LTRC Annual Research Program

Fiscal Year July 1, 2025 - June 30, 2026

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

Conducted by:
Louisiana Department of Transportation and Development
Louisiana Transportation Research Center
In accordance with Louisiana R.S. 48.105
Which governs the creation and operation
Of the Louisiana Transportation Research Center

In cooperation with
United States Department of Transportation Federal Highway Administration
June 2025

LOUISIANA TRANSPORTATION RESEARCH CENTER

Research, Technology Transfer, Education & Training

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

April 30, 2025

Ms. Melinda Roberson
Louisiana Division Administrator
Federal Highway Administration
5304 Flanders Drive, Suite A
Baton Rouge, LA 70808

Attention: Ms. Mary Stringfellow

RE: FY 2025-2026 Louisiana Transportation Research Center Annual Work Program

Dear Ms. Roberson:

Enclosed please find the FY 2025-2026 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 CFR 420 Subpart B and 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., Ph.D., P.E.
Director

cc: Mr. Chad Winchester, P.E.
Dr. Tyson Rupnow, P.E.

U.S. Department of Transportation
Federal Highway Administration

Louisiana Division Office

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

June 27, 2025

In Reply Refer To:
HDA-LA

Chad Winchester
Chief Engineer, Louisiana Department of Transportation & Development
Louisiana Transportation Research Center
Baton Rouge, LA

Subject: FY 2025-2026 State Planning & Research Part B Work Program

Dear Mr. Winchester:

This letter provides approval of the 2025-2026 State Planning & Research Part B Work Program as submitted by Tyson Rupnow, Associate Director of Research for the Louisiana Transportation Research Center, to FHWA on June 13, 2025.

A separate request will be required to process the fiscal documents necessary to obligate the federal funds for this Work Program. Should you have any questions regarding this matter, please contact me at (225) 757-7622, or laura.phillips@dot.gov.

Sincerely,

LAURA ELIZABETH PHILLIPS
Digitally signed by LAURA ELIZABETH PHILLIPS
Date: 2025.06.27 11:25:07 -05'00'

Laura Phillips
Transportation Planner

cc: Tyson Rupnow, LTRC
Dawn Sholmire, LADOTD

Abbreviations and Acronyms

Funding

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
P	Pavements
B	Bituminous
SA	Safety
SS	Special Studies
C	Concrete
ST	Structures
TT	Technology Transfer
LTAP	Local Technical Assistance Program
PF	Pooled Fund (Louisiana Lead)

Project Status

A	Active
P	Proposed
RFP	Request for Proposal
SIO	Statistical Internal Order

AAR	Alkali aggregate reaction
AASHTO	American Association of State Highway Transportation Officials
ACI	American Concrete Institute
ACR	Alkali-carbonate reaction
ACRP	Airport Cooperative Research Program
ADT	Average daily traffic
ALF	Accelerated loading facility
AM	Additive Manufacturing
AMRL	Asphalt and Materials Reference Laboratory
ANFIS	adaptive neuro fuzzy inference system
ANN	Artificial neural network
AO	aromatic oils
APWA	American Public Works Association
AR	Augmented Reality
ASCE	American Society of Civil Engineers
ASFD	Additive Stir Friction Deposition
ASR	Alkali-silica reaction
ATLaS	Accelerated Test Loading and Simulation
ATR-FTIR	Fourier-Transformed infrared
BBR	Bending beam rheometer
BMD	Balanced Mix Design
BMS	Bridge Maintenance Systems
CAD	Computer aided drafting
CCRL	Cement and Concrete Reference Laboratory
CE&I	Civil Engineering and Inspection
CIP	Cast in place
CLE	Coupled Lagrangian-Eulerian
CTM	Circular track meter
CPT	concrete prism test
CPT	Cone penetrometer
CR	crumb rubber
CUTC	Council of University Transportation Centers
DCP	Dynamic cone penetrometer
DFT	Dynamic friction tester
DIC	Digital image correlation
DIGGS	Data Interchange for Geotechnical and Geo-Environmental Specialists
DOT	Department of Transportation
DOTD	Louisiana Department of Transportation and Development
DSR	Dynamic shear rheometer
DSRC	Direct Short Range Communications
ECC	Engineered cementitious composite
EMCRF	Engineering materials characterization and research facility
EPA	Environmental Protection Agency
ERDP	Engineering Resource Development Program

ETG	Expert task group
EX	Extended Reality
FAF	Freight Analysis Framework
FE	Finite element
FHWA	Federal Highway Administration
FRP	Fiber Reinforced Polymer
FSS	Fully soften shear strength
FY	Fiscal year
GIS	Geographic information systems
GLTP	Geosynthetic load transfer platform
GUI	Graphical User Interface
HCM	Highway Capacity Manual
HEMP	Hurricane Evacuation Modeling Package
HFA	Hydrated fly ash
HMA	Hot mixed asphalt
ICC	Internally cured concrete
IRI	International roughness index
IT	Information technology
ITS	Intelligent Transportation System
LA PMS	Louisiana Pavement Management System
LCA	Life-Cycle Assessment
LEO	Louisiana employees online
LIDAR	Light detection and radar
LL	Liquid limit
LLM	Learning Language Model
LMS	Learning management system
LPA	Local public agency
LPESA	Louisiana Parish Engineers and Supervisors Association
LRFD	Load and Resistance Factored Design
LRSP	Local Road Safety Program
LSO	Learning solution online
LSU	Louisiana State University
LTA	Long term aged
LTAP	Louisiana Technical Assistance Program
LTRC	Louisiana Transportation Research Center
LWST	Locked wheel skid trailer
LWT	Loaded wheel tester
MASH	Manual for Assessing Safety Hardware
MCPT	Miniature concrete prism test
MEPDG	Mechanistic Empirical Pavement Design Guide
ML	Machine Learning
MPO	Metropolitan planning organization
MR	Mixed Reality
MRI	Major Research instrumentation

MTS	Materials Test Systems
NASA	National Aeronautics and Space Agency
NCAT	National Center for Asphalt Technology
NCHRP	National Cooperative Highway Research Program
NDG	NMuclear Density Gauge
NDT	Non-destructive testing
NHS	National highway system
NHTSA	National Highway Transportation Safety Administration
NNBF	Natural and Nature-Based Features
NSF	National Science Foundation
OCR	Overconsolidation Ratio
OGFC	Open graded friction course
OMC	Office of Multimodal Commerce
OTS	Office of technology services
PAV	Pressure aging vessel
PCC	Portland cement concrete
PCPT	Piezocone penetration test
PCR	Product category rule
PDH's	Professional development hours
PI	Performance index
PI	Principal Investigator
PL	Plastic limit
PLT	Pile Load Test
PMTS	Project management tracking system
PMS	Pavement management system
PRC	Project review committee
PRF	Pavement research facility
PSV	Polished stone value
QA	quality assurance
QC	quality control
RA	Research associate
RAP	Recycled asphalt pavement
RAS	Recycled asphalt shingles
RC	Reinforced concrete
RCC	roller compacted concrete
RDM	rolling density meter
RH	relative humidity
RITIS	Regional Integrated Transportation Information System
ROR	Run-off-road
RTFO	Rolling thin film oven
SARA	Saturates/Aromatics/Resins/Asphaltenes
SASHTO	Southeastern Association of State Highway and Transportation Officials
SBS	Styrene-Butadiene-Styrene
SCB	Semi-Circular Bend

SCM	Supplementary Cementitious Material
SCPTu	Seismic Piezocone Penetration Testing
SHSP	Strategic Highway Safety Plan
SLR	Sea Level Rise
SMA	Stone matrix asphalt
SN	Skid number
SOP	Standard operating procedure
SPS	Sandwich plate system
SPT	Standard penetration test
SSAM	Surrogate Safety Assessment Model
SSRB	Louisiana Standard Specifications for Roads and Bridges
STC	Southeast Transportation Consortium
STEM	Science Technology Engineering and Math
TA	Technical assistance
T-FAST	Turner Fairbanks Highway Research Center Fast ASR Test
TFHRC	Turner Fairbanks Highway Research Center
TIM	Traffic Incident Management
TIMED	Transportation Infrastructure Model for Economic Development
TLC-FID	Thin-layer Chromatography and Flame Ionization Detection
TRB	Transportation Research Board
TSR	Tensile strength ratio
TTEC	Transportation Training and Education Center
UHPFRC	Ultra-High Performance Fiber-Reinforced Concrete
ULL	University of Louisiana-Lafayette
UTC	University Transportation Center
UTM	Universal testing machine
USGA	United States Geological Administration
VMT	Vehicle miles traveled
VR	Virtual Reality
WG	Wicking Geotextile
WIM	Weigh in motion
WMA	warm mix asphalt
XRD	X-ray diffraction
XRF	X-ray fluorescence

Table of Contents

FHWA SPR Work Program

Part B

FAP Number SPR-0010(34)

FHWA Funding

SPR Research Budget Recap	H#	Federal	State	Total
Administrative Budget	TBD	$789,764.00	$197,441.00	$987,205.00
Research Support Studies Budget	TBD	$1,250,710.40	$312,677.60	$1,563,388.00
Active Studies Budget	TBD	$3,194,448.80	$798,612.20	$3,993,061.00
Proposed Studies Budget	TBD	$2,243,557.60	$560,889.40	$2,804,447.00
Pooled Fund Lead State Studies Budget	Varies	$775,697.00	$0.00	$775,697.00
Total SPR Budget		$8,254,177.80	$1,869,620.20	$10,123,798.00

SPR External Collaboration Budget Recap	H#	Federal	State	Total
Pool Funded Studies	N/A	$200,000	$0.00	$200,000
TRB Correlations	N/A			
NCHRP	N/A			
Total SPR External Collaboration Budget				

FHWA Funding

LTAP Budget Recap	H#	Federal	State	Total
LTAP	TBD	$542,938.00	$150,000.00	$692,938.00
LTAP Program Total		$542,938.00	$150,000.00	$692,938.00

STP: Technology Transfer Program Budget Recap	H#	Federal	Total
Technology Transfer Program and Operations	TBD	$1,644,931	$1,644,931
Workforce Development Program	TBD	$7,148,424	$7,148,424
Student Support Programs	TBD	$200,000	$200,000
Total STP Budget		$8,993,355	$8,993,355

Other DOTD Sections Funding

Other DOTD Sections Budget Recap	H#	Federal	State	Total
Active Studies Budget	TBD	$0.00	$64,050	$64,050
Proposed Studies Budget	TBD	$379,989	$0.00	$379,989
Total Other DOTD Sections Budget		**$379,989**	**$64,050**	**$444,039**

LTRC ANNUAL RESEARCH PROGRAM

SPR: TT-Fed/TT-Reg (80% Federal / 20% State)

FISCAL_YEAR 2025-2026

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: Administrative (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	P	ADM	DOTLT1000581	26-1PM	$987,205	$987,205	LTRC	Tyson Rupnow	Program Management	7/1/2025	6/30/2026		C-2
					$987,205	**$987,205**	**ADMINISTRATIVE BUDGET TOTALS**						
Project Type: Research Support (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	P	RS	DOTLT1000584	26-1TTRI	$450,659	$450,659	LTRC	Tyson Rupnow	Technology Transfer and Research Implementation	7/1/2025	6/30/2026		C-3
SPR: TT-Fed/TT-Reg - 5	P	RS	DOTLT1000587	26-1TRS	$358,975	$358,975	LTRC	Tyson Rupnow	Technical Research Surveillance	7/1/2025	7/1/2026		C-4
SPR: TT-Fed/TT-Reg - 5	P	RS	DOTLT1000583	26-1TA	$367,708	$367,708	LTRC	Tyson Rupnow	Technical Assistance	7/1/2025	6/30/2026		C-8
SPR: TT-Fed/TT-Reg - 5	P	RS	DOTLT1000536	26-1SSR	$40,000	$40,000	LTRC	Tyson Rupnow	Staff Support for Research	8/1/2025	6/30/2026		C-10
SPR: TT-Fed/TT-Reg - 5	P	RS	DOTLT1000585	26-1NPE	$40,301	$40,301	LTRC	Tyson Rupnow	New Product Evaluation	7/1/2025	6/30/2026		C-11
SPR: TT-Fed/TT-Reg - 6	P	RS	DOTLT1000585	26-1EQM	$305,745	$305,745	LTRC	Tyson Rupnow	Equipment Management	7/1/2025	6/30/2026		C-12
					$1,563,388	**$1,563,388**	**RESEARCH SUPPORT BUDGET TOTALS**						

LTRC ANNUAL RESEARCH PROGRAM

SPR: TT-Fed/TT-Reg (80% Federal / 20% State)

FISCAL YEAR 2025-2026

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: Bituminous (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	A	B	DOTLT1000511	24-1B	$148,866	$477,500	LTRC	Louay Mohammad	Sustainability through Development of Life-Cycle Information Models for Pavements in Louisiana	10/1/2023	9/30/2027		C-15
SPR: TT-Fed/TT-Reg - 5	A	B	DOTLT1000508	23-4B	$28,387	$82,258	LTRC	Saman Salari	Literature review of IDEAL-CT and IDEAL-RT tests methods for balanced mix design	3/4/2024	3/3/2025	12/31/2025	C-16
SPR: TT-Fed/TT-Reg - 6	A	B	DOTLT1000554	25-2B	$118,472	$172,305	LTRC	Moses Akentuna	Validation of SCB Jc Prediction Model and Aging Correction Factor	7/22/2024	7/21/2026		C-17
SPR: TT-Fed/TT-Reg - 6	A	B	DOTLT1000553	25-1B	$118,475	$171,368	LTRC	Moses Akentuna	Assessment of the PaveScan RDM for Continuous Density Measurements in Louisiana	7/22/2024	1/21/2026		C-18
SPR: TT-Fed/TT-Reg - 6	A	B	30000112	10-1EMCRF	$131,787	$24,108,022	LTRC	Louay Mohammad	Sustainable and Resilient Pavement Materials and Technologies Center (SRPC)	7/1/2009	6/30/2015	6/30/2025	C-19
					$545,987	**$25,011,453**	**BITUMINOUS BUDGET TOTALS**						
Project Type: Concrete (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	A	C	DOTLT1000560	25-1C	$109,538	$345,985	LTRC	Zhen Liu	Evaluation of T-Fast (TFHRC ASR Test) Test Method for Aggregate Acceptance	10/15/2024	10/14/2026		C-20
SPR: TT-Fed/TT-Reg - 6	A	C	DOTLT1000528	24-1C	$91,309	$258,117	LTRC	Zhen Liu	Investigation of Piezoelectric and Other Advanced Sensors in Concrete	7/1/2024	6/30/2026		C-21
					$200,847	**$604,102**	**CONCRETE BUDGET TOTALS**						
Project Type: Geotechnical (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000527	24-4GT	$92,538	$325,627	LTRC	Nick Ferguson	Geotechnical Asset Management (GAM) - Phase II	8/15/2024	8/14/2027		C-22
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000525	24-3GT	$88,700	$426,843	LTRC	Murad Abu-Farsakh	Statewide Calibration of CPT Direct Design Methods Using Static Load Test Data	5/1/2024	4/30/2027		C-23
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000517	24-2GT	$67,525	$251,395	LTRC	Gavin Gautreau	Web-Based Tool to Advance Geotechnical Data Interchange and Reliability-Based Site Characterization	12/1/2023	11/30/2025		C-25
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000471	23-2GT	$21,524	$197,665	LTRC	Nick Ferguson	Field Evaluation of Geophysical Applications for DOTD	2/6/2023	2/5/2025	9/5/2025	C-27
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000346	20-3GT	$19,150	$400,722	LTRC	Murad Abu-Farsakh	Development of a Design Methodology for Geosynthetic Reinforced Pavement using Finite Element Numerical Modeling	5/1/2020	4/30/2023	8/31/2025	C-28
SPR: TT-Fed/TT-Reg - 5	A	GT	DOTLT1000337	20-2GT	$68,500	$574,635	LTRC	Murad Abu-Farsakh	Instrumentation and Modeling of Geosynthetic Load Transfer Platform Performance	1/1/2020	6/30/2022	6/30/2026	C-30
SPR: TT-Fed/TT-Reg - 6	A	GT	DOTLT1000512	24-1GT	$94,800	$432,545	LTRC	Murad Abu-Farsakh	Evaluation and Incorporation of Site and Laboratory Variability into LRFD Design of Pile Foundations - Phase 2	11/1/2023	10/31/2026		C-32
SPR: TT-Fed/TT-Reg - 6	A	GT	DOTLT1000473	23-1GT	$104,852	$311,126	LTRC	Gavin Gautreau	LIDAR for Geotechnical Applications	3/1/2023	8/31/2025		C-35
SPR: TT-Fed/TT-Reg - 6	A	GT	30000111	10-1GERL	$183,700	$20,772,569	LTRC	Murad Abu-Farsakh	LTRC Support for Geotechnical Research at the Geotechnical Engineering Research Laboratory (GERL)	7/1/2010	6/30/2015	6/30/2027	C-36
					$741,289	**$23,693,127**	**GEOTECHNICAL BUDGET TOTALS**						
Project Type: Other (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	A	Other	30000169	11-1AD	$319,500	$5,621,122	LTRC	Vijaya Gopu	Administration of LTRC External Funding Programs	1/1/2008	6/30/2009	6/30/2027	C-38
					$319,500	**$5,621,122**	**OTHER BUDGET TOTALS**						
Project Type: Pavements (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	A	P	DOTLT1000567	25-1P	$60,000	$185,818	LTRC	Jun Liu	Development of a Database for Successfully Performing Pavement Sections in Louisiana	5/1/2025	4/30/2028		C-39
SPR: TT-Fed/TT-Reg - 5	A	P	DOTLT1000526	24-2P	$51,000	$149,100	LTRC	Qiming Chen	Developing a Methodology for Pavement Drainage System Rating	6/1/2024	11/30/2025		C-40

SPR: TT-Fed/TT-Reg - 6	A	P	DOTLT1000519	24-1P	$138,300	$371,615	LTRC	Zhong Wu	Evaluation of Louisiana Maintenance and Rehabilitation Treatment Decision Matrix for Cost-effective and Timely Pavement Preservation	1/1/2024	12/31/2026		C-41
SPR: TT-Fed/TT-Reg - 6	A	P	DOTLT1000272	19-2P	$16,350	$480,708	LTRC	Zhong Wu	Mechanistic Characterization of Asphalt Overlays for Pavement Rehabilitation and Preservation using Pavement ME Approach	8/1/2018	1/31/2021	10/31/2025	C-42
SPR: TT-Fed/TT-Reg - 6	A	P	DOTLT1000218	18-2P	$49,000	$315,000	LTRC	Qiming Chen	Mitigating Joint Reflective Cracks using Stone Interlayers: Case Study on Louisiana Highway 5, Desoto Parish	10/17/2017	10/16/2023	10/16/2026	C-43
SPR: TT-Fed/TT-Reg - 6	A	P	30000141	10-1ALF	$538,009	$26,093,061	LTRC	Zhong Wu	Management and Operation of the Pavement Research Facility	7/1/2009	6/30/2015	6/30/2027	C-44
					$852,659	**$27,595,303**	**PAVEMENTS BUDGET TOTALS**						

Project Type: Safety (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	A	SA	DOTLT1000564	25-1SA	$106,178	$215,728	LTRC	Milhan Moomen	Assessing Speeding-Related Crashes in Louisiana to Support the Safe System Approach	5/1/2025	4/30/2027		C-46
SPR: TT-Fed/TT-Reg - 5	A	SA	DOTLT1000513	24-2SA	$52,000	$261,355	LTRC	Elisabeta Mitran	Older Road Users Safety in Louisiana: Understanding the Crash Contributing Factors	1/1/2024	12/31/2025		C-47
SPR: TT-Fed/TT-Reg - 5	A	SA	DOTLT1000510	24-1SA	$80,353	$204,983	LSU	Hany Hassan	Ground-in Edge and Centerline Rumble Strip/Rumble Stripe Evaluation and Best Practices	5/1/2024	4/30/2026		C-48
					$238,531	**$682,066**	**SAFETY BUDGET TOTALS**						

Project Type: Special Studies (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000559	25-2SS	$122,532	$220,140	UNO	Bethany Stich	Truck Parking Shortage: Improving Efficiency and Identifying Opportunities	12/15/2024	3/14/2026		C-49
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000556	25-1SS	$50,028	$105,056	LTRC	Tara Tolford, MURP, AICP	Complete Streets Means Trucks, Too: Integrating Freight Traffic Needs with Active Transportation Planning and Policy	1/6/2025	7/5/2026		C-50
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000524	24-6SS	$165,956	$211,462	LTRC	Ruijie "Rebecca" Bian	Statewide Lane Reconfiguration “Road Diet” Screening for Louisiana	7/1/2024	6/30/2026		C-52
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000515	24-4SS	$52,431	$223,751	LTRC	Milhan Moomen	Improved Signalized Intersection Performance Using Computer Vision and Artificial Intelligence	1/1/2024	12/31/2025		C-53
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000514	24-3SS	$21,946	$292,526	LTRC	Milhan Moomen	Evaluating Practical Applications of Unmanned Aerial Vehicles (UAVs) for Traffic Incident Response and Management.	1/1/2024	12/31/2025	4/30/2026	C-54
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000509	24-2SS	$49,293	$249,078	LTRC	Ruijie "Rebecca" Bian	Trip Generation for Various Sites	1/1/2024	12/31/2025		C-55
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000463	23-4SS	$74,682	$258,849	LTRC	Ruijie "Rebecca" Bian	Statewide Non-Motorized Traffic Monitoring Study	7/1/2023	6/30/2025	12/31/2025	C-56
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000280	19-1SS	$203,800	$2,721,723	ULL	Elisabeta Mitran	LTRC Proposal for the Support of Research and Development in Special Studies	7/1/2019	6/30/2021	6/30/2027	C-57
SPR: TT-Fed/TT-Reg - 5	A	SS	DOTLT1000281	19-1ITS	$103,000	$3,905,189	ULL	Milhan Moomen	LTRC Proposal for the Support of Research and Development in ITS/Traffic	7/1/2019	6/30/2021	6/30/2027	C-58
					$843,668	**$8,187,774**	**SPECIAL STUDIES BUDGET TOTALS**						

Project Type: Structures (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	A	ST	DOTLT1000503	24-1ST	$107,000	$249,995	LSU	Ayman Okeil	Ultra High Performance Concrete Application In Link Slabs For Crack Mitigation	1/15/2024	1/14/2026		C-59
SPR: TT-Fed/TT-Reg - 5	A	ST	DOTLT1000457	22-3ST	$78,100	$383,004	LSU	Murad Abu-Farsakh	Evaluation of Embedded Pile Resistance on Scour Critical Bridges	5/2/2022	5/1/2025	6/30/2026	C-60
SPR: TT-Fed/TT-Reg - 6	A	ST	DOTLT1000523	24-2ST	$65,480	$117,596	Texas A&M Transportation Institute (TTI)	Sofokli Cakalli	Redesign of Innovative gate Arms (Ramp Closure Gate)	7/1/2024	9/30/2025		C-62
					$250,580	**$750,595**	**STRUCTURES BUDGET TOTALS**						
					$3,993,061	**$92,145,542**	**SPR: TT-FED/TT-REG ACTIVE BUDGET TOTALS**						

LTRC ANNUAL RESEARCH PROGRAM

SPR: TT-Fed/TT-Reg (80% Federal / 20% State)

FISCAL YEAR 2025-2026

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: Bituminous (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	P	B	DOTLT1000596	26-1B	$115,401	$160,000	LTRC	Louay Mohammad	Effect of SARA Asphalt Binder Fractionations on Laboratory Performance of Asphalt Mixtures	7/1/2022	4/30/2024		C-64
SPR: TT-Fed/TT-Reg - 5	P	B			$101,960	$350,000	LTRC	Louay Mohammad	Performance Of Asphalt Pavements Containing Recycled Materials Under Accelerated Loading	1/1/2018	6/30/2020		C-65
SPR: TT-Fed/TT-Reg - 5	P	B			$105,297	$299,000	LTRC	Louay Mohammad	Use of Artificial Intelligence to estimate long term field performance of asphalt pavement in Louisiana	7/1/2025	6/30/2027		C-66
SPR: TT-Fed/TT-Reg - 6	P	B			$63,163	$150,000	LTRC	Saman Salari	BMD Evaluation of Field-Aged Asphalt Mixtures in Louisiana	7/1/2025	6/30/2027		C-67
SPR: TT-Fed/TT-Reg - 6	P	B			$109,216	$210,000	LTRC	Louay Mohammad	Enhanced Interaction between Crumb Rubber Modifiers and Asphalt Binder to Improve Performance	7/1/2021	6/30/2023		C-68
SPR: TT-Fed/TT-Reg - 6	P	B			$88,333	$349,000	LTRC	Louay Mohammad	Enhancement of Mechanical Properties of Asphalt Cements and Asphalt Mixtures Containing Waste Plastic	7/1/2021	6/30/2023		C-69
SPR: TT-Fed/TT-Reg - 6	P	B			$101,960	$299,000	LTRC	Louay Mohammad	Enhancing Pavement Resiliency in Louisiana Due to Increased Moisture Levels from a Changing Climate	7/1/2021	6/30/2023		C-70
SPR: TT-Fed/TT-Reg - 6	P	B			$84,030	$180,000	LTRC	Saman Salari	Evaluation of RAP Fractionating by BMD Measures for Mixtures in Louisiana	7/1/2025	6/30/2027		C-71
					$769,360	**$1,997,000**	**BITUMINOUS BUDGET TOTALS**						
Project Type: Concrete (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 6	P	C			$100,000	$200,000	LTRC	Zhen Liu	Evaluation of the effect of integral waterproofing agents (admixtures) on surface resistivity measurements	7/1/2025	6/30/2027		C-72
SPR: TT-Fed/TT-Reg - 6	P	C			$18,750	$18,751	LTRC	Zhen Liu	Joint Deterioration Synthesis	7/1/2020	6/30/2026		C-73
SPR: TT-Fed/TT-Reg - 6	P	C			$100,000	$200,000	LTRC	Zhen Liu	The Mechanical Properties and Durability of Internally Cured Recycled Aggregate Concrete	7/1/2025	6/30/2027		C-74
SPR: TT-Fed/TT-Reg - 6	P	C			$100,000	$200,000	LTRC	Zhen Liu	Using chemical admixtures to mitigate ASR for concrete mixes containing potentially reactive and reactive aggregates	7/1/2025	6/30/2027		C-75
					$318,750	**$618,751**	**CONCRETE BUDGET TOTALS**						
Project Type: Geotechnical (80% Federal / 20% State)													
SPR: TT-Fed/TT-Reg - 5	P	GT			$54,621	$185,000		Gavin Gautreau	Streamlining DOTD Pile Load Test (PLT) Data Management: A Unified Framework for Efficient Upload, Reporting, and Visualization in within DOTD Geotechnical	8/1/2025	7/30/2027		C-76
SPR: TT-Fed/TT-Reg - 5	P	GT			$68,329	$150,000	LTRC	Nick Ferguson	Compaction Quality Assurance/Quality Control (QA/QC) using the Lightweight Deflectometer (LWD)	10/1/2025	9/30/2027		C-77
SPR: TT-Fed/TT-Reg - 5	P	GT			$46,000	$225,000	LTRC	Gavin Gautreau	Enhancing Public Access and Utilizing Artificial Intelligence to Digitize, Grow, and Share DOTD Geotechnical Data	8/1/2025	7/30/2027		C-78
SPR: TT-Fed/TT-Reg - 5	P	GT			$61,300	$200,000	LTRC	Murad Abu-Farsakh	Update on Evaluating the Magnitude and Time Rate of Consolidation Settlement of Embankments and other Infrastructures from Piezocone Penetration Tests (PCPT)	3/14/2023	3/29/2023		C-79
SPR: TT-Fed/TT-Reg - 5	P	GT			$20,000	$200,000	LTRC	Murad Abu-Farsakh	Use and Interpretation of Seismic Piezocone Penetration Testing (SCPTu) for Geotechnical Site Investigation	1/1/2018	12/31/2020		C-81

SPR: TT-Fed/TT-Reg - 6	P	GT			$60,000	$150,000	LTRC	Murad Abu-Farsakh	Performance Evaluation of Flexible Pavements Reinforced with Wicking Geotextiles (WG) build over Soft Subgrade Soils	7/1/2025	6/30/2027		C-82
					$310,250	**$1,110,000**	**GEOTECHNICAL BUDGET TOTALS**						

Project Type: Pavements (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	P	P			$45,000	$150,000	LTRC	Jun Liu	Application of Drone Based Remote Sensing Technologies in Pavement Condition Evaluation	10/1/2025	9/30/2027		C-83
SPR: TT-Fed/TT-Reg - 5	P	P			$50,000	$150,000	LTRC	Jun Liu	Investigating Longitudinal Cracking in Louisiana's Concrete Pavements	7/1/2025	6/30/2027		C-84
SPR: TT-Fed/TT-Reg - 5	P	P			$50,000	$150,000	LTRC	Qiming Chen	Mitigate Buckling/Patch Blow Ups in Composite Pavement	7/1/2025	6/30/2027		C-85
SPR: TT-Fed/TT-Reg - 6	P	P			$33,000	$150,000	LTRC	Zhong Wu	Maximizing Pavement Life by Implementing Perpetual Pavement Design in Louisiana	7/1/2025	6/30/2027		C-86
					$178,000	**$600,000**	**PAVEMENTS BUDGET TOTALS**						

Project Type: Safety (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	P	SA			$100,000	$290,000			Pavement Markings Retroreflectivity - Enhancing Traffic Safety	10/1/2025	3/31/2027		C-87
SPR: TT-Fed/TT-Reg - 5	P	SA			$80,000	$275,000	LTRC	Elisabeta Mitran	Safety of Median Openings on High-speed Highways in Louisiana	1/1/2026	12/31/2027		C-88
					$180,000	**$565,000**	**SAFETY BUDGET TOTALS**						

Project Type: Special Studies (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	P	SS	DOTLT1000589	25-3SS	$100,000	$250,000	LTRC	Milhan Moomen	Autonomous Trucking Regulatory Landscape Review	8/1/2024	7/31/2026		C-89
SPR: TT-Fed/TT-Reg - 5	P	SS			$100,000	$250,000	LTRC	Milhan Moomen	Assessing Louisiana's Facilities' Preparedness for Autonomous Trucks	7/1/2025	6/30/2027		C-90
SPR: TT-Fed/TT-Reg - 5	P	SS			$80,000	$250,000	LTRC	Milhan Moomen	Evaluation of Queue Warning Systems in Louisiana	11/1/2025	10/31/2027		C-91
SPR: TT-Fed/TT-Reg - 5	P	SS			$100,000	$250,000	LTRC	Milhan Moomen	Expanding Adaptive Traffic Control Signal Systems: A Strategic Study for Louisiana's Arterial Highways	7/1/2025	6/30/2027		C-92
SPR: TT-Fed/TT-Reg - 5	P	SS			$80,000	$280,000			Improve Data Resolution to Support Freight Planning in Louisiana	10/1/2025	9/30/2027		C-93
SPR: TT-Fed/TT-Reg - 5	P	SS			$38,813	$925,844	LTRC		New LTRC Proposal for the Support of Research and Development in Transportation Planning	7/1/2025	6/30/2027		C-94
SPR: TT-Fed/TT-Reg - 5	P	SS			$80,000	$280,000			Supporting Efficient Public Transit on State Routes	7/1/2025	6/30/2027		C-95
					$578,813	**$2,485,844**	**SPECIAL STUDIES BUDGET TOTALS**						

Project Type: Structures (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 6	P	ST			$70,000	$100,000			Investigation of the elimination of bridge joints using link slabs	9/1/2025	3/1/2027		C-96
SPR: TT-Fed/TT-Reg - 6	P	ST			$241,462	$241,462			Skew Detection System Replacement on Vertical Lift Bridges (Phase 3)	7/7/2025	7/7/2026		C-97
					$311,462	**$341,462**	**STRUCTURES BUDGET TOTALS**						

Project Type: TIRE (80% Federal / 20% State)

SPR: TT-Fed/TT-Reg - 5	P	TIRE	DOTLT1000593	26-4TIRE	$37,921	$37,921	UNO		Extended Reality for Infrastructure Assessment	7/1/2025	6/30/2026		C-99
SPR: TT-Fed/TT-Reg - 5	P	TIRE	DOTLT1000592	26-3TIRE	$40,000	$40,000	LTU		Revolutionizing Civil Infrastructure with Additive Friction Stir Deposition of Stainless Steel: A Predictive Thermomechanical Modeling Approach	7/1/2025	6/30/2026		C-100
SPR: TT-Fed/TT-Reg - 5	P	TIRE	DOTLT1000591	26-2TIRE	$40,000	$40,000	ULL		Exploring AI Framework for Modernizing Bridge Management: Integrating GPT and Predictive Analytics for Enhanced Decision-Making	7/1/2025	6/30/2026		C-101
SPR: TT-Fed/TT-Reg - 5	P	TIRE	DOTLT1000590	26-1TIRE	$39,891	$39,891	LTU		Towards Efficient and Robust Embodied Decision-making in Autonomous Driving	7/1/2025	6/30/2026		C-102
					$157,812	**$157,812**	**TIRE BUDGET TOTALS**						
					$2,804,447	**$7,875,869**	**SPR: TT-FED/TT-REG PROPOSED BUDGET TOTALS**						

LTRC ANNUAL RESEARCH PROGRAM

SPR: Pooled Fund: TT-Fed (100% Federal)

FISCAL YEAR 2025-2026

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: Pooled Fund (100% Federal)													
SPR: Pooled Fund: TT-Fed	A	PF	DOTLT1000568	25-5PF	$400,000	$520,000	Applied Research Associates - ARA	Jason Bittner	Ahead of the Curve - Migration from NCHRP to AASHTO Technical Training Solutions (TTS)	3/24/2025	9/23/2026		C-104
SPR: Pooled Fund: TT-Fed	A	PF	DOTLT1000565	25-4PF	$125,697	$342,886	LTRC	Louay Mohammad	Implementation of Louisiana BMD Framework for QC/QA Specifications	12/1/2024	5/31/2026		C-105
SPR: Pooled Fund: TT-Fed	A	PF	DOTLT1000501	21-1PF	$250,000	$900,000	LTRC	Tyson Rupnow	Southeast Transportation Consortium - Phase II	2/1/2023	6/30/2025		C-106
					$775,697	**$1,762,886**	**SPR: POOLED FUND: TT-FED ACTIVE BUDGET TOTALS**						
					$775,697	**$1,762,886**	**POOLED FUND BUDGET TOTALS**						

FISCAL YEAR 2025-2026

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 (State = $150k / Federal = Remaining)													
LTAP: TT-Fed/TT-Reg	P	LTAP	DOTLT1000570	26-LTAP	$692,938	$692,938	LTRC	MaryLeah Coco	Local Technical Assistance Program (LTAP)	7/1/2025	6/30/2025		D-108
					$692,938	**$692,938**	**LTAP BUDGET TOTALS**						
					$692,938	**$692,938**	**LTAP: TT-FED/TT-REG PROPOSED BUDGET TOTALS**						
Project Type: Technology Transfer and Training (100% Federal)													
STP: TT-Fed	A	TT	DOTLT1000278	19-TDSS	$225,000	$1,809,194	LTRC	Vijaya Gopu	Training and Development Support Services	7/1/2018	6/30/2021	6/30/2027	E-112
STP: TT-Fed	A	TT	30000320	08-1TSQ	$523,727	$2,712,073	LTRC	MaryLeah Coco	Technology Transfer Program and Operations (LSU)	7/1/2015	6/30/2018	6/24/2027	E-113
					$748,727	**$4,521,267**	**TECHNOLOGY TRANSFER AND TRAINING BUDGET TOTALS**						
STP: TT-Fed	P	TT	DOTLT1000573	26-TTRF	$250,000	$250,000	LTRC	MaryLeah Coco	Technology Transfer Registration Fees	7/1/2025	6/30/2025		E-116
STP: TT-Fed	P	TT	DOTLT1000574	26-COOP	$200,000	$200,000	LTRC	MaryLeah Coco	LA DOTD CO-OP Program	7/1/2025	6/30/2025		E-117
STP: TT-Fed	P	TT	DOTLT1000572	26-2TT	$175,000	$175,000	LTRC	MaryLeah Coco	LTRC Student Worker Program	7/1/2025	6/30/2025		E-118
STP: TT-Fed	P	TT	DOTLT1000571	26-1WDC	$4,262,407	$4,262,407	LTRC	MaryLeah Coco	Workforce Development Contracts	7/1/2025	6/30/2025		E-119
STP: TT-Fed	P	TT	DOTLT1000569	26-1WD	$1,366,017	$1,366,017	LTRC	MaryLeah Coco	Workforce Development	7/1/2025	6/30/2025		E-123
STP: TT-Fed	P	TT	DOTLT1000576	26-1TT	$37,500	$37,500	LTRC	MaryLeah Coco	Technology Transfer and Assistance for Senior Project Courses	7/1/2025	6/30/2025		E-125
STP: TT-Fed	P	TT	DOTLT1000575	26-1TSQ	$433,704	$433,704	LTRC	MaryLeah Coco	Technology Transfer Program and Operations (DOTD)	7/1/2025	6/30/2025		E-126
STP: TT-Fed	P	TT	DOTLT1000578	26-1SWD	$1,520,000	$1,520,000	LTRC	MaryLeah Coco	DOTD Staff Support for Workforce Development	7/1/2025	6/30/2025		E-129
					$8,244,628	**$8,244,628**	**TECHNOLOGY TRANSFER AND TRAINING BUDGET TOTALS**						
					$8,993,355	**$12,765,895**	**STP: TT-FED ACTIVE BUDGET TOTALS**						

LTRC ANNUAL RESEARCH PROGRAM

Other DOTD Sections (%Federal - Varies / %State - Varies)

FISCAL YEAR 2025-2026

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: Special Studies(%Federal - Varies / %State - Varies)													
Port Priority Program	A	SS	DOTLT1000419	22-2SS	$64,050	$323,669	ULL	Stephen Barnes	Economic Evaluation of Applications to the Port Construction and Development Priority Program	7/1/2021	6/30/2023	6/30/2026	G-131
					$64,050	**$323,669**	**SPECIAL STUDIES BUDGET TOTALS**						
					$64,050	**$323,669**	**OTHER DOTD SECTIONS ACTIVE BUDGET TOTALS**						
Project Type: Technology Transfer and Training(%Federal - Varies / %State - Varies)													
Safety	P	TT	DOTLT1000579	26-LRSP	$379,989	$379,989	LTRC	MaryLeah Coco	Local Road Safety Program	7/1/2025	6/30/2025		G-133
					$379,989	**$379,989**	**TECHNOLOGY TRANSFER AND TRAINING BUDGET TOTALS**						
					$379,989	**$379,989**	**OTHER DOTD SECTIONS PROPOSED BUDGET TOTALS**						

FHWA
Part B SPR Funded Research Program

ADMINISTRATIVE LINE ITEMS
AND
RESEARCH SUPPORT STUDIES

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Program Management**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000581**	Project Start Date:		7/1/2025
Research Project Number:	26-1PM	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$987,205
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$987,205**
Salaries		$987,205
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this project is to provide for LTRC Executive Staff salaries.

Objective(s): Employees charging to this line item include:
Samuel B. Cooper, Jr. Director
Sheri Hughes, Administrative Assistant
Tyson Rupnow, Associate Director, Research
Tracey Morgan, Administrative Assistant
Theresa Rankin, Administrative Specialist C
Samuel Cooper, III, Engineer 7
Zhongjie (Doc) Zhang, Engineer 7
Julius Codjoe, Engineer 7
Walid Alaywan, Structures Research Engineer 6

Expected Benefits: Effectively administer the LTRC Research program in the current political landscape.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

LTRC met all of their performance measures for the previous FY including projects completed and published on time (both exceeding 90%), projects completed within budget (+/- 20% of the December Biannual report estimate), employees were compliant in their training programs, and the Annual work program for FY 24-25 was executed with no major issues. Biannual reports were completed on time for all projects and LTRC administration submitted the APER report to FHWA in a timely manner.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Research program administration will encompass the creation and completion of the Annual Research Report (ARP), Annual Performance and Expenditures Report (APER), ensuring completion of all required bi-annual reports, and execution of the annual work program. Additionally, spearheading the Statewide Transportation Innovation Council (STIC) will be a duty included within the LTRC Research Program Management duties. The LTRC Research Manual will be reviewed and updated accordingly with required changes in the CFR. LTRC administration is considering adding several items to their implementation efforts including short video blogs on the completed research topics and the sending of a letter to the Department Secretary and Office Heads outlining the general benefits of the completed research as well as whom in the Department is responsible for implementation efforts.

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Technology Transfer and Research Implementation**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000584**	Project Start Date:		7/1/2025
Research Project Number:	26-1TTRI	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$450,659
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$450,659**
Salaries		$430,659
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$20,000
Other		

BUDGET JUSTIFICATIONS

Travel: Travel is earmarked for contract Principal Investigators to travel and present research findings at conferences such as the Annual Transportation Research Board Meeting. Individuals requesting to travel are required to provide an out-of-state travel request noting their estimated costs to travel and the research project in which the results will be presented.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this project is to document the technology transfer and research implementation efforts of our in-house and contract research staff. In-house staff charge to this line item when they are attending conferences, workshops, etc. and presenting research results, lobbying for research implementation, etc. Contract researchers will use the travel monies in this project to travel to present research findings on a case-by-case basis.

Objective(s): The objectives of this project is to document the various technology transfer and implementation efforts of the in-house and contract researchers including presentation of research findings at seminars, workshops, TRB, etc., preparation of peer reviewed journal articles, and presentations for webinars, etc.

Expected Benefits: By actively working to implement, adopt, and institutionalize research findings, the Department gains better products, processes, safer roads, etc. Couple that with the various technology transfer activities the research staff are involved in, the greater transportation community at the State, National, and even International level gain resources to draw upon for technology advancement and Professional Development.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

LTRC engineers and contract researchers are projected to have over 100 presentations and 30 peer-reviewed publications. This is due in part to all of our engineers and contract research staff presenting at least one presentation at the 2025 Louisiana Transportation Conference.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Technology Transfer and Research Implementation. A new key performance indicator (KPI - formerly called performance measures) added for LTRC staff and contract researchers is that we publish and present at least a combination of technical peer reviewed publications and presentations exceeding 80.

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Technical Research Surveillance**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000587**	Project Start Date:		7/1/2025
Research Project Number:	26-1TRS	Completion Date	(original)	7/1/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$358,975
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$358,975**
Salaries		$358,975
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Technical research surveillance is for administration of LTRC research contracts by project engineers and participation of LTRC staff on a wide variety of technical and research related project panels.

Objective(s): The objectives of this project is to track employee effort spent on administrating contract research projects by project managers, participation on LTRC PRC's, and participation in/on external research activities and panels such as TRB, NCHRP, ACRP, FHWA Expert Task Groups, etc.

Expected Benefits: Benefits include accurate tracking of employee effort to provide a variety of services such as panel participation. Nearly all LTRC research engineers participate in at least one committee (either research or technical) within the NCHRP program and others such as ASTM, ACI, LCA, LAPA, etc.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

- Research Problem Identification Committee (RPIC) problem statement generation
- Various LTRC Research committee meetings
- Proposal generation
- Proposed project proposal reviews
- 17-2GT, Participation in LTRC Report Review Committee & Deliverable Uploads to LTRC Website
- Ongoing LTRC Project Review Efforts
- Biannual Report creation
- LTRC Annual Report documentation
- Annual Work Program document creation
- South Eastern Asphalt User Producer Group (SEAUPG)
- American Concrete Institute (ACI)
  - ACI Louisiana Member
  - ACI440 Fiber Reinforced Polymer Reinforcement
- American Society of Civil Engineers (ASCE)
  - ASCE Louisiana
  - Transportation and Infrastructure in Cold Regions Engineering Division
  - Transportation and Development Institute (T&DI) Executive Committee Member and Past Chairman
  - Transportation and Development Institute (T&DI) Active Transportation Committee Member
- American Institute of Steel Construction (AISC)
- Deep Foundation Institute
- The International Association of Foundation Drilling
- US Universities on Geotechnical Engineering Research (USUCGER)
- Louisiana Engineering Society (LES)
  - State Board – Continuing Professional Development (CPD) Committee Chair
- Gulf Region Intelligent Transportation Society
- Geo Institute
  - Engineering Geology and Site Characterization Committee
  - Engineering Geosynthetics Committee
  - Engineering Deep Foundation Committee
- Member National Cooperative Highway Research Program (NCHRP) Panel
  - Project 10-104: Recommendations for Revision of AASHTO M 295 Standard Specification to Include Marginal and Unconventional Source Coal Fly Ashes
  - Project 10-110: 3D Modeling Guide for Construction Inspection
  - Project 14-48: Construction Guide Specifications for Pavement Treatments – Sand Seals and Ultra-thin Bonded Surface Treatments
  - Project 08-164: Institutional Integration of Active Transportation
  - Project 07-33: Evaluate the Benefits of Increasing Clear Zone at Higher Speed/Traffic Volume/Crash Locations
  - Project 17-111: Speed Management Solutions and Strategies to Improve Pedestrian and Bicyclist Safety on Arterial Roadways
  - Project TFPE 04: TRB/FHWA Performance Evaluations: Evaluation of FHWA's Every Day Counts Program
- Member of Transportation Research Board (TRB) Committee
  - AFP30 – Committee on Soil and Rock Properties
  - AFS20 – Committee on Geotechnical Instrumentation and Modeling
  - AFS70 – Committee on Geosynthetics
  - AKB10 – Committee on Innovative Highway Structures and Appurtenances
  - AKB30 – Committee on Concrete Bridges
  - AKD20 – Committee on Roadside Safety
  - AKG40 – Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials
  - AKG70 – Committee on Foundations of Bridges and Other Structures
  - AKG80 – Committee on Geosynthetics
  - AKM50 – Standing Committee on Advanced Concrete Materials and Characterization
  - AMR20 – Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity
- Friend Transportation Research Board Committee
  - AFK20 – Committee on Characteristics of Asphalt Materials
  - AFK40 – Committee on Surface Requirements of Asphalt Mixtures
  - AFK 50 – Standing Committee on Structural Requirements of Asphalt Mixtures
  - ACH40 Standing Committee on Human Factors of Infrastructure Design and Operation
  - ACP30 Standing Committee on Vehicle-Highway Automation
  - ACP15 Standing Committee on Intelligent Transportation Systems
  - AKR50 Standing Committee on Road Weather
  - ACH30 Standing Committee on Human Factors of Vehicles
  - ACH60 Standing Committee on Vehicle User Education, Training, and Licensing
  - ACS10 Standing Committee on Transportation Safety Management Systems
  - ACS60 Standing Committee on Truck and Bus Safety
  - AKD20 Standing Committee on Roadside Safety Design
  - ACH10 Standing Committee on Pedestrians
  - AME20 Standing Committee on Women and Gender in Transportation
  - ACS20 Standing Committee on Safety Performance and Analysis
  - AED60 Standing Committee on Statistical Methods
  - AKD30 Standing Committee on Low-Volume Roads
  - ACP40 Standing Committee on Highway Capacity and Quality of Service
- Panel Member – Behavioral Traffic Safety Cooperative Research Program Project

- BTS-02: Guide for Behavioral Traffic Safety Messaging on Variable Message Signs
- BTS-23: Outcomes of Variability in Teen Driving Experience and Exposure: Evidence from the Naturalistic Driving Study
- LCA Technical Committee
- FHWA Sustainable Pavements Technical Working Group
- American Association of State Highway Transportation Officials (AASHTO)
- AASHTO Research Advisory Committee (RAC)
- AASHTO RAC Value of Research Task Force
- AASHTO Innovation Community of Practice
- Board Member for the Traffic Safety Culture Transportation Pooled Fund
- American Society for Testing and Materials (ASTM)
- Subcommittee D04.20 – Empirical Tests of Bituminous Mixtures
- Subcommittee D04.21 on Specific Gravity and Density of Asphalt Mixtures
- Subcommittee D04.22 on Effect of Water & Other Elements on Bituminous Coated Aggregates
- Subcommittee D04.24 on Bituminous Surface Treatments
- Subcommittee D04.25 on Analysis of Bituminous Mixtures
- Subcommittee D04.26 on Fundamental / Mechanistic Tests
- Subcommittee D04.44 on Rheological Tests
- Subcommittee D04.45 on Specifications for Modified Asphalt
- Subcommittee D04.46 on Durability & Distillation Tests
- Subcommittee D04.99 on Sustainable Asphalt Pavement Materials and Construction
- Association of Transportation Safety Information Professionals (ATSIP)
- Institution of Engineering and Technology (IET)
- American Railway Engineering and Maintenance-of-Way Association (AREMA)
- American Public Transportation Association (APTA)
- Heavy Movable Structures (HMS)
- Louisiana Complete Streets Advisory Committee
- American Planning Association (APA, Louisiana Chapter)
- NCHRP Project Panel on Development of Field Test to Determine Actual Percent Embedment of Chip Seal Aggregate
- NCHRP Project Panel on Impact of Flooding and Inundation on the Resiliency of Pavements
- NCHRP Project Panel on Feasibility Evaluation and Guidance Development for Implementing Practical Aging Protocols for Balanced Mix Design (BMD) Verification and Acceptance

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Proposed activities include proposal generation, serving on PRC's, biannual report creation and evaluation, LTRC annual report documentation efforts, Annual work program document creation, various LTRC research committee meetings, problem statement review, etc. Additionally, LTRC engineers and staff will continue to serve on the multitude of panels and technical committees with organizations such as ACI, ASCE, SEAPUG, T&DI, AISC, LES, Geo0Institute, GRITS, NCHRP, LCA, TRB, FHWA, ASTM, and AASHTO.

Title:	**Technical Assistance**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000583**	Project Start Date:		7/1/2025
Research Project Number:	26-1TA	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$367,708
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$367,708**
Salaries		$367,708
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Technical assistance is assistance provided by LTRC staff to others in the transportation community and/or the traveling public. This occurs in the form of specialized testing, field testing, specification writing, manual revisions, STEM assistance, survey completion, short literature searches, etc.

Objective(s): To provide technical assistance on a variety of transportation topics to DOTD, local engineers, designers, materials suppliers, contractors, and the travelling public.

Expected Benefits: Technical assistance allows for a rapid response to needs that arise within the Department and transportation community at large. It allows for faster implementation and adoption of technologies and proven solutions to ongoing problems. In general it assists with overall relationship building between LTRC and the transportation community at large.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

- Various resistivity issues statewide
- AASHTO RAC surveys
- TTCC/NCC Surveys
- District lab engineers meeting attendance
- STEM activities
- LSU class demonstrations
- Expert task group panel meetings
- Ph.D. committee meetings
- EDSM updates
- EDC/STIC participation
- Forensic investigation of I-10 pavement issues (District 61)
- Verification test to validate the DOTD profiler certification site reference values for Section 22
- State DOT bridge IRI construction specifications-literature search for Section 25
- Analysis of DOTD 2024 profiler certification data in accordance with AASHTO R56 standard for Section 22
- IRI exclusions for QA/QC-literature search for Section 22
- H.015809 Friction Tests for District 02
- H.015880.6 US 90: LA 397 - Jefferson Davis P/L FWD test for District 07
- I-220 Friction Test for District 04
- Assisted Section 67 with the survey for NCHRP 01-63
- Ongoing Bridge deck testing to determine the rebar cover depth for Section 22
- Mini Pile Testing Hai Lin and Hussein with LSU
- Geotechnical Design Manual Assistance for DOTD Pavement & Geotechnical Design Sections
- Slag-Stabilized Soil, Overview and Equipment Loan to District 02
- Mississippi River Bridge – Geotechnical Overview/Review for Sections 67 and 35
- Pile Load Test Data Search of Section 67 data for Yazen Al-Harahsheh with LSU
- PCC Quality Assurance Manual (QAM) Revision Meetings with Section 22
- kiln utilization for biomass for LSU's Andrea Gavilanes
- National Road Research Alliance (NRRA) research project "Effective Use of Traffic Speed Deflectometer for Network and Project Level Application" survey
- Research survey from SCDOT – Rideability Specification
- Served as a science fair judge for Glasgow Middle School
- Assisted with grout cores testing (H.008145)
- Assisted Materials lab with ACR testing
- Assisted Materials lab with MCPT startup procedures
- Pecue Project - SB Pecue Bridge North Approach Slab Resistivity
- Girder coring I-10 @ US 165
- Evaluating the impact of speed feedback signs and uniform 60 mph speed limit on I-10 Atchafalaya Basin Bridge
- Analyzing statewide Drivewize deployments
- Multiple emails and responses regarding deployment of maturity for concrete acceptance
- Specifications (BMD, Maturity, ASR / Aggregate acceptance, UHPC, HES construction memo, Soil Nail walls, rigid pavement surface abrasion, flexural strength, polymer cement pavement striping, high-density polyurethane foam, deep soil mixing method soil stabilization, E-ticketing, geopolymer pipe lining, keystone retaining wall)
- Review of TR228, TR210
- PCC QA Manual revisions
- Standard plan review: CB-14
- CAV Innovation Day
- Assisted with access to PMS data
- AASHTO STEM Bridge Competition judge
- DOTD Resilience working group
- LCA Technical committee
- Transportation Professional Day at Knock Knock Museum
- Mass Concrete temperature differential discussions (multiple)
- Tarantula curve data analysis
- Neat slurry remediation for LA 964 Comite River Diversion Canal Bridge
- Forensic Investigation of Low Density Values on DOTD Project H.013206.6, Mix Lot 302
- Field Performance Comparison of PG 67-22 and PG 70-22 Pavement Sections

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Provide technical responses to DOTD, contractors, designers, travelling public, and the transportation community at large at the local, state, national, and international levels as requested. Continue to do field forensic investigations for the Department and local agencies as requested. Provide input on standard plans, specifications, EDSM updates, participate in surveys, and the EDC/STIC initiatives.

Title:	**Staff Support for Research**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000536**	Project Start Date:		8/1/2025
Research Project Number:	26-1SSR	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$40,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$40,000**
Salaries		$40,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This project is to provide a mechanism for LTRC to document staff hours spent supporting research outside of LTRC. This comes in many forms; but the most common is University Transportation Center (UTC) support. UTC's funded by the US DOT require matching funds for their grants. LTRC historically uses staff time as a form of these matching funds.

Objective(s): The objective is to document support by LTRC staff for outside research activities that require matching monies. LTRC staff charge to this project to document their support and time such that the correct match agreement forms can be completed and, if audited, LTRC has the proper documentation showing actual hours and salaries spent in the matching efforts.

Expected Benefits: Benefits for this project include LTRC being better able to meet one of the legislative mandates that LTRC has outlines that includes enhancing higher education and promoting interagency relationships between the Department/LTRC and our Louisiana Public Universities.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

N/A - There were no requests from other entities for matching monies in FY 2024-2025.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

If matching funds are requested, LTRC will evaluate the the need and applicability of the work requested and make a determination on how to use matching funds. i.e. use research engineer staff time, laboratory technician performing tests, etc.

Title:	**New Product Evaluation**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000585**	Project Start Date:		7/1/2025
Research Project Number:	26-1NPE	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$40,301
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$40,301**
Salaries		$40,301
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Evaluation of new products or processes is a vital support function for any DOT. This project allows LTRC to document efforts in this arena for evaluation of new cutting edge technologies, products, and processes for incorporation into DOTD plans, specifications, EDSMs, etc.

Objective(s): The objective for this project is to review cutting edge products, technologies, and processes for DOTD use, adoption, etc.

Expected Benefits: Adoption of new materials, test methods, etc. can lead to initial cost savings during the construction phase of a project. In addition, if the new product/process, leads to a longer service life, the cost savings are significantly multiplied by the savings during the maintenance and use phase of the infrastructure project.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Multiple research engineers are involved with the DOTD Specialty Products Evaluation Committee conducted through the Central Materials Laboratory. Products evaluated this FY include: StabilSoil, various emulsifiers, various tack coat additives, storm drain risers, multiple field applications of Pavix CCC100 in both District 04 and District 61, Zydex, smart sealant, Cell Crete, curbe delineators for bike paths, Lithtec, Panera T2, Innovasoil MH72, Enviortech services products - AMP, BaseBind X, BVaseBind XXX, DuraBlend, IceSlider RS, RoadSaver DC, hybrid polymer concrete striping, ape barrier, and SafeSign breakaway sign support systems.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Evaluate new cutting edge technologies, products, processes, etc. for potential DOTD use, adoption, piloting, etc. Participate on the Specialty Products Evaluation Committee.

Title:	**Equipment Management**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000585**	Project Start Date:		7/1/2025
Research Project Number:	26-1EQM	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$305,745
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$305,745**
Salaries		$215,745
Consumable Supplies & Materials		$20,000
Equipment	(non-expendable)	$70,000
Travel		
Other		

BUDGET JUSTIFICATIONS

Supplies: This covers repair parts for equipment repair for items less than $5000. Repairs costing more than that are categorized as equipment. Replacement of small hand tools as needed are included in this item.Equipment: This covers non-expendable equipment purchases and repair items costing more than $5000.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this project is to track the management of the laboratories including accreditation activities (AMRL and CCRL), equipment repair and replacement, and capital equipment purchases including their installation and training on use.

Objective(s): Objectives include maintaining accreditation for our laboratories, repair and/or replacement of small hand tools, and purchase of required equipment (exceeding $5000) as needed.

Expected Benefits: Properly functioning laboratory testing equipment and accredited laboratory facilities are the backbone of a successful research program. Benefits of this project are accredited laboratory facilities, and properly functioning equipment for research purposes in the GERL, EMCRF, ITS, Concrete, Geotechnical, PRF, and Asphalt laboratories.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Maintained AMRL Accreditation
Maintained CCRL Accreditation
Completed DOTD CO-OP Samples successfully
Replaced several small hand tools for the concrete and asphalt laboratories
Repaired two generators
Started the purchase process for a tow vehicle for the FWD
Started the purchase process for a new IRI and imaging vehicle
Routine maintenance of the FWD tester
Routine maintenance of the Friction Tester
Replaced the flow meter for the ICC surface friction tester and performed a water recalibration
Participated in standardized testing programs
AMRL Proficiency Samples were prepared and tested
CCRL Proficiency samples were prepared and tested
Purchase and Installation of New Crusher in Prep Room
Safety Training and Reporting (Nuclear Gauge) Duties
Purchase and Installation of COX Hamburg Wheel Tracking (HWT) Equipment
Purchase and installation of ICP Equipment

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Management of the laboratory facilities including maintenance and upkeep of accreditations (AMRL and CCRL), purchases of new equipment as necessary to fulfil the mission and successfully complete the approved LTRC annual work program, and repair and replacement of equipment and tools as necessary.

FHWA
Part B SPR Funded Research Program

CONTINUING RESEARCH

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Sustainability through Development of Life-Cycle Information Models for Pavements in Louisiana**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**		**Budget Category:**		**FHWA**
SIO:	**DOTLT1000511**		Project Start Date:		10/1/2023
Research Project Number:	24-1B		Completion Date	(original)	9/30/2027
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Louay Mohammad				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$477,500	**Total**		**$148,866**
	(revised)				
Est. Expended to Date		$183,000	Salaries		$147,366
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$179,000	Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure		$179,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Principles of sustainability focus on goal of proactively bringing key environmental, social, and economic factors into decision-making process. Life-Cycle Assessment (LCA) is a technique used to analyze and quantify environmental impacts of a product, system, or process. LCA provides a comprehensive approach to evaluate total environmental burden of a product or process by examining all of the inputs and outputs over life cycle, from raw material production to end of life.

Objective(s): This research proposes to develop life-cycle assessment framework for asphalt mixtures and pavements in Louisiana, which will cover material production and initial construction, maintenance phase, in-service phase, and end-of-life phase.

Expected Benefits: The developed framework is expected to provide an immediately implementable guideline on the implementation of LCA for Louisiana pavements, which can help define pavement systems to support decision making regarding changes to policies and practices to reduce the impacts of pavements on humans and the environment, while identifying potential unintended negative consequences.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Completed Conduct Lit Review
Task 2: Develop and Deliver Project Kick Off Training
Completed planning, in coordination with FHWA and LTRC staff, for a kick off meeting at LTRC's Center Transportation Training and Education Center. The Project Kick Off Training is scheduled for April 22-23, 2024at TTEC
Task 3: Conduct LCA Case Studies on Selected Projects and Collect EPDs
Continued collaboration with local contractors to coordinate the development of benchmarks for Louisiana's projects. JMFs and reports of 207 asphalt mixtures used in Louisiana were collected from the DOTD LaPave database. Environmental Product Declarations (EPDs) were generated for cradle-to-gate boundary system. Findings from preliminary data analysis were presented at the AAPT meeting held in Chicago, IL, September 9-12, 2024

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 3. Continue the conduct LCA Case Studies on Selected Projects and Collect EPDs
Task 4. Assist in the Development of Open-Sourced and Regional Binder EPDs

Title:	**Literature review of IDEAL-CT and IDEAL-RT tests methods for balanced mix design**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000508**	Project Start Date:		3/4/2024
Research Project Number:	23-4B	Completion Date	(original)	3/3/2025
Research Agency:	LTRC	Completion Date	(revised)	12/31/2025
Principal Investigator:	Saman Salari			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$82,258	**Total**		**$28,387**
	(revised)				
Est. Expended to Date		$46,539	Salaries		$28,387
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$75,882	Equipment	(non-expendable)	
	(revised)	$53,871	Travel		
Est. FY Expenditure		$53,871	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Louisiana Department of Transportation and Development (DOTD) currently utilizes the Loaded Wheel Tester (LWT) and Semi-Circular Bend (SCB) tests for balance mix design (BMD), but these methods are time-consuming and require complex specimen preparation. Recent advancements have introduced the IDEAL-CT and IDEAL-RT tests, which offer potentially faster and simpler alternatives for evaluating cracking and rutting performance.

Objective(s): This study aims to evaluate the viability and implementation capabilities of IDEAL-CT and IDEAL-RT for Louisiana asphalt mixtures, specifically focusing on their correlation to field performance.

Expected Benefits: The findings of the study will streamline asphalt mixture evaluation by validating the faster and simpler IDEAL-CT and IDEAL-RT tests, potentially improving quality control and resource allocation. Successful validation would enhance the ability to accurately predict roadway performance, leading to optimized design and maintenance strategies for Louisiana's infrastructure.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The following activites were performed:
Task 1: Literature Review
Task 2: Mixture testing and comparison

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following activities are expected to be performed:
Task 1: Literature Review
Task 2: Mixture testing and comparison
Task 3:Preparation of Final Report and Technical Summary

Title:	**Validation of SCB Jc Prediction Model and Aging Correction Factor**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000554**	Project Start Date:		7/22/2024
Research Project Number:	25-2B	Completion Date	(original)	7/21/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Moses Akentuna			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$172,305	**Total**		**$118,472**
	(revised)				
Est. Expended to Date		$37,477	Salaries		$118,472
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$75,000	Equipment	(non-expendable)	
	(revised)	$53,833	Travel		
Est. FY Expenditure		$53,833	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Balanced Mix Design (BMD) framework helps road agencies to design a durable mix for a by considering how the pavement will resist common distresses like rutting and cracking. The SCB test is a reliable way to measure cracking resistance, but it takes too long to complete. To address this, researchers developed a prediction model and aging correction factor to estimate SCB results quickly. This study aims to validate these tools for use in Louisiana.

Objective(s): The aim of the proposed study is to validate the SCB Jc prediction model and aging correction factor concept developed as part of LTRC project 19-4B.

Expected Benefits: By validating a prediction model and aging correction factor, this research hopes to guide state agencies in quality control/quality assurance (QC/QA) processes. This would significantly reduce the time needed to age asphalt mixtures before the SCB test, leading to faster results and improved efficiency.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The following activities were performed:
Task 1: Conduct a literature review
Task 2: Develop a test plan
Task 3: Execute the proposed test plan

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following activities are expected to be performed:
Task 3: Execute the proposed test plan
Task 4: Analyze Test Data
Task 5: Prepare a draft final report

Title:	**Assessment of the PaveScan RDM for Continuous Density Measurements in Louisiana**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000553**		Project Start Date:		7/22/2024
Research Project Number:	25-1B		Completion Date	(original)	1/21/2026
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Moses Akentuna				

BUDGET STATUS

Total Budget				**Estimated 2025-2026 Budget**		
Total Cost	(original)	$171,368		**Total**		**$118,475**
	(revised)					
Est. Expended to Date		$41,186		Salaries		$118,475
FY 2024 - 2025 Budget				Consumable Supplies & Materials		
FY Funds	(original)	$84,000		Equipment	(non-expendable)	
	(revised)	$52,893		Travel		
Est. FY Expenditure		$52,893		Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Asphalt pavements are crucial for transporting goods in the US, and their quality depends on the quality of the materials and the construction technique used. To improve durability, road agencies have focused on increasing the density of asphalt layers. However, current random testing methods might miss small defects. Newer technologies, like PaveScan, can continuously measure density and improve quality control. This study aims to evaluate PaveScan for asphalt density measurement in Louisiana.

Objective(s): The objectives of this research are to:
(1) Evaluate the PaveScan rolling density meter (RDM) for continuous asphalt mat and joint density measurements.
(2) Propose a framework for asphalt mat and longitudinal joint construction and quality control and/or assurance through continuous density measurements.

Expected Benefits: It is anticipated that guidelines will be proposed for using continuous density measurement for asphalt pavement quality assurance and/or control during construction. These guidelines will assist Louisiana to efficiently monitor pavement density during construction, resulting in pavement sections with limited defects and longer service lives.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The following activities were performed:
Task 1: Conduct a literature review and survey
Task 2: Develop a test plan
Task 3: Execute the proposed test plan

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following activities are expected to be performed:
Task 3: Execute the proposed test plan
Task 4: Analyze field density data
Task 5: Propose a framework for density measurements
Task 6: Prepare a draft final report

Title:	**Sustainable and Resilient Pavement Materials and Technologies Center (SRPC)**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**30000112**	Project Start Date:		7/1/2009
Research Project Number:	10-1EMCRF	Completion Date	(original)	6/30/2015
Research Agency:	LTRC	Completion Date	(revised)	6/30/2025
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$345,000
	(revised)	$24,108,022
Est. Expended to Date		$345,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$122,000
	(revised)	
Est. FY Expenditure		$122,000

Estimated 2025-2026 Budget		
Total		**$131,787**
Salaries		$121,987
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$4,900
Other		$4,900

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Escalating costs of materials and energy provide motivation to explore innovative techniques for infrastructure preservation and rehabilitation with sustainable, resilient, and recyclable methods. Using recycled materials and sustainable alternatives methodologies can reduce energy consumption and greenhouse gas emission while maintain the required pavement performances. Incorporating sustainable materials and technologies into transportation infrastructure will have a significant impact on lon

Objective(s): The objectives are to engage in multi-disciplinary research, education, and technology transfer initiatives that are focused on evaluation and implementation of sustainable and resilient technologies in transportation industry. Interdisciplinary research will examine design, assessment, and repair for next generation of pavement infrastructure. Goals are to increase the use of recycled materials, minimize non-renewable energy usage, reduce environmental impacts, and encourage use of emerging

Expected Benefits: Results of research conductus at SRPC provides recommendations for implementations into DOTD's Specifications for Roads and Bridges to improve and solve materials, design, production, and construction specifications. SRPC provides LTRC with an excellent position to pursue its quest for national and international excellence in research capability of all aspects of sustainable, resilient, and recyclable pavement materials.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Participated in the Louisiana DOTD Asphaltic Concrete Specification Committee;
Continue participation in technical assistance projects;
Developed and submitted proposals for external funding from FHWA Pool Fund (Implementation of Louisiana BMD framework for QC/QA Specifications) and NCHRP (Guidelines for Incorporating Aging Effects on Balanced Mix Design for Quality Assurance); and
Conduct workshops and seminars.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue participation in the Louisiana DOTD Asphaltic Concrete Specification Committee;
Continue participation in technical assistance projects;
Develop and submit proposals for external funding; and
Conduct workshops and seminars.

Title:	**Evaluation of T-Fast (TFHRC ASR Test) Test Method for Aggregate Acceptance**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000560**	Project Start Date:		10/15/2024
Research Project Number:	25-1C	Completion Date	(original)	10/14/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$345,985
	(revised)	
Est. Expended to Date		$141,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$80,000
	(revised)	$200,000
Est. FY Expenditure		$200,000

Estimated 2025-2026 Budget		
Total		**$109,538**
Salaries		$109,038
Consumable Supplies & Materials		$500
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: A newly developed test from researchers at Turner-Fairbank Highway Research Center (TFHRC) promises accurate Alkali-Silica Reactivity (ASR) aggregate source testing in as little as 21-days of age.

Objective(s): In this project, the T-FAST test will be investigated for potential use by the Department for aggregate acceptance on the AML. Note that FHWA is currently undergoing a Round-Robin set of testing to determine the precision and bias of the proposed test method.

Expected Benefits: Implementation of the results would give the Department the ability for aggregate acceptance at a much shorter timeframe than currently available.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: The majority of literature review has been completed;
Task 2: Have obtained the majority of the aggregates and sample preparation is underway;
Task 3: Have started mixing and testing with CPT and MCPT methods.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Keep catching up the newest publication and improving the literature review;
Task 2: Keep working on the laboratory testing;
Task 3: Keep working on the comparative testing;
Task 4: Start data analysis when enough data is available;
Task 5: Start working on final report once data analysis is complete.

Title:	**Investigation of Piezoelectric and Other Advanced Sensors in Concrete**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000528**	Project Start Date:		7/1/2024
Research Project Number:	24-1C	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$258,117
	(revised)	$258,117
Est. Expended to Date		$50,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$91,309
	(revised)	$51,000
Est. FY Expenditure		$50,000

Estimated 2025-2026 Budget		
Total		**$91,309**
Salaries		$90,809
Consumable Supplies & Materials		$500
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Advancements in sensor type and capability are rapidly advancing. A new breed of sensors utilizing piezoelectric potential have been developed. This project will investigate utilization of these new, and other potential sensors, for use in concrete non-destructive testing.

Objective(s): Review the state of the practice for piezoelectric sensors and other newly developed technology for NDT testing of concrete materials. Procure promising technology and conduct a variety of field tests in various locations across the State.

Expected Benefits: New NDT test methods have the potential to eliminate the need for casting cylinders, testing on hardened concrete, predicting sawcut time, etc. If NDT testing sensors allow for a reduction of cylinders, the Department stands to realize savings due to a potential reduction in claims, increased safety, etc.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1 - state-of-the-practice has been completed (partially) identifying promising sensors for laboratory testing. work is continually ongoing to further identify other promising technology
Task 2 - Wavelogix and Giatec sensors have been tested in laboratory conditions. Results were not promising for the ternary mixtures. Communication between the manufacturers and LTRC is ongoing for further sensor refinement.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 2 - Continue further laboratory testing of identified sensors
Task 3 - Move to field testing if laboratory testing shows better promise
Task 4 - Continue data analysis of selected technology with respect to laboratory results
Task 5 - conduct a cost benefit analysis is field testing provides promising results
Task 6 - Prepare a final report and technical summary

Title:	**Geotechnical Asset Management (GAM) - Phase II**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000527**	Project Start Date:		8/15/2024
Research Project Number:	24-4GT	Completion Date	(original)	8/14/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Nick Ferguson			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$325,627	**Total**		**$92,538**
	(revised)				
Est. Expended to Date		$31,692	Salaries		$76,938
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$60,243	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$42,000	Other		$15,600

BUDGET JUSTIFICATIONS

Other: The Other Budget Justification Status represents a contract with Blue Streak Technologies who will aid in developing the database for this research project.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Louisiana DOTD has many geotechnical elements that are part of transportation system and require maintenance. An inventory of culverts and other geotechnical assets is needed, since they do not fall under bridge and pavement maintenance inventories. A large culvert database was lost recently within DOTD, and this project can restore the data.

Objective(s): This will be a continuation of project 18-4GT and included data findings of retaining walls across Louisiana. There is a need to grow this preliminary asset database to include other assets, such as culverts, slopes, and embankments.

Expected Benefits: This research will expand on previous GAM efforts within Louisiana and allow DOTD a logical method to manage and address assets. Once inventoried, condition and consequence data will aid in risk, repair/replace options, and their potential cost. A proactive GAM system will help designers plan and maintain the transportation system as personnel retire and employee turnover occur.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Acquired a mass amount of data to compare and review from the department that do not file under bridge maintenance. Outlined a separate inventory and inspection checklist for the project review committee to review, and upon approval, a GAM database will be created through our contracted partners, Blue Streak Technologies.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Develop a strategy utilizing iVision to cross-check culvert data.
Finalize structured backbone of culvert database from Blue Streak Technologies.
Continue to incorporate data into database with multiple LTRC personnel.
Develop Risk and Consequence recommendations for Inspection handbook portion

Title:	**Statewide Calibration of CPT Direct Design Methods Using Static Load Test Data**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000525**	Project Start Date:		5/1/2024
Research Project Number:	24-3GT	Completion Date	(original)	4/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$426,843	**Total**		**$88,700**
	(revised)				
Est. Expended to Date		$93,700	Salaries		$88,700
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$98,000	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$81,700	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Louisiana was one of pioneering states to implement CPT technology for evaluating the pile resistance. The project (17-2GT) evaluated 22 direct CPT design methods using 80 concrete test piles with majority located in southeastern of state, although piles used throughout the state. Therefore, it is necessary to add more database with spatial state coverage. Also, there is a need to use piezocone penetration tests (CPTu) for evaluating CPTu methods and expand the implementation to other pile types

Objective(s): 1) Group pile load tests (PLTs) into state regions and pile type for evaluating pile-CPT/CPTu methods. 2) Use Bayesian to enhance the statistically limited/scattered data. 3) Re-evaluate pile-CPT/CPTu design methods for different regions and different pile types. 4) Develop pile design methods using machine learning (ML). 5) Evaluate seismic CPT methods for generating load-settlement curve of PLTs. 6) Calibrate resistance factors for different design methods. 7) Update the LPD-CPT software.

Expected Benefits: Supplementing traditional pile design with CPT/CPTu methods will save exploration costs and prevent overturns cost by providing more data and more reliable design methods. Incorporating CPT/CPTu design methods in “LPD-CPT” software will help design engineers to estimate pile resistance efficiently without need of manual calculation. The accurate evaluation of pile resistance by CPT/CPTu methods can result in significant reduction in construction cost of bridge foundations and infrastructures.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Conducted literature review on all available CPT and CPTu direct pile design methods, pile design methods that utilize seismic CPT data, Bayesian analysis, machine learning algorithms, different evaluation techniques, and reliability analysis methods.

Task 2: Collected 80 pile load tests (PLTs) from 34 old project sites from the Department of Transportation and Development (DOTD). Identified and collected data for new statewide project sites from the Department of Transportation and Development (DOTD) archives that included static (and possible dynamic) load tests (~ 50) conducted on precast prestressed concrete (PPC) piles and other pile types. Collected about 40 dynamic PLTs conducted on steel H and pipe piles from California, and about 70 dynamic PLTs conducted on steel H and pipe piles from Nebraska.

Task 3: Collected CPT data for the 80 pile load tests of old project sites. Collected available CPT and CPTu tests and soil boring data from the identified project sites with pile load tests in Task 2.

Task 5: Started grouping the collected PLTs and CPT/CPTu data based on pile type (i.e., PPC, steel H-pile, and steel pipe piles) for evaluation and LRFD calibration of pile-CPT/CPTu design methods.

Task 6: Started grouping the collected PLTs and CPT/CPTu data into regions for regional evaluation and LRFD calibration of pile-CPT/CPTu design methods.

Task 7: Started utilizing several machine learning techniques to predict the axial capacity of PPC piles.

Task 8: Collected about thirty (30) available direct CPT and CPTu Pile Design Methods. Incorporated the collected Pile-CPT methods in excel sheets. Started evaluating the thirty (30) Pile-CPT/CPTu methods for estimating the ultimate capacity of different pile types and/or different regions using statistical analysis, multidimensional unfolding, reliability/efficiency analysis, and any other evaluation criterion using the current collected PLT database.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Continue conducting literature review on all available CPT and CPTu direct pile design methods, pile design methods that utilizes seismic CPT data, Bayesian analysis, machine learning algorithms, different evaluation techniques, and reliability analysis methods.

Task 2: Continue collecting data from new project sites from the DOTD archives that included static (and possible dynamic) load tests conducted on PPC piles and other pile types. Finalize collecting the dynamic PLT database on steel H and pipe piles from California and Nebraska states.

Task 3: Continue collecting all available CPT and CPTu tests and soil boring data from the identified project sites with pile load tests, and conduct additional CPTu tests close to pile load tests for all project sites with missing CPTu tests.

Task 4: Plan for conducting seismic CPT tests close to pile load tests in selected project sites with pile load tests identified in Task 2.

Task 5: Continue grouping the collected PLTs and CPT/CPTu data based on pile type (i.e., PPC, H-pile, pipe piles) for evaluation and LRFD calibration of pile-CPT/CPTu design methods.

Task 6: Continue grouping the collected PLTs and CPT/CPTu data into regions for regional evaluation and LRFD calibration of pile-CPT/CPTu design methods.

Task 7: Continue exploring statistical and machine learning techniques to predict the axial capacity of different pile types and for generating/enhancing the statistically limited or scattered data.

Task 8: Continue incorporating the collected Pile-CPT methods in excel sheets or MATLAB. Continue evaluating the CPT/CPTu pile design methods for estimating the ultimate capacity of different pile types and/or different regions using statistical analysis, multidimensional unfolding, reliability/efficiency analysis, and any other evaluation criterion.

Title:	**Web-Based Tool to Advance Geotechnical Data Interchange and Reliability-Based Site Characterization**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**		**Budget Category:**		**FHWA**
SIO:	**DOTLT1000517**		Project Start Date:		12/1/2023
Research Project Number:	24-2GT		Completion Date	(original)	11/30/2025
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Gavin Gautreau				

BUDGET STATUS

Total Budget				**Estimated 2025-2026 Budget**		
Total Cost	(original)	$251,395		**Total**		**$67,525**
	(revised)					
Est. Expended to Date		$135,000		Salaries		$67,525
FY 2024 - 2025 Budget				Consumable Supplies & Materials		
FY Funds	(original)	$31,550		Equipment	(non-expendable)	
	(revised)			Travel		
Est. FY Expenditure		$41,000		Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: AASHTO LRFD design code is undergoing a major rewrite to focus on reliability and data variability. The methodologies required to perform site characterization will become more difficult computationally. New tools will be needed to help engineers perform and review the required calculations. A web-based tool using DIGGS and existing DOTD gINT formats will greatly help the Department and its consultants adopt the upcoming design changes to stay in accordance with LRFD code.

Objective(s): *Develop a DOTD standardized DIGGS dictionary
*Develop a tool to convert DOTD data formats (gINT, HoleBASE, & OpenGround) to DIGGS.
*Develop a web-based platform capable of consuming DIGGSml files, interactively select soil borings, create a composite stratigraphy, plot soil properties, and derived parameters vs. elevation, and develop design profiles.
*In the web-based platform, automate the process of the statistical analyses detailed in FHWA GEC

Expected Benefits: *Develop a DOTD standardized DIGGS dictionary.
*Develop a tool to convert DOTD data formats (gINT, OGC) to DIGGS.
*Develop a web-based platform to consume & share DIGGSml files (DOTD, Consultants, Others), interactively select soil borings, create a composite stratigraphy, plot soil properties and derived parameters vs. elevation; develop design profiles.
*Automate the web process/statistical analyses detailed in FHWA GEC No. 5 to facilitate compliance with anticipated future LRFD code.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Work continued and virtual meetings were held to share feedback and monitor progress. Integrations with the DOTD Geotechnical Database continued with the objective of capitalize on the database and features and functionality of Power BI. Presentations on our progress occurred 2024 Southeastern Transportation Geotechnical Engineering Conference (STGEC) in November 2024, and during the Louisiana Transportation Conference in March 2025.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
The prototype will be tested by HQ personnel and by Consultant Contractors working for the DOTD Geotechnical Section. The Final Report will be completed and include training materials. The software will be uploaded to LTRC and be provided to Section 67.

Title:	**Field Evaluation of Geophysical Applications for DOTD**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000471**	Project Start Date:		2/6/2023
Research Project Number:	23-2GT	Completion Date	(original)	2/5/2025
Research Agency:	LTRC	Completion Date	(revised)	9/5/2025
Principal Investigator:	Nick Ferguson			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$187,665
	(revised)	$197,665
Est. Expended to Date		$44,405
FY 2024 - 2025 Budget		
FY Funds	(original)	$78,308
	(revised)	$84,902
Est. FY Expenditure		$84,902

Estimated 2025-2026 Budget		
Total		**$21,524**
Salaries		$21,524
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This project is a follow up project to 20-4GT, which was a literature review synthesis on geophysical technologies that may offer the Department benefits.

Objective(s): This project will evaluate geophysical technologies (the Electrical Resistivity device and others) to determine exact benefits and implementation needs for the Department.

Expected Benefits: Additional insight between soil borings and Cone Penetrometer Testing will benefit department designs by providing more confidence. It may also reduce the number of soil borings (high costs and time) or identify areas of concern for more in-depth study. The additional information may reduce foundation costs and or increase the confidence and safety of the design.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 3-4: Two construction sites were visited with the ER device and one is scheduled in the near future. We have a new contact with quotation on second geophysical device (seismic refraction) which will be rented a shorter period of time to save on costs. Finalize site plans. Collect field data and conduct analysis/comparisons to determine beneficial and applicable devices for Louisiana.

Task 6: Drafted final report (intro, objectives, methodology, and discussion of results) where results can be added as they are collected. Drafted report sections to include selecting the devices and the adversities regarding the approval of/acquiring the Electrical Resistivity device. Revised plan of action to move forward from these adversities.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Conduct final Project Review Committee (PRC) meeting of findings.
Task 5: Recommend devices/geophysical methods and implementation steps following data analysis of Task 4.
Task 6: Complete final drafted report with results, conclusions, and implementation based on Task 3-5. In addition, provide cooperation with the editing team at LTRC.

Title:	**Development of a Design Methodology for Geosynthetic Reinforced Pavement using Finite Element Numerical Modeling**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000346**	Project Start Date:		5/1/2020
Research Project Number:	20-3GT	Completion Date	(original)	4/30/2023
Research Agency:	LTRC	Completion Date	(revised)	8/31/2025
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$300,302
	(revised)	$400,722
Est. Expended to Date		$383,102
FY 2024 - 2025 Budget		
FY Funds	(original)	$74,000
	(revised)	
Est. FY Expenditure		$59,550

Estimated 2025-2026 Budget		
Total		**$19,150**
Salaries		$19,150
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Pavements build over weak subgrade soils are often associated with construction difficulties, which poses challenge to pavement engineers. The current practice in Louisiana is to stabilize weak subgrades with cement/lime to create a working platform. Geosynthetics can offer a cost-effective alternative solution to this problem by reinforcing the pavement. Although the benefits of geosynthetics in pavements are recognized, the mechanism of reinforcement is still not fully understood.

Objective(s): 1) Develop finite element models to simulate the performance of geosynthetic reinforced pavements built over subgrades of different strengths. 2) Evaluate the effect of different parameters on the benefits of geosynthetic reinforcement. 3) Study the effect of reinforcement properties for low, medium, and high volume traffic sections. 4) Develop a design method for geosynthetic-reinforced pavements within the mechanistic-empirical pavement design guide (MEPDG).

Expected Benefits: It is anticipated that the research team will develop a cost-effective design methodology that incorporates the benefits of geosynthetic reinforcement in flexible pavements within the context of MEPDG. The results will help the design engineers to select the proper parameters that enhance the geosynthetic benefits. This study will help accelerate the construction of pavements over weak and problematic subgrades, and reduce the cost of pavements construction in Louisiana.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 5- Developed regression models, and ML-ANN models to evaluate the traffic benefit ratio (TBR), equivalent modulus, and equivalent depth for geosynthetic reinforcement of pavement built over weak, medium and stiff subgrades soil for medium and high volume roads. Start developing rut equation models for geosynthetic reinforcement of pavement built over weak, medium and stiff subgrades soil for low, medium and high volume roads.

Task 6- Developing design procedure based on mechanistic-empirical pavement design guide (MEPDG) for geosynthetic reinforced pavements built over weak, medium and stiff subgrades soil for low, medium and high volume roads.

Task 7- Developed design equations based on MEPDG for geosynthetic reinforced pavements built over weak, medium and stiff subgrades soil for low, medium and high volume roads.

Task 8- evaluated the life cycle cost benefit for geosynthetic reinforced pavements built over weak, medium and stiff subgrades soil for low , medium and high volume roads.

Task 9- Prepare draft of final report.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Task 9- Prepare the final report.

Title:	Instrumentation and Modeling of Geosynthetic Load Transfer Platform Performance	Project Status:	Ongoing

Funding Source:	SPR: TT-Fed/TT-Reg - 5	Budget Category:	FHWA

SIO:	DOTLT1000337	Project Start Date:		1/1/2020
Research Project Number:	20-2GT	Completion Date	(original)	6/30/2022
Research Agency:	LTRC	Completion Date	(revised)	6/30/2026
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget			Estimated 2025-2026 Budget		
Total Cost	(original)	$300,331	**Total**		**$68,500**
	(revised)	$574,635			
Est. Expended to Date		$500,759	Salaries		$64,750
FY 2024 - 2025 Budget			Consumable Supplies & Materials		$3,750
FY Funds	(original)	$85,000	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$82,500	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Imposing significant embankment load over soft clay can cause bearing capacity failures, large settlement, lateral movement, and slope instability. Driven pile, drilled shafts or stone columns are commonly used in the construction of embankment on soft clay to improve the capability of soft clay. To reduce the cost by reducing the number of piles, geosynthetic reinforcement platform can be added below the embankment to work as load transfer platform to the pile caps.

Objective(s): The objectives of study are: 1) Monitor the short-term and long-term behavior of geosynthetic load transfer platforms (GLTP) in Louisiana; 2) Evaluate and verify (or modify) important design factors and parameters for GLTP: load distribution (between the piles, geogrid, and soft soil), settlement, and lateral thrust; 3) Conduct finite element parametric study to evaluate the effect of different variables and parameters on the performance of GLTPs; and 4) Propose design and construction guidance.

Expected Benefits: The use of GLTP technology beneath the embankment and above the supporting piles has shown evidence to be a cost-effective design in many projects in USA and the world. To realize the potential benefits of using GLTP for pile-supported embankments in Louisiana, LA DOTD plans to build GLTP for three bridge projects. It is anticipated that the DOTD design method for GLTP will be improved based on the collected data from field instrumentations, and hence reduce the cost.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 3: Completed the instrumentation of GLTP at the project No. 2375, Amite River, Baton Rouge.

Task 4: Completed monitoring the performance of GLTP-MSE wall at the project No. 1234, LA 1, during the construction. Continued monitoring the performance of GLTP at the project No. 2375, Amite River, Baton Rouge during construction.

Task 5: Conducted Load Tests at the project site No. 1234, Port Allen Canal Bridge, LA 1, using Heavy weight dump Trucks.

Task 6: Continued developing 2D and 3D finite element (FE) models to simulate the behavior of GLTP pile-supported embankment. Developed 3D FE numerical models to simulate the behavior of geosynthetic LTP piles-supported embankment for five case studies in literature and selected cases from the FE parametric study.

Task 8: Continued using the 2D and 3D FE parametric study to evaluate the effect of different variables and parameters on the behavior of GLTP pile-supported embankments for the cases of piles tip on dense sand and piles tip on clay. Compared the FE results with available analytical methods for designing GLTP in literature. Developed new analytical design method for GLTP.

Task 9: Completed monitoring the performance of the GLTP-MSE wall at at the project No. 1234, Port Allen Canal Bridge, LA 1 after completing the construction at the site.

Task 10: Continued analyzing the collected data from the instrumentation at the project No. 1234, Port Allen Canal Bridge, LA 1.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Task 4- Continue monitoring the performance of the GLTP at the project site No. 2375, Amite River, Baton Rouge, during the construction of embankment. Task 5: Plan for conducting load tests using heavy trucks after the end of construction of the GLTP at the project site No. 2375, Amite River, Baton Rouge. Task 9: Waiting for completing the construction of the GLTP at Amite River site for long-term monitoring the performance of GLTP. Task 10: Waiting for completing the construction of the GLTP at Amite River site for analyzing the collected experimental data. Task 11: Prepare the final report.

Title:	**Evaluation and Incorporation of Site and Laboratory Variability into LRFD Design of Pile Foundations - Phase 2**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000512**	Project Start Date:		11/1/2023
Research Project Number:	24-1GT	Completion Date	(original)	10/31/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$432,545	**Total**		**$94,800**
	(revised)				
Est. Expended to Date		$133,385	Salaries		$94,800
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$88,700	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$81,350	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Geotechnical engineering deals with high spatial variation of soil properties in horizontal and vertical directions leading to uncertainty in geotechnical and deep foundation design. The variation in soil properties will affect the accuracy/reliability of measured data that can result in either underdesign (cause failure), or overdesign (extra cost) of infrastructure foundations. There is a need to incorporate these variations into load and resistance factor design (LRFD) of deep foundations.

Objective(s): The objectives of this research: 1) Evaluate and incorporate spatial variability of soil properties. 2) Evaluate number, type and distribution of soil borings and/or in-situ tests on pile design. 3) Study the effect of gap between soil borings and in-situ testing on pile design. 4) Evaluate number of pile load tests on pile design. 5) Evaluate distribution and location of soil borings and in situ testing on pile design. 6) Evaluate variability of pile static/dynamic load tests on pile design.

Expected Benefits: This study will provide the design engineers with tools to evaluate the spatial site variability of soil properties in the field (i.e., coefficient of variations, COV), as well as variations of measured soil properties in the laboratory. This study will also provide means to incorporate/implement the site/lab soil variability into LRFD design of deep foundations. It is anticipated that this study will improve accuracy, safety, reduce cost, and reduce risk of design of deep foundations.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Conducted literature review relevant to evaluation and incorporation of spatial site variability into the Load and Resistance factor Design (LRFD) of pile foundations. This includes: available techniques for evaluating the impact of spatial variability on reliability of pile design; available methods on implementing spatial site variability into LRFD design of pile foundations; studies on the effect of number, locations and distribution of soil borings/CPT tests within the specific site on reliability of pile design, studies on using random variation of soil properties for different layers using finite element (FE) analysis and/or machine learning (ML) techniques; and studies on risk assessment of incorporation the various factors of site variability on pile design.

Task 2: Collected ten project sites from the Department of Transportation and Development (DOTD) archives that have multiple soil borings and/or multiple cone penetration tests (CPT) in order to evaluate the spatial site variability. Collected nine project sites from DOTD archives that have multiple static and/or multiple dynamic load tests in order to evaluate the effect of number of pile load tests on the reliability of pile design.

Task 3: Evaluated six different prediction methods - Bayesian Compressive Sampling with Markov chain Monte Carlo (BCS_MCMC), Bayesian Neural Network (BNN), Genetic Algorithm (GA), Gene Expression Programming (GEP), Empirical Bayesian Kriging (EBK), and Inverse Distance Weighting (IDW) - for generating artificial CPT measurement profiles at untested locations for use to evaluate the spatial variability of site and soil properties. Evaluated the spatial variability of the ten identified sites using the semi-variogram approach. Started evaluating the effect of site variability on the design of pile foundation using Bayesian analysis. Collected electric resistivity (ER) data from seven different sites from DOTD in Louisiana. The ER imaging were analyzed to bridge the gap between the soil borings and/or CPT tests to improve site investigations.

Task 4: Continued evaluating the spatial variability of soil type and design parameters for the identified sites in Task 2 using Bayesian analysis, machine learning algorithms, and available special interpolation techniques.

Task 5: Started evaluating the effect of number, distribution, and type of measurements and lab/in-situ testing methods.

Task 6: Worked on incorporating the special site variability (both vertically and horizontally) evaluated from CPT tests into LRFD design of piles using the semi-variogram approach. Used advanced functionality of a MATLAB-based application for soil variability analysis. This tool features automated generation and classification of soil layers, integrating results from semi-variogram analyses directly into practical, user-friendly LRFD factors with minimal user involvement. Developed MATLAB code to handle large datasets efficiently, with new plotting functions, better data management systems, and performance optimizations that support the robust analysis of complex geotechnical data. Developed a mathematical framework to apply McVay's approach to calculate the variance reduction factor for rectangular grid pile configurations to estimate the effect of site variability on the design of pile group with different configurations.

Task 7: Worked on applying the Bayesian analysis to update the resistance factor of a new specific site for use in the design of pile foundations.

Task 8: Started exploring several techniques to implement the site variability into LRFD design of pile foundations, including Monte Carlo Simulations (MCS) and the Mean Value First Order Second Moment (MVFOSM) methods. Developed MATLAB code to implement the MCS and the MVFOSM methods to incorporate site variability through calibrating the LRFD resistance factors for design of pile foundations.

Task 10: Evaluated several ML techniques [Bayesian Neural Network (BNN), Genetic Algorithm (GA), Gene Expression Programming (GEP)] for generating artificial CPT data and evaluating the spatial variability of site and soil properties.

Task 11: Started evaluating the effect of number of static/dynamic load tests in the reliability analysis for updating the resistance factors in the load and resistance factor design (LRFD) of pile foundations. Different techniques were explored including Bayesian update, integrated confidence interval concept with Bayesian analysis, and Monte Carlo Simulations (MCS). Developed MATLAB code for updating the resistance factors using Bayesian analysis with/without the integrated confidence interval concept. Started working on establishing the Bayesian framework and MATLAB program to assess the impact of negative pile load tests on LRFD resistance factor calibration.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Task 1: Continue conducting literature review relevant to evaluation and incorporation of spatial site variability into the Load and Resistance factor Design (LRFD) of pile foundations. Task 2: Continue identifying several project sites f rom DOTD archives with multiple CPT tests and/or multiple soil borings and collecting data in order to evaluate the spatial site variability. Task 3: Continue evaluating different prediction methods for generating artificial CPT profile and soil boring data at untested locations for use to evaluate the horizontal spatial variability of site and soil properties. Continue evaluating the spatial variability of the ten identified sites using the semi-variogram method and other available approaches. Looking for more project sites with electric resistivity (ER) surveys to evaluate the spatial variability and fill the gap between the soil borings and/or CPT tests. Task 4: Continue evaluating the spatial variability of soil type and design parameters for the identified sites in Task 2 using Bayesian analysis, machine learning algorithms, and available special interpolation techniques. Task 5: Continue evaluating the effect of number and type of measurements and lab/in-situ testing methods on the reliability of geotechnical design parameters. Task 6: Continue incorporating the special site variability (both vertically and horizontally) evaluated f rom CPT tests into LRFD design of piles using the semi-variogram approach. Task 9: Start evaluating the effect of locations and distribution of soil borings/CPT tests within specific site on reliability analysis for LRFD pile design. Task 11: Continue evaluating the effect of number of static/dynamic tests on the updated resistance factors for LRFD design of pile foundations.

Title:	**LIDAR for Geotechnical Applications**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000473**	Project Start Date:		3/1/2023
Research Project Number:	23-1GT	Completion Date	(original)	8/31/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Gavin Gautreau			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$311,126
	(revised)	
Est. Expended to Date		$155,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$96,900
	(revised)	$60,000
Est. FY Expenditure		$60,000

Estimated 2025-2026 Budget		
Total		**$104,852**
Salaries		$104,852
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Light detection and radar (LIDAR) is a method for measuring distances. The data can be collected from land tripods, automobiles, drones and fixed wing airplanes. DOTD has begun collecting LIDAR on state highways. LIDAR data can be utilized for many purposes; the primary reasons are likely not geotechnical related. However, the data can be utilized for inventory purposes (Geotechnical Asset Management) and change detection of embankment slopes (inspections and problem identification).

Objective(s): Explore the utilization of LIDAR within DOTD and develop interfaces to tap into this data for geotechnical purposes. Recurring datasets of the same location could be compared to determine changing slopes. These large datasets may require Machine Learning or special software to open this data to the geotechnical section. Small scale drone-based LIDAR scans could be collected to supplement and define with more precision, problematic slopes that may be difficult, or hazardous, to access.

Expected Benefits: The proposed research would utilize an existing dataset within DOTD and provide a user interface for the Geotechnical Section to utilize this data for management of slopes and other geotechnical assets. More accurate location of soil boring elevations (from the office) would also be a benefit.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

LTRC investigated the purchase of a LiDAR Drone, and researched efforts to connect an existing LiDAR camera to a mobile backpack that can be utilized on this project and on into the future. Section 30 assisted with a LiDAR visit to the Vicksburg Bridge, and other scans to utilize change detection. Work on compiling the database and the research report continued.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

LTRC Looks to purchase a LiDAR Drone that can be utilized on this project. Additionally, efforts to connect an existing LiDAR camera to a mobile backpack are underway. Section 30 will also assist with multiple visits to the Vicksburg Bridge to scan the site and utilize change detection. Work on compiling the database and the research report will continue.

Title:	**LTRC Support for Geotechnical Research at the Geotechnical Engineering Research Laboratory (GERL)**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**30000111**	Project Start Date:		7/1/2010
Research Project Number:	10-1GERL	Completion Date	(original)	6/30/2015
Research Agency:	LTRC	Completion Date	(revised)	6/30/2027
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$523,000
	(revised)	$20,772,569
Est. Expended to Date		$21,131,169
FY 2024 - 2025 Budget		
FY Funds	(original)	$188,500
	(revised)	
Est. FY Expenditure		$179,000

Estimated 2025-2026 Budget		
Total		**$183,700**
Salaries		$121,000
Consumable Supplies & Materials		$37,200
Equipment	(non-expendable)	
Travel		$25,500
Other		

BUDGET JUSTIFICATIONS

Supplies: Supplies for MTS testing machine: $4,000.
Desktop computers for two graduate students: 2 x $2000 = $4,000.
Purchasing multiplexer for lab and field testing and monitoring: $1500
Calibration of triaxial and large direct shear test machines: $3,000.
Calibrating the in-situ test devices (DCP, LFWD, etc.): $3,000.
Annual license for PLAXIS 2D finite element software: $1,500.
Annual license for PLAXIS 3D finite element software: $2,000.
Misc/Replacement parts for Humboldt testing device: $3,000.
Triaxial, direct shear and consolidation tests parts (Dial Gauges, cables, molds, etc.): $3,000
Supplies for the in-box cyclic plate load test (instruments, wires, cables, etc.): $4,000.
Repairing the in-box cyclic plate load test (connection to hydraulic pump): $4,000.
Pump filters, oil change, materials, etc. for Geotech Lab: $2,000.
General Laboratory supplies and materials: $2,700.Travel: Travel: Attend TRB Conference for PI and one RA: 2 x $2500 = $5000
Attend TRB for four graduate students: 4 x $1500 = $6000
Attend Geocongress Conference for PI and one RA: 2 x $3000 = $6000
Attend Geocongress for one graduate student: $2500
Attend DFI conference: $3000
Attend Geosynthetics conference: $3000

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Transportation infrastructures in Louisiana, such as bridges and highways, are very essential for the state's residents and businessmen. Many challenges are facing the state to improve/modernize their transportation infrastructures that need to be identified, addressed and solved. Improving analysis, design, and construction of the geotechnical aspects of infrastructures is very vital. Therefore, problem statements and proposals need to be developed to solve the challenges.

Objective(s): The objectives of this study are: perform studies to meet the beneficiary requirements for geotechnical testing, technical assistance and research; advance the state-of-the-art in geotechnical research; maintain laboratory testing equipment; maintain in-situ testing devises and monitoring instruments, provide development, support and training of new and innovative techniques, and software for advancing transportation system, and develop problem statements and research proposals.

Expected Benefits: It is anticipated that improving and maintaining modern and safe infrastructures will have a direct impact toward improving the quality of life and boost healthy economic grow thin Louisiana. The development of new methodologies for geotechnical infrastructure's analysis, design and construction will help improve the accuracy/reliability of design, accelerate construction, and reduce material/labor cost, resulting in safer and more cost-effective infrastructure design.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS
- Developed potential ideas and problem statements for future LTRC research projects, - Provided geotechnical testing support and technical assistance for LA DOTD, - Provided guidance on improving the quality of laboratory testing to LA DOTD, - Developed research proposal on "Statewide Calibration of CPT Direct Design Methods Using Static Load Test Data," - Published several technical papers and conference proceedings on the findings of LTRC research projects, - Published one final report on "Internal Friction Angle of Sands with High Fines Content", - Attended several engineering workshops, Webinars, and conferences, - Maintained in-situ testing devices and measuring/monitoring instrumentation systems, - Maintained LTRC laboratory testing equipment, - Maintained various softwares related to CPT applications, such as estimating of pile capacity and soil behavior classification from CPT.
FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
- Provide geotechnical and geosynthetic testing support and technical assistance for LA DOTD, - Provide support and training for implementation of findings of research studies, - Develop research proposals and problem statements for future research activities, - Develop research proposal on "Update on Evaluating the Magnitude and Time Rate of Consolidation Settlement of Embankments and other Infrastructures from Piezocone Penetration Tests (PCPT)," - Develop research proposal on "Performance Evaluation of Flexible Pavements Reinforced with Wicking Geotextiles (WG) Build over Soft Subgrade Soils," - Develop research proposal on "Use and Interpretation of Seismic Piezocone Penetration Testing (SCPTu) for Geotechnical Site Investigation," - Publish research findings on technical papers, conference proceedings, and reports, - Repair, maintain, and upgrade the laboratory in-box accelerated cyclic plate load testing facility, - Maintain LTRC laboratory testing equipment, - Maintain in-situ testing devices and measuring/monitoring instrumentation systems, - Continue maintaining and upgrading the various CPT software applications.

Title:	**Administration of LTRC External Funding Programs**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**30000169**	Project Start Date:		1/1/2008
Research Project Number:	11-1AD	Completion Date	(original)	6/30/2009
Research Agency:	LTRC	Completion Date	(revised)	6/30/2027
Principal Investigator:	Vijaya Gopu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$211,428
	(revised)	$5,621,122
Est. Expended to Date		$4,039,680
FY 2024 - 2025 Budget		
FY Funds	(original)	$315,289
	(revised)	
Est. FY Expenditure		$315,289

Estimated 2025-2026 Budget		
Total		**$319,500**
Salaries		$309,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$10,500
Other		

BUDGET JUSTIFICATIONS

Travel: Travel: TRB Annual Meeting - $2,200; CUTC Summer Meeting - $1,000; NSF Board Meetings - $1,800; AASHTO Bridge Meeting - $1,200; DOTD dissemination meetings (in-state travel) - $3,800

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Enhance the external research funding at LTRC. Identify funding opportunities at the national, regional and state level in the broad area of transportation engineering, planning and management and organize single or multi-campus faculty teams/clusters – multi-disciplinary when needed -- that hold the most promise for being successful in attracting this competitive funding. Pursuit of these opportunities will be channeled through LTRC.

Objective(s): To cover administrative costs handled under contract to support LTRC research, development and technology transfer external funding program.

Expected Benefits: The efforts of this program will generate external funding for university faculty and support the research needs of DOTD. Participation in national level research efforts and programs enhance the stature of LTRC and address the critical needs of the state. Tasks carried out with support of external agencies -- NSF, FHWA, etc. -- enable workforce development in critical areas of the transportation sector.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Coordination of TIRE program and TIRE projects, held LTRC town-hall meetings at all state universities with engineering programs, explored opportunities for submitting proposals to advance bridge engineering education and practice, supported LAPELS Board in its effort to promote professional registration of university faculty, serves on the LAPELS board, coordinate the LTRC UTC (university Transportation Center) site projects and the UTC support studies through their completion after gaining funding from the UTC program, and disseminated the results of the NSF (National Science Foundation) project on field monitoring and measurement education.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Continue coordination of TIRE program and TIRE projects;
-Hold LTRC town-hall meetings at all state universities with engineering programs
-Coordinate submission of a revised NSF MRI (Major Research Instrumentation) proposal in this fiscal year
-Explore opportunities for submitting proposals to advance bridge engineering education and practice
-Support LAPELS Board in its effort to promote professional registration of university faculty
-Manage EPA $3M project with UL PI.

Title:	**Development of a Database for Successfully Performing Pavement Sections in Louisiana**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000567**	Project Start Date:		5/1/2025
Research Project Number:	25-1P	Completion Date	(original)	4/30/2028
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Jun Liu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$185,818
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$60,000**
Salaries		$60,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: In Louisiana, there are asphalt pavements that were constructed over 15 years ago and have continued to provide excellent service to the public. Drawing lessons from these successful asphalt pavements will not only aid in educating the next generation of LaDOTD pavement engineers by leveraging past experiences but also assist current decision-makers in making more informed choices regarding pavement designs and material selections for ongoing projects.

Objective(s): The objective of this research project is to document and analyze the successful asphalt pavements with extended lifespans in Louisiana.

Expected Benefits: Identify the design, construction, and material characteristics that contribute to the prolonged lifespan of superior asphalt pavements, and propose strategies for enhancing the durability of asphalt pavements in Louisiana by integrating these attributes into standard practices. By recognizing and incorporating these attributes, the overall performance of aphalt pavements in Louisiana can be enhanced for future projects.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1:
• Host a brainstorming meeting with the PRC committee members to collect insights and perspectives regarding the criteria for identifying successful pavements.
• Develop a nomination solicitation letter and form for successful pavements and distribute it to engineers at various located districts.
• Screen and summarize nominated pavement sections
• Finalize the list of pavement sections that will be included in this project.
Task 2:
• Conduct a comprehensive historical review of one pavement section.

Title:	**Developing a Methodology for Pavement Drainage System Rating**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000526**	Project Start Date:		6/1/2024
Research Project Number:	24-2P	Completion Date	(original)	11/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Qiming Chen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$149,100	**Total**		**$51,000**
	(revised)				
Est. Expended to Date		$66,000	Salaries		$51,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$97,100	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$88,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The DOTD Highway Needs Database contains a drainage condition field that has not been updated for approximately 20 years. The DOTD highway maintenance section once proposed a drainage condition Level of Service (LOS) but never implemented it.

Objective(s): The objective of this research is to explore the use of existing pavement and LiDAR data to develop a pavement drainage system rating index as part of pavement condition assessment in Louisiana, potentially by creating a drainage rating index as part of pavement condition assessment.

Expected Benefits: Developing a robust and advanced system for assessing drainage conditions will lead to more informed decision-making in pavement design, maintenance, and rehabilitation. The societal impact of enhanced road safety through reduced hydroplaning incidents and heightened pavement durability is immeasurable.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Conducted Literature Review
Task 2: Completed a State Wide Survey
Task 3: Examine and Evaluate Existing LiDAR Data

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Complete Literature Review
Task 3: Examine and Evaluate Drainage Condition with Existing Pavement Data and LiDAR Data
Task 4: Develop a Pavement Drainage System Rating Methodology
Task 5: Have a final PRC meeting to review and discuss the final report.

Title:	**Evaluation of Louisiana Maintenance and Rehabilitation Treatment Decision Matrix for Cost-effective and Timely Pavement Preservation**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000519**	Project Start Date:		1/1/2024
Research Project Number:	24-1P	Completion Date	(original)	12/31/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhong Wu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$371,615
	(revised)	
Est. Expended to Date		$111,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$148,944
	(revised)	
Est. FY Expenditure		$139,000

Estimated 2025-2026 Budget		
Total		**$138,300**
Salaries		$138,300
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: DOTD currently uses pavement condition index based decision matrix in its maintenance and rehabilitation treatment selection. However, some of the trigger index values adapted in the decision matrix table were developed from few projects with few years and log-miles of distress data. To ensure the optimum timing and cost-effective selection of various maintenance and rehabilitation treatments, there is a need to review, modify, and update the current decision matrix table adapted.

Objective(s): 1) Analyze PMS data and assess the optimum timing/cost-effectiveness for a number of treatment methods including thin overlays, micro-surfacing, crack sealants, and in-depth stabilization. 2) Provide modification recommendations to the PMS decision matrix in order to ensure optimum timing and cost-effectiveness selection of treatment methods.

Expected Benefits: The study will provide the DOTD Pavement preservation and PMS office updated triggers and performance models for cost-effective and timely maintenance and rehabilitation of pavements. Results of the study will immediately be implementable by pavement preservation and PMS office.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Conducted the literature review on different pavement treatment types, related data gathering and data mining strategies as well as state-of-the-art analytical tools.
-Based on the current DOTD pavement treatment types, an extensive search was conducted to identify all available pavement sections within the Pavement Management System (PMS), covering a range of roadway functional classifications and treatment types. As a result, over 500 pavement treatment segments were identified and selected for further analysis, including the as-built plan, treatment age, traffic and weather information, pavement surface distress conditions before and after the treatment and the treatment construction costs.
-The Markov Chain modeling method was utilized to predict pavement performance indices for the selected micro-surfacing, ultra-thin, and thin overlay pavement projects. The predicted results were then compared against the precondition requirements outlined in the treatment selection matrix.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-continue project selection and modeling for all DOTD's pavement maintenance and rehabilitation treatment types, including chip seal, medium overlay, structural overlay and reconstruction. Three pavement types- asphalt, composite and jointed concrete pavements will be separately investigated, including slurry sears and patching.
-Construct decision tree-based models using PMS-recorded pre-treatment pavement condition data (including alligator cracking, random cracking, patching, rutting, and roughness indices) to determine a true and representative range for all distress indices currently used in the DOTD Treatment Decision Matrix.
-Develop performance prediction models for various treatment types and pavement condition indices. The resulting analytical models will be used to evaluate and refine the index-based trigger values to support cost-effective and timely treatment selection.

Title:	**Mechanistic Characterization of Asphalt Overlays for Pavement Rehabilitation and Preservation using Pavement ME Approach**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000272**	Project Start Date:		8/1/2018
Research Project Number:	19-2P	Completion Date	(original)	1/31/2021
Research Agency:	LTRC	Completion Date	(revised)	10/31/2025
Principal Investigator:	Zhong Wu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$319,442	**Total**		**$16,350**
	(revised)	$480,708			
Est. Expended to Date		$460,500	Salaries		$16,350
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$53,300	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$37,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: For a smooth transition from the 1993 AASHTO pavement design guide to the new ly-developed Pavement ME Design for DOTD, there is a need to perform local-calibration of distress models for both pavement structural and preservation overlays in Louisiana. In addition, the pavement design engineers of DOTD have encountered several design issues in new asphalt and concrete pavement designs w hen using a previously-calibrated Pavement ME software.

Objective(s): 1) Address the existing Pavement ME's new pavement design issues encountered by the DOTD design engineers. 2) Evaluate the performance and existing trigger system of possible pavement preservation overlay strategies using Pavement ME. 3) Update local-calibration factors of Pavement ME and develop a set of optimum design inputs for both pavement rehabilitation and preservation asphalt overlays for DOTD implementation

Expected Benefits: 1) A detailed implementation plan for Pavement ME's rehabilitation module with a set of updated, local calibration factors and Louisiana design inputs. 2) A set of recommended design inputs for pavement preservation overlay using the Pavement ME. 3) Solutions for the existing Pavement ME Design software issues currently encountered.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Following the completion of the local calibration of Pavement ME Design, a design guideline document was prepared, containing various Louisiana-specific pavement design inputs and locally calibrated distress model coefficients for DOTD's implementation.
-A final technical report including all selected pavement projects used in the local calibration has been submitted for review.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

- The research calibration results are currently under review. Upon completion of the ARA and DOTD review, any necessary revisions to the local calibration coefficients in Pavement ME will be addressed and updated accordingly for DOTD implementation

Title:	**Mitigating Joint Reflective Cracks using Stone Interlayers: Case Study on Louisiana Highway 5, Desoto Parish**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000218**	Project Start Date:		10/17/2017
Research Project Number:	18-2P	Completion Date	(original)	10/16/2023
Research Agency:	LTRC	Completion Date	(revised)	10/16/2026
Principal Investigator:	Qiming Chen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$210,000	**Total**		**$49,000**
	(revised)	$315,000			
Est. Expended to Date		$235,000	Salaries		$49,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$47,000	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$41,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Reflective cracking in HMA overlays represents a serious challenge associated with pavement rehabilitation. In 2011, LTRC completed a study to evaluate and compare the performance of different crack control treatments in Louisiana for composite pavements. Stone interlayers were not one of the treatments discovered from a survey of DOTD engineers in the study and therefore were not evaluated. The scope of this research is also expanded to include a TA study involving fracture slab approaches.

Objective(s): The purpose of this project is to monitor the effectiveness of stone interlayers and fracture slab approaches in composite pavements, determine the effect of stone depth in mitigating reflective cracks at the transverse and longitudinal joints, and measure the movement of the portland cement concrete (PCC) transverse joints under traffic loading.

Expected Benefits: The results of the study may be used to recommend improved pavement design and preservation procedures.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Literature Review on rubblization and break and seat
Task 3: Identified two additional projects where stone interlayers were installed. Conducted data mining in the Pavement Management Systems database for newly identified projects.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Literature Review (continue working on literature review)
Task 3: Data mining the Pavement Management Systems database (continue collecting distress information on projects involving stone layers, rubblization and break and seat)
Task 5: Field tests (since our FWD is out of service, we will explore contract options)

Title:	**Management and Operation of the Pavement Research Facility**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**30000141**	Project Start Date:		7/1/2009
Research Project Number:	10-1ALF	Completion Date	(original)	6/30/2015
Research Agency:	LTRC	Completion Date	(revised)	6/30/2027
Principal Investigator:	Zhong Wu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$1,730,000
	(revised)	$26,093,061
Est. Expended to Date		$13,550,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$449,981
	(revised)	
Est. FY Expenditure		$225,000

Estimated 2025-2026 Budget		
Total		**$538,009**
Salaries		$423,009
Consumable Supplies & Materials		$100,000
Equipment	(non-expendable)	
Travel		$10,000
Other		$5,000

BUDGET JUSTIFICATIONS

Supplies: Supplies: The $100,000 budget covers the routine maintenance supplies, machine repair (parts and labor), and daily operational costs
at the DOTD's Pavement Research Facility.

The following supplies and operational items are included in the budget:
Parts replacement and mechanic repairing of ALF, parts replacement and mechanic repairing of ATLaS30, Dynamic Friction Tester and
Circular Track Meter Maintenance, building supplies, computer and software upgrade, steel braided cable, pillow block bearing, hydraulic oil filters, electrical solenoids, electrical cables/connector, electrical fuses, pressure relief valve, cable lube spray, poly grease, lawn weed killer, mouse/snake traps, toiletries, wasp spray, gasoline, mower and tractor maintenance.Travel:
Attend TRB Annual meeting (3 attendees) - $7,500
Attend a pavement conference (1 attendee) - $2,500

Other: The $5,000 cost will cover as-needed professional services, such as moving of ATLaS30 or ALF to new testing locations.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Pavement Research Facility (PRF) is a full-scale accelerated pavement research facility designed to determine in situ true performance for different pavement structures and materials using two heavy vehicle simulator loading devices. The research purpose is to investigate economical and practical alternatives related to the current design and construction practices, and provide implementable pavement solutions for DOTD in solving issues in pavement structure, construction and materials.

Objective(s): The objective of this project is to establish a management and operation framework for the Pavement Research Facility (PRF) to support full-scale accelerated pavement testing for DOTD. A manager and two operators will be funded in this facility. The scope of the work
includes facility management, equipment maintenance and operation, preparation of plans for individual experiments, construction, pavement instrumentation and accelerated pavement testing.

Expected Benefits: The research results generated can directly lead to implementable recommendations for DOTD in several key areas, including new pavement structure design, selection and construction of paving materials, improved monitoring of statewide pavement performance, and development of advanced analytical tools for pavement structure evaluation. PRF places LTRC in a strong position to continue advancing its reputation for national and international excellence in full-scale accelerated pavement testing.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Maintained the PRF site in good working condition with the ATLaS30 device and other loading and maintenance equipment remaining fully operational.
-Provided technical assistance to DOTD and LTRC in pavement testing, instrumentation, and equipment procurement.
-Conducted in-situ pavement friction testing on the selected asphalt pavement sections and completed the Final Report for Project 20-4P.
-Continued to support DOTD in the implementation of Pavement ME Design.
-Presented research findings from PRF projects at several professional conferences and meetings.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
-Continue maintenance of the PRF site, and develop research proposals focused on perpetual pavement design, longitudinal cracking in jointed concrete pavements (JCP), and accelerated pavement testing. -Continue to provide technical assistance in pavement testing, instrumentation and equipment procurement. -Publish research findings in technical papers, proceedings and reports.

Title:	**Assessing Speeding-Related Crashes in Louisiana to Support the Safe System Approach**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000564**	Project Start Date:		5/1/2025
Research Project Number:	25-1SA	Completion Date	(original)	4/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$215,728
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	$35,000
	(revised)	
Est. FY Expenditure		$35,000

Estimated 2025-2026 Budget		
Total		**$106,178**
Salaries		$106,178
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The role of speed in traffic crashes is a complex issue as reducing traffic speeds and speeding-related crashes continue to pose challenges. In order to move forward with the Safe System Approach implementation in Louisiana, there is a need to identify speeding-related crashes to be able to implement effective countermeasures to manage and mitigate the risk of speed as a contributing factor in road crashes.

Objective(s): The purpose of this study is to perform a comprehensive analysis of speeding-related crashes and speed data on roadways in Louisiana to understand the magnitude of the problem. Specific objectives: perform crash analysis to identify speeding-related crash variables and high-risk locations, investigate operating speed on the identified high-risk locations using probe data collected from the Regional Integrated Transportation Information System platform, and provide recommendations.

Expected Benefits: The results of the research will provide DOTD, LHSC, and other safety stakeholders with a deeper understanding of factors influencing speeding-related crashes to improve safety for all Louisiana road users and to reach the goal of Destination Zero Deaths. Furthermore, identifying locations with the highest speeding crash risk enables DOTD and the SHSP Implementation Team to prioritize budget allocations and to implement effective strategies in support of the Safe System Approach implementation.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Research proposal is under PRC review.
Task 1-Literature review

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 2- Collecting data
Task 3- Performing analyses

Title:	**Older Road Users Safety in Louisiana: Understanding the Crash Contributing Factors**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000513**	Project Start Date:		1/1/2024
Research Project Number:	24-2SA	Completion Date	(original)	12/31/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Elisabeta Mitran			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$261,355	**Total**		**$52,000**
	(revised)				
Est. Expended to Date		$147,253	Salaries		$52,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$145,000	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$145,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Older people are involved in more crashes than any other age group. Due to the increasing trends in fatality and serious injury rates per capita of drivers and pedestrians over the age of 65, Louisiana met the criteria to qualify for the Federal Highway Administration Older Driver and Pedestrian Special Rule 23 U.S.C. 148(g)(2). In order to achieve the Louisiana's Destination Zero Deaths and to address current increasing crash trends, we must find ways to improve safety of older road users.

Objective(s): The objectives of this study are to investigate the factors contributing to older road users crashes in Louisiana and to recommend effective countermeasures to support the SHSP strategies in reducing traffic fatalities and severe injuries.

Expected Benefits: This project will provide DOTD, Louisiana SHSP team, and other highway safety stakeholders with a deeper and more comprehensive understanding of factors influencing older road users' crashes. The study findings could be used as part of Destination Zero Deaths' efforts to reach the goal of zero fatalities and serious injuries on our roadways.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 2– Comprehensive crash analysis was finalized.
Task 3– Interim report was submitted for review.
Task 4- Started modeling older road users crash risk.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 4- Finish modeling older road users crash risk.
Task 5. Propose Targeted ORU crash countermeasures.
Task 6. Submit final report.

Title:	**Ground-in Edge and Centerline Rumble Strip/Rumble Stripe Evaluation and Best Practices**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000510**	Project Start Date:		5/1/2024
Research Project Number:	24-1SA	Completion Date	(original)	4/30/2026
Research Agency:	LSU	Completion Date	(revised)	
Principal Investigator:	Hany Hassan			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$204,983	**Total**		**$80,353**
	(revised)				
Est. Expended to Date		$75,927	Salaries		$77,853
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$95,741	Equipment	(non-expendable)	
	(revised)		Travel		$2,500
Est. FY Expenditure		$63,412	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Rumble Strips (RS) are a cost-effective safety countermeasure proven to reduce various types of road vehicle crashes (e.g., single vehicle run-off-road (SVROR)), depending on their installation location, by generating sound and vibration. However, their noise can be a source of annoyance for nearby residents, prompting complaints to state departments of transportation, including the Louisiana Department of Transportation and Development (LADOTD).

Objective(s): Evaluate the patterns, placement, and noise level of the rumble strip/rumble stripe installed on Louisiana highways to ensure that the best standards are used. Underlying this objective, this project aims to:
• Compare existing special rumbles details in Louisiana versus best practices.
• Measure and assess the in-vehicle and outside noise levels.
• Compare the measured noise levels to the acceptable noise levels.
• Recommend the best type/pattern of rumble strip/rumble stripe

Expected Benefits: This study will determine if the best standards have been used while installing rumble strips and stripes in Louisiana highways. Also, this study will recommend the best type/pattern of rumble strip/rumble stripe based on the analysis of collected data and research findings.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The following tasks have been completed:
Task 1 Literature Review.
Task 2 Document the current state of the practice in Louisiana.
Task 3 Comparison of Louisiana's rumble strip with the best practices.
Task 4 Preparing an interim report.
Task 5 Select sites for field study

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following tasks will be completed in the following fiscal year
Task 6 Field Study.
Task 7 Data analysis.
Task 8 Final Report.

Title:	**Truck Parking Shortage: Improving Efficiency and Identifying Opportunities**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000559**	Project Start Date:		12/15/2024
Research Project Number:	25-2SS	Completion Date	(original)	3/14/2026
Research Agency:	UNO	Completion Date	(revised)	
Principal Investigator:	Bethany Stich			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$220,140	**Total**		**$122,532**
	(revised)				
Est. Expended to Date		$19,600	Salaries		$100,532
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$141,358	Equipment	(non-expendable)	
	(revised)	$97,608	Travel		$10,000
Est. FY Expenditure		$97,608	Other		$12,000

BUDGET JUSTIFICATIONS

Travel: travel by 3 faculty members and multiple students to 10 different in state locations

Other: subscription to Implan and scientific software plus editing services

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The shortage of truck parking has been a longstanding issue in the trucking industry. Drivers often face challenges in finding safe places to park, leading to fatigue, increased accidents, and disruptions to the supply chain. Parking is generally a local land use issue, and many cities lack effective codes and regulation to accommodate and manage their commercial vehicle needs.

Objective(s): Identify what kind and where Variable Message Signage (VMS) is currently used and its effectiveness as well as where additional VMS integration is necessary. Survey government officials, community representatives, truck drivers and business owners to better understand the problem. Conduct economic impact statements about future truck parking projects or the economic impact of not having adequate parking.

Expected Benefits: This research will aid local and state governments in achieving the intent of Jason's Law Truck Parking Survey by increasing safe parking options for truck drivers. Primarily, this is an issue of safety. However effective local truck parking management and ordinance will not only help keep truckers safe, but they will also increase truck driver pay, improve highway performance, reduce road maintenance costs, and support economic growth through improved intra and interstate commerce.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1 - Project Kickoff
Task 2 - Investigating the Truck Parking Status
Task 3 - Literature Review

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 4 - Identify Funding Sources
Task 5 - Conducting Surveys and Interviews
Task 6 - Develop Recommendations
Task 7 - Writing the Final Report

Title:	**Complete Streets Means Trucks, Too: Integrating Freight Traffic Needs with Active Transportation Planning and Policy**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000556**	Project Start Date:		1/6/2025
Research Project Number:	25-1SS	Completion Date	(original)	7/5/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tara Tolford, MURP, AICP			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$105,056	**Total**		**$50,028**
	(revised)				
Est. Expended to Date		$3,543	Salaries		$50,028
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$55,028	Equipment	(non-expendable)	
	(revised)	$55,028	Travel		
Est. FY Expenditure		$55,028	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Louisiana has embraced a Complete Streets policy approach, but conflicts can occur where bicyclists and pedestrians interact with freight vehicle traffic. These conflicts can prevented through proactive, integrated multimodal planning and mitigated with specific geometric or operational improvements to increase safety where conflicts do occur. Research is needed to better understand these issues, integrate freight into complete streets policy implementation, and recommend mitigation strategies.

Objective(s): This study seeks to identify best practices for considering freight/trucking needs in Complete Streets by:
1. Identifying existing and potential future conflicts based on spatial analysis and practice review.
2. Analyzing crash records for freight- and vulnerable road user crashes and identify safety countermeasures and non-infrastructures strategies.
3. Survey stakeholders in the freight industry to gain perspective on conflicts, tensions, or needs to better support safe freight operations.

Expected Benefits: This research will highlight existing transportation network conflict points and potential future areas of concern for state, local, and regional transportation authorities. Survey findings will allow planners and advocates to better work with industry stakeholders on safe systems solutions and economic growth. Last, this research will develop processes, data, and tools to support future project development and planning processes for better policy implementation.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Activities expected to be completed in FY 24/25 include:

Task 1: Literature and Practice Review:
- National scan of state DOT Complete Streets policies and design guidance for language around freight completed
- Literature review of safety research, case studies, and design guidance for freight-inclusive complete streets completed
- Review of DOTD design and project delivery guidance re: context classification, design vehicle selection, performance based design, demand analysis completed

Task 2. Spatial (GIS) analysis of existing and planned pedestrian and bicycle facilities and existing and proposed freight routes and assets
- All freight routes in Louisiana identified and mapped
- Available freight volume and classification data collected
- Map of existing statewide bicycle facilities updated
- Preliminary map of planned statewide bicycle and pedestrian facilities completed
- Map of existing statewide transit routes updated
- Spatial analysis of potential conflict areas completed

Task 3: Analyze crash data (initiated)
- Crash records collected and prepared for analysis
- Initial analysis of crash records involving commercial vehicles and vulnerable road users completed

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 3: Complete Crash Data Analysis
Task 4: Prepare Interim Report & Presentation
Task 5: Conduct Stakeholder Outreach
Task 6: Prepare Final Report

Title:	**Statewide Lane Reconfiguration "Road Diet" Screening for Louisiana**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000524**	Project Start Date:		7/1/2024
Research Project Number:	24-6SS	Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Ruijie "Rebecca" Bian			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$211,462	**Total**		**$165,956**
	(revised)				
Est. Expended to Date		$45,506	Salaries		$120,705
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$105,535	Equipment	(non-expendable)	
	(revised)	$45,506	Travel		
Est. FY Expenditure		$45,506	Other		$45,251

BUDGET JUSTIFICATIONS

Other: Other budget is for a sub-contract to a consultant. The breakout sheet is attached to the proposal.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Not all the road segments marked with higher active transportation investment suitability have sufficient space in their existing conditions to accommodate non-motorists (e.g., bicyclists and pedestrians). Road diet is a solution that works within the existing Right-of-Way to improve safety, operations, and/or expand multimodal access or address other needs.

Objective(s): The objective of this research is to investigate opportunities for and feasibility of implementing road diets on roadways as well as identifying other underutilized utility rights-of-way/easements to help Louisiana develop a network accommodating non-motorized travel needs while optimizing use of publicly owned land.

Expected Benefits: Results from this research will help DOTD develop its own Road Diet Strategy to guide future construction and preservation projects to make systematic multimodal access improvements.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Literature review.
Task 2: Compile necessary GIS files for screening.
Task 3: Screen the compiled network to assess road diet opportunity and feasibility.
Task 4: Develop case study examples.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 5: Collect stakeholder opinions.
Task 6: Solicit public opinions.
Task 7: Finalize study results and develop a draft Road Diet Strategy for DOTD.

Title:	**Improved Signalized Intersection Performance Using Computer Vision and Artificial Intelligence**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000515**	Project Start Date:		1/1/2024
Research Project Number:	24-4SS	Completion Date	(original)	12/31/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$223,751
	(revised)	
Est. Expended to Date		$111,303
FY 2024 - 2025 Budget		
FY Funds	(original)	$80,000
	(revised)	$81,618
Est. FY Expenditure		$81,618

Estimated 2025-2026 Budget		
Total		**$52,431**
Salaries		$52,431
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This project is proposed to support performance-based approaches to traffic signal operations, maintenance, management, and design. It aims to provide tools for automating the evaluation of signalized intersection performance

Objective(s): 1. Assess the feasibility and accuracy of using computer vision technology for performance evaluation at signalized intersections.
2. Use computer vision and artificial intelligence to automatically convert data from video recordings at selected intersections into trajectories of road users.
3. Develop tools for DOTD traffic engineers to understand why road users show current behaviors and assist in determining what measures can be implemented to improve safety and efficiency at intersection

Expected Benefits: This project could help gain insights into traffic patterns, identify potential conflicts, assess safety risks, optimize signal timings, and develop strategies to improve safety and efficiency.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Literature review completed.
Task 2: Data collection and preprocessing 90 percent complete.
Task 3: Feasibility analysis 75 percent complete.
Task 4: Object detection is 75 percent complete.
Task 5: Object trajectory extraction 95 percent complete.
Task 7: Intersection performance evaluation is 50 percent complete.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 2: Data collection and preprocessing will be completed.
Task 3: Feasibility analysis will be completed.
Task 4: Object detection will be completed.
Task 5: Object trajectory extraction will be completed.
Task 6: Behavior analysis will be completed.
Task 7: Intersection performance evaluation will be completed.
Task 8: Final report will be completed.

Title:	**Evaluating Practical Applications of Unmanned Aerial Vehicles (UAVs) for Traffic Incident Response and Management.**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000514**	Project Start Date:		1/1/2024
Research Project Number:	24-3SS	Completion Date	(original)	12/31/2025
Research Agency:	LTRC	Completion Date	(revised)	4/30/2026
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$133,453	**Total**		**$21,946**
	(revised)	$292,526			
Est. Expended to Date		$105,277	Salaries		$21,946
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$100,000	Equipment	(non-expendable)	
	(revised)	$86,397	Travel		
Est. FY Expenditure		$86,397	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The use of Unmanned Aerial Vehicles (UAVs) in traffic incident management (TIM) shows a lot of promise. UAVs provide a great utility in providing aerial videos of incidents in areas which may not be covered by cameras. UAV videos may be transmitted to response staff in real-time for a better situational awareness, verification of secondary incidents, and allow for informed decisions to be made.

Objective(s): 1. Assess the feasibility of UAV use in Louisiana's traffic incident management (TIM) and monitoring.
2. Document issues and challenges in drone use for incident response.
3. Develop an information guide on UAV use for TIM.

Expected Benefits: The use of UAVs will be most beneficial in remote or rural areas where CCTV cameras and communication may be limited. With videos and pictures from the UAVs, response personnel will be able to make informed decisions with regards to incident response. Safety of response personnel at incident scenes may also be enhanced by providing better situational awareness.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1. Literature review completed
Task 2. Engagement with stakeholders mostly completed.
Task 3. Scenario selection and pilot test planning completed.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 4. Pilot testing will commence.
Task 5. Documentation on the limitations and challenges of UAV use in TIM will commence.
Task 6. Development of an informational guide will continue.
Task 7. Identification of benefits and costs of UAV in TIM will continue.
Task 8: The preparation of a final report will continue.

Title:	**Trip Generation for Various Sites**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000509**	Project Start Date:		1/1/2024
Research Project Number:	24-2SS	Completion Date	(original)	12/31/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Ruijie "Rebecca" Bian			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$249,078
	(revised)	
Est. Expended to Date		$199,785
FY 2024 - 2025 Budget		
FY Funds	(original)	$105,207
	(revised)	$122,588
Est. FY Expenditure		$122,588

Estimated 2025-2026 Budget		
Total		**$49,293**
Salaries		$10,269
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		$39,024

BUDGET JUSTIFICATIONS

Other: Other budget is for sub-contracts to consultants. The breakout sheet is attached to the proposal.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The 11th edition of the ITE Trip Generation Manual is missing several site codes. LTRC Project 18-4SS sought to confirm trip generation for strip malls and provided updated information specific to Louisiana for existing site codes in the ITE Trip Generation Manual. This proposal is to develop new trip generation (new site codes) for various types of sites that currently have no codes in the ITE manual. There may be the need to update some existing codes too.

Objective(s): Identify site codes currently included in the 11th Edition of the ITE Trip Generation Manual and confirm or update those using local data. Several uses that are of concern include the following: apartments, boat/RV storage, drive-thru daiquiri shops, car washes, Dollar General stores, Chick-fil-a restaurants, Vineyard/Event Centers and Restaurants with Specialty Markets. Poll DOTD Districts to prioritize list.

Expected Benefits: This will help traffic engineers more accurately assess a development's impact to the state highway system.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Conducted literature review
Task 2: Selected sample of locations for surveys and developed a schedule of measurement. (48 sites are selected and approved by PRC members)
Task 3: Conducted the pilot test of the Smart Micro Radar devices
Task 4: Collected data based on schedule developed in Task 2.
Task 5: Started verification of the data

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 5: Complete verification of the data
Task 6: Data cleaning
Task 7: Data analysis
Task 8: Complete final report
Task 9: Address comments from PRC members

Title:	**Statewide Non-Motorized Traffic Monitoring Study**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000463**	Project Start Date:		7/1/2023
Research Project Number:	23-4SS	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	12/31/2025
Principal Investigator:	Ruijie "Rebecca" Bian			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$258,849
	(revised)	
Est. Expended to Date		$184,167
FY 2024 - 2025 Budget		
FY Funds	(original)	$119,419
	(revised)	$79,895
Est. FY Expenditure		$79,895

Estimated 2025-2026 Budget		
Total		**$74,682**
Salaries		$24,429
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		$50,253

BUDGET JUSTIFICATIONS

Other: Other budget is for a sub-contract to a consultant. The breakout sheet is attached to the proposal.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Non-motorized traffic count data are collected and kept in different formats, which creates barriers in data sharing. In addition, a strategy is need in installing permanent counters at a strategic set of fixed locations and rotating a set of temporary counters to gain a better knowledge of network-wide volume. How will emerging technologies and data products help expand the utility of the observed counts?

Objective(s): The current project is to search for the best approaches to integrate non-motorized traffic (e.g., bicyclist/pedestrian) counting into the routine motorized traffic counting practice in Louisiana.

Expected Benefits: Including non-motorized traffic (e.g., bicyclist/pedestrian) counting into the routine motorized traffic counting practice will help state DOTs understand pedestrian and bicyclist travel patterns; select and prioritize projects improving multimodal access; ensure projects will be designed to balance multimodal travel needs for communities' benefits; and evaluate outcomes achieved from invested projects from multiple perspectives.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 2: Continue collecting, managing, and mapping non-motorized traffic counting data. (This task will continue throughout the entire project time)
Task 4: Test non-motorized traffic data from more data product vendors (e.g., Replica). The research team got access to Replica data in late January 2025.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 2: Continue collecting, managing, and mapping non-motorized traffic counting data. (This task will continue throughout the entire project time)
Task 5: Evaluate opportunities for expanding counting locations.
Task 6: Prepare the final report.

Title:	**LTRC Proposal for the Support of Research and Development in Special Studies**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000280**	Project Start Date:		7/1/2019
Research Project Number:	19-1SS	Completion Date	(original)	6/30/2021
Research Agency:	ULL	Completion Date	(revised)	6/30/2027
Principal Investigator:	Elisabeta Mitran			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$494,396
	(revised)	$2,721,723
Est. Expended to Date		$907,991
FY 2024 - 2025 Budget		
FY Funds	(original)	$195,318
	(revised)	
Est. FY Expenditure		$185,000

Estimated 2025-2026 Budget		
Total		**$203,800**
Salaries		$170,000
Consumable Supplies & Materials		$4,800
Equipment	(non-expendable)	$10,000
Travel		$19,000
Other		

BUDGET JUSTIFICATIONS

Equipment: The $10,000 will cover purchase of different equipment items, with an individual cost of each item not exceeding $5,000.Travel: Travel budget is to attend the following conferences and other project travel activities:
-TRB annual meeting-$5,000
-Lifesavers Conference-$3,000
-International Conference-$5,000
-Governors Highway Safety Association-$3,000
-Traffic Records Forum-$3,000

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The focus of LTRC on highway safety-related research has increased over the past 10 years as Louisiana adopted the strategic vision “Destination Zero Deaths” and committed in 2009 to halve fatalities and severe injuries by 2030. The Louisiana Strategic Highway Safety Plan (SHSP) uses a comprehensive, data-driven, multidisciplinary approach to identify the most severe traffic safety problems and the most effective approaches to solve them.

Objective(s): The purpose of this project is to provide long-term professional assistance to the Louisiana Department of Transportation and Development (DOTD) on the management and conduct of research for special studies-related matters. Projects to be managed can include safety and other special studies, as necessary.

Expected Benefits: The benefits of this project include specialized technical expertise for the management of ongoing research program to investigate special studies questions, especially in the area of highway safety.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1. Plan, develop, and manage the assigned LTRC research work program in the special studies/safety.
Task 2. Provide authoritative review of contract research in the area of special studies/safety.
Task 3. Coordinate efforts to disseminate and implement the research findings.
Task 4. Conduct transportation engineering research projects, as needed.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1. Continue to plan, develop, and manage the assigned LTRC research work program in the special studies/safety.
Task 2. Continue to provide authoritative review of contract research in the area of special studies/safety.
Task 3. Continue to coordinate efforts to disseminate and implement the research findings.
Task 4. Continue to conduct transportation engineering research projects, as needed.

Title:	**LTRC Proposal for the Support of Research and Development in ITS/Traffic**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000281**	Project Start Date:		7/1/2019
Research Project Number:	19-1ITS	Completion Date	(original)	6/30/2021
Research Agency:	ULL	Completion Date	(revised)	6/30/2027
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$872,706
	(revised)	$3,905,189
Est. Expended to Date		$174,138
FY 2024 - 2025 Budget		
FY Funds	(original)	$103,000
	(revised)	$174,138
Est. FY Expenditure		$174,138

Estimated 2025-2026 Budget		
Total		**$103,000**
Salaries		$103,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: To conduct research for special studies-related matters, specifically for Intelligent Transportation System (ITS) and traffic engineering related topics.

Objective(s): The objective is to provide long-term professional assistance to DOTD on the management and conduct of research for special studies-related matters, specifically for ITS and traffic engineering-related topics. No specific research documents will be produced from this project. However, each study identified under this project will have its own proposal developed, complete with objectives, scope of work, deliverables, and amount/resources required to undertake the study.

Expected Benefits: It would benefit all the designers, planners, decision makers, and stakeholders especially in DOTD's ITS and traffic engineering areas.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Continue with Task 1: Re-Evaluate the Vision of LTRC's Intelligent Transportation System (ITS) Laboratory and Re-align with the Transportation Needs of LTRC and DOTD to Better Serve the Public.
Continue with Task 2: Develop Research Protocols and Initiatives.
Continue with Task 3: Strategically Plan Own Project Schedules and Quantify Resources to Participate in Research Projects.
Continue with Task 4: Coordinate Information.
Continue with Task 5: Assume Leadership Roles in Forming and Maintaining Productive Working Relationships.
Continue with Task 6: Build and Maintain a Strong Research Program.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue with Task 2: Develop Research Protocols and Initiatives.
Continue with Task 3: Strategically Plan Own Project Schedules and Quantify Resources to Participate in Research Projects.
Continue with Task 4: Coordinate Information.
Continue with Task 5: Assume Leadership Roles in Forming and Maintaining Productive Working Relationships.
Continue with Task 6: Build and Maintain a Strong Research Program.

Title:	**Ultra High Performance Concrete Application In Link Slabs For Crack Mitigation**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000503**	Project Start Date:		1/15/2024
Research Project Number:	24-1ST	Completion Date	(original)	1/14/2026
Research Agency:	LSU	Completion Date	(revised)	
Principal Investigator:	Ayman Okeil			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$249,995
	(revised)	
Est. Expended to Date		$108,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$65,480
	(revised)	$15,000
Est. FY Expenditure		$60,000

Estimated 2025-2026 Budget		
Total		**$107,000**
Salaries		$94,000
Consumable Supplies & Materials		$11,000
Equipment	(non-expendable)	
Travel		$2,000
Other		

BUDGET JUSTIFICATIONS

Supplies: The cost of supplies is mainly for materials (steel fibers, fly ash, etc.) used for testing UHPC mix trials in the lab to support the research.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The performance of link slabs under different scenarios was investigated in a field study of the Ouachita River bridge through LTRC Project 14-1ST. It was found that link slabs perform well in a floating span configuration up to a segment length of 540 ft. Due to the tension experienced by these link slabs, transverse deck cracking along the gap between adjacent spans was observed. It was also found that notches in the deck did not arrest cracks as was hypothesized.

Objective(s): The objective of this project is to investigate the feasibility of using UHPC in link slab regions of bridge decks.

Expected Benefits: Extending the service life of bridges in general, and bridge decks in particular, is of great importance to bridge owners. Bridge decks are known to deteriorate faster than their supporting beams. Eliminating deck cracking, especially in link slabs in the vicinity of girder ends can have a great impact on the longevity of the deck, and consequently the entire bridge. This will translate into savings related to maintenance costs and even replacement costs.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 2 - Several UHPC mixes suitable for link slab applications were tested using locally procured ingredients whenever possible. Compression strength met the requirements of UHPC. Tension tests are currently ongoing.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 3 - Identify a bridge with link slab detail about to be bid for construction in consultation with DOTD.
Task 4 - Design an Instrumentation Plan based on the selected bridge configuration.
Task 5 - Start data collection, processing, and evaluation of UHPC link slab if bridge construction is completed.

Title:	**Evaluation of Embedded Pile Resistance on Scour Critical Bridges**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000457**	Project Start Date:		5/2/2022
Research Project Number:	22-3ST	Completion Date	(original)	5/1/2025
Research Agency:	LSU	Completion Date	(revised)	6/30/2026
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$383,004	**Total**		**$78,100**
	(revised)				
Est. Expended to Date		$240,400	Salaries		$75,100
FY 2024 - 2025 Budget			Consumable Supplies & Materials		$3,000
FY Funds	(original)	$78,500	Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure		$77,300	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Louisiana DOTD frequently evaluates channel geometry to determine if scour has impact on embedded foundation. In many cases, the resistance of embedded piles' estimated using nearby soil borings and on same static analysis methods used to design piles have shown that the pile resistance in many cases is less than the dead load reaction for the given pile. It is possible that the static equilibrium design methods are not adequate for this type of bridge evaluation that needs investigating.

Objective(s): 1) Complete additional structural load tests to confirm whether a bridge is safe to traffic load. 2) Explore methods to evaluate resistance of embedded piles for bridges subjected to critical scour. 3) Evaluate direct cone penetration test (CPT) methods to determine the best method for estimating the embedded pile resistance. 4) Incorporate long-term effect of pile resistance (scour, setup). 5) Identify bridges that will be replaced to confirm the best method by loading pile prior to demolition.

Expected Benefits: A standardized method of estimating the geotechnical resistance of embedded piles will help provide a more rapid response in determining whether it is safe or not to load post a bridge after any scour event. This w ill help ensure the safety of bridges to vehicles and passengers prior to open the bridge to traffic, and help prioritize bridge replacement projects.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1- conducted more literature review relevant to methods and techniques for evaluating the current resistance of in-place piles for in-service bridges.

Task 2- Identified four bridges to be demolished to cut and conduct static pile load test, and prepared general notes on cutting and conducting static load testing of a selected pile for inclusion on design plan of the 4 bridges that to be demolished. Prepared and signed design plan for conducting static and dynamic load tests on piles at the Vermilion river Bridge (project # H.014560). We are waiting to start the project for field testing. Conducted load tests on two model piles (10 ft. long and 4-inch diameter) at the Pavement Research Facility (PRF) site to evaluate the effect of consolidation and aging setup on pile's capacity.
Installed additional eight model piles at different locations in Louisiana state and conduct static pile load tests on them at different times to evaluate the effect of consolidation and aging setup on pile capacity.

Task 3- Performed CPT and seismic CPT (SCPT) tests on the seven proof load test bridges to obtain soil information and properties close to the pile bent, and performed CPT and SCPT on the four potential bridge site to be demolished.

Task 4- Analyzed the results of seven proof load tests and corresponding CPT/SCPT data for the seven sites for evaluating the ultimate capacity of tested piles. Analyzed the results of CPT and seismic CPT tests for Vermilion river Bridge site. Started analyzing the results of static load tests conducted on the model test piles.

Task 5- Analyzed 14 fully instrumented test piles using the top-performed 8 direct pile-CPT methods. Collected data from literature on pile load tests that were tested up to 30 years after installation. Collected pile load test data from literature for 5 piles subjected to long-term aging and scour. Continued updating the curves of consolidation and aging setup with time. Continued evaluating the effect of pile installation on the surrounding stress state and the effect of scour on the reduction in pile capacity using ABAQUS software.

Task 6- Prepare instrumentation plan at the project at Vermilion river Bridge (project # H.014560).

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 2- Continue identifying bridges with critical scour to conduct additional proof load tests. Identify new bridges to be demolished to cut and conduct a single static pile load test. Identify new bridges to be demolished to cut and conduct a single static pile load test to evaluate the long-term "aging" pile capacity. Continue conducting static load tests on the ten model test piles (10 ft. long and 4-inch diameter) at PRF site and other project sites to evaluate the effect of consolidation and aging setup on pile capacity.

Task 3- Perform CPT and seismic CPT tests through the bridge deck for any new proof load test sites and/or any potential bridges to be demolished to obtain soil information as close as possible to the pile bent(s) in question.

Task 4- Continue analyzing the CPTu and seismic CPT tests for any new proof load tests and/or single static load test on demolished bridge sites.

Task 5- Continue evaluating the potential use of seismic CPT tests for extrapolating the incomplete load-displacement curves from proof load tests.

Task 6- Continue collecting as much as possible pile load tests from literature that were tested up to 30 years after pile installation. Continue analyzing the collected data from literature on pile load tests that were tested up to 30 years after installation. Continue analyzing the collected data for consolidation and aging setup effects. Continue simulating the effect of pile installation on the surrounding stress state and the effect of global and local scour on the reduction of pile capacity using ABAQUS software.

Task 7- We are waiting to start the project at Vermilion river Bridge (project # H.014560) to final and execute the instrumentation plan.

Title:	**Redesign of Innovative gate Arms (Ramp Closure Gate)**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000523**	Project Start Date:		7/1/2024
Research Project Number:	24-2ST	Completion Date	(original)	9/30/2025
Research Agency:	Texas A&M Transportation Institute (TTI)	Completion Date	(revised)	
Principal Investigator:	Sofokli Cakalli			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$117,596	**Total**		**$65,480**
	(revised)				
Est. Expended to Date		$25,202	Salaries		$29,500
FY 2024 - 2025 Budget			Consumable Supplies & Materials		$33,862
FY Funds	(original)	$86,000	Equipment	(non-expendable)	$485
	(revised)	$52,116	Travel		$1,633
Est. FY Expenditure		$52,000	Other		

BUDGET JUSTIFICATIONS

Supplies: Supplies: Proving Grounds Research Facility testing services - $28,846
Reproduction of test results - $51
Vendor to provide construction fabrication/materials services - $4,000
Computer Operations (Computer equipment usage fee and network support services) - $565
RELLIS runway usage for proving grounds testing - $400

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Ramp Closure Gate design that was evaluated by TTI did not pass MASH (H.014518). To be efficient the system must pass MASH and be able to remain on the roadways so that they can be deployed rapidly when a closure is declared.

Objective(s): Conduct an evaluation of the existing Ramp Closure Gate design and propose a redesign that meets the functional requirement and passes MASH. The final design should utilize a majority of materials currently stocked by the Department.

Expected Benefits: To streamline the response to severe weather incidents and to greatly reduce the time required to close sections of the Interstate and other highways, which become unsafe to travel during severe weather, to ensure safety for the travelling public.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The following tasks have been completed:

Task 1 - Literature Review - A literature search summary report was submitted.
Task 2 - Redesign of Ramp Closure Gate - A design plan for the ramp closure gate was submitted.
Task 3 - Plan for Computer Simulations and Laboratory Testing - A testing plan was submitted.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 4 - Execution of Testing Plan - The research team will update the testing plan based on the feedback received in Task 3 and execute the computer simulations and crash testing plan.

Task 5 - Draft Technical Summary and Draft Final Report - A draft technical summary and draft final report will be submitted.

Task 6 - Final Presentation - Within two weeks after completion of Task 5, the research team will meet in person with the panel and deliver a power point presentation.

Task 7 - Revised Technical Summary and Final Report - After reviewing the feedback received in Task 5 and Task 6, a revised technical summary and final report will be submitted.

FHWA
Part B SPR Funded Research Program

PROPOSED RESEARCH

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Effect of SARA Asphalt Binder Fractionations on Laboratory Performance of Asphalt Mixtures**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**		**Budget Category:**		**FHWA**
SIO:	**DOTLT1000596**		Project Start Date:		7/1/2022
Research Project Number:	26-1B		Completion Date	(original)	4/30/2024
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Louay Mohammad				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$160,000	**Total**		**$115,401**
	(revised)				
Est. Expended to Date			Salaries		$113,901
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The 2018 LADOTD Specifications require a criterion for critical strain energy release rate, Jc, obtained from Semi Circular Bend (SCB) test as a part of its balanced asphalt mixture design. Asphalt binder aging has a significant effect on long-term performance of asphalt pavement. It causes embrittlement of asphalt binder due to the changes in rheological properties and chemical composition of asphalt binders.

Objective(s): The objective of this study is to compare chemical properties of asphalt binders characterized in LTRC Project 22-1B to the corresponding asphalt mixtures' SCB critical strain energy release rate, Jc.

Expected Benefits: Finding of this research will substantially increase understanding of the effect of chemical properties of various asphalt binders on intermediate temperature cracking resistance of asphalt mixtures. Specifically, those mixtures with increased use of recycled materials. Further, results will promote the use of sustainable technologies in Louisiana's flexible pavement construction.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1 – Conduct Literature review
Task 2 – Identify Asphalt Binders Characterized in LTRC Project 22-1B
Task 3 – Develop Asphalt Mixture Design and Conduct of Laboratory SCB testing
Task 4 – Perform Data analyses

Title:	**Performance Of Asphalt Pavements Containing Recycled Materials Under Accelerated Loading**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		1/1/2018
Research Project Number:		Completion Date	(original)	6/30/2020
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$350,000	**Total**		**$101,960**
	(revised)				
Est. Expended to Date			Salaries		$100,460
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Recycling of construction materials in flexible pavements is cost effective offers key element of sustainability in transportation infrastructure through reduction in use of virgin materials and eliminates needs for landfill areas. Reclaimed Asphalt Pavement (RAP) is commonly used because of its high compatibility with newly produced asphalt mixtures. Further, Reclaimed Asphalt Shingles (RAS) and waste plastics have become another promising candidate green construction material.

Objective(s): The objective of this research is to assess the applicability of “green” construction and performance alternatives such as RAS, increased amount of RAP, and waste plastics in Louisiana asphalt paving projects under accelerated loading.

Expected Benefits: Findings from this research results will be used to update asphalt mixture specifications in the Louisiana Specifications for Roads and Bridges. Further, results will promote the use of sustainable technologies in Louisiana’s flexible pavement construction.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1 – Conduct Literature review
Task 2 – Develop experimental factorial,
Task 3 – Perform laboratory asphalt mixture design and performance testing for mixtures to be used in Task 4
Task 4 – Prepare construction documents for construction of test lanes
Task 5 – Monitor construction of test lanes as per bid documents

Title:	**Use of Artificial Intelligence to estimate long term field performance of asphalt pavement in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$299,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$105,297**
Salaries		$103,797
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$1,500
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Louisiana Department of Transportation and Development (DOTD) conducts field surveys to document pavement distresses, with the collected data stored in the Louisiana Pavement Management System (PMS) database. Predicting long-term field performance of asphalt pavements is critical for optimizing maintenance schedules, extending service life, and minimizing lifecycle costs.

Objective(s): The objective of this study is to develop machine learning (ML) models to predict long term asphalt pavements in Louisiana. Candidate input data will include traffic information, pavement structural geometry and their material properties, and PMS distress survey data. These inputs will be used to train and validate ML models capable of providing accurate performance forecasts. Key variables and parameters influencing model accuracy will be identified to refine the design and application process.

Expected Benefits: The main product of this research will be an implementable algorithm to predicting long-term field performance of asphalt pavements. A user-friendly graphical user interface (GUI) will be developed, enabling designers to efficiently and cost-effectively predict asphalt pavement performance. This approach has the potential to significantly advance the adoption of data-driven approaches in pavement engineering.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Conduct a comprehensive literature review on studies relevant to the application of machine learning on asphalt mixture design and their long-term field performance;
Task 2: Collect JMFs, traffic data, and structural design for asphalt mixtures used in Louisiana from PMS database and identify field projects and collect their engineering performance; and
Task 3: Develop and train a machine-learning model for predicting the LTFP based on basic details about asphalt mixture design process

Title:	**BMD Evaluation of Field-Aged Asphalt Mixtures in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Saman Salari			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$63,163**
	(revised)				
Est. Expended to Date			Salaries		$63,163
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Louisiana DOTD utilizes a Balanced Mix Design (BMD) approach, including a five-day, 85°C aging protocol, to predict long-term asphalt pavement performance; however, the accuracy of these predictions against real-world field aging remains unverified. With numerous pavements now nearing a decade of service, this study aims to compare original BMD laboratory results with current field-aged core samples to assess the efficacy of the aging protocol.

Objective(s): The objective of this study is to compare laboratory-predicted and field-measured performance of Louisiana's asphalt pavements to evaluate the accuracy of the state's BMD aging protocols.

Expected Benefits: This study is expected to provide refined BMD specifications for Louisiana, leading to more accurate predictions of long-term pavement performance, improved roadway durability, and reduced maintenance costs through the validation and potential adjustment of current aging protocols.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following activities are expected to be performed
Task 1: Conduct a literature review
Task 2: Develop a test plan
Task 3: Execute the proposed test plan

Title:	**Enhanced Interaction between Crumb Rubber Modifiers and Asphalt Binder to Improve Performance**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2021
Research Project Number:		Completion Date	(original)	6/30/2023
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$210,000	**Total**		**$109,216**
	(revised)				
Est. Expended to Date			Salaries		$107,716
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Addition of crumb rubber (CR) particles to asphalt binders and asphalt mixtures is a sustainable construction technology that ensures waste tires are disposed of in an environmentally sustainable manner. Crumb rubber modifiers have been found to improve durability of asphalt pavements through increased rutting and cracking performance.

Objective(s): Objectives of this study are to identify thermally stable aromatic oils (AOs) for enhancement of interaction between CR particles and asphalt binder during CR modification of asphalt binders; (2) evaluate effects of CR type (ambient, cryogenic, proprietaries) and dosage rate on asphalt binder and mixture performance, and (3) evaluate effects of AO type and dosage rate on asphalt binder and mixture performance.

Expected Benefits: Findings from this research will offer incorporation of high contents of CR particles into asphalt binders and asphalt mixtures. This will reduce cost of highway construction and the adoption of recycled materials in construction practices.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Conduct Literature Review
Task 2: Develop a Statistically Based Laboratory Experiment
- Subtask 2.1: Chemical Characterization of CR Particles and Aromatic Oils
- Subtask 2.2: Asphalt binder Experiment (Base Asphalt binder + soaked [CR + AO])
  - Chemical, rheological, microstructural characterization
- Subtask 2.3: Asphalt Mixture Experiment
  - Characterization at high-, intermediate-, and Low-temperatures
  - Moisture susceptibility evaluation

Task 3. Perform Laboratory Experiment of Task 2

Title:	**Enhancement of Mechanical Properties of Asphalt Cements and Asphalt Mixtures Containing Waste Plastic**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2021
Research Project Number:		Completion Date	(original)	6/30/2023
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$349,000	**Total**		**$88,333**
	(revised)				
Est. Expended to Date			Salaries		$86,833
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: There is a growing interest in adoption of more recycled technologies for road pavement design and construction in order to protect the environment and to provide other economic benefits. In 2017, US EPA reported that approximately 35.5M tons of waste plastic was generated, which represents over 100% increase in waste plastic generation in 27 years. Despite benefits obtained from waste plastics, there are many challenges associated with their use in asphalt pavements.

Objective(s): The objectives of the research are to (1) evaluate low-, intermediate- and high temperature properties of waste plastics in asphalt cements and asphalt mixtures; and (2) assess economic and environmental impacts, health and safety, and long-term durability associated with use of waste plastics materials in asphalt mixtures.

Expected Benefits: It is anticipated that results from this research will recommend revisions to Louisiana's asphalt specifications for incorporating waste plastics in asphalt cements and mixtures. Further, results will promote the use of sustainable technologies in Louisiana's flexible pavement construction.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Project starts FY 25-26

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1. Conduct Literature Review and Survey
Task 2- Develop Statistically Based Laboratory Experiment
Task 3- Develop Compatibilizers and Waste Plastic Experiment
Task 4- Perform Asphalt Cement Experiment

Title:	**Enhancing Pavement Resiliency in Louisiana Due to Increased Moisture Levels from a Changing Climate**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2021
Research Project Number:		Completion Date	(original)	6/30/2023
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$299,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$101,960**
Salaries		$100,460
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$1,500
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: There is a significantly increasing risk of severe high tide flooding in many coastal and adjacent inland areas and exacerbating flood risk associated with hurricanes and coastal storms. Surface transportation systems in coastal areas, including roadway corridors, are becoming increasingly vulnerable to flooding, inundation and erosion. Inundation weakens pavement structure with varying degrees of structural deterioration that reduces pavements' service life.

Objective(s): The objective of this study is to evaluate the effectiveness of nature-based hybrid structures including dikes, wetlands and dunes incorporated with natural materials that are native to the area, with or without sheet piles, for reducing the impact of SLR and extreme events on roadways.

Expected Benefits: The developed practice is expected to provide an immediately implementable guideline on the design and construction of roads with the evaluated Natural and Nature-Based Features (NNBF) for achieving coastal roadways with enhanced resilience.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Conduct a comprehensive literature review on studies relevant to roadway damage caused by flooding events, and application of NNBF for improving the resilience of coastal roadways.
Task 2: Evaluate the effectiveness of nature-based hybrid structures such as dikes, wetlands and dunes incorporated with natural materials that are native to the area, with or without sheet piles.
Task 3: Quantify the frequency, magnitude and duration of inundation events with/without NNBF utilizing existing storm surge and wind wave models with flexible meshes

Title:	**Evaluation of RAP Fractionating by BMD Measures for Mixtures in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Saman Salari			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$180,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$84,030**
Salaries		$84,030
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The asphalt industry's drive for sustainability necessitates increased use of Recycled Asphalt Pavement (RAP), yet the inherent variability of aged RAP binder and aggregate limits its incorporation due to concerns about pavement performance. Louisiana's current specifications, which do not account for RAP fractionation, restrict RAP usage, hindering potential environmental and economic benefits.

Objective(s): The asphalt industry's drive for sustainability necessitates increased use of Recycled Asphalt Pavement (RAP), yet the inherent variability of aged RAP binder and aggregate limits its incorporation due to concerns about pavement performance. Louisiana's current specifications, which do not account for RAP fractionation, restrict RAP usage, hindering potential environmental and economic benefits.

Expected Benefits: This study is expected to enhance the sustainable use of recycled asphalt pavement (RAP) in Louisiana by demonstrating that fractionation allows for increased RAP incorporation without compromising pavement performance, potentially leading to revised state guidelines and improved infrastructure sustainability.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The following activities are expected to be performed
Task 1: Conduct a literature review
Task 2: Develop a test plan
Task 3: Execute the proposed test plan

Title:	**Evaluation of the effect of integral waterproofing agents (admixtures) on surface resistivity measurements**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$200,000	**Total**		**$100,000**
	(revised)				
Est. Expended to Date			Salaries		$100,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Waterproofing admixtures have the potential to affect surface resistivity measurements. The question is how much and in which direction do these different waterproofing admixtures affect the surface resistivity measurements.

Objective(s): (1) Laboratory testing and evaluate the short term and long tern effects of different waterproofing admixtures on concrete's surface resistivity. (2) Determine the amount of admixtures needed to reach the required surface resistivity.

Expected Benefits: It will provide additional tools in the toolbox for ready-mix producers for meeting and/or exceeding surface resistivity specifications. This will be very beneficial to the Department in the case of traditional items such as fly ash and slag become scarce.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Literature review
Task 2: Laboratory testing
Task 3: Data analysis

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Joint Deterioration Synthesis**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2020
Research Project Number:		Completion Date	(original)	6/30/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$18,751	**Total**		**$18,750**
	(revised)				
Est. Expended to Date			Salaries		$18,750
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Designers typically place expansion joints to relieve compressive forces in portland cement concrete (PCC) pavements and bridge decks for temperature cycles. Early joint deterioration reduces efficiency while posing performance problems for concrete and maintenance problems for state highway agencies (SHAs).

Objective(s): Determine the extent to which joint deterioration is problem for the Louisiana Department of Transportation and Development (DOTD) and conduct research to determine what other states specify in regard to joint deterioration mitigation.

Expected Benefits: Research findings from this study will provide more information about the joint deterioration mitigation and can also lead to improved design and construction of concrete expansion joints for DOTD.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

1. Literature review about joint deterioration.
2. Collect information about the extent to which joint deterioration is problem in Louisiana.
3. Collect information about how other states specify in regard to joint deterioration mitigation.
4. Final Report.

Title:	**The Mechanical Properties and Durability of Internally Cured Recycled Aggregate Concrete**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$200,000	**Total**		**$100,000**
	(revised)				
Est. Expended to Date			Salaries		$100,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Concrete recycling has been widely recognized as an effective way to solve the problems caused by the disposal of construction and demolition wastes. However, the use of recycled aggregates in concrete mixing is still limited due to the poor properties (i.e., low strength and poor durability) of recycled aggregate concrete. More efforts are needed to help improve the properties of recycled aggregate concrete.

Objective(s): (1) Laboratory testing and evaluate the influence of carbonation treatment on recycled aggregate's properties. (2) Laboratory testing and evaluate the influence of internal curing on recycled aggregate concrete's properties.

Expected Benefits: It will provide the Department a better way to recycle the waste concrete and improve the properties of recycled aggregate concrete for wider applications.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Literature review
Task 2: Laboratory testing
Task 3: Data analysis

Title:	**Using chemical admixtures to mitigate ASR for concrete mixes containing potentially reactive and reactive aggregates**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Zhen Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$200,000	**Total**		**$100,000**
	(revised)				
Est. Expended to Date			Salaries		$100,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Due to concerns of alkali-silica reactivity, the Department currently restricts the use of reactive aggregates in concrete and requires mitigation using SCM's for potentially reactive aggregates. This has reduced the overall amount of aggregates available for concrete production, thereby increasing costs and causing much debate between the Department and our industry partners. Recent advancements in admixture development, such as MasterLife ASR 1778, have shown successful mitigation of ASR in co

Objective(s): (1) Laboratory testing and evaluate the effectiveness of different chemical admixtures to mitigate ASR with Miniature Concrete Prism Test method. (2) Evaluate the cost efficiency of the tested chemical admixtures.

Expected Benefits: Allowing ASR mitigation with chemical admixtures, along with the implementation of electronic ticketing may enable the Department to allow more aggregates to be used in concrete, thereby lowering costs. This could also subdue growing concerns about the future availability of SCM's currently used for mitigation.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Literature review including using chemical admixtures for ASR mitigation, and ASR mitigation effectiveness evaluation with MCPT method.
Task 2: Laboratory testing
Task 3: Data analysis

Title:	**Streamlining DOTD Pile Load Test (PLT) Data Management: A Unified Framework for Efficient Upload, Reporting, and Visualization in within DOTD Geotechnical**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		8/1/2025
Research Project Number:		Completion Date	(original)	7/30/2027
Research Agency:		Completion Date	(revised)	
Principal Investigator:	Gavin Gautreau			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$185,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$54,621**
Salaries		$54,621
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Effective management of pile load test (PLT) data is critical for geotechnical engineers to assess foundation performance and ensure safety and compliance. Current practices involve fragmented data storage across multiple databases, inconsistent upload protocols, and limited integration with visualization and reporting tools. This disorganization results in inefficiencies, potential errors, and difficulties in accessing or analyzing data for decision-making, design, and related research.

Objective(s): DOTD would benefit from a more streamlined solution to organize, manage, and visualize PLT data. The primary objective is to develop a unified, user-friendly interface for managing PLT data with connections to OpenGround Cloud. A goal is to enable the systematic organization of multiple databases, streamline data uploads, and enhance the generation of interactive and static reporting outputs.

Expected Benefits: A unified framework offers numerous benefits for DOTD, enhancing both efficiency and effectiveness in managing PLT data. By standardizing processes, it will significantly reduce the time and effort required, resulting in substantial efficiency gains. Accurate, real-time data visualization and reporting will empower engineers to make well-informed decisions regarding foundation design and performance. Connections to OpenGround Cloud will benefit data accessibility and enable analysis and audits.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The project has not started.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The project will gather information and resources to begin the project.

Title:	**Compaction Quality Assurance/Quality Control (QA/QC) using the Lightweight Deflectometer (LWD)**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		10/1/2025
Research Project Number:		Completion Date	(original)	9/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Nick Ferguson			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$68,329**
	(revised)				
Est. Expended to Date			Salaries		$68,329
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Current QA/QC specifications for road base courses and subgrades are based on moisture content and density criteria. Field nuclear moisture-density gauges (NDG) are often used for QA/QC. These devices are expensive to maintain and operate. The LWD is another potential tool for QA/QC in these applications, based on mechanistic or performance properties of the soil (deflection under load), vs materialistic properties (density and moisture).

Objective(s): This research will investigate the implementation of the LWD as an acceptance tool within DOTD. The LWD measures the dynamic deflection modulus of a layer. These load-deflection tests can be related to the performance of a layer. The research will conduct a matrix of test to establish confidence in using the LWD. The research matrix will compare the LWD against the NDG, the DCP, and a series of rolling patterns to establish pass/fail limit criteria; and include pros, cons, and cost information.

Expected Benefits: Developing and implementing an LWD specification and acceptance criteria for Louisiana would allow for modulus based QA/QC, which more relates/directly relates to performance. I.e. how does a pavement layer perform under a traffic load (Load-Deflection). It would also allow for non-nuclear based QA/QC testing. The LWD could provide the department a low-cost, easy to use device for acceptance testing without tedious safety training and storage requirements of the NDG.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The project has not started.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

LTRC already owns these devices so comparison testing could begin once the testing matrix is developed.

Title:	**Enhancing Public Access and Utilizing Artificial Intelligence to Digitize, Grow, and Share DOTD Geotechnical Data**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		8/1/2025
Research Project Number:		Completion Date	(original)	7/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Gavin Gautreau			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$225,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$46,000**
Salaries		$46,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: DOTD manages a vast repository of geotechnical data and documents. Deep bridge borings and cone penetration tests (CPT) are valuable data, as these documents characterize the soil at locations across the state for design of highway structures. LTRC/DOTD has made strides through recent geotechnical database projects to standardize and organize the data. DOTD faces challenges in making this data accessible to the public and growing the historical dataset.

Objective(s): The primary objective of this research is to develop a secure, user-friendly framework and interface for public access to geotechnical data while addressing technical challenges. A way to facilitate not only information but also digital log-data via a subsequent page on the same interface is a longer-term goal.
Additionally, computer advancements allow for the digital extraction of geotechnical data more easily, growing the DOTD historical dataset from information to data is an objective.

Expected Benefits: This research will enable DOTD to enhance public transparency and improve access to valuable geotechnical information/data without compromising security or exposing sensitive engineering information or other DOTD data. Significant benefits include improving efficiency through the reduction of manual data extraction efforts, saving both time and resources. The project will enhance decision making by transforming historical PDF into structured data to enable faster and more informed planning.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The project has not started.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Gather resources and begin the project.

Title:	**Update on Evaluating the Magnitude and Time Rate of Consolidation Settlement of Embankments and other Infrastructures from Piezocone Penetration Tests (PCPT)**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		3/14/2023
Research Project Number:		Completion Date	(original)	3/29/2023
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$200,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$61,300**
Salaries		$61,300
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The construction of embankments on soft soils requires accurate estimation of magnitude and rate of settlement to conduct rational and safe design. A previous study was conducted to evaluate several methods for estimating consolidation parameters from piezocone penetration test (PCPT), and a new method was proposed. The study was based on limited lab data and sites. New PCPT methods were developed since then. The developed embankment settlement software was never finalized, verified and tested.

Objective(s): The main objective of this research study is to update methods for accurate estimation of the magnitude and time rate of consolidation settlement of embankments and other infrastructures over cohesive soils from piezocone penetration test (PCPT) data and dissipation test data, and to upgrade, verify, and finalize the developed software to include in-situ PCPT data, standard penetration test (SPT) data and laboratory-evaluated soil boring data.

Expected Benefits: This study will provide an updated on the best methods for estimating the magnitude and time rate of consolidation settlements utilizing the piezocone penetration and dissipation tests for use in Louisiana. The findings of this study will significantly help improve the estimation of settlements for embankments, MSE walls, Bridges and other infrastructures for safe analysis and design, which can help reduce the construction cost, and result in more resilient geotechnical infrastructure.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Task 1- Conduct comprehensive literature review on relevant work on estimating the consolidation parameters and embankment settlement from the piezocone penetration and dissipation test data. Task 2- Identify new construction embankment sites for field instrumenting and monitoring of consolidation settlement with time. Task 3- Drill boreholes to retrieve soil samples for laboratory consolidation tests, and conduct in-situ piezocone penetration and dissipation tests to evaluate the consolidation parameters needed to calculate the magnitude and time rate of consolidation settlement of cohesive soils as w ell as the value of overconsolidation ratio (OCR). Task 4- Start analyzing the laboratory and PCPT data for estimating the magnitude and time rate of consolidation settlement of monitored embankments using the different PCPT methods.

Title:	**Use and Interpretation of Seismic Piezocone Penetration Testing (SCPTu) for Geotechnical Site Investigation**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		1/1/2018
Research Project Number:		Completion Date	(original)	12/31/2020
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Murad Abu-Farsakh			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$200,000	**Total**		**$20,000**
	(revised)				
Est. Expended to Date			Salaries		$20,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The piezocone penetration test (CPTu) is a preferred in-situ test for subsurface investigation. The addition of geophone to CPTu (SCPTu) will enhance the geotechnical investigation by providing four independent measurements: tip resistance, sleeve friction, porewater pressure, and shear wave velocity (Vs). The Vs can be used to evaluate small-strain shear modulus (Go), which is appropriate to analyses of foundation systems, retaining walls, and problems involving cyclic and seismic loadings.

Objective(s): The objective of this study are: identifying available methods to evaluate small-strain shear modulus (Go) and damping coefficient (C) from SCPTu; conducting SCPTu tests on selected sites; modify/develop models to evaluate Go and C for Louisiana soils; apply Go and C values to evaluate pile capacity using PDA and CAPWAP cases; develop load-deformation curves for selected test piles for comparison with measured data; and develop model to evaluate undrained shear strength (Su) from SCPTu data.

Expected Benefits: The proposed research project will help the LA DOTD to better evaluate the initial shear modulus (Go) and damping coefficient of subsurface soils for various design applications, such as the dynamic analysis of driven piles and the establishment of load deformation curves of piles. This is expected to result in cost effective and safer axial and lateral capacity design of piles.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1 - Conduct comprehensive literature review on the use of Seismic Piezocone Penetration Testing (SCPTu) for geotechnical engineering applications such as evaluating the static and dynamic soil properties; evaluate small-strain shear modulus (Go) and damping coefficient (C); evaluate the undrained shear strength, Su; establish pile load-deformation curve, etc.

Task 2 - Identify old and new project sites for conducting Seismic Piezocone Penetration Testing (SCPTu) and soil borings.

Task 3 - Start collecting in-situ test data for selected sites using SCPTu.

Task 4 - Start collecting soil samples for laboratory testing to evaluate the Go and C from samples retrieved from soil borings of same sites.

Title:	**Performance Evaluation of Flexible Pavements Reinforced with Wicking Geotextiles (WG) build over Soft Subgrade Soils**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:			Project Start Date:		7/1/2025
Research Project Number:			Completion Date	(original)	6/30/2027
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Murad Abu-Farsakh				

BUDGET STATUS

Total Budget				**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000		**Total**		**$60,000**
	(revised)					
Est. Expended to Date				Salaries		$60,000
FY 2024 - 2025 Budget				Consumable Supplies & Materials		
FY Funds	(original)			Equipment	(non-expendable)	
	(revised)			Travel		
Est. FY Expenditure				Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Due to presence of soft subgrades with high water table in Louisiana, pavements experience some joints/cracks during construction and/or generated from repetitive traffic loads, which allow rainwater to infiltrate into pavement a short time, causing reduction in soil strength and modulus. The use of wicking geotextile (WG) that provides both gravity and capillary suction-induced (wicking) drainage in any saturated condition can significantly improve the mechanical properties of pavement material

Objective(s): The main objective of this study is to evaluate the potential benefits of incorporating wicking geotextiles (WG) to enhance the performance of flexible pavements constructed over soft subgrade soils. This study will specifically focus on the drainage and stabilization improvements provided by wicking geotextile against the moisture-related problems in the pavement layers and develop guidelines and procedures on how to use the WG to improve the performance of WG-reinforced flexible pavements.

Expected Benefits: The use of WG in flexible pavements, particularly those built atop soft subgrade, is expected to significantly improve the performance of pavements through laterally draining the infiltrated water from rainfall or capillary rise from high water table (in addition to reinforcement/stabilization), which will help maintain the pavement layers in a dry condition. As a result, the strength/stiffness of pavement materials will be enhanced, leading to considerable enhancement in pavement performance.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Conduct literature review on published work relevant to the use and application of wicking geotextiles in flexible pavements, embankments, and other infrastructures to mitigate moisture-related problems.

Task 2: Repair and maintain the in-box test device setup at the geotechnical engineering research laboratory of LTRC, connect it to hydraulic pump, and upgrade the data acquisition system.

Task 3: Start constructing and instrumenting WG-reinforced pavement sections of different configurations, geomaterials, and WG types inside the laboratory in-box test device at LTRC and conduct cyclic load test of these sections.

Title:	**Application of Drone Based Remote Sensing Technologies in Pavement Condition Evaluation**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		10/1/2025
Research Project Number:		Completion Date	(original)	9/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Jun Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$45,000**
	(revised)				
Est. Expended to Date			Salaries		$45,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Ground-based automated pavement survey systems typically cover only one lane per survey, limiting efficiency. Access issues arise during urgent assessments post-disasters like floods or hurricanes. Local agencies lack personnel and funds for fully automated systems, resorting to manual surveys, which are laborious, time-consuming, and costly. Researching and adopting emerging drone based remote sensing technologies could offer substantial economic, social, and environmental gains.

Objective(s): The objective of this research is to conduct a pilot study of using Drone based remote sensing technologies for pavement condition evaluation.

Expected Benefits: This research could enable state and local agencies to conduct network-level pavement evaluations more efficiently. Drone-based remote sensing is likely more cost-effective and capable of covering larger areas in less time.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Review existing literature and practices on drone platforms and remote sensing technologies for pavement condition evaluation, including photographs, infrared thermography, LiDAR, and multispectral imagery.
Task 2: Identify suitable drone platforms and remote sensing technologies for this study.

Title:	**Investigating Longitudinal Cracking in Louisiana's Concrete Pavements**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Jun Liu			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$50,000**
	(revised)				
Est. Expended to Date			Salaries		$50,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: In Louisiana, field observations by DOTD pavement design engineers and the LTRC research team reveal that longitudinal cracking is not only prevalent in jointed plain concrete pavements (JPCPs) but, in some cases, more severe than transverse cracking. This distress significantly impacts the performance and service life of concrete pavements. Given the frequency and severity of longitudinal cracking in Louisiana, an investigative study is essential to uncover the specific causes and contributing

Objective(s): a) Conduct field investigations to document longitudinal cracking in Louisiana's concrete pavements;
(b) Identify the root causes of longitudinal cracking in JPCPs specific to Louisiana;
(c) Develop actionable recommendations for JPCP design features and construction practices to mitigate and prevent longitudinal cracking.

Expected Benefits: The results of this study will offer practical recommendations to minimize/prevent longitudinal cracking in concrete pavements through improved design and construction practices. By addressing this issue, the study will enhance the durability and performance of JPCPs in Louisiana, reducing maintenance costs and extending pavement service life. These outcomes will directly benefit DOTD, contractors, and the broader transportation community by improving pavement quality and long-term efficiency.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Select representative concrete pavement sections exhibiting significant longitudinal cracking, as well as nearby sections without longitudinal cracking.
Task 2: Conduct a historical review of construction documents, and PMS videos and data for the selected pavement sections.

Title:	**Mitigate Buckling/Patch Blow Ups in Composite Pavement**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Qiming Chen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$50,000**
	(revised)				
Est. Expended to Date			Salaries		$50,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Districts 03 and 61 face recurring issues with asphalt patches in composite pavement as underlying PCC pavement expands and shifts. In hot weather, this causes blow-ups and shoving, requiring frequent grinding and eventual full-depth replacement. This ongoing cycle poses safety concerns and a significant maintenance challenge.

Objective(s): This research aims to determine the optimal asphalt patch length and/or relief joints to prevent blow-ups and shoving in composite pavements. It will assess their effectiveness in reducing maintenance needs, improving performance, and lowering costs. The study will also explore implementation within routine maintenance and pavement preservation projects, leading to standard details and pay items for construction.

Expected Benefits: Given Louisiana's extensive composite pavement mileage, establishing a minimum asphalt patch length or relief joint could significantly reduce maintenance costs and labor. If maintenance crews can apply these joints, the approach could also benefit future pavement preservation projects. Additionally, a new standard detail and pay item could be developed for inclusion in construction projects.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Conduct a literature review on published research related to buckling in composite pavements.
Task 2: Identify composite pavement sections for field study and develop an instrumentation plan for field monitoring.

Title:	**Maximizing Pavement Life by Implementing Perpetual Pavement Design in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**			**Budget Category:**	**FHWA**
SIO:			Project Start Date:		7/1/2025
Research Project Number:			Completion Date	(original)	6/30/2027
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	Zhong Wu				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$150,000	**Total**		**$33,000**
	(revised)				
Est. Expended to Date			Salaries		$33,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Perpetual pavements are long-life asphalt pavements designed to last over 50 years without the need for major structural rehabilitation or reconstruction. Research has shown that perpetual pavements are often more cost-effective than traditional pavement designs, providing greater long-term economic benefits. Therefore, it is essential to identify perpetual pavement design practices suitable for Louisiana, taking into account the state's local traffic conditions and environmental factors.

Objective(s): The objective of this study is to identify and establish typical perpetual pavement designs in Louisiana for DOTD implementation.

Expected Benefits: This study aims to provide data-driven guidance for DOTD to implement more durable and cost-effective pavement structures, ultimately extending pavement service life and reducing long-term maintenance costs.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Literature review

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Continue Literature review
-Pavement Project Selection for Performance Assessment
a)Identify suitable pavement projects from DOTD's Pavement Management System (PMS), prioritizing sections with extensive historical performance records and substantial traffic data
b)Establish explicit selection criteria emphasizing pavement age, traffic volume, climatic conditions across Louisiana, historical distress records, and maintenance history
c)Coordinate with DOTD to obtain comprehensive historical datasets, including detailed pavement structural information, distress history, past maintenance treatments, traffic loading patterns, and regional climatic data.
d)Conduct initial screening of pavement sections using PMS data to ensure diverse representation of structural types, geographic distribution, climatic influences, and traffic conditions.
e)Perform comprehensive field evaluations, including visual condition surveys, pavement coring, and Falling Weight Deflectometer (FWD) testing, to validate existing conditions and confirm data reliability.

Title:	**Pavement Markings Retroreflectivity - Enhancing Traffic Safety**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		10/1/2025
Research Project Number:		Completion Date	(original)	3/31/2027
Research Agency:		Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$290,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$100,000**
Salaries		$100,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: In order to advance safety and mobility, pavement markings must be visible during day and nighttime driving conditions. To retain their effectiveness and longevity, regular reflective pavement markers maintenance is required. The 2022 FHWA final rule requires applicable agencies to implement a method for maintaining pavement-marking retroreflectivity at or above minimum levels, providing a 4-year compliance date for implementing the method.

Objective(s): The objective of this research is to develop cost-effective strategies for restriping process to maintain pavement-marking retroreflectivity statewide to advance safety and mobility in Louisiana. An additional objective is to evaluate the traffic safety impact of pavement marking retroreflectivity.

Expected Benefits: The results will provide DOTD and other safety partners with essential information to guide implementation of cost-efficient methods for restriping and maintaining reflective pavement markings at or above minimum levels to enhance safety in Louisiana. Developing and implementing a methodology to maintain pavement marking retroreflectivity will help DOTD prioritize how to spend resources to maximize the life of pavement markings and to justify highway safety investments.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Safety of Median Openings on High-speed Highways in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		1/1/2026
Research Project Number:		Completion Date	(original)	12/31/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Elisabeta Mitran			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$275,000	**Total**		**$80,000**
	(revised)				
Est. Expended to Date			Salaries		$80,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Median openings are installed when there is a need to provide left turns, accommodate indirect left turns for other intersections, or facilitate U-turns at midblock locations. Installing median openings may also increase congestion and crashes. Understanding the safety effects of median openings on Louisiana highways is an important step in guiding the implementation of proactive strategies to eliminate fatal and serious injuries for all road users by reducing conflicts at high-speed locations.

Objective(s): The goal of this research is to perform a network screening approach in a safe system context to identify potential areas of safety improvement at median openings on high-speed highways in Louisiana and prioritize locations for systemic safety improvements. Research objectives are to identify risk factors contributing to median opening crashes, screen and prioritize median opening locations on high-speed facilities to reduce conflicts, and prioritize locations for J-turn retrofitting.

Expected Benefits: Developing a data driven network-screening approach to identify locations for safety improvement can help DOTD to prioritize and plan where to put restricted treatments, and retrofitting wide median openings on high-speed facilities to reduce conflicts. In addition, the findings of this project could provide DOTD with useful information for future development of access management policies.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Autonomous Trucking Regulatory Landscape Review**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000589**	Project Start Date:		8/1/2024
Research Project Number:	25-3SS	Completion Date	(original)	7/31/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$250,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	$100,000
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$100,000**
Salaries		$100,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Autonomous vehicles are expected to provide several benefits including improved safety, a reduction in roadway fatalities; improved quality of life, access and mobility; reduced energy use and improved supply chain management. Innovation in AV technology has seen great leaps over the last decade. However, this innovation requires oversight by government to ensure safety, and protection of the public interest.

Objective(s): The research should also answer questions related to the minimum functional requirements for the navigation, localization, planning, and control systems of AVs in Louisiana. It informs on what DOTD must do to leverage AV operations for TSMO. It will provide recommendations for autonomous truck policies and regulations to facilitate the safe and efficient development and adoption of autonomous truck technologies throughout the state of Louisiana to ensure both safety and accessibility.

Expected Benefits: This project will provide LaDOTD with the necessary information so they can enhance the innovation, safety, and efficiency of LA's transportation system and supporting the efficient movement of trucks

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

To be determined by Project Review Committee (PRC).

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Complete proposal.
Approval of proposal by PRC.
Start of project.

Title:	**Assessing Louisiana's Facilities' Preparedness for Autonomous Trucks**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$250,000	**Total**		**$100,000**
	(revised)				
Est. Expended to Date			Salaries		$100,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Automated vehicle (AV) technologies are currently being developed at a fast pace. Major companies are currently developing and testing commercial truck AV technologies through pilots and demonstrations across the globe. To fully utilize and obtain the full benefits of autonomous trucks, it is important to have adequate and improved truck facilities. These include facilities for parking, high-quality pavements, transfer hubs, intact road markings, road signs and signals, charging stations, etc.

Objective(s): The proposed research will investigate truck facilities in Louisiana and assess their readiness for autonomous trucks. Ultimately, the research will propose policy guidelines to be adopted by the DOTD and other partner agencies to guide truck facility readiness for the operation of autonomous trucks in Louisiana.

Expected Benefits: The research will highlight the state of truck facilities and show infrastructure gaps that have to be filled in readiness for autonomy. The results of the research will guide DOTD to develop and improve truck facilities across the state to accommodate autonomous trucks.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Evaluation of Queue Warning Systems in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		11/1/2025
Research Project Number:		Completion Date	(original)	10/31/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$250,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$80,000**
Salaries		$80,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Queue warning systems inform drivers of the presence of congested conditions downstream using warning signs and flashing lights. This enables drivers to anticipate an upcoming situation requiring braking to avoid queue-related collisions. Louisiana has installed queue warning systems along some interstates, including the I-10 and I-210. This research evaluates Louisiana's queue warning systems on Louisiana's interstates to assess their influence in reducing rear-end collisions.

Objective(s): The proposed research is to evaluate the effectiveness of queue warning systems installed on Louisiana's interstates in work zones and other locations. Specifically, the research will seek to:
• Investigate the state-of-the practice of queue warning along with innovative technologies and their relation to mobility and safety.
• Measure the safety effectiveness of queue warning systems in the state in preventing crashes.
• Provide guidelines on how to best use queue warning systems.

Expected Benefits: The research will provide DOTD with information about available queue warning technology and how effective they are. Also, the safety effectiveness analysis will provide a measure of the efficacy of queue warning systems installed on the state's interstates, which may provide evidence for further investment in the technology wherever it is warranted. Finally, guidelines will be provided to ensure that the highest benefits are reaped from future queue warning systems to be installed.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Expanding Adaptive Traffic Control Signal Systems: A Strategic Study for Louisiana's Arterial Highways**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Milhan Moomen			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$250,000	**Total**		**$100,000**
	(revised)				
Est. Expended to Date			Salaries		$100,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Peak hour congestion is consistently a problem in Louisiana, specifically on arterial highways. Several corridors have implemented adaptive traffic control signal systems, and have demonstrated reduced congestion and improved traffic flow. This study explores the benefits of such corridors for potential implementation in other locations.

Objective(s): The study will include a comprehensive review of coordinated adaptive signal systems in other states. Importantly, it will seek to determine if these adaptive signals include all road users in their design, as well as the skills and level of maintenance required for the signals. Benefits and costs of the signals will be estimated using local data. The study will also document the infrastructural needs for implementation.

Expected Benefits: The research findings will provide DOTD with data-supported criteria for expanding adaptive signal control systems to other high-priority arterial corridors across Louisiana, building upon the successful implementations in District 7. The study outcomes will establish a strategic framework for identifying suitable corridors and determining infrastructure requirements, enabling DOTD to make informed decisions for future adaptive signal system deployments.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Improve Data Resolution to Support Freight Planning in Louisiana**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		10/1/2025
Research Project Number:		Completion Date	(original)	9/30/2027
Research Agency:		Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$280,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$80,000**
Salaries		$80,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Freight Analysis Framework (FAF) database provides estimates of US freight flows and is continuously maintained by BTS and FHWA. The resolution of freight flow data in Louisiana needs to be improved (both geographically and categorically) to better support in-state freight planning activities. A methodology needs to be developed for Louisiana to support freight planning on a continuous basis.

Objective(s): This research is to develop a model or methodology to disaggregate the FAF flow data to the parish level (or even better) with inbound, outbound, and through traffic. The study will develop a cost-effective and replicable data collection plan if more data is determined needed to support the validation.

Expected Benefits: Results will help better estimate freight flow across a multimodal network and improve forecasts for future freight movements, which significantly influence freight planning in Louisiana. The data can also be used in assisting economic impact studies whenever freight components are involved. It can also help to estimate truck parking needs to resolve the severe parking shortage issue in Louisiana.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be discussed after development of project proposal.

Title:	**New LTRC Proposal for the Support of Research and Development in Transportation Planning**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$925,844	**Total**		**$38,813**
	(revised)				
Est. Expended to Date			Salaries		$29,813
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$9,000
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Travel: Travel budget is to allow PI and the rest of the staff to travel to the Transportation Research Board Annual Meeting, the ASCE International Conference on Transportation & Development, and other planning related travels to conferences

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This project provides long-term professional assistance to the Louisiana Department of Transportation and Development on transportation planning and other matters. Research is conducted on topics from LTRC's research program, technical assistance requests from DOTD, and external research solicitations.

Objective(s): The objective is to provide long-term professional assistance to DOTD on the management and conduct of research for special studies-related matters, specifically for transportation planning related topics. No specific research documents will be produced from this project. However, each study identified under this project will have its own proposal developed, complete with objectives, scope of work, deliverables, and amount/resources required to undertake the study.

Expected Benefits: The research results and technical assistance are expected to facilitate DOTD's transportation planning activities. It would benefit all the designers, planners, decision makers, and stakeholders especially in DOTD's transportation planning section. This project also affords LTRC the opportunity to support the enhancement of higher education.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1. Develop research protocols and initiatives. Perform a wide and complex variety of transportation planning related studies
Task 2. Strategically plan own project schedules and quantity of resources to participate in research projects.
Task 3. Coordinate information between relevant Louisiana universities, LTRC, and various LA DOTD personnel for successful completion of research studies.
Task 4. Assume leadership roles in forming and maintaining productive working relationships both internally and externally.
Task 5. Plan, develop, and manage a strong LTRC research work program in transportation planning.

Title:	**Supporting Efficient Public Transit on State Routes**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/1/2025
Research Project Number:		Completion Date	(original)	6/30/2027
Research Agency:		Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$280,000	**Total**		**$80,000**
	(revised)				
Est. Expended to Date			Salaries		$80,000
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Investments in public transit support congestion mitigation, economic development, and equitable access for all Louisianans. As Louisiana (and many other states) move toward context classification as a key framework for roadway decision-making, additional guidance is needed to provide for flexible, context-sensitive design while improving transparency and efficiency of permitting processes for local agencies seeking to enhance transit services.

Objective(s): Develop recommendations and model context-sensitive design guidance/policy language for DOTD and a resource guide for local government and transit agencies to facilitate improved coordination and collaboration across jurisdictions.

Expected Benefits: Findings will present opportunities to resolve design and logistical barriers to existing and future transit service provisions based on national best practice and data development; it will aid local governments and transit agencies while supporting efficiency and communication within DOTD and to external partners, and addressing safety issues associated with transit vehicle and pedestrian activity on and crossing state routes (where a disproportionate share of pedestrian fatalities occur).

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

To be determined based on the approved research proposal.

Title:	**Investigation of the elimination of bridge joints using link slabs**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		9/1/2025
Research Project Number:		Completion Date	(original)	3/1/2027
Research Agency:		Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$100,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$70,000**
Salaries		$65,000
Consumable Supplies & Materials		$4,000
Equipment	(non-expendable)	
Travel		$1,000
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Bridge joints are considered a maintenance hassle and cause localized roughness to users of the highway network. If several of these joints can be eliminated creating a link-slab; user experience would potentially rise while future maintenance costs would decline.

Objective(s): Proposed research includes a thorough review of existing bridge designs with a significant number of joints within the current DOTD Bridge Inventory. Upon reviewing the many designs, a study to determine which designs are most suitable to potentially remove joints creating link-slabs. The research will determine which designs are most suitable for this retrofit, potential retrofit procedures and designs, and the total number and spacing of joints that can be eliminated using this method.

Expected Benefits: Bridge maintenance will be responsible for implementation of results, if positive, with their rehabilitation contracts for joint removal/repair. The impact to the travelling public will be significant in terms of the improved rideabiltiy of our bridges. Economically, the reduced number of joints requiring reoccurring maintenance can be potentially reduced thus saving tax payer dollars.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1. Perform a literature search on the use of link slabs on bridges and their performances in other states. Submit a report to the project review committee (PRC).

Task 2. Work with the Bridge Maintenance section to develop criteria for reviewing the bridge inventory and to finalize a list of suitable candidate bridges to be placed on a list for link slab applications.

Title:	**Skew Detection System Replacement on Vertical Lift Bridges (Phase 3)**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 6**	**Budget Category:**	**FHWA**

SIO:		Project Start Date:		7/7/2025
Research Project Number:		Completion Date	(original)	7/7/2026
Research Agency:		Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$241,462	**Total**		**$241,462**
	(revised)				
Est. Expended to Date			Salaries		$208,663
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		$12,799
Est. FY Expenditure			Other		$20,000

BUDGET JUSTIFICATIONS

Travel: Task 4 - Site Visit (3 engineers, 2 days) $4,131
Task 6 - Site Visit for Testing (1 engineer, 1 week) $2,542
Task 6 - Site Visit for Commissioning (3 engineers, 1 week) $6,126

Other: Controls Vendor Subcontractor $20,000

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Phase 2 of the study included the design and installation of the recommended replacement technology systems and to compare and document their performance when operating on the Ellenders Ferry Vertical Lift Bridge over the Intracoastal Waterway, located in Calcasieu Parish.
Phase III of the study will resolve identified issues during Phase II, the implementation phase, and to integrate one or more of the recommended new technologies into the existing Ellenders Ferry bridge control system.

Objective(s): The objective of this work is to further improve and refine the recommended preferred alternative skew monitoring and detection technologies, to integrate them into the existing control system, and to prove their operability and long-term reliability at the Ellenders Ferry Vertical Lift Bridge.

Expected Benefits: 1) Design of Integrated Skew Monitoring and Existing Ellenders Ferry Bridge Control System.

2) Implementation for DOTD Skew Monitoring Remote Access.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
(1) Analyze the shortcomings of the Phase 2 installed communications network. This task will consist of troubleshooting the installed communications network including an in-depth analysis of the Phase II gathered data and obtained test results (2) Develop modifications, replacements, and reconfigurations of the communication transmission system to resolve all system network shortcomings. This task will include working closely with the Phase II systems vendor (Panatrol) and SMART relay manufacturers to arrive at a SMART relay that is specifically designed for our application. (3) Investigate and resolve issues related to the installed SMART relays and associated equipment. (4) Design and integrate upgrades to the Phase II Ellenders Ferry bridge control system. The proposed upgrades will not actively control skew of the bridge but will provide skew indication, monitoring, alarm and system trip functionality in the event of severe skew conditions. (5) Provide a system that enables DOTD to remotely access the installed skew system to analyze the performance of the monitoring system. This feature will be available for read-only access and with the optional ability to download captured data. (6) Provide final testing and commissioning for the upgraded new skew technology system to prove its operating accuracy and reliability. (7) Prepare final report documenting Phase III work. This report will include the results of the troubleshooting, the design upgrades, and the results and analysis of the skew monitoring testing performed. Additionally, recommendations for application of the system at other bridges will be included in the report.

Title:	**Extended Reality for Infrastructure Assessment**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000593**	Project Start Date:		7/1/2025
Research Project Number:	26-4TIRE	Completion Date	(original)	6/30/2026
Research Agency:	UNO	Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$37,921
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$37,921**
Salaries		$37,921
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Traditional condition assessments rely heavily on human-based visual inspections. While valuable, they are inherently subjective and limited in scope. These challenges highlight the need for more advanced, objective, and data-driven approaches to infrastructure assessment.

Objective(s): Leverage extended reality (XR), a combination of virtual reality (VR), and augmented reality (AR) and mixed reality (MR) to enable advanced visual examination of civil infrastructure.

Expected Benefits: The research results of this project have the potential to significantly enhance DOTD's traditional inspection methods.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Start the project and complete the following tasks:
Task 1. AR System Configuration and Integration
Task 2: Controlled Environment Testing and Field Implementation
Task 3: AI-Driven Inspection Tools Development
Task 4: Student Engagement and Research Dissemination including Final Report

Title:	**Revolutionizing Civil Infrastructure with Additive Friction Stir Deposition of Stainless Steel: A Predictive Thermomechanical Modeling Approach**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000592**	Project Start Date:		7/1/2025
Research Project Number:	26-3TIRE	Completion Date	(original)	6/30/2026
Research Agency:	LTU	Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$40,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$40,000**
Salaries		$38,100
Consumable Supplies & Materials		$1,650
Equipment	(non-expendable)	
Travel		$250
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: Traditional repairs such as welding and bolting often introduce residual stress and defects that reduce longevity of parts. Additive Friction Stir Deposition (ASFD) is an emerging solid-state additive manufacturing (AM) process that has the potential to revolutionize repair methods by providing cost-effective and durable solutions for repair of high-performance metal components.

Objective(s): Predict thermo-mechanical properties of 316 stainless steel by physics-informed machine learning (PIML)
Develop a Coupled Lagrangian-Eulerian (CLE) model for the ASFD process incorporating the temperature-dependent stainless steel properties
Optimize the process parameters (eg. rotational speed, traverse speed, and feed rates) based upon the temperature and deposition layer geometry
Validate the CEL model by comparing its results with experimental results obtained from the MELD 3D equipment

Expected Benefits: benefits of this research include a high accuracy PIML model for predicting thermo-mechanical properties of stainless steel, a reduction in missing data to improve CEL modeling capabilities for AFSD applications, and an efficient integrated computational framework for advanced materials and manufacturing processes

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

start the project and complete the following tasks:
Task 1. Material modeling through PMIL
Task 2: CEL model development and process parameter optimization
Task 3: Determine experimental validation

Title:	**Exploring AI Framework for Modernizing Bridge Management: Integrating GPT and Predictive Analytics for Enhanced Decision-Making**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000591**	Project Start Date:		7/1/2025
Research Project Number:	26-2TIRE	Completion Date	(original)	6/30/2026
Research Agency:	ULL	Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$40,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$40,000**
Salaries		$38,845
Consumable Supplies & Materials		$1,000
Equipment	(non-expendable)	
Travel		$155
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: With the expansion of transportation networks and the advancement in technology, bridge management has become increasingly complex requiring more efficient methods to handle large amounts of data. Traditional approaches struggle to keep pace with the growing demands of infrastructure maintenance, making automation and data-driven decision-making essential for optimizing bridge performance and longevity.

Objective(s): Identify and evaluate critical factors/parameters for effective bridge management protocols
Develop a preliminary AI framework using GPT for predictive analytics for modernizing bridge maintenance systems (BMS)
Elaborate how GPT will enhance decision-making by synthesizing inspection data, historical records, and predictive models
Establish a foundation for expanding AI applications in other infrastructure systems

Expected Benefits: This study will provide DOTD with a state-of-the-art, AI-driven bridge management framework that integrates both GPT-based automation and predictive analytics.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

The project will be started and the following tasks will be completed:
Task 1: Research and technology review
Task 2: Identification of critical parameters in Bridge Management Protocol
Task 3: Development of AI framework for bridge management
Task 4: Integration of GPT for automation
Task 5: Predictive analytics for maintenance needs
Task 6: prepare final report

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Towards Efficient and Robust Embodied Decision-making in Autonomous Driving**	**Project Status:**	**Proposed**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000590**	Project Start Date:		7/1/2025
Research Project Number:	26-1TIRE	Completion Date	(original)	6/30/2026
Research Agency:	LTU	Completion Date	(revised)	
Principal Investigator:				

BUDGET STATUS

Total Budget		
Total Cost	(original)	$39,891
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$39,891**
Salaries		$39,891
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: As the transportation community moves towards autonomous driving, reliable and effective motion planners will be critical. This project will be developing an intelligent motion planner capable of processing a vehicle's sensory observations to calculate safe and efficient control actions including speed and heading adjustments.

Objective(s): To develop an AI-based motion planner utilizing Large Language Models (LLMs) to guide an autonomous vehicle in navigation tasks.

Expected Benefits: Further research advancements in in autonomous driving, further development of STEM curriculum in the area of AI and autonomous vehicles, and potential development of next-generation transportation systems in the State of Louisiana.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

This project will be started and the following tasks completed:
Task 1: Encode the Driving Environment via a Scene Describer
Task 2: Integrate LLM into the Motion Planning Task
Task 3: Implementation of the proposed motion planner in an indoor testbed
Task 4: Preparation of a journal paper and final report

FHWA
Part B SPR Funded Research Program

POOLED FUND
LOUISIANA
LEAD STATE RESEARCH

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Ahead of the Curve - Migration from NCHRP to AASHTO Technical Training Solutions (TTS)**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: Pooled Fund: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000568**	Project Start Date:		3/24/2025
Research Project Number:	25-5PF	Completion Date	(original)	9/23/2026
Research Agency:	Applied Research Associates - ARA	Completion Date	(revised)	
Principal Investigator:	Jason Bittner			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$520,000
	(revised)	
Est. Expended to Date		$50,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$200,000
	(revised)	$50,000
Est. FY Expenditure		$50,000

Estimated 2025-2026 Budget		
Total		**$400,000**
Salaries		$392,000
Consumable Supplies & Materials		$4,000
Equipment	(non-expendable)	
Travel		$4,000
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: A survey conducted at the AASHTO RAC in 2023 indicated that more than half the states in attendance would support a pooled fund effort to move the AOTC material to TTS with the remaining attendees would probably support the effort, but need additional approval from their respective agencies first. This pooled fund effort will make this effort to re-offer the Ahead of the Curve training in a format for all DOT agencies in an on-demand format rather than a face-to-face for all participant.

Objective(s): The primary objectives of this pooled fund study are as follows:
•Transfer AOTC information from NCHRP to AASHTO
•Update and transfer existing information into AASHTO Technical Training Solutions (TTS) format
•Make all courses 508 compliant

Expected Benefits: Benefits include updating all courses to keep relevancy with ever changing FHWA, CFR, etc. In addition the program has no home, no teacher, etc. This allows the AASHTO RAC community to bring the content back in a readily accessible format through TTC in which many State DOTs already participate. This will allow training in an on-demand format for research managers, project managers, etc. within each State DOT.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

The project was started with a notice to proceed in February/March of 2025 with ARA. They have been working diligently moving the existing storyboards from the current 1.5-day in-person format to the AASTHO Technical Training Solutions (TTS) digital online self-directed learning format.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue reformatting the four (4) core courses and start the 14 elective courses. Additionally a new course will be developed regarding best practices for 508 compliance. Meetings will be held regularly with stakeholders to discuss, review, and finalize the course materials.

Title:	**Southeast Transportation Consortium - Phase II**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: Pooled Fund: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000501**	Project Start Date:		2/1/2023
Research Project Number:	21-1PF	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Tyson Rupnow			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$900,000
	(revised)	
Est. Expended to Date		$125,000
FY 2024 - 2025 Budget		
FY Funds	(original)	$200,000
	(revised)	
Est. FY Expenditure		$125,000

Estimated 2025-2026 Budget		
Total		**$250,000**
Salaries		$240,000
Consumable Supplies & Materials		$4,000
Equipment	(non-expendable)	$4,000
Travel		
Other		$2,000

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The current Southeast Transportation Consortium (STC) is nearing its second extension to round out 10 years of productive work. In that 10 year period at least 12 research products have been produced on a wide variety of topics of interest to the AASHTO Region 2 member states. Additionally, the technology transfer and idea sharing between the states has benefited all immensely.

Objective(s): (1) Discuss and screen potential research or synthesis projects; (2) Conduct research and synthesis studies; (3) Hold a multi-state peer exchange for up to five (5) STC member states on a topic of their choosing; (4) Communicate and disseminate research results and innovative practices through publications and other technology transfer activities;

Expected Benefits: Increased knowledge sharing as well as tackling common research interests between STC Member states.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Three synthesis topics were identified and funded:
25-1PF: Artificial Intelligence and Its Role and Use Within State Departments of Transportation
25-2PF: Balanced Mix Design - A 1-Year Check on Quality Control Testing and State DOT Adoption
25-3PF: Alternative Funding Sources for State Departments of Transportation Construction Programs Other than Gas Tax

An STC meeting and Peer Exchange was held in Auburn, AL April 15-17, 2025 and a final report was developed per the Code of Federal Regulations. Another two potential synthesis topics were identified.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Complete the three ongoing pooled fund projects and start an additional one or two synthesis topics of interest. Set-up next STC meeting and peer exchange in Florida for the March-April of 2026 timeframe.

Title:	**Implementation of Louisiana BMD Framework for QC/QA Specifications**	**Project Status:**	**Ongoing**

Funding Source:	**SPR: TT-Fed/TT-Reg - 5**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000565**	Project Start Date:		12/1/2024
Research Project Number:	25-4PF	Completion Date	(original)	5/31/2026
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	Louay Mohammad			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$342,886	**Total**		**$125,697**
	(revised)				
Est. Expended to Date		$80,000	Salaries		$124,197
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)	$80,000	Equipment	(non-expendable)	
	(revised)		Travel		$1,500
Est. FY Expenditure		$80,000	Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The 2016 LADOTD Specifications require a criterion for critical strain energy release rate, Jc, obtained from Semi Circular Bend (SCB) test as a part of its balanced asphalt mixture design. SCB test is performed on long term aged (LTA) compacted samples (5 days at 85°C). However, practices of QC/QA are time-sensitive. Thus, it is impractical to include LTA SCB samples during QC and QA testing.

Objective(s): The objective of this study is to develop a practical LTA protocol for asphalt mixes. The proposed LTA protocol is envisioned to be rapid, easy, and reliable, and requires shorter sample conditioning time for plant-produced asphalt mixture samples than AASHTO R30, which makes it practical for implementation of SCB in QC/QA testing

Expected Benefits: The main product of this research will be an implementable specification for the use of the SCB test in QC/QA practices in the state of Louisiana. It is anticipated that findings will complement the current 2018 Louisiana DOTD Specifications for Roads and Bridges, and provide efficient proactive measures to ensure that mixtures are produced and compacted as expected for an extended service life against cracking.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Task 1: Conducted a comprehensive literature review on studies relevant to long-term aging of asphalt mixtures and identify promising aging procedures;
Task 2: Identified two field projects and collected component materials of plant-produced asphalt mixtures; and
Task 3: Performed asphalt mixtures conditioning as per experimental factorial from asphalt mixture collected in Task 2; and
Task 4: Conducted laboratory asphalt binder and asphalt mixture experiments as per experimental factorial

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Task 1: Continue conduct of literature review on studies relevant to long-term aging of asphalt mixtures and identify promising aging procedures;
Task 2: Continue to identify field projects and collect component materials of plant-produced asphalt mixtures as per experimental factorial; and
Task 3: Perform asphalt mixtures conditioning as per experimental factorial from asphalt mixture collected in Task 2; and
Task 4: Conduct laboratory asphalt binder and asphalt mixture experiments as per experimental factorial
Task 5: Perform primary data analysis

FHWA
LTAP Funded Program

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Local Technical Assistance Program (LTAP)**	**Project Status:**	**Proposed**

Funding Source:	**LTAP: TT-Fed/TT-Reg**		**Budget Category:**		**FHWA**
SIO:	**DOTLT1000570**		Project Start Date:		7/1/2025
Research Project Number:	26-LTAP		Completion Date	(original)	6/30/2025
Research Agency:	LTRC		Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco				

BUDGET STATUS

Total Budget				**Estimated 2025-2026 Budget**		
Total Cost	(original)	$692,938		**Total**		**$692,938**
	(revised)					
Est. Expended to Date				Salaries		$385,480
FY 2024 - 2025 Budget				Consumable Supplies & Materials		$22,000
FY Funds	(original)			Equipment	(non-expendable)	$8,000
	(revised)			Travel		$68,000
Est. FY Expenditure				Other		$209,458

BUDGET JUSTIFICATIONS

Supplies: Supplies necessary to conduct technology transfer and workforce development activities for the LA LTAP program.

Supplies to be purchased for use only in research and technical activities.

Equipment: No individual item will exceed $5,000.

Travel: Travel: -Travel for statewide delivery of required courses for the transportation community
-Travel for professional development
-Travel for both pre and post event management activities
-Travel for assistance with onsite course registration and management
-Travel for statewide specification meetings
-Travel for statewide meetings

Other: Other: -Professional Services (Special Projects): $50,000
-Course material production (printing, copying, binding, etc): $21,000
-Professional services (instructors): $100,000
-Professional services (LPA on Line/CBT Module): $38,458

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: LTRC's Local Technical Assistance Program (LTAP) stimulates the progressive transfer of highway technology through training, work force development and technical assistance. A cooperative effort of DOTD, FHWA and LSU, LTAP leverages the expertise and resources of these organizations for the benefit of local transportation and public works agencies.

Objective(s): 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, technical assistance, and information dissemination.

Expected Benefits: LTAP offers training, technical assistance, newsletters, and a multimedia lending library.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

LTAP Training/Technical Assistance:
-Delivered 8 in-person offerings of "Roads Scholar #8A: Successful Supervision for Local Road Supervisor" courses [168 attendees]
-Delivered 8 in-person offerings of "Roads Scholar #5: Safety – A Common Sense Approach for the Public Works Employee" courses [242 attendees]
-Delivered 7 in-person offerings of "Roads Scholar #15: Safety for Public Works First Responders" courses [200 attendees]
-Delivered 4 in-person offerings of "Chainsaw Safety and Precision Felling" courses [419 attendees]
-Delivered 4 in-person offerings of "APWA Heavy Equipment" 2-Day workshops [94 attendees]
-Delivered 3 online "LPESA Virtual Showcases" via Zoom [70 attendees]
-Delivered Local Public Agency (LPA) training: 1 in-person offering of "LPA Qualification Core Training" 2-day course [35 attendees], & 1 offerings of the "LPA Construction, Engineering, and Inspection (CE&I)" [32 attendees]
-Provided one-on-one technical assistance to 2 local agencies upon request (Franklin Parish, Livingston Parish) in support of implementing pavement preservation practices; located 1 local agency draft plans for developing an Emergency Traffic Control Plan (City of Monroe)

LTAP Partnership Efforts:
-Conducted the LTAP Advisory Committee Meeting on August 12, 2024 to consult with key partners and local stakeholder representatives on necessary programmatic changes, new training topics, and other technical assistance needs they may have.
-Organized and facilitated the Fall 2024 [119 attendees] and Spring 2025 conferences [___ attendees] of the Louisiana Parish Engineers and Supervisors Association (LPESA); supported 4 Board Meetings and 1 General Assembly Meeting at PJAL Convention.
-Delivered 2 webinars as part of the "LPESA Virtual Showcase" series [33 attendees]
-Co-hosted with APWA Baton Rouge branch 4 series of 2-day training on Heavy Equipment Safety & Maintenance and Tractor Mower Safety [94attendees]
-Provided conference evaluation support and presented at the Louisiana Traffic Safety Summit [300 attendees]
-Provided support in and served as a Voting Member of the LTRC's Safety Research Problem Identification Committee (RPIC) and the Traffic Records Coordinating Council (TRCC)
-Presented as Keynote Speaker for the Louisiana Engineering Society (LES) Baton Rouge chapter
-Presented at the Office of the Governor's Rural Development Workshop, Transportation Curriculum Council Meeting, the Louisiana Traffic Safety Summit 2024, the Louisiana Transportation Conference 2025
-Actively engaged in conversations and meetings with the statewide EDC-Strategic Workforce Development Group
Continued promoting FHWA, DOTD, and LTRC programs and initiatives to local agencies including IIJA/BIL funding opportunities, Build a Better Mousetrap, Every Day Counts initiatives
-Attended the 2024 NLTAPA Annual Conference, 2025 NLTAPA South Central Region Meeting, and 2025 National Association of County Engineers (NACE) Meeting
-Engaged and network with peers in the Association for Talent Development (ATD), Women in Transportation Seminar (WTS), the Police Jury Association of Louisiana (PJAL), and Louisiana Municipal Association (LMA)
-Provided support in and served as Member of Capital Region's "Transportation Vision Green 2050 -Transportation Sector Focused Group for the Pollution Reduction Plan targeting the Baton Rouge Metropolitan Statistical Area
-Participated as one of the stakeholder panels of the NCHRP 20-24(146) Local and Tribal Agency Grants Toolkit and TRB's Transit Cooperative Research Program (TCRP) Project: B-57 Innovative Marketing and Customer Communication Strategies for Rural Transit

Communications and Outreach
-Underwent a brand refresh with new LTAP and LRSP logos; replaced all exhibition banners and secured new swag items
-Established increased social media presence by creating a LinkedIn Account: Louisiana LTAP Center
-Provided information on LTAP programs, training and technical assistance by exhibiting at the conventions of the Police Jury Association of Louisiana (PJAL) and Louisiana Municipal Association
-Produced and disseminated 4 quarterly "Technology Exchange" newsletters, 12 monthly "Local Connections" e-mail bulletins, many social media updates on LinkedIn and Facebook, numerous training and course announcement email bulletins as well as created and distributed and abundance of physical flyers and brochures for LTAP events and LTAP partner's events.
-Participated as guest interviewees in LTRC's newly launched podcast, Driving Force
-Worked with LTRC Publications Team to produce a 3-minute video promoting LTAP as part of DOTD-LTRC Section 33
-Launched "Innovate for Impact" campaign to enhance efforts to promote FHWA's Build a Better Mousetrap initiative

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
LTAP Training/Technical Assistance: -Deliver FHWA-developed training on "2023 Updates of the MUTCD" workshops [4 sessions] -Revise content and deliver offerings of "Roads Scholar #4: Temporary Traffic Control for Local Agencies" course [5 sessions] -Revise content and deliver offerings of "Roads Scholar #6: Heavy Equipment Safety & Maintenance for Local Agencies" course [5 sessions] -Deliver "Chainsaw Safety and Precision Felling" course [4 sessions] -Deliver series of Local Public Agency training workshops, involving the LPA Qualification Core Training (2-day training), and LPA Construction, Engineering, & Inspection (CE&I) (1-day training) courses [2 series] -Deliver "Basics of Work Zone Safety with Basic Flagger" mini-workshop upon request -Deliver "Heavy Equipment Safety" and "Tractor/Mower Safety" mini-workshops upon request -Deliver "Pavement Preservation/Road Surface Management" workshops by request -Continue to provide technical assistance to local agencies in support of implementing pavement preservation practices, drainage -Promote the LPA Online Training Portal to LPAs, project consultants, MPOs, SHSP teams, and other partner groups -Participate in Management [Leadership Program] Train-the-trainer to enhance LTAP's workforce development organizational excellence initiatives LTAP Partnership Efforts: -Organize and facilitate the Fall 2025 and Spring 2026 conferences of LPESA -Deliver joint training with the Louisiana Chapter of APWA [2 sessions estimated] -Deliver joint training with DOTD Highway Safety Section and FHWA Louisiana [3 sessions] -Support implementation and outreach activities associated with EDC-7 initiatives: Nighttime Visibility for Safety, Enhancing Performance with Internally Cured Concrete (EPIC2), Strategic Workforce Development, and Next Generation Traffic Incident Management: Technology for Saving Lives -Continue participating in LTRC's Safety RPIC and other relevant road safety efforts -Promote FHWA, DOTD, and LTRC programs and initiatives to local agencies -Participate in activities that support partner organizations and affiliates (APWA, TRB, LMA, LES, WTS, NACE and NLTAPA) -Re-engage the Metropolitan Planning Organizations in an effort to increase local stakeholder participation in LTAP's strategic workforce development and road safety efforts -Continue efforts as one of the stakeholder panels of the NCHRP 20-24(146) Local and Tribal Agency Grants Toolkit -Continue efforts as a panel member of TRB's Transit Cooperative Research Program (TCRP) Project: B-57 Innovative Marketing and Customer Communication Strategies for Rural Transit Communication and Outreach: -Provide information on LTAP programs, training and technical assistance by exhibiting at the 2026 Conventions of the Police Jury Association of Louisiana (PJAL) and Louisiana Municipal Association -Produce and disseminate 4 quarterly "Technology Exchange" newsletters, 12 monthly "Local Connections" e-mail bulletins, multiple social media updates on LinkedIn and Facebook, numerous training and course announcement email bulletins -Update the LTAP Communications and Outreach Plan, Communications Scheduler, website content, course workbooks, brochures and other marketing collaterals for LTAP events and partner agency events -Disseminate Section 33-LTAP's video and LTRC's Driving Force podcast to all stakeholders

FHWA
STP Funded
Technology Transfer & Education Program

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Training and Development Support Services**	**Project Status:**	**Ongoing**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000278**	Project Start Date:		7/1/2018
Research Project Number:	19-TDSS	Completion Date	(original)	6/30/2021
Research Agency:	LTRC	Completion Date	(revised)	6/30/2027
Principal Investigator:	Vijaya Gopu			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$441,453
	(revised)	$1,809,194
Est. Expended to Date		$144,340
FY 2024 - 2025 Budget		
FY Funds	(original)	$225,000
	(revised)	
Est. FY Expenditure		$145,000

Estimated 2025-2026 Budget		
Total		**$225,000**
Salaries		$210,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		$15,000
Other		

BUDGET JUSTIFICATIONS

Travel: Travel: -Travel for statewide delivery of required courses for the transportation community
-Travel for professional development
-Travel for both pre and post event management activities
-Travel for assistance with onsite course registration and management
-Travel for statewide specification meetings
-Travel for statewide meetings

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Training and Development Support Services will be involved in the management of the Louisiana Department of Transportation and Development's Structured Training Unit Learning Management System (LMS), which is a mandated system by the State of Louisiana Division of Administration.

Objective(s): This project will be responsible for coordinating and maintaining the LEO/LSO (Louisiana Employees Online/Learning Solution Online) system for the Technology Transfer and Training programs as well as other related training. The project will assist in implementing programs that are time sensitive and critical to the DOTD meeting the various training and program requirements.

Expected Benefits: Meet internal and external customer needs in order to provide time sensitive programs for the Louisiana Department of Transportation and Development (DOTD).

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Completed conversion to new LMS. Made adjustments to programs at the beginning of calendar year 2025 to support policy changes.
-Trained other staff to schedule CPTP training and monitor compliance with this mandatory training.
-Monitored compliance with DOTD training requirements, conducted outreach when necessary, and provided reporting to management as mandated by the state. Compliance was over 99%.
-Aided in rewriting training policy and produced a manual covering DOTD training requirements.
-Worked with team to streamline training manual request process, standardize manuals and reduce waste.
-Setting up new computers and network printers for users in OTS environment
-Installation and configuration of new software for users
-Continued aiding in programming of new training laptops
-Preparation for conferences and meetings
-Involved with replacement of current RMS system, keeping the old system working until replaced
-Involved with moving current VM servers to OTS environment

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Train staff to work with Loss Prevention and enhance reporting to achieve the highest level of year-round compliance.
-Work with team on Equipment Safety training procedures and provide tracking and reporting capability.
-Continue to support DOTD when modifications to training requirements and policies as needed.
-Continue to monitor and assist in efforts to maintain a high level of compliance with all required training.
-Continue documenting procedures, updating manuals and training and assisting others in our systems.
-Continue all IT support services for LTRC campus and employees.
-Aid in setup of new PCs replacing ones who's lease has expired
-Support for the new RMS once up and running.

Title:	**Technology Transfer Program and Operations (LSU)**	**Project Status:**	**Ongoing**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**30000320**	Project Start Date:		7/1/2015
Research Project Number:	08-1TSQ	Completion Date	(original)	6/30/2018
Research Agency:	LTRC	Completion Date	(revised)	6/24/2027
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$361,546
	(revised)	$2,712,073
Est. Expended to Date		$336,835
FY 2024 - 2025 Budget		
FY Funds	(original)	$505,802
	(revised)	
Est. FY Expenditure		$435,000

Estimated 2025-2026 Budget		
Total		**$523,727**
Salaries		$468,727
Consumable Supplies & Materials		$17,500
Equipment	(non-expendable)	$15,000
Travel		$11,250
Other		$11,250

BUDGET JUSTIFICATIONS

Supplies: Supplies necessary to conduct technology transfer and workforce development activities for the public information and media team.

Supplies to be purchased for use only in research and technical activities.

Equipment: This budget item is comprised of various items all not to exceed $5,000 on an individual basis.

Travel: Travel: -Travel for professional development
-Travel for both pre and post event management activities
-Travel for statewide photography and videography
-Travel for statewide meetings

Other: Contracts for external technology transfer initiatives.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This program is responsible for developing and maintaining publication design, graphic design, website, database maintenance, public relation press packages, Section 504/508 compliance, and editing of all media projects for the Louisiana Transportation Research Center and Louisiana Department of Transportation and Development on a statewide level. In addition, this program is responsible for the production of all reports and production pieces for the Louisiana Legislature.

Objective(s): The objectives of this study are to: Disseminate information on new technologies and methodologies to the Louisiana Department of Transportation and Development (DOTD) and other transportation-oriented agencies; improve communications on technical, transportation-related issues between the department and other agencies; encourage implementation of new procedures and technologies; and disseminate information on transportation subjects to appropriate managers and engineers in the department.

Expected Benefits: Dissemination of technology transfer, training, and research initiatives to the transportation community as a whole.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Began work on RMS enhancements through contract
    -Completed file upload error resolution
    -Anticipated rich text editor update
    -Anticipated LTAP/Elavon payment gateway update
    -Anticipated duplicate student error resolution
-Managed Adobe Cloud licenses for DOTD employees
-Support for all Section 33 users managing the Registration Management System
-Coordinated various mandatory PHP upgrades to LTRC servers
-Coordinated asphalt scholarship application process (ASCE and LAPA)
-Designed 4 issues of Technology Exchange for LTAP
-Managed online SASHTO scholarship application process; designed new poster advertisement
-Compiled, designed, and produced LTRC annual report (23-24)
-Maintained regular posting of all LTRC publications on website and social media channels
-Maintained accessibility requirements for all uploaded publications online
-Updated structured training webpages
-Facebook: 1,034 followers, LinkedIn: 1,289 followers, X: 202 followers
-97 social media posts (63,605 impressions on LinkedIn 7/1/24 – 3/25/24)
-Continued Employee Spotlight feature online
-Managed and coordinated LTC tradeshow
-Managed LTC Sponsorships
-Designed LTC event signs/coordinated sign printing
-Designed LTC print program
-Designed updated LTC pop-up banner with new logo colors
-Designed and coordinated production of updated mousepads with new logo
-Designed TRB poster template for engineers and researchers to use for poster sessions
-Designed podcast feature template to promote LTRC's new podcast and bi-weekly drops
-Designed parking pass template for use internally for TTEC visitors
-Designed 3 LTAP pop-up banners with new logo brand
-Created Adobe Spark pages to share on social media for LTRC and LTAP
-Pre-Flight and deliver 18 TRB Posters
-Pre-flight and deliver 15 Student LTC Posters
-Pre-flight and deliver 1 Geo Technical Poster
-Design/Produce 17 LTC Pop-up banners
-Design Calcasieu River Bridge Project coin
-Photography-
-LTC 2025
-ROADEO 2025
-LTAP Successful Supervision
-Various on-site events
-Film and Production- Training- Volumetric Truck Calibration-DOTD
-Film and Production- Training - AASHTO T316- Viscosity Tester – DOTD
-Film and Production- Training- LPA/CEI Recording- LTAP
-Film and Production- Annual Report Video Supplemental- Section 33 and Section 19 Program Spotlight- LTRC
-Film and Production- Training- Cyclic/SCB Test Incorporating Digital Image Correlation- LTRC
-Film and Production- Training- Highway Safety Training/Work Zone Safety- LTRC
-Film and Production- Gulf Research Program-Pitch video – LTRC
-Animation/Motion Graphics- ArcGis Permit Instructional video-DOTD
-Animation/Post Production- College Flyover Reroute video- DOTD
-Animation/Post Production- I10-210 Calcasieu Bridge Google Map Animations- DOTD
-2,100 YouTube subscribers
-Edited and published 9 Project Capsules
-Edited 13 Final Reports/Technical Summaries
-Published 11 Final Reports/Technical Summaries
-Published 4 Technology Today newsletters
-Created Adobe Express articles for all Tech Today issues
-Created and distributed Constant Contact emails for all Tech Today issues
-Developed and compiled mobile app content for LTC 2025, as well as providing operational support before and during the conference
-Wrote, recorded, edited, and published 14 episodes of "The Driving Force" podcast
-Edited 3 training manuals for LTRC's Internal Training Team
-Continued to apply disclaimer watermark for safety reports and stay updated concerning new disclaimer requirements
-Continued to apply accessibility requirements for all newly published work
-Continued to implement new Word template for all newly published work
-Continued to maintain document information form for state library liaison
-Updated Tech Today external and interdepartmental mailing lists to reflect new leadership and section heads, as well as expanding email distribution list
-Developed and published a press release for 2025 SASHTO scholarship winners

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
-Revise TTEC section of the website -Update pop-up posters for LTRC sections with updated branding -Layout 4 Tech Exchange newsletters -Maintain LTRC website and update as issues/needs arise -Continue to design online and publication pieces in line with LTRC branding -Continue to maintain LTRC's social media presence -Continued preparation and publishing of Project Capsules -Continued editing and publishing of Final Reports/Technical Summaries -Publishing of 4 Technology Today newsletters, including digital content distributed via Adobe Express, Constant Contact, etc -Continued writing, recording, editing, and publishing episodes of "The Driving Force" podcast -Continued editorial support for other work groups within Section 33 -Continued work on 508 accessibility issues for PDF documents -Complete server migration to OTS virtual machines/ stay current with PHP needs -RMS enhancements through Blue Streak contract -Course waitlist feature -Reporting feature enhancements -PMTS styling of RMS site -Enhancement to course listing layout and presentation

Title:	**Technology Transfer Registration Fees**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000573**	Project Start Date:		7/1/2025
Research Project Number:	26-TTRF	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$250,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$250,000**
Salaries		
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		$250,000

BUDGET JUSTIFICATIONS

Other: Statewide technology transfer and research activities related to workforce development.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: To provide cost effective transfer of technology and workforce development opportunities to Louisiana's parish and municipality and public works agencies through training, technical assistance, and information dissemination.

Objective(s): Strengthen the technology transfer, training, education, and other opportunities to Louisiana's parish and municipality and public works agencies.

Expected Benefits: Provide access to cost effective workforce development activities that will lead to better trained public works agencies.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Provided cost effective transfer of technology and workforce development opportunities to Louisiana's parish and municipality and public works agencies through training, technical assistance, and information dissemination.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue to provide cost effective transfer of technology and workforce development opportunities to Louisiana's parish and municipality and public works agencies through training, technical assistance, and information dissemination.

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**LA DOTD CO-OP Program**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000574**	Project Start Date:		7/1/2025
Research Project Number:	26-COOP	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$200,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$200,000**
Salaries		$200,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Louisiana Department of Transportation and Development (DOTD) Co-Op program is a cooperative endeavor between the DOTD and Louisiana universities with accredited engineering programs, providing practical experience to junior and senior level undergraduates through part-time employment in public transportation engineering work.

Objective(s): This program is intended to enhance the educational process by providing opportunities for participants to explore their interest in transportation engineering through practical experience; provide opportunities for DOTD to evaluate participants of this program as potential employees; and enhance the educational process by providing opportunities for students to explore their interest in transportation engineering through practical experience.

Expected Benefits: Student will have the opportunity to work in their related career field. Increase the students' employability in their career field of engineering. Increase the students' potential to advance within their career field.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-15 undergraduate students participated in the Co-op program at various DOTD districts/sections.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Place approximately 15 students in various DOTD districts/sections across the state;
-Continue end of semester presentations in a face-to-face or virtual format;
-Retain students in the Co-Op program each semester/quarter; and
-Attend/participate in engineering related career fairs held throughout the state of Louisiana

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**LTRC Student Worker Program**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000572**	Project Start Date:		7/1/2025
Research Project Number:	26-2TT	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$175,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$175,000**
Salaries		$175,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: To pay salaries for undergraduate students employed to provide support in fulfilling necessary job tasks on various Louisiana Transportation Research Center (LTRC) projects.

Objective(s): Employee undergraduate students in the field of research, technology transfer, education, and training.

Expected Benefits: Offer undergraduate students employment experience in research, technology transfer, education, and training in state government, specifically transportation, that will expose them to public service opportunities post graduation.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Thirty (30) undergraduate students were employed by LTRC to provide support in fulfilling necessary job tasks on various LTRC projects, research, technology transfer, training, and education initiatives.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue to pay for salaries for undergraduate students employed to provide support to various LTRC projects.

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Workforce Development Contracts**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000571**	Project Start Date:		7/1/2025
Research Project Number:	26-1WDC	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$4,262,407
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$4,262,407**
Salaries		$1,564,000
Consumable Supplies & Materials		$41,400
Equipment	(non-expendable)	$220,000
Travel		$49,600
Other		$2,387,407

BUDGET JUSTIFICATIONS

Supplies: Supplies to be purchased for use only in research and technical activities.

Equipment: Special purpose equipment to be purchased for use only in research and technical activities.

Equipment: Special purpose equipment to be purchased for use only in research and technical activities.
-$110K: Room EOL Replacements/Upgrades TTEC 101, 160, 175, 179
-$7K: Data Input Solution (TTEC 100)

Software/Licensing:
-$2K: Visix Support Renewal
-$10K: Articulate Subscription Renewal
-$5K: Adobe License Renewal
-$8K: Mazevo/EMS Software renewal
-$41K: ASTM Standards
-$31K: IHS Engineering Workbench
-$6K: EOS.web

Travel: Travel: Travel for statewide delivery of required courses for the transportation community.
-Travel for professional development
-Travel for both pre and post conference management activities
-Travel for assistance with onsite course registration and management
-Travel for statewide district trainer meetings
-Travel for course facilitation

Other: Contracts for external workforce development initiatives.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this study is to provide contractual services through federal, university, and private sector suppliers for continuing education, professional development, technical skills, software, leadership, management, and supervisory training. The scope of this project also includes providing individual registration fees for Louisiana Department of Transportation and Development (LADOTD) employees to attend workshops, courses, and conferences to enhance their professional and technical deve

Objective(s): Provide specialized support statewide to the DOTD as well as specialized services to departmental section heads in the delivery of training, creation of competency models, technology integration, technology transfer of technical and non-technical efforts, and special projects that represent a variety of stakeholders in Louisiana.

Expected Benefits: A platform to share ideas. Promotes innovative technology implementation throughout the transportation community. Enhances collaboration between the state, local, federal, university, and transportation community partners.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Held over 700 events, hosting approximately 7,500 attendees in the TTEC Building
-Hosted 2025 Louisiana Transportation Conference with 1,500 attendees and vendors
-Used EMS to schedule and report classes and attendee numbers for LTRC
-Switched EMS companies to save over $5,000 on annual subscriptions
-A total of 15 undergraduate students participated in the Co-op program at various LADOTD districts/sections throughout the School Year
-Hosted Co-op in person student presentations and video-conferenced other DOTD areas in the fall and spring
-Attended and participated in 9 career fairs and 3 engineering networking events
-Hosted Students for Success Series for Co-op students professional development
-One (1) EI hired into the Engineer Resource Development Program (ERDP) rotated through various LA DOTD sections and districts throughout Louisiana. This number is low due to low applications
-One (1) EI successfully hired into LA DOTD: Section 27 Traffic
-Member of Cooperative Education and Internship Association (CEIA)
-Member of National Association of Colleges and Employers (NACE)
-EI's will be hired into the ERDP before the end of this FY
-FHWA Grant awarded for $52,085
-Hosted two AASHTO STEM Outreach Solutions workshops (formerly TRAC and RIDES) April 2025
-Member of the AASHTO's STEM Outreach Solutions Program Committee- Vice Chair
-Added 210 new titles and updated 681 records to the LTRC library online catalog
-508 Compliances: maintained and included in negotiation process with database subscription vendors
-Consolidate duplicate materials
-Updated OPAC (public facing online catalog) to reflect new LTRC web design
-Renewed ASTM Standards
-Renewed AASHTO Publications via Engineering Workbench
-Renewed EOS.web
-Renewed Movable Library Stack Maintenance via AOS Office Designs
-NTKN-National Transportation Knowledge Network (the regional TKNs were merged into the National TKN)
-SLA-Special Libraries Association, Transportation Community
-TRB-AJE45-Standing Committee on Information and Knowledge Management- Member
-TRB-B0002-TRB Information Services Committee- Friend
-TRB- E0006(1)-TRT (Transportation Research Thesaurus) - Friend
-TRB- ABG20 Standing Committee on Transportation Education and Training-Friend
-Held 7 NHI courses training
-Requested and informed employees of available NHI Webinars
-368 Employees attended 185 individual registration events
-Planned a executed partnership with VBR for the 2025 LTC March 2025 in Baton Rouge, LA
-Planned and executed hotel contract for meeting space, exhibitor space, and overnight accommodations for the 2025 LTC
-National and Louisiana Chapter of the Society of Government Meeting Professionals (SGMP) Member
-2021-Present Louisiana Chapter of the Society of Government Meeting Professional (SGMP) 1st Vice President
-2021-Present Louisiana Chapter of the Society of Government Meeting Professional (SGMP) Treasurer
-Facilitated 5 Conflict Management classes
-Facilitated 10 Professional Writing classes
-Used the RMS for registration and tracking
-Coordinated and managed Radiation Safety Officer training
-Coordinated and managed 2025 PE Review
-Coordinated and managed 3 Traffic Engineering Process and Report classes
-Coordinated and managed Blue Marble Global Mapper
-Coordinated and managed Pavement Striper
-Coordinated and managed Indirect Cost
-Coordinated and managed DC Electrical
-Coordinated and managed Electrical Safety
-Coordinated and managed Foundational Vehicle to Everything V2X
-Coordinated and managed 2 Crash Analysis training
-Coordinated and managed 2 Safety Data training
-Coordinated and managed Crowdsourcing for Advancing Transportation Operations
-Coordinated and managed Best Practices for Design, Construction, and Life of MSE Structures
-Coordinated and managed 3 Professionalism and Ethics Requirement for Engineers and Surveyors
-Coordinated and managed Statewide Systems Analysis Project
-Procured Business Continuity Back Ups: Audio DSP, Crestron Input Cards, Crestron Output cards, Video Tx, Video Rx
-Procured BYOD USB Switching for Zoom Audio Video Upgrade
-Procured BYOD Wireless Conferencing
-Procured Security Camera Server Upgrades
-Procured AV Rack mounted commercial grade monitors
-Procured LTRC Conference Room-Dante AV System Upgrade
-Procured TTEC Conference Room Table Cubby Replacement/Upgrade
-Procured new TTEC Copy Room Storage and Furniture
-Procured TTEC lobby furniture
-Procured overhead cameras for training rooms
-Renewed Visix
-Renewed Articulate
-Renewed Adobe
-Renewed Accruent/EMS

-Professional member of Avixa
-Coordinated and managed 51 UNO Microsoft Office classes
-Coordinated and managed 19 ArcGIS classes
-Coordinated and managed 13 ATTSA classes
-Coordinated and managed 11 CADD classes
-Association for Talent Development (ATD)- Baton Rouge Chapter- President- Baton Rouge Chapter
-Facilitated 8 Foundations of Leadership Development classes
-Facilitated 12 Emotional Intelligence classes
-Facilitated 6 Organizational Culture classes
-Facilitated 4 Managing Across Generations & Transformational Leadership class
-Contributing member of team who created, deployed, and analyzed organizational engagement surveys for various DOTD sections
-Data analysis for surveys
-Created KPIs for two DOTD sections

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Continue to facilitate and host events at TTEC
-Continue additions to and updating of library materials into the online catalog
-Continue to monitor 508 Compliance pertaining to the LTRC Library page
-Renew ASTM Standards
-Renew AASHTO Publications- Engineering Workbench
-Renew EOS
-Renew Moveable Library stack AOS Office Designs
-Continue to schedule and use EMS reporting for LTRC
-Continue to register employees for professional development trainings/workshops/conferences.
-Continue to suggest and schedule NHI courses
-Continue to offer NHI Webinars
-Conduct, host, plan, and present at 2025 LTC March 2025 in Baton Rouge, LA
-RFP, negotiate and secure contract for meeting and exhibitor space for the 2027 Louisiana Transportation Conference Approximately 1600 attendees; 185 vendors
-RFP, negotiate and secure contracts for overnight accommodations for the 2027 Louisiana Transportation conference Locations TBD. Approximately 800 room nights.
-Request and secure funding assistance from Visit Baton Rouge for expenses incurred with the 2027 Louisiana Transportation Conference (facility rental, shuttle/transportation, conference attendee parking fees, etc.)
-Secure dates for the 2027 Louisiana Transportation Conference
-Secure dates and begin preliminary planning for SASHTO 2028
-Update and complete the LTRC Conference/Event Planning Guide
-Attend the Society of Government Meeting Professionals 2023 National Education Conference
-Facilitate Professional Writing Skills classes
-Facilitate Conflict Management classes
-Host IMSA-Signal Technician 1 Class
-Host IMSA- Signal Technician 2 Class
-Host IMSA Sign Technician class
-Coordinate PE Review 2024
-Host Traffic Engineering Software Training class
-Continue to deliver Leadership classes around the state as needed
-Continue to offer UNO Microsoft Office courses
-Continue to offer and increase GIS and CADD courses
-Continue to host ATTSA courses
-Continue to schedule Mechanics courses training
-Continue to suggest and conduct training through NHI and FHWA
-Submit RFP's as needed throughout the year (about 3 per year)
-Continue to offer and conduct courses as needed and/or requested
-Continue to write contracts/proposals for required and/or requested training as needed
-Request PO's as warranted
-Continue to use the RMS for course registration and tracking
-Update student manual as needed
-Purchase Buisness Continuity Back up (Audio DSP and DSP Blade, Crestron Scaler, Video Tx and Rx)
-Digital Directory/Visix (LTRC and TTEC)
-Travel Projector and Travel Screen Upgrade

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Workforce Development**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000569**	Project Start Date:		7/1/2025
Research Project Number:	26-1WD	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$1,366,017
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$1,366,017**
Salaries		$1,346,017
Consumable Supplies & Materials		$10,000
Equipment	(non-expendable)	
Travel		$10,000
Other		

BUDGET JUSTIFICATIONS

Supplies: Supplies for technology transfer activities - no single item to exceed $5,000Travel: Statewide travel for structured and specialized training program delivery.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this study is to provide for the strategic planning, program development, and delivery management of the workforce development programs for the Louisiana Department of Transportation and Development (DOTD) personnel. The scope of this study also includes the development, delivery, and administration of the Louisiana Transportation Research Center's (LTRC's) transportation outreach program.

Objective(s): Deliver structured and specialized training programs to Louisiana Department of Transportation and Development (DOTD) personnel and other transportation partners statewide.

Expected Benefits: Expand the knowledge base of all employees and give employees a greater understanding of their responsibilities within their role within the organization while offering professional growth opportunities.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Standardized subject titles for all DOTD manuals.
-Standardized cover sheets for all DOTD manuals.
-Continue to update technical specifications for DOTD Construction and Materials manuals.
-Currently revising publications ordering process to eliminate duplication of effort, utilizing "just in time logistics" to order publications directly with Reproduction. This project has eliminated backlog, excess inventory and use of dated material. Working to finalize process with Reproduction and pass responsibility directly to districts/sections with start of new fiscal year.
-Completed conversion to the new LMS, Success Factors. Adjusted programs and curricula at the beginning of calendar year 2025 to meet updated training policy changes.
-Completely revised DOTD Policy and Procedures Manual (PPM) # 59, Workforce Development, to reflect updated training policy, the new LMS and the new Continuous Performance Management (CPM) system.
-Revised the DOTD Course Catalog and produced the DOTD Training Requirements Catalog.
-Reorganized unit into multi-functional, mutually supporting teams, increasing capability and collaboration.
-As a team streamlined publication order request process, standardizing titles and cover sheets, updating specifications and reducing effort and waste.
-The Construction and Materials Training Program has facilitated (42) Re-certifications, (95) Initial Certifications, (38) New Certifications, (18) Authorizations and (43) Specialty Areas, resulting in a total of (236) Department accreditations year to date.
-Year to date, the Structured Training Program has successfully proctored (59) exams for (58) employees.
-DOTD Structured Training Program assignments are supported by (124) web based training (WBT) course, (55) instructor led training (ILT) courses, (22) self-study publications that require proctored exams, and (47) technical manuals.
-There are (641) items in Success Factors organized into (100) programs and (116) curricula, allocated through the use of (166) different assignment profiles.
-Monitored compliance of all DOTD and Civil Service assigned training, conducting outreach and coordination and providing reports to leadership as required by legislative, civil service or department policy. Compliance was in excess of 99%.
-Hosted the DOTD Training Curriculum Council (TCC) meeting in Nov 2024 in accordance with requirements set forth in PPM #47.
-Facilitated (4) Basic Flagging training courses.
-Facilitated (17) Maintenance Traffic Control training courses.
-Provided (4) LD Facilitation Skills for Managers courses.
-Supported (12) New Employee Orientation courses for (462) employees.
-Supported (3) New Supervisor Orientation courses for (67) supervisors.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Submit PPM 59 to the DOTD Standing Committee on Human Resources (SCHR) for staffing and review.
-Coordinate with the Reproduction Section to finalize and implement the publication order request process.
-Coordinate with the Equipment Section to finalize and implement the Equipment Operator Certification Program (EOCP), executing training procedures and tracking and reporting equipment training records. Working with the Loss Prevention section, monitor all assigned safety training to ensure highest level of year-round compliance reporting.
-Monitor all assigned DOTD and Civil Service training to ensure the highest level of year-round compliance with all requirements.
-Modify or implement new training requirements in accordance with DOTD policy.
-Utilizing quarterly reviews, continue to refine and improve procedures and update technical publications.

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**Technology Transfer and Assistance for Senior Project Courses**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000576**	Project Start Date:		7/1/2025
Research Project Number:	26-1TT	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$37,500
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$37,500**
Salaries		
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		$37,500

BUDGET JUSTIFICATIONS

Other: Items for research and technology transfer purposes only.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: To provide support for senior project engineering courses up to a maximum of $7,500/university/year.

Objective(s): Senior Design Projects allow students to sharpen learned engineering skills in a real-world environment. These include: problem analysis, design analysis, experimentation, use of leading CAD and analysis software, innovation, communication skills, and teamwork, often within an interdisciplinary team.

Expected Benefits: Through this senior design project, students will be exposed to products, engineering practices and culture, allowing them to assess the transferability of these skills into their future employability opportunities. This experience of collaborative problem solving, respectful interaction and coordination to achieve a shared goal allows engineers-to-be to develop important teamwork skills that are valued by employers.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Participation from two universities: Louisiana Tech University (1 project) and University of Louisiana at Lafayette (1 project).

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

Continue to provide technology transfer and assistance for senior project engineering courses.

Title:	**Technology Transfer Program and Operations (DOTD)**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000575**	Project Start Date:		7/1/2025
Research Project Number:	26-1TSQ	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget			**Estimated 2025-2026 Budget**		
Total Cost	(original)	$433,704	**Total**		**$433,704**
	(revised)				
Est. Expended to Date			Salaries		$433,704
FY 2024 - 2025 Budget			Consumable Supplies & Materials		
FY Funds	(original)		Equipment	(non-expendable)	
	(revised)		Travel		
Est. FY Expenditure			Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: This program is responsible for developing and maintaining publication design, graphic design, website, database maintenance, public relation press packages, Section 504 compliance, and editing of all projects for the Louisiana Transportation Research Center and Louisiana Department of Transportation and Development on a statewide level. In addition, this program is responsible for the production of all reports and production pieces for the Louisiana Legislature.

Objective(s): The objectives of this study are to: Disseminate information on new technologies and methodologies to the LouisianaDepartment of Transportation and Development (DOTD) and other transportation-oriented agencies; improve communications on technical, transportation-related issues between the department and other agencies; encourage implementation of new procedures and technologies; and disseminate information on transportation subjects to appropriate managers and engineers in the department.

Expected Benefits: Dissemination of technology transfer, training, and research initiatives to the transportation community as a whole.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Prepared 7 Technical Draft Project Capsules
-Provided Technical Review for 15 Final Reports
-Served on interview panel for ERDP and Editor applicants
-Provided engineering experience verification for former ERDP interns seeking PE licensure
-Began work on Registration Management System (RMS) enhancements through contract
    -Completed file upload error resolution
    -Anticipated rich text editor update
    -Anticipated LTAP/Elavon payment gateway update
    -Anticipated duplicate student error resolution
-Managed Adobe Cloud licenses for DOTD employees
-Support for all Section 33 users managing the RMS
-Coordinated various mandatory PHP upgrades to LTRC servers
-Coordinated asphalt scholarship application process (ASCE and LAPA)
-Designed 4 issues of Technology Exchange for LTAP
-Managed online SASHTO scholarship application process; designed new poster advertisement
-Compiled, designed, and produced LTRC annual report (23-24)
-Maintained regular posting of all LTRC publications on website and social media channels
-Maintained accessibility requirements for all uploaded publications online
-Updated structured training webpages
-Facebook: 1,034 followers, LinkedIn: 1,289 followers, X: 202 followers
-97 social media posts (63,605 impressions on LinkedIn 7/1/24 – 3/25/24)
-Continued Employee Spotlight feature online
-Managed and coordinated LTC tradeshow
-Managed LTC Sponsorships
-Designed LTC event signs/coordinated sign printing
-Designed LTC print program
-Designed updated LTC pop-up banner with new logo colors
-Designed and coordinated production of updated mousepads with new logo
-Designed TRB poster template for engineers and researchers to use for poster sessions
-Designed podcast feature template to promote LTRC's new podcast and bi-weekly drops
-Designed parking pass template for use internally for TTEC visitors
-Designed 3 LTAP pop-up banners with new logo brand
-Created Adobe Spark pages to share on social media for LTRC and LTAP
-Pre-Flight and deliver 18 TRB Posters
-Pre-flight and deliver 15 Student LTC Posters
-Pre-flight and deliver 1 Geo Technical Poster
-Design/Produce 17 LTC Pop-up banners
-Design Calcasieu River Bridge Project coin
-Photography: LTC 2025; ROADEO 2025; LTAP Successful Supervision; and various on-site events
-Film and Production- Training- Volumetric Truck Calibration-DOTD
-Film and Production- Training - AASHTO T316- Viscosity Tester – DOTD
-Film and Production- Training- LPA/CEI Recording- LTAP
-Film and Production- Annual Report Video Supplemental- Section 33 and Section 19 Program Spotlight- LTRC
-Film and Production- Training- Cyclic/SCB Test Incorporating Digital Image Correlation- LTRC
-Film and Production- Training- Highway Safety Training/Work Zone Safety- LTRC
-Film and Production- Gulf Research Program-Pitch video – LTRC
-Animation/Motion Graphics- ArcGis Permit Instructional video-DOTD
-Animation/Post Production- College Flyover Reroute video- DOTD
-Animation/Post Production- I10-210 Calcasieu Bridge Google Map Animations- DOTD
-2,100 YouTube subscribers
-Edited and published 9 Project Capsules
-Edited 13 Final Reports/Technical Summaries
-Published 11 Final Reports/Technical Summaries
-Published 4 Technology Today newsletters
-Created Adobe Express articles for all Tech Today issues
-Created and distributed Constant Contact emails for all Tech Today issues
-Developed and compiled mobile app content for LTC 2025, as well as providing operational support before and during the conference
-Wrote, recorded, edited, and published 14 episodes of "The Driving Force" podcast
-Edited 3 training manuals for LTRC's Internal Training Team
-Continued to apply disclaimer watermark for safety reports and stay updated concerning new disclaimer requirements
-Continued to apply accessibility requirements for all newly published work
-Continued to implement new Word template for all newly published work
-Continued to maintain document information form for state library liaison
-Updated Tech Today external and interdepartmental mailing lists to reflect new leadership and section heads, as well as expanding email distribution list
-Developed and published a press release for 2025 SASHTO scholarship winners

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
-Continue to prepare project capsules, and review draft final reports -Continue to provide Technology Transfer Manager comments for biannual reports (awaiting response from Tyson) -Continue to serve as ERDP engineer-of-record (e.g. interview panels, experience verification) -Revise TTEC section of the website -Update pop-up posters for LTRC sections with updated branding -Layout 4 Tech Exchange newsletters -Maintain LTRC website and update as issues/needs arise -Continue to design online and publication pieces in line with LTRC branding -Continue to maintain LTRC's social media presence -Continued preparation and publishing of Project Capsules -Continued editing and publishing of Final Reports/Technical Summaries -Publishing of 4 Technology Today newsletters, including digital content distributed via Adobe Express, Constant Contact, etc -Continue writing, recording, editing, and publishing episodes of "The Driving Force" podcast -Continue editorial support for other work groups within Section 33 -Continue work on 508 accessibility issues for PDF documents -Complete server migration to OTS virtual machines/ stay current with PHP needs -RMS enhancements through Blue Streak contract

LTRC Annual Research Program
Fiscal Year 2025-2026

Title:	**DOTD Staff Support for Workforce Development**	**Project Status:**	**Proposed**

Funding Source:	**STP: TT-Fed**	**Budget Category:**	**FHWA**

SIO:	**DOTLT1000578**	Project Start Date:		7/1/2025
Research Project Number:	26-1SWD	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$1,520,000
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$1,520,000**
Salaries		$1,520,000
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of this study is to provide for the strategic planning, program development, and delivery management of the workforce development programs for the Louisiana Department of Transportation and Development (DOTD) personnel by non-LTRC employees. This project will not be utilized by LTRC's Section 19 or 33.

Objective(s): Provide for the strategic planning, program development, and delivery management of the workforce development programs for the Louisiana Department of Transportation and Development (DOTD) personnel by non-LTRC employees.

Expected Benefits: Development, implementation, and evaluation of human resource and organizational development initiatives for the Louisiana Department of Transportation and Development (DOTD).

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Course development and delivery of Local Public Agency (LPA) training;
-DOTD employee structured training;
-Human Resources training, maintenance related training; and
-Meeting involvement related to DOTD's Transportation Training Curriculum Council.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Course development and delivery of Local Public Agency (LPA) training;
-DOTD employee structured training;
-Human Resources training, maintenance related training; and
-Meeting involvement related to DOTD's Transportation Training Curriculum Council.

Other DOTD Funded Projects

Title:	**Economic Evaluation of Applications to the Port Construction and Development Priority Program**	**Project Status:**	**Ongoing**

Funding Source:	**Port Priority Program**	**Budget Category:**	**Other DOTD Sections**

SIO:	**DOTLT1000419**		Project Start Date:		7/1/2021
Research Project Number:	22-2SS		Completion Date	(original)	6/30/2023
Research Agency:	ULL		Completion Date	(revised)	6/30/2026
Principal Investigator:	Stephen Barnes				

BUDGET STATUS

Total Budget				**Estimated 2025-2026 Budget**		
Total Cost	(original)	$86,862		**Total**		**$64,050**
	(revised)	$323,669				
Est. Expended to Date		$203,042		Salaries		$64,050
FY 2024 - 2025 Budget				Consumable Supplies & Materials		
FY Funds	(original)	$99,894		Equipment	(non-expendable)	
	(revised)	$100,306		Travel		
Est. FY Expenditure		$82,069		Other		

BUDGET JUSTIFICATIONS

Budget amounts do not require justifications.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The Port Priority Program through DOTD must ensure the State of Louisiana is receiving the required minimum rate of return on the State's investment and the applicants are meeting the required benefit cost ratio. Economic evaluations of applications submitted to the Port Priority Program need to be performed by an economist with a doctorate degree in economics, knowledgeable of Louisiana laws, knowledgeable of Louisiana ports and their activities, and be familiar with the Port Priority Program.

Objective(s): The objective of this project is to perform research and analysis of Port Priority Program applications to ensure the State is receiving the required minimum rate of return on the State's investment.

Expected Benefits: These evaluations will ensure that all applications to the Port Priority Program are considered using a consistent set of metrics and methodology to help the State of Louisiana prioritize strategic investments in ports to help stimulate economic activity.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

Completed each of the project-related tasks noted below for up to 12 program applications.

Task 1: Preliminary Meetings With Project-Sponsoring Ports
Preliminary meetings will be scheduled as needed with project-sponsoring ports.
Task 2: Preliminary Review of Applications
All future applications submitted to the program during the project period will be reviewed.
Task 3: Application Review Meetings
Meetings to discuss applications submitted to the program during the project period will be scheduled as needed.
Task 4: Theoretical Benefit-Cost Validity Check
All future applications submitted to the program during the project period will undergo a theoretical benefit-cost validity check.
Task 5: Verification of Claims
All future applications submitted to the program during the project period will have key claims verified by the PI.
Task 6: Benefit-Cost Calculations
Benefit-cost calculations will be completed for all future applications submitted to the program during the project period.
Task 7: Development of Quarterly and Biannual Reports
Quarterly reports will be completed during all quarters when applications are received and biannual reports will be completed for all future reporting periods.
Task 8: Presentations and Project Support
Future presentations and project support will occur as needed.

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES
Expect to complete each of the project-related tasks noted below for up to 7 program applications. Task 1: Preliminary Meetings With Project-Sponsoring Ports Preliminary meetings will be scheduled as needed with project-sponsoring ports. Task 2: Preliminary Review of Applications All future applications submitted to the program during the project period will be reviewed. Task 3: Application Review Meetings Meetings to discuss applications submitted to the program during the project period will be scheduled as needed. Task 4: Theoretical Benefit-Cost Validity Check All future applications submitted to the program during the project period will undergo a theoretical benefit-cost validity check. Task 5: Verification of Claims All future applications submitted to the program during the project period will have key claims verified by the PI. Task 6: Benefit-Cost Calculations Benefit-cost calculations will be completed for all future applications submitted to the program during the project period. Task 7: Development of Quarterly and Biannual Reports Quarterly reports will be completed during all quarters when applications are received and biannual reports will be completed for all future reporting periods. Task 8: Presentations and Project Support Future presentations and project support will occur as needed.

Title:	**Local Road Safety Program**	**Project Status:**	**Proposed**

Funding Source:	**Safety**	**Budget Category:**	**Other DOTD Sections**

SIO:	**DOTLT1000579**	Project Start Date:		7/1/2025
Research Project Number:	26-LRSP	Completion Date	(original)	6/30/2025
Research Agency:	LTRC	Completion Date	(revised)	
Principal Investigator:	MaryLeah Coco			

BUDGET STATUS

Total Budget		
Total Cost	(original)	$379,989
	(revised)	
Est. Expended to Date		
FY 2024 - 2025 Budget		
FY Funds	(original)	
	(revised)	
Est. FY Expenditure		

Estimated 2025-2026 Budget		
Total		**$379,989**
Salaries		$307,458
Consumable Supplies & Materials		
Equipment	(non-expendable)	
Travel		
Other		$72,531

BUDGET JUSTIFICATIONS

Other: Contracts for Special Services for the Local Road Safety Program.

PROBLEM STATEMENT, OBJECTIVE(S) AND EXPECTED BENEFITS

Problem Statement: The purpose of the Louisiana Local Road Safety Program (LRSP) is to identify key safety needs and guide investment decisions to achieve reductions in fatalities and serious injuries on local rural public roadways.

Objective(s): To work in cooperation with the Louisiana Department of Transportation and Development's (DOTD'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.

Expected Benefits: The LRSP offers a proactive approach for local road agencies to address safety issues. The LRSP can show the public and policy makers that something is being done to systematically reduce severe crashes, thereby, building trust with local government officials, key stakeholders, and the general public.

FISCAL YEAR 2024 - 2025 ACCOMPLISHMENTS

-Delivered 6 in-person offerings of "Basics of Work Zone Safety with Basic Flagger" mini-workshops [136 attendees]
-Developed, customized, and presented 3 in-person offerings of a LRS Plan Implementation workshop [33 attendees]
-Delivered 1 "LRSP Virtual Call for LRSP Project Pre-Apps" [25 attendees]
-Facilitated 2 LRSP Project Selection (Project Application Review) Committee Meetings—14 project applications were evaluated.
-Processed and evaluated 30+ individual Local Road Safety Project inquiries, pre-applications, or applications this fiscal year.
-Worked with Crash Data Engineers to provide additional data and GIS maps to 12 LPAs that were included during the Project Evaluation Review Committee Meetings held in August 2024 and March 2025, respectively.
-Partnered with CARTS and DOTD Safety Section to improve accessibility and utilization of roadway, crash, and traffic volume data.
-Provided technical assistance on local road safety projects using crash profiles, crash data analysis, and other sources. Continued to promote new Crash Data tools developed by CARTS and DOTD's Highway Safety Section to local agencies and regional stakeholders
-Collaborated with the DOTD Highway Safety Section in order to develop and deliver a new training on "Local Road Safety Implementation Workshops" and post-workshop technical assistance to LPAs that attended the workshop.
-Continued supporting the SHSP and related Infrastructure and Operations initiatives, including serving as Statewide Emphasis Area co-chair, Work Zone Safety Task Force member, and additional safety-related EDC initiatives.
-Presented the LRSP at Rural Development Workshop co-organized by the Office of the Governor and DOTD on 10/10/24
-Developed and disseminated the conference evaluation online form using Qualtrics and presented a session on "Turning Safety Plans to Projects" at the Louisiana Safety Summit (November 12-14, 2024)
-Presented a LRSP Implementation session at the Louisiana Transportation Conference (March 17-19, 2025)
-Participated in DOTD's Safety Road Show and Statewide I/O Meeting and attended two regional Safety Road Show meetings.
-Promoted Local Road Safety through internal publications [LTAP Technology Exchange, LTRC Technology Today] and external partner publications [Police Jury Association of Louisiana Magazine, Louisiana Municipal Association e-news, NLTAP Newsletter]
-Provided information on LRSP funding, training and technical assistance at exhibitor booths during the Police Jury Association of Louisiana (PJAL) convention on February 12-14, 2025; Louisiana Municipal Association (LMA) on convention July 31 to August 2, 2024; and Rural Complete Streets Summit 2024
-Prepared for and facilitated the LPESA Fall Conference in Ruston, LA (September 25-26, 2024) and Spring Conference (May 7-8, 2025)
-Participated in the road safety sessions at the NLTAPA Meeting in Albuquerque, New Mexico (July 21-25, 2024)
-Participated in the Safe Routes to Public Places Program Project Selection Committee Meeting (July 24, 2024)
-Provided support in and served as a Voting Member of the LTRC's Safety Research Problem Identification Committee (RPIC) and the Traffic Records Coordinating Council (TRCC)
-Participated in the FHWA-led Pilot Systemic Safety Workshop (July 30, 2024) in Baton Rouge
-Participated in the NLTAPA Safety Circuit Rider engagement group and the NLTAPA Safety Work Group Zoom calls
-Provided technical support for Chitimatcha and Coushatta Tribal agencies for the development of their local safety plans

FISCAL YEAR 2025-2026 PROPOSED ACTIVITIES

-Revise content and deliver offerings of "Roads Scholar #11: Road Safety 365" course [5 classes]
-Deliver "Basics of Work Zone Safety with Basic Flagger" mini-workshops upon request [12 half-day classes estimated]
-Engage parish and municipal stakeholders in a peer-to-peer forum on Local Road Safety and Complete Streets
-Present LRSP at the Local Public Agency Training Core Qualifications Training [2 classes estimated]
-Team up with FHWA and DOTD to include road safety elements in the MUTCD Updates Training [5 classes estimated]
-Present LRSP session at either LPESA Fall 2025 Conference or LPESA Spring 2026 Conference
-Provide technical support to jurisdictions that are in the process of developing or implementing their Local Road Safety Plans as well as SHSP I&O Action Plan activities related to statewide and federal highway safety programs as well as BIL grants from USDOT.)
-Provide Crash Data analysis and promote new Crash Data tools developed by CARTS and DOTD's Highway Safety Section to local agencies and regional stakeholders (ongoing)
-Provide technical assistance and capacity building to the Regional Safety Coordinators, Coalitions, LPAs, and other SHSP stakeholders, including on-site visits; participation in coalition meetings; RSA training, and other activities in the Strategic Highway Safety Plan and regional action plans (ongoing)
-Support SHSP and related Infrastructure and Operations initiatives and additional safety-related EDC initiatives (ongoing)
-Promote Local Road Safety through external partner publications such as Police Jury Association of Louisiana Magazine, Louisiana Municipal Association e-news, American Planning Association Magazine, etc. (ongoing)
-Participate in the NLTAPA Safety Circuit Rider engagement group and NLTAPA Safety Work Group (ongoing)
-Participate in Traffic Records Coordinating Council meetings and national conference to keep abreast with data analysis efforts that impact LRSP's technical assistance and project application outreach efforts
-Coordinate with CARTS and LA DOTD sections engaged in local data collection to enhance quality, accessibility, and utilization of all available data (ongoing)
-Participate in any relevant Complete Streets and VRU outreach efforts, and integrate them into our Local Road Safety Planning efforts
-Participate in and present at the Statewide DOTD/SHSP 2026 Safety Road Show webinar as well as at the in-person DOTD/SHSP 2026 Road Shows for DOTD District and SHSP Regional Infrastructure and Operations stakeholders (ongoing)
-Integrate LTAP's Parish Profile efforts into the data analysis efforts that DOTD Highway Safety Section and CARTS will implement to streamline project identification and prioritization efforts for LRSP

LTRC Annual Research Program
Fiscal Year 2025-2026

	2025 RPIC PROBLEM STATEMENTS
Final Ranking	**PROBLEM STATEMENT TITLE**
1	Enhancing Public Access and Utilizing Artificial Intelligence to Digitize, Grow, and Share Geotechnical Data across Louisiana.
2	Evaluation of the effect of integral waterproofing agents (admixtures) on surface resistivity measurements
3	Evaluation of RAP Fractionating by BMD Measures for Mixtures in Louisiana
4	Investigation of the elimination of bridge joints using link slabs
5	Pavement Markings Retroreflectivity - Enhancing Traffic Safety
6	Intersections Safety Evaluation
7	Investigating Longitudinal Cracking in Louisiana's Concrete Pavements
8	BMD Evaluation of Field-Aged Asphalt Mixtures in Louisiana
9	Safety of Median Openings on High-speed Highways in Louisiana
10	Assessing the Validity of AASHTO SU4 - SU7 vehicles on Louisiana Highways using WIM Data
11	Improve Data Resolution to Support Freight Planning in Louisiana (from RPIC discussions)
12	Electric Vehicle Taxation Landscape in Louisiana (from RPIC discussions)
13	Application of Road Weather Information Systems Capabilities for Foggy Weather Safety on Elevated High-Speed Highways in Louisiana

14	AI-Driven Innovations for Enhancing Highway Embankment and Dam Safety
15	Supporting Efficient Public Transit on State Routes
16	Evaluation of Queue Warning Systems in Louisiana
17	Expanding Adaptive Traffic Control Signal Systems: A Strategic Study for Louisiana's Arterial Highways
18	Modeling the Hydraulic Conditions of the Lake Bistineau Dam to Improve Safety
19	Skew Detection System Replacement on Vertical Lift Bridges (Phase 3)
20	Using chemical admixtures to mitigate ASR for concrete mixes containing potentially reactive and reactive aggregates.
21	Mitigate Buckling/Patch Blow Ups in Composite Pavement
22	Application and Implementation of CPT Technology in Geotechnical Engineering.
23	Using AI to Evaluate Unbalanced Congestion at Signalized Intersections using Google and Other Similar Software