

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency: Washington State Department of Transportation (WSDOT)

Transportation Pooled Fund Program Project # TPF-5(386)	Transportation Pooled Fund Program - Report Period: ☐ Quarter 1 (January 1 – March 31), 2026 ☒ Quarter 2 (April 1 – June 30), 2026 ☐ Quarter 3 (July 1 – September 30), 2026 ☐ Quarter 4 (October 1 – December 31), 2026	
TPF Study Number and Title: TPF-5(386), Gravel-Bed River Assessment Tool for Improved Resiliency of Engineering Design		
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Lead Agency Project ID:	Other Project ID (i.e., contract):	Project Start Date: September 2018
Original Project Start Date: September 2018	Original Project End Date: September 20, 2024	If Extension has been requested, updated project End Date: December 31, 2026

Project schedule status:

☒ On schedule	☐ On revised schedule	☐ Ahead of schedule	☐ Behind schedule
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Overall Project Statistics:

Total Project Budget	Total Funds Expended This Quarter	Total Funds Expended by the End of This Quarter	Percentage of Work Completed to Date
\$559,933	\$5,894*	\$542,695*	97%*

* This amount is an estimate since the exact labor cost was not available at the time of preparing this Quarterly Report.

Project Description:

Background:

The world's rivers and streams are adjusting to changes in climate. In Washington State, stream channels are becoming more dynamic – especially in the vicinity of gravel-bed rivers. Federal, state, tribal and private roads are increasingly compromised or destroyed due to progressively more dynamic channel processes. A river's bedload (sediment transported along the channel bed) drives how rivers move into – or away from – road infrastructure. In order to design durable roads and bridges, we need high quality information on how the natural material in the river system will move and deposit in the vicinity of road infrastructure.

Widely available methods for assessing channel dynamics and hazards are based on sand-bed rivers, like the Mississippi River, that do not apply to gravel-bed rivers found throughout the United States. We need a gravel-bed river assessment tool that accounts for changes in gravel-bed rivers from glacial melt and extreme flooding associated with projected future climate change.

In this pilot, WSDOT proposes to develop practical guidance and methods for assessing bedload transport in gravel-bed rivers for more resilient road infrastructure. This guide will inform engineering design, hazard assessment, and maintenance strategies of roads along or near gravel-bed rivers. Other federal and state agencies support the pilot, and are willing to assist in the development and review process. WSDOT anticipates that US Forest Service, US Fish and Wildlife Service, Oregon DOT, Caltrans and other public works agencies will use the gravel-bed assessment tool developed by this pilot project.

Objectives:

This pilot will consist of three parts:

1. A technical workshop to define the framework, goals, and criteria for developing the guidance and case studies.
2. Data collection and case study development.
3. The guidance write-up and finalization

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

WSDOT (Cygnia Foruzani) successfully completed draft versions of Chapters 1 (Introduction), 2 (Components of Geomorphic Assessments), and 3 (Sediment Budget Framework). Chapter 3 was substantially revised and now aligns with the framework established in Chapter 2. All three chapters have been provided to the co-authors (Tim Abbe and Joanna Curran) for review.

Work on Chapter 4 (Best Practices in Sediment Transport Modeling) and Chapter 5 (Methow River Case Study) is underway. We hope to complete both chapters by the end of Q3. However, progress will depend on Joanna's available time and funding constraints. Cygnia is also developing Appendix A to support Chapter 2 and is nearing completion of a full draft for internal review by the co-authors.

Anticipated work next quarter:

WSDOT anticipates completing the first drafts of Chapters 4 and 5 by the end of September. Appendix A is expected to be completed by the end of August. Once a complete draft of the guidance document is assembled, we will identify three external subject matter experts to conduct a peer review.

Significant Results:

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).

Potential Implementation:

The final product of the pilot study will be the publication of WSDOT's guidance and methods. These will be applicable to state DOTs and other highway asset managers across the nation wherever gravel-bed rivers are found.