



Green Infrastructure & Stormwater Management CASE STUDY

Hahn Desert Parkway

Location: Albuquerque, NM

Client: Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA)

Design Firm(s): Sites Southwest (landscape architect) Smith Engineering Company (engineering)

Landscape architect/Project contact: George Radnovich, ASLA

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ASLA Chapter: New Mexico

Project Specifications

Project Description: The Hahn Arroyo Drainage Channel was originally built in the 1960's; over the years it deteriorated to the point that concrete occurred during rains. AMAFCA commissioned Sites Southwest to develop a conceptual design for the rehabilitation of the Hahn Channel and later an engineer which worked with Sites. Together, the consultants and AMAFCA took an innovative sustainably oriented approach serving its drainage function while making it multi-use.

This "Integrated Systems Approach" to the project included using the old channel concrete for walls, designing cisterns to collect arroyo water for use on the landscape (with water quality cleaning devices), water harvesting strategies channel-side which collected all site drainage, use of three water use levels of primarily native plants, interpretive signage, and open space/park land. In addition some of an adjacent park's water use needs was supplied by the cisterns. Other recreational enhancements include a multi-use trail, dog watering stations, wayfinding signage and tire filling stations for bicyclists.

Project Type:

Open space – park

Drainage space

Part of a redevelopment project

Design features: Rain garden, cistern, porous pavers - this project may not totally fit concepts in non-arid regions of the country.

This project was designed to meet the following specific requirements or mandates: To meet funding criteria, developer/client preference, designed to meet the new MS4 Permit that AMAFCA is participating in with EPA Region 6

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 1 acre to 5 acres. The project included an existing arroyo channel with existing native grass/shrubland - the total acreage is between 3-5 acres.

The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? Not specifically

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$1,000,000-\$5,000,000 (Public funding: Regional - this would be a question for AMAFCA - unsure of funding)

Related Information: The total bid amount of the project is \$3.2 million dollars. In general the landscape costs were about \$500,000 excluding the cost of necessary walls, trails, grading, cisterns and other related amenities designed in part by project engineers and landscape architects.

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site design/development project: This is hard to determine. Costs for walls are less expensive due to use of urbanite, water costs will be less expensive due to use of cisterns, and maintenance will be less expensive due to use of native plant.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs. Water and maintenance costs should be reduced.

Number of jobs created: Not available - this question would require analysis for ancillary jobs created through service industry and contractors.

Job hours devoted to project:

Planning and Design: 650

Construction: 330 (not including contractors time)

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

As mentioned all site precipitation, excepting that that fell within the channel area was retained on site. The channel carried water from surrounding neighborhoods and mountain areas upstream.

Community & economic benefits that have resulted from the project: The community benefitted from this project because nothing like it has ever been done locally (and to our knowledge nationally). This project will be a learning tool for AMAFCA and the City of Albuquerque Parks and Recreation Department. Because the project included interpretive signage the public will also be educated about the needs of water conservation and green building.

Additional Information

Links to images: www.hahnarroyoproject.com