

SAFE-TO-FAIL ADAPTATION STRATEGIES FOR PHOENIX-AREA ROADWAYS UNDER INCREASING PRECIPITATION

27 April 2016 – College Ave Commons 3rd Floor Atrium – 12pm to 1pm

<https://maps.asu.edu/?id=120&mrkId=62858>

OPEN TO THE PUBLIC

A PRESENTATION BY ARIZONA STATE UNIVERSITY'S SPRING 2016 COURSE

URBAN INFRASTRUCTURE ANATOMY

Civil, Environmental, and Sustainable Engineering
School of Sustainability
School of Geographical Sciences and Urban Planning

Global climate models predict increases in precipitation events in the Phoenix-metropolitan area and with the proposition of more flooding new insights are needed for protecting roadways and the services they provide. Students from engineering, sustainability, and planning worked together in ASU's Urban Infrastructure Anatomy Spring 2016 course to assess i) how historical floods changed roadway designs, ii) precipitation forecasts to mid-century, iii) the vulnerability of roadways to more frequent precipitation, iv) adaptation strategies focusing on safe-to-fail thinking, and v) strategies for overcoming institutional barriers to enable transitions. The students designed an EPA Storm Water Management Model for the City of Phoenix and forced it with future precipitation forecasts. Vulnerability indexes were created for infrastructure performance and social outcomes. A multi-criteria decision analysis framework was created to prioritize infrastructure adaptation strategies.