TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): 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 # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* TPF-5(464)	**Transportation Pooled Fund Program - Report Period:** ☐ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☑ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31)	
Project Title: Hydrologic and Hydraulic Software Enhancements (SMS, WMS, Hydraulic Toolbox, and HY-8)		
Name of Project Manager(s): Eric Brown	**Phone Number:** 202-366-4598	**E-Mail** eric.r.brown@dot.gov
Lead Agency Project ID: N/A	**Other Project ID (i.e., contract #):** N/A	**Project Start Date:** October 1, 2020
Original Project End Date: December 31, 2025	**Current Project End Date:** December 31, 2025	**Number of Extensions:** N/A

Project schedule status:

☑ On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
Estimate Pending # Contributors: $500,000	$100,000 (all FHWA funds)	20%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$20,000 and 4%	$20,000 (all FHWA funds)	20%

Project Description:

Perform needed enhancements, feature additions, and maintenance to four FHWA sponsored hydraulic engineering software packages routinely used by State DOTs and their consultants across the Nation. The four applications are: 1) the Surface-water Modeling System (SMS), 2) the Watershed Modeling System (WMS), 3) the Hydraulic Toolbox, and 4) the HY-8 Culvert Hydraulic Analysis Program. The contractor will also create/update the user's guides, help files, and release notes issued with new versions of each software package. New software executable files will be periodically posted to, or linked from the FHWA Hydraulic Engineering Discipline website: https://www.fhwa.dot.gov/engineering/hydraulics/. New software versions will be deployed through webinars, conference presentations, workshops, and training courses. Deployment activities will cover the use of new features and completed maintenance activities.

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

While State contributions continue to be transfered, FHWA funds for Project Year 2021 were used for all activities. The project activities for this quarter follow:

1) HY-8: Version 7.70 was posted.

Improvements made in Version 7.70 include the following:

• Added a secondary versioning number
• Updated the Quick Start Guide
• Upgraded the interface for high pixel density displays and updated interface icons
• Upgraded to a new library to export data to the report generator with Microsoft Word format (DOCX)
• Added an option to set default unit system, outlet control, and exit loss
• Added irregular roadway plot minimum and maximum crest elevations in the side view
• Increased the number of irregular roadway plot points from 15 to 5000
• Added Manning's n value and plot of critical depth in the tailwater channel
• Added feedback to the user when irregular tailwater channel is insufficient for the specified flow
• Improved HY-8 tailwater computations to better handle surcharge situations
• Added culvert size on the results page
• Added Ke value of the inlet edge types and the culvert barrel slope in the Edit Crossing window
• Added max shear stress to the AOP table
• Provided testing information to the user in the HY-8 User's manual

Anticipated work next quarter:

The total amount of FHWA contribution of funds ($100k) to the TPF has been spent, and no State contributions have been used to date. The project task order (TO) has expired, and FHWA staff will work to initiate a new TO and obligate to-date State contributions to the new TO. This process will take a few months, so no new work is expected to occur during Quarter 4 (October 1st - December 31st, 2021).

FHWA staff will continue to market the value of this project while seeking additional partners.

Significant Results:

A new version of the Hydraulic Toolbox (5.1.4) was developed.

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).

The TAC did not identify any challenges or future obstacles that could affect project tasks and ultimate completion.

Potential Implementation:

When appropriate, the TAC anticipates deploying new software versions through a combination of: FHWA website posting, GovDelivery notifications to subscribers, release notes, presentations, and training courses. Future quarterly reports will provide additional details as new software version become ready for release.