

Magma Flood Retarding Structure Rehabilitation Project Pinal County, Arizona

Fact Sheet
February 2017

History of the Dam:

The Magma Flood Retarding Structure (FRS) was originally constructed by the Soil Conservation Service (now Natural Resources Conservation Service, NRCS) in 1964. It is operated and maintained by the Magma Flood Control District.

The 5.3-mile-long, 26-foot high earthen structure provides flood protection to a portion of the Town of Florence, Arizona, including an estimated 1,100 current residents, 500 residential and commercial properties, agricultural land, and related infrastructure.

Additional residents and structures will be protected in the future as development continues to occur in the downstream benefitted area.

It was originally classified as a low hazard dam, which is a hazard classification given to dams that do not pose a threat to loss of life if it failed, but could cause damage to agricultural lands, fences, livestock, farm equipment, and county roads and bridges. The classification was later changed to high hazard due to houses and businesses downstream that might be flooded if the structure failed.



Installing erosion protection for the auxiliary spillway

Why Rehabilitate the Structure?

The FRS had developed safety deficiencies and inadequacies since the time of its construction related to embankment cracking and auxiliary spillway capacity.

To address these concerns, the project sponsors, with assistance from the NRCS, completed a Supplemental Watershed Plan and Environmental Assessment (Plan/EA).

The Plan/EA called for rehabilitation of the Magma FRS to provide for continued flood protection while meeting current dam safety and performance standards.

As a result of changes in dam safety criteria, mitigation of known safety deficiencies and significant downstream development, the FRS was rehabilitated to high hazard standards

Rehabilitation Details:

Rehabilitation included raising the top of dam by four feet, construction of a central filter along the length of the embankment, protecting the auxiliary spillway from erosion using rock riprap, and improving the principal spillway outlet with a reinforced concrete dissipation structure and riprap channel. The project was completed in 2016.

Project Cost:

The NRCS provided technical assistance and 65 percent of the design and construction cost. Project sponsors provided easements and land rights for the project and 35 percent of the cost.

Benefits:

Rehabilitation of the structure brought it up to current State dam safety criteria and extended its life and its benefits for another 50 years. The total flood damage reduction benefit from the rehabilitation project is estimated at \$29 million.

Partners:

Magma Flood Control District
Florence-Coolidge Natural Resource Conservation District
Natural Resources Conservation Service

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