TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): FHWA HIBT

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)*	**Transportation Pooled Fund Program - Report Period:**
TPF-5(227)	☐ 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:		
Continued Advancements in Load and Resistance Factor Design (LRFD) for Foundations, Substructures and Other Geotec		
Name of Project Manager(s):	**Phone Number:**	**E-Mail**
Silas Nichols	202-366-1554	silas.nichols@dot.gov
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:**
Multiple	Multiple	Varies
Original Project End Date:	**Current Project End Date:**	**Number of Extensions:**
Varies		

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
580,000	520,000	60%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
0	0	N/A

Project Description:

This project is broken into several sub-tasks to address specific Load and Resistance Factor Design (LRFD) research and deployment needs for State DOTs. Tasks include but are not limited to:

1. Development of technical guidance for design of shallow foundations
2. Development of comprehensive design problems in LRFD
3. Evaluation of capacity determination for large diameter driven piles
4. LRFD guidance for design and construction of driven piles
5. Evaluation of load and resistance factors for abutment design
6. Update of LRFD Seismic Design Guidance
7. Development of technical guidance for design of deep foundations for lateral load

The pooled fund is leveraging funds against other sources, so as to maximize the benefits to participating states and to best advance the practice. The objective of each task is to address a gap in the transition from allowable stress design (ASD) to LRFD identified by state DOTs and other transportation partners.

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

This report covers work periods (Quarters FY 2013):

Work on design and construction manual for driven piles was postponed due to contracting issues. Work moved to FY2013. Work included:

1. Developed and awarded contracts for update to guidance document Design and Construction of Driven Piles. The manual will be a comprehensive update to existing driven pile guidance to align with LRFD Bridge Design Specifications and address gaps in guidance. Funding for this efforts will be shared between the pooled fund ($225,000) and FHWA program funding ($325,000).

2. Began work on archiving Introduction to LRFD training materials into web-based training that will be available to State DOTs on demand. With implementation of LRFD now complete, the instructor led training development (NHI 132082) is no longer necessary to maintain. Funding for this effort is shared between the pooled fund ($50,000) and FHWA program funding ($248,000)

3. Completed work on LRFD Seismic Design Training courses including development of web-based training. $125,000 committed from TPF-5(227), remaining money from FHWA Program Office.

Anticipated work next quarter:

During the next quarter, it is anticipated that:

1. Work will begin on research on design methods for large diameter open-ended driven piles
2. Work will begin on GEC 9, Design of Deep Foundations for Lateral Load

Significant Results:

By contract, FHWA completed work on LRFD Seismic Design Training courses including development of web-based training. $125,000 committed from TPF-5(227), remaining money from FHWA Program Office (~$200,000). The updated training course provides on-demand, asynchronous web-based training on seismic design basics. This course is free. The original 5-day Instructor-Led training course has been split into two 2-day courses that better utilize time.

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).

Primary circumstance affecting project is leveraged funding from other sources to begin work. This problem has been solved.

Potential Implementation:

Current and previously completed work will assist DOTs and transportation partners in establishing a minimum standard of care for design and construction of foundations in an LRFD template. The developed guidance and research addresses gaps, questions and difficulties users have had in translating practice from ASD.