



US Army Corps
of Engineers®

Urban Flood Demonstration Program

Arid Regions Demonstration Program: Urban Flood Damage Reduction and Channel Restoration



Description

A U.S. Army Corps of Engineers (USACE) demonstration program focuses on urban flood damage reduction and channel restoration in the arid and semi-arid regions of the southwestern United States. The goal of the program is to develop and demonstrate innovative technologies to address



regional problems. Work is being undertaken by

the U.S. Army Engineer Research and Development Center (ERDC) in collaboration with the Desert Research Institute (DRI), part of the Nevada system of higher education. Work efforts have focused on the Truckee River (NV), Las Vegas Wash (NV), Rio Salado (AZ), and the Middle Rio Grande (NM).



Stakeholders include U.S. Army Corps of Engineers District personnel, other Federal agencies, state and local governments, and flood-control districts. The program is officially named the Urban Flood Damage Reduction and Channel Restoration Development and Demonstration Program for Arid and Semi-Arid Regions (UFDP).

Benefits

The program combines the national expertise of the USACE with the expertise of academic institutions through DRI and stakeholders. The program demonstrates the application of new and innovative techniques, models, and methods to arid and semi-arid regions. Work focuses on the special problems of the arid southwest, including but not limited to:

- techniques to improve urban flood forecasting in arid regions
- demonstration and evaluation of river restoration techniques
- improved design guidance for supercritical flood channels
- improved design guidance for streambank stabilization and grade control
- integrated water resources management to achieve local/regional goals
- improved modeling of water and sediment transport in arid regions
- investigation of implications of climate change on arid regions

Issue The arid and semi-arid regions of the southwestern United States have unique and severe flooding and river restoration problems. These areas have rapidly developing population centers and unique watershed management issues. Defining a middle ground between ecosystem restoration, flood control, and water supply is difficult, especially in populated areas where human life and property are at stake. Rivers in the urban areas of the southwestern United States present unique challenges in sedimentation, restoration, and flood damage reduction. The goal of this program is to develop and demonstrate innovative technologies to address these regional problems.

These topics were selected and pursued with input and collaboration from Corps field personnel, along with state and local stakeholders. Their input and expertise are an integral part of the program. We seek opportunities to coordinate activities with other ongoing efforts.

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Partners DRI, Clark County Flood Control District, Southern Nevada Water Authority, Washoe County, Maricopa County Flood Control District, USACE South Pacific Division, Bureau of Reclamation, US Fish and Wildlife Service, Sandia National Laboratories, and other Federal, state, and local agencies.