TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): _Federal Highway Administration_(FHWA)_____

INSTRUCTIONS:
Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project *#TPF-5(478)* ***Note:** Obligation transactions must be completed prior to the project end date.*	**Transportation Pooled Fund Program - Report Period:** ☐Quarter 1 (January 1 – March 31) ☐Quarter 2 (April 1 – June 30) ☒Quarter 3 (July 1 – September 30) [2023] ☐Quarter 4 (October 1 – December 31)

Project Title:

Accelerated Implementation and Deployment of Pavement Technologies (AIDPT) Pooled Fund

Pooled Fund Study Description:

Background:

Since 2013, FHWA's Accelerated Implementation and Deployment of Pavement Technologies (AIDPT) Program, in partnership with State Departments of Transportation (DOTs), academia and industry, has identified asphalt and concrete paving advancements and seek to implement effective strategies for rapid deployment of new and promising technologies. Through the leveraging of Federal investments with State DOT partnerships, the AIDPT Pooled Fund study aims to advance deployment of engineering design criteria and specifications for new and efficient practices, products, and materials that support processes of importance to FHWA and State DOT partners.

The AIDPT Pooled Fund Study is an opportunity for participating states to advance deployment of the innovative technologies in interest areas including, but not limited to, Balanced Mix Design (BMD) for asphalt, performance engineered mixture (PEM) for concrete, pavement preservation, sustainability, resiliency or any other pavement management strategy that improves decision-making processes, technical frameworks, education efforts, and stakeholder engagement.

As this pooled fund is designed, FHWA collaborates with each DOT to define the parameters of each state pavement technology project. The above-mentioned topics were identified in the initial solicitation; however, as noted, other topics are considered when proposed by participating DOTs. The study provides up to $250,000, up to 100 hours of technical assistance, and resources for developing case study reports and videos for each selected pavement technology project. Additionally, FHWA plans to host a website for publishing case studies and other relevant project documents, as well as peer exchanges for showcasing lessons learned and best practices from the projects. Each state DOT is expected to participate in pooled fund meeting opportunities and actively collaborate with other states and FHWA to advance these initiatives. The state DOT will complete a report documenting the initiative and outcomes of selected state DOT accelerated pavement technologies projects.

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Lead Agency contact: LaToya Johnson & Gina Ahlstrom	**Other Project ID (i.e., contract #** N/A	**Project Start Date:** September 30, 2021
Original Project End Date: October 30, 2026	**Current Project End Date:** October 30, 2026	**Number of Extensions:** N/A

Project schedule status:

☒On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Study Funding:

Table 1: Funding Commitments by Agency

Agency	**Commitments**					
	2021	**2022**	**2023**	**2024**	**2025**	**2026**
FHWA	**$1,504,000.00**	**$1,000,000.00**	$_____	$_____	$_____	$_____
AL		$50,000.00				
AZ		$10,000.00	$10,000.00			
CA			$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
CO		$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
CT			$10,000.00	*$10,000.00*	*$10,000.00*	
GA	$10,000.00	$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	

HI	$10,000.00		$10,000.00			
ID	$50,000.00					
IL		$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
IA		$50,000.00				
LA		*$10,000.00*	*$10,000.00*	*$10,000.00*	*$10,000.00*	*$10,000.00*
ME			$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
MS	$10,000.00	$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
MO	$60,000.00					
NY			$20,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
ND		$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	
OK		$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*	*$10,000.00*
OR				*$10,000.00*	*$10,000.00*	*$10,000.00*
PA	$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*	
TX	$10,000.00	$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*	
VT			$10,000.00	*$10,000.00*	*$10,000.00*	*$10,000.00*
WI	$10,000.00	$10,000.00	$10,000.00			
Totals:	**$170,000.00**	**$210,000.00**	***$180,000.00***	*$150,000.00*	*$150,000.00*	*$100,000.00*

Table 2: Project Proposals by Agency

Agency		**Project Proposals**	**Project Topics**	**Allocations**		
				2021	**2022**	**2023**
1	AL	Finalized – Funding allocated (returned)	Asphalt - Balance Mix Design		$250,000	($250,000)
2	AZ	Finalized – Funding allocated	Resilience	$200,000	$50,000	
3	CA	Not Submitted yet	To be determined			
4	CO	Finalized – Funding allocated	Sustainability	$250,000		
5	CT	Finalized – Funding allocated	Asphalt - Balance Mix Design			$250,000
6	GA	Submitted – Not active (to be removed)	Preservation			
7	HI	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
8	ID	Not Submitted yet	To be determined			
9	IL	Finalized – Funding not requested	Performance			
10	IA	Finalized – Funding allocated	Foundations		$250,000	
11	LA	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
12	ME	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
13	MS	Not Submitted yet	To be determined			
14	MO	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
15	NY	Finalized – Funding allocated	Asphalt – performance tests			$136,000
16	ND	Finalized – Funding transferred	Asphalt - Balance Mix Design			
17	OK	Not Submitted yet	To be determined			
18	OR	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
19	PA	Not Submitted yet	To be determined			
20	TX	Finalized – Funding allocated	Asphalt - Balance Mix Design		$250,000	
21	VT	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
22	WI	Finalized – Funding not yet allocated	Asphalt - Balance Mix Design			
	Totals:			$450,000	$800,000	$286,000

Note: Pooled fund study project funding is sent to participating agencies via allocation memos. Allocation memos are sent to the DOT once project proposals have been submitted and finalized. Project proposals are typically in one of the following statuses: Not Submitted yet, Submitted-In review, Finalized – Funding not yet allocated, Finalized – Funding allocated. Additional project information is included in this report for agencies that have finalized project proposals and receive funding allocations, as provided with the project summaries included.

Table 3: Funding Transfers by Agency

Agency		Transfers		
		2021	**2022**	**2023**
1	AL		$50,000	
2	AZ		$10,000	$10,000
3	CA			$10,000
4	CO		$10,000	$10,000
5	CT			$10,000
6	GA	$10,000	$10,000	$10,000
7	HI	$10,000		$10,000
8	ID	$50,000		
9	IL		$10,000	$10,000
10	IA		$50,000	
11	***LA***			
12	ME			$10,000
13	MS	$10,000	$10,000	$10,000
14	MO	$60,000		
15	NY			$20,000
16	ND		$10,000	$10,000
17	OK		$20,000	
18	***OR***			
19	PA	$10,000	$10,000	
20	TX	$10,000	$10,000	
21	VT			$10,000
22	WI	$10,000	$10,000	$10,000
	Totals:	**$170,000**	**$210,000**	**$140,000**

State Project Updates

Alabama: Alabama Department of Transportation (ALDOT)

Progress this Quarter:

Project Highlights: Balanced Mixture Design (BMD): The foundation of BMD specifications resulted from pilot and field sections as long-term field evaluation of BMD test sections for benchmarking and determination of performance testing variability during production.

ALDOT is in the process of implementing Balanced Mixture Design (BMD) concepts into construction specifications. ALDOT has evaluated available performance test methods, begun collecting BMD data for current mixture designs, and have preliminary thresholds for quality acceptance.

Key Project Milestones:

- Completed a revised project proposal based on collaboration with National Center for Asphalt Technology (NCAT) – May 2023
- Project letting – November 2023
- Construction test sections – Mid 2024
- Preliminary field performance measurements – Spring/summer 2025
- Long term field performance measurements – 2026 and beyond

Anticipated work next quarter:

We plan to let the project for construction in the second quarter of 2024.

Significant Results:

There are no results to report currently.

Potential Implementation:

We do not have sufficient information for this.

Quarterly Project Statistics:

State	Total Project Budget		Total Cost to Date for Project This Quarter		Percentage of Work Completed to Date	
AL:	$250,000.00		Original budget: $250,000.00		(TBD for Q4)	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended**		**Total Percentage of Time Used to Date**	
$0.00			(TBD for Q4)		$0%	
Allocations:	2021	2022	2023	2024	2025	2026

Circumstance affecting project or budget: Our greatest concern at this time is testing the possible project locations using a profiler and drilling cores to ensure that the experimental mixes will be placed on reasonably similar underlying layers. [There are no circumstances within ALDOT's control expected to affect the project or budget. The project proposal was updated on May 2, 2023. ALDOT is on schedule to demonstrate successes with BMD specifications that could potentially extend to broader applications directly or with region specific modifications, as determined appropriate. Any modifications to the specifications will need to be determined by any region considering the ALDOT BMD research and application results.]

Arizona: Arizona Department of Transportation (ADOT)

Progress this Quarter:

Project Highlights: Resilience: Pavement Performance and Climate Data Analysis

It is anticipated that the effort would measurably advance FHWA / State DOT state of the practice and tools testing as it relates to linking climate models, climate data, pavement, materials, and sustainability and resilience for weather and natural hazard risk.

Two of the six case studies have begun. Delay in adding an AZ-located pavement design firm to the contract is still underway so field visits and the final four case studies can be identified and begin early in 2024.

Key Project Milestones:

- Initial climate model data downloaded in 2022.
- The prior year's 6TB of climate data has been pulled and synthesize to begin using on the pavement design case studies. The last three quarters have been working on identifying and starting the project case studies
- ADOT initiated the following activities during the 3rd quarter and identify the activities as ongoing for th quarter. Climate model data synthesis and starting analysis.

FHWA CMIP 5 with LOCA data sets was utilized.

https://www.fhwa.dot.gov/engineering/hydraulics/software/cmip_processing_tool_version2.cfm\

Data consists of 5.9 terabytes (TB) of high resolution extracted from eighteen (18) General Circulation Models (GCM).

- The current efforts are focused on sorting through pavement corridor case study candidates and acquiring historical as-builts for identified pavement sections.
- Narrowed the case study pool to ten system locations but need to get to four locations as scoped in the proposal.

Anticipated work next quarter:

Schedule has extended from Spring 2024 conclusion to end of 2024.

Significant Results:

State of AZ has been fully mapped to future climate data. That data will feed a 2024 effort to establish the agency baseline climate data set for planning, design, and M&O..

Potential Implementation:

Final outputs will develop draft design guidance and 'how to' videos on linking climate data and pavement design decision making.
Future heat and precipitation (2100) analysis will contribute to drafting pavement design specifications.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
AZ:	$300,000.00		Original budget: $300,000.00		15% money	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended**		**Total Percentage of Time Used to Date**	
$20,000.00 [7%]			$45,000.00		30%	
Allocations:	2021	2022	2023	2024	2025	2026
	$200,000.00	$50,000.00				

Circumstance affecting project or budget: None reported for Quarter 1.

Colorado: Colorado Department of Transportation (CDOT)

Progress this Quarter:

Project Highlights: Benchmarking Transportation Sector Green House Gas (GHG) Emissions, EPDs

Colorado HB 21-1303 "Buy Clean Colorado Act" directs the Office of State Architecture and Colorado Department of Transportation (CDOT) to establish policies that reduce greenhouse gas emissions over time by accounting for and limiting the global warming potential (GWP) of key construction materials in state-funded building and transportation projects.

The Office of the State Architect is responsible for Section 117 of the bill, which covers building construction, and CDOT is responsible for Section 118 of the bill, which covers transportation infrastructure that includes road, highway, and bridge construction. The eligible construction materials listed under Section 118 of the bill are asphalt and asphalt mixtures, cement and concrete mixtures, and steel.

- Milestone #1 - Specification in place to require EPD submittals by July 1, 2022 – met.
- Milestone #2 - Year 2 EPD submittal requirements for additional materials – met, incorporated requirements for EPD submittals for structural steel and precast concrete products.
    - Met with local asphalt binder supplier to discuss concerns with generating supply chain specific binder EPDs and how that information may be used/is intended to be used.

- Modified EPD support tool for project/Contractor usage to comply with Year 2 EPD Protocol Document/submittal requirements.
- Coordinated with the American Concrete Pipe Association, National Precast Concrete Association, and Prestress/precast concrete institute on status of EPD development for Colorado materials suppliers.
- Performed review of Steel PCR Committee A5 vs A3 debate/discussion

Anticipated work next quarter:

- Continue outreach to industries targeted for EPD data collection in Year 2/Year 3 of program (pre-cast concrete/steel). Colorado specific ACPA/NCPA Meeting date: December 15, 2022.
- November 14 meeting with UL on CDOT's Steel PCR comments
- Continue planning and discussion on how to address disengaged and unsupportive contractors.
- Prepare CDOT Annual EPD Report

Significant Results:

Developed methodology for collecting, reviewing and cataloging GHG's emissions through Environmental Product Declarations for various construction materials used on CDOT projects, focusing on Concrete, Asphalt, and Steel materials. Specification approved through CDOT process and incorporated into eligible projects. EPD website developed and maintained at Specification and protocol document approved. https://www.codot.gov/business/designsupport/materials-and-geotechnical/epd.

Potential Implementation:

Collection of EPDs on eligible construction materials continues. Next phase of the project will shift towards analyzing EPD data received, as well as other national EPD databases to begin developing a GWP threshold methodology and draft GWP limits to be inserted into future CDOT policy as required by Colorado HB 1303.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
CO:	$300,854.00 (Fed.$250,000.00)		$129,794.00		28.7% (money only)	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended**		**Total Percentage of Time Used to Date**	
$40,159.00			(TBD for Q4)		50%	
Allocations:	2021	2022	2023	2024	2025	2026
	$250,000.00					

Georgia:

Progress this Quarter:

Project Highlights: Crack Mitigation/ Pavement Preservation Techniques **[*WITHDRAWN*]**

The GDOT State Maintenance Office has determined that there is no immediate research needs for pavement preservation. Therefore, GDOT is withdrawing its previous research topic. The GDOT Office of Materials and Testing typically leads materials research. However, there are no immediate research needs and a new topic has not been identified.

Anticipated work next quarter:

To Be Determined, based on Project Approval.

Significant Results:

N/A.

Potential Implementation:

N/A.

Quarterly Project Statistics:

State	Total Project Budget		Total Cost to Date for Project		Percentage of Work Completed to Date	
GA:	N/A		N/A		N/A	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
N/A			N/A		N/A	
Allocations:	2021	2022	2023	2024	2025	2026

Circumstance affecting project or budget: GDOT determined that it would be best to withdraw the initial pavement preservation topic.

Idaho: Idaho Transportation Department (ITD)

Progress this Quarter:

Project Highlights: The Idaho Transportation Department (ITD) is still working to finalize a specific project focus. On April 7th, we submitted a proposal titled *Integrating Construction and Materials Testing Data with Geospatial Locations for Development of a Construction and Materials Testing Database.* ITD is waiting to hear back on the proposal.

Anticipated work next quarter:

To Be Determined, based on Project Approval.

Significant Results:

N/A.

Potential Implementation:

N/A.

Quarterly Project Statistics:

State	Total Project Budget		Total Cost to Date for Project		Percentage of Work Completed to Date	
ID:	TBD		TBD		TBD	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
TBD			TBD		TBD	
Allocations:	2021	2022	2023	2024	2025	2026

Circumstance affecting project or budget: N/A.

Illinois: Illinois Department of Transportation (IDOT)

Progress this Quarter:

Project Highlights: Profiler Comparison - Benchmark Profiler vs. the Urban Low Speed Profiler

Repair/Upgrade profilers, setup track at ICART, complete testing at ICART, Analyze testing results; draft report on results, track setup, and conclusions finalized; create operators manuals for both benchmark and urban low speed profilers.

IDOT does not report progress on the project scope of work this quarter. The primary progress is related to working final coordination to get the AIDPT project contract in place.

Federal FY2023 commitment contribution transfer planned (to be sent to FHWA during FY2023 2nd quarter).

Anticipated work next quarter:

When a contract is in place, work will begin on assessing the two pieces of equipment and beginning the pooled fund scope of work during the 2023 quarter 4.

Significant Results:

None to date.

Potential Implementation:

The urban low speed profiler will be utilized as a reference device or potentially a benchmark device at ICART if it is proven to meet the repeatability and accuracy results.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
IL:	$300,000 (Federal: $250,000.00)		$50,842.86		25%	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
$50,842.86 (17%)			$50,842.86		21%	
Allocations:	2021	2022	2023	2024	2025	2026

Circumstance affecting project or budget: The project has been delayed with the state funded work to make the equipment operational. However, the project is progressing towards completion.

Iowa: Iowa Department of Transportation (IowaDOT)

Progress this Quarter:

Project Highlights: Foundations

Iowa DOT is in the first year of a 5-year plan to implement the technologies and field training that will allow for rapid measurement, real-time construction compaction monitoring, and modulus-based field control, as implemented on four Spring 2022 pavement construction/grading projects (FY 2022 – 4 to 5 projects). Currently deploying VIC monitoring, e-construction compaction reporting, and APLT modulus

measurement technology on two pilot projects currently under construction. The state supports performance-based specifications.

Anticipated work next quarter:

Validated Intelligent Compaction (VIC) and Automated Plate Load Testing (APLT): Continue VIC monitoring deployment, e-construction compaction reporting, APLT modulus measurement technology on two pilot projects currently under construction and ten additional projects are anticipated for FY2023.

Significant Results:

Utilized the Iowa DOT STIC and AID in-situ measurement projects to pilot two innovative technologies that previously were not used in the state of Iowa, which includes modulus-based measurements. Outcomes include model specifications, training materials, and workflow processes to assist agencies in developing a roadmap for modulus-based pavement foundation construction in their state.

Potential Implementation:

The DOT is committed to moving foundation construction requirements from the current Method specification to performance-based requirements. The objective of this project will be to support the implementation of technologies on additional projects for performance-based specifications.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
IA:	TBD (Federal: $250,000.00)		(TBD for Q4)		(TBD for Q4)	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
(TBD for Q4)			(TBD for Q4)		(TBD for Q4)	
Allocations:	2021	2022	2023	2024	2025	2026
		$250,000.00				

Circumstance affecting project or budget: None reported for Quarter 2

Missouri: Missouri Department of Transportation (MoDOT)

Progress this Quarter: Award date: May 10, 2023 [Quarter 2]

Project Highlights: Balanced Mixture Design (BMD)

1. MU finished all the mix designs for the nine test sections and submitted it to the contractor and MoDOT for approval.
2. MU set up a mobile testing trailer at the plant location with the ability to compact/produce specimens for BMD testing. These specimens were brought back to the MU asphalt lab and tested with IDEAL-CT, IDEAL-RT, and Hamburg tests. All the mixes passed the set thresholds for cracking and rutting tests, as shown in the attached Appendix A at the end of the document.
3. MU procured eight buckets of each plant-produced mix with an intention to reheat and test these mixtures. MU also procured fifty additional buckets of aggregate stockpiles in anticipation of a future need to recreate the mixtures in laboratory.

Anticipated work next quarter:

The Plant Produced Lab Compacted (PMLC) or also referred to as reheated mixtures will be tested next quarter and results will be reported.

MU will also provide details on the pre-construction field condition measured via their in-house ML-based fully-automated pavement condition measuring system.

Significant Results:

None reported.

Potential Implementation:

None reported.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
MO:	$249,998.00		$25,000.00		15%	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
$25,000.00 (15%)			$25,000.00		8.5%	
Allocations:	2021	2022	2023	2024	2025	2026

Circumstance affecting project or budget: None reported for Quarter 2

North Dakota: North Dakota Department of Transportation (NDDOT)

Progress this Quarter:

Project Highlights: Implementing Balanced Mix Design

Project start 12/16/2022, Final Closeout 2027.

National Center for Asphalt Technology (NCAT) and NDDOT are developing BMD test sections for a validation study. We are working with a stakeholder group representing contractors and industry to develop the test sections for a 2024 construction project on ND 14.

NDDOT completed the 2nd year of BMD performance test benchmarking.

Developed BMD Field Validation Test Sections with NCAT and stakeholder group. Project is scheduled to be bid in February 2024 and constructed in Summer 2024.

Anticipated work next quarter:

Finalize test section project details.

Significant Results:

Development of BMD Field Validation Test Sections.

Potential Implementation:

Implementation of BMD through Pilot Projects.

Quarterly Project Statistics:

State	Total Project Budget		Total Cost to Date for Project		Percentage of Work Completed to Date	
ND:	$400,000-Pooled Fund: $250,000.00		$0		5%	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
NCAT has not submitted 1st Invoice			$0		10%	
Allocations:	2021	2022	2023	2024	2025	2026
		$250,000				

Circumstance affecting project or budget: NCAT has started working on project but not billed to project yet.

Pennsylvania: Pennsylvania Department of Transportation (PennDOT)

Progress this Quarter:

Project Highlights: Implementation of Mastics at the Pennsylvania DOT

The PennDOT determined the best area of pavement management program support to be using mastic materials for preservation activities that would evolve in developing statewide application specific specifications. The PennDOT State Transportation Innovation Council (STIC) was a source for supporting equipment acquisitions during the earlier phases of mastic material application. The AIDPT project component of the ongoing PennDOT efforts will include technical assistance and collaboration to determine the extent of mastic materials use.

Research applications, new equipment, and specifications used by other states Summer 2023 Develop PennDOT draft specification Fall 2023 Finalize PennDOT specification Summer 2024.

Anticipated work next quarter:

Continue to research other state Mastic Specifications, and start on a first draft for PA.

Significant Results:

To date research has been started by PennDOT to look into current specifications for Mastic.

Potential Implementation:

a. Research applications, new equipment, and specifications used by other states Summer 2023
b. Develop PennDOT draft specification Fall 2023
c. Finalize PennDOT specification Summer 2024.

Quarterly Project Statistics:

State	Total Project Budget		Total Cost to Date for Project		Percentage of Work Completed to Date	
PA:	0		0		10%	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
(TBD for Q4)			(TBD for Q4)		(TBD for Q4)	
Allocations:	2021	2022	2023	2024	2025	2026
	0	0	0			

Circumstance affecting project or budget: None reported for Quarter 2.

Texas: Texas Department of Transportation (TxDOT)

Progress this Quarter: No change from Quarter 2

Project Highlights: Asphalt - Balance Mix Design

Several balanced mix design sections have been constructed to compare a control mix design with several balanced mixed designs that encompass several factors: recycled materials, rejuvenators, different binder grades, etc. These projects are being monitored annually to evaluate distress with aging under traffic loading conditions. Additionally, several new balanced mix design projects have been identified for evaluation during multiple days of construction. TxDOT completed a phase 1 balanced mix design initiative on 8/31/2022 and has commenced phase 2 to be completed in 2025.

Anticipated work next quarter:

Validation of Rutting (HWT, IDEAL-RT) and Cracking (OT, IDEAL-CT) tests & thresholds with field performance data from WesTrack.

Significant Results:

Presentation at TRB Annual Meeting in January 2024 to model evolution of cracking performance,
Paper under review
Final Report associated with ongoing implementation project submitted to document construction & laboratory evaluation of 9 field projects (33 field sections) constructed from 2019-2022

Preliminary field performance data has been correlated to laboratory tests with promising results. Mitigation strategies for underperforming mixtures or mixtures with high amounts of recycled materials have been developed. An analysis is ongoing of how factors such as pavement components, traffic levels, condition history, and localized weather affect pavement performance. As more field performance data is collected, these factors will be correlated to observed distresses to develop/ strengthen mix design guidance.

Potential Implementation:

Revision of TxDOT Special Specification 3074 (SS3074) with IDEAL-CT & IDEAL-RT and associated thresholds tied to field performance.

Documentation of the performance of balanced mix design sections in the state of Texas will allow for improvements in balanced mix design efforts towards the implementation of full performance-based specifications. Field monitoring data tied to performance tests shared across the industry will allow for data-based specifications. Understanding the effect of factors such as pavement components, traffic levels, condition history, and localized weather will allow for better design methods.

Quarterly Project Statistics:

State	**Total Project Budget**		**Total Cost to Date for Project**		**Percentage of Work Completed to Date**	
TX:	TBD (Federal: $250,000.00)		(TBD)		(TBD)	
Total Project Expenses and Percentage This Quarter			**Total Amount of Funds Expended This Quarter**		**Total Percentage of Time Used to Date**	
(TBD)			(TBD)		(TBD)	
Allocations:	2021	2022	2023	2024	2025	2026
		$250,000.00				

Circumstance affecting project or budget: None reported.

NOTE: Other state project progress snapshots expected, as provided by a respective participating state representative for Quarterly reporting. The quarterly reporting time frames are after the defined quarters outlined on page 1.