



## Emergency Watershed Protection (EWP) EWP Assistance After Hurricane Harvey

There are 2,100 watershed projects in the nation established by local units of government with the assistance of the USDA Natural Resources Conservation Service (NRCS) Watershed Program (Public Law 78-534 and Public Law 83-566). These projects consist of over 11,000 flood control dams and thousands of conservation practices that provide over \$2 billion in annual benefits in flood prevention, water supplies, recreational areas, and other benefits.

There are three programs authorized in the Public Law 83-566 Watershed Protection and Flood Prevention Program: Watershed Protection and Flood Prevention, Emergency Watershed Protection Program (EWP) and Watershed Rehabilitation Program.

The **EWP Program** offers technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms and other natural disasters that impair a watershed.

All EWP projects must have a sponsor and demonstrate that they reduce threats to life and property; be economically, environmentally and socially sound; and must be designed to acceptable engineering standards.

NRCS partners with diverse sponsors to complete EWP Program projects. Sponsors include cities, counties, towns, conservation districts, or any federally-recognized Native American tribe or tribal organization.

### **Emergency Watershed Protection Program helps in the recovery effort in Harris County, Texas after Hurricane Harvey.**

Hurricane Harvey, which made landfall in Texas on August 25, 2017, is blamed for 103 direct and indirect deaths. The deadly storm dumped record rainfall into Harris County waterways, resulting in disastrous flooding that led to sinkholes, bank erosion, failed concrete, collapsed outfall pipes, as well as the destruction of countless trees, bushes, and grasses.

Approximately 14,000 commercial structures and businesses were flooded, resulting in varying degrees of damage. Fiscally, Harvey ranks as the second-most costly hurricane to hit the U.S. mainland since 1900, causing nearly \$125 billion in damages.

To put things into perspective, during Hurricane Harvey, a total of 1 trillion gallons of water fell across Harris County over a four-day period. This amount of water would cover Harris County's 1,800 square miles with an average of 33 inches of water. Harris County typically receives an annual rainfall of about 50 inches per year. The damage to the county's drainage infrastructure was unimaginable.

"NRCS's EWP Program works tremendously for flood control infrastructure," says Harris County Flood Control District Director of Operations, Alan Black, who oversees the district's planning, engineering, construction, and infrastructure divisions; in other words, planning, designing, building, and maintaining.

“When a disaster comes along and causes slope erosions, failures, pipes that get blown out from the storm – we work with NRCS and EWP to make those repairs to the natural infrastructure.”

According to Black, the NRCS has provided \$13 million through the EWP Program to be used for drainage infrastructure repairs. “The EWP Program is integral to repair damaged channels to get them back up and running where they should be.”

When Harvey came in, from the time we got engineers onto contract and built the job it was three years and about \$85 million dollars for all the recovery work. NRCS paid about 80 percent of that.

To watch a video that features Alan Black describing in more detail how the NRCS and the EWP Program helped Harris County recover from the hurricane, to the NRCS web page: <https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection>



Steel sheet piling 20 to 30 ft deep was installed to stabilize the ground and riprap concrete blocks installed to prevent future erosion.

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