

## **Transportation Pooled Fund Program**

### **Project Title:**

Full-Scale Seismic Performance Testing of U.S. Highway Bridge Column

### **Project Manager and Phone Number:**

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**Project No:** TPF-5(180)

**Project is:** under the R&D

### **Reporting Period:**

Apr. – Jun. 2011

### **Description of Work Performed and Progress:**

1. The decision was made to test the full-scale bridge column in the UCSD's Shake Table.
2. The large scale (full) bridge column specimen was casted in July 2010.
3. In August, 2010, an analytical model was generated to simulate the testing result. The lumped plasticity model was used. The ground motions were concatenated together to see the cumulative effects of the tests in succession.
4. The bridge column test set up can be seen with the following link:  
<ftp://137.110.165.25/> .
5. In the week of the September 19-25, 2010, the full-scale column was tested. A series shake table tests were performed, and the project is performing the test results analysis. A preliminary test result was discussed and presented in the 2011's TRB Annual Meeting at AFF50 Bridge Seismic Design and Performance Committee meeting.
6. The test result is now being analyzed and will be compared with similar bridge design with smaller scale. The scale effects of this full-scale shake table test will be studied and provide suggestions of the validation of smaller scale testing. The test results implications and comparison between this full scale and other smaller scale test results are expected to be completed by October, 2011.
7. A draft final report of full column test is completed and will be posted to the FHWA ftp website soon.

**STATUS AND COMPLETION DATE**

Percentage of work completed to date for total project

Project is: 90 %

The project is on schedule.

Expected Completion Date: 10/31/2011

**Project Manager**

W. Phillip Yen, Ph.D., P.E.