

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 type="checkbox"/> Quarter 2 (April 1 – June 30) <input checked="" 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)	Project Start Date: 11/01/17	
Original Project End Date: 6/30/20	Current Project End Date: 9/30/22	Number of Extensions: 1	

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	95%
\$225,000 (Phase 2 – 4/13/21 to 9/30/22)	\$312,500	100%

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	100%
\$60,863	\$60,863	100%

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 08/08/2022.

Project Action Items:

1. All state DOTs to look into converting latest bridge inventory data to 2020 version.
2. USGS follow up with TXDOT on scouring program development and assistance.
3. Team to provide feedbacks on the use of regional vs. global ShakeMap (accuracy vs. speed)

Contract Status:

Caltrans received approval by FHWA TPF Program for 2nd 2-year project extension for the period of 10/1/2022 to 9/30/2024. Illinois DOT joined the pooled fund for the 2nd extension. All funds for the 2nd extension have been committed pending transfer.

Caltrans is in the process of getting the contract executed by 10/1/2022.

Work Progress

DOTs	Phase II	Task Description (7/1/2022 to 9/30/2022)
California	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A;
	Task 3	
Idaho	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC);
	Task 3	
Mississippi	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	
	Task 3	
Missouri	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A; Scenario ShakeMaps and kmz for exercise visual;
	Task 3	Worked with M. White on scenario collection for Planning exercises.
Oklahoma	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC);

	Task 3	
Oregon	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A; user inventory update
	Task 3	Response to inquires from A. Nako on triggering for M4.4 Oregon earthquake
South Carolina	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage); validation of inventory and notification settings
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A;
	Task 3	
Texas	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage); Grant county user/notification setting
	Task 2	EQ response (ShakeCast product QC);
	Task 3	
Washington	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A;
	Task 3	
Utah	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage)
	Task 2	EQ response (ShakeCast product QC);
	Task 3	
FHWA	Task 1	USGS ShakeCast hosting service (primary and backup switchover during planned outage); Infobridge pyCast test server
	Task 2	EQ response (ShakeCast product QC); ShakeCast Q/A;
	Task 3	Infobridge NBI API and Impact csv (w Hazus DS2); automated workflow for pyCast product posting
USGS		<ul style="list-style-type: none"> * Power Automate revisions for automated posting of all processed ShakeCast products on TPF SharePoint/Planner site at USGS * pyCast Testing for DOT server instances, Ground Failure docker service for site probabilities * GSM_only validation for ShakeCast triggering (after PDL outage at NEIC) * kml update for geospatial display

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.

The next project quarterly meeting is scheduled on 11/07/2022.

Caltrans to execute 2nd extension contract with USGS by 10/1/22.

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.