

ATTACHMENT 7

"TechJust"

TECHNICAL JUSTIFICATION OF PROJECT
PHYSICAL BENEFITS

TECHNICAL JUSTIFICATION

Project Summary

The Project proposes to construct a 530 acre-foot flood control and aquifer recharge basin in the City of Rialto, south of 210 Freeway at the intersection of Baseline Road and Cactus Avenue. The system captures a watershed area of 3,707 acres and is capable of delivering 8,646 cubic feet per second of storm water during a 100 year storm event. Cactus Basin 3 is part of a five basin storm system, two of which have already been built, that will help to eliminate any potential increase in flood hazard due to planned development in the area.

As part of the 210 Freeway construction project, CALTRANS and SANBAG reconstructed Cactus Channel to intercept flows from the north of the 210 freeway and discharge them into the Cactus Basins south of the freeway. As a result, the additional flows are concentrated requiring the enlargement of Cactus Basin 3 to mitigate the stormwater runoff.

Historically, flooding along the Rialto Channel downstream of the basins occurs on a fairly regular basis, even during moderate rain events. In the winter of 2004/2005, flooding along the channel was so severe that it damaged several property walls immediately adjacent to the channel (see photo below).



Photo 1-1 Winter storms of 2004-2005 caused \$1.2 million in damage to block walls along Rialto Channel downstream of the basins.

The objectives for the Project are to reduce the peak flow rate, enhancement of water recharge, improve water quality, increase habitat and expand recreational opportunities. Ultimately, Cactus Basins 4 and 5 must be constructed along with improvements to Rialto Channel in order to protect against the 100-year flood. Award of this grant for Basin 3 will allow us to build Basins 4 and 5 several years earlier than current projections indicate.

Physical Benefits

The Project will have the following physical benefits:

- Reduced flood hazard area
- Reduced number of structures flooded
- Reduced flooding duration
- Increased aquifer recharge
- Increase water quality
- Preserved open space
- Increased recreation opportunities
- Increased Habitat Restoration
- Increased Alluvial Fan Sage Scrub Habitat

Reduced flood hazard area

The Project will reduce the 100-year peak flows from 8,646 cfs to 1,329 cfs . Based upon our HEC-RAS modeling the amount of area shown in the flood hazard area without the basin is approximately 1,765 acres and with the basin is approximately 1,226 acres. This makes a difference of 539 acres. Further acreage protection will be realized when Cactus Basins 4 and 5 are in place.

Reduced number of structures flooded

A HEC-RAS analysis shows that approximately 1,586 residential structures and 477 commercial or industrial structures would be protected by the flood reduction realized from this Project. The area gaining increased protection from flooding includes existing tract homes, industrial parks, shopping centers, a railroad corridor and major traffic corridors including Interstate 10, Riverside Avenue and Foothill Blvd. Further property protection will be realized when the full basin system is in place.

Reduced flooding duration

Unit hydrograph studies were conducted using AES software. These studies showed without basin the storm duration peak flow would last 5 days and with basin the storm duration peak flow would last 3 days. This makes a difference of 2 days. Further duration reduction will be realized when the full basin system is in place. The hydrology numbers are based on current land use plans and conducted with ultimate build out of those land uses. If land uses changes more or less flow could be experienced at the site.

Increased aquifer recharge

The 1988 EIR stated that the San Bernardino Valley Municipal Water District (SBVMWD) proposed to utilize the basins for groundwater recharge in a manner that would not interfere with the project's overall flood control objective. SBVMWD issued a letter October 30, 2012 confirming their desire to work with SBCFCD to use the Cactus Basins for groundwater recharge. Currently, the ability to utilize the basins for recharge purposes is on hold due to nearby contamination of perchlorate in the groundwater basin. It is anticipated that the circumstances will soon change when the EPA and RWQCB meet to discuss the need to allow the basins to reach their full groundwater recharge potential which will benefit the perchlorate treatment effort. Until the contamination issue is settled, the SBCFCD plans to use the basins for flood control purposes only, though construction will include at least some of the appurtenances required for future recharge usage such as earthen berms within the basin.

Increase water quality

The District and SBVMWD believe the Project will complement clean-up efforts for the perchlorate plume. SBVMWD is committed to protecting beneficial uses of groundwater recharge and will be conducting a study to show the benefits to the plume remediation. Though this will not be an instant benefit once the construction is complete, it will eventually be realized. The amount of benefit is also unknown at this time.

Preserved open space

SBCFCD currently owns approximately 116 acres of open space at the Project site. This acreage will not be developable due to the Project and future construction of Cactus Basins 4 & 5.

Increased recreation opportunities

The District is pursuing other multi-use benefits with the City of Rialto, such as future trails for biking or walking around the perimeter of Cactus Basins 3-5. The City already has plans to provide a Class I Bike Path with their Renaissance Plan just west of the Basins.

Increased Habitat Restoration

Required mitigation for this project includes habitat restoration (Basin 3A) for which the District intends to include informational exhibits explaining the riparian habitat and the function of the basins. The Project will provide 41 acres of onsite habitat restoration. Also approximately 17.6 acres of riparian habitat will be restored within the Rialto Channel downstream of the Project.

Increased Alluvial Fan Sage Scrub Habitat

The SBCFCD will hydroseed the project site with an alluvial fan sage scrub seed mix. An area immediately east of Basin 3A will be reserved as a riparian habitat revegetation area in which cuttings will be installed and seeded-over in accordance with the Habitat Restoration/Revegetation Plan. The loss of alluvial fan sage scrub will also be mitigated off-site by preserving approximately 45 acres of reserve mitigation land.

Support Documents Included

Multiple reports, drainage studies, basin analysis, preliminary plans and cost estimates have been prepared by the County of San Bernardino Flood Control District for the Cactus Basins projects and other proposed projects downstream of the basins. These are as follows:

- Comprehensive Storm Drain Plan No. 3, 1973
- Comprehensive Storm Drain Plan No. 3-3, 1988
- Preliminary Alternative Analysis Study for the Rialto Channel, 2004
- Rialto Channel Floodplain Study, August 2012 (Q100)
- Rialto Channel Floodplain Study, September 2012 (Q10 & Q25)
- Rialto Channel Floodplain Study- revised, October 2012 (Q100)

The data from these reports will help us achieve an appropriate environmental, economic, and engineering solution to the flooding of this area, making it more attractive for development and water recharge resources. These studies have been used to plan and design the basins for capacity, peak flow attenuation, and mitigation needs.