

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): [California Department of Transportation \(Caltrans\)](#)

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 # TPF-5(357)		Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input checked="" type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: Connecting the DOTs: Implementing ShakeCast Across Multiple State Departments of Transportation for Rapid Post-Earthquake Response			
Name of Project Manager(s): Sharon Yen	Phone Number: 916-208-7771	E-Mail Sharon.yen@dot.ca.gov	
Lead Agency Project ID: Task ID 2949, Project ID P1132	Other Project ID (i.e., contract #): Contract #65A0658 (Phase 1) Contract #65A0812 (Phase 2) Contract #65A0999 (Phase 3)	Project Start Date: 11/01/17	
Original Project End Date: 6/30/20	Current Project End Date: 9/30/24	Number of Extensions: 2	

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
\$450,000 (Phase 1 – 11/1/17 to 10/22/20)	\$430,830	100%
\$225,000 (Phase 2 – 4/13/21 to 9/30/22)	\$312,500	100%
\$277,500 (Phase 3 – 10/1/22 to 9/30/24)	\$232,667	85%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$47,587	\$47,587	85%

Project Description:

The California Department of Transportation (Caltrans) is organizing and leading the TPF project, "Connecting the DOTs: Implementing ShakeCast Across Multiple State Departments of Transportation for Rapid Post-Earthquake Response," study number TPF-5(357) (<http://www.pooledfund.org/Details/Study/609>). Ten State Departments of Transportation (DOT) have committed funds and are key partners on this multi-state DOT project.

ShakeCast is a web-based tool that delivers an assessment of potential impacts to highway structures within minutes of an earthquake, raising situational awareness and improving emergency response for executive decision makers, traffic management center operators, and maintenance staff.

This TPF project seeks to achieve two primary objectives. First, it will bring participating DOTs into full ShakeCast operation for post-earthquake assessment of state and local bridge inventories. Second, the project will provide a mechanism to actively engage representatives from state DOTs with common interests in implementing and expanding the application of ShakeCast technologies to improve emergency response capabilities.

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

Project quarterly meeting held on 6/3/24

Project Action Items:

1. All states to review the new 2022 NBI workbook for inventory update.
2. All states to consult with their own IT on requirements of system migration using Docker or other platform after TPF ends.
3. Search for viable options for the long-term operation of ShakeCast for all partners after project end.

Work Progress

DOTs	Phase II	Task Description (04/01/2024 to 06/30/2024)
California	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook;
	Task 3	
Idaho	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook; group email QC
	Task 3	
Illinois	Task 1	USGS ShakeCast hosting service; bridge inventory update
	Task 2	EQ response (ShakeCast product QC); Draft NBI 2024 Workbook
	Task 3	
Missouri	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook; user inventory update
	Task 3	
Oklahoma	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook
	Task 3	AWS deployment
Oregon	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook (CSV, XML)
	Task 3	Next Gen. Bridge Fragility (TAC)
South Carolina	Task 1	USGS ShakeCast hosting service
	Task 2	Draft NBI 2024 Workbook; ShakeMap scenario exercise

	Task 3	
Texas	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook
	Task 3	
Washington	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook
	Task 3	
Utah	Task 1	USGS ShakeCast hosting service
	Task 2	EQ response (ShakeCast product QC); draft NBI 2024 Workbook
	Task 3	
FHWA	Task 1	USGS ShakeCast hosting service; Infobridge pyCast test server
	Task 2	EQ response (M4.8/4.9 New Jersey, ShakeCast product QC); draft NBI 2024 (CSV, XML)
	Task 3	
USGS	Task 2	* Ongoing testing for Docker image of DOT pyCast instances using NBI2023 dataset; PSA06 metric in ShakeMap
	Task 3	* Draft workbook (NBI2024) and data files (txt, csv, xml) for all states.; Revised bridge no-macro Workbook
	Task 3	* Updated Docker image snapshots of current production server for individual DOTs
	Task 4	* Tag release (4.3.11 and 4.3.8) of Docker image and packages for ShakeCast V4; Full spectrum ShakeMap cli build for ShakeCast image
	Task 4	* SSA ShakeCast poster

Anticipated work next quarter:

The following work is anticipated for next quarter:

- USGS to continue the effort in providing technical support and assistance to participating DOT partners.
- USGS to continue the effort to work on providing ShakeCast cloud hosting to participating DOTs.
- ShakeCast team to continue communications with other DOTs about ShakeCast and to join the TPF.

System features development and State specific system functionality improvement is an ongoing effort for this project.

Final project meeting is scheduled on 9/23/24.

States to review and update workbook if necessarily.

States to consult with their own IT on requirements of system migration using Docker or others after TPF ends.

FHWA look into starting a new TPF with DOTs.

Significant Results:

Nothing to report at this 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).

Not thing to report at this time.

Potential Implementation:

Nothing to report at this time.