

Arroyo 1: Improving function while staying green

By Adam Holguin, El Paso Water

As west El Paso develops around the Franklin Mountains, the built and natural environments converge, providing a challenge for El Paso Water. The utility is tasked with improving a system that protects roads, infrastructure and private property while minimizing the direct impact to mountains.

“We provide safety protection and at the same time we want to preserve the beauty of our mountain and open spaces,” said Gisela Dagnino, Utility Chief Operations Officer Stormwater. “We have to be humble, very ethical and mindful of the responsibility that we have in our designs around the mountain.”

The Arroyo 1 Dam and Green Infrastructure Improvements project is taking place in a natural arroyo, flanked by neighborhoods to the east, west and south, and releases stormwater and debris into the concrete lined Bear Ridge channel. Past rain events, most notably in 2015, overwhelmed the existing infrastructure, causing severe flooding and damage to surrounding roads. Arroyo 1 also serves as a small trailhead to a hiking and biking path, which many El Pasoans voted to preserve.

“I want to make the improvements without removing the natural part of the arroyo,” said Jorge Lopez, Capital Improvement Project Manager for Stormwater.

The project aims to slow the velocity of stormwater coming off the mountain, preventing additional erosion to the arroyo and minimizing silt and rock from clogging the Bear Ridge channel.

Crews are excavating and reshaping one-third of a mile of the arroyo upstream from the Bear Ridge channel. Green infrastructure, such as gravel filled soil systems also known as geo grids, will slow water velocity, and reduce erosion to the arroyo slopes.

Arroyo 1 is the first project to utilize geo grids, a low-lying material that provides stability and prevents erosion. Gabion structures, wire cages filled with rock meant to provide structural functions while blending into their natural surroundings, will also be featured. “Gabion baskets allow for vegetation to grow through them, allowing them to become part of the natural landscape,” Dagnino said.

“This area is beautiful,” Lopez said. “I bike and hike the mountain myself, so I am excited this project will blend in with the natural surroundings.”

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Arroyo 1 Dam and Green Infrastructure Improvements

Challenge



Heavy rain overwhelmed infrastructure, causing severe flooding and damage to surrounding roads.

Solution



Project designed to decrease velocity of stormwater coming off the mountain.

Going Green



Views of the mountain and access to trails are preserved while adding public safety measures to help reduce stormwater runoff.



Gabion structures provide structural functions while blending into natural surroundings.



First EPWater project to utilize geogrids, a low-lying material that provides stability and prevents erosion.

