

# TRANSPORTATION POOLED FUND PROGRAM

## QUARTERLY PROGRESS REPORT – Q1/2026

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

|  |   |   |  |
|--|---|---|--|
| <b>Transportation Pooled Fund Program Project</b>  |   | <b>Quarterly Report Period</b>  |  |
| TPF-5(500) LTPP Forensic Investigations - Stage 2<br><a href="https://www.pooledfund.org/Details/Study/729">https://www.pooledfund.org/Details/Study/729</a> |   | <input checked="" type="checkbox"/> Quarter 1: Jan-Mar<br><input type="checkbox"/> Quarter 2: Apr-Jun<br><input type="checkbox"/> Quarter 3: Jul-Sep<br><input type="checkbox"/> Quarter 4: Oct-Dec |  |
| <b>Lead Agency PM</b>  | <b>Lead Agency PM Phone</b>               | <b>Lead Agency Email</b>  |  |
| Mustafa Mohamedali   | 360-704-6307                              | <a href="mailto:MohameM@wsdot.wa.gov">MohameM@wsdot.wa.gov</a>  |  |
| <b>Lead Agency Technical Lead</b>  | <b>Lead Agency Tech Lead Phone</b>        | <b>Lead Agency Email</b>  |  |
| Karen Carlie   | 360- 709-5479                             | <a href="mailto:karen.carlie@wsdot.wa.gov">karen.carlie@wsdot.wa.gov</a>  |  |
| <b>Principal Investigator (PI)</b>   | <b>PI Phone</b>                           | <b>PI Email</b>   |  |
| Gonzalo Rada PhD, PE (WSP)<br>Kevin Senn (NCE)   | 512-496-4465<br>775-329-4955              | <a href="mailto:gonzalo.rada@wsp.com">gonzalo.rada@wsp.com</a><br><a href="mailto:ksenn@ncenet.com">ksenn@ncenet.com</a>  |  |
| <b>Lead Agency Project ID</b>  | <b>Other Project ID (e.g. contract #)</b> | <b>Program Start Date</b>   |  |
| Y12819   | WSP 6420230016                            | Sep 2, 2022   |  |
| <b>Contract Start Date (Original)</b>  | <b>Contract End Date (Original)</b>       | <b>Revised Contract End Date</b>  |  |
| Aug 17, 2023   | Mar 31, 2026                              | September 30, 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 \$ |
|------------------------|------------------------|---------------------|-----------------------|---------------------|--------------------------|
| 440,000                | 440,000                | 100                 | 440,000               | 302,768             | 33,175                   |

### 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 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 detailed in this section. Table 1 provides further information on the Task 2 and Task 3 activities, while Figure 1 shows the location of the LTPP test sections selected for investigation. During the reporting period in question, the project's performance period was extended through September 30, 2026 and \$100,000 in additional funding was obligated to carry out higher-order analyses as well as to provide additional project information dissemination activities. As was the case in the previous reporting period, *progress on the project tasks was significant.*

Task 1. Project Management: • Working with WSDOT, executed contract modification extending the project's period of performance until September 30, 2026 and providing additional funding for the conduct of higher-order analyses and project dissemination information activities • Prepared and submitted January, February and March 2026 invoices • Prepared and submitted quarterly progress report for the January 1 to March 31, 2026 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: • This task was completed during the previous quarterly progress report • In all, 69 LTPP test sections at 22 locations in 19 states were identified, which is in line with the 63 test sections, 26 locations and 23 states identified in TPF-5(332) • No further work is anticipated under this task, as attention during the upcoming period will focus on the subtask 3c higher-order analyses and the Task 4 project dissemination activities.

Task 3a. Desktop Studies: • Completed Texas SPS-08 (PCC) desktop study and submitted memorandum to WSDOT and TxDOT – this was the last desktop study to be carried out under subtask 3a • Completed revisions to desktop study reports for six Missouri SPS-10 test sections based on agency provided input • Virtual or in-person meetings were pursued with the California, Washington and Texas DOTs to review the desktop study findings • Other than the referenced meetings, no further work is anticipated under this subtask, as attention during the upcoming period will focus on the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 3b. Follow-Up Forensic Investigations: • As indicated in subtask 3a, continued to pursue virtual or in-person meetings with various agencies to review and discuss the respective desktop studies, but were unsuccessful • Working with the FHWA LTPP Team, continued to pursue resolution of problem issues identified by the TPF-5(500) team – these issues and associated actions are summarized in the findings, conclusions, and recommendations chapter of the draft project report detailed next • Other than possible meetings with the California, Washington and Texas DOTs, no further work is anticipated under this subtask, as attention during the upcoming period will focus on the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 3c. Higher-Order Analyses: Under this subtask, the results from the TPF-5(332) and TPF-5(500) desktop studies and forensic evaluations have started to be analyzed at a higher level • Rather than considering specific test section or project locations, pavement performance and the factors that affect it will be considered at the LTPP experiment level – i.e., at a national scale that considers different pavement materials, subgrade soils, traffic, and climate • Specifically, the forensic evaluation results from the LTPP SPS-8 (AC), SPS-10 (WMA), SPS-2 (PCC) and SPS-8 (PCC) experiment test sections

will be grouped (separately) to perform the higher-order analyses • Test sections falling into these experiments, which have not undergone evaluation, will also be considered as part of the analyses.

Task 4. Final Report: • Completed preparation of draft project report, which covers the work performed under task 2 and subtasks 3a and 3b • Draft report was submitted to WSDOT, which in turn, distributed it to the project’s Technical Advisory Committee (TAC) for review and comment • TAC comments and input are anticipated in early April 2026, and the report will be revised based on the input received • The analyses being performed under subtask 3c will be documented as a separate chapter in the project report, but this is not expected to commence until the July to August 2026 reporting period • It is anticipated the higher-order analyses will yield “good practices” recommendations, which will be documented under Task 4 in the form of a techbrief • To further disseminate the project findings, conclusions and recommendations, they will be presented at a national webinar to be held towards the end of the project, most likely in August 2026.

### **Anticipated work next quarter**

During the upcoming reporting period, the project’s effort will mainly focus on the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 1. Project Management: Plan and coordinate a possible project TAC meeting • Prepare and submit quarterly progress report for the April 1 to June 30, 2026 period • Continue to perform subcontractor management activities • As needed, continue to coordinate project activities with FHWA LTPP Team and its DCSC • Conduct other required project management activities.

Task 2. Test Section Nominations: Activities under this task have been completed • Attention will now shift to the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 3a. Desktop Studies: Activities under this subtask have been completed, but virtual or in-person meetings with the California, Washington, and Texas DOTs to discuss the respective desktop studies are possible • Attention will now shift to the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 3b. Follow-Up Forensic Investigations: Activities under this subtask have been completed, but virtual or in-person meetings with the California, Washington, and Texas DOTs to discuss the respective desktop studies are possible • Attention will now shift to the subtask 3c higher-order analyses and the Task 4 project information dissemination activities.

Task 3c. Higher-Order Analyses: • Commenced with the grouping of test sections previously evaluated in TPF-5(332) and TPF-5(500) according to LTPP experiment – the initial groupings include SPS-2, SPS-8(AC), SPS-8(PCC), and SPS-10 test sections • An initial plan for analyses of the data associated with the referenced grouping was formulated, with a focus on performance metrics and the factors that affect those metrics • Began to analyze data in accordance to plan, with the initial effort focusing on the trends of the performance metrics over time.

Task 4. Final Report: • It is anticipated TAC input on the draft project report will be received in early April 2026 • Once input has been received, the project team will revise the project report • Project team will also begin to assemble presentation that will be used during the planned August 2024 webinar • No further reporting material is anticipated during the upcoming reporting period.

### **Significant results**

The project continued to realize important results and findings. For example, 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 showed 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 was incorporated in the 2024 LTPP InfoPave release. Since then, additional data (distress, traffic, etc.) issues have been identified in the LTPP database during forensic evaluations and the project team is working with the FHWA LTPP team to address these issues. This includes investigating traffic anomalies (CO, IA), distress anomalies (FL, MI, NC), and missing maintenance or rehabilitation data (NC, TX). Another important outcome of the forensic investigations to date is the confirmation 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. The project team also learned, based on meetings with WSDOT, planned rehabilitation on the Washington SPS-10 project has been postponed, providing additional time to assess test section performance. Likewise, there were several positive outcomes from the September 2025 Iowa DOT meeting including determining dowel bars were present in the supplemental test section, potential future work, and a commitment to perform sampling, as needed. Similar results have been realized from meetings with other agencies – most recently receiving core measurements and material testing data from Missouri DOT, which was implemented into an update to the Missouri SPS-10 desktop study.

**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. Moreover, the extension of the performance period and the obligation of additional funds will enable the project team to further enhance the results by introducing higher-order analyses (e.g., such as performance review and analyses of multiple SPS-10 Warm-Mix Asphalt test sections across the country), developing a “good practices” TechBrief, and delivering a webinar sharing key project finding, conclusions and recommendations.

**Potential Implementation**

The primary outcome of the test section forensic evaluations to date has been 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. In addition, the recent performance period extension and obligation of additional funds will allow for higher-order analyses, development of “good practices” TechBrief, and delivery of webinar sharing key project findings, conclusions and recommendations – all considered important implementation tools.

**Table 1. TPF-5(500) Project Summary Information**

| Study # | # of Sites | # of Sections | State(s) | LTPP ID | Experiment Type <sup>1</sup> | Pavement Type <sup>2</sup>    | Purpose of Investigation   | Status  |
|---------|------------|---------------|----------|---------|------------------------------|-------------------------------|--|---|
| 1       | 1          | 6             | AZ       | 04-0213 | SPS-02                       | JPCP                          | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 04-0214 |                              |                               |  |   |
|         |            |               |          | 04-0215 |                              |                               |  |   |
|         |            |               |          | 04-0217 |                              |                               |  |   |
|         |            |               |          | 04-0262 |                              |                               |  |   |
| 04-0268 |            |               |          |         |                              |                               |  |   |
| 2       | 1          | 4             | CA       | 06-0201 | SPS-02                       | JPCP                          | Performance Comparison; Other  | Draft memorandum completed; pursuing input from agency  |
|         |            |               |          | 06-0203 |                              |                               |  |   |
|         |            |               |          | 06-0811 | SPS-08                       |                               |  |   |
|         |            |               |          | 06-0812 |                              |                               |  |   |
| 3       | 1          | 2             | CA       | 06-A805 | SPS-08                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 06-A806 |                              |                               |  |   |
| 4       | 1          | 4             | CO       | 08-0213 | SPS-02                       | JPCP                          | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 08-0215 |                              |                               |  |   |
|         |            |               |          | 08-0811 | SPS-08                       |                               |  |   |
|         |            |               |          | 08-0812 |                              |                               |  |   |
| 5       | 1          | 4             | FL       | 12-AA01 | SPS-10                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; revisions per agency input ongoing  |
|         |            |               |          | 12-AA02 |                              |                               |  |   |
|         |            |               |          | 12-AA03 |                              |                               |  |   |
|         |            |               |          | 12-AA61 |                              |                               |  |   |
| 6       | 1          | 6             | IA       | 19-0214 | SPS-02                       | JPCP                          | Performance Comparison; Other  | Memorandum finalized per agency input   |
|         |            |               |          | 19-0215 |                              |                               |  |   |
|         |            |               |          | 19-0219 |                              |                               |  |   |
|         |            |               |          | 19-0221 |                              |                               |  |   |
|         |            |               |          | 19-0224 |                              |                               |  |   |
| 19-0259 |            |               |          |         |                              |                               |  |   |
| 7       | 1          | 4             | KS       | 20-0202 | SPS-02                       | JPCP                          | Performance Comparison; Other  | Memorandum finalized per agency input   |
|         |            |               |          | 20-0203 |                              |                               |  |   |
|         |            |               |          | 20-0206 |                              |                               |  |   |
|         |            |               |          | 20-0210 |                              |                               |  |   |
| 8       | 1          | 2             | MS       | 28-0805 | SPS-08                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 28-0806 |                              |                               |  |   |
| 9       | 1          | 6             | MO       | 29-AA01 | SPS-10                       | AC                            | Performance Comparison; Other  | Memorandum finalized per agency input   |
|         |            |               |          | 29-AA02 |                              |                               |  |   |
|         |            |               |          | 29-AA03 |                              |                               |  |   |
|         |            |               |          | 29-AA62 |                              |                               |  |   |
|         |            |               |          | 29-AA66 |                              |                               |  |   |
| 29-AA67 |            |               |          |         |                              |                               |  |   |
| 10      | 1          | 1             | MT       | 30-7075 | GPS-6S                       | AC                            | Excellent Performance; Other   | Draft memorandum completed; no input from agency to date  |
| 11      | 1          | 3             | NC       | 37-0801 | SPS-08                       | AC                            | Performance Comparison; Other  | Revisions to draft memorandum in progress due to recent data collection; no input from agency to date |
|         |            |               |          | 37-0802 |                              |                               |  |   |
| 12      | 1          | 6             | OK       | 40-AA01 | SPS-10                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 40-AA02 |                              |                               |  |   |
|         |            |               |          | 40-AA03 |                              |                               |  |   |
|         |            |               |          | 40-AA61 |                              |                               |  |   |
|         |            |               |          | 40-AA62 |                              |                               |  |   |
| 40-AA63 |            |               |          |         |                              |                               |  |   |
| 13      | 2          | 2             | PA       | GPS-6S  | AC                           | Performance Comparison; Other | Draft memorandum completed; revised per input from one of two agencies |   |
|         |            |               | WA       |         |                              |                               |  |   |
| 14      | 1          | 3             | SD       | 46-0803 | SPS-08                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 46-0804 |                              |                               |  |   |
|         |            |               |          | 46-0859 |                              |                               |  |   |
| 15      | 1          | 2             | TX       | 48-0801 | SPS-08                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 48-0802 |                              |                               |  |   |
| 16      | 1          | 3             | TX       | 48-AA01 | SPS-10                       | AC                            | Performance Comparison   | Memorandum finalized per agency input   |
|         |            |               |          | 48-AA02 |                              |                               |  |   |
|         |            |               |          | 48-AA03 |                              |                               |  |   |
| 17      | 1          | 2             | TX       | 48-A807 | SPS-08                       | JPCP                          | Performance Comparison   | Draft memorandum completed; pursuing input from agency  |
|         |            |               |          | 48-A808 |                              |                               |  |   |
| 18      | 1          | 3             | WA       | 53-AA01 | SPS-10                       | AC                            | Performance Comparison; Other  | Memorandum finalized per agency input   |
|         |            |               |          | 53-AA02 |                              |                               |  |   |
|         |            |               |          | 53-AA03 |                              |                               |  |   |
| 19      | 2          | 4             | WA       | 53-A809 | SPS-08                       | JPCP                          | Performance Comparison; Other  | Draft memorandum completed; pursuing input from agency  |
|         |            |               |          | 53-A810 |                              |                               |  |   |
|         |            |               |          | 53-0201 |                              |                               |  |   |
|         |            |               |          | 53-0203 |                              |                               |  |   |
| 20      | 1          | 2             | WI       | 55-0805 | SPS-08                       | AC                            | Performance Comparison; Other  | Draft memorandum completed; no input from agency to date  |
|         |            |               |          | 55-0806 |                              |                               |  |   |

Totals: 22 69

<sup>1</sup> Experiment Type

GPS-6S = AC Overlay of Milled PCC Pavement Using Conventional or Modified Asphalt Experiment  
 SPS-02 = 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

<sup>2</sup> Pavement Type

AC = Asphalt Concrete  
 JPCP = Jointed Plain Concrete Pavement

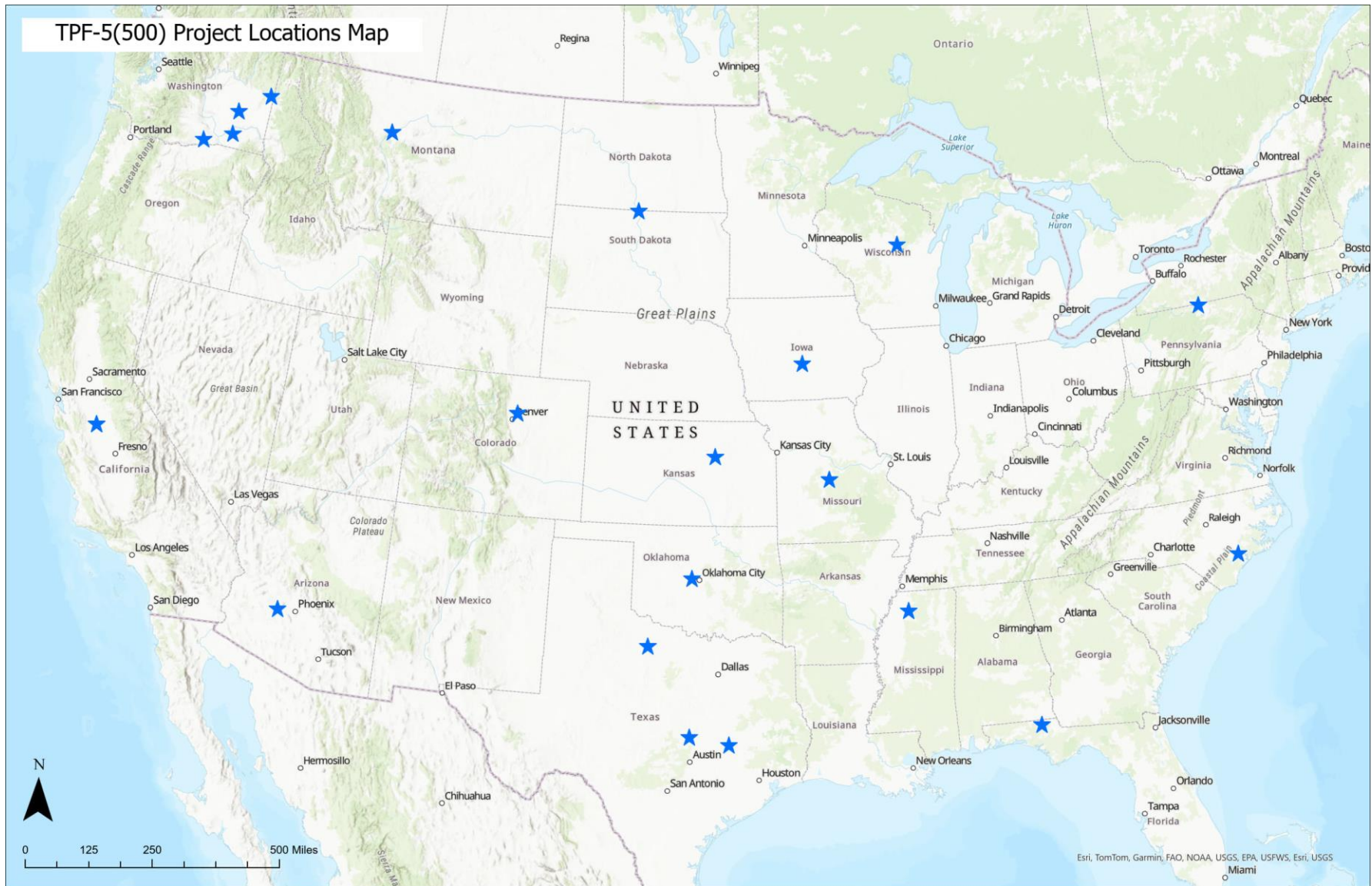


Figure 1. Geographical Location of TPF-5(500) LTPP Test Sections.