



COUNTY OF SAN BERNARDINO

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CALIFORNIA

# SAN SEVAINE CREEK WATER PROJECT

FINAL

ENVIRONMENTAL ASSESSMENT

AUGUST 1995

SUBMITTED  
UNDER THE GUIDELINES OF THE  
SMALL RECLAMATION PROJECTS ACT OF 1956 - P.L. 84-984  
UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION



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## FINDING OF NO SIGNIFICANT IMPACT

### BACKGROUND

For the purpose of providing flood control, dependable water supplies, environmental protection, and outdoor recreation opportunities within a portion of the San Bernardino County Flood Control District the County of San Bernardino (County) has applied for a loan under the Small Reclamation Projects Act of 1956 (Public Law 84-984, as amended). The proposed project responds to the needs of the public as provided for by the County Charter and its elected Board of Directors. Flood control reflects the needs for personal safety, economic security, transportation, housing, water supply, recreation, and protection of sensitive wildlife habitat. This Finding of No Significant Impact (FONSI) discusses the impacts of the proposed project, identifies mitigation measures, and documents features essential for wildlife enhancement.

A final environmental assessment (EA) dated August 1995 was prepared to address environmental issues under the National Environmental Policy Act (NEPA). The final EA results from a year of review and revision after publication of the draft in July 1994. Formal consultation under Section 7 of the Endangered Species Act, and consultation as required by the National Historic Preservation Act and the Fish and Wildlife Coordination Act was also conducted during this time.

The EA meets all requirements of NEPA and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, in addition to pertinent Federal and State laws and regulations concerning environmental protection. The Bureau of Reclamation considers the EA to be an adequate disclosure of the environmental effects associated with the proposed project, and concludes that the proposed action, including the described mitigation measures, will not significantly impact the environment and therefore will not require the preparation of an Environmental Impact Statement (EIS). This decision is based on the following:

#### Prior to construction:

1. A Section 404 permit under the Clean Water Act would be required. Coordination with the Corps is ongoing and the permit will be obtained by the County prior to construction. The County will fully implement all conditions identified in the permit.
2. A 1601 permit under California State law would be required. Coordination with the Department of Fish and Game is ongoing and the agreement must be completed prior to construction. The County will fully implement all conditions attached to the permit.
3. The County will provide a conservation easement of approximately 138 acres of fee title land of coastal sage scrub in the area identified in the EA (Figure 3.15). The Fish and Wildlife Service will review the wording of the conservation and protection agreement. The preserve will be integrated into the Oak Summit Preserve's management plan.

4. Approximately 111 acres of Riversidian Alluvial Fan Sage Scrub (RAFSS) would be preserved within the conservation easement. Contractor construction specifications would carefully limit the extent of disturbance to natural vegetation. Access roads would be located on the outside of the levees and no materials would be borrowed from the existing natural channel north of the proposed debris basin. Public access to the preserve area would be prohibited.
5. Approximately 13 acres of Riversidian Upland Sage Scrub (RUSS) would be preserved within the conservation easement. Restoration and revegetation efforts will eventually result in the re-establishment of a plant community most like RUSS on approximately 46 acres of levee and debris embankment side slopes.
6. The northern portion of East Etiwanda Levee would be located on or as close to the eastern edge of the flood control fee title property as technically feasible.
7. Final project design shall ensure no loss of habitat outside the project boundaries.
8. A detailed restoration plan will be developed and approved by the Service and Reclamation, which will include the following:
  - a. Restore areas of temporary disturbance by removing and controlling non-native plants, garbage, and man-made debris.
  - b. The outside levee slopes will be revegetated with native coastal sage scrub species endemic to the project area, and the inside levee slopes will be covered with native soil and seedbank.
  - c. Reclamation shall require the County to hire a qualified biologist to develop a monitoring plan to cover a period of five years. Photographs, monitoring of species presence, and relative cover, and hydrology studies will be used.
  - d. Develop a seed collection and transplant/topsoil conservation plan.
  - e. Develop a detailed erosion control plan for culverts, berms, etc., and a reclamation plan for removing and stockpiling topsoil.
  - f. Develop a detailed revegetation/habitat restoration plan for reclamation of the levees to an alluvial scrub community.
  - g. Develop a detailed plan for temporary and permanent irrigation systems.
  - h. Develop a detailed monitoring/maintenance plan to monitor the success of the revegetation program and ensure proper care of artificially eroded sites or areas requiring reseeding/planting.

9. Prior to initiating construction related activities, permits to disturb soil would be obtained from the San Bernardino County Agricultural Commissioner. The permits would contain specific measures to reduce fugitive dust visibility beyond the immediate construction area. Contractor work packages would contain mitigation measures/provisions:
- a. The contractor would be allowed to clear vegetation only immediately before excavation and grading activities and would be required to minimize the extent of cleared areas at any given time.
  - b. The contractor would be required to conduct frequent watering of cleared areas; soil compaction; and early paving, sealing, or oiling of access routes and parking areas.
  - c. The contractor would be required to suppress grading activities during periods of high winds.
  - d. The contractor would be required to conduct frequent street cleaning of paved roadways adjacent to construction sites that are frequented by earth moving equipment and employee vehicles that could transport and deposit soil from the project area to said paved roads. In addition, water erosion controls would be put into place to prevent soils from eroding away and onto paved roadways.
  - e. San Bernardino County Flood Control District and the contractor would immediately revegetate disturbed areas following completion of project construction.
  - f. The contractor would develop a transportation management plan with strategies to reduce vehicle trips and route traffic through as few intersections to the greatest extent possible.

During Construction:

10. All areas to be included in the habitat preserve shall be clearly marked and all construction personnel shall be thoroughly briefed and instructed by a qualified biologist.
11. All construction should be scheduled to avoid the California gnatcatcher breeding season (Feb. 15 to Aug. 31), which is also the breeding season for many other species of wildlife. Any work during this period shall require prior approval from Reclamation and the Service and if so granted shall be monitored by a qualified biologist.
12. A qualified biologist will be on-site during habitat clearing to monitor impacts, prevent unauthorized habitat loss, and flush gnatcatchers out of the impact area.
13. The Fish and Wildlife Service and action agency personnel reserve the right to enter the area for the purpose of inspection for compliance.

14. Standard construction practices such as watering of disturbed areas are required to reduce short-term erosion resulting from construction. Ridges and slopes above the levels needed for recharge and collection would be reseeded with native coastal sage scrub species. Revegetation of other disturbed areas using native species would impede soil erosion caused by implementation of this project.
15. The following mitigation measures would be implemented to minimize project related noise:
  - a. Construction activities would be limited from 07:00 to 19:00 hours Monday through Saturday and would not be permitted on Sundays or federal holidays except for concrete placement during summer months.
  - b. All construction equipment with internal combustion engines would be muffled in accordance with manufacturer's specifications or local ordinances, whichever is greatest.
  - c. Special consideration would be given to staging areas where initial daily warm-up of equipment takes place prior to commencing the days work, such a location should be well away from any currently inhabited areas. Such a consideration would help attenuate noise and prevent undue exposure of temporary but concentrated plumes of carbon monoxide and other combustion engine exhaust gases.
16. In the event that cultural or paleontological sites are discovered during ground disturbing activities, such activities would be halted to inform Reclamation's Regional Archaeologist and other appropriate federal and state personnel. Prior to resuming construction activities, a qualified archaeologist or paleontologist should inspect the site and monitor further construction activities in the area. An archaeological and paleontological field check is recommended during the initial grading phase of construction in the north-half of the project area where the proposed debris basin is to be located in Etiwanda Creek.
17. Wildlife compatible fencing will be used in order accommodate wildlife movement into and through the proposed preserve and to ensure that none of the area to be preserved is further degraded.

After Construction:

18. The levee and debris basin embankment side slopes would be recovered with topsoil taken from the project footprint and stockpiled near the Etiwanda Creek crossing of 24th Street. The stockpiling will be done in such a way as to preserve as much of the native propagules as possible.

19. Ensure long-term management and protection for disturbed areas, restored areas, and unimpacted areas by establishing a conservation easement and a long-term maintenance and monitoring plan. The long-term maintenance and monitoring plan shall be approved by Reclamation and the Service and will include :
  - a. Maintenance of fences and other structures to restrict access.
  - b. A hand-weeding program for two seasons; no pesticides or herbicides will be used.
  - c. Removal of trash and other debris.
  - d. The purpose of monitoring is to identify and allow for correction of any problems.
20. The County Flood Control District would monitor runoff entering the flood control system to determine water quality and assist in locating pollution sources.
21. Indian Trust Assets would not be impacted.

Formal Section 7 Consultation under the Endangered Species Act was conducted prior to preparation of the final EA. Project features were modified to accommodate recommendations made by the Fish and Wildlife Service to secure a non-jeopardy opinion with regards to the existence of the California gnatcatcher (listed April 29, 1993). Compliance with the measures contained herein satisfies all requirements contained in the Service's biological opinion. However, even with these measures, incidental take is still unauthorized.

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USBR Memorandum to FWS dated March 9, 1994 transmitting Biological Assessment with determination of "no effect"	

FWS Memorandum to USBR dated April 11, 1994 commenting on Biological Assessment and requesting additional work  
USBR Letter to County dated May 10, 1994 requesting additional work on Biological Assessment  
Final Biological Assessment dated February, 1994  
County responses to Biological Assessment dated May 12, 1994  
USBR Memorandum to FWS dated May 23, 1994 regarding Informal Consultation "not likely to adversely affect"  
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County Letter to FWS dated May 20, 1994 requesting estimate to prepare Coordination Act Report under Fish and Wildlife Coordination Act  
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This alternative is the only project configuration which adequately fulfills all primary and secondary project purposes. Environmental consequences are analyzed in detail for this alternative.

## **ADVERSE EFFECTS**

The proposed project has been structured in such a way as to incorporate mitigation or compensation of environmental effects to limit overall impacts to a level of non-significance. Direct environmental effects of the proposed project include the loss of 36 acres of coastal scrub along Etiwanda Creek. In addition, fugitive dust will be released during project construction and routine maintenance. Construction of the dam along 24th Street will adversely affect the local viewshed. Slight to moderate adverse cumulative effects would result from project-related losses of 36 acres of coastal scrub, in combination with the effects of many other projects and activities in the area. These adverse effects would be offset or mitigated to a level of non-significance through revegetation and restoration of native vegetation, and the development of a regional linear parkway, and many other measures.

## **BENEFICIAL EFFECTS**

The project is expected to result in groundwater recharge of 25,000 acre-feet per year which is expected to offset the adverse effects of regional development which is reducing the amount of natural recharge. The water conserved by the project would benefit safe yield as defined under the Chino Basin adjudication and will not be credited as an additional supply. The conserved water would, therefore, not be responsible for any growth-inducing effects.

Current flood control facilities are undersized or incomplete to adequately protect existing land improvements--both private and public. Maintenance of the existing system is significant and generates more dust and pollution than would be the case if the project is completed. Debris entering the drainage system from the National Forest is the primary cause of many problems.

Construction of the debris basin is critical to the integrity of downstream channels and culverts, reducing maintenance, and the effective operation of conservation facilities.

In addition to providing groundwater recharge and flood control benefits, environmental enhancement is also part of the proposed project. Of the 161 acres of open space between the proposed Etiwanda levees, an estimated 137 acres of high-quality Riversidian alluvial fan sage scrub will be permanently preserved through a dedicated conservation easement of fee title land between the Etiwanda Levees. The levees will be revegetated by respreading topsoil stockpiled during the construction phase. The Etiwanda Debris Basin will be revegetated with native mule fat scrub and native trees to replace those lost during construction.

All project features below Etiwanda Basin will be incorporated into a major regional linear parkway with equestrian trails, footpaths, exercise facilities, and landscaping for wildlife and recreational use. The parkway is expected to generate a benefit of over 1.7 million uses annually. Project facilities, including the preserve area, will be routinely patrolled and inspected to minimize unauthorized use.

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## CHAPTER 1 PURPOSE AND NEED

### 1.1 PURPOSE

The primary purpose, as identified by the project sponsor (the County of San Bernardino) is to control flood flows emanating from the San Gabriel Mountains and increased runoff resulting from local development. Secondary purposes include more effective groundwater recharge, the preservation and enhancement of sensitive wildlife habitat, and the creation of a regional recreation facility. Each of the secondary purposes are limited by the authorities of the San Bernardino County Flood Control District (District) and are directly related to the responsible planning, design, construction, and maintenance of flood-control facilities as required under California State Law.

Figure 1.1 shows the project area with respect to Southern California. The County's authorities are restricted to the County of San Bernardino. The lower extension of the San Sevaine/Etiwanda Drainage Channel and its confluence with the Santa Ana River are located in Riverside County.

### 1.2 NEED

The proposed project responds to the needs of the public as provided for by the County Charter and its elected Board of Directors. Flood control reflects the needs for personal safety, economic security, transportation, housing, water supply, and recreation. State and federal laws require the consideration of other environmental needs as well. This project focuses on the needs for flood control, water supply, the protection of sensitive wildlife habitat, and outdoor recreational opportunities.

To ensure that the flood conveyance channels can endure the scouring action of a major event, and to allow the recharge basin inlets to capture water, the debris must be removed from the water. This can be easily accomplished with an upstream basin, sized and situated to allow the debris to settle out of the water before continuing downstream. It is not necessary for the water to be retained for long periods of time. A few hours is adequate time to settle out the larger particles. Floating debris is capable of restricting flows through the existing floodway. This is of special concern with the smaller culverts located downstream of the abandoned Kaiser Steel Plant.

The existing upper basins along San Sevaine Creek are adequate to capture flood debris, however no debris-capturing facility exists on Etiwanda Creek. Thus, the main feature of the proposed project is a debris basin on Etiwanda Creek. Modifications to existing facilities downstream are also required to provide for proper operation.

### **1.2.2 Water Supply**

The Chino Groundwater Basin was adjudicated in 1977. Under the adjudication, the Basin is defined as having a safe yield of 140,000 acre-feet per year. This determination was based on historical production and recharge conditions--when most of the land was farmed or grazed. The land use is changing to light industry, commercial and residential use. The resultant lower retention and infiltration capacities causes higher runoff volumes. Some of the runoff is recharged in the Santa Ana River, but most is lost to flows out of the Basin. Recent studies by the Metropolitan Water District of Southern California suggests that the reduction in natural recharge capability is approaching critical levels where safe yield cannot be maintained. The need to preserve natural recharge capability and create additional capacity is of serious concern.

The project would provide an increased water supply to the Chino Basin by providing water storage and percolation areas. Percolated runoff would assist in recharging the Basin, the basic water supply of the western part of San Bernardino County. Chino Basin provides water to agriculture, as well as municipalities and industry. Increased recharge capacity in Rich Basin could also benefit the Rialto Groundwater Basin. *End of this section (1.2.2)*



### **1.2.3 Environmental Protection**

The project area contains biological resources of regional and national importance. Some of these, such as the Riversidian alluvial fan sage scrub, are important due to their limited distribution and uniqueness. Alluvial scrub in Southern California is a unique plant association composed of shrubs and subshrubs characteristic of coastal sage scrub but including numerous chaparral and desert species--none of which are endangered or threatened. This plant community has only recently been described in some detail (Smith 1980), but once covered a large area in Southern California, including the Chino Basin (Hanes 1978; Smith 1980; Jigour 1993; see FWS memorandum dated April 11, 1994). Only about 42,000 acres or about 5% of the original alluvial scrub habitat remains. Of the remaining fragments, very little has been protected from future loss and disturbance. The resource agencies, some environmental groups, and a few local residents are concerned with the need to protect alluvial sage scrub occurring in the project area.

### **1.2.4 Outdoor Recreation**

Land use in the Chino Basin is rapidly converting from rural agricultural to light industry, commercial and residential. While population densities are increasing at a dramatic rate, outdoor recreational opportunities are diminishing. Benefits associated with regional parks and trail systems established along public works facilities have been demonstrated throughout the United States. The Santa Ana River Trail system extends over a hundred miles from the San Bernardino Mountain Range to the Pacific Ocean. Extension of the system along the Etiwanda/San Sevaine drainage channel from the Santa Ana River toward the San Gabriel Mountains in the San Bernardino National Forest would provide tremendous recreational opportunities to the local communities as well as being of substantial benefit to the regional park system.

## 1.3 RELATED ACTIVITIES

### 1.3.1 Flood Control

Increasing flood hazards associated with regional development, a lack of adequate flood-control facilities, and damages experienced to existing land improvements prompted a major conceptual plan for flood control projects in Day, Etiwanda, and San Sevaine Creeks (Bill Mann & Assoc. 1983). Detailed drainage plans were subsequently developed and many have been implemented (Bill Mann & Assoc. 1985, 1988; Planning Network/Bill Mann & Assoc. 1984).

While flood control needs were being addressed for these projects, the County also recognized the advantages of combining flood-control facilities with some means of using the runoff to recharge a groundwater resource adversely affected by development and traditional flood control projects that decrease the natural recharge ability of the land and stream beds. A flood-control project in Day Creek, the next major creek system to the west, is now complete. The growing demand for resource conservation resulted in modification of the original Day Creek Project concept into a combined flood control/groundwater recharge project.

A similar approach was taken by Engineering-Science and Bill Mann & Assoc. when they produced an environmental assessment (EA) and loan application report (LAR) for submittal to the U.S. Bureau of Reclamation (Reclamation) under the Small Reclamation Projects Act (SRPA; P.L. 84-984) for a combined flood control/groundwater recharge project in Etiwanda and San Sevaine Creeks. Low-interest loans available under SRPA would assist the County in developing a properly designed and constructed groundwater recharge and flood-control facility.

A final LAR was transmitted to Reclamation's Lower Colorado Regional Director on January 22, 1990, with a final EA and a "Finding of No Significant Impact" (Engineering-Science and Bill Mann & Assoc. Oct. 1989, transmitted Jan. 22, 1990). An application was filed with the U.S. Army Corps of Engineers (Corps) for a Section 404 permit as required under the Clean Water Act for activities involving the discharge of fill materials into waters of the United States. The Corps issued a public notice of the permit application and comments were solicited from August 30 to September 30, 1991. Substantial negative comments from several public agencies were received which caused the Corps to deny issuing a permit for any new construction.

Subsequently, the County reformulated the conceptual plan with input from federal and state resource agencies. This EA describes the reformulated plan which emphasizes environmental enhancement and the avoidance of substantial environmental effects.

Chino Basin Municipal Water District, the Metropolitan Water District of Southern California, Cucamonga County Water District and purveyors of water in the Rialto Basin are in various stages of conjunctive use studies designed to maximize beneficial use of water in the project area.

While a number of agencies, including San Bernardino County Flood Control District, have conducted groundwater recharge activities in the past, this project envisions a major improvement in the present groundwater overdraft. The County intends to work with all local purveyors during each stage of design to insure the maximum regional benefit.

### **1.3.2 Commercial/Residential Development**

Large scale residential development is expected to occur within the cities of Fontana and Rancho Cucamonga, and the unincorporated County areas immediately adjacent to the project. Such developments are typically flood-protected by the individual developers with dikes and levees constructed with little regard for regional needs. This project offers a more permanent, cost-effective means of flood control.

### **1.3.3 Transportation Improvements**

Construction on the Foothill Freeway, Route 30 is expected to begin in 1995 with work on the Route 30/Interstate 15 interchange. Work on the balance of the route is pending completion of necessary environmental reviews. The freeway will run in an east-west direction approximately 1 mile south of the project area. This project will disturb approximately 300 acres of alluvial fan sage scrub habitat. As proposed mitigation, the California Department of Transportation (CALTRANS) sought other nearby parcels with alluvial fan sage scrub habitat for purchase. Although some of the parcels adjacent to the San Sevaine project area have already been developed or graded, the majority of the parcels still consist of Coastal Sage Scrub habitat.

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## CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

### 2.1 PROPOSED ACTION

The proposed action would entail Reclamation approval of an SRPA loan to the County for project design and construction. The project proposed for funding results from a regional diversity of needs placed on limited natural resources by a growing population.

Flood control, water conservation, environmental preservation, and recreational opportunities are all components of the proposed project and are the responsibility of the San Bernardino County government and other local, state, and federal agencies. The plan of development responds to regional planning efforts of the various agencies and provides the basic infrastructure to expand for the greater public benefit.

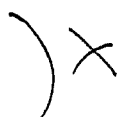
Information presented in this chapter is based in-part on the October 1989 LAR prepared by Engineering Science in association with Bill Mann & Associates. The conceptual plan has been modified to preserve critical habitat along Etiwanda Creek and avoid impacts along San Sevaine Creek. Basic designs for the flood control and recharge facilities have not changed with the exception of omitting the proposed debris basin on San Sevaine Creek, added features for recreation, and the modification of facilities planned for upper Etiwanda Creek to accommodate habitat preservation and enhancement.

#### 2.1.1 Description of Proposed Project

The proposed project would enable the County to integrate several existing flood-control and groundwater recharge facilities with new or rehabilitated facilities to meet expanded public needs. Most of the proposed project involves improvements to existing conveyance channels, levees and percolation basins. The only completely new feature is the Debris Basin proposed at the site of the existing Etiwanda Spreading Grounds.

The project map presented as Figure 2.1 delineates proposed and related features. Table 2.1 summarizes the main project features. Preliminary design drawings for each of the features are contained in Appendix C of the accompanying *San Sevaine Creek Water Project Loan Application Report and Feasibility Study* (Clark, July 1995).

#### 2.1.1.1 Etiwanda Levees



The proposed levees would extend from near the mouth of Etiwanda Canyon to the proposed debris basin at 24th Street. The purpose of the levees is to prevent lateral movement of the stream bed outside the existing floodway and to maintain the effectiveness of the debris basin. The levees would extend for slightly more than one mile along the existing drainage channel and protect the natural habitat occurring in the floodplain from encroaching development. The levees would be located between 800 and 1,800 feet apart to accommodate meandering stream flows necessary to sustain high-value Coastal Sage Scrub. The west levee would be constructed along an existing dirt road--having nominal affects on existing habitat values. The east levee and maintenance road would replace existing dirt roads on the east side of Etiwanda Creek within the preserve area. Both levees would be constructed using fill material excavated from the proposed debris basin.

Compacted fill would range in height from 0 to 20 feet with facing side slopes of 3:1. Back slopes may be flattened to 5:1 if adequate material is available or through a levee maintenance program. Facing slopes would be rip-rap armored. All areas impacted by construction (except roadways) would be restored and revegetated with naturally occurring plant species after consultation with appropriate state and federal agencies as discussed in Chapter 4. The east levee will be completely revegetated and restored and will be accessed only for repairs. The levees would not be open to public access as part of an agreement with the U.S. Fish and Wildlife Service and California Department of Fish and Game to preserve the natural habitat and limit access to the National Forest. The levees would be fenced to prevent all access.

the partial displacement of the spreading grounds, although the basin would not be operated as a conservation pool to store runoff. }\*

The basin would be designed to accommodate debris from the tributary drainage area of approximately 3 square miles. The debris storage volume would be approximately 1 million cubic yards--which should be adequate to accommodate a 100-year storm following a catastrophic fire in the upper watershed. (Detailed hydrologic studies are currently underway to develop final design data). The large storage capacity is necessary to ensure adequate operational capability under worst-case conditions. The debris material is marketable and would be removed from the project site or used to maintain the levees.

Criteria for debris basin design are usually based on providing storage capacity for debris generated by a single major flood event as a minimum. Considerable information has been gathered by the Los Angeles County Flood Control District on its large network of dams and debris basins. Maximum single storm debris production rates as high as 120,000 cubic yards from a one-square mile watershed, and single season rates as high as 150 percent of the maximum single storm rate have been recorded. Debris volumes carried by flowing streams which equal the clear water volume of the stream (100 percent bulking) have also been recorded.

Wildland fire history is an important factor in debris studies. Debris discharges from totally burned watersheds can be many times the rate of an unburned watershed. Valuable information on historical fires is available from the U. S. Forest Service or California Division of Forestry for use in making debris studies. Because of the experience the Los Angeles County Flood Control District has had with debris movement in the San Gabriel Mountains, its criteria was used in the preliminary design of the debris basin as shown on the plans. Final designs would be based on the most recent information available.

The designer is aware that certain basins and dams as defined in the "Statutes and Regulations Pertaining to Supervision of Dams and Reservoirs" published by the State Department of Water Resources, Division of Safety of Dams, would fall under State jurisdiction. The designer would review regulation and design criteria established by the State and Federal government.

### 2.1.1.3 Lower San Sevaine Conservation Basin (Basin 5)

A series of five percolation basins exist along the San Sevaine Creek Channel between Summit Avenue and Interstate 15. These are flow through basins providing debris catchment and water conservation. Basin 5 would be expanded to approximately 2,350 acre-feet of storage capacity.

The existing basin would be redesigned with an improved inlet, outlet, and spillway works. The outlet is sized to accommodate 1,200 cfs, while the emergency spillway would handle up to 35,300 cfs. The depth of the improved basin would range from 0 to 12 feet with side slopes of 2.25:1 and extend for 7,560 feet as described in Figure 2.4. The area would be revegetated after construction and safety features provided to allow public use of the area as an extension of the proposed regional parkway system.

The linear parkway would be extended to include the upper basins (1 through 4). Upstream linear parkway features, including the spreading grounds and debris basins previously proposed, have been excluded from the proposed project to avoid impacts to biological and cultural resources.

### 2.1.1.4 Victoria Basin

Victoria Basin is located north of Interstate 15 on the western edge of the Etiwanda Channel. The inlet and outlet structures of this existing basin would be modified for improved operation. Some earthwork would be required to complete the improvements, however there would be no excavation to increase the existing 235 acre-feet of storage capacity.

### 2.1.1.5 Rich Basin





Rich Basin is located northeast of the San Sevaine Basins along the existing Hawker-Crawford Channel. This flow through basin would be deepened by approximately 3 feet to provide 26 acre-feet of storage capacity.

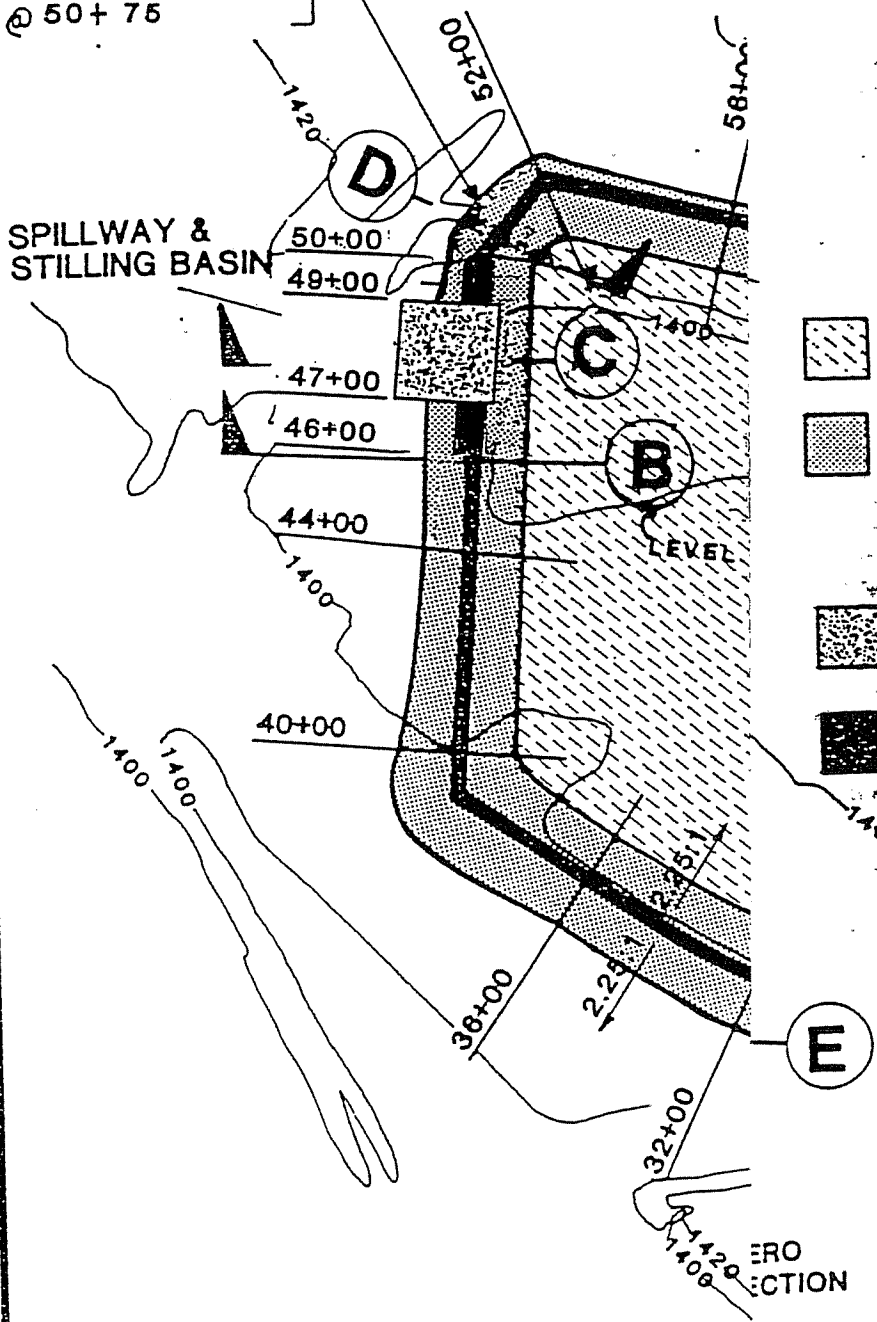
OUTLET WORKS  
@ 50+75

SPILLWAY &  
STILLING BASIN



**LEGEND**

-  BASIN FLOOR
-  UNREINFORCED SLOPE
-  SPILLWAY & STILLING BASIN
-  DAM CREST



AN BERNARDINO COUNTY  
 OOD CONTROL DISTRICT

**SEVAÏNE CREEK SYSTEM**

SEVAÏNE DAM & RETENTION BASIN  
**PLAN**

SCALE: 1"=400'

PLATE 13

FIGURE 2.4



#### 2.1.1.6 Hickory Basin

Hickory Basin is a partially developed flow through basin located east of the San Sevaine Channel and south of the Santa Fe Railroad. The basin serves as the terminus of the West Fontana Channel and covers an area of about 16 acres although its existing storage capacity is minor. The basin would be deepened and inlet/outlet works would be added to provide for approximately 220 acre-feet of storage. Existing eucalyptus trees that would be removed would be replaced with indigenous species.

#### 2.1.1.7 Jurupa Basin

Jurupa Basin is located on about 60 acres east of the existing unlined channel at Jurupa Avenue, the southern project boundary. This basin would be excavated and designed as a bypass basin to receive peak flows from the channel for up to 1,200 acre-feet of storage. A spillway would direct excess flows back into the channel. Low channel flows would also be directed into the basin for improved conservation.

#### 2.1.1.8 Etiwanda/San Sevaine Floodway Channel

The velocity of flow in the existing Etiwanda Creek earth ditch varies from 15 to 20 feet per second (fps). Steep slopes and high velocities cause major damage to the existing channel, even in small storms. Flows have seriously eroded the channel banks in many storms and have broken out of the channel in several past events. Portions of the existing channel have rail and wire revetted levees. It would not be ~~not~~ feasible to line the channel walls and leave the channel bottom unlined due to the erosive nature of the soil and the high velocity of the channel flow. Therefore, in order to intercept and conduct storm flows into the recharge facilities and prevent loss of life and property, lining of the channels is necessary. Although the initial (dry) infiltration capacity of a natural channel is typically higher than that of an excavated basin of equal area, high flow velocities and sediment transport are not conducive to recharge. Assuming an average velocity of 15 fps, flows emanating from the San Gabriel Mountains would enter downstream facilities in Riverside County in less than one hour. Under saturated conditions with high flows,

it is doubtful that infiltration volumes would even be measurable. Infiltration losses due to channel lining would be more than recovered through improved operation of the conservation basins for any size flow.

The existing floodway would be improved for effective operation of the conservation basins as well as recreational use. The floodway is referenced in three sections for the purposes of this report:

Reach 1, from the proposed Etiwanda Basin to Highland Avenue

Reach 2, from Highland Avenue to Foothill Boulevard

Reach 3, from Foothill Boulevard to Jurupa Avenue

Most of the floodway would be constructed as a trapezoidal channel with 1.5:1 side slopes. Rectangular sections are required at some locations due to construction constraints. All sections would be designed to convey 100-year flows. Chain link fencing would isolate the channel from the adjacent linear parkways.

**Reach 1 (Etiwanda Channel):** Reach 1 would extend approximately 5,000 feet from the Etiwanda Basin outlet to the existing lined channel north of Highland Avenue and Interstate 15 with a design capacity of 6,300 cfs. The channel freeboard and adjacent linear parkways (south of 24th Street) could contain flows in excess of 10,000 cfs although extensive damage would result to improvements. A concrete box structure would replace the present 24th Street dip section. The existing earthen Etiwanda channel is maintained with heavy equipment.

**Reach 2 (San Sevaine Etiwanda Double Channel):** Reach 2 begins near the outlet of Basin 5, upstream from Interstate 15, and extends approximately 12,000 feet to Foothill Boulevard. The existing channel is actually two separate but parallel concrete-lined channels to maintain separate flows in Etiwanda and San Sevaine Creek. Channel lining is complete, however modifications are needed to provide public access as part of the linear parkway. The channel capacity at the end of Reach 2 is 12,200 cfs.

**Reach 3 (San Sevaine Channel):** This existing earthen channel extends approximately 21,000 feet from Foothill Boulevard to Jurupa Avenue and accommodates flows from 12,200 to 18,850 cfs. Hickory and Jurupa Basins are located along this reach. Three reinforced concrete box structures have been constructed to conduct flows under Arrow Highway, Whittram Avenue, and the Santa Fe Railway.

A concrete-lined channel would be constructed from the Santa Fe Railway south to Interstate 10. The Metropolitan Water District Upper Feeder crosses beneath the channel approximately 1,000 feet south of the railroad. A concrete pad would be constructed over the pipeline for added protection. A transition (drop structure) would be constructed immediately downstream of the pipeline because of the grade change, and a rectangular channel would be required for a short distance downstream.

Triple box structures are proposed for channel crossings at San Bernardino Avenue, Valley Boulevard, and possibly at the railroad spur south of San Bernardino Avenue. Mulberry Channel, located immediately south of Valley Boulevard, is proposed for connection to San Sevaine Creek. At Interstate 10, two converging rectangular concrete-lined channels would be constructed under the freeway. The eastern channel would intercept Mulberry Channel flows, and the two channels would join immediately south of the freeway. Freeway traffic should not be affected by the proposed construction.

Because of the proposed rectangular channel under Interstate 10 and the proximity of the Southern Pacific Railroad, a rectangular concrete-lined channel would be built between these two crossings. A triple box structure would be located at the rail-line crossing. A bypass track would be necessary to keep the line in operation during construction. A trapezoidal concrete-lined channel is proposed downstream of the railroad crossing to Slover Avenue. A triple box structure is planned for the Slover Avenue crossing.

#### 2.1.1.9 Groundwater Recharge

The proposed project plan involves modifications to five percolation basins and the Etiwanda Spreading Grounds to enhance recharge to the Chino Groundwater Basin. Etiwanda Spreading

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Grounds, Etiwanda Basin, San Sevaine Basins (1 through 5), and Rich Basin are located near the upper end of the proposed project. Preliminary design drawings for the Lower San Sevaine Basin are presented in Figure 2.4. Victoria, Hickory, and Jurupa Basins are located in the middle and lower end of the project. Groundwater recharge would be accomplished by the capture, storage and percolation of runoff originating in the mountains to the north of the service area and the valley area within the San Sevaine Creek Watershed area. The major water conservation facilities are located at the upper end (north) of the project close to the runoff sources and where percolation rates are the highest.

Urban runoff would be conducted to the basins by a system of existing or proposed storm drains which are not part of this project. The recharge project features and related facilities are shown in Figure 2.1. Several of the percolation basins exist as flow-through areas with limited storage capacity. The proposed project would significantly increase the storage volume and subsequently the groundwater recharge capability of the existing facilities. Current use of project facilities by the Chino Basin Municipal Water District (CBMWD) for artificial recharge may not be affected by the proposed improvements except for possible short-term interruptions to accommodate construction activities

The United States Geological Survey, in its report "Artificial Recharge in the Upper Santa Ana Valley" dated 1972, analyzed and estimated recharge rates on all of the recharge facilities in the Chino Basin area. These rates were based on review of well driller logs, ring infiltrometer tests, and field inspections. USGS data are unavailable for Rich, Hickory, and Jurupa Basins, but based on information from similar sites in the area, a filtration rate of 2 to 3 feet/day for Rich and Hickory Basins, and 1 to 1.5 feet/day for Jurupa Basin are reasonable. Percolation tests by the CBMWD in the San Sevaine Spreading Grounds and San Sevaine Basins indicate a sustained percolation rate of 2.5 feet/day.

Etiwanda Basin, the five San Sevaine Basins, and Victoria Basin overlie porous soils and have correspondingly high potential percolation rates. Percolation basins located lower on the alluvial fan (Hickory and Jurupa Basins) occur in areas of relatively less permeable soils and have lower

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potential percolation rates. Short and long-term infiltration estimates for each facility are presented in Table 2.2. The lower sustained infiltration rates identified for Etiwanda Basin and Basin 5 reflect the potential sealing effects of fines that would accumulate in these basins during runoff events. The recharge capabilities of the facilities are shown in Table 2.3. Storage capacities of the proposed water conservation facilities are shown in Table 2.4.

The State of California Department of Water Resources (DWR) and the Metropolitan Water District of Southern California (MWD) completed a conjunctive use study of the Chino Basin for the storage of imported water from the State Water Project. The study included the potential use of the Etiwanda Spreading Grounds, San Sevaine Spreading Grounds, and Victoria Basins for water spreading purposes. The DWR/MWD analysis of the three facilities indicated a potential recharge capacity of 22,800 - 34,200 acre-feet/year based on a filtration rate of 2 to 3 feet/day and 100 days of spreading. More recent studies being completed by MWD could significantly benefit final designs and maintenance procedures. Final designs will be completed in collaboration with MWD and the Chino Basin Watermaster.

**TABLE 2.2**  
**ESTIMATED INFILTRATION RATES**

Facility	Continuous Long Term	Initial Short Term
Etiwanda Spreading Grounds	3.0 ft/day	3-6 ft/day
Etiwanda Basin	2.5 ft/day	3-6 ft/day
San Sevaine Basins (1 through 4, Existing)	3.0 ft/day	3-6 ft/day
Lower San Sevaine Retention Basin	2.5 ft/day	3-6 ft/day
Victoria Basin	2.0 ft/day	2-4 ft/day
Rich Basin	2.0 ft/day	2-3 ft/day
Hickory Basin	2.0 ft/day	2-3 ft/day
Jurupa Basin	1.5 ft/day	1-2 ft/day

**TABLE 2.3**  
**SAN SEVAINE CREEK WATER PROJECT**  
**PROJECT RECHARGE CAPABILITY**

Facility	Proposed Recharge Rate (cfs)	Proposed Recharge Capacity (ac-ft/day)	Estimated Recharge Rate (ft/day)
Etiwanda Spreading Grounds	21	42	3.0
Etiwanda Basin <sup>a</sup>	--	--	2.5
San Sevaine Basins (1 through 4) (Existing)	33	66	3.0
Lower San Sevaine Retention Basin 5	117	234	2.5
Victoria Basin	28	56	3
Rich Basin	7	14	3
Hickory Basin	20	40	3
Jurupa Basin	28	56	1
<b>Totals</b>	<b>254</b>	<b>508</b>	

<sup>a</sup> The proposed Etiwanda Basin is not planned to be operated as a recharge facility.

**TABLE 2.4**  
**SAN SEVAINE CREEK WATER PROJECT**  
**SURFACE STORAGE CAPACITY**

Facility	Existing Flow- through Area (acres)	Proposed Surface Area <sup>a</sup> (acres)	Potential Storage Capacity (ac-ft)
Etiwanda Spreading Grounds	42	8	59
Etiwanda Basin	0	19	235
San Sevaime Basins (1 through 4) (Existing)	22	22	200 <sup>b</sup>
Lower San Sevaime Retention Basin	19	110	2,350
Victoria Basin	19	19	235
Rich Basin	14	5	26
Hickory Basin	16	12	220
Jurupa Basin	19	56	1,200
<b>Totals</b>	151	251	4,290 <sup>c</sup>

<sup>a</sup> The "proposed surface area" is the area usable for water percolation and/or storage. The existing areas are mainly flow-through areas only.

<sup>b</sup> Existing storage capacity

<sup>c</sup> Although the proposed Etiwanda Debris Basin could provide 235 acre-feet of storage, the basin is not currently planned to be operated for storage purposes.



#### 2.1.1.10 Wildlife Preserve

Approximately 137 acres of natural habitat would be preserved through a dedicated conservation easement of fee title land along the Etiwanda Creek, between the San Bernardino National Forest and the proposed site of the Etiwanda Debris Basin. The preserve would extend for a little more than one mile and vary in width from 800 to 1,800 feet depending on the natural contour of the floodplain. Undisturbed Riversidian alluvial fan sage scrub and Riversidian upland sage scrub will account for 124 acres of the proposed preserve.

Habitat and water supply for wildlife would be enhanced through surface retention in the recharge basins. Imported water supplied through the Metropolitan Water District of Southern California for recharge in the Etiwanda Spreading Grounds would also complement wildlife use of the preserve. The area would be fenced and patrolled regularly to reduce damage from unauthorized use. The need for fencing would be evaluated annually to determine optimum wildlife use while restricting public access. Annual inspections will be performed by federal biologists and an evaluation workshop conducted every five-years with the County.

#### 2.1.1.11 Linear Parkways

Approximately 9 miles of linear parkways would be constructed adjacent to flood control features downstream of Etiwanda Debris Basin. The parkways would double as maintenance access for the channels and basins, but would be open to public use. The east-side parkway would contain an asphalt paved jogging path, the west-side path would remain unpaved. Both sides would be landscaped--some areas in grass. Open areas adjacent to basins would be furnished with picnic tables and exercise facilities. Lighting would not be provided and the park would be closed between dusk and dawn. Figures 2.5 and 2.6 describe the parkway as conceptualized. Actual facilities and landscaping would be determined during final design and limited to the budget provided in the project loan.

## 2.2 ALTERNATIVES TO THE PREFERRED PROJECT

There are many ways to encourage groundwater recharge and control flooding in the project area. Significant recharge and flood control features have already been constructed along Etiwanda and San Sevaine Creeks well below the San Gabriel Mountains, but additional recharge capacity and control measures are urgently needed.

The alternatives listed below were developed as the result of many years of project planning and scoping. Alternative E was selected as the preferred project based on the need for improved flood control which is the primary project purpose, and secondary project purposes based on the needs of water conservation, wildlife enhancement, and recreation. Table 2.5 lists the features of the alternatives. Alternatives B-D are considered but eliminated with detailed explanation (Table 2.6). Environmental consequences of Alternatives A and E are discussed in detail in Chapter 3.

### ALTERNATIVE A

No action. The National Environmental Policy Act (NEPA) requires environmental impact analysis for projects and activities involving the federal government, federal funding, federal lands, and federal actions, including federal loan programs. The lack of an SRPA loan would cause the County to complete most or all of the project piecemeal, by private developers, or with funds provided by private developers as the need arises. Flood control in the San Sevaine and Etiwanda Creek areas are essential for future development and conscientiously undertaken water conservation programs, including groundwater recharge, are essential for the future of the whole Chino Basin whether the SRPA is approved for the proposed project or not. The environmental consequences of Alternative A are analyzed in detail in Chapter 3. This alternative was not chosen because, although some project purposes and needs would eventually be met, it is believed that a planned approach would be most beneficial.

### ALTERNATIVE B

**Direct conveyance for flood control.** Flood control needs of future development in the San Sevaine Creek area could be met by channelizing

**TABLE 2.5 (Cont'd)  
SAN SEVAINE CREEK WATER PROJECT  
COMPARISON OF ALTERNATIVES**

	<b>Etiwanda Creek Debris Basin</b>	<b>San Sevaime Creek Debris Basin</b>	<b>Percolation Basins</b>	<b>Conveyance Channels</b>	<b>Wildlife Corridors and Recreation En- hancement</b>	<b>Meets Purposes and Needs</b>
<b>Alternative E Preferred Project</b>	Debris basin at 24th Street, levees extend- ing to canyon would preserve alluvial fan sage scrub.	None. Spreading Grounds remain in place.	Modifications to basin inlets/outlets to intercept high-volume flows.	Concrete-line existing channel from Etiwanda Debris Basin to Lower San Sevaime Retention Basin.	Extensive land- scaping and pres- ervation of alluvial fan sage scrub and other natural com- munities to create wildlife/recreation open space.	

**TABLE 2.5  
SAN SEVAINE CREEK WATER PROJECT  
COMPARISON OF ALTERNATIVES**

	<b>Etiwanda Creek Debris Basin</b>	<b>San Sevaime Creek Debris Basin</b>	<b>Percolation Basins</b>	<b>Conveyance Channels</b>	<b>Wildlife Corridors and Recreation En- hancement</b>	<b>Meets Purposes and Needs</b>
<b>Alternative A</b> No Federal Action	Debris Basin may not be constructed, or by developers as required	Probably none. Spreading Grounds remain in place.	Needed modifications would be constructed piecemeal by developers as required.	Needed modifications would be constructed piecemeal by developers as required.	Without loan avail- ability little or no enhancement is likely. Existing and future private de- velopment would block access to public and wildlife.	Partially meets flood control and recharge needs. No environmental enhancement needs met.
<b>Alternative B</b> Direct Convey- ance for Flood Control	None. Etiwanda Spreading Grounds remain in place.	None. Spreading Grounds remain in place.	No additional modifications.	Etiwanda would be concrete-lined from canyon mouth to existing channel. San Sevaime to be lined from Foothill Blvd. south.	None. Existing and future private de- velopment would block access to public and wildlife.	Meets flood control need only, no recharge, enhancement, or habitat preservation.
<b>Alternative C</b> 2-Basin System (Original 1989 Proposal)	Debris basin at mouth of Etiwanda Canyon.	Debris basin at mouth of San Sevaime Canyon.	Proposed modifi- cations as for Alt. E (the preferred project).	Concrete-lined channel from Etiwanda Basin to existing Lower San Sevaime Retention Basin and concrete- lined channel from San Sevaime Basin to recharge basins.	Development on Etiwanda and San Sevaime creeks would occur up to channels. Very narrow linear parkways possible.	Meets project purposes and needs, but environmental impacts high.
<b>Alternative D</b> 1-Basin System (Preferred Plan but without Wildlife or Recreation Enhancement)	Debris basin at 24th Street, developers would construct upstream flood control facilities.	None. Spreading Grounds remain in place.	Proposed modifications as for Alt. E (the preferred project).	Proposed modifications as for Alt. E (the preferred project).	None. Existing and future private development would block access to public and wildlife.	Meets flood control and recharge needs but no enhancement or wildlife habitat preservation.

Etiwanda Creek and by lining the currently unlined channels. The retention basins could be modified to properly intercept runoff. This is, however, not a realistic option since many of the channels and basin inlets and other features would be vulnerable to scouring from debris-laden flood waters. Secondary project purposes, including water conservation, wildlife habitat enhancement, and recreation, would not be met, and existing values would be adversely affected. These impacts are summarized in Table 2.6, but the alternative was eliminated from further planning.

### ALTERNATIVE C

**Two-basin system.** Debris basins would be located at the mouths of Etiwanda and San Sevaine Canyons and concrete-lined channels would be constructed from the debris basins to the retention basins located downstream. The upper San Sevaine Retention basins serve as the debris basins under the proposed project, but a more effective option would be to develop a separate debris basin on San Sevaine Creek. This would also extend flood control benefits north of Summit Avenue. Alternative C was the preferred project in the previous SRPA Loan Application for the San Sevaine Creek Water Project (Engineering Science and Bill Mann & Associates, October 1989). This alternative would meet the primary project purpose of flood control, as well as groundwater recharge and recreation, but would result in high environmental impacts (Table 2.6). This alternative was considered but eliminated from further planning.

### ALTERNATIVE D

**Single-basin system.** A single debris basin would be located on Etiwanda Creek at 24th Street for water conservation/flood control only, without environmental or recreational enhancements. No County land would be preserved through a conservation easement. The retention basins could be modified to intercept runoff. This alternative meets the project purposes of flood control and water conservation, but would not facilitate recreation or provide wildlife habitat enhancement (Table 2.6). This alternative was considered but eliminated from further planning.

### ALTERNATIVE E

**The preferred project.** A single debris basin on Etiwanda Creek incorporating existing facilities to minimize impacts to sensitive vegetation and additional right-of-way and special features to create added recreational and environmental benefits. The Upper San Sevaine Retention basins function as the debris basins for San Sevaine Creek. All of the other basins are modified to ensure their usefulness as water recharge and flood control structures. This alternative is the only project configuration which adequately fulfills all primary and secondary

project purposes and needs. Environmental consequences are analyzed in detail for this alternative in Chapter 3.

### **2.2.1 Analysis of Effects of Alternatives**

Alternatives considered but eliminated included: No Action (Alt. A), Direct Flood Control Conveyance (Alt. B), 2-Basin System (Alt. C), and 1-Basin System With No Enhancement (Alt. D). These alternatives were determined to inadequately fulfill the purposes and needs stated in Chapter 1 (Table 2.6). A 1-basin system with environmental enhancement was identified as the preferred project (Alt. E) based on the fulfillment of purposes and needs.

Detailed analyses of the direct, indirect, and cumulative effects of the preferred alternative are presented for every topic of analysis (except Climate, Section 3.1) in Chapter 3 of this document along with a discussion of the environmental effects of the no-action alternative (Alt. A). Summary analyses of the environmental effects of the other alternatives (B, C, D) are presented in Table 2.6.

Under the No Action Alternative, it is assumed the County-owned land adjacent to the east side of Etiwanda Creek would eventually be sold and developed as residential housing. It is also assumed that Etiwanda Creek above the existing spreading grounds would be channelized and concrete-lined with little or no environmental enhancement or restoration and with little or no open space preservation. Additional housing likely to be built is assumed to include approximately 80 acres on the east side of Etiwanda Creek, but, if the Creek is channelized and concrete-lined, development may include as much as 100 acres. This would be assumed to be capable of supporting up to 300 additional people. The same line of reasoning is employed in the analysis of effects of the other project alternatives. The 2-basin system would provide flood control for up to 100 acres along Etiwanda Creek and 175 acres along San Sevaine Creek and would be capable of supporting up to 700 additional people in very light residential development.

**TABLE 2.6  
SUMMARY OF EFFECTS OF ALTERNATIVES CONSIDERED BUT ELIMINATED**

Topic	Direct Conveyance for Flood Control	2-Basin System	1-Basin System, No Enhancement
<b>Water Availability and Quality</b>	<p><b>Direct:</b> Severe adverse effects of lack of recharge to offset diminishing volume of natural recharge which defines safe-yield. Other projects would be necessary. <b>Indirect:</b> Slight adverse effect of water supply demand created by approximately 300 people. Severe adverse effects of water supply problems caused by lack of recharge. <b>Cumulative:</b> Slight adverse effects of 300 additional people on water supply added to the expected 624,600 new regional residents by the year 2035. Severe adverse effects of continued lack of groundwater recharge.</p>	<p><b>Direct:</b> Highly beneficial effects of recharge to offset diminishing volume of natural recharge which defines safe-yield. <b>Indirect:</b> Slight adverse effect of water supply demand created by approximately 700 new people. <b>Cumulative:</b> Slight adverse effects of 700 additional people on water supply added to the expected 624,600 new residents by the year 2035.</p>	<p><b>Direct:</b> Highly beneficial effects of recharge to offset diminishing volume of natural recharge which defines safe yield. <b>Indirect:</b> None. <b>Cumulative:</b> None.</p>
<b>Soils</b>	<p><b>Direct:</b> Moderate beneficial effects of flood control facilities. <b>Indirect:</b> None. <b>Cumulative:</b> None.</p>	<p><b>Direct:</b> Highly beneficial effects of flood control facilities. <b>Indirect:</b> None. <b>Cumulative:</b> Slight beneficial effects of flood control construction together with that of other Chino Basin flood control projects.</p>	<p><b>Direct:</b> Highly beneficial effects of flood control facilities. <b>Indirect:</b> None. <b>Cumulative:</b> Beneficial effects of flood control added to that of other flood control projects in the area.</p>
<b>Land Use</b>	<p><b>Direct:</b> Moderate adverse effects of potential development of 300-resident housing adjacent to Etiwanda Creek. <b>Indirect:</b> Slight adverse effects of conversion of 80 acres of open space to very light residential housing. <b>Cumulative:</b> Slight adverse effects of conversion of 80 acres of open space to very light residential added to the 2,728 acres expected to develop in Etiwanda North Plan.</p>	<p><b>Direct:</b> Moderate adverse effects of construction of both debris basins in sites currently open space. <b>Indirect:</b> Moderate adverse effects of conversion of 275 acres of open space to very light residential housing. <b>Cumulative:</b> Moderate adverse effects of conversion of 275 acres of open space to very light residential added to the 2,728 acres expected to develop in Etiwanda North Plan.</p>	<p><b>Direct:</b> Slight adverse effects of flood control and recharge facility construction in area currently open space. <b>Indirect:</b> None. <b>Cumulative:</b> None.</p>
<b>Physiography</b>	<p><b>Direct:</b> Slight adverse effects of retardation of natural development of the alluvial fan.</p>	<p><b>Direct:</b> Slight adverse effects of retardation of natural development of the alluvial fan</p>	<p><b>Direct:</b> Slight adverse effects of retardation of natural development of the alluvial fan as</p>

TABLE 2.6 cont'd.  
SUMMARY OF EFFECTS OF ALTERNATIVES CONSIDERED BUT ELIMINATED

Topic	Direct Conveyance for Flood Control	2-Basin System	1-Basin System, No Enhancement
Physiography (cont.)	Indirect: None. Cumulative: Slight adverse effects of alluvial fan development retardation added to the numerous other flood control projects in the Chino Basin.	due to flood control. Indirect: None. Cumulative: Slight adverse effects of alluvial fan development retardation added to the numerous other flood control projects in the Chino Basin.	developments are implemented with flood control. Indirect: None. Cumulative: Slight adverse effects of alluvial fan development retardation added to the numerous other flood control projects in the Chino Basin.
Vegetation	Direct: Severe adverse effects of possible eventual loss of most RAFSS along Etiwanda Creek as developments are implemented with no habitat to be restored or created in and adjacent to Etiwanda Cr. and Debris Basin. Indirect: Severe adverse effects of possible eventual loss of all RAFSS adjacent to Etiwanda Creek as developments are implemented piecemeal. Cumulative: Severe adverse effects of loss of RAFSS in and adjacent to Etiwanda Creek combined with near extinction of RAFSS elsewhere.	Direct: Severe adverse effects of possible eventual loss of 50 acres of RAFSS to Etiwanda and San Sevaine Creek debris basin and flood channel construction. Indirect: Severe adverse effects of possible eventual loss of 275 acres of RAFSS adjacent to Etiwanda Cr. as developments are protected by flood control. Cumulative: Severe adverse effects of loss of 325 acres of RAFSS in and adjacent to San Sevaine and Etiwanda Creek combined with near extinction of RAFSS elsewhere.	Direct: Severe adverse effects of loss of 157.98 acres sage scrub along Etiwanda Creek levees. Indirect: None. Cumulative: Severe adverse effects of alluvial fan development added to the numerous other flood control projects in the Chino Basin.
Wildlife	Direct: Severe adverse effects of loss of most or all of Etiwanda Creek habitat as developments are implemented with no habitat enhancement or restoration. Indirect: Severe adverse effects of loss of habitat and wildlife corridors. Cumulative: Severe adverse effects of loss of habitat combined with effects of similar developments in Chino Basin.	Direct: Severe adverse effects of loss of 50 acres of Etiwanda Creek habitat due to debris basin and flood channel construction. Indirect: Severe adverse effects of loss of 275 acres of habitat and wildlife corridors. Cumulative: Severe adverse effects of loss of 325 acres of habitat combined with effects of similar developments in Chino Basin.	Direct: Severe adverse effects of loss of 157.98 acres of Etiwanda Creek habitat to levee construction. Indirect: None. Cumulative: Severe adverse effects of alluvial fan development added to the numerous other flood control projects in the Chino Basin.
Special Status Species	Direct: Moderate adverse effects of loss of habitat along Etiwanda Creek to channelization. Indirect: Severe effects of	Direct: Moderate adverse effects of loss of habitat along Etiwanda and San Sevaine creeks to channelization and debris basin	Direct: Moderate adverse effects of loss of sage scrub habitat along Etiwanda Creek due to levees. Indirect: Severe adverse



## EXECUTIVE SUMMARY

### PROPOSED PROJECT

The proposed project is designed to provide flood protection and up to 25,000 acre-feet annual groundwater recharge to the Chino Groundwater Basin and wildlife enhancement. Project features include levees, a debris basin, minor to extensive improvements to five existing recharge basins, improvements to Etiwanda and Etiwanda/San Sevaine flood channels, a wildlife preserve, and a linear parkway.

#### 1. Etiwanda Levees and Debris Basin

The Etiwanda Levees will extend downstream from the mouth of Etiwanda Canyon to stabilize the natural drainageways and direct debris-laden runoff into the proposed Etiwanda Basin. The basin will be located on Etiwanda Creek north of 24th Street, replacing a portion of the existing spreading grounds. The levees and basin will form the boundaries of the wildlife preserve. Levee and basin designs are not final.

#### 2. San Sevaine Retention Basins

Runoff emanating from San Sevaine Canyon enters five existing retention basins located along San Sevaine Creek. The lower San Sevaine Retention Basin (Basin 5) combines flood control and percolation functions. This component of the project will include a new outlet conduit, a new chute spillway, and the basin will be excavated for additional storage capacity.

#### 3. Victoria Basin

Victoria Basin is an existing basin, but has no inlet from the Etiwanda Channel to receive storm flows. Inlet and outlet structures with some embankment modifications would be completed under the proposed project.

**4. Rich Basin**

Rich Basin is an existing retention basin connected to the San Sevaine basins by an existing concrete-lined channel. The basin will be excavated to provide additional storage.

**5. Hickory Basin**

Hickory Basin is an undeveloped flow-through basin with very little existing storage capacity. The basin would be modified to provide a true recharge capability by additional excavation and embankment work, and by appropriately sized and configured inlet and outlet works.

**6. Jurupa Basin**

Jurupa Basin is undeveloped and is presently used to spread flows turned out from San Sevaine/Etiwanda Channel during very low storm flows. The proposed project calls for excavation and embankment modifications, as well as outlet and inlet features.

**7. Conveyance Channels**

No new conveyance channels will be constructed, but under the proposal, existing channels will be modified as necessary to accommodate specified flow volumes and some will be concrete-lined. The Etiwanda Creek Channel will be lined from the proposed Etiwanda Basin to the existing trapezoidal Etiwanda Channel contiguous with the San Sevaine Channel at Basin 5. A dirt and rip-rap channel for the combined San Sevaine/Etiwanda Creek extending from Foothill Boulevard to Jurupa Basin will also be concrete-lined.

**8. Wildlife Enhancement**

A wildlife preserve will be established between the East and West Etiwanda Levees. Of the approximately 161 acres included between the levees, the County of San Bernardino will dedicate 137 acres of fee title land to a preserve

managed for the enhancement of Coastal Sage Scrub and California gnatcatcher habitat.

**9. Linear Parkways**

The existing flood control and recharge facilities are largely inaccessible to the public and wildlife. The proposed project calls for extensive revegetation, landscaping, and recreational facility construction to incorporate enhancement features into the project. Native plant species and bicycle/jogging paths, horse trails, exercise facilities, and picnic areas will be included in the project along all major floodways and some infiltration basins (except in the preserve area).

**PROJECT ALTERNATIVES**

The project alternatives listed below were developed through many years of planning and scoping. Alternative E was selected as the preferred project based on the need for improved flood control which is the primary project purpose, and secondary project purposes based on the needs of water conservation, wildlife enhancement, and recreation. Alternatives B-D are considered but eliminated with detailed explanation. Environmental consequences of Alternatives A and E are discussed in detail.

- A. **No action.** The proposed federal action is U.S. Bureau of Reclamation approval of a low-interest loan to the County of San Bernardino, California (County). Without the loan, private landowners are likely to construct all flood control aspects of the project through piecemeal development as property values increase. Improved groundwater recharge and recreational needs would probably also be satisfied by others. The environmental consequences of the no-action alternative are analyzed in detail. In haphazard fashion, the no-action would eventually meet some or most of the flood control and groundwater recharge needs, but would fail to provide for the preservation of wildlife habitat and would fail to provide an integrated recreational facility.

- B. Direct conveyance for flood control.** The primary project purpose of flood control for private landowners in the San Sevaine Creek area could be met by channelizing Etiwanda Creek and lining the currently unlined channels. Secondary project purposes, including groundwater recharge, wildlife habitat enhancement, and recreation facilities, would not be met, and existing values would be negatively affected under this alternative. This alternative was considered and eliminated from further planning.
- C. Two-basin system.** Debris basins would be located at the mouths of Etiwanda and San Sevaine Canyons and concrete-lined channels would be constructed from the debris basins to retention basins located downstream. The two-basin system was the preferred project in the previous SRPA Loan Application for the San Sevaine Creek Water Project (Engineering Science and Bill Mann & Associates, October 1989). This alternative would meet the primary project purpose of flood control, as well as groundwater recharge and recreation, but would result in high environmental impacts. This alternative was considered but eliminated from further planning.
- D. Single-basin system.** A single debris basin would be located on Etiwanda Creek for water conservation/flood control only, without environmental or recreational enhancements. Downstream conservation/flood control improvements would also be provided. This alternative meets the primary project purpose of flood control and the secondary purpose of water conservation, but would not facilitate recreation or provide wildlife habitat enhancement. This alternative was considered but eliminated from further planning.
- E. The preferred project.** A single debris basin as in D, incorporating existing facilities to minimize impacts to sensitive vegetation and additional right-of-way and special features to create added recreational and environmental benefits.

### 1.2.1 Flood Control

The need for flood control results from damage experienced by public and private property in the project area during recent storms. Inadequate funding and interim drainage planning for the San Sevaine/Etiwanda Watershed have resulted in the construction of undersized channels incapable of meeting current and future flood control needs.

The canyons draining the San Gabriel Mountains into the Chino Basin are dry for nearly the entire year. Even in presettlement conditions only a few of the largest drainageways carried water all the way to the Santa Ana River, and then only after extremely heavy rains. Much of the runoff infiltrates into the alluvial fill of the Chino Basin or into the alluvial fans at the base of the mountains. Runoff also carries massive quantities of debris--rock, gravel, and sand--which, under presettlement conditions, would be deposited mainly on the alluvial fan.

Floodwater and meandering floodways posed a serious threat to farmland, homes, businesses, and roads located in the project area. As the watershed was developed, many of the larger drainage channels were straightened and lined in order to remove water quickly to the Santa Ana River. More recently, a variety of water conservation facilities have been built and building codes modified to reduce the increasing runoff volume. In many cases, these measures are aimed at reducing peak flows and not improving water conservation. Some of these facilities were constructed by the County as interim and long-term solutions, others were constructed by landowners and developers to protect their property and investments.

Existing water conservation and flood control features in the San Sevaine and Etiwanda Creek areas are shown in Figure 1.2. The efficiency of both the water conservation and the flood control aspects of these facilities are jeopardized by debris carried in flood flows. The inlets to the Etiwanda Spreading Grounds and the Victoria, Hickory, and Jurupa percolation basins become clogged with debris from high-volume flows almost immediately. The flood channels and spillways could be destroyed by a serious flood through the scouring action of the debris. Even concrete-lined channels can be ripped apart by highly loaded (debris-laden) storm flows. Many of the inlet features of the recharge facilities are inadequately sized, or are vulnerable to scouring action.

A Metrolink commuter rail line will bisect the project area, running west to east, parallel to the new Route 30. This rail system will not be impacted by the San Sevaine Creek Water Project.

## **1.4 PERMIT REQUIREMENTS**

### **1.4.1 Federal:**

Endangered Species Act (Section 7) - The Endangered Species Act (ESA) requires that Federal agencies consult with the Service should it be determined that an action may affect a listed endangered or threatened species. In its memorandum to the Service dated March 9, 1994, Reclamation requested concurrence with its determination that this project is not likely to adversely affect any Federal listed threatened or endangered species. The Service provided concurrence by memorandum dated May 26, 1994 which closed informal consultation under ESA (see Chapter 8, Attachments). It should be noted that consultation could be reopened for a variety of reasons. Field surveys were conducted for numerous endangered, threatened, and sensitive species in 1992 and 1994. These indicated that the proposed project may affect California gnatcatcher. Formal consultation was initiated November 1, 1994 (see Chapter 8, Attachments). The U.S. Fish and Wildlife Service released a biological opinion dated May 9, 1995, in which the Service determined that the proposed project is not likely to jeopardize the continued existence of the species (see Chapter 8, Attachments). Several 'reasonable and prudent conditions' and 'terms and conditions' were identified in the opinion. The County will implement these and all other commitments identified in the Finding of No Significant Impact (FONSI) and every recommendation and condition contained in the opinion.

Fish and Wildlife Coordination Act (Section 2b) - Consultation with the Service was initiated in 1992 when the project concept was re-evaluated with added emphasis on environmental enhancement. The Service entered into a contract with the County to provide a planning aid letter in 1993. The letter was received February 10, 1994 (see Chapter 8, Attachments). The Fish and Wildlife Service then produced a Fish and Wildlife Coordination Act Report (Vizgirdas and Hanlon 1995). The County will implement the recommendations contained in the report.

Clean Water Act (Section 404) - The Clean Water Act was passed by Congress in 1977 to restore and maintain the chemical, physical, and biological integrity of jurisdictional waters of the United States. Section 404 pertains to 'dredge and fill' activities and requires permitting by the Army Corps of Engineers for any construction activity within jurisdictional waters. Coordination with the Corps is ongoing and the permit will be obtained by the County prior to construction. The County will fully implement all conditions identified in the permit.

Clean Water Act, National Pollutant Discharge Elimination System (NPDES) - NPDES permitting pertains to operational discharge of pollutants. This permit is required for construction and the County has obtained a permit (No. 8 36s302188) for operation of its facilities that discharge to waters of the United States or any tributary on this project. Project features will enhance the County's ability to monitor water quality as required under the permit. The County will fully implement all conditions identified in the permit.

#### 1.4.2 State:

Stream or Lake Alteration (Section 1601) Agreement- 1601 agreements are required when a project is proposed for construction in any stream designated by the Department of Fish and Game (Department) in which there is at any time an existing wildlife resource or from which these resources derive benefit. The agreement provides for reasonable modifications in the proposed construction as would allow for the protection and continuance of the wildlife resource as concurred with by the applicant and the Department. This agreement must be completed prior to construction. The County will fully implement all conditions attached to the permit.

#### 1.4.3 Local:

Air Quality- The United States Environmental Protection Agency has determined that the South Coast Air Basin, encompassing most of Southern California, is in non-compliance for nitrous oxides (NOx). San Bernardino County is not in violation although it is subject to the same regulatory constraints under EPA rules.

PM10 dust is a concern in San Bernardino County. Revegetation plans recommended by the U.S. Fish & Wildlife Service should substantially mitigate any possible PM10 issues.



**TABLE 3.4**  
**HYDROLOGIC BALANCE OF THE CHINO BASIN YEAR 2000 WATER SUPPLY**  
**AND WASTEWATER FLOW CONDITIONS**  
**(ACRE-FEET)**

Hydrologic Components	Chino I	Chino II	Chino III
<u>Inflows</u>			
Percolation of Stormflow	1,825	1,776	0
Deep Percolation of Rain	22,551	22,161	6,304
Streamflow Diverted for Recharge	185	0	0
Santa Ana River Baseflow Percolation	0	0	20,247
Net Returns From Use*	11,355	29,608	106,342
Subsurface Inflows From Mountains	960	0	0
Subsurface Inflow Other Basins	<u>19,504</u>	<u>7,685</u>	<u>2,264</u>
Subtotal Inflows by Subbasin	56,380	61,230	135,157
Subtotal inflow (all subbasins) = 252,767			
<u>Outflows</u>			
Phreatophytes	0	0	12,342
Subsurface Outflows	0	0	0
Wastewater Discharge to SAR	<u>0</u>	<u>0</u>	<u>96,247</u>
Subtotal Outflows by Subbasin	0	0	108,589
Subtotal Outflow (all subbasins) = 108,589			
Net Inflow To Groundwater Basin = 252,767 - 108,589 = 144,178			
Year 2000 Production	42,697	71,072	31,235
Year 2000 Production (all subbasins) = 145,004			
<u>Rising Water Calculation</u>			
Santa Ana Base Flow at Riverside Narrows	N/A	69,000	N/A
Wastewater Discharge to SAR	N/A	96,247	N/A
SAR Base Flow at Prado Dam	N/A	145,000	N/A
Base Flow Recharging Chino Basin	N/A	20,247	N/A

Source: Engineering Science 1989

percolation. Approximately 25,000 acre-feet of water runs off the San Sevaine-Etiwanda alluvial fan per year and is available for groundwater recharge.

**Indirect Effects:** Groundwater contamination in the Chino Basin, primarily caused by discharge from dairy farms, is a major water resources problem in the study area. The project would indirectly benefit groundwater quality in the future by recharging runoff water that has relatively low TDS and reducing the need to import Colorado River water that is more expensive and higher in TDS contamination.

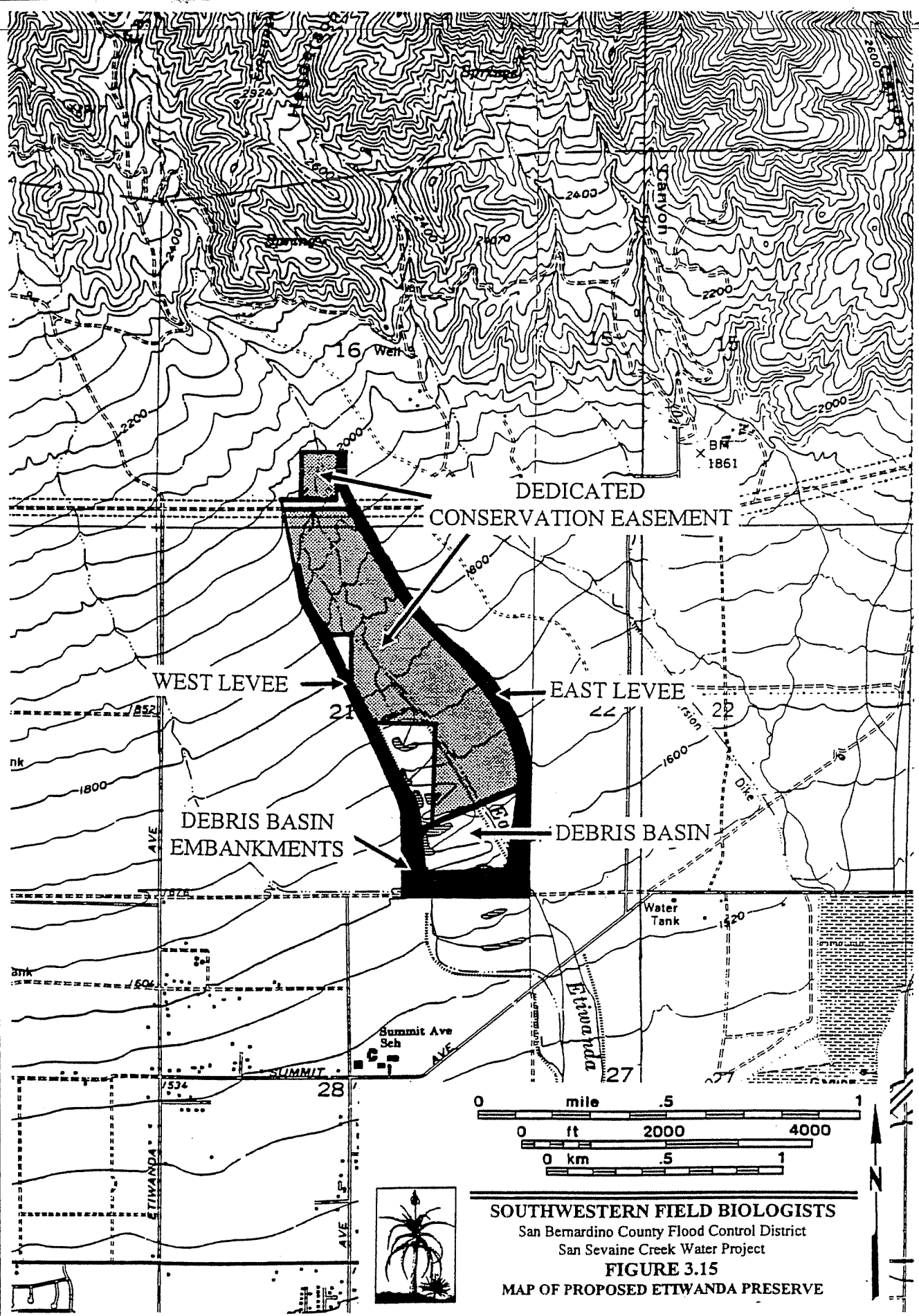
**Cumulative Effects:** Combined with the effects of water conservation programs and other water recharge projects in the Chino Basin, the project effects would be highly beneficial.

***Mitigation***

Mitigation is not required. However, the County would monitor runoff entering the flood control system as an enhancement feature. High-flow events can be expected to result in highly turbid discharge, but this would be filtered out in the recharge basins.

A Clean Water Act, Section 404 permit, which pertains to 'dredge and fill' activities within jurisdictional waters of the United States would be required. Coordination with the Corps is ongoing and the permit will be obtained by the County prior to construction. The County will fully implement all conditions identified in the permit.

A State of California, 1601 agreements would be required in order to provide for reasonable modifications in the proposed construction as would allow for the protection and continuance of the wildlife resource as concurred with by the applicant and the Department. This agreement must be completed prior to construction. The County will fully implement all conditions attached to the permit.



**SOUTHWESTERN FIELD BIOLOGISTS**  
 San Bernardino County Flood Control District  
 San Sevaine Creek Water Project  
**FIGURE 3.15**  
**MAP OF PROPOSED ETTWANDA PRESERVE**

**BIOLOGICAL ASSESSMENT  
FOR THE  
SAN SEVAINE CREEK WATER PROJECT  
SAN BERNARDINO COUNTY, CALIFORNIA**

February 1994

Southwestern Field Biologists  
8230 East Broadway Boulevard, Suite W-8  
Tucson, Arizona 85710-4002

Prepared for:

San Bernardino County  
Department of Transportation/Flood Control District  
825 East Third Street, Room 101  
San Bernardino, California 92415-0835

## INTRODUCTION

The County of San Bernardino is planning a water conservation and flood control project for the Etiwanda Creek and adjacent San Sevaine Creek area in southwestern San Bernardino County, California. The primary goal of the project is to encourage runoff percolation into the Chino Groundwater Basin, but it will also provide for flood control, recreational opportunities, and environmental enhancement. Several flood control and recharge facilities already exist along San Sevaine and Etiwanda Creeks. The efficiency of both recharge and flood control facilities are jeopardized by debris carried in flood runoff. The County plans to improve runoff conveyance facilities, enlarge and improve turnout facilities of existing percolation basins, construct a debris basin to protect recharge basins and channels, and create a linear parkway along the creeks.

The proposed action would involve approval of a federal loan under the Small Reclamation Projects Act (P.L. 84-984) administered by the Bureau of Reclamation. Section 7 of the Endangered Species Act (16 U.S.C. §§ 1531-1544) requires that loan applicants conduct appropriate studies to ensure the proposed project does not jeopardize the continued existence of any federally listed endangered or threatened species. Southwestern Field Biologists was retained to determine whether the proposed action may affect any endangered or threatened species.

Southwestern Field Biologists conducted field surveys of the proposed project site to locate any federally listed threatened or endangered species. Three field surveys were conducted in 1992 and U.S. Fish and Wildlife Service personnel were informally consulted to obtain a list of federally listed threatened or endangered species that may occur in the region.

## STUDY AREA AND PROPOSED PROJECT

The proposed project is located along Etiwanda and San Sevaine Creeks south of the San Gabriel Mountains in San Bernardino County, California (Figure 1). The project map (Figure 2) delineates the project and related features. The proposed project involves the construction of facilities for the purpose of providing groundwater recharge through percolation of runoff originating in the mountains to the north of the project area and from the valley area within the Etiwanda and San Sevaine Creek watersheds.

The essential features of the proposed Etiwanda Creek Project are:

### Etiwanda Levees and Debris Basin

The Etiwanda Levees will extend from the mouth of East Etiwanda Canyon to stabilize the natural drainageways and direct debris-laden runoff into Etiwanda Basin. The proposed debris basin will be located on Etiwanda Creek north of Summit Avenue replacing most of the existing spreading grounds.

### Lower San Sevaine Retention Basin (Basin 5)

The Lower San Sevaine Retention Basin No. 5 is an existing facility that combines flood control and percolation functions. This component of the project will include an expanded embankment dam, a new uncontrolled outlet conduit, a new uncontrolled chute spillway, and the basin will be extended to the south for additional storage capacity.

### Victoria Basin

Victoria Basin is an existing basin, but has no inlet from the Etiwanda Channel to receive storm flows. Under the proposed project, inlet and outlet structures and some embankment modifications would be built.

---

### **Rich Basin**

Rich Basin is an existing retention basin connected to the San Sevaine Basins by an existing concrete-lined channel. The basin will be excavated deeper to provide additional storage.

### **Hickory Basin**

Hickory Basin is an undeveloped flow-through basin with very little existing storage capacity. The basin would be modified to provide a true recharge capability by additional excavation and embankment work, and by appropriately sized and configured inlet and outlet works.

### **Jurupa Basin**

Jurupa Basin is undeveloped and is presently used to spread flows turned out from San Sevaine-Etiwanda Channel during very low storm flows. The proposed project calls for excavation and embankment modifications, as well as outlet and inlet features.

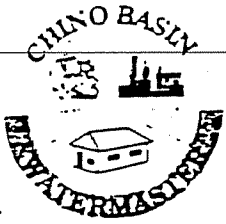
### **Conveyance Channels**

No new conveyance channels will be constructed, but under the proposal, existing channels will be modified as necessary to accommodate specified flow volumes and will be concrete-lined. The Etiwanda Creek Channel will be lined from Etiwanda Basin to Basin 5. A dirt and rip-rap channel for the combined San Sevaine-Etiwanda Creek flows extends from Foothills Blvd. to Jurupa Basin and will also be concrete-lined.

## Linear Parkways

The existing flood control and recharge facilities are largely inaccessible to the public and wildlife. The proposed project calls for extensive revegetation, landscaping, and recreational facility construction to incorporate enhancement features. Native plant species and bicycle/jogging paths, horse trails, exercise facilities, and picnic areas will be included in the project along all major floodways, around retention basins, and along the levees.





LETTER #5

CHINO BASIN WATERMASTER

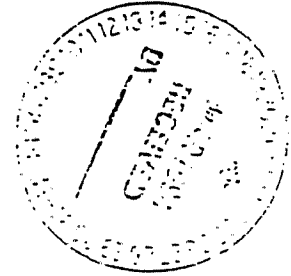
8555 Archibald Avenue P.O. Box 697 Redlands, California, CA 91729-0697

EDWIN D. JAMES

TEL: (909) 981-1712  
FAX: (909) 981-9254

March 21, 1994

County of San Bernardino, Planning Department  
385 North Arrowhead Avenue, Third Floor  
San Bernardino, CA 92415-0182



Attention: Mr. Randy Scott

RE: San Sevaine Creek Water Project  
Proposed Mitigated Negative Declaration

We are in receipt of the "Proposed Mitigated Negative Declaration for the San Sevaine Creek Water Project". Our interest in the project directly relates to its potential effect on replenishment of the Chino Basin.

Discussions in the Mitigated Negative Declaration (CEQA-2 and CEQA-9) suggest that more than 22,800 acre-feet of recharge capacity will be developed as a result of the project. It is unclear whether this is new, additional recharge capacity or some restatement of what is perceived to be the current recharge capacity of the basins discussed. Additionally, no mention is made of the recharge capacity which will be lost by channel lining proposed as part of this "conceptual" plan.

We are concerned the information from which your conclusions are drawn is outdated. Presently, a Water Resources Management Study for the Chino Basin is underway. Early indications from it suggest there will be a significant shortage of recharge capacity in the near future. The Chino Basin cannot afford to lose any recharge capacity at the spreading grounds or by lining channels since it is so important to the maintenance of the water supply of our area.

One of the primary purposes of the project and of the San Bernardino County Flood Control District is to improve groundwater recharge. It does not appear that the project as proposed will accomplish this purpose and it could have a very significant impact on the current recharge capabilities of the Chino Basin. We submit that a Mitigated Negative Declaration is inappropriate for this project and an Environmental Impact Report is necessary. The project should not proceed to design from the

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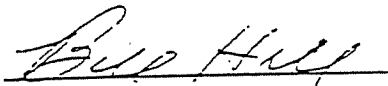
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"conceptual" phase until a complete analysis of the proposed project and of alternatives to the proposed project is made. Alternatives which should be considered include leaving the presently unlined portions of the channels unlined, alternative methodology and material that would be appropriate for the Etiwanda Debris Basin Dam, possible construction of T-levee systems or other means which would facilitate enhanced non-storm recharge capabilities, and relocation of the debris staging area to an area unsuitable for recharge to name a few.

We recognize flood control for the protection of life and property is very important. However, maintenance of the existing groundwater recharge capacity for the local water supply is equally as important to both life and property. Protection from floods and maintenance of recharge capacity can be accomplished simultaneously if their joint significance is recognized and project facilities are conceived and designed accordingly.

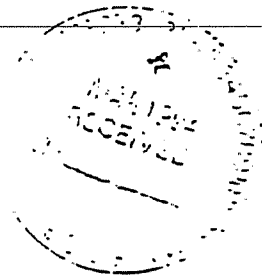
Thank you for the opportunity to comment and we look forward to the development of a project that will not safeguard against one environmental impact while negating the positive impact of another.

Very truly yours,



Bill Hill, Chairman  
Chino Basin Watermaster on behalf  
of the Appropriative Pool

LETTER # E



**MWD**

*METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA*

Mr. Randy Scott  
County of San Bernardino  
Planning Department  
385 N. Arrowhead Avenue  
San Bernardino, CA 92415-0182

MAR 30 1994

Dear Mr. Scott:

Initial Study and Proposed Mitigated Negative Declaration  
for the San Sevaine Creek Water Project

We have received the Initial Study and proposed Mitigated Negative Declaration for the San Sevaine Creek Water Project. The project proposes to mitigate existing flood hazards and provide groundwater recharge improvements for the community of North Etiwanda. The comments herein represent the Metropolitan Water District's (Metropolitan) response as a potentially affected public agency.

Our review of the Initial Study indicates that Metropolitan has three facilities in the area of your proposed project. Metropolitan's Upper Feeder, Etiwanda Pipeline and Rialto Pipeline are within your project site. The "Project Characteristics, Reach 3 (San Sevaine Channel)" section of the Initial Study states that Metropolitan's Lower Feeder is 1000 feet south of the railroad. Please note that our Upper Feeder, not our Lower Feeder, is in this area and the reference should be corrected. The attached map shows Metropolitan's facilities in relation to your proposed project. In addition to these facilities, a service connection and distribution pipeline appurtenant to the Rialto Pipeline in the area of Etiwanda Creek is not shown on this map but may be affected by the project. It will be necessary to consider these facilities in your project planning.

Additionally, Metropolitan is concerned about the proposed construction of earthen dams and additional cuts adjacent to our facilities. The "Project Characteristics, Etiwanda Debris Basin" section of the Initial Study indicates that an earthen dam is proposed north of and adjacent to Summit Avenue. However, the project map indicates that the proposed dam is adjacent to the unimproved 24th Street. Since Metropolitan's Rialto Pipeline and appurtenant service

2

Mr. Randy Scott

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MAR 30 1984

connection and distribution pipeline are adjacent to the above-referenced 24th Street and the Etiwanda Spreading Grounds, their possible protection or relocation should be incorporated into your project design.

The Initial Study also discusses the use of heavy equipment during the construction of the proposed facilities. In order to avoid potential conflicts with Metropolitan's facilities, we request that preliminary prints of all improvement plans for any activity in the area of Metropolitan's pipelines and rights-of-way be submitted for our review and written approval. You may obtain detailed prints of drawings of Metropolitan's pipelines and rights-of-way by calling Metropolitan's Substructures Information Line at (213) 217-6564. A statement of Guidelines for development in Metropolitan's facilities area, fee properties or easements has been attached for your information.

Additionally, pages CEQA-2 and CEQA-9 of the Initial Study suggest that the project will develop in excess of 22,800 acre-feet of recharge capacity, but it is not clear whether or not that recharge amount is in addition to the existing recharge activities in the project area. As discussed in the analysis, those estimates were partially based on conclusions drawn by Metropolitan and the State Department of Water Resources in the early 1980's.

Since then, Metropolitan has performed field investigations as part of its conjunctive-use planning that suggest that the removal of soils in the top 30 to 50 feet of the geologic formation in the area would substantially affect the percolation capacities of the alluvial fan area. For example, the current estimate of percolation capacity of the exposed soils in the lower portion of San Sevaine basins is estimated to be 0.5 feet-per-day. By contrast, percolation rates in the relatively undisturbed area of Etiwanda Creek are in the 3 to 5 feet-per-day range (see attached summary of field testing and observations). This suggests that construction methods which remove significant amounts of surface alluvium or which isolate the area behind the debris basin at Etiwanda Creek by extending the dam foundation to significant depth could have the effect of actually reducing percolation capacity in the area.

While the Etiwanda Creek debris basin site does not affect Metropolitan's proposed conjunctive-use planning, it would affect the Chino Basin Watermaster's (Watermaster) ongoing

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replenishment activities as the ongoing spreading at San Sevaine and Etiwanda Creeks represents about half the spreading by Watermaster. This site uses water which is imported by Metropolitan.

Metropolitan is also interested in exploring opportunities to enhance the percolation of the Etiwanda Creek area downstream of our Rialto Pipeline and has discussed this use with County Flood Control staff. The Initial Study proposes that a significant portion of that area be used as a debris storage and staging area. It is unclear, however, whether such a designation would preclude development of water spreading features.

Additionally, Metropolitan has identified the Victoria Basin as a "candidate" for development of additional conjunctive-use opportunities. Required improvements would probably be limited to outlet modifications and may very well be consistent with your proposed plans. Metropolitan's planning for conjunctive-use does not currently involve the Rich, Hickory, or Jurupa Basins.

While Metropolitan believes that the implementation of your project provides important opportunities for cooperation in development of the water resources of the Chino Basin, we are concerned that there is not sufficient information available to draw conclusions regarding the effects that might result from the project. As Metropolitan documents the results of its very recent field studies, we would welcome the opportunity to share that data, as well as discuss with you means to avoid what may be very significant impacts on groundwater replenishment activities.

We appreciate the opportunity to provide input to your planning process. If we can be of further assistance, please contact Mr. Kenneth Kules of Groundwater Resources at (213) 217-6792.

Very truly yours,

Edward G. Means  
Director of Resources

AMR/gg  
5/23/84

Attachments

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Mr. Randy Scott

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cc: Mr. Richard Hansen  
General Manager  
Three Valleys Municipal Water District

Mr. Donald Harriger  
General Manager  
Western Municipal Water District

Mr. Robert Westdyke  
General Manager  
Chino Basin Municipal Water District



# CHINO BASIN WATERMASTER

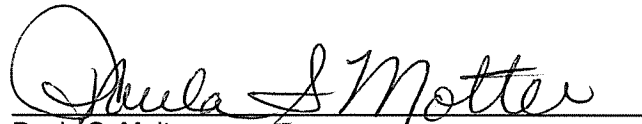
9641 San Bernardino Road, Rancho Cucamonga, Ca 91730  
Tel: 909.484.3888 Fax: 909.484.3890 www.cbwm.org

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April 12, 2007

I, Paula S. Molter, am an employee of the Chino Basin Watermaster ("Watermaster"). As part of its normal course of business, Watermaster maintains a library of documents relevant to the Chino Groundwater Basin and Watermaster's role as the arm of the Court administering the Chino Basin Judgment. It is part of my regular duties to retrieve such documents from the library in response to requests from various parties.

I hereby certify that the attached document, titled **San Sevaine Creek Water Project Final EIR, Aug 1995**, is a full, true and accurate copy of that document, on file and of record in the Watermaster library.

  
Paula S. Molter