

TRANSPORTATION POOLED FUND PROGRAM

QUARTERLY PROGRESS REPORT – Q3/2024

Lead Agency: **Washington State Department of Transportation (WSDOT)**

Transportation Pooled Fund Program Project		Quarterly Report Period
TPF-5(500) LTPP Forensic Investigations - Stage 2 https://www.pooledfund.org/Details/Study/729		<input type="checkbox"/> Quarter 1: Jan-Mar <input type="checkbox"/> Quarter 2: Apr-Jun <input checked="" type="checkbox"/> Quarter 3: Jul-Sep <input type="checkbox"/> Quarter 4: Oct-Dec
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Lead Agency Project ID	Other Project ID (e.g. contract #)	Program Start Date
Y12819	WSP 6420230016	Sep 2, 2022
Contract Start Date (Original)	Contract End Date (Original)	Revised Contract End Date
Aug 17, 2023	Mar 31, 2026	--

Program Schedule Status

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

Overall Program Statistics

Commitments to date \$	Obligations to date \$	% Obligated to date	Contracted to date \$	Expended to date \$	Expended this quarter \$
380,000	180,830	47%	160,000	109,080	32,705

Project Description

The objective of this pooled fund study is to create a mechanism to allow for rapidly completing forensic evaluations of LTPP sections before going out of service. Test sections that are no longer active, but which have remained unchanged (i.e., no maintenance or rehabilitation has been applied), may also be considered for forensic evaluation. Possible reasons for carrying out the forensic evaluations include: • Determining reasons for poor pavement performance/premature failures •

Understanding exceptional pavement performance and/or longevity • Validating pavement performance prediction (predicted vs actual) • Collecting data to support development and/or calibration of pavement performance prediction models • Closing-out or conducting final investigations of experimental test sections. Ultimately, the primary reason for carrying out the evaluations will be to determine if the data contained in the LTPP database adequately explains the performance of the test sections and why they performed as they did. If the existing information is insufficient, then identifying and collecting additional information to inform the performance will be strongly considered.

Progress this quarter (includes meetings, work plan status, contract status, significant progress, etc.)

The work performed in each of the tasks specified by the project's scope of work (SOW) is summarized below. The attached table (Table 1) provides further information on the Task 2 and Task 3 activities, while the attached figure (Figure 1) shows the location of the LTPP test sections selected for forensic investigation.

Task 1. Project Management: • Completed preparation for and participated in face-to-face meeting with WSDOT on July 2, 2024 in WSDOT's offices; provide update of TPF-5(500) activities to date and discussed forensic evaluation results for LTPP test section in WA • Pursued Technical Advisory Committee (TAC) meeting, but it was not possible to find a date that would accommodate most TAC members; will try to setup referenced meeting during upcoming reporting period • Began to pursue in-person meeting with TxDOT in October or November 2024; will provided update of TPF-5(500) activities to date and discuss forensic evaluation results for LTPP test section in TX • Prepared and submitted July, August and September invoices • Prepared and submitted quarterly progress report for the April 1 to June 30, 2024 period • Continued to perform subcontractor management activities • Continued to coordinate project activities with FHWA LTPP Team and its Data Collection Services Contractor (DCSC) • Conducted other required project management activities.

Task 2. Test Section Nominations: • Continued to work on identifying LTPP test sections for possible forensic evaluation – to date, 34 LTPP test sections at 11 locations in 9 states have been identified • Continued to prepare and submit test section nomination forms for WSDOT approval for conduct of forensic evaluations – to date, nominations for 8 locations covering 20 LTPP test sections have been approved. Continued to work with the FHWA LTPP Team and its DCSC to identify additional candidate test sections.

Task 3a. Desktop Studies: • Completed forensic desktop evaluations for 19 LTPP test sections in AZ, KS, MT, PA, TX, and WA – draft technical memoranda were prepared and submitted to WSDOT for review and approval, including follow-up actions with respective agencies and FHWA LTPP Team • Commenced work on forensic desktop evaluations for 12 LTPP test sections in MO and MS and are ready to start evaluation of 2 more sections in CA – completion of these evaluations is anticipated in the upcoming reporting period.

Task 3b. Follow-Up Forensic Investigations: • Began planning and coordination for in-person meeting with TxDOT in October or November 2024 • Continued working on planning and coordination of virtual meetings with AZ, KS, and TX as well as with WSDOT and the FHWA LTPP Team to review draft desktop forensic evaluation memoranda • Worked on follow-up actions from July 2, 2024 review meeting with WSDOT • As appropriate, follow-up forensic investigation plans are being formulated based on outcomes from the referenced meetings.

Task 4. Final Report: • No work is anticipated under this task until the final months of the project.

Anticipated work next quarter

The anticipated work to be performed in each of the tasks specified by the project's SOW is summarized below:

Task 1. Project Management: • Complete preparation for and participate in face-to-face LTPP agency meeting with TXDOT in October or November 2024; provide update of TPF-5(500) activities to date and review of forensic evaluation results for LTPP test section in TX • Begin planning activities and potentially hold the next Technical Advisory Committee (TAC) meeting during the upcoming reporting period • Prepare and submit monthly invoices • Prepare and submit quarterly progress report for the July 1 to September 30, 2024 period • Continue to perform subcontractor management activities • Continue to coordinate project activities with FHWA LTPP Team and its DCSC • Conduct other required project management activities • Continue to discuss obligation of additional funds to the contract; approximately 70% of obligated funds have been spent to date and it is anticipated the remaining funds will last another 4 to 5 months.

Task 2. Test Section Nominations: • Continue to work on identifying LTPP test sections for possible forensic evaluation • Continue to prepare and submit test section nomination forms for WSDOT approval for conduct of forensic evaluations.

Task 3a. Desktop Studies: • Complete desktop evaluations for 14 LTPP test sections in MO, MS and CA • Begin working on desktop evaluations for other test section nominations approved by WSDOT.

Task 3b. Follow-Up Forensic Investigations: • Participate in-person agency meeting with TXDOT in October or November 2024 to review desktop study completed in TX; follow-up actions and adjustments to the desktop study memoranda are anticipated based on meeting outcomes • Continue preparations for and participate in similar meetings with AZ, KS and, if finished evaluations, with MS, MO and CA, as well as with the FHWA LTPP Team to review draft desktop forensic evaluation memoranda • As appropriate, formulate follow-up forensic investigation plans based on outcomes from referenced meetings.

Task 4. Final Report: • No work is anticipated under this task until the final months of the project.

Significant results

Although work on the project commenced less than a year ago, important results and findings are already being realized. Based on the forensic evaluation desktop study for the WA test sections, an issue requiring correction of the LTPP InfoPave tool was identified. More specifically, the plots of rutting versus time for the three test sections in question were showing incorrect trends, even though data associated with these plots were determined to be correct. The project team prepared and submitted LTPP Data Analysis and Operations Feedback Report (DAOFR) to the FHWA LTPP Team for corrective action; correction has been incorporated in the August 2024 LTPP InfoPave release. Since then, a few other data (distress, traffic, etc.) issues have been identified during other forensic evaluations in the LTPP database and the project team is working with the FHW LTPP team to address these issues. Another important outcome of the forensic investigations to date is the confirmation that all test sections investigated to date, without exception, have adequate data to explain their performance. Moreover, recommendations are being made to further collect data elements that

would further enhance the available data – e.g., within test section thickness measurements, close-out performance testing, laboratory testing, etc. We also learned, as part of the July 2 meetings with WSDOT, planned rehabilitation on the Washington SPS-10 project has been postponed, providing additional time to assess test section performance.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems)

There are no technical challenges to report at present (and none are anticipated), which may affect completion of the project. As indicated in previous progress reports, however, enough funding is available for a robust start, but future progress of work will depend on committed funds being obligated to enable the work to continue without a break. At this time, it is anticipated the remaining funds will last another 4 to 5 months.

Potential Implementation

The primary outcome of the test section forensic evaluations is memoranda documenting the major findings, conclusions, and recommendations, both for each investigation and for the overall project. As with the Stage 1 effort (TPF-5(332)), numerous important findings have been made as a direct result of the forensic evaluations, which will directly affect, and therefore improve, the LTPP database and will advance knowledge in the pavement community – please see earlier Significant Results section. And many more findings are anticipated over the remainder of the project.

Table 1. Summary of Task 2 and Task 3 Activities to Date

Study #	# of Sites	# of Sections	State(s)	LTPP ID	Experiment Type ¹	Pavement Type ²	Purpose of Investigation	Nomination Submittal	Nomination Approval	Study Start	Initial Memo Submittal	Memo Acceptance
1	1	1	PA	42-1597	GPS-6S	AC	Excellent Performance; Other	12/6/2023	12/11/2023	12/11/2023	Cancelled	Cancelled
2	1	6	AZ	04-0213	SPS-2	JPCP	Performance Comparison	12/6/2023	12/11/2023	12/11/2023	2/26/2024	
				04-0214								
				04-0215								
				04-0217								
				04-0262								
3	2	2	PA	42-1597	GPS-6S	AC	Performance Comparison	1/22/2024	2/1/2024	2/1/2024	2/13/2024	
			WA	53-1007								
4	1	1	MT	30-7075	GPS-6S	AC	Excellent Performance; Other	2/4/2024	5/22/2024	6/10/2024		
5	1	3	TX	48-AA01	SPS-10	AC	Performance Comparison	2/4/2024	5/22/2024	4/30/2024	5/21/2024	
				48-AA02								
				48-AA03								
6	1	4	KS	20-0202	SPS-2	JPCP	Performance Comparison; Other	2/15/2024	5/22/2024	5/28/2024	7/11/2024	
				20-0203								
				20-0206								
				20-0210								
7	1	3	WA	53-AA01	SPS-10	AC	Performance Comparison; Other	3/5/2024	5/22/2024	3/12/2024	4/14/2024	
				53-AA02								
				53-AA03								
8	1	10	MO	29-AA01	SPS-10	AC	Performance Comparison; Other	4/24/2024		7/10/2024		
				29-AA02								
				29-AA03								
				29-AA61								
				29-AA62								
				29-AA63								
				29-AA64								
				29-AA65								
				29-AA66								
9	1	2	MS	28_0805	SPS-08	AC	Performance Comparison; Other	7/23/2024		7/23/2024		
				28_0806								
10	1	2	CA	06_A805	SPS-08	AC	Performance Comparison; Other	7/24/2024		Not Started		
				06_A806								

¹ Experiment Type

GPS-6S = AC Overlay of Milled PCC Pavement Using Conventional or Modified Asphalt Experiment
 SPS-2 = Strategic Study of Structural Factors for Rigid Pavements Experiment
 SPS-08 = Study of Environmental Effects in the Absence of Heavy Loads
 SPS-10 = Warm Mix Asphalt Overlay of Asphalt Pavement Study

² Pavement Type

AC = Asphalt Concrete
 JPCP = Jointed Plan Concrete Pavement

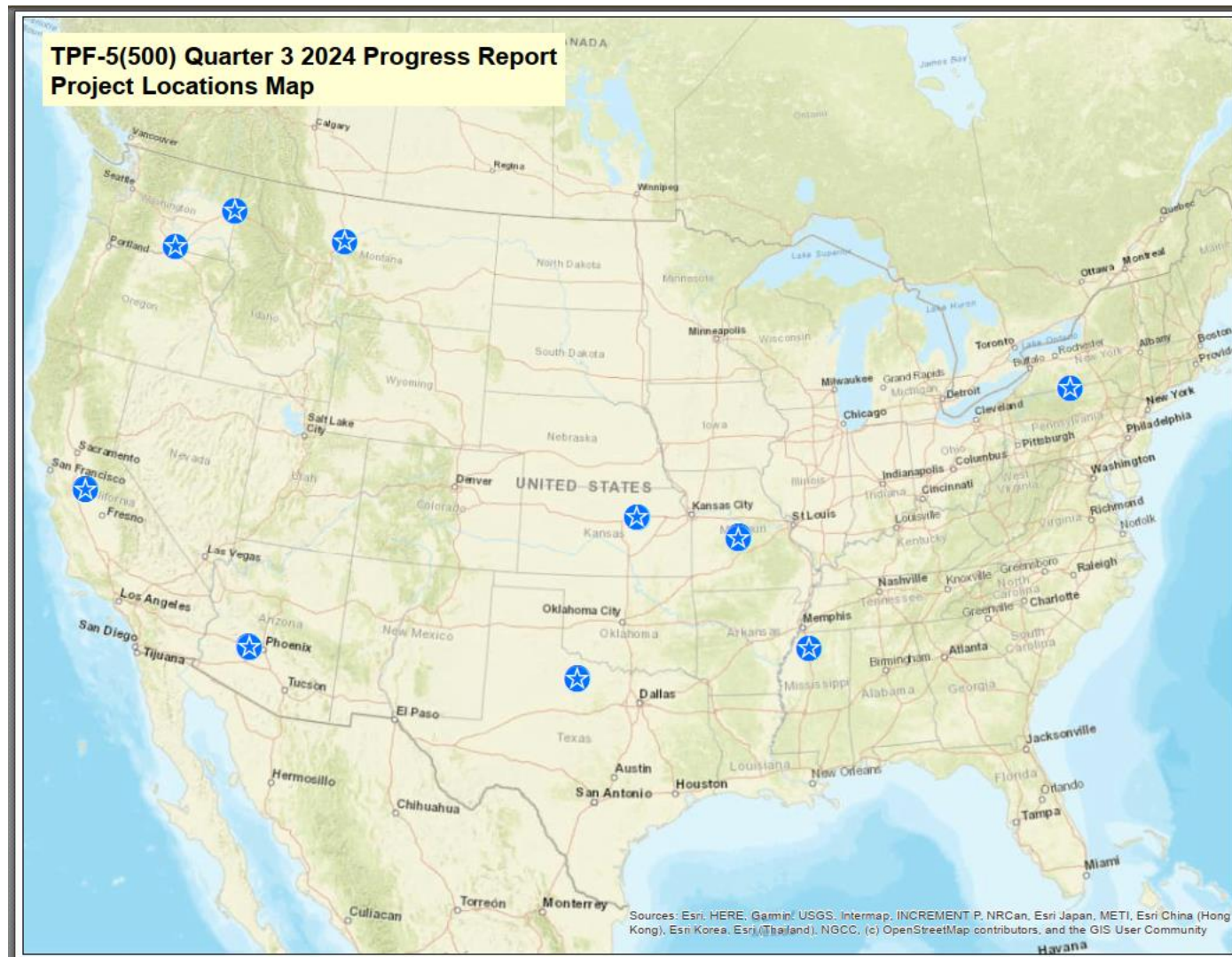


Figure 1. Geographical Location of TPF-5(500) LTPP Test Sections