	ne purpo ches tha l transpo nent (LA al estima ed and k approad es more onsistent transpo ic perce lt to gair stimates ncies (S on from DOTD st	se of at achieve ortation DOTD) to ating can ouilt that are ch and closely and rtation ption of n legislation s for TA's) to LADOTD caff		

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

The Project Review Committee has been established and Request for Proposal (RFP) development will commence in May, 2016.

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

To be determined based on the selected proposal.

Title:	Highv	vay E	vacuation	Modeling Package		Project Status:		Proposed		
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
						1				
SIO:						Project Start Date:			9/1/2016	
Resear	ch Proj	ect N	umber:			Completion	Date	(original)		8/31/2018
Resear	ch Age	ncy:		LSU		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	Chester Wilmot						
				Budo	SET \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget	
Total C	Total Cost (original) \$200,000					Total				\$75,000
	(revised)									
Est. Ex	pended	to D	ate			Salaries				\$72,000
	F	FY 20	15 - 2016 B	udget		Equipment	(expend	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e>	(pendable)		\$1,000
		(revi	sed)			Travel			\$2,000	
Est. FY	Expen	diture	9			Other				
				PURPOS	SE A	ND SCOPE				
To deve evacua years a	elop a c tion mo ind dem	ompi dels ionsti	uterized hu developed rate its use	rricane evacuation m at the Louisiana Trai in a trial application.	iode nspc	ling package ortation Resea	that inc irch Ce	orporates th nter (LTRC)	e hurrica over the	ane e last 10
				FISCAL YEAR 2015	201	6 ACCOMPLIS	HMENTS	;		
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
 Prepare synthetic population data for New Orleans metropolitan area; Prepare evacuation network for New Orleans metropolitan area; and Prepare input data files in the required format and automate the dynamic updating of the input files. 										

Title:	Radio Tracki	-freq ing a	uency Idei Ind Future	ntification (RFID) Ta Asset Managemen	ial	Project S	tatus:	Proposed		
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO						Project Start Date:			5/1/2016	
Resear	ch Proie	ect N	umber:	16-1C		Completion	Date	(original)		4/30/2018
Resear	ch Ager	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	Amar Raghavendra	a					
				Budo	SET \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget	
Total C	ost	(orig	inal)	\$165,312		Total				\$112,656
		(revi	sed)							
Est. Ex	pended	to Da	ate			Salaries				\$52,656
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e>	kpendable)		\$60,000
		(revi	sed)			Travel				
Est. FY	Expend	diture	9			Other				
				PURPOS	SE A	ND SCOPE				
This pro Transpo allow th highwa suitable study th	ofect will ortation he depai y syster e for use he possi	I stud and tmer n in a on a bility	dy the feasi Developme nt to lookup an efficient above-grou of inventor	bility of using RFID t ent (LADOTD) paven mixture design and and cost-effective wand and underground ying these assets fro	echi nent con ay. higi om a	nology to track materials and struction infor The research hway element a moving vehic	k the Lo I highw mation will ider s. Addi cle.	ouisiana Dep ay assets. R of the mater ntify the RFI tionally, the	Partment FID tagg rials use D tags a research	of ging will d on the nd readers n will also
				FISCAL YEAR 2015	· 201	6 ACCOMPLIS	HMENTS	6		
Gathere manage	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS Gathered pertinent information from vendors and other states using RFID technology for asset management.									
				FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	S		
-Perforn -Acquir -Choos -Start fi	-Perform literature review; -Acquire RFID systems; -Choose site(s) for field trial; and -Start field testing.									

Title: Evalu	tle: Evaluation of CFRCP: Phase II Accelerated Loading						Project S	tatus:	Proposed
Funding Sou	rce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:					Project Start Date:			7/1/2016	
Research Pro	ject N	umber:			Completion	Date	(original)		6/30/2018
Research Age	ency:		LTRC		Completion	Date	(revised)		
Principal Inve	stigato	or:	Amar Raghavendra	a					
			Budo	GET (STATUS				
	٦	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total Cost	(orig	inal)	\$250,000		Total				\$33,000
	(revi	sed)						-	
Est. Expended	d to D	ate			Salaries				\$33,000
	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Funds	(orig	inal)			Equipment	(non-e	xpendable)		
	(revi	sed)			Travel				
Est. FY Exper	nditure	9			Other				
			PURPOS	SE A	ND SCOPE			-	
The purpose of loading. Addit The performan	of this ionally nce of	project is to , cracking the sectior	o determine the fatig patterns for long pav ns will be determined	ue fi reme I uno	ailure mechan ent sections w der heavy load	ill also d accel	CFRCP und be identified erated loadir	ler accel and doo ng.	erated cumented.
			FISCAL YEAR 2015	- 201	16 ACCOMPLIS	HMENT	S		
-Develop prop	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES								
-Design section -Construct section	ons; and the second sec	nd							

Title:	Devel RCC F	opm Pave	ent of Prec ments	liction Models and	or	Project S	tatus:	Proposed		
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Start Date:			7/1/2016	
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		6/30/2018
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	Amar Raghavendra	à					
				Budo	SET \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget	
Total C	ost	(orig	inal)	\$100,000		Total				\$47,000
		(revi	sed)						-	
Est. Ex	pended	to D	ate			Salaries				\$42,000
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		\$5,000
FY Fun	ds	(orig	inal)			Equipment	(non-ex	kpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture)			Other				
				PURPOS	SE A					
The pulleading method fatigue	rpose o to the o ls for m will be i	f this devel ultiple nves	project is to opment of o e types of p tigated.	o use load related re design software that avements under hea	sea has avy l	rch data to pre the ability to o oads. Additior	edict pe quickly nally, pi	erformance c compare va roperties of f	of RCC p rious de RCC rela	avements sign ated to
				FISCAL YEAR 2015	· 201	6 ACCOMPLIS	HMENT	6		
				FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	S		
-Develop proposal; -Fabricate test beams; and -Program test equipment to perform fatigue tests.										

Title:	Feasil Beyor	bility nd 28	and Adva Days	ntages of Acceptar		Project St	tatus:	Proposed		
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Start Date:				7/1/2016
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		6/30/2017
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	Zachary Collier					1	
				Budo	SET \$	STATUS				
		Т	otal Budge	ł			Estimat	ed 2016-2017	7 Budget	
Total C	ost	(orig	inal)	\$30,000		Total				\$30,000
		(revi	sed)							
Est. Ex	pended	to D	ate			Salaries				\$30,000
	F	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-ex	kpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture	9			Other				
				PURPOS	SE A	ND SCOPE			-	
The pu criteria say 28-	rpose o for PCC days to	f this C mat 56-d	study is to terials. Incr lays of age.	perform a literature r eased cement subst This project would	revie ituti look	ew and determ on may requir at the feasibi	nine be e a cha ility of th	st practices f anged date fo his change.	for acce or accep	ptance tance from
				FISCAL YEAR 2015	· 201	16 ACCOMPLIS	HMENT	6		
				FISCAL YEAR 2016-2	2017	PROPOSED A	CTIVITIE	S		
-Develop proposal; -Perform literature review; -Prepare final report; and -Develop implementation statement.										

Title:	Reliat Patch	ole Ea Wor	arly Openi k	ng Strength for Cor	s and	Project S	tatus:	Proposed		
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Start Date:			7/1/2016	
Resear	ch Proje	ect N	umber:			Completion Date (original)				6/30/2017
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)		
Principal Investigator: Zachary Collier						• •				
				Buda	SET (STATUS				
Total Budget Estimated 2016-20									7 Budget	t
Total C	Total Cost (original)			\$40,894		Total				\$40,894
(revised)										
Est. Expended to Date						Salaries				\$40,894
FY 2015 - 2016 Budget				udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture)			Other				
				Purpos	SE A	ND SCOPE			•	
This res agency from ur	search v survey nderstar	will pi . The nding	rovide a lite transporta the latest t	rature survey of the tion agency has a ne hinking and practices	late ed s ad	st agency req to specify earl lopted by simil	uireme y open lar age	nts along wit ing strengths ncies.	th a state s and wo	e highway buld benefit
				FISCAL YEAR 2015	· 20′	16 ACCOMPLIS	HMENT	S		
				FISCAL YEAR 2016-2	2017	PROPOSED A	СТІVІТІВ	s		
-Perforn -Survey -Analyz -Prepar	m literat / states e data; e final r	and epor	eview; t.							

Title:	Effect Dolon	of C nitic	lay Conter Limestone	nt on Alkali-Carbona	R)	Project Status:		Proposed		
Fundir	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO						Project Start	Data:		7/1/2016	
Resear	ch Proie	ect N	umber:		F		Date	(original)		6/29/2018
Resear	ch Age			LTRC	F	Completion	Date	(revised)		0/20/2010
Princip	al Inves	tigato	or:	Amar Raghavendra		·				
				Budge	et S	TATUS				
		т	otal Budge	t			Estimat	ed 2016-201	7 Budge	
Total C	ost	(orig	inal)	\$600,000		Total				\$500,000
		(revised)								
Est. Ex	Est. Expended to Date					Salaries				\$100,000
	FY 2015 - 2016 B			udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e>	(pendable)		\$400,000
		(revi	sed)			Travel				
Est. FY	Expen	diture	9			Other				
				PURPOSE	e an	d Scope				
and de	terioratio	on. E	Beams will I	EISCAL XEAD 2015	ed ir	n long term A		bansion.		
				FISCAL TEAR 2015 - 2	2010	6 ACCOMPLIS	HMENI	5 		
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
Purcha	Purchase XRF and produce beams.									

Title:	Estab Mater	lishn ials a	nent of the and Techno	Center for Sustain	able	e Pavement		Project St	tatus:	Proposed	
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:						Project Start	Date:			7/1/2016	
Resear	ch Proje	ect N	umber:			Completion Date (original)				6/30/2018	
Resear	ch Agei	ncy:		LTRC		Completion	Date	(revised)			
Principal Investigator: Louay Mohammad											
	BUDGET STATUS										
		Т	otal Budget	t			Estimat	ted 2016-2017	7 Budget		
Total Cost (original)				\$150,000		Total				\$50,000	
		(revis	sed)								
Est. Expended to Date						Salaries				\$50,000	
	F	TY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Fun	ds	(orig	inal)			Equipment	(non-ex	xpendable)			
		(revis	sed)			Travel					
Est. FY	Expen	diture)			Other					
				PURPOS	SE AI	ND SCOPE					
The train as more goods vieconom corner of State en- escalati and me- state ag paveme- natural adopt n recycler escalati our exis recyclar significa materia environ are also on cono the prace	Purpose AND Scope The transportation infrastructure in Louisiana includes 60,925 miles of streets, roads, and highways, as well as more than 13,426 bridges. Annually, freight transportation in this system carries over 360 million tons of goods valued at approximately 96 billion dollars; 49% of these goods are transported by trucks. The State economy relies completely on our ability to move goods, fuel, and people freely and inexpensively to every corner of our State. Therefore, efficient operation of the highway network is critical for the viability of the State economy and its growth and productivity. The inadequacy of many of the existing roads and the escalating costs of materials and energy provide a great motivation for exploring new innovative techniques and methods for design, building, and preserving roads that ensure its sustainability. In recent years, many state agencies and the Federal Highway Administration (FHWA) have emphasized the importance of pavement sustainability and recycling. The recent increase in energy prices and the gradual depletion of adopt methodologies that would be beneficial to the environment, to the users, and to the industry. Using recycled materials and sustainable methodologies will not only reduce help to overcome the current rapid escalation of the costs for building with new virgin highway materials, but it will also maximize the usage of our existing pavement assets in our rehabilitation strategies. In addition, by incorporating sustainable and recyclable materials and technologies into transportation infrastructure, those structures will have a significant impact on the viability and longevity of our society. The use of sustainable and recycled materials will reduce the amount of materials to be quarried, processed, and transported and protect the environment and scarce natural resources. In addition, energy consumption and greenhouse gas emission are also reduced as a result of the use of sustainable alternatives. Therefore, the proposed center will										

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Establish of the Center for Sustainable Pavement Materials and Technologies;

-Develop proposals for external funding for the center; Conduct research relevant to the Center theme and LADOTD needs; and

-Develop and Promote effective Sustainable Pavement Technologies for managing and preserving the infrastructure.

Title:	A Stat Zone	A State-of-the-Art Virtual Environment for Highway Work Ione Construction Safety Research, and Training						Project S	tatus:	Proposed	
Fundin	ig Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA		
SIO:						Project Start	Date:		4/1/2016		
Resear	ch Proj	ect N	umber:	16-5SA		Completion	Date	(original)		9/30/2018	
Resear	ch Agei	ncy:		LSU		Completion	Date	(revised)			
Principal Investigator: Sherif Ishak											
				Budge	et S	TATUS					
Total Budget Estimated 2016-2								ed 2016-201	7 Budget		
Total C	Total Cost (original)			\$280,900		Total				\$151,232	
(revised)											
Est. Expended to Date						Salaries				\$69,693	
	I	TY 20	15 - 2016 Bi	udget		Equipment	(expend	dable)			
FY Fun	ds	(orig	inal)	\$25,000		Equipment	(non-e>	(pendable)		\$62,860	
		(revi	sed)			Travel					
Est. FY	Expen	diture)			Other			\$18,6		
				PURPOSE	E AN	d S COPE			-		
The pur potentia transpo virtual e	rpose o al resea ortation environr	f this rch a admir nent	project is to pparatus fo nistration ag in safety tra	o determine the effect or studying highway w gencies as well as to o aining for the Louisian	tiven /ork dete na Do	ness of an int zone safety a ermine the po epartment of	egratec and sup otential Transp	d virtual envi oport the dec of incorpora portation and	ronment cision-ma ting the d Develo	as a aking of integrated pment.	
				FISCAL YEAR 2015 - 2	2016	6 ACCOMPLIS	HMENTS	6			
-Resea -Projec resear	-Research proposal was developed for this project; and -Project Review Committee (PRC) meeting was held April 18, 2016 to discuss the scope of work with the research team and review the proposal.										
				FISCAL YEAR 2016-20)17 I		CTIVITIE	S			
-Compl -Compl -Compl -Compl -Compl	-Complete Task 1 - Literature review; -Complete Task 2 - Design of a virtual environment; -Complete Task 3 - Equipment installation; -Complete Task 4 - Simulation interface integration; and -Complete Task 5 - Develop a risk-assessment approach.										

Title:	Pedes	strian	is and Bicy	clists Count				Project S	tatus:	Proposed
Fundin	g Sour	ce:	SPR: TT-I	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Star	t Date:		1/18/2016	
Resear	ch Proje	ect N	umber:	16-4SA		Completion	Date	(original)		
Resear	ch Agei	ncy:				Completion	Date	(revised)		
Principal Investigator:								•		
				Budg	ET	Status				
	Total Budget Estimate								7 Budget	t
Total Cost (original)			\$150,000		Total				\$100,000	
		(revi	sed)						0	
Est. Expended to Date						Salaries	1			\$100,000
	F	Y 20	15 - 2016 Bi	ıdget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)	\$10,000		Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture)			Other				
				PURPOS	EA	ND SCOPE				
The purprised of the provide and ide	rpose o es for st informa ntify op	f this ate c ation portu	project is to ount progra needed to o nities to into	o research methods o im, identify funding s develop an efficient a egrate counting with	of cour our and exis	ounting bicycl ces for condu cost-effective sting vehicula	es and cting co bicycle r counti	pedestrians ounts and po e and pedest ing program.	, researc itential p trian cou	ch best artners, nt program,
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	S		
A Proje	A Project Review Committee (PRC) meeting was held on February 18, 2016 to develop the scope of work.									
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
To be c	letermir	ned.								

Title: Hig Im	ghway (provem	Constructio ent in Loui	nd	Project S	tatus:	Proposed			
Funding S	ource:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
			1			_			
SIO:					Project Start	Date:			9/1/2015
Research F	Project N	lumber:	16-1SA		Completion	Date	(original)		4/30/2018
Research A	Agency:		LSU		Completion	Date	(revised)		
Principal in	vestigat	or:	Heimut Schneider	SET 9	STATUS				
	-	Fotal Budge	t			Estimat	ed 2016-201	7 Budaet	ł
Total Cost	(oric	ninal)	\$112,300		Total				\$56.148
	(rev	ised)	¢112,000						<i> </i>
Est, Expended to Date Salaries \$50							\$56,148		
FY 2015 - 2016 Budget					Equipment	(expend	dable)		. ,
FY Funds	(orig	jinal)			Equipment	(non-ex	(pendable)		
	(rev	ised)			Travel				
Est. FY Exp	penditure	Э			Other				
			PURPOS	SE A				<u>.</u>	
The purpos Louisiana c crashes and be used to for improve	e of this crash rep d reporti develop d report ct Revie or this pr or; and	project is to ports by poli- ing practice strategies to ing of work w Committe oject, and c	o provide a review of ice officers, to review s, to identify factors a to reduce work zone zone related crashes FISCAL YEAR 2015 be meetings were he one on December 7,	cur i lite asso cras s. 20 1	rent practices rature to obtai ociated with we shes and injuri 16 AccompLis one on Septem 5 to discuss th	for rep on the s pork zon ies, and HMENTS aber 21 he scop	orting work a tate of know e crashes in d to develop d to develop , 2015 to de e of the wor	zone cra ledge or Louisia recomm velop the k with th	e scope of e Principal
-A research proposal was developed and is now under PRC review. FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES -Complete Task 1 - Literature Review; -Complete Task 2 - Data Selection; -Complete Task 3 - Interim Report; and -Start Task 4 - Data Analysis.									

Title:	le: Failure Prevention for Sensitized Structural Alloys used in Coastal Transportation Proje								Project Status:	
Fundir	ng Sour	ce:	SPR: TT-I	Fed/TT-Reg		Е	Budget	Category:	FHWA	
SIO						Project Start	Date:		7/1/2016	
Resear	ch Proje	ect N	umber:	17-5TIRE		Completion Date (original)				6/30/2017
Resear	ch Agei	ncy:		ULL		Completion	Date	(revised)		
Princip	al Inves	tigato	or:							
				Budgi	ЕТ 🕄	Status				
		Т	otal Budget	l .		Estimat	ted 2016-201	7 Budge	t	
Total C	ost	(orig	inal)	\$29,968		Total				\$29,968
		(revi	sed)						1	
Est. Ex	pended	to D	ate			Salaries	1			\$25,468
FY 2015 - 2016 Budget						Equipment	(expen	dable)		\$1,000
FY Fun	lds	(orig	inal)			Equipment	(non-ex	xpendable)	\$3,500	
		(revi	sed)			Travel				
Est. FY	'Expen	diture	9			Other				
				PURPOSI	e ai	ND SCOPE			<u> </u>	
with Ma	ass Los	s in s	ensitized al	loys, precisely AA5xx	(X—:	series alloys u	ised in	coastal tran	sportatio	on vehicles.
				FISCAL YEAR 2015 -	20 1	6 ACCOMPLIS	HMENT	8		
				FISCAL YEAR 2016-20)17	PROPOSED A	CTIVITIE	S		
 -Task 1: Four ultrasonic parameters will be measured: wave velocity for shear and longitudinal waves as well as attenuation coefficient for shear and longitudinal waves; -Task 2: Two materials will be tested, both used in the construction of efficient vehicles and affected by sensitization: AA5083 (4 - 4.9 wt.% Mg) and AA5456 (4.7 - 5.5 wt.% Mg). Three temperatures will be used: low (100 oC), intermediate (135 oC), and high (170 oC). The sensitization will be lab-produced through controlled incremental heating in a programmable oven. Measurements (P-E and RUS) will be taken after each heat treatment. For each point on the heating-time axis, the G67 test will be performed on parallel samples made from the exact same lot, heat-treated at the same time and under the same conditions. The calibration between heating time (in hours) and Mass Loss (in mg/cm2) will be obtained; and -Task 3: Prepare and submit final report. 										

Title:	tle: A Data-driven Framework for Damage Diagnosis and Prognosis of Coastal Bridges							Project Status:		Proposed
Fundin	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		Budget Category: FHWA				
				1					1	
SIO:						Project Start Date:				7/1/2016
Resear	ch Proj	ect N	umber:	17-4TIRE		Completion	Date	(original)		6/30/2017
Resear	ch Age	ncy:		LSU		Completion	Date	(revised)		
Principa	al Inves	tigato	or:							
				Budg	ET	STATUS				
		Г	Total Budge	t		l	Estima	ted 2016-201	7 Budge	t
Total C	Total Cost (original) \$30,000					Total				\$30,000
	(revised)									
Est. Expended to Date					Salaries				\$30,000	
	FY 2015 - 2016 Budget			udget		Equipment	(exper	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture	Э			Other				
				PURPOS	ΕA				<u> </u>	
The pu (estima bridges	rpose o iting the	f this dam	project is to nage locatio	o develop a novel da n and severity) and p	ta-c proç	driven framewo gnosis (predict	ork to ing the	mplement da e remaining u	amage d useful life	iagnosis e) of coastal
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENT	s		
				FISCAL YEAR 2016-2	017	PROPOSED A	СТІVІТІВ	ES		
-Task 1 corrosi -Task 2 scenar -Task 3 identify -Task 4 -Task 5 remain -Task 6	 -Task 1: Create a benchmark bridge model with damage on load-carrying members (represented by corrosion cracks); -Task 2: Create a Finite Element (FE) model for the benchmark bridge subjected to various loading scenarios to obtain the structural responses which will be used as observational data for analysis; -Task 3: Process the data using established data-driven algorithms to extract the damage features and to identify the damage location and extent; -Task 4: Establish a probabilistic future loading model based on previously observational data; -Task 5: Incorporate all the data and information into the developed DP framework and predict the remaining useful life of the bridge; and -Task 6: Prepare and submit final report. 									

Title:	Desig for Lo	n an w-Ei	d Investiga mission Ve	ition of a Fuel-Flexib hicles	stem	Project Status:		Proposed	
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg	E	Budget	Category:	FHWA	
SIO:					Project Start	Project Start Date:			7/1/2016
Resear	ch Proj	ect N	umber:	17-3TIRE	Completion	Date	(original)		6/30/2017
Resear	ch Age	ncy:		ULL	Completion	Date	(revised)		
Principa	al Inves	tigato	or:	-					
				Budge	ET STATUS				
		٦	otal Budge	t		Estimat	ed 2016-201	7 Budge	t
Total C	Total Cost (original) \$29,990			\$29,990	Total				\$29,990
	(revised)								
Est. Expended to Date					Salaries				\$26,190
FY 2015 - 2016 Budget				Equipment	(expend	dable)			
FY Fun	ds	(orig	inal)		Equipment	(non-ex	(pendable)		\$3,800
		(revi	sed)		Travel				
Est. FY	Expen	diture	e		Other				
				PURPOSE	E AND SCOPE			-	
The pur continu and airp	rpose o ous spr planes p	f the ays f bowe	project is tc or clean ve red by jet e	develop a fuel-flexibl hicles such as micro t ngines.	le aerodynamic f urbine-driven hy	uel inje brid veł	ction systen nicles (cars,	n supply trucks, a	ing and boats)
				FISCAL YEAR 2015 - 2	2016 ACCOMPLIS	HMENTS	6		
				FISCAL YEAR 2016-20	17 PROPOSED A	CTIVITIE	S		
 Task 1: design and fabrication of swirling air paths in a FB injector for atomization enhancement; Task 2: integration of the injection system with the lab-scale micro turbine burner being established in Mechanical Engineering at UL Lafayette; Task 3: investigation of spray characteristics involving spray angle and droplet size; Task 4: measurement of combustion exhaust gas temperature and emissions with the varying injector geometry (swirling angles, locations); Task 5: data analysis and documentation of spray features (angles and droplet size), emission and flame temperature results corresponding to various/no swirler angles and locations in the FB injector; and Task 6: Prepare and submit final report. 									

Title:	Drone Const	es foi tructi	r Automati ion Monito	c Pothole Detectior ring	n an	d Road		Project St	tatus:	Proposed
Fundin	g Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO						Project Star	t Date:		7/1/2016	
Resear	ch Proje	ect N	umber:	17-2TIRE		Completion	Date	(original)		6/30/2017
Resear	ch Agei	ncy:		LSU		Completion	Date	(revised)		
Principal Investigator: Supratik Mukhopa						ıy		I		
				Budo	SET (STATUS				
Total Budget Estimated 2016-2017 Budget										
Total C	Total Cost (original) \$30,000					Total				\$30,000
		(revi	sed)							
Est. Exp	pended	to D	ate			Salaries				\$30,000
	F	FY 20	15 - 2016 B	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				
Est. FY	Expen	diture	9			Other				
				PURPOS	SE A	ND SCOPE			-	
The goa Louisian constru conditic	al of the na road ction ar ons and	e proj ls and nd rej haza	ect is to de d marking t pair project ardous obje	velop fully autonomo hem up for possible i s and improving theii cts before they can o	repa repa r sat caus	drones for auto airs as well as fety by discove se catastrophic	omatica trackin ering a c incide	ally detecting g the progre nd reporting ents.	pothole ss of roa dangerc	es in ad pus
				FISCAL YEAR 2015	· 20′	16 ACCOMPLIS	HMENT	5		
-Took 1		00000	ant of an im	FISCAL YEAR 2016-2	dulo	PROPOSED A	CTIVITIE	5		
 - I ask 1: Development of an image stabilization module; - Task 2.1: Development of an Advanced Computer Vision System for Detecting Objects; - Task 2.2: Development of an algorithm for autonomous navigation of drones; - Task 3: Integration of hardware and software and development of battery replacement mechanism; - Task 4: Experimentation with the system, its evaluation, and its deployment in the real world; and - Task 5: Prepare and submit final report. 										
Title:	Advanced Modeling of Piezocone Penetration Test Using tle: Cavity Expansion Theory and Interpretation Simulator Development							Project S	Project Status:	
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Fundir	ng Sour	ce:	SPR: TT-	Fed/TT-Reg		E	Budget	Category:	FHWA	
SIO:						Project Start	Date:			7/1/2016
Resear	rch Proje	ect N	umber:	17-1TIRE		Completion	Date	(original)	6/30/2017	
Resear	rch Ager	ncy:		LSU		Completion Date (revised)				
Princip	al Inves	tigato	or:							
				Budo	SET \$	STATUS				
		Т	otal Budge	t			Estimat	ted 2016-201	7 Budget	
Total C	ost	(orig	inal)	\$30,000		Total				\$30,000
		(revi	sed)							
Est. Expended to Date Salaries							\$27,622			
	FY 2015 - 2016 Budget Equipment (expendable)							dable)		\$2,378
FY Fun	FY Funds (original) Equipment (non-exper							xpendable)		
		(revi	sed)			Travel				
Est. FY	/ Expend	diture)			Other				
				PURPOS	SE A	ND SCOPE				
from th	al of this plastic so e piezoo	olutio	ns for cavit penetration	y expansion problem tests.	is to	the interpreta	ation of	and maxim	um bene	fit extraction
				FISCAL YEAR 2015	· 201	6 ACCOMPLIS	HMENT	S		
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	s		
-Task 1	1: Riaora	ous a	nalytical so	lution for spherical c	avit	v expansion:				
-Task 2 -Task 3 -Task 4	Task 1: Rigorous analytical solution for spherical cavity expansion; Task 2: Interpretation of piezocone test results; Task 3: Piezocone interpretation simulator development; and Task 4: Prepare and submit final report									

FHWA

Part II SPR Funded Research Program

POOLED FUND LOUISIANA LEAD STATE RESEARCH

Title:	Devel Resea	opm arch	ent of a Gu Results	of a Guidebook for Determining the Value of ults						
Fundin	g Sour	ce:	SPR: Poo	eled Fund: TT-Fed		Е	Budget	Category:	FHWA	
						1				
SIO:				DOTLT1000090		Project Start	Date:			1/4/2016
Resear	ch Proje	ect N	umber:	16-1PF		Completion	Date	(original)		3/30/2017
Resear	ch Ager	ncy:		West Virginia University		Completion Date (revised) 1/3/20				1/3/2018
Principa	al Inves	tigato	or:	Yoojung Yoon						
				Budg	ET	STATUS				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$150,000		Total				\$78,400
(revised)										
Est. Ex	pended	to D	ate		Salaries \$5					
	F	FY 20	15 - 2016 Bi	udget	Equipment (expendable)					
FY Fun	ds	(orig	inal)		Equipment (non-expendable) \$					
		(revi	sed)			Travel				\$3,500
Est. FY	Expen	diture	9			Other				\$15,260
				PURPOS	EA	ND SCOPE				
The prin Consor the valu -Investi mission researd -Define tables/ -Develo catego -Develo measu	mary ob tium (S gate all ns, rese ch proje the par diagram op a stra ries) to op a rati res.	ojectiv TC) r mple possearch ect; rame ns; aightf an e ng m	ve of this pr esearch se ted researc sible aspect objectives, ters require orward dec nd point (e. ethod to de	oject is to develop a ctions that will allow th. Therefore, the spe- is (e.g., state DOT or research attributes s d for determining the ision matrix to guide g., measure quantific etermine research val	gui a co ecifi gan such val put catic	debook used to onsistent appro- c aims of the v izational struct n as qualitative lues of research olic agencies fro on methods) we by integrating	oy all S oach fo work pr ctures, s e or qua ch proje rom a s <i>r</i> ith exa g all of t	outheast Tra or measuring oposed are state/nationa antitative) to ects in relation starting point mples; and the qualitation	ansporta and do as follov al transp develop onship c (e.g., re ve and q	ition cumenting vs: ortation o a list of esearch uantitative
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	6		
N/A										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
 -Perform literature and discovery search including questionnaire surveys; -Development of research project categories; -Development of value of research measures; -Gap analysis on existing quantification process; -Interim report; and -Development of measurement processes. 										

Title: Prep-	MES	oftware Im	tware Implementation and Enhancement Project Status: Ongoing								
Funding Sour	ce:	SPR: Poo	oled Fund: TT-Fed		E	Budget	Category:	FHWA	<u> </u>		
			Ι					1			
SIO:			DOTLT1000057		Project Start	Date:			8/1/2015		
Research Proj	ect N	umber:	15-1PF		Completion Date (original)				12/31/2016		
Research Age	ncy:		University		Completion	Date	(revised)		10/31/2016		
Principal Inves	tigato	or:	Joshua Li								
			Bude	GET	STATUS						
Total Budget Estimated 2016-2017 Bud									t		
Total Cost	(orig	inal)	\$142,202		Total				\$23,113		
	(revi	sed)	\$91,953								
Est. Expended	l to D	ate	\$24,910		Salaries				\$13,474		
	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)				
FY Funds	(orig	inal)	\$78,799		Equipment	(non-e	xpendable)				
	(revi	sed)	\$78,799		Travel				\$2,379		
Est. FY Expen	diture	e	\$68,840		Other				\$7,260		
			PURPO	SE A	ND SCOPE						
Pavement ME but requires m 5(242), the Ph the quality of r in-built clusteri Highway Admi quality control analysis of true The objective of Prep-ME softw Upon completi not only by pa collection engi	Desi uch r ase I aw W ng ar nistra (QA/ ck loa of pro ftwar vare v on of veme neers	gn (previou nore inputs I final delive Yeigh-In-Mo halysis meth ation (FHW/ QC), and ca ading data, a posed Pha e for traffic vith enhanc this project at design e s to collect th	sly MEPDG/DARWin from various source erable Prep-ME software hods for Pavement M A) Traffic Monitoring an be used by state and preparation of in se III project is to as data collection and F and customized to t, participating state optimers to prepare better traffic data and	n-Ml es. T vare a, a Gui high put sist featu DOT input	E) is a significa hrough the tra is capable of nd generating Design. This so de (TMG) and way agencies for AASHTO f participating s ement ME Des ures for each i Ts will have a s at for Pavemer anage those da	ant adv insporta pre-pro three I oftware TMAS for the Pavem tate D0 sign and ndividu software at A for	vancement in ation pooled ocessing, im levels of traff complies wi for quality a QA/QC of the ent ME softw DTs on the fu d to deliver r al state. The and datab Design, but a other applica	a pavem fund stu porting, fic data i ith the F assurand raffic da vare. ull imple new gen ase tool ass tool aso traff ations.	ent design, udy TPF- checking inputs with ederal ee and ta collection, mentation eration of set used ic data		

Fiscal Year 2016-2017

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

-Developed updated Prep-ME software with the capability to import WIM data based on both TMG 2001 and TMG 2013 format. Since the release of TMG 2013, several participating states have been collecting WIM data in accordance with the TMG 2013 format. This new capability has been tested with sample TMG 2013 WIM data from Kentucky and Wisconsin, which shows that Prep-ME is capable to automatically differentiate the WIM data formats and correctly import the WIM data into the Prep-ME SQL database; -A portable version of Prep-ME has been developed to assist field traffic data collection and WIM sensor calibration. The software has been distributed to participating states for testing and comments; -The research team has coordinated with all the participating states on Prep-ME on-site trainings. Several states, including Nevada, Kentucky, North Carolina, have received the training. State WIM data were requested and used for the training to demonstrate the software functionality and how the software can be utilized by pavement design and traffic data collection engineers to improve operation productivities. Desired enhancements of software capabilities were discussed during the training for each state and several updates of the software were released based on the comments. The training for Michigan and Louisiana are scheduled in May and July 2016 respectively; and

-Continued providing technical support on a need basis to help state DOTs deploy the Prep-ME software. In particular, the team worked closely with MDSHA, KYTC, Wisconsin DOT, NVDOT on the issues and questions encountered during the implementation of Prep-ME for their daily usage. Several bugs were fixed and improvements made during the past fiscal year. In addition, several new features requested by participating states were added to enhance the existing capabilities in Prep-ME.

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Complete on-site training for the remaining states who would like to have on-site training, and provide online webinar training for all participating states and other users. The comments from all participating states will be addressed and necessary changes will be made in Prep-ME;

-Integrate the states' comments and deliver a final version of Portable Prep-ME to aid states in field data collection and WIM sensor calibration;

-Deliver a final version of Prep-ME software for Phase III of TPF-5(242) with enhanced capabilities requested by participating states;

-Continue providing technical support on a need basis in a timely manner to help states implement Prep-ME for daily traffic data collection and ME based pavement design; and

-Propose new Scope of Work for Task 4 of TPF-5(242) and gather feedback and comments from participating states. Many participating states are actively implementing the Prep-ME software and have demonstrated their intentions to continue supporting the development of Prep-ME for new features and technical support.

Title: Desig	n an ining	d Analysis g High-RAF		Project St	tatus:	Ongoing				
Funding Sour	ce:	SPR: Poo	eled Fund: TT-Fed		E	Budget	Category:	FHWA		
SIO:			DOTLT1000002		Project Start	Date:			11/1/2014	
Research Proj	ect N	umber:	14-5PF		Completion	Completion Date (original) 10/31/2				
Research Age	ncy:		LTRC		Completion Date (revised)					
Principal Inves	tigato	or:	Louay Mohammad							
			Buda	SET \$	Status					
	Т	otal Budge	t		l	Estima	ted 2016-2017	7 Budget	t	
Total Cost	(orig	inal)	\$306,812		Total				\$100,000	
	(revi	sed)								
Est. Expended	to D	ate	\$125,000		Salaries				\$98,000	
I	FY 20	15 - 2016 Bi	udget		Equipment	(expen	dable)			
FY Funds	(orig	inal)	\$66,000		Equipment	(non-e	xpendable)			
	(revi	sed)			Travel				\$2,000	
Est. FY Expen	diture)	\$66,000		Other					
			PURPOS	SE A	ND SCOPE					
Despite recent (RAP), many s process. In may modified aspha practice. On the increasing the technology. For acceptable lev American Asso Specification for of waste roofin another promis mixtures. How procedure require materials and or design asphalt needed to asso content asphal mixtures (warm propose aspha produced specification	adva tates any s alt pro- ne oth allow or ins el of pociatio or Us g asp sing or vever, uire a durab mixte ure ag t mixte n and alt mix	ancements are still car tates, RAP oducts. In a per hand, m rable percer tance, up to performanc on of State e of Reclair ohalt shingle andidate of , to ensure ddressing r bility of the p ures with hi gencies tha es. The ob I hot) contai cture specif and/or roa	in the design of asph utious in their regular is currently not allow addition, high percen- nany state agencies a ntages of RAP in asp 5 50% RAP has been the in addition, reclai Highways and Trans med Asphalt Shingle es that have been pr f recycling, also beca successful use of RA many concerns relate orduced mixture. C gh-RAP and/or RAS it satisfactory perform jectives of this study ining high-RAP conte ications that incorpord	alt i tions yed tage are t bhalt n us por s as oce soce corres ause to use to use to ause ause ause ause ause ause ause ause	mixtures conta s to avoid dura in highest-class es of RAP exc taking a more t mixture to tal ed in some as d asphalt shing tation Officials an Additive in ssed into a rec of the high co of the high co	aining F ability p ability p ss asph eeding aggres ke full : sphalt r gles (R cyclabl onfiden on betw ecomm ations rom the h mech ed asp tic test e study	Reclaimed As problems rela- nalt mixtures 25% are no ssive approa- advantage of nixtures, whi AS), defined HTO) MP 15- Aix Asphalt (I e product," h bility with pay lices in the m veen virgin an nendations m to the current ause of high- nanistic test of halt shingles criteria as te 7.	sphalt P ated to the and in p t commo ch by co f this pro- ch produ- by the -09 "Sta HMA)" a ave bec ving asp ixture de nd recyce nake it di t specifi -RAP ar criteria fo s (RAS); ested on	avement ne recycling polymer- only used in onsidering omising uced an The ndard s "any type ome halt esign cled ifficult to cations are nd/or RAS or asphalt and 2) plant	

Fiscal Year 2016-2017

FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS

-Continued collecting data from a variety of sources to review completed and on-going laboratory and field studies on the design, characterization, and fatigue/fracture performance of HMA and WMA incorporating high percentages of RAP and/or RAS;

-Continued communications with participating states personnel from Florida, Colorado, and Louisiana to provide assistance and guidance in identifying two field projects from each state as per the test factorial. Further, FHWA joined this project and provided eleven mixtures from on-going project FHWA-PROJ-11-0070 "Advance Use of Recycled Asphalt in Flexible Pavement Infrastructure: Develop and Deploy Framework for Proper Use and Evaluation of Recycled Asphalt in Asphalt Mixtures":

-Tested mixtures from Lanes 1-5 and 9 of FHWA-ALF lanes for dynamic modulus and S-VECD fatigue characterization. The SCB tests for Lane 7 and 9 have also been completed; and

-Preliminary data analyses were performed. Dynamic modulus master curves and the damage characteristic curves have been constructed using available data. Tests results are found to be sensitive to material composition (WMA vs. HMA, and RAP content). Further, parameters were developed for the score card analysis of each test that included specimen preparation, instrumentation, standard test method, testing, training, interpretation, sensitivity to mix composition parameters, routine application, correlation to field performance, data analysis, cost, and repeatability. In addition four levels of evaluation were established for each parameter.

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue identification of field projects and material collection from participating states; and -Perform laboratory experiment on mixtures collected from participation states as per test factorial.

Title:	Southe	ast	Transport	ation Consortium			Project S	tatus:	Ongoing		
Funding	g Sourc	e:	SPR: Poo	eled Fund: TT-Fed		В	ludget	Category:	FHWA	L	
SIO:				2000281		Project Start	Data:			0/1/2000	
Researc	h Projec	rt N	umber:	09-1PF			Date.	(original)		8/30/2012	
Researc	ch Agena					Completion Date (revised)				8/30/2018	
Principa	l Investi	gato	or:	Tyson Rupnow				· · ·			
-		-		Budg	UDGET STATUS						
		т	otal Budge	t		E	Estimat	ed 2016-201	7 Budge	t	
Total Co	ost	(origi	inal)	\$150,000		Total				\$10,000	
		(revis	sed)	\$300,000							
Est. Exp	ended t	o Da	ate	\$55,000	\$55,000 Salaries						
	F١	í 20 ′	15 - 2016 Bi	udget	Equipment (expendable)						
FY Fund	ds	(origi	inal)	\$10,000	0 Equipment (non-expendable)						
		(revis	sed)			Travel				\$10,000	
Est. FY	Expendi	iture	•	\$10,000		Other					
				PURPOS	E A	ND SCOPE					
soutnea resource planning participa activities intended research program individua annual r	ast Trans es to coo g, design ating stat s and oth d to redu n activition are to c ally with meeting.	spor ordir tes. ner i ice c es ir deve spe	tation Cons nate resear onstruction, The progra national pro duplication the state elop synerg cific resear	sortium's (STCS) obje ch and develop impro maintenance, manag am is intended to sup ograms such as the N of research and prov research programs. T y and provide for a m och proposals. This pr	plei plei latio ide fhe iore	ves are to pool d methods of a nent, and oper ment ongoing onal Cooperati means for bet cooperative a e efficient use of funds the m	address ation o state, f ive Hig iter con nd colla of reso nanage	al, professions sing commo f transportat dederal, and hway Reseat nmunication aborative ob urces. STC ment and co	n proble ion syst universi arch Pro- of on-gu jectives projects osts incu	a academic ims in the ems in ty research gram. It is oing of the STC are funded rred for the	
				FISCAL YEAR 2015 -	201	16 ACCOMPLISI	HMENTS	6			
-Manage -Present -Started	-Managed STC pooled fund consortium; -Presented update at the regional conference calls and Annual TRB meeting; and -Started pooled fund project "Development of a Guidebook for Value of Research"										
				FISCAL YEAR 2016-20	017	PROPOSED AC	CTIVITIE	S			
-Present -Comple -Initiate -Hold int -Plan an	Present status of activities at the Annual Research Advisory Committee Meeting; Complete interim report and meeting; Initiate RFP's; Hold interim report meeting; AND Plan and hold STC annual meeting for 2017.										

FHWA

LTAP Funded Program

Title:	Local	Tech	nnical Assi	istance Program (L ⁻	ΓAF	')		Project St	tatus:	Proposed		
Funding	g Sourc	ce:	LTAP: TT	-Fed/TT-Reg		В	Budget	Category:	FHWA			
				1					1			
SIO:				DOTDLT1000114		Project Start	Date:			1/1/2016		
Researc	h Proje	ect N	umber:	17-LTAP		Completion Date (original)				12/31/2017		
Researc	h Agen	су:		LTRC		Completion I	Date	(revised)				
Principa	l Invest	igato	or:	Marie Walsh								
				Budg	ET	STATUS						
Total Budget						I	Estimat	ed 2016-2017	7 Budge	t		
Total Cost (original) \$570,64						Total				\$570,644		
(revised)												
Est. Expended to Date						Salaries				\$258,833		
FY 2015 - 2016 Budget Equipment (expendable)												
FY Fund	ds	(orig	inal)			Equipment	(non-ex	pendable)				
		(revi	sed)			Travel				\$23,313		
Est. FY	Expend	liture	9			Other				\$288,498		
				PURPOS	E A	ND SCOPE			<u>.</u>			
To provi parish a assistan	de cost nd mun ce and	t effe nicipa infor	ctive transf ality public t rmation dis	er of technology and transportation and pu semination.	wo Iblic	rkforce develo works agenci	pment es thro	opportunitie ugh training	s to Lou , technic	iisiana's cal		
				FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENTS	5				
Parish and municipality public transportation and public works agencies through training, technical assistance and information dissemination. FiscaL YEAR 2015 - 2016 AccompLishments Partnered with the Louisiana Department of Transportation and Development (LADOTD) Bridge Inspection and Maintenance (I&M) Section and district personnel to develop and deliver over eight (8) Roads Scholar #13-Inspection of Local Bridges classes to 199 participant stakeholders through 2000 hours as part of the NBIS Compliance Program; Partnered with the LADOTD Bridge Inspection and Maintenance Section to update and deliver the class, Roads Scholar #14-Bridge Maintenance and Repair to 160 local bridge personnel for 966 hours of training; Partnered with the DOTD Bridge Inspection and Maintenance and the Bridge Design Sections to develop and deliver the "Overview of Bridge Load Rating for Local Bridges" to over 100 participants for 624 hours, as part of the DOTD NBIS Compliance Program; -Sponsored two Louisiana Parish Engineers and Supervisors statewide technical conferences for over 150 attendees; -Coordinated FHWA Everyday Counts Technology Transfer Webinar and Demonstration Showcase got GRS/IBS Technology. Sixty (60) federal, state, and local personnel participated; -Co-sponsored the FHWA Complete Streets Peer Exchange for 89 federal, state, and local participants over two days and over 900 contact hours; -Presented three (3) Local Public Agency (LPA) Core Training Classes at agency request. 136 people attended with over 900 hours of training; -Delivered three day LPA Training Program to 130 people for 900 hours; -Completed transfer of Local Road Safety Program back to LTAP for future coordination with DOTD Safety Section; -Implemented regional public works responder training in Capital Region for APWA Public Works week for 700 plus public works employees; and -Developed and delivered new equipment preventive maintenance training for Capital Region supervisors									n r 0 attendees; er ⁄ Section;			

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Develop and deliver 8 sessions of Road Safety 365;

-Deliver 8 sessions of new MUTCH and sign installation class, Roads Scholar #9: The Road to Better Signing;

-Complete update of Roads Scholar #3: Drainage Class and schedule and offer at 8 statewide locations; -Update LTAP Supervisor Training class and offer statewide in 8 locations; and

-Work with LADOTD's Bridge Inspection and Bridge Maintenance departments to develop a class on revised software for bridge inspections to bring statewide to 8 locations;

-Bring statewide to 5 locations Heavy Equipment Preventative Maintenance classes

FHWA

STP Funded Technology Transfer & Education Program

Title: Wo	rkforce	e Developn	nent Support For Safe		Project Status:		Ongoing			
Funding So	ource:	STP: TT-	Fed	В	Sudget	Category:	FHWA	\		
				Droiget Ctart	Data			7/4/0044		
SIU:		1 1		Project Start	Date:	(a mi mi m a D		7/1/2014		
Research P	roject n	number:	15-1WDSC		Completion Date (original)			12/31/2017		
Research A	gency:			Completion	Date	(revised)				
Principal Inv	estigat	or:	Dortna Cummins	- 0						
			BUDGE	T STATUS						
		Total Budge	t		Estimat	ed 2016-201	7 Budge	t		
Total Cost	(ori	ginal)	\$250,000	Total				\$93,790		
	(rev	rised)								
Est. Expended to Date\$82,725Salaries\$72,137										
	FY 20	015 - 2016 B	udget	Equipment	(expen	dable)				
FY Funds	(ori	ginal)	\$102,823	Equipment	(non-e>	kpendable)				
	(rev	rised)		Travel				\$1,500		
Est. FY Exp	enditur	е	\$58,041	Other				\$20,153		
			PURPOSE	AND SCOPE			•			
The Louisia universities technology transportatio training and curriculum b transportatio Developmen Training and activities.	na Cen to colla ransfer on ager educa eing de on profe nt (LAD I Educa	ter for Tran- borate on s r, the LCTS ncies and w tion program eveloped by essionals or OTD), Loui- ation Center	sportation Safety (LCTS afety related projects a will provide enhanced ill be available to work to n which includes the ne the Transportation Re n a national basis. The siana Transportation Re r (TTEC) in Baton Roug	S) will provide a ind leverage res technical assista to meet other st ew multi-disciplir search Board (1 Louisiana Depa esearch Center ge, Louisiana wi	structu ources ance to ate and nary hig TRB) w rtment (LTRC Il serve	ure for Louis 5. Supported 5 federal, sta 6 regional ne 9 ghway safety ill be made a of Transpor (), and the T 9 as the nucl	iana's re by rese te and lo eeds. An y profess available tation ar ransport eus for t	esearch arch and ocal e expanded sional e to nd tation these		
			FISCAL YEAR 2015 - 2	016 ACCOMPLIS	HMENTS	6				
-Held staff r -Assisted Sa	Held staff meetings to begin development of a Workforce Development Plan; and Assisted Safety Section in conduct of 2 multi day training sessions.									
			FISCAL YEAR 2016-201	17 PROPOSED AC	CTIVITIE	S				
-Finalize Wo	Finalize Workforce Development plan.									

Title:	Techn Louisi	olog ana	gy Transfei Universitie	r & Research Impleme es	ort for	Project Status:		Ongoing				
Fundin	g Sourc	ce:	STP: TT-	Fed	E	Budget	Category:	FHWA				
SIO:				30000241	Project Start	t Date:			1/1/2010			
Resear	ch Proje	ct N	umber:	10-4AD	Completion	Date	(original)		12/31/2013			
Resear	ch Agen	cy:		LTRC	Completion	Date	(revised)		6/30/2016			
Principa	al Invest	igato	or:	Tyson Rupnow	·							
				BUDGE	T STATUS							
		Т	fotal Budge	t		Estima	ted 2016-201	7 Budge	t			
Total Co	ost	(orig	jinal)				\$10,000					
(revised)												
Est. Exp	pended	to D	ate	\$40,115	\$40,115 Salaries							
	F	Y 20	15 - 2016 B	udget	Equipment	(expen	dable)					
FY Fun	ds	(orig	inal)	\$10,000	Equipment	(non-e	xpendable)					
		(revi	sed)		Travel	1			\$10,000			
Est. FY	Expend	liture	Э	\$4,000	Other							
				PURPOSE	AND SCOPE							
The pur dissemi to fund audienc Confere Departr funds a	rpose of ination c technolo ces such ence (LT nent of re dispe	the of res ogy t as C), Tran rsed	project is to search resu transfer trav Transporta Louisiana 1 sportation a d on a case	b provide travel funds t ilts at various technologies vel for university faculty tion Research Board (7 Fransportation Research and Development (LAE by case basis as it app FISCAL YEAR 2015 - 2	o university rese gy transfer even y to deliver rese TRB) Annual Me ch Center (LTRC DOTD) Impleme plies to providing	earch p nts. This arch re eeting, C) Sem ntation g a ber	orincipal inve s project pro sults to state Louisiana Tr inar Series, meetings ar nefit to Louis	stigators vides a e and na ransporta and Lou nd trainin iana.	s for mechanism itional ation isiana ng. Travel			
N/A												
				FISCAL YEAR 2016-20	17 PROPOSED A	CTIVITIE	S					
Continu state ar	Continue to provide support technology transfer travel for university faculty to deliver research results to state and national audiences.											

Title: Tech	nolog	yy Transfer	Program and Oper	atio	ons (LSU)	Project Status:		Ongoing		
Funding Sou	ce:	STP: TT-F	Fed		В	Budget	Category:	FHWA		
					1			[
SIO:			30000320		Project Start	Date:			7/1/2015	
Research Proj	ect N	umber:	08-1TSQ		Completion Date (original)				6/30/2018	
Research Age	ncy:		LTRC		Completion I	Date	(revised)			
Principal Inves	stigato	or:	Sam Cooper, Jr.							
			Budg	SET \$	STATUS					
	Т	otal Budge	t		i	Estimat	ed 2016-2017	7 Budge	t	
Total Cost	(orig	inal)	\$353,904		Total				\$353,833	
	(revi	sed)								
Est. Expended	to D	ate			Salaries				\$312,833	
	FY 20	15 - 2016 Bu	udget	Equipment (expendable)						
FY Funds	(orig	inal)	\$353,904		Equipment	(non-ex	pendable)		\$15,000	
	(revi	sed)			Travel				\$6,000	
Est. FY Exper	diture	9	\$353,904		Other				\$20,000	
			PURPOS	SE A	ND SCOPE			<u>.</u>		
The objectives -Disseminate i Transportatio -Improve cominagencies; -Encourage im -Disseminate in department.	of th nform n and munic nplem nform	is study are nation on ne Developme cations on te entation of nation on tra	e to: ew technologies and ent (LADOTD) and o echnical, transportati new procedures and ansportation subjects	met thei on-i tec s to	thodologies to transportatior related issues hnologies; and appropriate m	Louisia n-orient betwee d anager	ana Departm ed agencies en the depar s and engine	nent of s; tment a eers in t	nd other he	
			FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENTS	5			
Fiscal Year 2015 - 2016 Accomplishments Publication chair for 2016 Transportation Conference; -Sponsorship coordinator for 2016 Transportation Conference; -Assisted in all 2016 Transportation Conference committees; -Developed all LTC 2016 publications, website, registration, e-commerce and mobile device development; Published 4 Tech Today Newsletters; -Published 2015 Annual Report; -Set up registration for 17 NHI/other training, and 13 LTAP training classes; Photographed all LTRC events; -Launched LTRC Mobile App; -Launched redesigned LTRC website; Filmed and produced 15 DOTD informational videos; Published 19 Project Capsules; Published 21 Final Reports; Published 2 Tech Assistance Reports; and Published 1 TIPE report								velopment;		

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Assist in development of 2 LTRC seminar series;

-Continue development of all LTC 2016 -2017 publications, website, registration, e-commerce and mobile device development;

-Continue maintenance of LTRC website;

-Assist Secretary's office in development of 3 promotional videos;

-Continue to edit and distribute project capsules, technical summaries, final reports, and technical

assistance reports;

-Publish 4 Tech Today newsletters;

-Photograph all LTRC events; and

-Video all LTRC events.

Title: Technology Tra	nsfer Registration Fees		Project Status:		Proposed			
Funding Source: STP:	TT-Fed	Budget	Category:	FHWA				
				1				
SIO:	DOTDLT1000117	Project Start Date:	[7/1/2016				
Research Project Number	: 17-TTRF	Completion Date	(original)	6/30/2017				
Research Agency:	LTRC	Completion Date	Completion Date (revised)					
Principal Investigator:	Sam Cooper, Jr.							
	BUDGE	T STATUS						
Total B	udget	Estima	ted 2016-201	7 Budge	t			
Total Cost (original)			\$100,000					
(revised)				-				
Est. Expended to Date Salaries								
FY 2015 - 20	16 Budget	Equipment (expen	dable)					
FY Funds (original)		Equipment (non-e	xpendable)					
(revised)		Travel						
Est. FY Expenditure		Other			\$100,000			
	PURPOSE	AND SCOPE		<u></u>				
To provide cost effective t parish and municipality pu assistance and informatio	ransfer of technology and w blic transportation and publ n dissemination.	vorkforce development lic works agencies thro	opportunitie bugh training	s to Lou , technic	isiana's :al			
	FISCAL YEAR 2015 - 2	016 ACCOMPLISHMENT	S					
Provided cost effective tra parish and municipality pu assistance and informatio	nsfer of technology and wo blic transportation and publ n dissemination.	rkforce development o lic works agencies thro	pportunities bugh training	to Louis , technic	iana's :al			
	FISCAL YEAR 2016-201	17 PROPOSED ACTIVITIE	S					
Continue to provide cost effective transfer of technology and workforce development opportunities to Louisiana's parish and municipality public transportation and public works agencies through training, echnical assistance and information dissemination.								

Title:	AASH	TO F	PONTIS Ag	reement		Project Status:		Proposed			
Fundin	ng Sour	ce:	STP: TT-	Fed		B	Budget	Category:	FHWA		
SIO:				DOTDLT1000122		Project Start	Date:			7/1/2016	
Resear	ch Proje	ect N	umber:	17-PONTIS		Completion	Date	6/30/2017			
Resear	ch Ager	ncy:		LTRC		Completion Date (revised)					
Principa	al Inves	tigato	or:	Sam Cooper, Jr.					•		
				Budge	GET STATUS						
	Total Budget							ed 2016-2017	7 Budget	:	
Total C	ost	(orig	inal)	\$125,000		Total				\$125,000	
		(revi	sed)								
Est. Ex	Est. Expended to Date Salaries										
	F	Y 20	15 - 2016 B	udget		Equipment	(expen	dable)			
FY Fun	ıds	(orig	inal)			Equipment	(non-ex	xpendable)			
		(revi	sed)			Travel					
Est. FY	'Expend	diture)			Other				\$125,000	
				PURPOSE	e ar	ND SCOPE			-		
AASHT	O PON	TIS A	Agreement								
				FISCAL YEAR 2015 - 2	201	6 ACCOMPLIS	HMENT	6			
AASHT	O PON	TIS A	Agreement								
				FISCAL YEAR 2016-20)17	PROPOSED AC	CTIVITIE	S			
AASHTO PONTIS Agreement											

Title:	LADO	TD C	CO-OP Pro	gram		Project St	tatus:	Proposed		
Fundir	ng Sour	ce:	STP: TT-	Fed		E	Budget	Category:	FHWA	
SIO:				DOTDLT1000118		Project Start	Date:		7/1/2016	
Resear	ch Proje	ect N	umber:	17-COOP		Completion		6/30/2017		
Resear	ch Ager	ncy:		LTRC		Completion Date (revised)				
Princip	al Invest	tigato	or:	Sam Cooper, Jr.					1	
				Budg	ET \$	Status				
		Т	otal Budge	t			Estimat	ted 2016-2017	7 Budge	t
Total C	ost	(orig	inal)	\$200,000		Total				\$200,000
		(revi	sed)							
Est. Expended to Date Salaries \$200,00								\$200,000		
	F	Y 20	15 - 2016 B	udget		Equipment	(expen	dable)		
FY Fun	nds	(orig	inal)			Equipment	(non-e:	xpendable)		
		(revi	sed)			Travel				
Est. FY	'Expend	diture	;			Other				
				PURPOS	E AI	ND SCOPE			•	
The Lo endeav senior l prograr explore opportu	uisiana vor betw level uno m is inte e their in unities fo	Depa een t dergr ndec teres or LA	artment of 1 the LADOT raduates th I to enhanc to in transpo DOTD to e	Transportation and Do D and Louisiana Univ rough part-time empl e the educational pro prtation engineering to valuate participants of EISCAL YEAR 2015 -	evel vers oym oces hrou of th	lopment (LAD sities, providing nent in public t s by providing ugh practical e is program as	OTD) (g pract transpo g oppor experies potent	CO-OP progr ical experien prtation engir tunities for p nce. This pro ial employee	ram is a nee to jui neering v participar ogram al os.	cooperative nior and work. This nts to Iso provides
-17 stu	dents pa	articir	pated in CC	OP at various LAD) sections thro	uahou	t Louisiana.		
				FISCAL YEAR 2016-2	017	PROPOSED A	СТІVІТІЕ	S		
-Place CO-OP approximately 20 students in various LADOTD Sections -Continue end of semester presentations; and -Retain students in CO-OP.							ns acro	oss the state	,	

Title:	Title: LTRC Student Program								tatus:	Proposed
Fundin	ng Sour	ce:	STP: TT-	Fed		Budget Category: FHWA				
SIO:				DOTDLT1000116		Project Start	Date:		7/1/2016	
Resear	ch Proje	ect N	umber:	17-2TT		Completion	Date	(original)		6/30/2017
Resear	ch Ager	ncy:		LTRC		Completion Date (revised)				
Principal Investigator: Sam Cooper				Sam Cooper, Jr.						
				Budg	ЕТ \$	Status				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budget	t
Total C	ost	(orig	inal)	\$147,000		Total				\$147,000
		(revi	sed)							
Est. Expended to Date			ate			Salaries			\$147,000	
	F	Y 20	15 - 2016 B	udget		Equipment	(expen	dable)		
FY Fun	lds	(orig	inal)			Equipment	(non-ex	(pendable)		
		(revi	sed)			Travel				
Est. FY	' Expend	diture)			Other				
				PURPOS	e ai	ND SCOPE			-	
To pay Transp	for sala ortation	ries f Cent	or undergrater (LTRC)	aduate students empl projects.	oye	ed to provide s	support	to various L	ouisiana	3
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	3		
Thirty (tasks o	30) unde n variou	ergra s LT	iduate stud RC project	ents were employed I s.	oy I	TRC to provid	de supj	oort in fulfillir	ng neces	ssary job
				FISCAL YEAR 2016-20)17	PROPOSED A	CTIVITIE	S		
Continu projects	Continue to pay for salaries for undergraduate students employed to provide support to various LTRC projects.									

Title: Wo	kforce	e Developn	Project St	tatus:	Proposed				
Funding So	urce:	STP: TT-	Fed	Budget Category: FHWA					
								7/4/0040	
SIO:		1	DOTDLT1000115	Project Start	Date:	(7/1/2016		
Research Pi		lumber:	17-1WDC	Completion	Date	(original)		6/30/2017	
Research Ag	jency:			Completion	Completion Date (revised)				
Principal Inv	estigat	or:	Sam Cooper, Jr.	STATUC					
		Total Dudge	BUDGET	STATUS	Cotimo	ad 2016 201	7 Dudge		
Tatal Quart				Tatal	Estima	ed 2016-201	r виаде	f 477.000	
Total Cost	(ori	ginal)	\$3,177,806	Iotal				\$3,177,806	
	(rev	ised)						A 4 045 574	
Est. Expend	ed to L	Date		Salaries				\$1,215,571	
	FY 20	015 - 2016 B	udget	Equipment	(expen	dable)	\$207,500		
FY Funds	(ori	ginal)		Equipment	(non-e	kpendable)			
	(rev	ised)		Travel				\$35,000	
Est. FY Exp	enditur	e		Other				\$1,719,735	
			PURPOSE A	AND SCOPE					
The purpose suppliers for managemer fees for Lou workshops,	of this contin t, supe siana I course	s study is to uing educat ervisory train Department s and confe	provide contractual servition, professional develo ning. The scope of this p of Transportation and E erences to enhance their	vices through fo opment, technic project also incl Development (L professional a	ederal, cal skill udes p .ADOT and tecl	university a s, software, roviding indi D) employee nnical develo	nd priva leadersh vidual re es to atte opment.	te sector hip, egistration end	

Fiscal Year 2016-2017

-Member of TRB Committee ABG30: -Member of TRB Committee ABG20: -Member of TRAC and RIDES Advisory Board; -President of National Transportation Training Directors ; -Member of LTRC 16-5SA "Highway Work Zone Construction Safety Research and Training: A Driving Simulator Study"; -Member of TRB Committee B0002; -Secretary of SLA Transportation division; -Member of AASHTO RAC TKN TF; -Completed and deployed "Transformational Leadership" course; -Began course development for the following topics: Contract Negotiations; Critical Conversations; and Being a Change Agent: -Subscribed to new online catalog for the LTRC Library with EOS.Web, and successfully imported records from the original library catalog; -Received and integrated into the collection approximately 200 boxes of materials from off-site storage; -FHWA Grant awarded in the amount of: \$91,273. Implementation and evaluation of TRAC and RIDES Programs in Schools in the State of Louisiana. Federally funded grant. 8/1/2015-12/31/2015; -Developing training videos for the leadership development; -Updated / replaced digital signage system in TTEC Lobby: -Upgrading from system running off an obsolete operating system, moving us to total digital; -Installed 2 TV's in TTEC Lobby upgrading to Digital capability; -Installed New digital system in classroom 179, including New Projector, 2 TV's, Crestron Control system, Crestron 16x16 switcher, Crestron DVP-HD for streaming video, new mounts and cables; -Installed new monitor/display in Room 101 to facilitate in presentation; -Conducted the 2016 Louisiana Transportation Conference – February/March 2016, Baton Rouge River Center, Baton Rouge, LA with approximately 1.350 participants and 87 vendors: -Secured the 2018 and 2020 dates for the Louisiana Transportation Conference with the Baton Rouge River Center. Contract negotiations to begin in March 2017; -Local Road Safety Peer Exchange (LTRC/Louisiana Center for Transportation Safety); September 2015, Baton Rouge, LA., LTRC/Transportation Training and Education Center (TTEC), Negotiated overnight hotel rooms; -2016 Highway Safety Manual (HSM) Implementation Peer Exchange (LA DOTD Highway Safety), May 2016, New Orleans, LA., Location TBD; Sent our RFP and negotiated hotel for meeting space, food/beverage, etc. - 30 people; -2016 Safety Analysis and Project Development Peer Exchange (LA DOTD Highway Safety); May 2016, New Orleans, LA., Location TBD; Sent out RFP and negotiated hotel for meeting space, food/beverage, etc. - 60 people; -Southeastern Maintenance Peer Exchange (LA DOTD Maintenance Section); October/November 2016, New Orleans, LA., Location TBD; Sent our RFP and negotiated hotel for meeting space, food/beverage, etc. - 40 people; -2015 – 2017 Louisiana Chapter of SGMP Board of Directors - Secretary; -Louisiana Transportation Conference hosted at the Baton Rouge River Center with 1,587 participants; 72 technical sessions; 8 professional development sessions; \$155,000 in conference sponsorships. -Conducted: Course Description(#Students and Courses/Events) TOTAL: 3,582 Students in 290+ Classes and Event -Highway Safety Manual(48) -Trafficware (28) -PE Review (72) -TIMs (65 in 2 classes) -Asphalt Pilot Review (43) -RSA (24) -Historic Bridges (100 in 4 classes) -Tensar (20) -NHI Workshops (Fiscal Year)(426 in 16 classes) -Individual Registrations (359 Employees in 86 events) -LSU CADD (190 in 19 classes) -UNO (1505 in 132 classes) -Foundations of Leadership Development(343 in 19 classes) -Emotional Intelligence (248 in 14 classes) -Organizational Culture (111 in 8 classes) -6 full-time employees hired into the ERDP and rotated through various LA DOTD sections throughout Louisiana. -4 ERDP employees successfully hired into LA DOTD sections: Public Works (1); Road Design (2); and Material Lab (1): and 2 ERDP employees are still in rotation.

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continued additions of library materials into the online catalog; -Upgrade Classroom 175 to all digital format to match Room 179: -Upgrade Classroom 160 to all digital format to match Room 179; -Upgrade Projector in Auditorium to higher lumen solution; -Modify programming to accommodate new projector; -Rebuild LTRC Conference room A/V solution: -Attend Crestron 101; -Attend Lectrosonics Digital Sound Processing Training; -Conduct 5-Day National Transportation Training Directors conference in Providence, Rhode Island for approximately 75 participants and 10 vendors; -Complete development of "Being a Change Agent" for Section 17, QCIP; -Complete development of "Crucial Conversations" (title to change) for Janice Williams, Office of Engineering; -Secure hotel contract for meeting space and overnight hotel accommodations for the 2018 Louisiana Transportation Conference, February 2018 – Belle of Baton Rouge Hotel, Baton Rouge, LA - 750 overnight rooms; -Secure hotel contract for overnight hotel accommodations for the 2018 Louisiana Transportation Conference, February 2018, Baton Rouge Hilton, Baton Rouge, LA, 75 overnight rooms; -Secure contract for meeting space for the 2018 Louisiana Transportation Conference February/March 2018, Baton Rouge River Center and Baton Rouge, LA. Approximately 1350 participants and 80 vendors; -Conduct the 2016 Fall LTRC Seminar Series: Geotechnical; -Conduct the 2017 Spring LTRC Seminar Series: Pavements; -Place approximately 20 students in the CO-OP Program in various LA DOTD sections across the state; and -Hire approximately 5 employees to participate in the ERDP.

Title:	Title: Workforce Development								tatus:	Proposed
Fundir	ng Sour	ce:	STP: TT-I	Fed		Budget Category: FHWA				
						1				
SIO:				DOTDLT1000113		Project Start	Date:	1		7/1/2016
Resear	Research Project Number:			17-1WD		Completion	Date	(original)		6/30/2017
Resear	Research Agency:					Completion	Date	(revised)		
Principal Investigator: Sam Cooper, Jr.										
				Budg	ET	Status				
		T	otal Budge	t			Estima	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$995,549		Total				\$995,549
		(revi	sed)							
Est. Ex	Est. Expended to Date					Salaries				\$975,549
	FY 2015 - 2016 B		15 - 2016 B	udget		Equipment	(expen	dable)		\$10,000
FY Fur	nds	(orig	inal)			Equipment	(non-e	xpendable)		
		(revi	sed)			Travel				\$10,000
Est. FY	Est. FY Expenditure					Other				
				PURPOS	E A	ND SCOPE			<u>.</u>	
manag Develo adminis	ement o pment (stration (of the	workforce OTD) persc e Louisiana	development program onnel. The scope of the Transportation Rese	igic ns f nis s earc	planning, prog or the Louisia study also incl h Center's (LT	na Dep udes th TRCs) f	evelopment partment of T ne developm transportatio	ranspor ent, deli n outrea	very tation and very and ich program.
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	S		
-Structu -Impler -Impler -Sched trainin -120 c -Impler Manag	-Structured Training Program transfer to LEO/LSO complete; -Implemented Structured Training Program tracking in LEO/LSO and trained users; -Implemented 74 revised Structured Training Programs; -Scheduled, registered, and subscribed employees for leadership, management, supervisory, computer training, NHI, CADD/GIS and other specialty courses; -120 construction certifications and 350 re-certifications awarded; and -Implemented revised Location and Design Advanced Math Algebra, Dangerous Insects training, Site Manager Materials training video, and Basic Flagging recertification.									
				FISCAL YEAR 2016-2	017	PROPOSED A	CTIVITIE	S		
-Contin evalua -Contin -Contin -Contin	nue to m ations, an nue to de nue to re nue to de	eet v nd sa evelo fine s evelo	vith principa afe operatin p Construc Structured t p web-base	al customers to priorit og checklists; tion, Materials, and M training Programs an ed courses where app	ize Iair d pi prop	need to devel atenance Cour rocesses in LE priate.	op train ses; EO/LSC	ning courses); and	s, perforr	nance

Title:	ele: Support for Senior Project Courses								Project Status:	
Fundin	ng Sour	ce:	STP: TT-	Fed		Budget Category: FHWA				
SIO:				DOTDLT1000121		Project Start	Date:		7/1/2016	
Resear	ch Proje	ect N	umber:	17-1TT		Completion	Date	(original)		6/30/2017
Resear	ch Ager	ncy:		LTRC		Completion Date (revised)				
Principal Investigator: Sam Coop				Sam Cooper, Jr.						
				BUDGE	т	Status				
		Т	otal Budge	t			Estimat	ted 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$37,500		Total				\$37,500
		(revi	sed)							
Est. Expended to Date					Salaries					
FY 2015 - 2016 B		15 - 2016 B	udget		Equipment	(expen	dable)			
FY Fun	nds	(orig	inal)			Equipment (non-expendable)				
		(revi	sed)			Travel				
Est. FY	'Expend	diture)			Other				\$37,500
				PURPOSE	A I	ND SCOPE			·	
To prov	vide sup	port	for senior p	project engineering cou	urs	es up to a ma	ximum	of \$7,500 / 1	universit	y / year.
-				FISCAL YEAR 2015 - 2	201	6 ACCOMPLIS	HMENTS	6		
No Univ	versity F	Partic	ipation.							
				FISCAL YEAR 2016-20	17	PROPOSED A	CTIVITIE	S		
Continu	ue to pro	ovide	support fo	r senior project engine	eri	ng courses.				

Title: Technology Transfer Program and Operations (DOTD)								tatus:	Proposed
Funding Sou	rce:	STP: TT-I	Fed		Budget Category: FHWA				
					-				
SIO:			DOTDLT1000119		Project Start	Date:		7/1/2016	
Research Pro	lumber:	17-1TSQ		Completion I	Date	(original)		6/30/2017	
Research Age	ncy:		LTRC		Completion I	Date	(revised)		
Principal Inves	stigate	or:	Sam Cooper, Jr.						
			Budg	ET	STATUS				
	1	Fotal Budge	t			Estima	ted 2016-201	7 Budge	t
Total Cost	(orig	jinal)	\$495,542		Total				\$495,542
	(revi	ised)							
Est. Expended	to D	ate			Salaries				\$495,542
FY 2015 - 2016 E		15 - 2016 B	udget		Equipment	(expen	dable)		
FY Funds	(orig	jinal)			Equipment (non-expendabl		xpendable)		
	(revi	ised)			Travel				
Est. FY Exper	diture	Э			Other				
			PURPOS	EA	ND SCOPE			<u> </u>	
The objectives -Disseminate Transportatio -Improve cominagencies; -Encourage im -Disseminate department.	s of th nforn n and munic nplem nforn	his study are nation on ne I Developm cations on transition of nentation on tra	e to: ew technologies and of ent (LADOTD) and of echnical, transportation new procedures and ansportation subjects	met ther on-i tec	thodologies to r transportatior related issues thnologies; and appropriate m	the Lo n-orien betwe d anagei	uisiana Dep ted agencies en the depar rs and engine	artment s; tment a eers in t	of nd other he
			FISCAL YEAR 2015 -	201	16 ACCOMPLIS	HMENT	S		
-Publication cl -Sponsorship -Assisted in al -Developed al -Published 4 T -Published 20 -Set up registr -Photographee -Launched LT -Launched reg -Filmed and p -Published 19 -Published 21 -Published 1 T	FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS Publication chair for 2016 Transportation Conference; Sponsorship coordinator for 2016 Transportation Conference; Assisted in all 2016 Transportation Conference committees; Developed all LTC 2016 publications, website, registration, e-commerce and mobile device development; Published 4 Tech Today Newsletters; Published 2015 Annual Report; Set up registration for 17 NHI/other training, and 13 LTAP training classes; Photographed all LTRC events; Launched LTRC Mobile App; Launched redesigned LTRC website; Filmed and produced 15 DOTD informational videos; Published 21 Final Reports; Published 21 Final Reports; Published 21 Tinal Reports; Published 1 TIRE report.								

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Assist in development of 2 LTRC seminar series;

-Continue development of all LTC 2016 -2017 publications, website, registration, e-commerce and mobile device development;

-Continue maintenance of LTRC website;

-Assist Secretary's office in development of 3 promotional videos;

-Continue to edit and distribute project capsules, technical summaries, final reports, and technical

assistance reports;

-Publish 4 Tech Today newsletters;

-Photograph all LTRC events; and

-Video all LTRC events.

Title:	Title: DOTD Staff Support for Workforce Development							Project St	Project Status:		
Fundin	g Sour	ce:	STP: TT-I	Fed		Budget Category: FHWA					
SIO.				DOTDI T1000123		Project Start	Date:		7/1/2016		
Research Project Number:			umber:	17-1SWD		Completion	Completion Date (original)				
Research Agency:				LTRC		Completion	Date	(revised)			
Principa	al Inves	tigato	or:	Sam Cooper, Jr.		I					
	BUDGET STATUS										
		Т	otal Budge	t			Estimat	ed 2016-2017	7 Budge	t	
Total C	ost	(orig	inal)	\$1,520,000		Total				\$1,520,000	
		(revi	sed)						-		
Est. Expended to Date			ate			Salaries				\$1,520,000	
	F	TY 20	15 - 2016 Bi	udget	Equipment (expendable)		dable)				
FY Fun	ds	(orig	inal)			Equipment	Equipment (non-expendable)				
		(revi	sed)			Travel					
Est. FY	Expen	diture	9			Other					
				PURPOS	e ai	ND SCOPE			-		
The pur manage Develop Section	rpose o ement c pment (19 or \$	f this of the LAD Sectio	study is to workforce OTD) persc on 33.	provide for the strate development program onnel by non-LTRC er	gic ns f npl	planning, prog or the Louisia oyees. This pr	gram de na Dep roject w	evelopment artment of T vill not be uti	and deli ranspor lized by	very tation and LTRC	
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	;			
N/A											
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Course -LADO -Humar -Meetin	 -Course development and delivery of LPA training; -LADOTD employee structured training; -Human Resource training, maintenance related training; and -Meetings involvements related to LADOTD's Transportation Training Curriculum council. 										

Federal Funded Research Program

PROPOSED RESEARCH

Title:	tle: Safety Center Management of Traffic Records Projects							Project St	Project Status:	
Fundin	ig Sour	ce:	100% Fec	leral		E	Budget	Federa	al	
SIO:						Project Star	t Date:			4/1/2016
Research Project Number:					Completion	Date	(original)		9/30/2016	
Research Agency:						Completion	Date	(revised)		
Principal Investigator: Dortha Cummins										
				Budg	ET	STATUS				
		Т	otal Budge	t			Estima	ted 2016-2017	7 Budge	t
Total C	ost	(orig	inal)	\$1,500,000		Total				\$1,500,000
		(revis	sed)							
Est. Ex	Est. Expended to Date					Salaries			\$71,000	
	F	TY 20	15 - 2016 Bu	udget		Equipment	(expen	dable)		
FY Fun	ds	(orig	inal)			Equipment	uipment (non-expendable)			
-		(revis	sed)			Travel				\$2,500
Est. FY	Expen	diture	;			Other				\$1,426,500
				PURPOS	E A	ND SCOPE			<u>.</u>	
The Lou behalf o approve support	uisiana of the Lo ed by th t the Str	Cente ouisia le Exe ategi	er for Trans ana Highwa ecutive Cor c Highway	sportation Safety (LC by Safety Commission mmittee of the Louisia Safety Plan (SHSP).	TS) n (L ana	i, shall prepar HSC) utilizing Traffic Recor	e, man Sectio ds Coc	age and coo n 23 USC 40 ordinating Co	rdinate o 05c fund mmittee	contracts on ls, as e (TRCC) to
				FISCAL YEAR 2015 -	20	16 ACCOMPLIS	HMENT	S		
				FISCAL YEAR 2016-2	017	PROPOSED A	СТІVІТІВ	S		
-Hire st -Attend -Coordi monito	-Hire staff person for contract management; -Attend TRCC meetings and serve on Executive Committee; -Coordinate with LHSC and TRCC on project selection, contract management, project implementation and monitoring.									

Self-Generated Funded Research Program

CONTINUING RESEARCH

Title:	Title: Field Implementation of the Louisiana Interface Shear Strength Test							Project S	Project Status:	
Fundin	ng Sourc	e:	NCHRP			Budget Category: Self-Genera				
SIO:				30001505		Project Start	Date:			8/9/2013
Resear	Research Project Number:			14-2B		Completion	Date	(original)		8/8/2015
Resear	ch Agen	cy:		LTRC		Completion	Date	(revised)		12/31/2016
Principal Investigator: Louay Mohamm				Louay Mohammad					•	
				Bude	ET :	STATUS				
		Т	otal Budge	t			Estimat	ed 2016-201	7 Budge	t
Total C	ost	(orig	inal)	\$186,407		Total				\$40,000
		(revi	sed)							
Est. Ex	Est. Expended to Date			\$14,700		Salaries			\$35,800	
	F	Y 20	15 - 2016 Bi	udget		Equipment	(expen	dable)		
FY Fun	ids	(orig	inal)	\$35,000		Equipment	(non-ex	kpendable)		
		(revi	sed)			Travel			\$2,200	
Est. FY	' Expend	liture)	\$35,000		Other				\$2,000
				PURPOS	SE A	ND SCOPE				
The obj field pro propose these te climatic	jective of ojects to ed test m ests. To c and trat	f this aug hetho ach ffic c	s research i ment their od and crite ieve this ok conditions a	s to evaluate the test potential implementa eria, and to relate obst ojective, field projects ind will be monitored	tion serv s wil for	ethod develope . These meas red tack coat f I be selected a a period of two	ed in N sureme ield pei across elve mo	CHRP Proje ints will be u formance to the US to re onths.	ect 9-40 sed to v the out present	in actual alidate the comes of different
				FISCAL YEAR 2015 -	20′	16 ACCOMPLIS	HMENT	6		
-Compl -Condu	leted Ta licted Tas	sk 1 sk 2:	: Develop t conduct of	he experimental plar the approved exper	i; ar ime	nd ntal plan of Ta	ask 1.			
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Task 2 -Task 3 -Task 4	-Task 2: Continue the conduct of the approved experimental plan of Task 1; -Task 3: Monitor field performance; and -Task 4: Prepare Draft Final Report.									
Title: Calibration of LRFD Geotechnical Axial (Tension and Compression) Resistance Factors (φ) for California						Project Status:		Ongoing		
--	--------	--------------	----------------------	----------	---------------------------------	-----------------	----------------------------	----------	-----------	--
Funding Source: CALTRANS					Budget Category: Self-Generated					
810:				Droio	ot Stort	Doto			1/16/2015	
SIU:	a at N	umbori	DOTE11000055	Proje		Date:	(original)		1/16/2015	
Research Age		umper.		Com		Date	(original)		1/15/2017	
Principal Inve	stigat	r.	Murad Abu-Earsakh	Com	Jelion	Date	(Tevised)			
	Silgan	JI.	Bunge	T STATUS	3					
	1	otal Budge	t		-	Estimat	ed 2016-2017	7 Budget	t	
Total Cost	(orig	inal)	\$70.598	Tota					\$21,520	
	(revi	sed)	+ -,						. ,	
Est. Expended	d to D	ate	\$50,000	Salar	ies				\$21,520	
	FY 20	15 - 2016 Bi	udget	Equip	oment	(expen	dable)	ψ21,020		
FY Funds	(orig	inal)	\$35,000	Equip	Equipment (non-expendable)					
	(revi	sed)		Trave	Travel					
Est. FY Exper	diture	9	\$30,000	Othe	Other					
			PURPOSE		PE			<u></u>		
Purpose AND Scope The objective of this research project is to recommend revisions to the California Amendments to the AASHTO LRFD Specifications and Caltrans technical documents pertaining to resistance factors used in design and evaluation of deep foundations. To achieve the objectives of this study, geotechnical information, design report of deep foundation, and load test data, pile driving records and PDA etc. will be collected by working with the Caltrans Foundation Testing Branch (FTB). The collected data will be digitized and compiled into excel files using a standard template for further design capacity analysis including static analysis, dynamic and PDA. The measured nominal resistance can be determined using static load test data or PDA analysis depending on the available load test data. The obtained load test database will be grouped into several subgroups in according to their pile type, soil type, bearing type (axial compression or tension). If enough data is available, resistance factors for each classification group will be calibrated. The predicted and measured resistance will be determined according to the methods provided in the California Amendments. Statistical analyses will be performed to evaluate the performance of each design method. LRFD calibration of resistance factors will be performed using the calibration procedure outlined by the TRB transportation research circular No. E-C079. Each design method will be assessed for the safety and serviceability risks.										
-Completed lit	oratu		FISCAL YEAR 2015 - 2	2016 ACC		HMENT	5 I drillod chof	ter		
-Completed literature review relevant to LRFD calibration of driven piles and drilled shafts; -Continued collecting available drilled shaft cases from California and other states; -Started analyzing the predicted and measured load carrying capacities of collected drilled shaft cases; and -Separated the measured and predicted tip and side resistances from the total shaft capacities.										

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Continue analyzing the predicted and measured load carrying capacity of drilled shafts; -Prepare database for regression and reliability analysis; and -Calibrate the total, tip and side resistance factors of drilled shafts.

Other DOTD Funded Projects

CORS 911: Continuously Operating Reference Stations for the Bayou Corne Sinkhole							Project S	tatus:	Ongoing		
Funding Source: emergency fund						Budget Category: Other DOTD Sections					
SIO:				30000980		Project Start	Date:			3/18/2013	
Resear	rch Proj	ect N	umber:	13-9GT		Completion	Date	(original)		3/17/2014	
Resear	rch Agei	ncy:		LSU		Completion	Date	(revised)		9/30/2016	
Principa	al Inves	tigato	or:	Joshua Kent							
				Bude	ET :	STATUS					
		Т	fotal Budge	t			Estimat	ed 2016-201	7 Budge	t	
Total C	ost	(orig	jinal)	\$350,785		Total				\$4,000	
		(revi	sed)	\$474,380							
Est. Ex	pended	to D	ate	\$387,135		Salaries			\$4,000		
	F	FY 20	15 - 2016 Bi	udget		Equipment (expendable)					
FY Fun	nds	(orig	inal)	\$49,703		Equipment (non-expendable)					
		(revi	sed)			Travel					
Est. FY	' Expen	diture	e	\$45,426		Other					
				PURPOS	SE A	ND SCOPE					
The fundamental objective of this project is to provide long-term monitoring of portions of HWY-70 potentially vulnerable to the Assumption Parish sinkhole. The project includes fabrication, deployment, and maintenance of five (5) continuously operating reference stations (CORS) of GPS receivers and antennae designed to actively monitor and measure surface motions of the route and its bridges. If monitoring reveals movement, implementation of remedial actions may be warranted. However, no implementation activity is currently anticipated.											
				FISCAL YEAR 2015 -	20′	16 ACCOMPLIS	HMENTS	5			
-All 5 C -The Fi	-All 5 CORS stations are active and running and providing reports; and -The Final Report is being drafted.										
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES											
Continu	ued mor	nitorir	ng will be e	valuated by the Eme	rger	ncy Operations	s group				

Title: FHWA Safety Transfer Fund Support for LCTS						Project Status: Or		Ongoing		
Fundir	ng Sour	ce:	Safety			E	Budget	Category:	Other Sectio	DOTD ons
						Ducient Chart	Data			7/4/2045
SIU:	ch Droit					Project Start	Date:	(original)		//1/2015
Resear	ch Proje		umber:	10-151F5		Completion	Date	(original)		12/31/2017
Princip		tigoto	or:	Dortha Cumming		Completion	Dale	(Tevised)		
Fincip	armves	ligat	Л.			CTATUO				
				BUDG	ET	STATUS				
			otal Budge	t			Estimat	ed 2016-201	/ Buage	t
Total C	ost	(orig	inal)	\$1,263,287		Total				\$793,509
		(revi	sed)							
Est. Ex	pended	to D	ate	\$264,880		Salaries	1			\$271,927
	F	Y 20	15 - 2016 B	udget		Equipment	(expen	dable)		
FY Fun	nds	(orig	inal)	\$482,451		Equipment (non-expendable)				
		(revi	sed)			Travel				\$22,000
Est. FY	'Expend	diture	9	\$157,906		Other				\$499,582
				PURPOS	ΕA	ND SCOPE			-	
The Lo univers technol transpo training curricul profess (LADO Educat	The Louisiana Center for Transportation Safety (LCTS) will provide a structure for Louisiana's research universities to collaborate on safety related projects and leverage resources. Supported by research and technology transfer, the Safety Center will provide enhanced technical assistance to federal, state and local transportation agencies and will be available to work to meet other state and regional needs. An expanded training and education program which includes the new multi-disciplinary highway safety professional curriculum being developed by the Transportation Research Board will be made available to transportation professionals on a national basis. The Louisiana Department of Transportation and Development (LADOTD), Louisiana Transportation Research Center (LTRC) and the Transportation Training and Education Center (TTEC) in Baton Rouge, Louisiana will serve as the nucleus for these activities.									
				FISCAL YEAR 2015 -	20 ⁻	16 ACCOMPLIS	HMENTS	6		
-Develop draft Strategic and Work Plan for LCTS; -Support implementation of SHSP at State level and regionally through nine regional coalitions; Goals for LRSP -Assist with transition of program back to LTAP; and -Provide training and outreach on program as needed.										
	FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES									
-Finalize Strategic and Work Plan for LCTS; -Develop Workforce Development Plan for LCTS; and -Expand marketing and outreach of LCTS across state.										

Title:	Exploring the Use of Pavement Markings in the Dynamic Envelope of a Railroad Crossing to Enhance Safety						Project Status:		Proposed	
Fundin	g Sour	ce:	Highway/	Rail Safety		E	Budget	Category:	Other Sectio	DOTD ons
80						Draiget Start	Data			7/1/2016
SIU:	ah Drai					Project Start	Date:	(original)		7/1/2016
Resear			umper:			Completion	Date	(original)		6/30/2018
Dringing		icy.				Completion	Date	(revised)		
гппсра		liyall	Л.			STATUC				
		т	otal Budge	H BODC	9E I -	STATUS	Estimat	ed 2016-201	7 Budge	+
Total C	oet	(orig		\$100,000		Total	Lotiniat		Duuge	\$50.000
Total C	051	(ong	sed)	\$100,000		TOLAI				φ30,000
Est Ex	nended	to D	ate			Salaries				\$48.000
LOU. LA	F	TY 20	15 - 2016 Bi	udaet		Equipment	(expend	dable)	\$1,000	
FY Fun	ds	(orig	inal)			Equipment	(non-ex	(pendable)	φ1,00	
		(revi	sed)			Travel			\$1.000	
Est. FY	Expen	diture	9			Other				
	•			PURPOS	SE A	ND SCOPE			<u> </u>	
The purpose of this project is to evaluate the effectiveness of the Louisiana Department of Transportation and Development's (LADOTD's) proposed pavement markings in reducing instances of stopped vehicles within the dynamic envelope of at-grade highway-rail crossings at known locations where drivers tend to stop on the tracks. Video data will be collected for a set period before and after the pavement markings have been applied. Data analysis will be undertaken to determine types and frequency of encroachment into the dynamic envelope zone, and comparative analysis will be undertaken to evaluate the effectiveness of the pavement markings. The literature review will be conducted nationwide. The list of locations to be experimented will be agreed with LADOTD and shall be no more than four. The mounting of traffic data collection devices, along with installation of the dynamic envelope pavement markings and accompanying signage, will be undertaken by LADOTD. The research team assumes LADOTD will obtain any special permits, including environmental clearance and permit for any installations.										
FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES										
-Task 1: Perform Literature Review; -Task 2: Confirm Test Locations; -Task 3: Mount Data Collection Devices; -Task 4: Collect Pre-Installation Data; -Task 5: Install Pavement Markings and Accompanying Signage; and -Task 6: Collect Post-Installation Data.										

Title:	le: Economic Evaluation of Applicants to the Port Construction and Development Priority Program							Project St	tatus:	Proposed
Funding Source: Port Priority Program Budget 0							Category:	Category: Other DOTD Sections		
SIO:						Project Start	t Date:			7/1/2016
Resear	ch Proje	ect N	umber:			Completion	Date	(original)		12/31/2017
Resear	ch Ager	ncy:		LSU		Completion	Date	(revised)		
Principa	al Inves	tigato	or:	James Richardson						
	BUDGET STATUS									
		Т	otal Budge	t			Estimat	ted 2016-2017	7 Budge	t
Total C	ost	(orig	inal)	\$75,000		Total				\$50,000
		(revi	sed)							
Est. Ex	pended	to Da	ate			Salaries			\$50,000	
	F	Y 20	15 - 2016 Bi	udget		Equipment (expendable)		dable)		
FY Fun	ds	(orig	inal)			Equipment (non-expendable)				
		(revi	sed)			Travel				
Est. FY	Expend	diture)			Other				
				PURPOS	E A	ND SCOPE				
The objective of the project is to perform research and analysis of the port priority program application to ensure the State is receiving the required minimum rate of return on the State's investment.										
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENT	8		
				FISCAL YEAR 2016-20	017	PROPOSED A	CTIVITIE	S		
 Preliminary meetings with project sponsoring ports; Preliminary review of applications; Benefit Cost Validity Check; Benefit Cost Calculations; and Development of Quarterly Reports. 										

Title:	Louisiana Local Road Safety Program							Project Status:		Proposed	
Funding Source: Safety						В	Budget	Category:	Other Sectio	DOTD ns	
010							<u> </u>			4/4/0040	
SIO:				DOTDL11000120		Project Start	Date:	(· · ·)		1/1/2016	
Resear	ch Proje	ect N	umber:	16-LRSP		Completion I	Date	(original)		12/31/2017	
Resear	ch Ager	ncy:				Completion	Date	(revised)			
Principa	al Invest	tigato	or:	Marie Walsh	(
		_		BUDG	ET \$	STATUS					
		Т	otal Budget	t			Estimat	ed 2016-2017	7 Budge	t	
Total C	ost	(orig	inal)	\$338,440		Total				\$338,440	
		(revi	sed)								
Est. Ex	pended	to D	ate			Salaries				\$214,749	
	F	Y 20	15 - 2016 Bu	udget		Equipment	(expend	dable)			
FY Fun	ds	(orig	inal)			Equipment (non-expe		pendable)			
		(revi	sed)			Travel			\$8,687		
Est. FY	Expend	Expenditure Other						\$115,004			
				PURPOS	E A	ND SCOPE			-		
To work in cooperation with Louisiana Department of Transportation and Development's (LADOTD's) Highway Safety Office to implement and manage the Local Road Safety Program (LRSP) in addition to providing support to other statewide road safety initiatives at both the state and local levels.											
				FISCAL YEAR 2015 -	201	6 ACCOMPLIS	HMENTS	;			
 FISCAL YEAR 2015 - 2016 ACCOMPLISHMENTS Hosted a statewide Local Road Safety Peer Exchange last September 10-11, 2015 which not only generated leads for potential LRSP projects but also fostered partnerships between the MPO's, regional safety coalitions and local public agencies; Worked with LADOTD and New Orleans Planning Commission in facilitating a road safety assessment effort that would be replicated across the region; Improved the evaluation process and criteria to use for rating project applications; Developed and started implementing an Outreach Plan that promoted the program at major conferences/summits/meetings (LMA, Smart Growth, PJAL, LPESA meetings); Engaged multidisciplinary partners and facilitated sessions at the Louisiana Highway Safety Summit last October 20-22, 2015; Utilized emerging communication trends (Facebook and electronic newsletters) as a way of sharing best practices as well as training information/updates; Coordinated with LADOTD Highway Safety Section to standardize project selection process with DOTD's data driven HSIP project selection process; Conducted parish level networking screening on five of the top 20 priority parishes; and Initiated local road safety plan development process in three of the top 20 priority parishes. 											

LTRC Annual Research Program

Fiscal Year 2016-2017

FISCAL YEAR 2016-2017 PROPOSED ACTIVITIES

-Participate with LADOTD in development of process to disseminate Fugro data to local entities; -Coordinate with LADOTD safety section on utilization of networking screening process to identify potential local road project locations and prioritize funding;

-Complete local road safety plan development for at least 10 of the top 20 priority parishes; and -Disseminate high PSI locations developed as part of statewide network screening process.

LTRC Annual Research Program

Fiscal Year 2016-2017 2016 RPIC PROBLEM STATEMENTS

FINAL RANKING	PROBLEM STATEMENT TITLE
1	Highway Construction Work Zone Safety Performance and Improvement in Louisiana
2	Retrofit of Existing Statewide Louisiana Safety Walk Bridge Barrier Railing Systems
3	Pipe Material Zones in Coastal Louisiana
4	Calibration Factors for HSM Intersection SPFs
5	When is the use of AST Interlayers Over Soil Cement Justifiable
6	Louisiana Trip Generation Manual
7	A Highway Construction Work Zone Mobility Impact Assessment Tool
8	Quality control / Quality Assurance on Base Course and Embankments using the Dynamic Cone Pentrometer
9	Estimating Average Daily Traffic Counts Using Cell Phone Data
10	Development of New Software Solutions for Pile Design in Louisiana
11	Radio-frequency Identification (RFID) Tagging for Material Tracking and Future Asset Management
12	Evaluation and Guidance of Planning-Level Cost Estimation
13	Reliable Early Opening Strength for Concrete Pavements and Patch Work
14	Develop a Cost Effective Perpetual Pavement Design and Evaluation of the Structural Coefficient of Asphalt Mixtures
15	Development of Geotechnical Manual for LADOTD
16	Development of a 4.75mm (No. 4) Nominal Maximum Size Mixture
17	Development of Prediction Models and Design Guides for RCC Pavements
18	Overheight Impact Avoidance and Incident Detection System
19	Development of Splices for Precrast Concrete Piles
20	Research and Recommend the Appropriate Type of Dredge Required to Dredge Louisiana's Coastal Ports
21	Mix Specification to Improve Roadway Density
22	Hurricane Evacuation Modeling Package (HEMP)
23	Enhancing Durability of Reinforced Concrete Elements in Louisiana Using Corrosion-Resistant FRP Bars
24	A State-of-the-Art Virtual Environment for Highway Work Zone Construction Safety Research, and Training
25	Pedestrians and Bicyclists Count
26	Feasibility and Advantages of Acceptance of Concrete Beyond 28 Days
27	The Potential Safety Impacts to the State Aviation Transportation System Through the use of Unmanned Aerial Systems (USA) Operations
28	Impermeable Treatments Over Cracked AC Pavements in High Water Table Areas
29	Geotechnical Asset Management
30	Development of a New Travel Time Reliability Measure as an Indicator of Level of Service
31	To Determine the Feasibility of Utilizing Aerial Drones as a Platform for Traffic Cameras
32	Field Implementation of Handheld FTIR Spectrometer for Polymer Content Determination and for Quality Control of RAP Mixes