



Santa Ana River Corridor Trail System

Final Master Plan

EDAW, Inc.

in association with

2M Associates

**SANTA ANA RIVER CORRIDOR
TRAIL SYSTEM MASTER PLAN**

Final Master Plan Workbook

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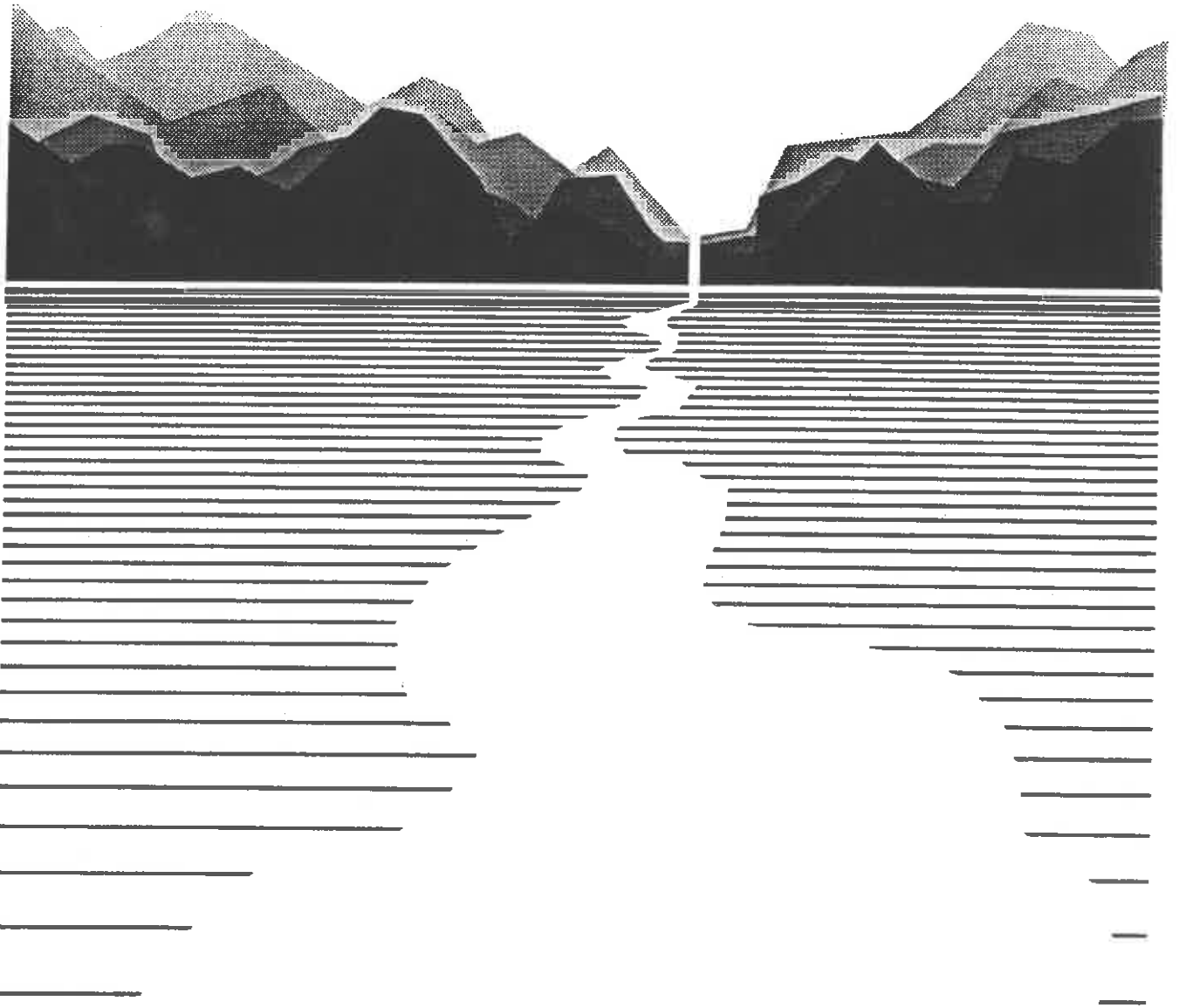
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Executive Summary

EXECUTIVE SUMMARY

INTRODUCTION

In 1955, the Santa Ana River corridor was recommended to the California State Parks Commission as a multi-purpose recreation area. Since that time, ever-increasing demand for recreational use along this river corridor has focused attention on the need for a comprehensive long-range trail master plan compatible with the river's natural and recreational resource potential. The Santa Ana River corridor is a unique and diverse natural setting covering eight distinct regions. Its geographic location extending over 100 miles from the Pacific Ocean to 8600 feet within the San Bernardino Mountains, provides a backbone open space and multi-use trail system in Southern California. It connects both public parkland and natural open space in three different Southern California counties and the San Bernardino National Forest.

There has long been consideration for this corridor to serve as a regional parkland and open space corridor system. Currently, the river corridor provides somewhat localized, divergent and often isolated recreational activities ranging from camping, bird watching, hiking, bicycling, and horseback riding to more urban regional park functions. Consequently, this study of the Santa Ana River corridor provides Southern California residents with a unique opportunity to provide trail linkage to this extensive regional recreational resource and at the same time emphasize education and protection of the area's diminishing open space and its sensitive natural resources. The open space corridor is quickly diminishing and trail linkage may be lost if actions are not taken now to insure protection of the resource.

Recognizing this need, funding for this project is being provided through an Interagency Agreement developed specifically for the Santa Ana River Corridor Trail System Master Plan. The following agencies are parties to that agreement:

- County of San Bernardino
- County of Riverside
- County of Orange
- City of San Bernardino
- City of Highland
- City of Redlands
- City of Loma Linda
- City of Colton
- City of Rialto
- City of Riverside
- City of Corona
- City of Anaheim
- City of Huntington Beach
- County Service Area 19 (Chino Hills)
- Orange County Water District

- **State of California, Dept. of Parks and Recreation**
- **U.S. Forest Service, San Bernardino National Forest**
- **National Park Service, Rivers and Trails Conservation Assistance**

GOALS AND OBJECTIVES

The overall goal for the Santa Ana River Corridor Trail System Master Plan is to actively promote and plan for a continuous multi-use regional trail system along the Santa Ana River corridor. Ancillary to this effort, this study provides a comprehensive recreation trail system master plan with sufficient detail to allow for trail siting, and detailed design standards that will facilitate future trail construction with limited additional planning and engineering.

In support of the overall goal, this plan pursues the following objectives:

- Provide for a continuous, safe trail linkage system.
- Provide trail linkage to feeder trail systems.
- Provide multi-use, barrier-free trail opportunities for all ages.
- Provide environmental education opportunities within the trail system.
- Provide protection of the natural resources for the Santa Ana River corridor through operation and management guidelines.

To achieve these goal objectives, various products are presented in this workbook that are intended to direct and implement the trail master plan into a viable, functioning reality. This study identifies design guidelines and policies which will promote trail design safety and continuity and insure the integration of property interests. Promotional interpretive materials developed for this study will help develop interest and environmental awareness. The implementation strategy will allow for the trail project to proceed as intended. A Management, Operation and Maintenance Plan will provide for long-term organizational structure and maintenance.

However, these products are not intended to be static or inflexible. This 'workbook' format provides for continual updating of the plan to allow for the incorporation of future trails, parks and facilities and other changes.

STUDY PROCESS

The study process was structured into three phases including a Concept Plan in Phase I, followed by a Preliminary Plan and Detail Design Guidelines in Phase II and a Final Master Plan in Phase III.

Developing a Concept Plan in Phase I required collecting existing data, preparing base maps and interviewing key agencies. The data collected was analyzed according to resource, recreational and educational value. A Siting Evaluation Matrix continued this analysis to determine trail suitability and sensitivity. From this analysis, an overall trail system was developed for the river corridor at 1000' scale.

Phase II included a more detailed trail siting analysis at 200' scale illustrating the main river trails, feeder trails and various trail support facilities. A draft workbook was also prepared.

The Phase II workbook addressed: goals and objectives; summary of the Phase I analysis; trail system summary; signage; interpretation and education; marketing; public involvement; economic benefit; management and operations and maintenance; implementation; environmental issues; and, design standards.

The Phase III effort refined the draft trails plan and workbook. An environmental checklist was also developed in conjunction with the submittal of the final master trails plan. A poster was also developed for use in promoting the development of the trail system.

TRAIL SUMMARY HIGHLIGHTS

The proposed master trails plan incorporates an extensive trail system that includes approximately 75 miles of paved bicycle trails, 75 miles of unpaved equestrian and hiking trails, 35 miles of a multi-use unpaved trail and 30 miles of alternative mountain bike trail on existing roads and trails through the U.S. Forest Service. Several loop trail opportunities also exist. Various trail-related facility sitings were also identified including, 32 trail staging areas, twelve campgrounds, four primitive trail camps, seven nature/education centers and 32 feeder trail connections. These are described below.

Trail Types:

Bicycle Trail:

A paved Class I bicycle trail of a minimum of 10 feet in width is proposed from the Pacific Coast Highway in Huntington Beach to the junction with the future Crafton Hills Trail in Redlands. The bike trail is intended for recreational use linking various park sites plus commuter bicycle use as an alternative to the automobile. In some areas there are bike trails on either side of the river to accommodate future commuter traffic to industrial sites such as the Agua Mansa Enterprise Zone and the Norton AFB reuse complex. The 75 miles of bike trail proposed is approximately 40% complete today. The remaining trail segments will be new trail and will incorporate the following on-going projects.

- Gypsum Canyon bridge with a separate bike trail and barrier to link to the existing Caltrans trail. Verify both
Recommend
90% comp
- Continuation of the bike trail from the Green River Rd./Caltrans bike trail into Chino Hills State Park by the Corps of Engineers and others. No
- Bike trail studies by the City of Corona to extend the trail from the County line to River Rd. at the Corona/Norco city limits. No
- County of Riverside plans for the bike trail segment from Van Buren Blvd. to⁷ Martha McLean-Anza Narrows Regional Park.
- City of Riverside bike trail plans for the trail segment within Martha McLean-Anza Narrows Regional Park to Rubidoux Ave./Tequesquite Ave. Puzzle
- County of Riverside plans for a levee top bike trail from the Mission Blvd. bridge north to the County line.
- County of San Bernardino plans for a levee top bike trail from the County line north to the future Agua Mansa Regional Park/La Cadena Drive.

Equestrian/Hiking Trail:

An unpaved trail for hiking and equestrian use is proposed parallel to the 75 miles of bicycle trail. The trail be between 6 and 10 feet wide. The width may be narrower in more sensitive slope and habitat areas or where a parallel 10 feet wide bicycle trail exists. The trail will be 10 feet wide where trail use is heavy and where it doubles as a maintenance road. In some river segments there are trails on both sides of the river to accommodate trail users from both sides. Several loop trail opportunities exist. The trail will extend all the way from the Pacific Crest Trail to the Pacific Coast Highway.

Multi-Use Trail:

A multi-use trail for equestrians, hikers and non-motorized mountain bikers is proposed from the Mill Creek/Greenspot Road junction in the Redlands area to the Pacific Crest Trail. The trail width is four feet with parallel trails in heavy use areas or a single trail with passing areas and pullouts in more remote areas. This trail would fall within two governmental jurisdictions, San Bernardino County and the National Forest Service.

San Bernardino County would construct the segment from Mill Creek to Morton Canyon at Greenspot Road. The Forest Service has already constructed approximately 5.1 miles of trail from the Heart Bar area to the South Fork Campground area. A further leg of the trail from South Fork to near Camp Angelus is expected to be completed in 1990. The Forest Service has plans in the next few years to complete the segment from Heart Bar to the Pacific Crest Trail on the eastern edge of the trail system and the Morton Peak segment on the western edge to link up with the completed trail near Camp Angelus. About 50% of this trail should be completed by the end of 1990.

Alternative Mountain Bike Trail:

Under consideration by the U.S. Forest Service is approximately 30 miles of alternative trail route for mountain bikes. The trail would utilize existing mountain roads and trails through the heavier trail use areas of the National Forest.

Feeder Trail:

There are approximately 32 city, county or U.S. Forest Service feeder trails that connect to the Santa Ana River Trail system. Most of these feeder trails do not now exist but are planned or are unofficially used by the public.

Trail Facilities:

Trail Staging Areas:

Trail staging areas are access points to the river trail network where people can begin or end their trips. Along the river corridor, thirty-two are proposed. They are generally found at park sites and/or arterial roadways. Facilities would usually include picnic tables, restrooms, shade trees or structures, trash receptacles, water, lighting, signage and parking. Additional facilities would be included at anticipated heavier use sites. At heavy equestrian use areas, these facilities should also include parking for horse trailers, hitching posts and stock water tank. A typical facility would be about one acre in size. Spacing along the corridor would be from three to five miles apart or from 1-1/2 to 3 miles apart in more dense urban areas. There would be seven proposed trail staging areas in Orange County with two of these locations serving equestrian needs. Riverside County would have thirteen proposed staging areas with six of those sites primarily equestrian use. San Bernardino County would have six proposed trail staging areas. The U.S. Forest Service would have five.

Trail Rest Stops:

Trail rest stops are remote stopping points along the trail for resting. No vehicular access is required except for maintenance access. They are designed for the through trail user and bicycle commuter use only. Trail rest stops are spaced every 3 to 5 miles and sized approximately 1/4 acres or less. Typical trail rest stop facilities would include picnic table, water, trash receptacles, shade trees or shelter, signage, and a restroom or portable toilet. Equestrian oriented trail rest stop facilities would also include hitching posts and a stock watering tank. There are eleven proposed or enhanced trail rest stops for Orange County. Equestrian oriented rest stops would apply to two of these. There are eight proposed trail rest stop locations in Riverside County and six locations in San Bernardino County. The U.S. Forest Service would have nine facilities.

Campgrounds:

Campgrounds serve the 'through trail user' and should be generally designed to accommodate up to 100 campers for special group events. The camp sites are spaced every 10 to 20 miles. Good road access and parking is required at proposed campgrounds. Campground facilities should be close to the trail and away from RV camping. Facilities would include central barbecue pits, toilets, garbage cans, hitching rails, potable water, stock watering tank, shelter or shade trees and the camping area. In Orange County one campground site is currently in existence. Riverside County has two proposed campgrounds and San Bernardino County has three to four proposed. The U.S. Forest Service has six campground sites with three of those sites oriented to the equestrian user.

Primitive Trail Camps:

Primitive trail camps consisting of only fire rings and tent sites are located along the U.S. Forest Service segment of the trail. These are remote walk-in/ride-in only campsites for primitive camping. These smaller campsites would augment the larger improved campgrounds which have vehicle access.

Nature/Education Centers:

These centers are devoted to promoting respect, awareness, appreciation and a sense of stewardship for the diversity of plant and animal wildlife habitat found within the river corridor through observation, research and education. Centers are designed primarily for school-age groups to promote a strong environmental ethic. A system of seven are proposed along the length of the river corridor.

PHASING:

Continued delay in adoption and implementation of this trails plan will increase costs markedly due to higher land costs and lost trail connections. There is of course the danger that increased costs can be cited as reasons for not completing the project. Therefore, the trail should be completed as soon as possible. This workbook identifies completion within a 20-year period, or by the year 2010. Every effort should be made to speed up this process to the extent possible. Priority trail segments and projects are noted.

Project phasing is expected to be two-fold: An Initial and Future Phases. The Initial Phase is defined as those activities which should occur within the first ten years. Continued trail expansion and connectivity and the completion of on-going projects are generally included in the Initial Phase. Beyond ten years, the remaining components are grouped into the Future Phase and include completion of the entire system over a 20 year period.

Specific priority trail projects in the Initial Phase which should begin in the first three years include:

Orange County:

- Widen existing bicycle trail from the Pacific Coast Highway to Centennial Regional Park from 10 feet to a minimum 12 to 14 feet to accommodate very heavy bicycle trail use.
- Provide additional barrier free trail staging areas to allow for better access by trail users and to reduce impacts on existing small neighborhood parks.
- Assume management control of the existing Caltrans trail from Featherly Regional Park to the County line which is poorly maintained.

Riverside County:

- Establish a short-term bicycle lane/route and equestrian trail system through the Norco area using existing streets and trails subject to City approval.
- Complete on-going City and County bicycle trail projects from Van Buren Blvd. to Tequesquite Ave. in Riverside.
- Complete design of on-going City of Corona trail studies from the County line to River Road at the Corona/Norco city boundary.
- Construct a levee top bicycle trail from the Mission Boulevard bridge north to the County line.

San Bernardino County:

- Construct a bicycle/equestrian and hiking trail from the Riverside/San Bernardino County line north to the future Agua Mansa Regional Park trail staging area at La Cadena Drive.
- Construct a trail staging area at La Cadena Drive/future park site.
- Establish Cone Camp as a "special use permit" campground near Redlands for special trail events.

San Bernardino National Forest:

- Continue on-going trail development program for the Camp Angelus to South Fork Campground trail segment and the Heart Bar area to Pacific Crest Trail segment.

COST ESTIMATE SUMMARY

A planning-level cost estimate for the Santa Ana River Trail by phase and jurisdiction is provided below. This estimate is in 1990 dollars. The use of volunteer labor and materials and private sponsorship could significantly reduce the cost of implementation and on-going maintenance. Effective intergovernmental coordination and planning is necessary to keep the project cost effective.

Initial Phase (10 years)*	Cost Range (\$Million)	
Orange County	\$2.6	to \$2.7
Riverside County	6.1	to 6.4
San Bernardino County	3.4	to 3.6
U.S. Forest Service	<u>1.2</u>	to <u>1.3</u>
Subtotal	\$13.3	\$14.0
<hr/>		
Future Phases (Beyond 10 years)*		
Orange County	\$2.3	to \$2.4
Riverside County	10.3	to 10.8
San Bernardino County	9.2	to 9.7
U.S. Forest Service	<u>1.7</u>	to <u>1.8</u>
Subtotal	\$23.6	to \$24.7
Total Cost Estimate \$36.9 to <u>\$38.7</u>		

- * Costs exclude land acquisition for open space purposes, cost of operations and maintenance, and management cost. Trail modifications to existing trails by the Corps of Engineers in Orange County are assumed. Costs are for preliminary planning purposes only. Creating an expanded public parkway along the river, such as in San Bernardino County, would significantly increase the costs for that County. Proposed Nature Center costs are not included.

INTERPRETATION

Themes for each of eight regions or reaches of the Santa Ana River are identified for the natural and cultural resources unique to the corridor. There are over 18 school districts, 15 colleges and universities, and numerous public and private service institutions that are located adjacent to or surrounding the Santa Ana River that could benefit from increased access provided by the Santa Ana River Trail.

Interpretation and educational goals for the trail system include providing:

- Opportunities for "hands-on" science education and research.
- Selected trail-related features to foster a visitors appreciation of land stewardship.
- Encouragement for school programs and the general public to become actively involved in conserving the river's natural resources.
- Opportunities to train prospective teachers during student teaching or methods courses.

The overall educational and interpretive theme for the trail stresses appreciation of the river as a regional feature comprising of a series of inter-related natural settings and management practices. General themes for any interpretation of river resources include:

- Why the Santa Ana River Trail was established
- Uses of its waters and the effects on the river
- The future of the land, land use, and the environment
- Historical land use/management practices and its effects on the river
- Historic peoples, their places and times
- Diversity along the river, both natural and manmade
- Habitat and niche relationships
- Migration patterns of birds and mammals
- Plant and habitat succession
- Energy flow in and between ecosystems

Program and facility recommendations of the plan include: seven natural science/interpretive centers; plant propagation areas; education trails and outdoor classrooms; interpretive points for the general trail user; natural areas for scientific research; and a Santa Ana River Trail and Education Guide outlining a thematic, sequential, grade-level curriculum.

MARKETING

The focus of "marketing" the Santa Ana River Trail is to increase public and political support for the trail system. Initial objectives of marketing activities include:

- Developing immediate visibility for the trail as a regional, cooperatively sponsored public amenity with a broad base of support and appeal.
- Portraying the trail as a vital "investment" to the health and well-being of all citizens and communities surrounding the trail.
- Developing a sense of "high priority" need for adopting, funding and building the trail.

- Highlighting and linking the recreation benefits of the trail with the benefits that trail access to the river environment provides for science education.
- Assuring adoption of the trail concept by all political entities.

Tools outlined to assist individuals in realizing the social and economic benefits the trail include: master mailing lists; a major Master Plan announcement event; ribbon cutting events with the opening of each new trail segment; the Crest to Coast Trail Event; press releases; a quarterly newsletter; educational video tapes; publication in appropriate journals; and awards programs.

PUBLIC INVOLVEMENT

Citizen groups and government agencies who have an interest in the Santa Ana River Trail system are identified. A schedule for involvement and strategy for increasing citizen interest in continuing the planning process and implementing individual trail components is provided.

The basic objectives for involving members of the public in the planning, implementation, and programming of the trail are to:

- Recognize the absolute role of grassroots support in affecting political and community acceptance of the trail system.
- Incorporate ideas and suggestions for how the trail should be built, operated, and maintained.
- Develop and nurture "volunteerism" and "sponsorship".

An "open membership" Council of trail interests is recommended as the follow-up organization to the Santa Ana River Task Force. The intent of the Council is to provide a common forum for all the interests involved with the Santa Ana River Trail to share ideas, resolve conflicts, and provide technical and volunteer support.

Quarterly meetings of the Council are recommended. Three of these will be small sessions located and organized around the progress of each of the three counties involved. The fourth meeting will be an annual event for the entire Council membership.

ECONOMIC BENEFIT

The benefits of a trail to local government, communities, and businesses not only satisfy a need but prove the trail is and will be a valuable investment of public resources.

Reliable data about the number of users does not exist for the Santa Ana River Trail as an entire system as that system is not now in place. The approach taken estimates changes in land values, and the subsequent tax base, to within 1/8 mile of the trail. This approach shows trail benefits

to the community at large: the governments that rely on property taxes to sustain their ability to function; and to the landowners of all types on who place great value on their property as an investment.

A range of between \$139.7 million and \$201.8 million dollar value increase can be attributed to the "primary" property adjacent to the trail. In the case of Orange County, where the trail is already in place and land use patterns are relatively fixed, a benefit range between \$96,800,000 and \$130,600,000 has already been greatly realized. In Riverside (\$28,800,000 to \$46,800,000 increase in land values) and San Bernardino counties (\$14,400,000 to \$23,800,000 increase in land values) much of the land around the river is ranchland, lying vacant, or underdeveloped. Land uses are quickly changing. This estimate, then, is probably just a fraction of what the future holds in store.

MANAGEMENT AND OPERATIONS

From a user's perspective, continuity is the key goal of a long distance trail. To achieve that goal, an extremely effective form of agency cooperation and collaboration is required. The logical agents for assuring that the plan is fully implemented, operated, and managed are Orange County, Riverside County, San Bernardino County, and the San Bernardino National Forest. To a great extent, their efforts to date have been extremely effective, although most advances have been done autonomously. These agencies will effectively become the **Trail Management Group**. The individuals within each Management Group organization that are responsible for the Santa Ana River Trail should, at a minimum, meet annually to coordinate such items as funding requests to state and federal agencies and inter-jurisdictional management policies.

Implementing the Santa Ana River Trail, its accompanying use areas, and feeder trails to guarantee a successful trail network also requires a continued interest and involvement of trail advocates to complement agency abilities. Such interest is useful for such items as monitoring trail use, evaluating physical conditions, and keeping abreast of adjacent land use activities that may affect the trail environment. Given the scale and complexity of the interests involved with the Santa Ana River corridor, a systemwide **Santa Ana River Outreach Coordinator** position or responsibility should be created. The Outreach Coordinator will serve as a liaison between management agencies and the myriad of agencies and citizens interested in the trail. Specific responsibilities would include:

- serving as a contact point for citizen questions and a facilitator for citizen involvement
- managing activities of the Trails Council, including meetings and newsletters

- organizing the ongoing Crest to Coast Trail Ride
- coordinating marketing activities involved with the entire trail.

Funding for the Outreach Coordinator position should be shared between the public and private sectors.

Minimum levels and immediate needs for operations and maintenance staffing are depicted. Total annual costs for trail maintenance activities will likely average approximately \$10,000/mile for paved bicycle trails and \$5,000/mile for equestrian and hiking trails.

Specific issue discussions and management guidelines are provided for: security; points of access, control, and user conflicts; trail corridor width; water source development; trail camp development; vegetation/habitat management; permits; water quality; and erosion control/bank stabilization.

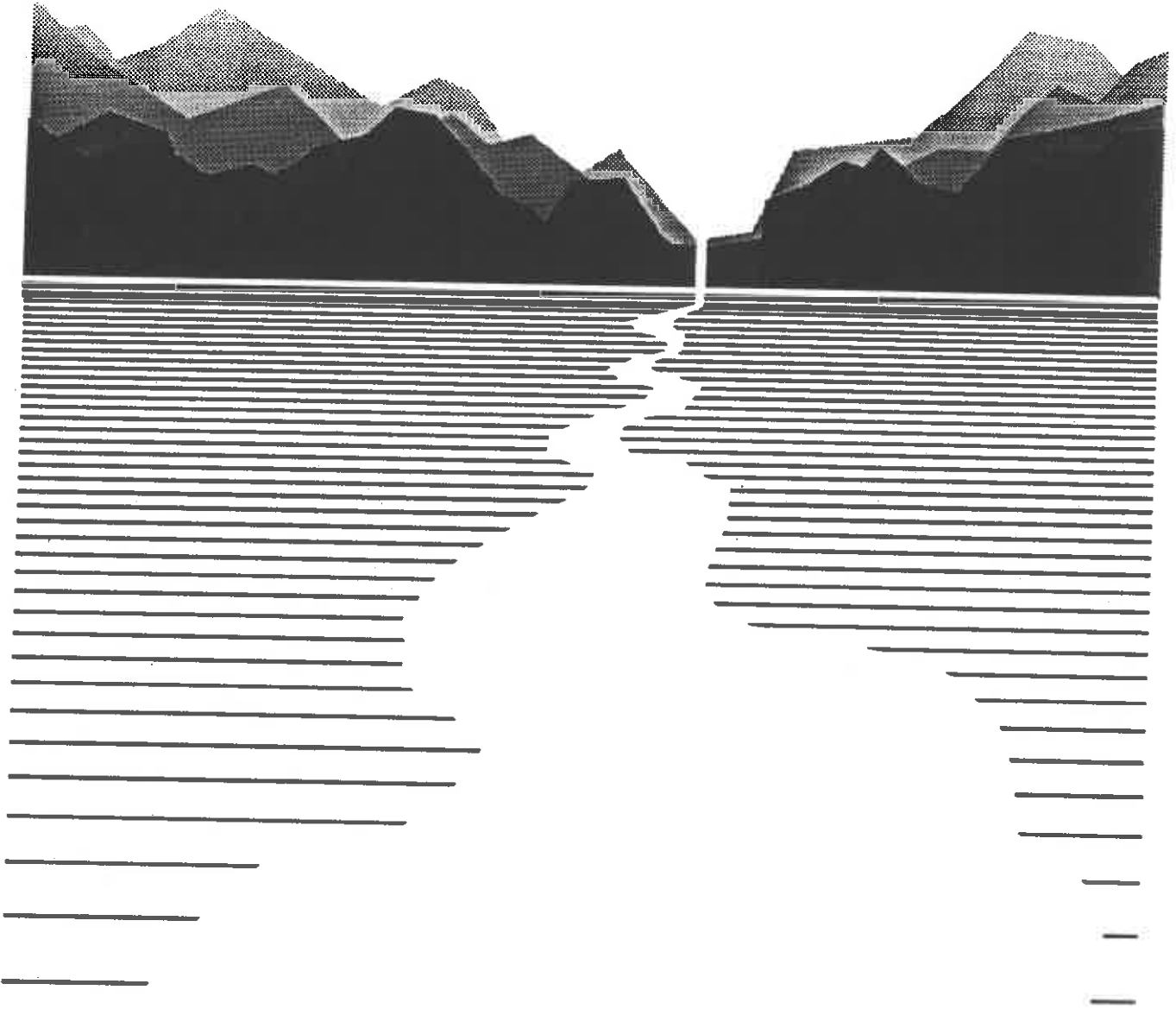
IMPLEMENTATION

Appropriate funding mechanisms to use in acquiring, developing and maintaining the trail system facilities are outlined.

Recommendations for phasing and the incremental implementation of the trail system are shown. Construction cost estimates are provided for initial and future trail-related activities. The vast majority of the trail alignment is within already owned and managed public lands or flood control easements. The sections of trail alignment and staging areas that require additional land or easement acquisition are identified. Recommended techniques for acquiring the lands are shown. Condemnation shall not be used to acquire lands for the trail or related access/staging needs.

A significant prelude to all actions associated with the trail system, and in particular the funding of the system, is to ensure that this Master Plan is formally adopted into the plans and policies of the landowner agencies, jurisdictions associated with the management of the river and its environs, and the special interests that would benefit from a continuous Santa Ana River Trail. In the case of San Bernardino County, the trail system should be incorporated into any use conditions involved with the permitting of required sand and gravel reclamation and mitigation plans. Agencies that have adopted policies about the trail within their respective General Plans or have supporting resolutions about it are listed. A model-ordinance/regulation for protection of implementation of the trail corridor is provided.

The National Trails System Act (Public Law 90-543) allows for the designation of trails meeting certain criteria as National Recreation Trails. There are five trail segments now constructed that should be immediately nominated for designation. Eventually, the entire 110-mile long trail should be nominated.



1.0 Introduction

1.0 INTRODUCTION

In 1955 the Santa Ana River was recommended to the State Parks Commission as a multi-purpose recreation area. Since that time, the river corridor has been viewed by many as an important regional recreation and open space resource. The river corridor covering three counties has always had the potential to include a regional trail system from the crest of the San Bernardino Mountains to the Pacific Ocean, some 110 miles long. In 1969, the first "Crest to Coast Trail Event" was held drawing attention to the significance of the river corridor and the need for a continuous trail system. In 1977, portions of the trail system were designated National Recreation Trail status by the U.S. Dept. of the Interior. Ultimately connecting with the Pacific Crest National Scenic Trail, the Santa Ana River Trail is destined to be completed over the next two decades and become one of the nation's longest recreation trails serving millions of people in the fast-growing Orange County and Inland Empire region. Refer to Figure 1-1.

A very unique element of this trail is its great diversity. The Santa Ana River Trail has its origins in the San Bernardino National Forest in the Heart Bar Ranch area. The Santa Ana River Trail begins at the Pacific Crest Trail at 8600 feet near Coon Creek Jumpoff. From there the trail crosses approximately 33 miles of National Forest around Morton Peak to the Mill Creek - Santa Ana River confluence north of Redlands in the valley floor. The trail then extends along the southern edge of the wide boulder-strewn Santa Ana Wash area and into San Bernardino. Then the trail enters an urbanized reach from San Bernardino to Riverside. At Rancho Jurupa Regional Park, the trail enters a riparian woodland corridor all the way to Prado Dam in Corona. From there the trail extends through the Santa Ana Canyon area and into the very urbanized coastal plain of Orange County. Its ultimate destination is the Pacific Ocean; at a total of 110 miles and 8600 ft. of elevation change.

The demand by the general public for an equestrian/hiking trail and a bicycle trail along the Santa Ana River has increased significantly over the last twenty years. This is due to several factors, including: increasing population, higher standards of living, more leisure time for recreational pursuits, increasing popularity of bicycling and horseback riding, and diminishing open space in Southern California. The Santa Ana River corridor is very significant in helping to meet this demand by providing a natural setting for a trail system linking public parkland and open space.

The region is the fastest growing area in the country and open space is a diminishing resource. The trail and open space system, linked by approximately 32 feeder trails, is the "Interstate" of trail systems in the three county area - the backbone of the system. It is essential that the trail system be constructed in order to provide trail linkage to the entire regional trail network. The bike trail is also one answer to the region's freeway gridlock problem and persistent air quality degradation.

The purpose of this workbook, entitled the Santa Ana River Corridor Trail System Master Plan, is to define a regional trail system from the Pacific Crest Trail in the San Bernardino National Forest to the mouth of the river at the Pacific Ocean. The study is a trail master plan, not an open space study. The study's intent is to establish a consistent trail policy for the entire three

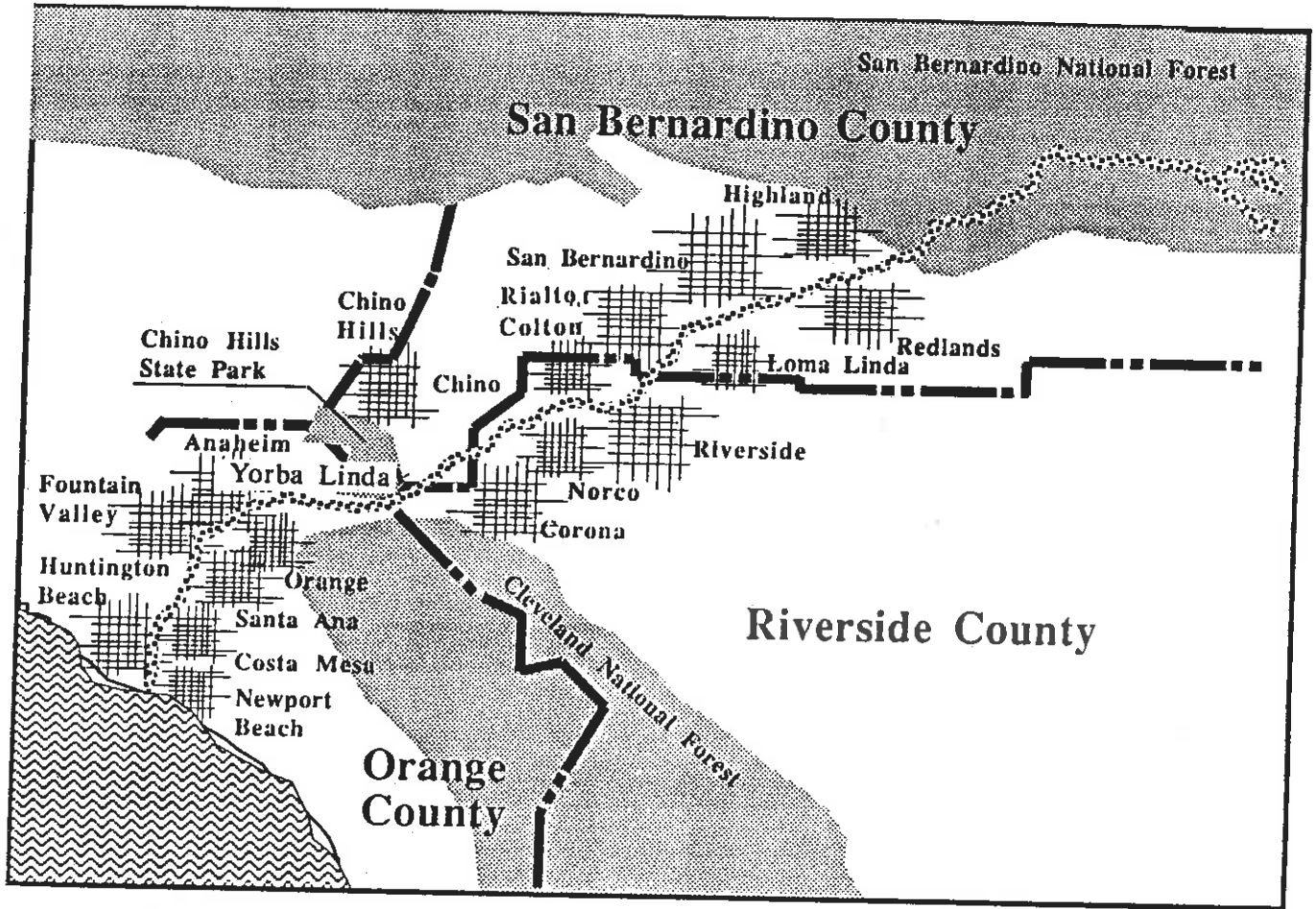


Figure 1-1 Regional Context

Santa Ana River Corridor Trail System

EDAW inc.



County stretch of the river dealing with the trail's implementation, operation and management and design standards. However, some open space recommendations are made to provide for an adequate public trail corridor.

Trail development continuity is a problem. The trail stretches across three counties, fourteen cities, two state parks and the National Forest and involves the activities of several other agencies. It also traverses several distinct environments including channelized urban, riparian, desert wash and mountainous conditions. Trail users along the way will have different opportunities for public outdoor recreation, environmental and historical education and may utilize the bike trail for alternative transportation.

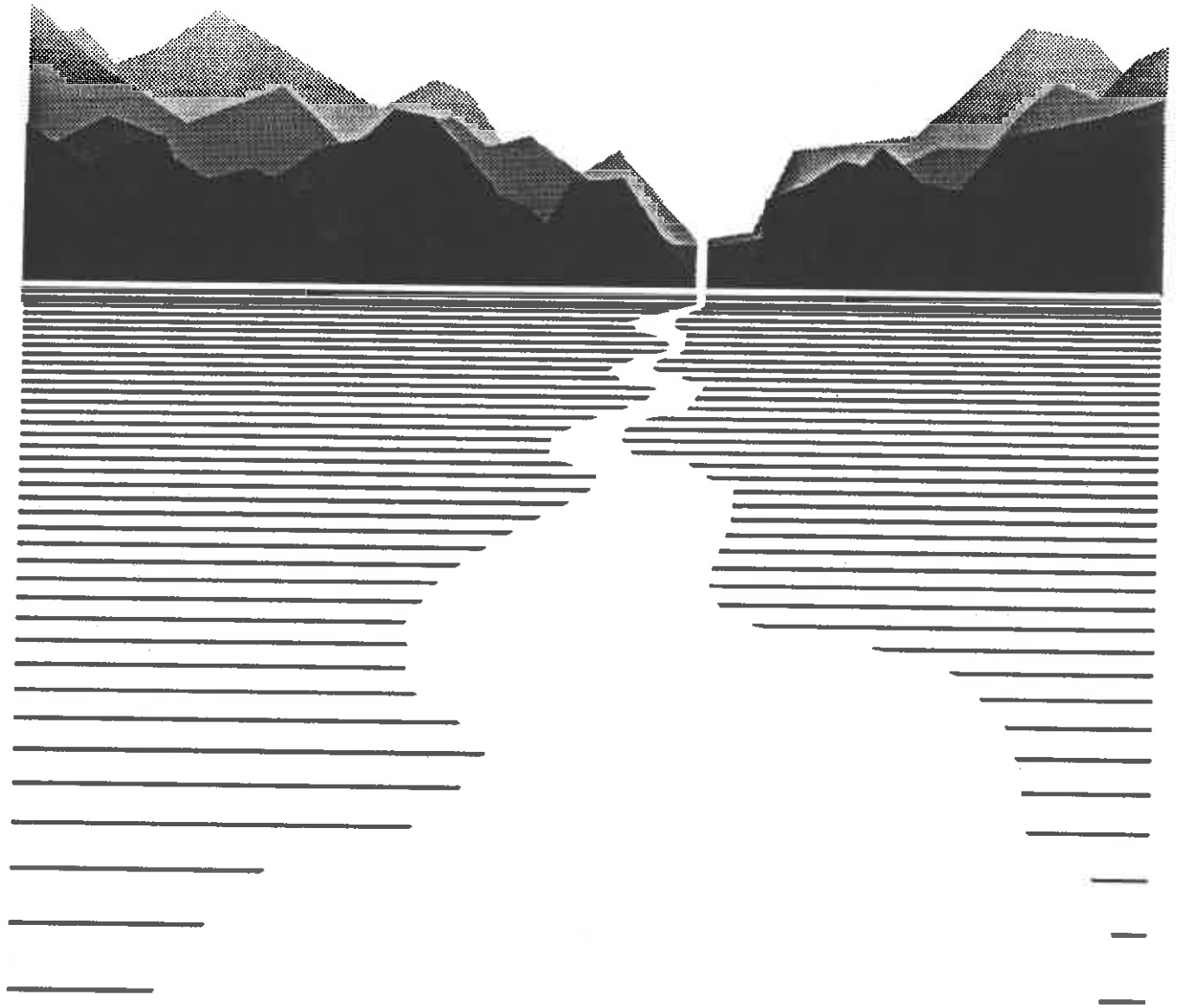
Because of the differing agencies, river edge conditions and short/long term development of the trail system, this workbook was developed which could be updated over time. Accompanying this workbook is a set of 80 maps at 1 inch = 200' scale. The maps are also available in AutoCAD disk format.

The workbook is divided into 14 sections. Each deals with a specific topic of the trail system. These sections are listed below:

Executive Summary

1. Introduction
2. Goals and Objectives - developed at the beginning of the study
3. Phase One Analysis - summary of background information.
4. Trail System Summary - description of the proposed trail system and its components.
5. Signage Element - description of the proposed recommendations for signage.
6. Interpretive Element - description of a program of cultural and environmental education.
7. Marketing Element - description of how the trail system might be marketed to aid in its continued development.
8. Public Involvement Element - public participation and workshops held.
9. Economic Benefit Element - examples of how trails have benefitted various communities and what the economic benefit may be to communities immediately adjacent to this trail.

10. **Management/Operations & Maintenance Element - preliminary rough cost estimate and management recommendations.**
11. **Implementation Element - trail segment phasing and financing alternatives. Draft Ordinance.**
12. **Design Standards Element - trail sections and material standards for various trail conditions and jurisdictions..**
13. **Environmental Checklist - Summarized environmental conditions along the trail corridor. Potential mitigation requirements within sensitive segments to be studied in future phases. Potential for environmental analysis and documentation (EA/EIR/EIS).**



2.0 Goals & Objectives

2.0 GOALS AND OBJECTIVES

2.1 Goals and Objectives Statement

A goals and objectives statement for the project is provided below.

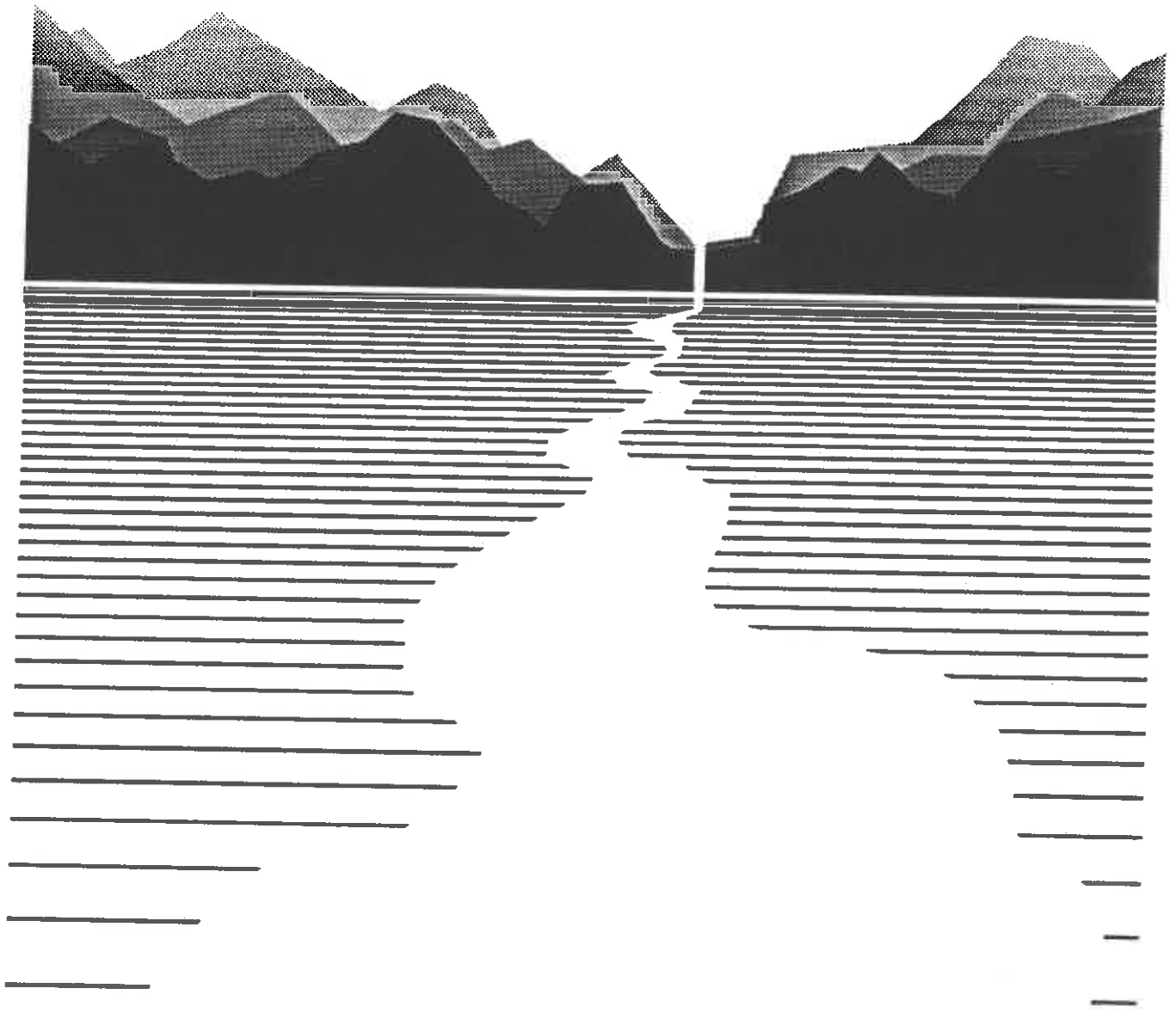
The overall goal of this project is to actively promote and to plan for a continuous multi-use regional trail system along the Santa Ana River corridor linking the Pacific Ocean and the Pacific Crest Trail. The trail system master plan is to provide for safe use and enjoyment of open space, environmental education and interpretive opportunities and a multi-use recreation and transportation trail system. This will be accomplished through a planning process emphasizing public agency and general public input in order to provide for maximum public access and circulation opportunities with minimum environmental impact.

The final product is a comprehensive recreation trail system master plan with sufficient detail to site trail locations; and detailed design standards that will facilitate trail construction with a minimum of additional planning and engineering.

The overall goal is listed as specific objectives below:

- Provide for continuous safe trail linkage from the Pacific Ocean to the Pacific Crest Trail in the San Bernardino National Forest.
- Provide trail linkage to regional and sub-regional feeder trail systems, where appropriate.
- Provide multi-use trail opportunities within the trail system for hiking, running, bicycle, horseback and wheelchair.
- Provide nature trail and environmental education interpretive opportunities, where appropriate, within the trail system.
- Provide for the protection of open space natural resources including wildlife habitat and cultural resources. Ensure that trail use, locations and management are consistent with the protection of natural, scenic and aesthetic values.
- Develop trail opportunities for persons of all levels of ability. This would include persons with a variety of physical capabilities and limitations and user needs in a manner consistent with state and federal regulations.
- Develop guidelines and policies to insure the integration of adjacent private property interests into the Master Plan.

- **Develop a Master Plan workbook to include the following elements:**
 - **Master Plan Layout**
 - **Design Standards and Details**
 - **Signage Element**
 - **Interpretive Element**
 - **Marketing Element**
 - **Promotional Poster/Brochure Guide**
 - **Public Involvement Element**
 - **Economic Benefit Analysis**
 - **Management/Operations and Maintenance Element**
 - **Implementation Element**
 - **Environmental Checklist**



3.0 Phase One Analysis

3.0 PHASE I ANALYSIS

3.1 Summary

The attached reduced maps and charts represent a summary of information collected during the initial phase of the study in 1989. This includes the following:

- Trail Continuity
- User Demand
- Recreation Experience
- Loss to Development
- Cost and Implementation
- Optional Routes
- Environmental Resource Compatibility
- Land Use Compatibility
- Recreation Opportunity
- Education Opportunity
- Physical & Site Constraints
- Comments
- Ownership
- Zoning

For more information, refer to the Environmental Checklist (13.0) and Implementation (11.0) Chapters.

Table 3-1: Phase I Siting Evaluation

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Orange County- Estuary- MP 1 to 3.	Exist. bike trail from Pacific Coast Hwy. northward. COE to construct new ramp under new PCH bridge to link w/ Huntington State Beach. Equestrian trail to end at MP 2.5. Need to consider continuation to State Beach for a tie-up area for horses.	Exist. trail in very high demand & use, mainly bicycle traffic on weekends, early AM and early PM. Some commuter bike travel. Need to provide equest. facil. at or near beach. Relatively smaller equestrian use.	Bicycle trail very good-heavy use, sometimes too heavy for trail width. Some congestion at bike trail bridges. Landscaping would improve visual quality. Provides trail connection to beach. Urbanized environment.	COE will provide new ramp/bridge at PCH. Orange County to provide ramp under proposed 19th St. & Banning Ave. bridge. COE to accommodate trail modifications with Mainstem Project.	Low cost. May widen bike trail due to heavy travel. Cost to provide equestrian facilities all the way to State Beach; tie up area at beach. Possible equestrian staging area at Fairview Park (County and/or City of Costa Mesa). Improve trail signage, landscaping. Provide staging areas at State Beach, Fairview Park; Rest stop at Fairview Park.	Equestrian trail to stop at Fairview Park or continue to State Beach. Consider tie up area at State Beach and/or staging area at Fairview Park. Keep trail users away from COE saltwater marsh restoration area. Continue equestrian trail below levee parallel to bike trail south to PCH. Work with State Parks for beach destination facilities if allowed. Equestrian use special permits are based upon in-house state review of each unique request.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Orange County Estuary- MP 1 to 3.	Trail existing- on levees. Need to stay away from COE's 92 ac. saltwater marsh restor- ation project south of 19th St. on east side - also Talbert Park and southern portion of Fairview Park. Tidal flows come up to MP 1.5 to 2.0. Stay out of river bottom.	OCFCD. Trails compatible on levee tops. COE to widen river channel and Greenville - Banning Channel modifications - trail to be accomodated. Need to explore equestrian trail ex- tension to State Beach and tie-up facil. potential. Maintained by HBP of EMA.	Both trail types existing. Pacific Ocean, saltwater marsh restor- ation project willow forest, Victoria Pond, Lease Tern habitat, Bolsa Chica wetlands, archaeo. site at Fairview Park, wetland enhancement at Talbert & Fairview Park (proposed-OC), tidal influx, history of the river, COE pro- jects, ele- vations, Crest to Coast Trail Event, Mile Post #1. Both trail types in.	Extension of equestrian trail to beach area - narrow ramp under PCH - equestrian & bicycle interface. May desire special use permit process only. Need to work with State Parks. COE to accomodate trail in Mainstem Project. Trail may need to be widened due to heavy bicycle traffic on weekends/holidays - especially closer to beach area/PCH. Existing ramps in. Levee conditions.

**SANTA ANA RIVER TRAIL
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
Orange County Coastal Plain Urban - MP 3 to 7.	Through trail from Fairview Park to Cen- tennial Park. Bike lane linkage at Adams Ave. and Slater Ave. Existing trail. Trails are separated.	Very high bike use, slightly less than near the beach. Same use patterns of weekend and early AM and PM. Relatively smaller eques- trian use. Commuter bike traffic.	Bike trail very good. May need to be widened due to heavy travel. Need rest stop facil. Suburbia Park impacted by trail users. Additional landscaping to improve visual quality and provide shade areas. Urban environment.	None. COE to accomodate trail mod- ifications with Main- stem Project.	Low cost. Improve rest stop facil- ities at Suburbia and Arevalos Park (TBD). Improve trail signage & landscaping. May widen trail to accomodate heavy bike traffic. Should provide staging area at Centennial Park, vacant land avail- able.	Provide staging area at Centennial Park.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Orange Co.- Coastal Plain Urban- MP 3 to 7.	Compatible. Urban environment. Trail on levees or adjacent to levee, Greenville- Banning Channel.	OCFCD. Maintained by HBP of EMA. Compatible with land use.	Linkage to Mesa Verde CC. Connection be- tween Fairview Park and Cen- tennial Park. Both trail types existing. Urbanized levee condition. Mile- posts & elevation markers.	Existing ramps in. COE to accomodate both trails in Mainstream Project. Trail may need to be widened up to Centennial Park due to high bike traffic on weekend/holidays. Levee or channel edge conditions.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Orange Co. - Coastal Plain Urban - MP 7 to 11.	Both trails existing. Feeder trail to Santiago Creek. COE to accomo- date trails in Mainstem Project. Need to accomodate for riding and hiking use up Santiago Creek Channel- too narrow for bikes. Bikes on Garden Grove Blvd.?	High demand, but less than beach area for bicycles. In- creasing eques- trian use closer to Anaheim Hills, Yorba Linda & Orange. Mid- day use de- creases due to heat. Commuter bike traffic.	Separate trails north to MP 9.5. Then combined levee condition. Heavy trail user impact to Edna Park. Trail width seems adequate. Land- scaping a plus by Willowick Golf Course, Alona Park, Riverview Golf Course. More landscaping needed else- where. Rest stops needed due to hotter conditions.	COE to accomo- date trail modifications in Mainstem Project.	Low cost. Ramps and bridges are in. Need trail continuation up Santiago Creek. Need staging area- suggest Alona Park to relieve Edna Park. Additional landscaping & signage.	Trail up Santiago Creek will be diffi- cult due to narrow ROW.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Orange Co.- Coastal Plain Urban- MP 7 to 11.	Urbanized levee conditions. Trail compatible.	OCFCD. HBP of EMA maintains trails. Trail is compatible.	Both trail types existing. Old railroad bridge at MP 9, ele- vations, mile- posts, Santiago Creek, County seat, citrus industry era, early settlers.	None. Feeder trail up Santiago Creek will be difficult due to narrow ROW. Ramps are in. Bridges are in. Levee conditions.

SANTA ANA RIVER TRAIL
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Orange Co.- Coastal Urban Plain MP 11 to 21.	Both trail types existing. Bike lane at Ball Rd./Taft Ave. Dual trails north to Katella Ave. then splits. Dual trails north to Imperial Hwy. then they combine again north to Yorba Reg. Park. Poten- tial trail access to Anaheim Stadium. Commuter trail parking poss- ible at Stadium and Lakeview Ave.	Moderately high use by bike riders. In- creasing use by equestrians. Trail thru I-5/SR-57/ SR-22 fwy. interchange area very urbanized, hot, deso- late. Not inviting.	Both trail types- dual and separate trails. MP 11 to 13 is very hot, urbanized river goes under- ground- needs landscaping. Water spreading basins add visual quality improvement north of Katella Ave. Imperial Woods Trail is very good section. Very inviting.	Trail is exist- ing. Narrow ROW in some areas. COE to accomo- date trail in modifications Mainstem Project.	Low. Landscaping needed from MP 11 up to Imperial Woods Trail seg- ment - especially in Frwy. inter- change area of MP 11 to 13. Staging area at Anaheim Stadium, Riverdale Park. Rest stops at or near Lincoln Ave., Carbon Canyon Channel and Santa Ana River Lakes. Wider bike lane on Imperial Hwy bridge w/barrier. Signage.	Consider staging area at Anaheim Stadium for all users, ball game traffic and commuter traffic. River trail access at Riverdale Park. Possible commuter trail parking by hospital at Lakeview Ave.

SANTA ANA RIVER TRAIL

**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
Orange Co.- Coastal Urban Plain- MP 11 to 21.	Existing trail compatible on levees above spreading basins which are used by several bird species such as herons. The region east of Riverdale Park at Lakeview Ave. is general habitat to the Black Rail and Long Eared Owl, both uncommon and declining bird species.	OCFCD. HBP of EMA maintains trail.	Both trail types existing. Aquifer recharge, water spreading basins, Anaheim Stadium, Imperial Woods Trail, early settlers, citrus industry era, Santa Ana River Lakes.	Narrow urbanized ROW. Water spreading basins. Levee conditions most of the segment.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Orange Co.- Canyon- MP 21 to 26.	Existing combined trail north and east of Imperial Hwy. Proposed El Cajon Trail enters at Yorba Park. Anaheim Hills Trail on south side of river from trail-connection needed from Santa Ana Cyn. Rd. across Imperial Hwy. to river trail. Many proposed feeder trails including Weir Cyn. Trail, and Gypsum Canyon Trail. City of Yorba Linda bike connection off La Palma Ave. Also linkage to Featherly Park loop trails.	User demand moderately high- combined bicycle, equestrian and pedestrians. Strong trail use thru Canyon area. Very popular trail ride northward to Featherly Park.	Very good trail thru Yorba Park- trails separated but adjacent. River channelized but has water and vegetation. Canyon area is great trail experience. Both trails combined to Weir Cyn. where they split, reconnect past river bend and both cross at Gypsum Cyn. Two equestrian wet crossings.	None. COE to accomodate trail modifications in mainstem Project. Trail accomodated along La Palma Ave. with new development. New bike lane w/barrier on new Gypsum Cyn. Rd. bridge. Bike lane temporarily rerouted.	Low. COE to accomodate trail- exist. staging area at proposed El Cajon Trail junction, Weir Cyn. Trail and Gypsum Cyn. Trail. Exist. camping concession at Featherly Regional Park.	Feeder trail (TBD) at proposed El Cajon Trail in Yorba Park - consider staging area at junction. Also possible staging areas at junctions of proposed Weir Cyn. Trail.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Orange Co.- Canyon- MP 21 to 26.	Existing trail thru Yorba Regional Park. Up on levee. Continues to new Gypsum Cyn. Rd. bridge (under construction). Sensitive habitats north of Weir Cyn. Rd. Wildlife enhancement project at Horseshoe Bend- a wetland enhancement project area. Riparian area north and east thru Featherly park to Gypsum Cyn. Horses & trail users to avoid bend area. A narrow band of So. Cottonwood-Willow Riparian Forest occurs parallel to the river on the south side east of Imperial Hwy. This area is avoided. At Weir Cyn., south of the freeway, a So. Willow Scrub habitat area exists.	OCFCD, OCSD & Harbors Beaches and Parks of EMA. Trail to be sited as compatible with habitat areas, park uses, and wet crossing safety. Trails to stay out of bend habitat project area.	Both trail types existing. Yorba Rancho Adobe, El Cajon Trail, Anaheim Hills Trail, elevations, mileposts, citrus industry era, oil production-Carbon Cyn. Access to Yorba Regional Park facilities. Wildlife habitat areas, wetland enhancement project at bend, SAVI Canal and Ranch, archaeo. sites, Indian and early settler cart trails, fault line, Rancho Santa Ana, Horseshoe Bend, Gypsum Station Cart Road.	Wet crossings (2) for equestrian trail. Levee conditions. New bike lane on Gypsum Cyn. Rd. bridge. Coord. with County Habitat Mgmt. Plan Study now underway for Canyon Area.

Orange
Canyon-
MP 21 to 26.

The riverbottom itself and its edges are So. Cottonwood - Willow Riparian Forest up to Gypsum Cyn. The area south of the river near Gypsum Cyn. is habitat to Many Stemmed Dudleya, a very rare and threatened plant species. Trail siting should be done in consultation with a biologist. A replanting mitigation program may be needed.

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SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
Tri-County Area- Canyon- MP 26 to 32.	Bike trail connection to Cal Trans trail (scooters permitted) from Gypsum Canyon Rd. to Green River Rd. and Golf Course. Feeder trails at proposed Coal Cyn. Trail, Brush Canyon Trail and Aliso Cyn. Trail with Chino Hills State Park. Trail plans are coord. w/ State Parks M.P. for Chino Hills. Also linkage to the proposed Gallery Forest Loop Trail (seasonal). Trail link to Prado Regional Park via Aliso Canyon Trail.	Reduced use currently due to poor or non-existing trails. Ultimate high use once trail connections all completed for all trail users. Com-muter trail use also.	Both trail types Cal Trans trail parallel to 91 Frwy. has noise. Does permit motor scooters. Equestrian trail to follow a meandering route per COE GDM II route. Several opportuni-ties for feeder trail access into Cleveland Nat. Forest, Chino Hills State Park. Great seg-ment except for nearby 91 Frwy. im-pacts.	Trails mod-ifications to be accomo-dated by COE in Mainstem Project- but only up to about MP 31. Potential loss of trail segment or re-route due to SAWPA approved treat-ment plant site #1. Recommend SAWPA utilize pro-posed site #1E.	Moderate. Trail staging areas proposed at Coal Cyn. Trail junc-tion. Bike bridges (2). Trail does not exist beyond existing Cal Trans trail. (+3 miles). Staging area/camp-ground needed at Chino Hills State Park's southern area.	Promote SAWPA Site #1E. Coord. w/Chino Hills State Park and COE. Riverside Co. parkland lost to COE project-not available. (Riverside County Parks Dept. land) Trails into Chino Hills State Park include Aliso Canyon/Brush Canyon, and potentially El Cajon Trail.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
Tri-County Area- Canyon- MP 26 to 32.	<p>Bike trail to follow existing Cal Trans trail, then up to train tressel and into Chino Hills State Park. Sensitive riparian areas, wildlife corridors. Some equestrian wet crossings per COE trail alignment in GDM II. Trail also consistent with Chino Hills State Park M.P. Need to coord. w/ on-going County Wildlife Mgmt. Plan study. The riverbottom and edge are characterized as So. Cottonwood- Willow Riparian Forest. At Coal Cyn. south of the freeway, there is the habitat of the San Diego Horned Lizard, an uncommon and threatened species. This area is avoided. Further east on the south side of the river at the Green River Rd. area is an area of So. Sycamore- Alder Riparian Woodland.</p>	<p>OCFCD, Cal Trans, Chino Hills State Park and COE. Trail per COE GDM II alignment. Coord. with Chino Hills State Park. The Coal Cyn. Stables and Green River Golf Course are private.</p>	<p>Both trail types. Train tressel, Butterfield Stage Route, Chino Hills State Park, wildlife, riparian habitat, archaeological sites, Yorba Rancho, fault line, Cleveland National Forest, mileposts, elevations, Indians and early settlers, Prado Dam.</p>	<p>Cal Trans bike/scooter trail on narrow ROW- user conflicts. Potential problems due to SAWPA treatment plant project at site #1. Two bicycle bridges needed to cross river.</p>

Tri-County
Area-
Canyon-
MP 26 to 32
(continued)

The trail avoids this area. Within Aliso Cyn. in Chino Hills State Park, exists the South Coastal Minnow which is extremely rare, endangered and unprotected within a So. Sycamore - Alder Riparian Woodland. This feeder trail route needs to be carefully sited to avoid impact. Below SR-71 is So. Cottonwood-Willow Riparian Forest, an area of Least Bell's Vireo, a very rare and endangered species. The trail and trail bridge should avoid the riparian forest area, to the extent possible. Near Scully Hill, the COE's trail route may conflict with 2 mule deer dispersion areas. The most important area is west of the hill. An option may be to zig-zag up the hillside out of the canyon bottom. The trail should be screened. The bike trail could not zig zag up the hill. Another potential trail conflict is the river crossing over to the tie in point with the Coal Cyn. Stables cart road. The trail should be visually screened by vegetation or topography from the terminus of a mule deer dispersion corridor on the north bank of the river. The trail in general needs to be sensitive to wildlife breeding and dispersion areas for its entire length. Trail siting with a biologist is needed to avoid sensitive areas.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
Riverside Co.- Riparian- MP 32 to 38.	Planned COE trail ends at MP 32. Goal is to continue the trail to the Norco bluff area with a major trail linkage with the proposed Temescal Wash Trail. Other linkage to the proposed Chino Creek Trail probably rerouted to go thru Chino Hills St. Park.	High equestrian trail use currently, better trails needed. High bike use in Corona as well. With thru linkage to MP 32, trail use would be very high. Commuter bike use also assumed from Riverside/ Corona/Norco to O.C. Temescal Wash Trail would be major trail feeder thru Corona.	Both trail types planned. Combined trail thru most of basin area. Constrained ROW thru free-way and dam area. Rest stops needed at Butterfield Mem. Park. Staging area needed at junction of proposed Temescal Wash Trail. Most of segment a very good trail experience. Some free-way and rail-road noise/ visual impacts from MP 32 to 34. Airport noise from MP 35 to 37.	Trail to be accommodated at SR-71/91 interchange construct. (1955)- plenty of ROW per Cal Trans. Need to work w/COE to get trail thru dam/spillway area, and along levees/ thru borrow areas to MP 37. Trail near Auto Center St. needs to be accommodated with new business park development in the area.	Moderate cost. Trail bridge below SR-71. Ramp trail up slope by dam/spillway. Trail on COE levees in 2 areas. Plan for trail with borrow pit reclamations. Trail bridge across Temescal Wash. All new trail for 6 miles. Signage and landscaping. Staging area at proposed Temescal Wash Trail. Rest area at Butterfield Mem. Park.	Option to go around either side of COE borrow area west of airport. Work with COE on dam/spillway/ levee areas.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
Riverside Co.- Riparian- MP 32 to 38.	COE - planned trail ends at MP 32. Goal is to get to Norco bluffs area. Bridge below SR-71 needed to cross river. Trail skirts around COE Prado Dam borrow sites (2), on top of a levee up to Auto Center St. Trail up and out of Orange Co. Water District proposed recharge basin at elev. ±514 ft., and the dam's max. flood level (to the extent possible). Trail to be coord. w/sensitive species and habitat areas on the ground including Southern Cottonwood Willow Riparian Forest west and north of the municipal airport and west of Corydon St..	Trail generally within COE fee & leasehold land-some in Corona; trail crosses Cal Trans area by SR 71-91 interchange, COE Prado dam and spillway area, and AT&SF railway ROW corridor and COE proposed levee. Trail through Corona's Butterfield Mem. Park, COE proposed levee along Smith Ave., thru Corona's National G.C. (park site) into COE leasehold land to Corona. Trail is compatible up to Corydon St. area.	Both trail types. Mileposts and elevation markers. Prado Dam - COE projects. Prado Basin habitat resources. Butterfield Stage route. Chino Hills State Park. Yorba Slaughter Adobe. Corona's history - Grand Ave. Circle City, lemon industry area, Temescal Wash, Indians and early settlers, least Bell's vireo & other threatened or endangered species.	Trail bridge below SR-71. Trail under new SR-71/91 interchange (1995 const.) should be ok per Cal Trans. Difficult trail up slope by spillway. Trail to follow COE proposed levee. Narrow ROW along Smith Ave. - use COE levee to be constructed up to Rincon St. Trail needs to stay out of OCWD recharge basin at ±514' elev. and outside or near edge of enlarged dam reservoir basin. Trail to avoid COE borrow areas. Trail to cross Temescal Creek.

Trail avoids this habitat- trail also avoids Least Bell's vireo nesting sites in the riparian forest, as well as Western Yellow billed Cuckoo, Orange Throated Whiptail and Black shouldered Kite habitat. Trail goes through habitat of the Burrowing Owl which covers the entire basin. The most important areas are the least Bells' vireo nesting sites which are avoided in the Stagecoach St. area.

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SANTA ANA RIVER TRAIL
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Riverside Co.- Riparian- MP 38 to 42.	Both trails proposed. Trail linkage to proposed Cucamonga Creek Trail into San Bernardino. Co., option for both sides of the river. Linkage to Norco's River-trails Park, Santa Ana River Park. Options for Corydon/Norco Dr. for 1 or both trails use, bluff route for 1 or both and consider short & long term solutions.	High equestrian use now. Could be moderate to high bicycle use if trail existed. Commuter bike travel probable to O.C. Norco has tried to get bluff trail for some 20 years. Demand for both trail types will increase as dairies to the north become residential areas.	Both trails planned. Bluff route or street route options. May desire to split up. Bluffs are better for experience factor, but high construction costs and some environ. impacts Some area would need rip-rap. Long approval process with COE and resource agencies. Short term solution is use of Corydon/Norco Dr./Hamner for bike trail and Corydon/Norco for equestrian trail.	Bluff tops lost to housing development already. New development going in at Stagecoach St. between Bluff Rd. & Corydon St. Development north and east of Corona National site lost to housing develop. Need to plan now to have a trail on the north side of the river if it is to ever happen- get into the General Plan.	Costs may vary depending on solution. High cost if bluff route selected. Low cost if Corydon/Norco Dr. route selected. May have short-term Corydon-Norco Dr. route with long-term bluff route. Could also plan for long-term trail on north side of the river when the dairies are developed and the river edge developed-trail to be paid by developers - also River Rd. bridge widening (TBD) with trail and barrier included.	Trail to be discussed more with Norco staff. Options include use of Corydon St./Norco Drive/Hämner Ave. and/or bluff route. Also option for trail on north side of the river when it is developed after dairies are gone. Long-term effort to get trail below bluffs approved and constructed. High maintenance also. But better experience. May be safer than streets. Bluff better for thru commuter travel since no stop signs and signals. May split trail users with bikes on streets and horses on streets and/or bluffs or alternate side of the river.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Riverside Co.- Riparian- MP 38 to 42	Trail to consider sensitive habitat below Norco bluff areas of Southern Cottonwood/ Willow Riparian Forest. This area is sensitive to Western Yellow Billed Cuckoo & Black Shouldered Kite which are rare and threatened and uncommon and threatened, respectively. Area west of Stagecoach St. is habitat of Willow Flycatcher (rare & threatened) and Least Bell's Vireo (very rare & endangered). Entire bluff area is sensitive, especially from MP 41 to 43 which is also a least Bell's vireo general habitat area. Trail to stay east of Stagecoach St. Boggy and silted conditions near River Road bridge area and north of MP 41 should be avoided.	Much of the basin is owned by OCWD. Some is COE. Top of bluffs' are private, except for the NWC and SRC in Norco. Streets are City of Norco - refer to Streets & Trails Commission. Corydon St. is in Corona, west River Rd., and in Norco east of River Rd. (a busy arterial). Signaled crossing at Corydon St., not at Bluff Rd. County owns parkland at River Road. City of Norco owns Rivertrails Park.	Both trail types proposed. Mileposts and elevation markers. Tradeoffs as to trail routing along Corydon St. or along bluff edge. Possibility of trail on both sides of the river and short-term/long-term solutions being short-term street trail use with long-term river edge use. Norco has good dual equestrian trails all along Corydon St. and Norco Dr. Linkage to proposed Cucamonga Creek Trail to San Bern. Co. & Prado Regional Park.	Bluff areas are unstable with erosion, river meanders under cutting banks, riparian forest up to bluff edge. Top of bluff's are private except for Naval Weapons Center and State Rehabilitation Center. Some steep slopes along bluffs. Traffic at River Rd. and along Corydon/ Norco Dr. a consideration. No bike trail now on these streets, but Norco has a very good equestrian trail on Corydon/Norco Dr. Hamner Ave. traffic a concern.

SANTA ANA RIVER TRAIL
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
Riverside Co.- Riparian MP 42 to 48.	Both trail types planned. Feeder trail opportunities including the proposed Wineville Ave. Trail, Pedley Ave. Trail, Bain Street Trail, La Sierra Trail, Pedley Trail and a new one, the Hole Lake Trail. Trail options for both sides of the river for equestrians.	High equestrian use. Potentially high bike trail use if a trail existed. Commuter bike traffic possible. Increasing demand for both types as north side of the river develops and dairies close. Lots of feeder trails would mean very good access and high use. Heavy equestrian use area - especially in the summer.	Beautiful riparian zone, high bluffs to the west. Equestrian trail opportunities to meander, loop trails, trails on both sides of the river. Lowlands are primarily public open space. Need rest stops for the longer trail rides and bike riders. Trail staging areas at trail junctions, Hidden Valley area, and Agriculture Park site.	La Sierra/Norco area is developing. Area Specific Plans need to consider Santa Ana River Trail and feeder trails. On north side of the river, in unincorporated Pedley and Jurupa areas, need to plan for trail access along the river and feeder trails. Approx. 2000' east of Pedley Ave. is private land - should be acquired. The rest is County or State land leased to the County or City - Norco or Riverside.	Moderate - bluff trails would need to be created or improved to reduce erosion and hazards. Most equestrian trails exist. Add staging areas and rest stops. Bike trail would be all new for about 6 miles. Signage, some landscaping. Ramp needed under Van Buren Ave. - south side of river. Need staging areas at feeder junctions and rest stops.	Need to manage interface of bike trail and equestrian trail. Trails for equestrian use possible on both sides of the river. Maintenance higher due to bluff erosion and meandering river.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
Riverside Co.- Riparian- Mp 42 to 48.	Sensitive Southern Cottonwood - Willow Riparian Forest below bluffs within river corridor. A lot of Giant Reed influx. Large areas burned in 1989. Area from MP 42 to 46 are Least Bell's Vireo general habitat and trails would need to be carefully sited - use existing trail footprints where possible. Other sensitive species include Black Shouldered Kite and Orange Throated Whiptail. Bike trail should stay to the edge of the bluff to minimize habitat impacts from the constructed trail and slope stabilization, if any. Management of Hidden Valley area to be considered. High water table/boggy area east of Wineville Ave. to Etiwanda Ave.	Most of the land is public. Norco manages Rivertrails Park from MP 42 to 44. Then there is a 2000' segment of private land east of Pedley Ave. East of that is the Santa Ana River Regional Park (county) and Hidden Valley Wildlife Area (State leased to the County). Adjacent to the County land is the Agriculture Park site (Riverside) west of Van Buren Ave. land is parkland and trail is compatible.	Several feeder trail opportunities on both sides of the river. Beautiful area for trail due to riparian forest. Elevation markers and mileposts. Interpretive potential for wildlife, Hidden Vallely, old irrigation channel along bluffs, Rancho Jurupa era, De Anza Trail, old club house at Hidden Valley a potential inter. center.	Fire danger as evidenced by fires in 1989. Bluff edge protection, erosion control. Meandering river. Least Bell's Vireo habitat.

SANTA ANA RIVER TRAIL
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Riverside Co.- Riparian- MP 48 to 53.	Both trail types. Equestrian trail on both sides of the river. Feeder trail opportunities to Jensen-Alvarado Adobe and in Jurupa. County planning bike trail from Van Buren Blvd. to Martha McLean Anza Narrows Park. Riverside to construct trail from Martha McLean Anza Narrows Park to existing bike trail at Tequesquite Ave. Trail to continue north to County line with recent funding.	High equestrian use from Rancho Jurupa Regional Park southward through the riparian zone. Moderate use north of there within channelized river corridor. May desire bike trail to link with regional softball/baseball complex near Riv. Co. Parks HQ. Trail linkage to Louis Robidoux Nature Center and Jensen Alvarado Adobe, and 2 regional park facil.	Will have bike trail from Van Buren Blvd. to Co. line in next few years. Equestrian trail existing but not continuous-should know where you are going to avoid boggy areas. Beautiful riparian forest, adjacent hills, and farmland.	Expansion of Riverside's Treatment Plant should accommodate dual trail on that side of the river. Proposed golf course project at Tequesquite Arroyo to accommodate trail	Bike trail existing or in process. Equestrian trail needs upgrade. Add rest stops and staging areas. Improve/expand equestrian campground at Rancho Jurupa Park. Low cost section overall. Signage needed. Some landscaping such as at treatment plant.	Coord. with on-going bike trail plans-County & City.

SANTA ANA RIVER TRAIL

**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
Riverside Co.- Riparian- MP 48 to 53.	Area includes Southern Cottonwood- Willow Riparian Forest area from bluff edge to edge. Includes habitat of Orange Throated Whiptail, Heron, and Western Yellow Billed Cuckoo. No Least Bell's Vireo noted. Trails to be sited at bluff edge or at existing trail locations. Trail hazards due to boggy/high water table areas - 2 areas at Martha McLean Anza Narrows Park called "deep water" and "black hole".	Land is primarily County parkland. Some City of Riverside land at treatment plant, closed landfill and Mt. Rubidoux. Other is Riverside Co. FCD, where channelized Private land all surrounding park- land on bluff tops. Trail to be compatible with day use areas and camping areas.	Both trails assumed. Interp. potential for De Anza Crossing Louis Roubidoux, Jensen-Alvarado Adobe, Rancho Jurupa, Easter Sunrise Service, Crest to Coast Trail Ride, old railroad bridge (Union Pacific), wildlife habitat- riparian zone, Flabob Airport, early settlers and Indians, Anderson Estate, aqueducts.	Bluff edge con- ditions with erosion problems. County FCD won't allow trails on top of levees for equestrians due to liability concerns, can ride in river bottom or where there is no steep rough rip rap. Narrow ROW at River- side's Treatment Plant.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
Riverside/ San Ber- nardino Co.- Inland Urban- MP 53 to 60.	Extend bike trail north from Fairmount Park area to La Cadena Dr. bridge/Agua Mansa Park site. Consider both sides of the river to service future industrial park commuter bike traffic.	Some equestrian use now.No bike trail north of Mission Blvd.- area is generally undeveloped. Future Agua Mansa Industrial area. Need to provide for future commuter bike travel as well as existing equestrian users. Several large horse farms now in the area which will be developed over time.	This segment is very barren. Needs extensive landscaping - hot, dry, little river water or vegetation. Upgrade landscape with future Agua Mansa industrial projects. Continued local equestrian use and thru travel linking Agua Mansa Park site with Rancho Jurupa Park. Feeder trails include Jurupa Trail & trail to Box Springs Mt. Park. Agua Mansa Park to be trail staging area.	Bridge structures have not accommodated ramps when constructed. Plan now for trail on both sides as area develops. Sewage treatment plant to be expanded- needs to consider trail.	Moderate cost- no existing trails north of Fairmount Park. Need signage and landscaping. Need ramps under SR-60 bridge, Market St. bridge, Riverside Ave./N. Main St. bridge, La Cadena Drive and SPRR bridges, totalling 5. Trail staging areas at trail junctions and major one at Agua Mansa Park. Camping area possible here too.	Option to provide trail on both sides of the river for bike use. Dependent upon success or failure of Agua Mansa Enterprise Zone. Area is blighted now. Needs considerable up-grade.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
Riverside/ San Bernar- dino Co.- Inland Urban- MP 53 to 60.	Segment enters a channel- ized levee environment. Some So. Cottonwood Willow Riparian Forest adjacent to Lake Evans and existing bike trail to Fairmount Park, Riverside. Some stretches of barren sand. River segment north of Edison powerlines and La Loma Hills is also riparian forest up to La Cadena Dr. North of that is a habitat area of Los Angeles Pocket Mouse on the north side of the river, a rare species but not threatened.	Ownership is Riverside and San Bernardino County FCD's. Mt. Rubidoux is City of Riverside. Agua Mansa Park area is County of San Ber- nardino Solid Waste Dept. - Future Regional Park site. River generally sur- rounded by private land. Equestrian trail generally sited at toe of levee in river- bottom, bike trail on FCD levees. Potential bike loop trail thru Fairmont Park around Lake Evans, City of Riverside	Both trail types provided. Oppor- tunity for trail staging area at Carlson Park, old gateway into historic Riverside district. Rest stop at Fairmount Park. May extend bike trail across Mission Blvd. bridge to link w/Rancho Jurupa and future ball- field complex. Interpretive potential for rancho era, hispanic com- munities in the area, Agua Mansa Cemetery, Trujillo Adobe, and Lime Kilns.	Ramps needed under 5 bridges. Area is blighted.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>TRAIL CONTINUITY</u>	<u>USER DEMAND</u>	<u>RECREATION EXPERIENCE</u>	<u>LOSS TO DEVELOPMENT</u>	<u>COST & IMPLEMENTATION</u>	<u>COMMENTS & OPTIONS</u>
San Bernardino Co.- Inland Urban- MP 60 to 67.	Provide both trail types up the Santa Ana River from Agua Mansa Park towards Redlands. No trail currently exists. Several proposed feeder trails include the Reche Canyon Trail, Cajon/Lytle Creek Trail, Mid-City Trail, San Timoteo Creek Trail, Mission Morey Trail, Mt. View Trail, and City Creek Trail a total of 7.	Current demand is low since no trail exists. Bikes now use various surface streets. A new trail should stimulate trail use for thru equestrian and bike travel and loop or local trail use. High potential for commuter bike travel due to nearby office/industries/comm'l. areas including Colton, Norton AFB, Tri-City and Hospitality Ln.	Trail follows channelized river edge with maint. road which has some landscaping. Fairly good segment. River has water and vegetation. Several feeder trail linkages possible. Freeway interchange area is very urbanized - will require a costly ramp solution. Segment needs extensive landscape, rest stops and staging areas.	Most bridges have maint. roads leading up to them, but no access road underneath except I-215 Frwy. Ramps will be needed. Maint. road narrow in some places. Ramps under I-10 Frwy. and the SPRR bridges are the greatest challenge. Need to consider trail in Norton AFB reuse, Tri-City area, Colton, Grand Terrace, San Bernardino and Redlands.	High cost. Ramps needed under the Southern Pacific RR, Interstate 10, Mt. Vernon Ave., "E" Street, Waterman Ave., Tippecanoe Ave., and Santa Fe RR bridges, a total of 7 bridges. Ramps under I-10 and the SPRR will be very costly, but less than other solutions of bridges or tunnels.	Important urban segment of trail. Much of segment still underdeveloped and should include open space corridor setback, landscaping, trail staging areas and rest stops. Difficult segment due to bridge constraints.

SANTA ANA RIVER TRAIL

**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
San Bern- ardino Co.- Inland Urban- MP 60 to 67.	The confluence of Warm Creek and the Santa Ana River include sensitive habitat of the Slender Horned Spine flower and the Pringles Monardella, both extremely rare and endangered, San Diego Horned Lizard, Los Angeles Sun Flower, Western Yellow Billed Cuckoo and Gambell's Yellow Cress. These habitats are generally contained within exist. concrete walls. East of Waterman Ave. is habitat of the California Black Rail. The trails would generally avoid these habitats on the levee tops, on top of walls or stay to the immediate edge. South of Norton AFB near the powerplant, there is a habitat area of Sycamore Alluvial Woodland. The trail would skirt the edge of this area. Within the river bottom itself is an area of Santa Ana River Woolley Star which is extremely rare and endangered and unprotected.	Ownership is mixed: private, State, San Bern. Co. FCD; various water companies (such as the Gage Canal or other Riverside - based ownership) and federal near Norton AFB. Some City of Riverside.	Trail would be primarily urban in nature. There would be significant riparian growth to view at the Warm Creek confluence and between Waterman Ave. and Tippecanoe. Interp. potential includes feeder trails, the rail road era, Route 66, fault lines, mileposts, elevations, Norton AFB.	Significant man-made barriers of roadway and trail bridges which will require ramps or trails would have to be routed through city streets.

San Bern-
Co.
Inland
Urban-
MP 60-67.
(continued)

South and east of the base
is an area of Riversidian
Alluvial Fan Sage Scrub
which is rare and en-
dangered. The trail would
also skirt around this
area.

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SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
San Bernardino Co.- Santa Ana Wash- MP 67 to 75.	Provide both trail types- bicycle trail to Crafton Hills Trail and a multiple use trail across Mill Creek (wet) and up into the National Forest. Trail to extend thru Redland's proposed parkway to the proposed Nature Center then north to the forest. Several feeder trails. Trail should link with future Greenbelt Trail which parallels Greenspot Road.	Increased trail use by equestrians. Beautiful views to the mts. across the wide wash area. Little bike use since no existing trail. Trail would link with Crafton Hills Trail to Yucaipa Regional Park. Good area for Mt. Bikes. Completed trail should get a lot of use from Redlands, Yucaipa, Mentone, Highland and San Bernardino residents as well as the thru trail user.	Good experience along bluff edge with mountain view across wide wash. Both trail types possible. Need rest areas and staging areas. High heat in summer- water and shade needed. North of the Crafton Hills Trail, a multi-purpose trail only is proposed.	Bluff edge still available. New development such as Redland's parkway area, should accommodate continuous parkway open space corridor for trail at the river's edge. Ramps under bridges not constructed.	Moderate cost. Eight miles of new trail. Almost all non-public land. Bridge ramps needed at Alabama St., Tennessee St. and Orange St. Signage and landscaping needed. Rest stops and trail staging areas needed.	A few trail options to cross Mill Creek confluence area across water district lands. Paved bike trail to continue on Crafton Hills Trail route while Santa Ana River Trail splits and becomes an unpaved multiple- use trail for Mt. bikes, equestrians and hikers.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
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SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUNITY	PHYSICAL & SITE CONSTRAINTS
San Bernardino Co.- Santa Ana Wash- MP 67 to 75.	At the confluence of City Creek and the river and within the entire length of the river-bottom area is an area of Riversidian Alluvial Fan Sage Scrub. A narrower band of Santa Ana Woolley Star is also found eastward to Church St., both of which are rare and endangered. East of the treatment plant at Alabama St. is an area of Santa Ana Woolley Star. The trail should avoid these areas and the City Creek Trail loop connection should stay on the Alabama St. bridge. East of the Redlands airport are found vast areas of habitat within and outside of the riverbottom.	Mixed land ownership including County, BLM, Sand and Gravel operators, SBVWCD, SBVMWD, COE and other private. Use of levee, bluff edge and Greenspot Rd. minimizes impact. Trail to follow proposed Redlands parkway.	Both trail types provided. Staging areas possible at several sites including: east of Mt. View Ave., Alabama St., Orange St., proposed Redlands Nature Center near the airport, at the junction with the Crafton Hills Trail and the Green Belt Trail. Interpretive potential includes sensitive species, COE Seven Oaks Dam, the Greenspot Rd. bridge, citrus era, early settlers and Indians, aqueducts, fault lines, elevation markers and mileposts.	Trail follows levee or river bluff edge. Possible route parallel to Greenspot Rd. then into National Forest. Need to cross Mill Creek-wet. Areas to the east generally owned by water districts-try to minimize intrusion.

MP 67 to 75
(continued)

These include the Slender Horned Spine flower, an extremely rare and endangered, unprotected species. The trail would follow the levee or bluff top, but would go thru this large widespread habitat zone. Along Greenspot Road is another area of Santa Ana River Woollystar. Trail parallels the road to minimize potential impact. Within the area identified as an equestrian campground at the mouth of Morton Canyon is an area of So. Sycamore-Alder Riparian Woodland. Campground to be carefully sited. Much of the river-bottom area is proposed for COE mitigation area due to impacts from the borrow sites and dam construction. These areas are avoided.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
<p>USFS- Morton Peak- MP 75 to 93.</p>	<p>Multi-purpose trail enters NF boundary lands near Green-spot Rd. and enters the Morton Canyon area per the approved trail alignment. It heads toward Morton Peak area bypassing the Santa Ana River route and the COE's Seven Oaks Reservoir, Dam and Spillway. The trail heads east to Morton Peak then north to Thomas Hunting Ground area then west of Camp Angeles to re-enter the S. Ana River canyon.</p>	<p>Per the USFS, this alignment provides the best recreation opportunity of those alignments considered for the users. This alignment maximizes the opportunity to interface with recreation improvements and facilities in the area. The trail will receive varied uses including hiking, backpacking, equestrians and mountain bikes. The latter is becoming a more significant use statewide.</p>	<p>The multi-purpose trail, unpaved, will be utilized by hikers, backpackers, equestrians, pack trains, and mountain bikers. The USFS approved trail, per the EA, provides the best opportunity for the forest user to interface with other improvements. It also minimizes exposure to psychological and physical barriers, including special use sites, cabins, roads, river fords, etc. The goal is to provide a wilderness-type experience to the extent possible.</p>	<p>The Santa Ana River canyon will be blocked with the COE's proposed Seven Oaks Dam and reservoir per the Mainstem Project. Therefore, the selected trail follows the Morton Peak alignment. Some special use permit areas, such as cabins or resorts, have blocked potential routes. These use areas have been avoided. Hydro-electric and aqueduct facilities also are located at the canyon mouth area which block access.</p>	<p>This alignment has the most favorable net present worth of all the alternatives considered by the USFS. This route also best fits the land, thereby resulting in a minimum impact on the land, low construction costs and low on-going maintenance costs. It also provides maximum opportunity and flexibility for sequential development and linking with future developments. The USFS provides for up to a 1/4 mile corridor within which the practicality of locating the final, on-ground route can be determined.</p>	<p>The trail avoids the COE's Seven Oaks Dam area and very rough, rocky terrain in the lower Santa Ana River canyon area. The trail does not follow the the river, but goes around Morton Peak and Camp Angeles to re-enter the river canyon west of the Seven Oaks area. Potential option to begin the trail further east through a proposed development north of Mill Creek.</p>

MP 75 to 93.
(continued)

This alignment is not currently built, but is scheduled to be constructed by the USFS over the next few years. This is the only large segment of trail which is diverted far away from the river.

The segment will be hot and dry - rest stops and water will be needed for the thru traveler to increase its use. Most use is expected to be thru use. Because the trail is not in a riverine environment, user demand may drop.

This route will be a non-riverine experience, more like a mountain top hiking experience. Camping may be provided in the Morton Canyon area as an entry/exit point at this valley - mountain junction. Camping also available at the Thomas Hunting Grounds.

SANTA ANA RIVER TRAIL

**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
USFS- Morton Peak- MP 75 to 93.	The USFS approved trail alignment enters the National Forest at Morton Canyon at about the 2000' elevation. This area is designated as a Southern Sycamore- Alder Riparian Woodland. Siting of the trail and campground facilities need to protect the woodland habitat. The trail follows mountainous terrain towards Morton Peak, then northeast to the Santa Ana River canyon once again. The trail route is consistent with the approved Environmental Assessment. The trail attempts to stay on the north facing slope where possible. The area has a high fire danger.	The trail enters the NF boundary thru private lands in section 9. It then proceeds thru USFS property west of more private lands at Camp Angeles. Near Cold Creek it again enters private/leased lands before entering USFS lands near Pinezanita. Cabin areas are avoided. Sensitive habitats are avoided per the EA.	One multipurpose trail is provided. The trail is within close proximity to a lookout on top of Morton Peak, a potential trail visitor stop at 4,624'. It then crosses the Base Line, another interp. feature. From there it enters the Thomas Hunting Grounds and on to Constance Peak (6,645'). From there it heads north to Filaree Flat at 4,600' and the Santa Ana River area at Schneider Creek. The area has extensive history of ranching and early settlement.	Relatively steep dry terrain up to Morton Peak where it enters the forested area. USFS selected the trail route to minimize on-going maintenance and initial construction costs. Since that time, the COE Seven Oaks Dam now blocks the river route alternative.

USFS-
Morton Peak-
MP 75 to 93.

Rest stops are
proposed at
Morton Canyon,
and seasonal
creeks. Camp-
grounds are pro-
posed at Morton
Cyn. and Thomas
Hunting Grounds.
Mileposts and
elevations can
be noted.

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**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
USFS - Upper River- MP 93 to 107.	Multi-purpose trail, as sited in the USFS EA, extends from the Pinezanita area eastward thru Seven Oaks, Barton Flats, South Fork and on to the Heart Bar State Park area. This is the end of the river proper. The trail is sited between Hwy. 38 and the Santa Ana River up to MP 102. It generally avoids campsites and cabin areas, staying typically 1000' away from the river to MP 98 then closer to within about 500'	This segment will be heavily used by fishermen, area campers, area cabin owners, local resorts and the thru hiker equestrian or mountain biker. Some segments are already constructed. The trail will need to accommodate heavier use, especially on weekends and in the summertime. Heavy use areas are Seven Oaks, South Fork, Barton Flats, and Heart Bar. Equestrian and hiking use is throughout.	The trail, for the most part, does not follow the immediate river edge. It stays between 200' and 1000' feet away. This is due to sensitive habitat along the river, wildlife corridors and cabins. From MP 102 to MP 104, the area has a significant number of cabins and campgrounds in the area. Also in the Heart Bar Campground area. Therefore, there is less of a "wilderness" experience here. An existing equestrian camp is located in the Heart Bar area. Other proposed features may include rest stops at distances along the river, or at creek crossings	Some areas are already developed with cabins and campgrounds the trail has been woven through the various areas, especially South Fork. An Addendum II (in 1981) was prepared to re-route the trail through this segment. This alignment is the one to utilize.	Costs go to the USFS. Some segments are completed already - ±5 miles. Trails may vary when flagged on the ground due to site conditions. The EA Addendum II covers detailed siting through the congested South Fork area. The overall trail has the most favorable Net Present Worth of the various alignments considered.	Should consider side trail loops or access trails to the river for rest stops where the trail is over 500' to 1000' away from the river. Some existing trails might be used for loop trail experiences.

MP 93 to
(continued)

from the river to MP 102. Here it crosses the river to the north. Short side trails to access the river corridor, or short loop trails, may be possible for river edge rest stops. At MP 102 the trail closely parallels the river to the north. At MP 103, the trail and river safely cross underneath Hwy. 38 through the South Fork Campground area. The trail then heads away from the highway and river to MP 104. It then parallels the river again to MP 107 at Heart Bar.

and camp ground east of Seven Oaks, South Fork, and Heart Bar. Staging areas might be located east of Seven Oaks, South Fork and Heart Bar. All exist or are planned except east of Seven Oaks.

SANTA ANA RIVER TRAIL

**PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION**

SEGMENT/ MILE POST	ENVIRONMENTAL RESOURCE COMPATIBILITY	OWNERSHIP/LAND USE COMPATIBILITY	RECREATIONAL EDUC. OPPORTUN.	PHYSICAL & SITE CONSTRAINTS
USFS - Upper River- MP 93 to 107.	The multi-purpose trail route was selected by the USFS to be generally located on the north slope and to be located away from the immediate river edge. The trail would extend thru forested areas but would avoid more sensitive woodland areas immediately along the river. This is to avoid potential impacts to wildlife habitat, wildlife corridors, preserve water quality and to reduce erosion. The river area is already impacted by existing use such as fishing. An Environ. Assessment was approved for the route.	The trail is located within the jurisdiction of the USFS. At MP 104 the trail enters Heart Bar State Park. The trail extends to the end of Heart Bar at MP 107. The trail is outside of the San Gorgonio Wilderness. An Addendum II of the EA was finalized in 1981. It dealt with more detailed siting thru the South Fork area where several alignments were considered. One was approved which resolved most concerns of the cabin owners.	The multi-purpose trail offers the opportunity for the thru traveler as well as area campers, cabin owners and resort guests. Interpretive potential includes the Heart Bar Ranch, Barton Flats, the river, elevations, mileposts, and area settlement history. This segment of the trail is less of a "wilderness" experience due to heavy use and area campgrounds. There are several campgrounds available, rental cabins, an equestrian campground and staging areas.	The trail was sited to avoid potential impacts to the river, to respect existing development considerations and to provide a safe trail crossing underneath Hwy. 38 in the South Fork area. The trail may need to be fine-tuned as it is flagged on the ground due to site conditions.

SANTA ANA RIVER TRAIL

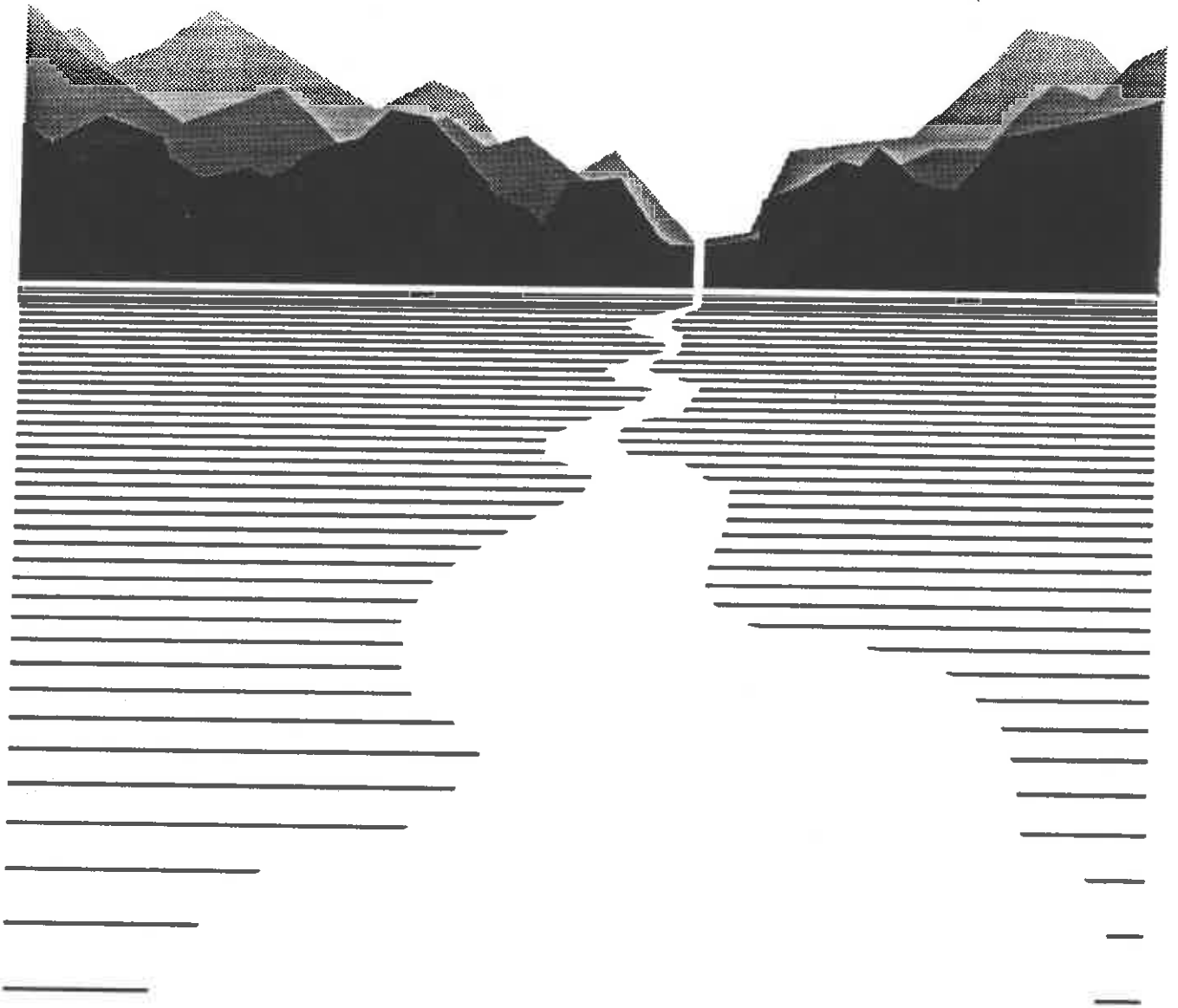
PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

SEGMENT/ MILE POST	TRAIL CONTINUITY	USER DEMAND	RECREATION EXPERIENCE	LOSS TO DEVELOPMENT	COST & IMPLEMENTATION	COMMENTS & OPTIONS
USFS- Upper River- MP 107 to 110.	This segment, as approved by the USFS, provides trail linkage from Heart Bar to the Pacific Crest Trail (PCT). It is east of the main recreational area and would represent back tracking for many trail users. It also represents a loop trail option to the PCT then onto Coon Creek Rd. back to Heart Bar. This trail also links w/the Calif. Riding & Hiking Trail.	Demand should be moderate in comparison to the Heart Bar/South Fork area. Trail would link with both the PTC and Calif. Riding & Hiking Trail, both major state-wide trails. Trail users include backpackers, hikers, equestrians and may include Mt. bikers.	The trail segment would provide a more wilderness-type experience than the use of Coon Creek Rd. which can receive a lot of use, particularly on weekends. The trail would leave the Creek corridor and parallel it to the north some ±2000' away. Use of certain sections of dirt road off the main route may be possible. Good signage needed.	The most direct route up Coon Creek has a dirt road which is accessible to most vehicles. The trail route avoids this corridor and is away from the creek.	Trail is in engr. design/construction now. On ground analysis of the trail indicates it should be shifted slightly (TBD). Because it is away from the creek, rest stops are desirable. Upgrading of the Coon Creek Jumpoff special permit campground may be desirable as a PCT-Santa Ana River Trail event starting point rather than at Heart Bar.	New trail provides an alternative to the sometimes busy Coon Creek Rd. Expansion/upgrade of Coon Creek Jumpoff as a trail terminus may be desirable.

SANTA ANA RIVER TRAIL

PRELIMINARY TRAIL CORRIDOR
SITING EVALUATION

<u>SEGMENT/ MILE POST</u>	<u>ENVIRONMENTAL RESOURCE COMPATIBILITY</u>	<u>OWNERSHIP/LAND USE COMPATIBILITY</u>	<u>RECREATIONAL EDUC. OPPORTUN.</u>	<u>PHYSICAL & SITE CONSTRAINTS</u>
USFS- Upper River- MP 107 to 110.	Trail leaves the Coon Creek corridor which is dry most of the year - Follows a new align- ment away from the more sensitive creek area. Precise trail siting by the USFS may vary from its orig- inal alignment and may utilize existing dirt roads rather than create a new scar on the land.	Trail extends from Heart Bar State Park into USFS lands then back into the State Park area at the PCT and Coon Creek Jumpoff. The Jumpoff is about 2000' from the edge of the Nat. Forest. The San Gorgonio Wilder- ness is to the south of Coon Creek approx. 3 miles. Trail is compat- ible. To the east of the Jumpoff is private land. Cabins at the Jumpoff were originally thought to have been built on private property, but are actually on USFS land.	Trail provides an improved linkage to the Pacific Crest Trail/Calif. Riding and Hiking Trail. Trails to Mission Springs/Mission Creek and Mt. San Gorgonio to the south and Onyx Peak (9114'), Joshua Tree Nat. Mon. and Big Bear Lake Basin to the north. New S. Ana River Trail segment provides a more wilderness -type experience. Show mileposts, ele- vations, PCT/ CRHT signage. Interp. poten- tial for these trails plus Heart Bar Ranch, Coon Creek Jump- off, Mt. San Gorgonio and local historical features. Coon Creek Jumpoff is a wonderful amenity on USFS lands.	USFS is finding that this trail segment may vary somewhat due to on ground siting efforts under- way.



4.0 Trail System Summary

4.0 TRAIL SYSTEM SUMMARY

The 110-mile Santa Ana River Trail system (non-motorized trail) from the Pacific Crest Trail (PCT) at elevation 8600 ft. to the Pacific Ocean at sea level is the backbone, the "Interstate Frwy.", of the three-county trail and open space network. In order for this trail system to function and to be fully enjoyed by the region's trail users, several trail components are identified.

This chapter summarizes the various components of the trail system. Further detailed information is found in accompanying chapters of the workbook including signage, phasing, design standards and management/operations and maintenance.

A set of 80 plans at 200' scale under separate cover have also been completed which provide greater detail regarding the location of trails and trail-related facilities. The attached set of 14 plans schematically represent the overall trail system. Further engineering studies at approximately 40' scale will be required during specific design and implementation. *Get*

4.1 Trail System Components

The trail system consists of the following major components.

- Bicycle Trail - Class I Paved (75 mi.)
- Equestrian/Hiking Trail - Unpaved (75 mi.)
- Multi-use Trail - Unpaved (35 mi.)
- Alternative Mountain Bike Trail - USFS (30 mi.)
- Trail Staging Areas (32)
- Trail Rest Stops (34)
- Campgrounds (12)
- Primitive Trail Camps - USFS (4)
- Nature/Education Centers (7)
- Feeder Trail Connections (32)

Bicycle Trail - Class I: A Class I paved bicycle trail is proposed from the Pacific Coast Highway Trail to the Crafton Hills Trail (future) in Redlands near the base of the San Bernardino Mountains. It would travel a distance of approx. 75 miles. About 40% of the bike trail is now completed, mostly in Orange County. On-going projects which have been incorporated include:

- County of Orange - Gypsum Canyon Road bridge with a separate bike trail and barrier to link to the Caltrans trail.
- Continuation of the bike trail from the Green River Rd./Caltrans trail into Chino Hills State Park by the Corps of Engineers and others.
- Bike trail studies by the City of Corona to extend the trail from the County line to River Rd. at the Corona/Norco city limits.

- County of Riverside construction drawings for the bike trail segment from Van Buren Blvd. to Martha McLean-Anza Narrows Regional Park in Riverside.
- City of Riverside bike trail planning for the trail segment from Martha McLean-Anza Narrows to Rubidoux Ave/Tequesquite Ave.
- County of Riverside plans for a levee top bike trail from the Mission Blvd. bridge north to the County line.
- County of San Bernardino plans for a bike trail from the County line north to the future Agua Mansa Regional Park/La Cadena Drive.

The bike trail would be a minimum 10 ft. wide paved trail, separated for the most part, from vehicular traffic. In some locations, the trail is immediately parallel to the companion equestrian/hiking trail. The two trails would be separated by a fence and buffer which varies in width.

Within the beach section of the trail from the Pacific Coast Highway to Centennial Regional Park in Santa Ana, it is proposed that the trail be widened to 12 ft. or more to better accommodate the very heavy bike traffic especially present on weekends and holidays. This trail is also used by joggers and runners. In two areas, dual bike trails on either side of the river are proposed to promote bicycle commuter use. These include the future Agua Mansa Industrial Enterprise Zone and the Norton AFB Industrial-Commercial Complex.

Equestrian/Hiking Trail: An unpaved trail for hiking and equestrian use is proposed over the same 75 mile trail length. This trail meanders more and includes some wet crossings within the riverbottom. The river is currently used by equestrian and hikers. However, some stretches of the river are on private lands and other obstacles prevent year-round public access. The Crest to Coast Trail Event for example, requires a lot of coordination and approvals because the total system is not completed. The master plan identifies a permanent route and expands upon existing trails in Orange and Riverside County. Some areas have trails on both sides of the river due to existing use on either side and heavy trail use during portions of the year.

The trail itself will be between 6 and 10 feet wide. The width will be narrower in more sensitive slope and habitat areas or where a parallel 10 ft. bicycle trail exists. Where trail use is heavy and the trail doubles as a maintenance road, the trail will be 10 ft. wide.

In some areas there will be trails on either side of the river to accommodate users on both sides of the river.

An equestrian tie-up area is proposed immediately inland from the Pacific Coast Highway in Orange County to allow riders to walk a short distance to the beach. Huntington State Beach will allow equestrian group access to the beach by special permit only via their main entrance west of the river. From the tie-up area, equestrians may ride 110 miles all the way to the Pacific Crest Trail.

Multi-use Trail: A multi-use trail is proposed from the Mill Creek/Greenspot Road junction in the Redlands area to the Pacific Crest Trail. This trail would travel up to the National Forest boundary about two miles away at Morton Canyon. From there, the trail would fall under the jurisdiction of the Forest Service and extend another 33 miles to the Pacific Crest Trail for a total of about 35 miles of trail.

The trail would be utilized by equestrians, hikers and occasionally by mountain bikers (non-motorized). It would be 3 to 4 feet in width with passing trails and pullouts to accommodate the different uses. Where use is very heavy, parallel trails should be constructed to minimize potential trail conflicts. A gradient of 7% to 8% or less is proposed. Special erosion control measures may be needed due to multiple use.

The U.S. Forest Service (USFS) has constructed approximately 5.1 miles of trail from the Heart Bar area to the South Fork Campground area. Another approximate 12 miles of trail from South Fork to near Camp Angelus will be completed in 1990. The Forest Service would then need to complete the segment from Heart Bar to the PCT on the eastern edge of the trail system (two trail alignments are being considered at this time) and the Morton Peak segment on the western edge to link up with the completed trail near Camp Angelus. The County would construct the segment from Mill Creek to Morton Canyon to complete the multi-use trail component. About 50% of this trail should be completed by the end of 1990. The remainder would be completed under this plan and the approved USFS trail alignment plan and environmental assessment.

Alternative Mountain Bike Trail: The U.S. Forest Service is considering an alternative mountain bicycle trail route to parallel the main multi-use trail. The trail would extend through the heavier trail use portions of the forest east of Morton Peak to the Pacific Crest Trail. The purpose of the mountain bike trail is to provide a separate trail route for this use to minimize potential trail conflicts associated with bicycle contact with horses or hikers. The trail would be designed similar to the multi-use trail and would utilize existing trails or mountain roads in the National Forest.

This trail can be accessed via Warm Springs Truck Road at Mill Creek Canyon on Highway 38. The truck trail route would extend approximately 1.7 miles to one of two junctions with the Santa Ana River Trail northeast of Morton Peak. The main trail from Morton Peak west to Morton Canyon and Greenspot Road is anticipated to receive light trail use by all trail user types. Therefore, it is believed that mountain bicycle use of this segment would not cause any significant conflict and should also be available for mountain bike use. Erosion control measures within this area will be needed due to erosive soils and light vegetative cover.

East of Morton Peak at Warm Springs Truck Road, the mountain bike trail would extend approximately 29 miles to the Pacific Crest Trail following existing mountain roads to Thomas Hunting Grounds and then north to Camp Angelus. From there the trail would follow the Middle

Control Road north to Seven Oaks Road and River Road parallel to the Santa Ana River. At the South Fork Campground, the trail would cross underneath Highway 38 and follow an existing trail south of the highway along the river to the Cienega Seca Creek Trail. At Heart Bar Campground the trail would then follow Coon Creek Road to the Pacific Crest Trail and the Jumpoff.

Trail Staging Areas: Trail staging areas are access points to the river trail network where people can begin or end their trips. Thirty-one are proposed. They are like "park and rides" for trails. They are generally found at park sites and/or at major roadway crossings. Facilities may include:

- Picnic Tables
- Restrooms or portable toilets
- Shade trees or structures
- Trash receptacles
- Water
- Lighting
- Signage
- Parking

Where equestrian trail use is anticipated to be heavy, additional facilities would be added and/or the staging area would be designated an equestrian facility. Additional facilities would include:

- Parking to accommodate horse trailers
- Hitching posts/rails
- Stock water tank

Trail staging areas range in size from about 1/2 acre (20 cars) to 1 1/2 acres (up to 50 cars). A typical facility would be about one acre. Equestrian staging areas would be somewhat larger to accommodate horse trailer circulation. Forest Service facilities will be more rustic and smaller. Spacing of trail staging areas vary depending upon the side of the river, anticipated use, trail mode and available park/arterial roadway. In densely urbanized areas, these would be at 1 1/2 to 3 mile intervals. In less populated areas they would be 3 to 5 miles apart.

The following are proposed multi-use trail staging areas: (*Joint use/Equestrian oriented facilities)

- Fairview Park* (Costa Mesa)
- Centennial Regional Park (Santa Ana)
- Spurgeon Park (Santa Ana)
- Anaheim Stadium (County of Orange)
- Riverdale Park (Anaheim)
- Yorba Regional Park (County of Orange)
- Featherly Regional Park (County of Orange) * 2 areas/1 is equestrian
- Chino Hills State Park - Santa Ana River Flats* (State)
- Butterfield Memorial Park (Corona)

- Corona National Golf Course/Park Site* (Corona)
- Prado County Park (County of Riverside)
- Wayne Makin Park* (Norco)
- Clark Park/Caltrans Park & Ride (Norco)
- Pedley Ave. Trail* (County of Riverside)
- La Sierra Trail/Hidden Valley (County of Riverside)
- Agriculture Park* (Riverside)
- Van Buren Blvd. (County of Riverside)
- Martha McLean - Anza Narrows Regional Park (County of Riverside-2)
- Carlson Park (Riverside)
- Agua Mansa Regional Park (County of San Bernardino)
- Washington St./Reche Canyon Channel (Colton/Co. of San Bernardino)
- San Timoteo Creek (San Bernardino/Co. of San Bernardino)
- City Creek Trail/Orange St. (Redlands/Co. of San Bernardino)
- Redlands Nature Center/Opal Ave. (Redlands/ Co. of San Bernardino)
- Mill Creek (County of San Bernardino)
- Camp Angelus Area (USFS)
- Forsee Creek Rd. (USFS)
- Barton Creek/Glass Rd. (USFS)
- South Fork Area (USFS)
- Heart Bar Ranch (USFS)

Trail Rest Stops: Trail rest stops are remote stopping points along the trail for rest. These are especially important in the hotter inland areas. They should be located within existing parks where possible. No trail use vehicular access is required, only maintenance vehicle access. These facilities are geared toward the through user and the trail commuter.

Rest stops are spaced every 3 to 5 miles and may be oriented toward bicycle or equestrian use, depending upon the trail location and side of the river. Their location is also dependent upon the nearest trail staging area, campground and available land or easement. Rest stops are approx. 1/4 acre or less in size and are typically sited right adjacent to the trail within the existing easement or parkland. Forest Service facilities will be more rustic and may not have water.

Trail rest stop facilities may include:

- Picnic table
- Water
- Trash receptacles
- Shade trees or shelter
- Signage
- Restroom or portable toilet

Equestrian oriented trail rest stops should also include:

- Hitching posts
- Stock watering tank

The following are proposed trail rest stops. Some already exist. (*Joint Use/Equestrian oriented):

- Pacific Coast Highway Trail (County of Orange)
- Fairview Park (Costa Mesa/County of Orange)
- Arevalos Park (Huntington Beach)
- Suburbia Park (Costa Mesa)
- Edna Park (Santa Ana)
- Katella Ave. Area - 2 locations (Anaheim and Orange/Co. of Orange)
- Carbon Canyon Channel Area (County of Orange) *2 locations/1 equestrian
- Santa Ana River Lakes* (County of Orange)
- Yorba Regional Park (County of Orange)
- Chino Hills State Park - Aliso Canyon Trail (State)
- Prado Dam Area (Corps/Co. of Riv.)
- Norco Bluffs - North (Co. of Riv.)
- Hidden Valley Nature Center (Co. of Riverside)
- Bain St. Trail (Co. of Riverside)
- Pedley Trail (Co. of Riverside)
- Fairmount Park (Riverside)
- Jurupa Trail (Co. of Riverside)
- Box Springs Mt. Trail (Co. of San Bernardino)
- Rialto Trail (Co. of San Bernardino)
- Mission Morey Trail (San Bernardino/Co. of San Bernardino)
- Mountain View Trail (Redlands/Co. of San Bernardino)
- Norton AFB Complex (County/City of San Bernardino)
- Alabama St./Palm Ave. (Redlands/Co. of San Bernardino)
- Morton Canyon Area (USFS)
- Morton Peak Area (USFS)
- Crystal Creek/Baseline Area (USFS)
- Camp Angelus Area (USFS)
- Cold Creek Area (USFS)
- Stetson Creek Area (USFS)
- South Fork - Nature Trail Terminus (USFS)
- Coon Creek/Santa Ana River Confluence (USFS)
- Pacific Crest Trail (USFS)

Campgrounds: Campgrounds serve the through trail user, such as the Crest to Coast Trail Event, and weekend or day use trips from large regional parks. Most campgrounds should accommodate organized youth and adult groups. These need to be spaced every 15 to 20 miles. Depending upon the time one had to travel and the travel mode, campgrounds could be selected based upon a day's travel by bicycle, horseback or walking.

Some trail users enjoy travelling in large groups. Therefore, designated campgrounds should be designed to accommodate up to 100 trail users for group events as well as small groups or individuals. Vehicles would be limited at campsites, but supply dropoffs would be possible for group resupply. Good road access would be needed along with nearby parking.

Campground size would vary depending upon regional needs with the Santa Ana River Trail being only one component of the user need. Trail-oriented facilities should be close to the trail and away from RV camping. USFS campgrounds would be more rustic.

Facilities may include:

- Central barbecue pit
- Toilet(s)
- Garbage Cans
- Hitching Rails
- Potable Water
- Stock Watering Tank
- Shelter (optional)
- Shade Trees
- Tent Area

The following are proposed campgrounds serving the trail system. Some already exist. (*Joint Use/Equestrian-oriented)

- Featherly Regional Park (County of Orange)
- Chino Hills State Park - Santa Ana River Flats * (State)
- Rancho Jurupa Regional Park * (Co. of Riverside)
- Agua Mansa Regional Park (Co. of San Bernardino)
- Cone Camp* Special Use Permit Only (SBVWCD)
- Morton Canyon (USFS/SBVWCD)
- Thomas Hunting Grounds * (USFS)
- Seven Oaks/Barton Creek * (USFS)
- South Fork (USFS)
- Heart Bar Ranch * 2 campgrounds - 1 mountain bicycle and hiker/1 equestrian group (USFS)
- Coon Creek Jumpoff (Group Special Permit) (USFS)

Primitive Trail Camps: Within the National Forest, four primitive trail camps are proposed near the main multi-use trail and mountain bike trail. These campgrounds are meant to be primitive with fire rings and tent sites only. There would be no water or direct vehicle access at these locations. These campgrounds are meant to augment the other improved campgrounds to provide a more wilderness-like environment for smaller groups of trail users. Camp locations include:

- Cold Creek
- Forsee Creek
- Barton Flats
- Heart Bar

Similar camp conditions can be found at Thomas Hunting Grounds in addition to the proposed improved campground at that location.

Nature/Education Centers: Science and nature education is a major goal of educators, both nationwide and especially in Southern California. Local school districts heavily use the river system and the two existing Nature Centers along the river in Riverside County. School outings are booked a year in advance. To promote a strong environmental ethic and to educate school age youngsters as well as adults, a system of 7 Nature/Education Centers is proposed. These may include:

- Fairview & Talbert Regional Park (Co. of Orange - potential)
- Featherly Regional Park (Co. of Orange - potential)
- Prado County Park (existing) (Riverside Co.)
- Hidden Valley Wildlife Area - site of the old clubhouse (Riverside Co.)
- Louis Robidoux Nature Center in Rancho Jurupa Regional Park (Riverside Co.)
- Redlands Nature Center at Opal Ave. and the Santa Ana Wash (Redlands)
- Heart Bar Ranch - (USFS)

These facilities would be augmented with nature trails and an interpretive program. Refer to chapter 6.0 Interpretive Program for more information. Costs for these centers are not included and would be separate projects.

Feeder Trail: There are 32 city or county feeder trails that connect to the Santa Ana River Trail making it the backbone of a large regional trail network. Most of these feeder trails do not now exist or are unofficially used.

Feeder trail linkage is accommodated in the Master Plan for the following:

- Pacific Coast Highway Bike Trail
- Fairview Park Bike Trail
- Santiago Creek Trail via Garden Grove Blvd.
- El Cajon Trail
- Weir Canyon Trail
- Gypsum Canyon Trail
- Brush Canyon Trail
- Aliso Canyon Trail
- Fresno Canyon Creek Trail
- Temescal Wash Trail
- Cucamonga Creek Trail
- Wineville Ave. Trail
- Pedley Ave. Trail
- Bain St. Trail
- La Sierra Trail
- Pedley Trail
- Hole Lake Trail (potential)
- Jurupa Trail
- Box Springs Mt. Trail
- Rialto Trail
- Reche Canyon Trail
- Cajon/Lytle Creek Trail
- Mid-City Trail
- San Timoteo Canyon Creek Trail
- Mission Morey Trail
- Mountain View Trail
- City Creek Trail
- Redlands Bicycle Trail
- Abandoned ATSF Railway Line/Opal Ave. Trail (potential)
- Green Belt Trail
- Crafton Hills Trail
- Pacific Crest Trail
- California Riding & Hiking Trail

4.2 Estimated Cost and Phasing

Completion of the trail system is anticipated to cost in the range of \$36.9 to \$38.7 million for the entire length of the trail. This cost would be shared by the three counties, the U.S. Forest Service and participating Cities. The cost breakdown by area is:

Orange Co.	\$ 4.9 - \$ 5.1 million
Riverside Co.	\$16.4 - \$17.2 million
San Bernardino Co.	\$12.6 - \$13.3 million
U.S. Forest Service	<u>\$ 3.0 - \$ 3.1 million</u>
	\$36.9 - \$38.7 million

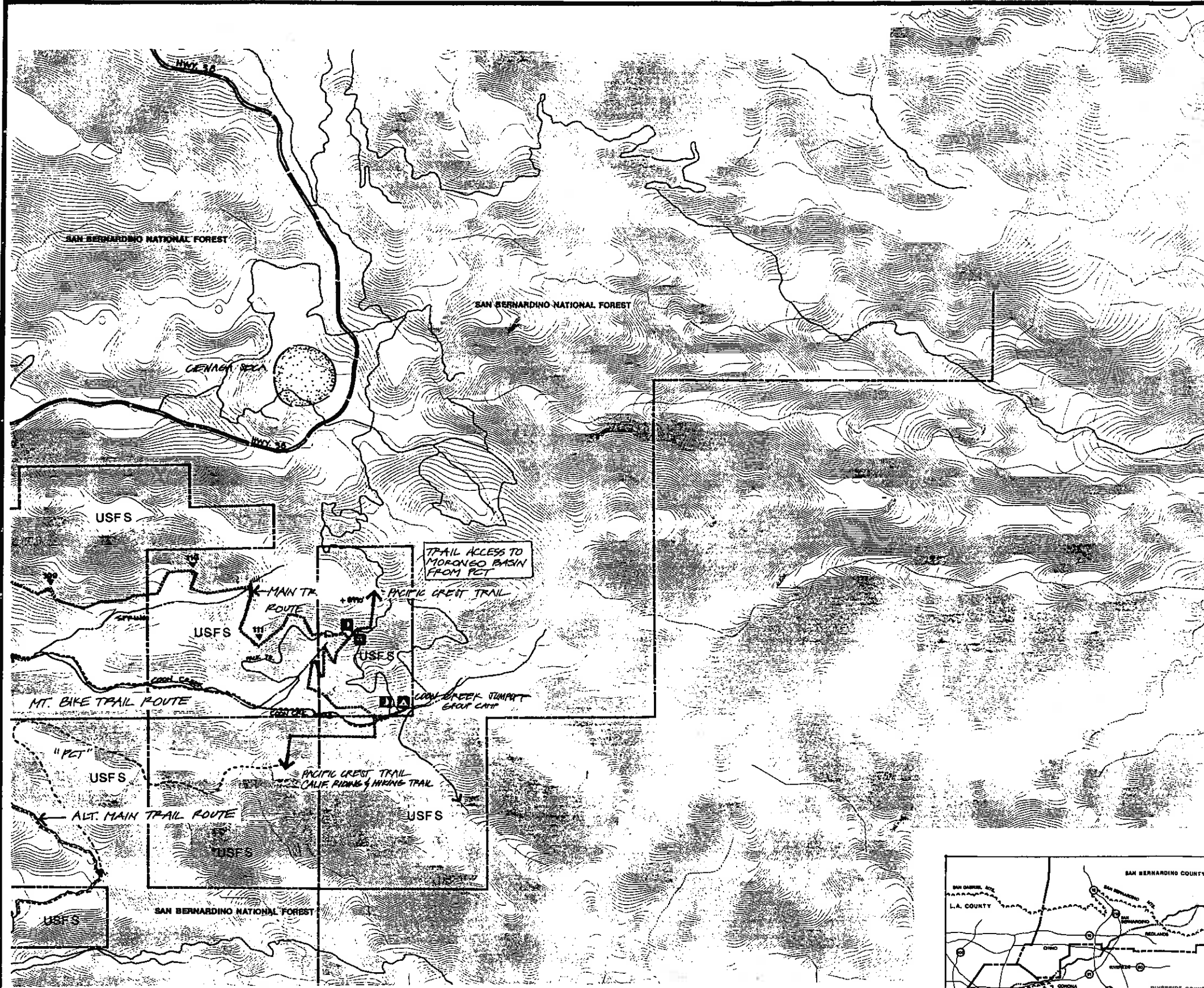
The initial 10-year phase cost estimate is \$13.3 to \$14.0 million. This amounts to an annual construction and planning requirement of \$1.3 to \$1.4 million. Beyond ten years in what is called Future Phases, the budget is \$23.6 to \$24.8 million over a 10 year period. It is generally felt that the trail system will take 20 years to complete. This cost does not include significant costs associated with developing Nature/Science Education Centers and the acquisition of additional public open space along the river except for trail development. Additional river edge parkland, as recommended for San Bernardino County, for example, would significantly increase the cost for that County. The cost estimate also does not include management and operations and maintenance. These costs are identified in Chapter 10.0. Costs are in current dollars.









The use of volunteer or sponsor labor and materials would significantly reduce the cost of construction.

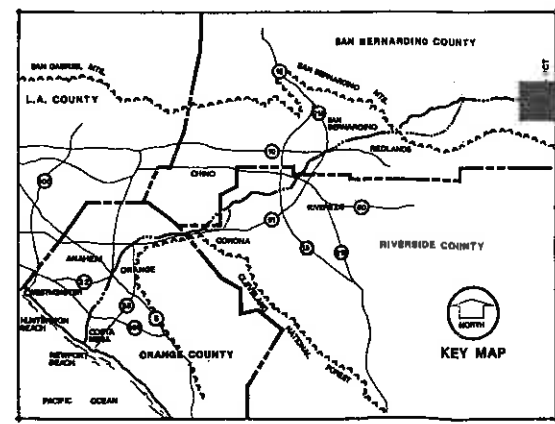
4.3 Summary Trail Maps

Attached are reduced trail maps (14) of the trail system. For greater detail, refer to the 80 maps at 200 ft. scale.

Figure 4-1: Summary Trail Maps (14)

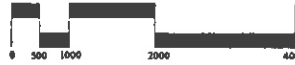


-  CONNECTOR TRAIL/
MULTIPLE USE TRAIL
(RIDING, HIKING, MT. BIKES)
-  BRIDGE RIVER CROSSING
-  WET RIVER CROSSING
-  RAMP UNDER BRIDGE
-  TRAIL STAGING AREA
-  TRAIL REST STOP
-  TRAIL OVERNIGHT CAMP
-  INTERPRETIVE STATION
EDUCATIONAL OPPORTUNITIES




CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

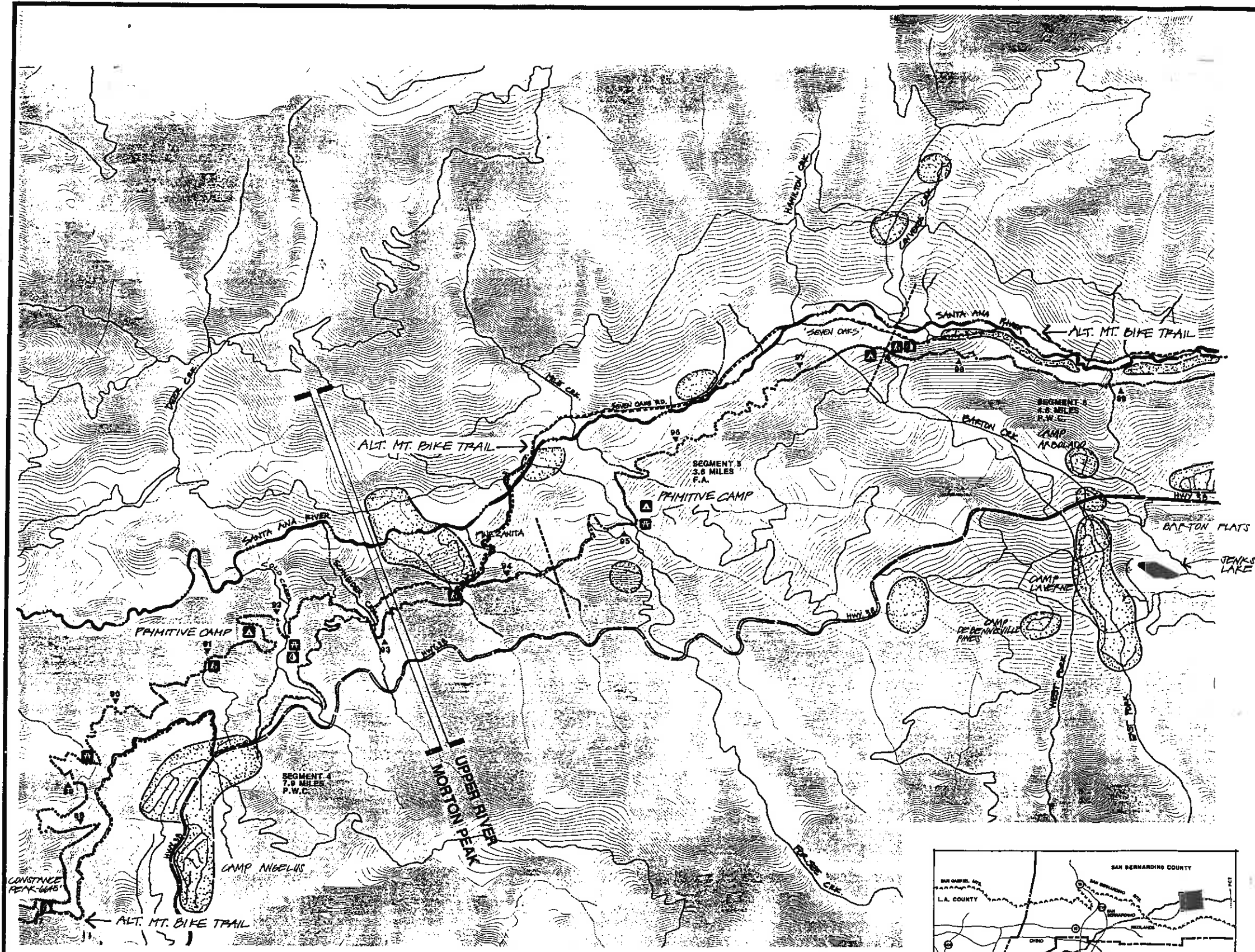
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









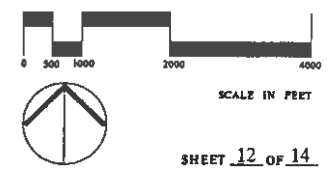
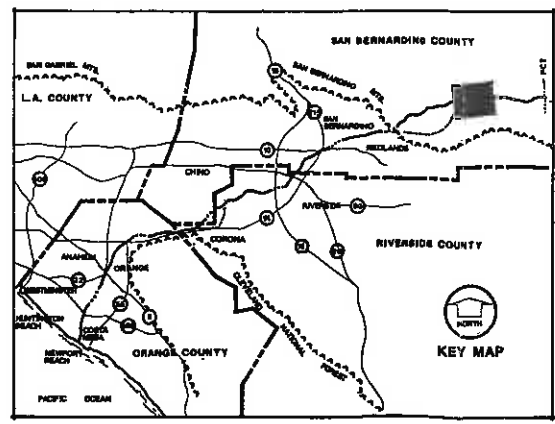
SCALE IN FEET



SHEET 14 OF 14

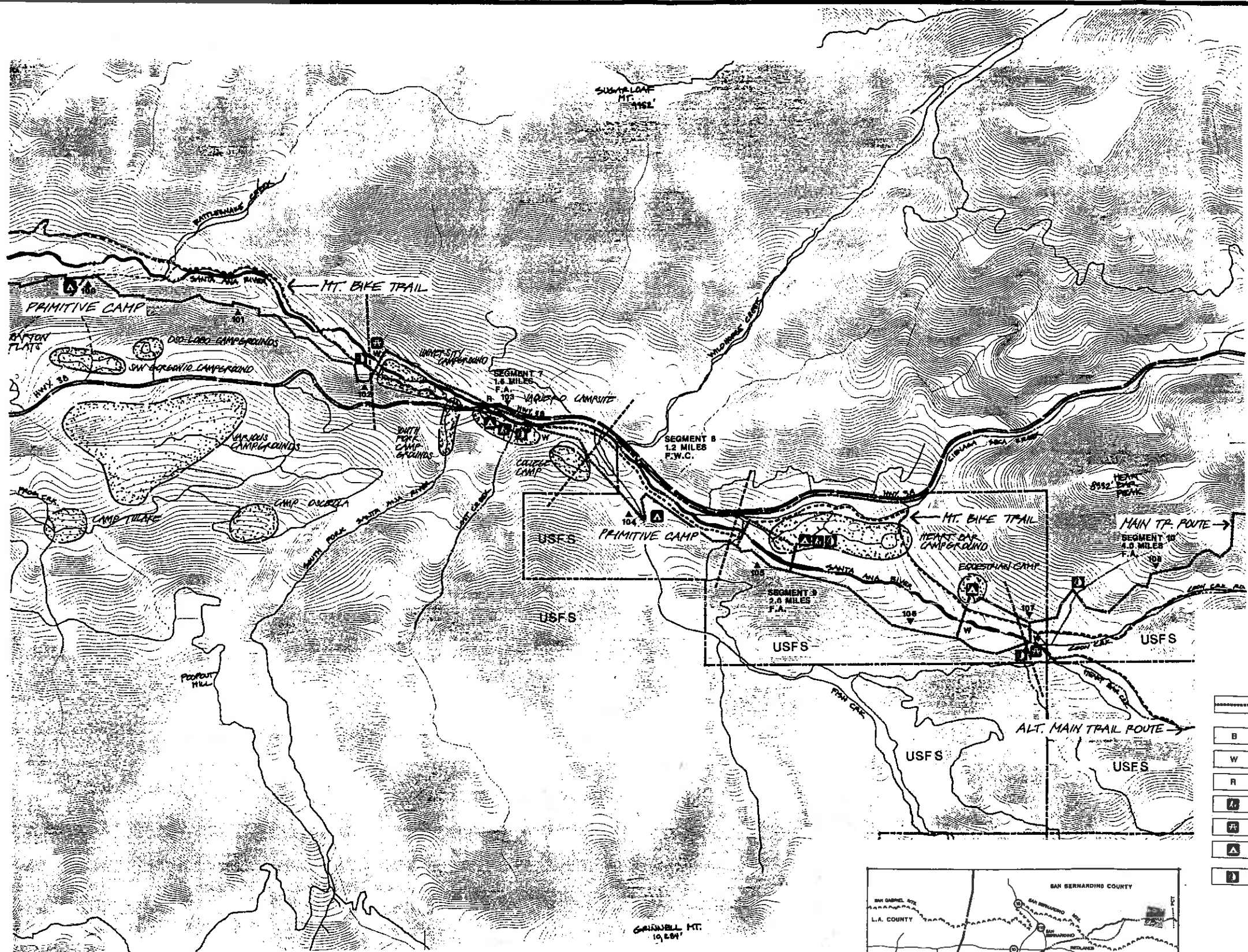










-  CONNECTOR TRAIL/
MULTIPLE USE TRAIL
(RIDING, HIKING, MT. BIKES)
-  BRIDGE RIVER CROSSING
-  WET RIVER CROSSING
-  RAMP UNDER BRIDGE
-  TRAIL STAGING AREA
-  TRAIL REST STOP
-  TRAIL OVERNIGHT CAMP
-  INTERPRETIVE STATION
EDUCATIONAL OPPORTUNITIES

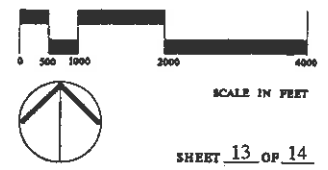
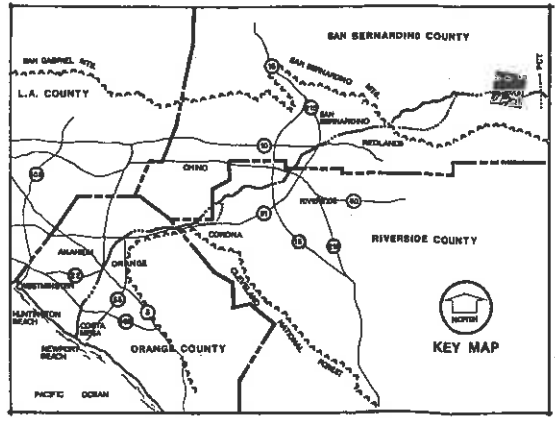


CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

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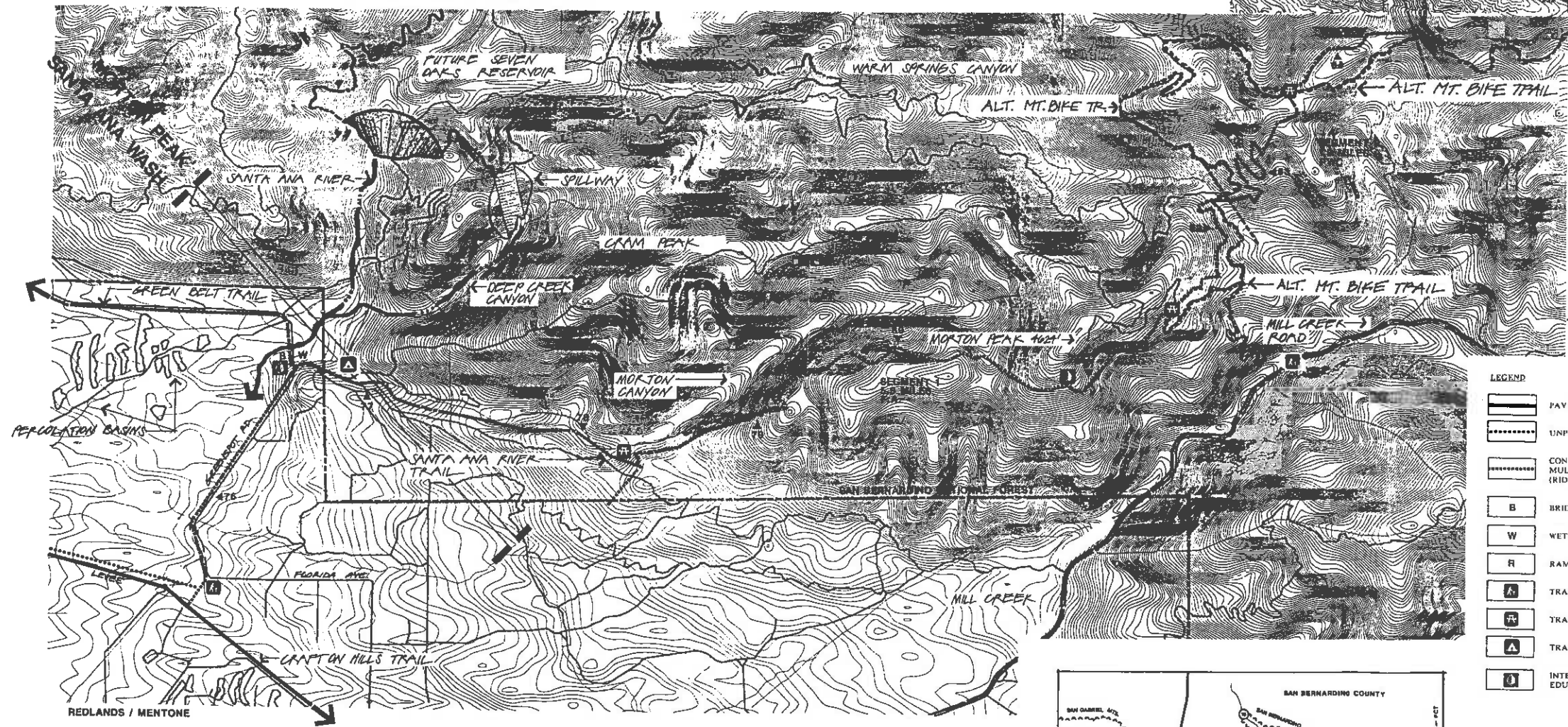


-  CONNECTOR TRAIL/
MULTIPLE USE TRAIL
(HIDING, HIKING, MT. BIKES)
-  BRIDGE RIVER CROSSING
-  WET RIVER CROSSING
-  RAMP UNDER BRIDGE
-  TRAIL STAGING AREA
-  TRAIL REST STOP
-  TRAIL OVERNIGHT CAMP
-  INTERPRETIVE STATION
EDUCATIONAL OPPORTUNITIES

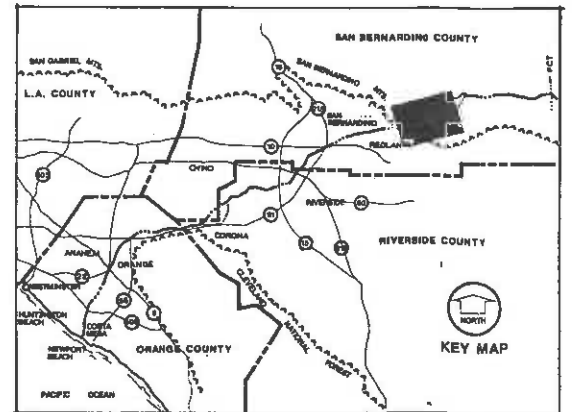


CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

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- LEGEND**
- PAVED HIKE TRAIL
 - UNPAVED RIDING & HIKING TRAIL
 - CONNECTOR TRAIL / MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
 - BRIDGE RIVER CROSSING
 - WET RIVER CROSSING
 - RAMP UNDER BRIDGE
 - TRAIL STAGING AREA
 - TRAIL REST STOP
 - TRAIL OVERNIGHT CAMP
 - INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

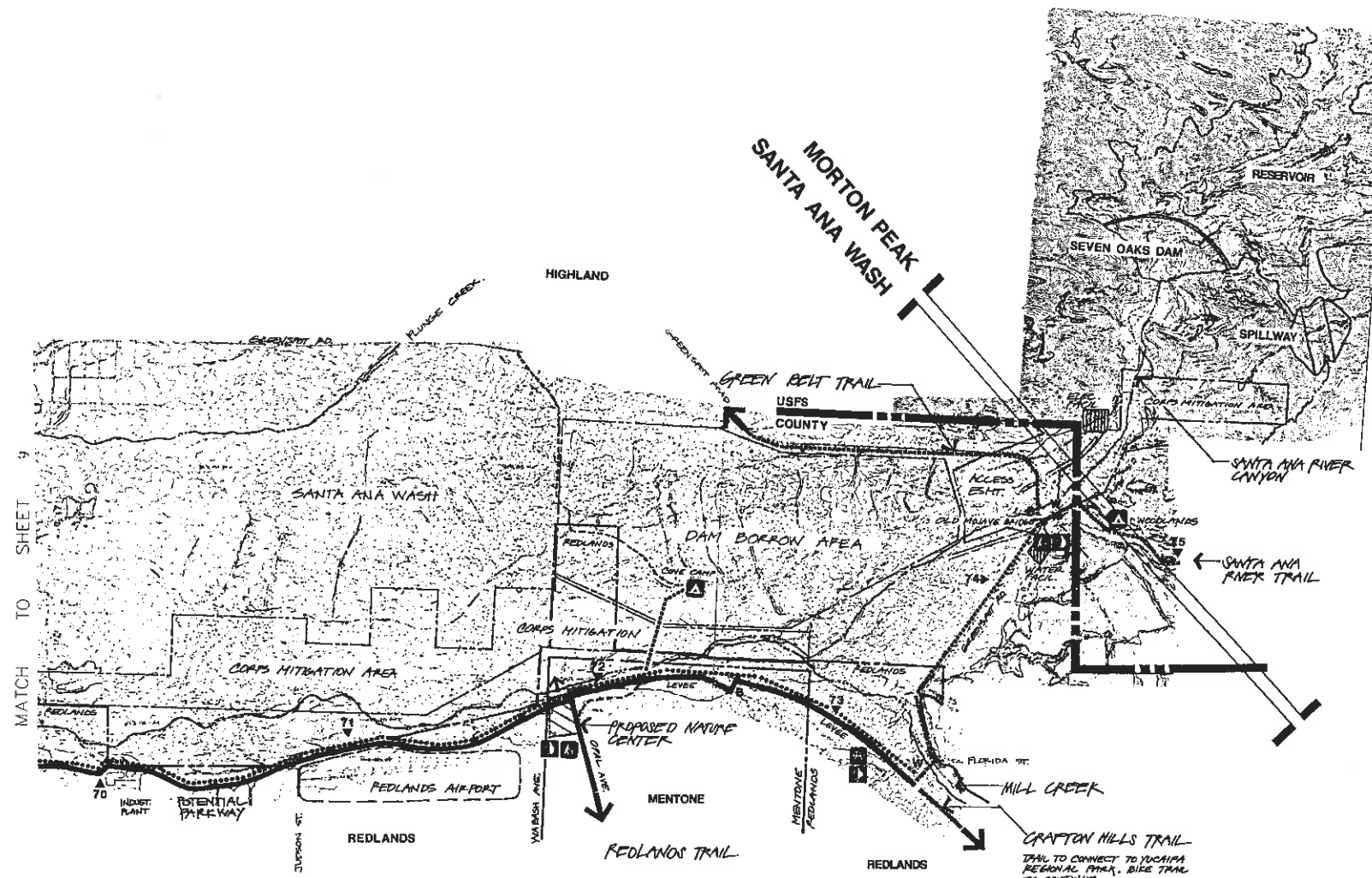


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SHEET 11 of 14

CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties



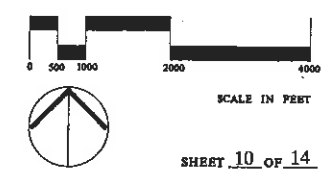
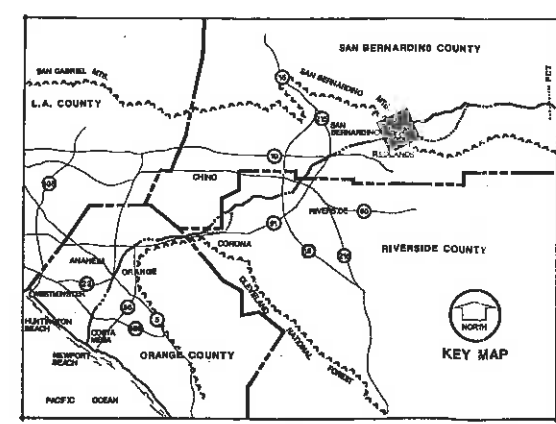
SAN BERNARDINO NATIONAL FOREST

- LEGEND**
- PAVED BIKE TRAIL
 - UNPAVED RIDING & HIKING TRAIL
 - CONNECTOR TRAIL/MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
 - BRIDGE RIVER CROSSING
 - WET RIVER CROSSING
 - RAMP UNDER BRIDGE
 - TRAIL STAGING AREA
 - TRAIL REST STOP
 - TRAIL OVERNIGHT CAMP
 - INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

* OWNERSHIP IS PRIMARILY PRIVATE THRU REDLANDS WITH COUNTY FLOOD CONTROL OWNERSHIP ALONG LEVEES. WASH AREAS OWNED BY WATER DISTRICTS (INCL. GREENSPOT RD.) WITH SOME IRLM AND COUNTY. LARGE AREAS TO BE USED BY CORPS OF ENGINEERS FOR DAM BORROW MATERIAL AND FOR MITIGATION REPLANTING AREAS. ZONING IS OPEN (COUNTY) AND OPEN LAND DIST., AGRICULTURE DIST., AIRPORT DIST. AND MISC. OTHERS ("REDLANDS").

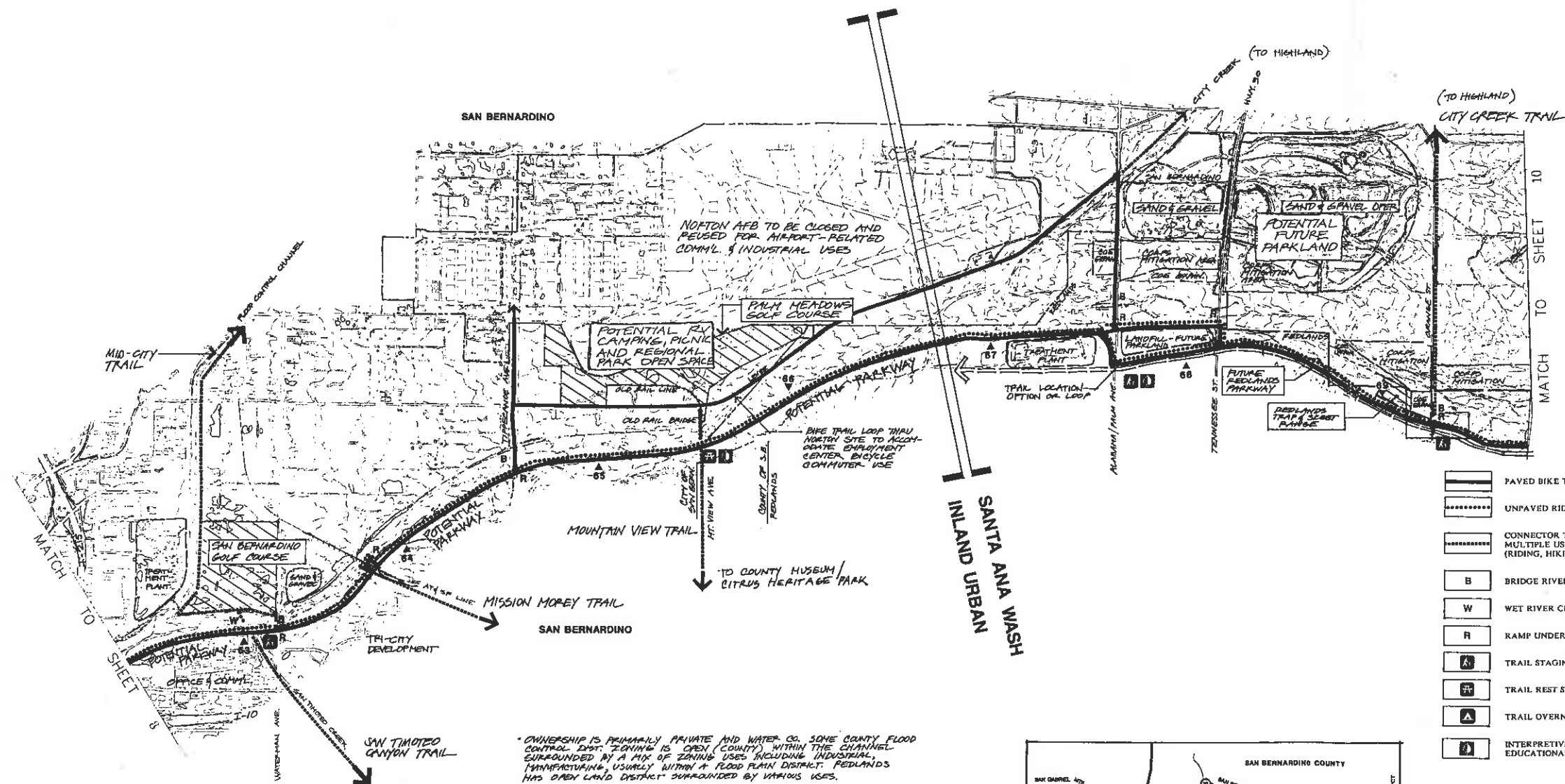
* NO EXIST. DESTINATION FITS. FUTURE REDLANDS NATURE CENTER.

* RIVER IS WIDE WASH WITH CONFLUENCE OF MILL CREEK. TRAIL FOLLOWS RIVER EDGE, LEVEE AND GREENSPOT RD.



CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

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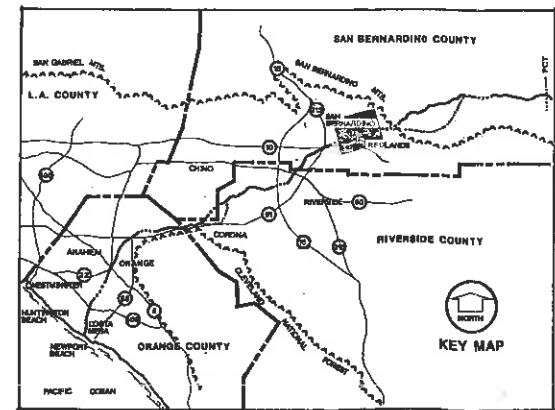


CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

* OWNERSHIP IS PRIMARILY PRIVATE AND WATER CO. SOME COUNTY FLOOD CONTROL DIST. ZONING IS OPEN (COUNTY) WITHIN THE CHANNEL SURROUNDED BY A MIX OF ZONING USES INCLUDING INDUSTRIAL, MANUFACTURING, USUALLY WITHIN A FLOOD PLAIN DISTRICT. REDLANDS HAS OPEN LAND DISTRICT SURROUNDED BY VARIOUS USES.

* RIVER IS CHANNELIZED TO THE CONFLUENCE WITH CITY CREEK WHERE A WASH CONDITION BEGINS AND CONTINUES TO THE NATIONAL FOREST (SOUTHWEST). SOUTHWEST RIVER EDGE TRAIL REDLANDS IS GENERALLY OPEN. SHOULD DEVELOP TRAIL WITH REDLANDS PROPOSED PARKWAY.

* DESTINATION POINTS DO NOT CURRENTLY EXIST. FUTURE ONE MAY BE NORTON REUSE AREA AND REDLANDS PARKWAY. BIKE LOOP THRU NORTON COULD ACCOMMODATE COMMUTER TRAVEL TO THIS EMPLOYMENT CENTER.



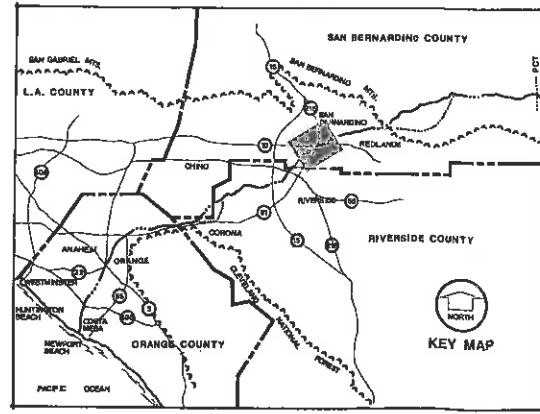
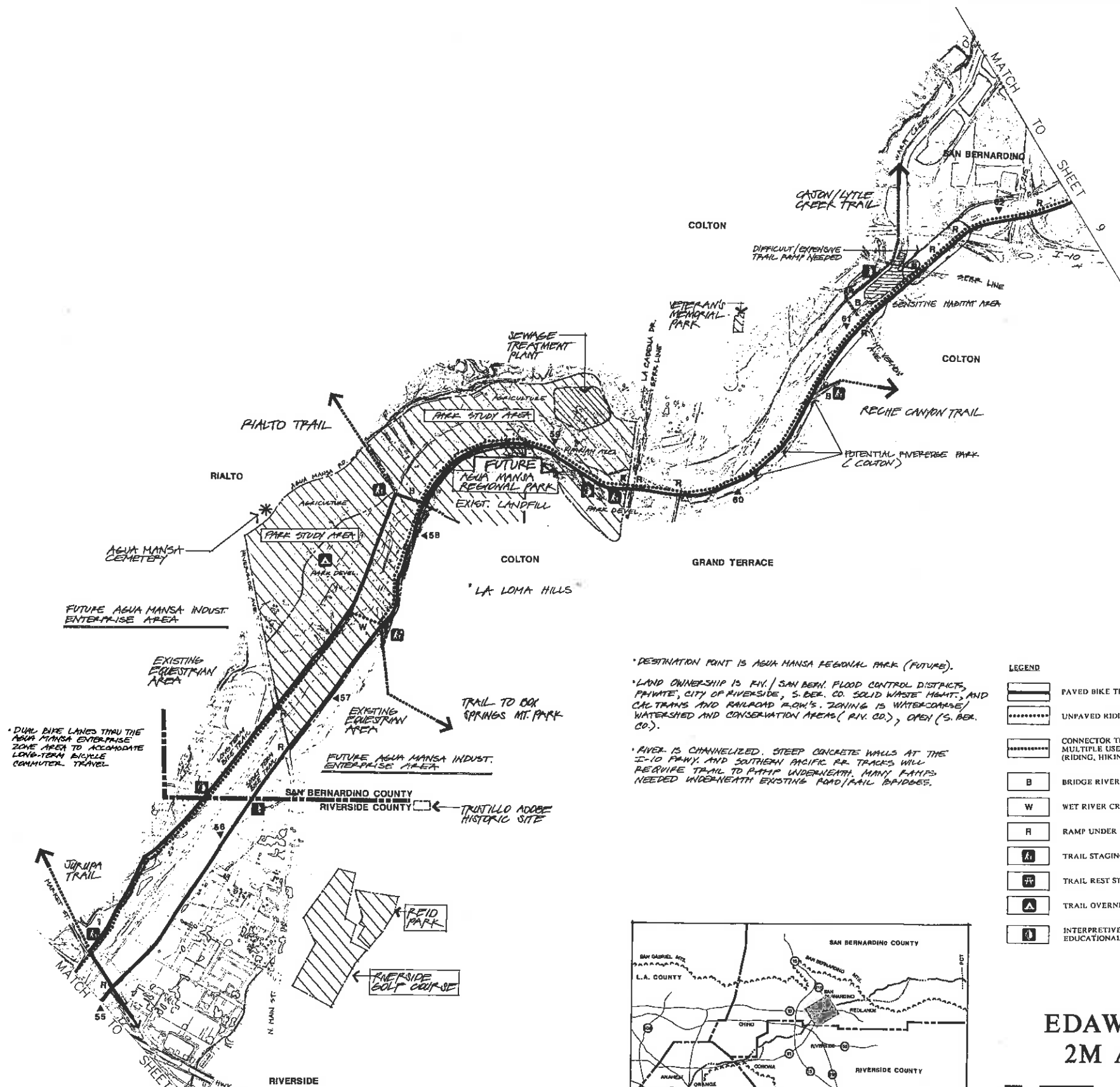
- PAVED BIKE TRAIL
- UNPAVED RIDING & HIKING TRAIL
- CONNECTOR TRAIL/MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
- BRIDGE RIVER CROSSING
- WET RIVER CROSSING
- RAMP UNDER BRIDGE
- TRAIL STAGING AREA
- TRAIL REST STOP
- TRAIL OVERNIGHT CAMP
- INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

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 SCALE IN FEET

SHEET 9 OF 14

CONCEPT PLAN SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN Orange, Riverside, & San Bernardino Counties



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SCALE IN FEET

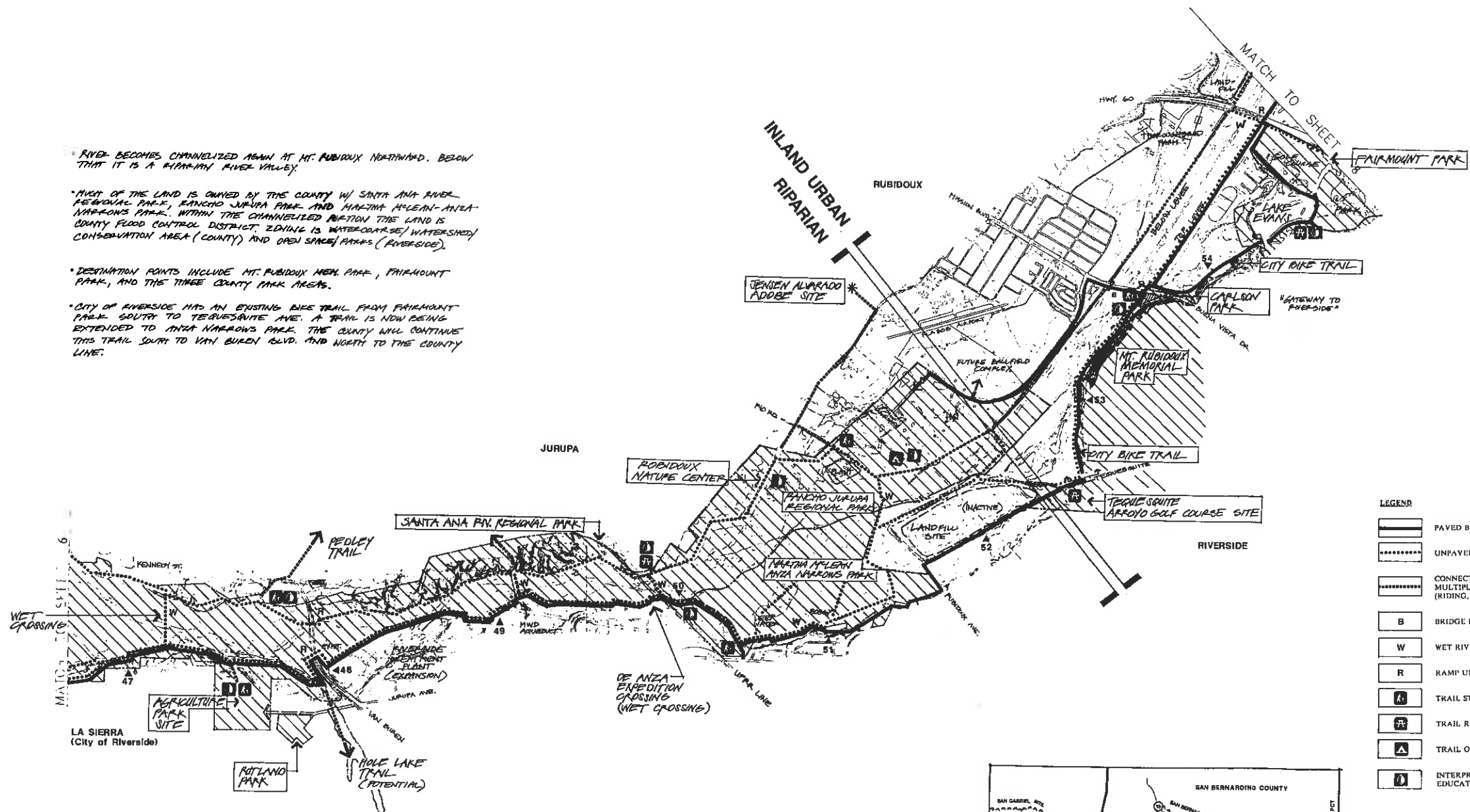
SHEET 8 OF 14

* RIVER BECOMES CHANNELIZED AGAIN AT MT. RUBIDOUX NORTHWARD. BELOW THAT IT IS A MOUNTAIN RIVER VALLEY.

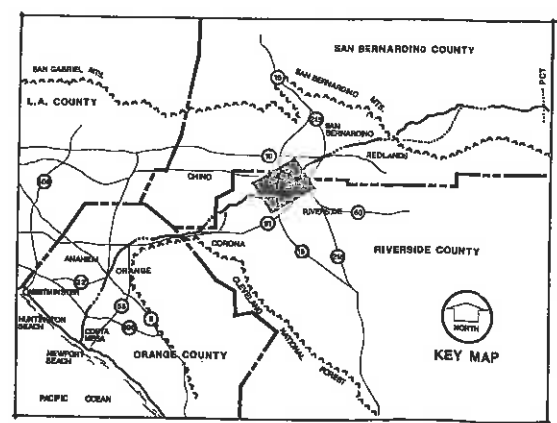
* MOST OF THE LAND IS OWNED BY THE COUNTY W/ SANTA ANA RIVER REGIONAL PARK, RANCHO JURUPA PARK AND MARTHA McLEAN ANZA NARROWS PARK. WITHIN THE CHANNELIZED SECTION THE LAND IS COUNTY FLOOD CONTROL DISTRICT. ZONING IS WATERCOURSE/WATERSHED/ CONSERVATION AREA (COUNTY) AND OPEN SPACE/PARKS (RIVERSIDE).

* DESTINATION POINTS INCLUDE MT. RUBIDOUX MEM. PARK, FAIRMOUNT PARK, AND THE THREE COUNTY PARK AREAS.

* CITY OF RIVERSIDE HAS AN EXISTING BIKE TRAIL FROM FAIRMOUNT PARK SOUTH TO TEQUENITE AVE. A TRAIL IS NOW BEING EXTENDED TO ANZA NARROWS PARK. THE COUNTY WILL CONTINUE THIS TRAIL SOUTH TO VAN BUREN BLVD. AND NORTH TO THE COUNTY LINE.



- LEGEND
- PAVED BIKE TRAIL
 - UNPAVED RIDING & HIKING TRAIL
 - CONNECTOR TRAIL/ MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
 - BRIDGE RIVER CROSSING
 - WET RIVER CROSSING
 - RAMP UNDER BRIDGE
 - TRAIL STAGING AREA
 - TRAIL REST STOP
 - TRAIL OVERNIGHT CAMP
 - INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

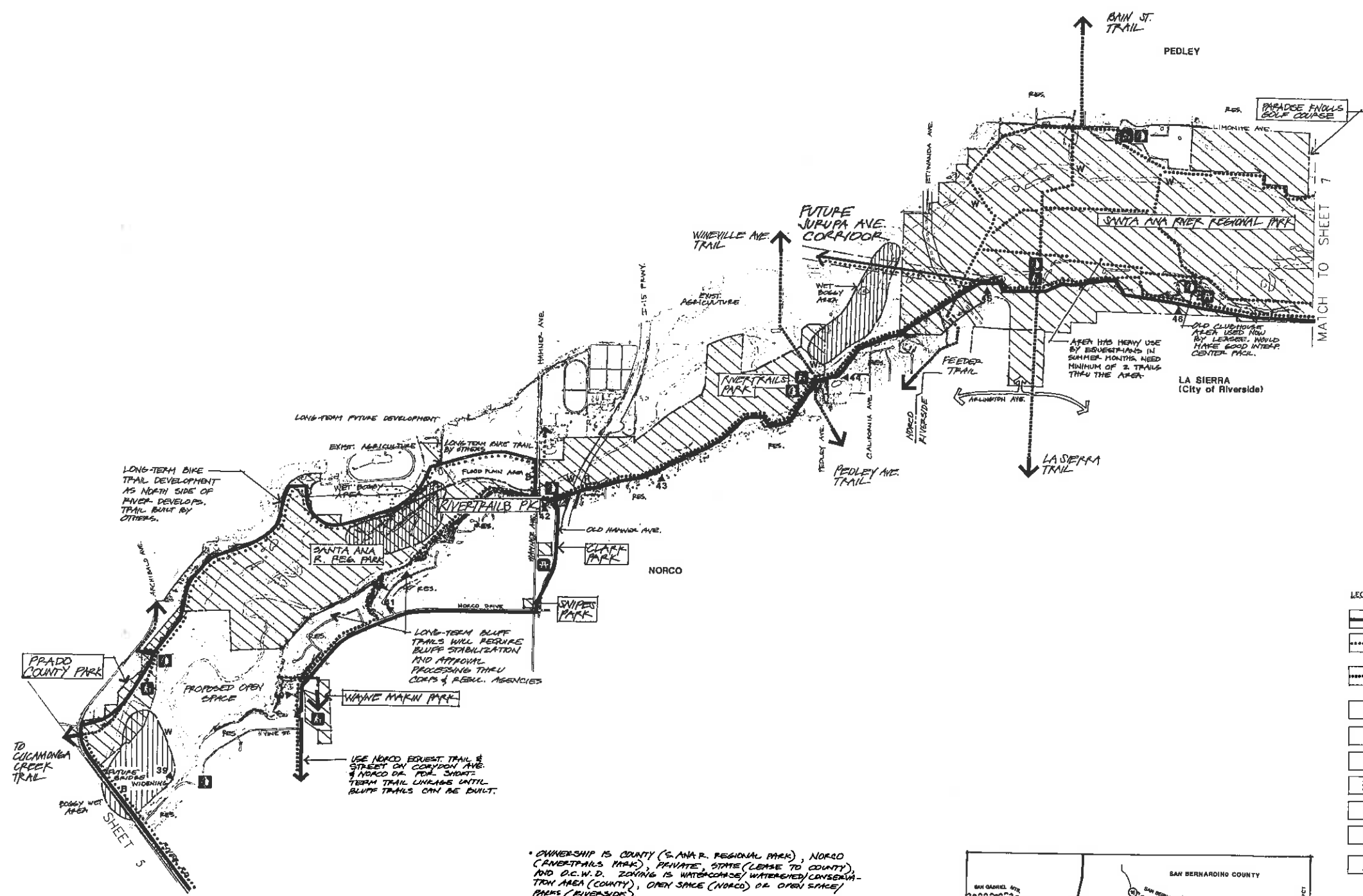












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SHEET 7 OF 14

CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
Orange, Riverside, & San Bernardino Counties



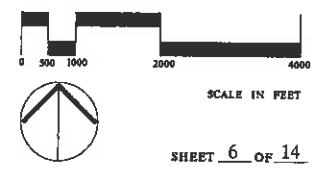
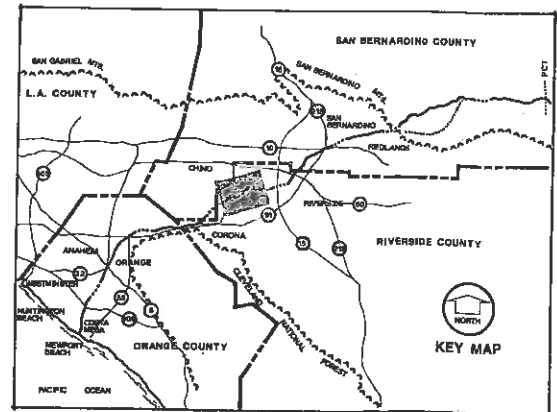
- LEGEND**
-  PAVED BIKE TRAIL
 -  UNPAVED RIDING & HIKING TRAIL
 -  CONNECTOR TRAIL/
MULTIPLE USE TRAIL
(RIDING, HIKING, MT. BIKES)
 -  BRIDGE RIVER CROSSING
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 -  RAMP UNDER BRIDGE
 -  TRAIL STAGING AREA
 -  TRAIL REST STOP
 -  TRAIL OVERNIGHT CAMP
 -  INTERPRETIVE STATION
EDUCATIONAL OPPORTUNITIES

* OWNERSHIP IS COUNTY (S. ANA R. REGIONAL PARK), NORCO (RIVERTRAILS PARK), PRIVATE STATE (LEASE TO COUNTY) AND D.C.W.D. ZONING IS WATERCOURSE/WATERSHED/CONSERVATION AREA (COUNTY), OPEN SPACE (NORCO) OR OPEN SPACE/PARKS (RIVERSIDE).

* DESTINATION POINTS INCLUDE WAYNE MARKIN PARK, RIVERTRAILS PARK AND SANTA ANA RIVER REGIONAL PARK.

* RIVER EDGE IS GENERALLY LOCATED WITHIN MEANDERING RIVER VALLEY. TRAIL TO STAY AT BLUFF TOP - WILL REQUIRE BLUFF/TRAIL FOOTING STABILIZATION. SHORT-TERM TRAIL LINKAGE COULD BE PROVIDED ALONG CORYDON/NORCO DR. IN NORCO UNTIL BLUFF TRAILS CONSTRUCTED. RIVER VALLEY IS SENSITIVE MOUNTAIN AREA. SOME BOBBY AREAS AT TOP OF BLUFF A PROBLEM.

CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties



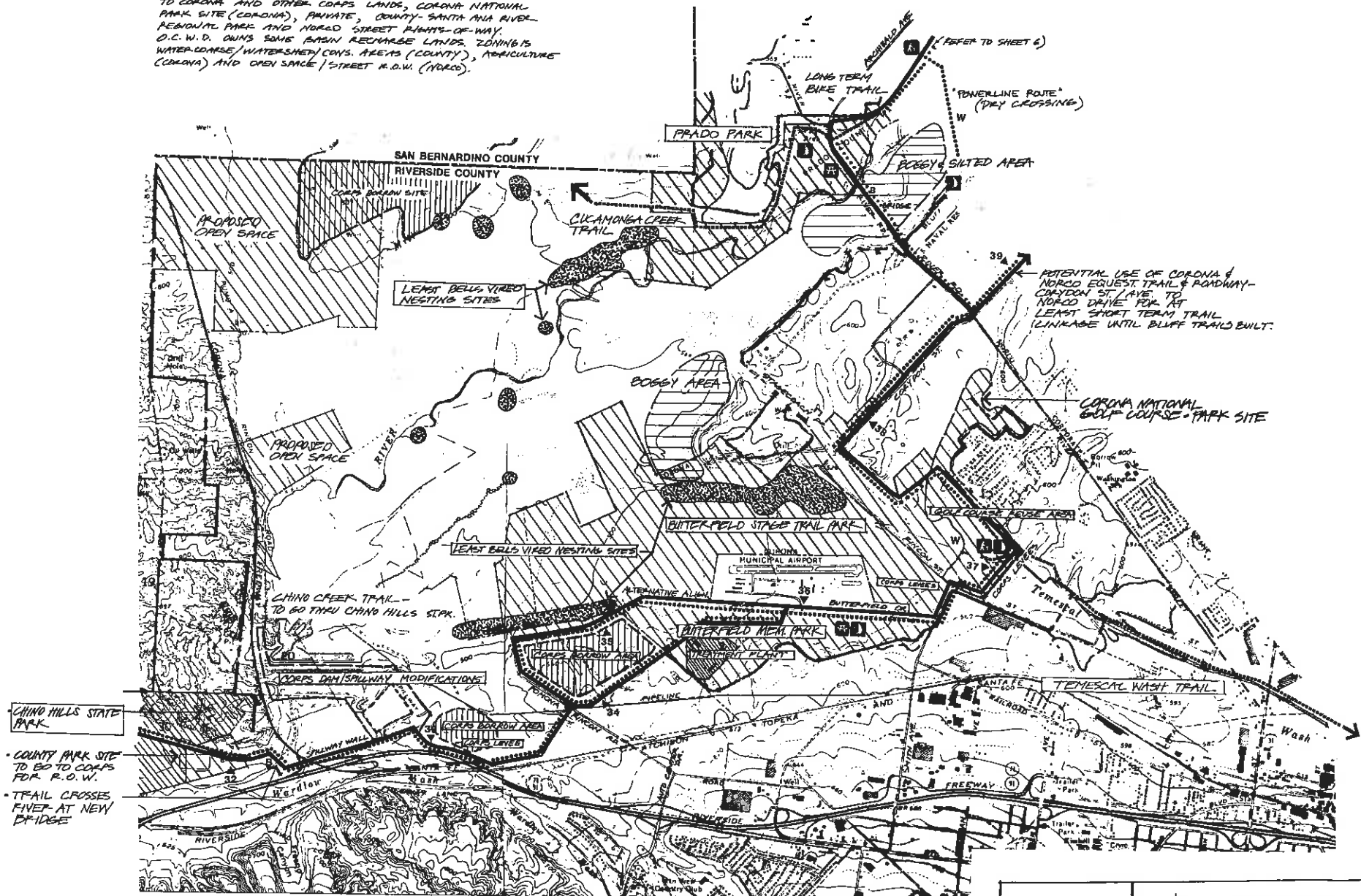
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* TRAIL LOCATED ALONG EDGE OF CORPS LEASEHOLD AREA TO CORONA AT EDGE OF FLOOD BASIN. TRAIL USES CORPS FUTURE LEASES AND AVOIDS BORROW AREAS FOR DAM CONSTRUCTION. LEAST BELLS VIREO NESTING AREAS AVOIDED.

* ONCE TRAIL LEAVES CORONA, THERE ARE SHORT AND LONG-TERM OPTIONS THAT NORCO. THESE ARE TEMPORARY AND BACKUP USE OF CORYDON/NORCO DR. AND LONG-TERM BLUFF TRAILS.

* DESTINATION LOCATIONS ARE CHINO HILLS STATE PARK, BUTTERFIELD STAGE PARK, CORONA NATIONAL (FUTURE) AND SANTA ANA RIVER REGIONAL PARK.

* OWNERSHIP IS MIXED INCLUDING: CORPS BASIN LEASEHOLD TO CORONA AND OTHER CORPS LANDS, CORONA NATIONAL PARK SITE (CORONA), PRIVATE, COUNTY, SANTA ANA RIVER REGIONAL PARK AND NORCO STREET RIGHTS-OF-WAY. O.C.W.D. OWNS SOME BASIN RECHARGE LANDS. ZONING IS WATER-COURSE/WATERSHED/COYS. AREAS (COUNTY), AGRICULTURE (CORONA) AND OPEN SPACE / STREET R.O.W. (NORCO).

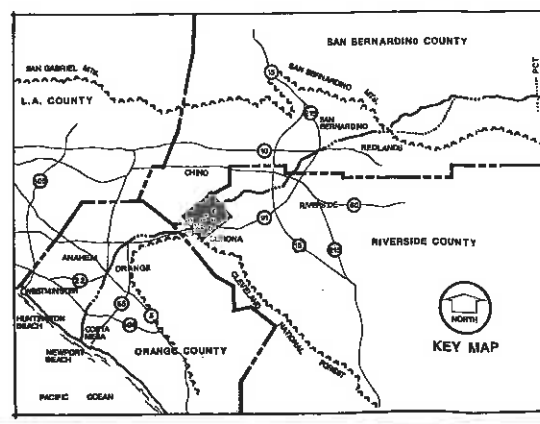


CHINO HILLS STATE PARK

* COUNTY PARK SITE TO GO TO CORPS FOR R.O.W.

* TRAIL CROSSES FIVER AT NEW BRIDGE

- LEGEND
- PAVED TRAIL
 - UNPAVED ROAD & HORSE TRAIL
 - CONNECTOR TRAIL / MULTIPLE USE TRAIL (BIKING, HORSE, MT. BIKING)
 - BRIDGE RIVER CROSSING
 - WET RIVER CROSSING
 - KAMP UNDER BRIDGE
 - TRAIL STAGING AREA
 - TRAIL REST STOP
 - TRAIL OVERNIGHT CAMP
 - INTERPRETIVE STATION / EDUCATIONAL OPPORTUNITIES

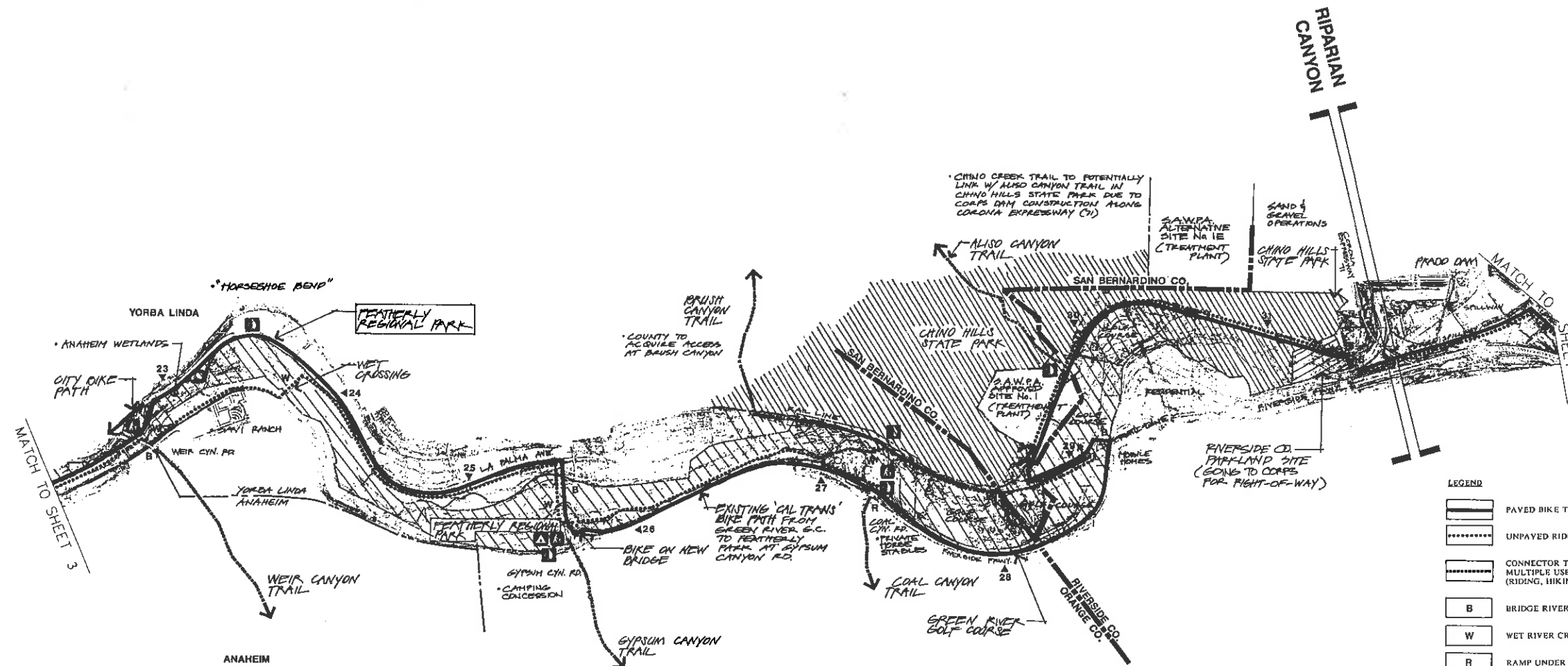


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SHEET 5 OF 14

CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
Orange, Riverside, & San Bernardino Counties

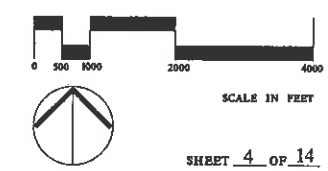
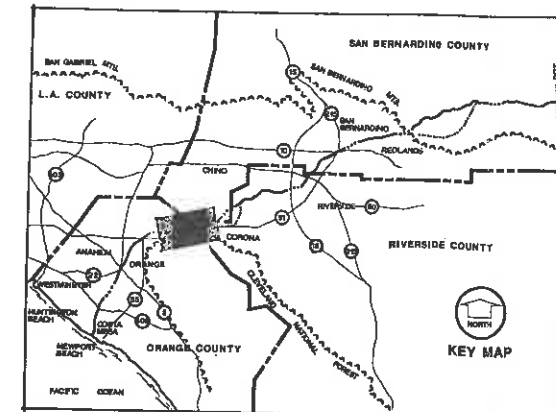


- * CORONA EXPRESSWAY 71 TO BE CONSTRUCTED AS A FREEWAY W/ THE 71/91 INTERCHANGE BEING MODIFIED. TRAIL ACCESS WILL BE POSSIBLE.
- * CORPS TO RAISE HEIGHT OF PRADD DAM W/ NEW SPILLWAY MODIFICATIONS, SPILLWAY RETAINING WALL ADDITIONS, OUTLET WORKS CHANGES AND NEW LEVEES ALONG SR-71 AND 91. TRAIL TO CROSS RIVER WEST OF THE 71 HWY, THEN TRAIL SITED BEHIND SPILLWAY WALL TO A LEVEE NORTH OF SR-91.
- * RIVER EDGE IS GENERALLY CHANNELIZED W/ SECTIONS OF RIPARIAN WOODLAND.
- * OWNERSHIP IS COUNTY OF ORANGE TO COUNTY LINE. RIVERSIDE/SAN BERNARDINO CO. IS CORPS OF ENGINEERS, CHINO HILLS STATE PARK, COUNTY AND PRIVATE. ZONING IS OPEN SPACE/FLOODWAY/RECREATION.
- * DESTINATION PTS. INCLUDE FEATHERLY PARK CAMPGROUND, HORSE STABLES AND CHINO HILLS STATE PARK.

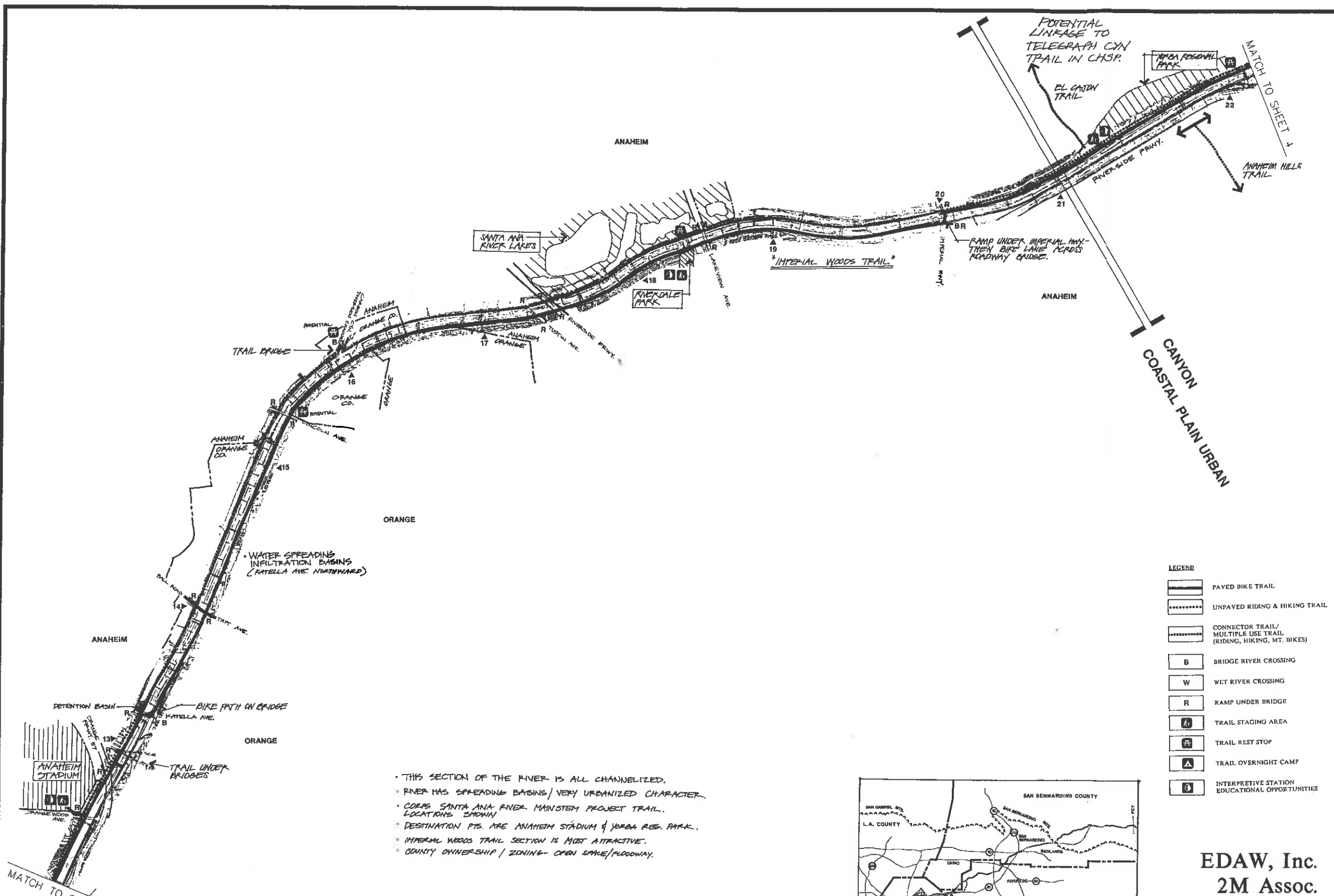
LEGEND

	PAVED BIKE TRAIL
	UNPAID RIDING & HIKING TRAIL
	CONNECTOR TRAIL/MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
	BRIDGE RIVER CROSSING
	WET RIVER CROSSING
	RAMP UNDER BRIDGE
	TRAIL STAGING AREA
	TRAIL REST STOP
	TRAIL OVERNIGHT CAMP
	INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties



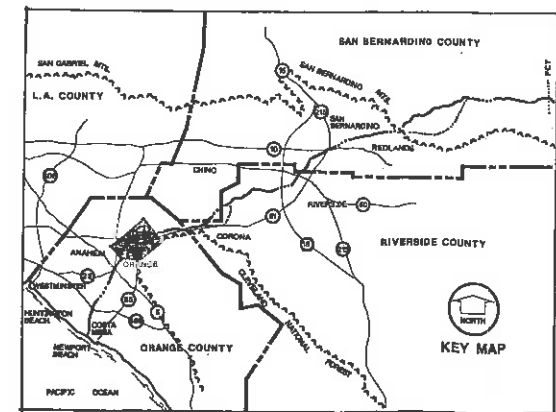
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- THIS SECTION OF THE RIVER IS ALL CHANNELIZED.
- RIVER HAS SPREADING BASINS / VERY URBANIZED CHARACTER.
- CORPS SANTA ANA RIVER MAINSTEM PROJECT TRAIL LOCATIONS SHOWN.
- DESTINATION PTS. ARE ANAHEIM STADIUM & YORBA REG. PARK.
- IMPERIAL WOODS TRAIL SECTION IS MOST ATTRACTIVE.
- COUNTY OWNERSHIP / ZONING - OPEN SPACE / FLOODWAY.

LEGEND

	PAVED BIKE TRAIL
	UNPAVED RIDING & HIKING TRAIL
	CONNECTOR TRAIL / MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
	BRIDGE RIVER CROSSING
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	INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

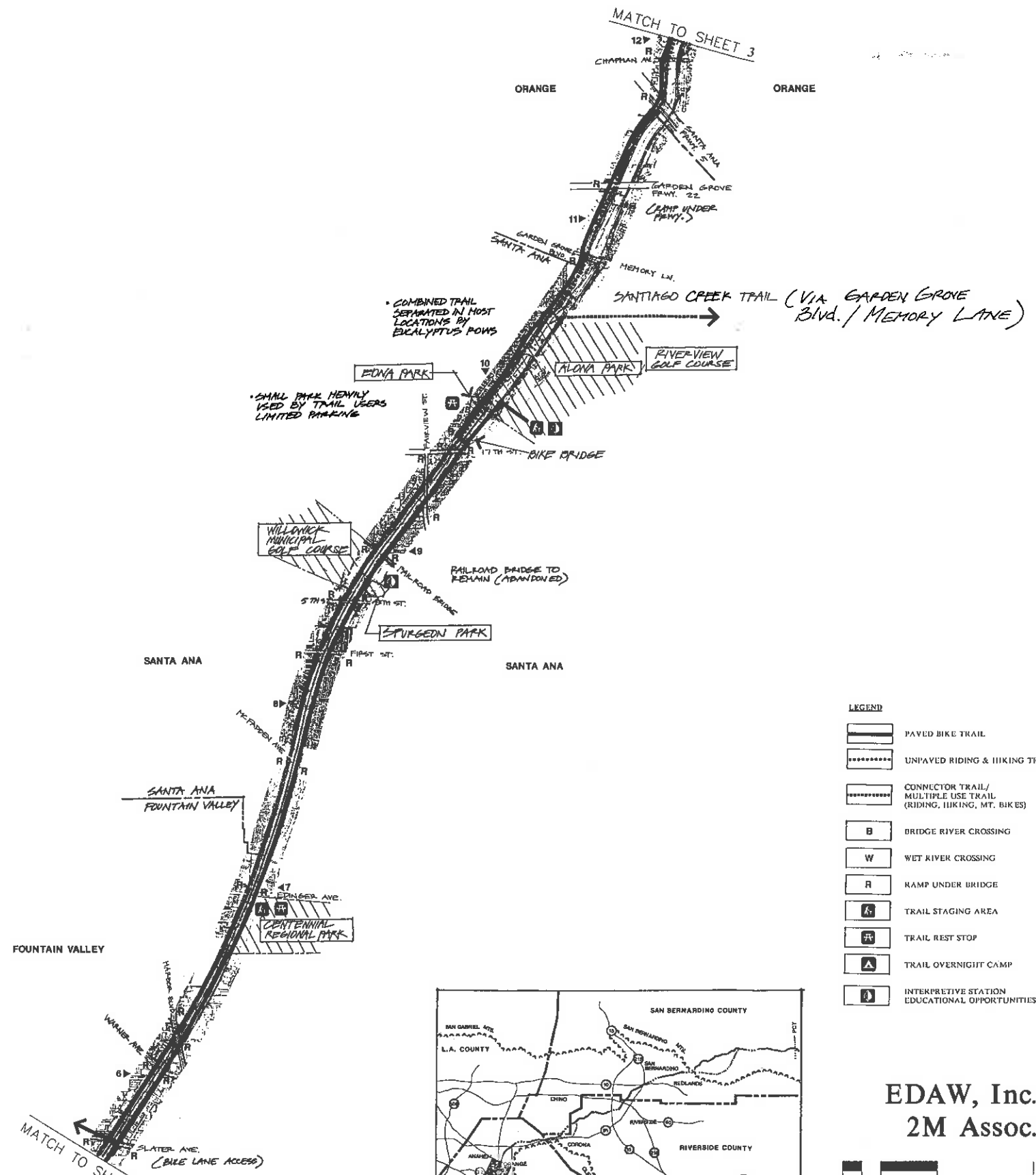


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SCALE IN FEET

SHEET 3 OF 14

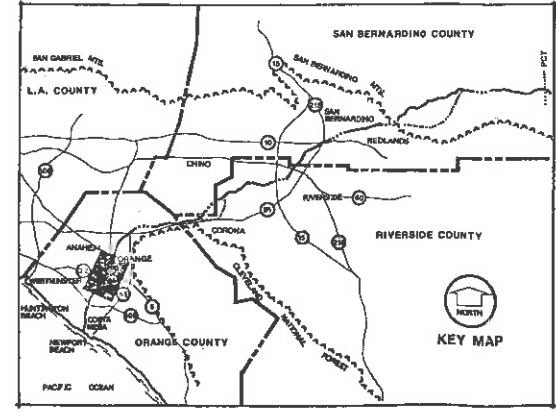
CONCEPT PLAN
SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
Orange, Riverside, & San Bernardino Counties



- THIS SECTION OF THE RIVER IS ALL CHANNELIZED. URBAN CHARACTER.
- CORPS MAINSTEM PROJECT TRAILS ARE SHOWN.
- DESTINATION PTS ARE CENTENNIAL REG. PARK & ALONA PARK.
- RIVER SEGMENT THRU RIVERVIEW G.C. VERY PLEASANT.
- COUNTY OWNERSHIP / ZONING IS OPEN SPACE/FLOODWAY.

LEGEND

	PAVED BIKE TRAIL
	UNPAVED RIDING & HIKING TRAIL
	CONNECTOR TRAIL / MULTIPLE USE TRAIL (RIDING, HIKING, MT. BIKES)
	BRIDGE RIVER CROSSING
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	TRAIL OVERNIGHT CAMP
	INTERPRETIVE STATION EDUCATIONAL OPPORTUNITIES

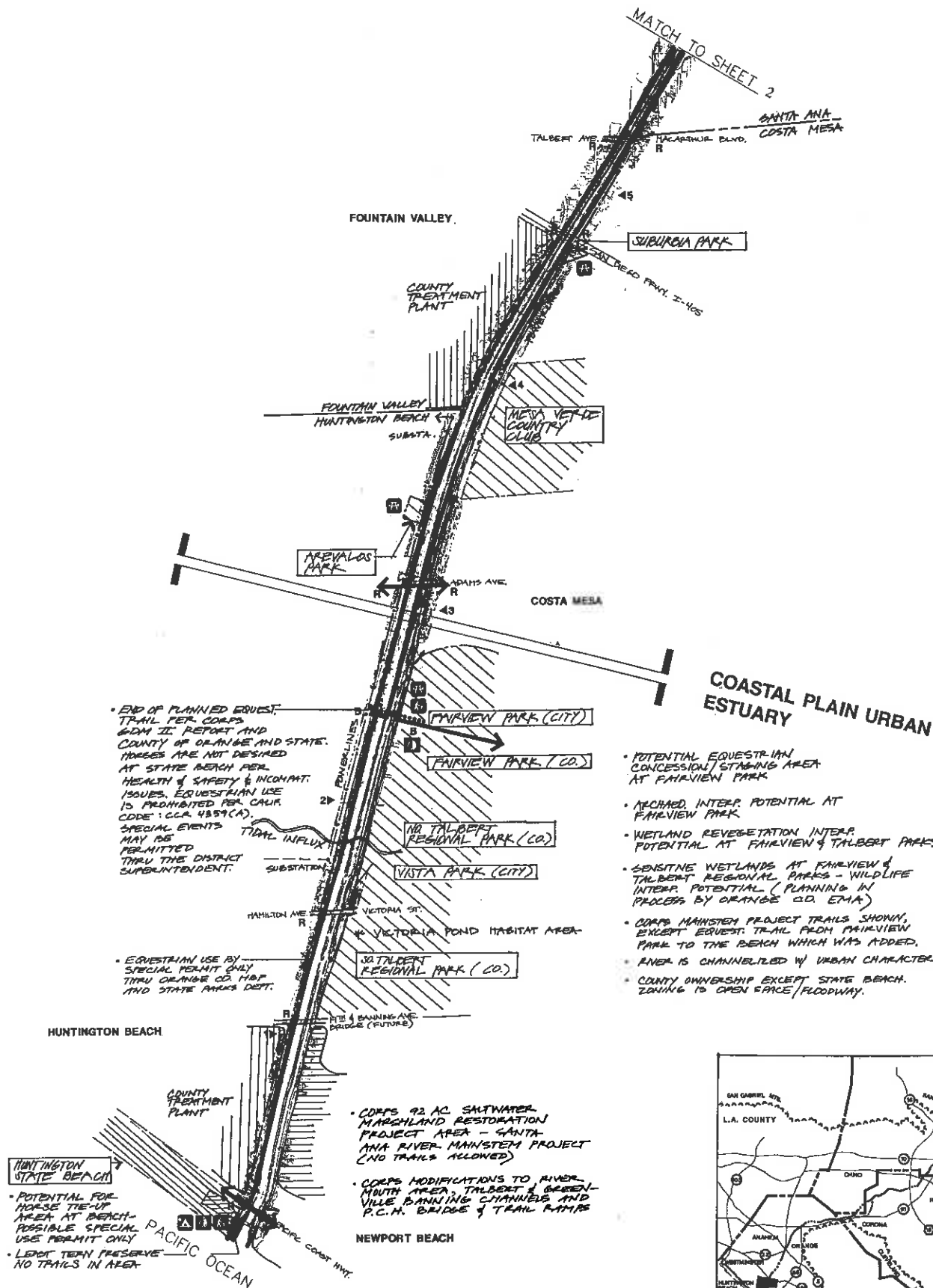


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SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
 Orange, Riverside, & San Bernardino Counties

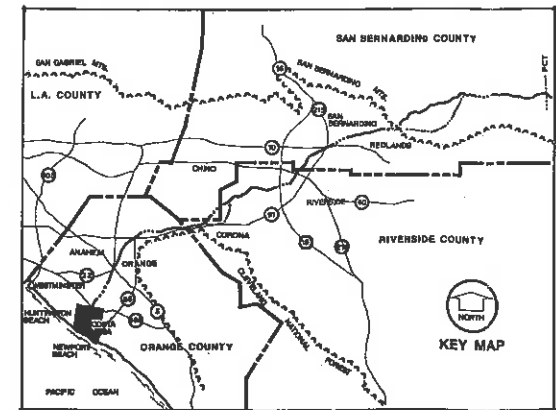
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 SCALE IN FEET

SHEET 2 OF 14



- LEGEND**
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 - UNPAVED RIDING & HIKING TRAIL
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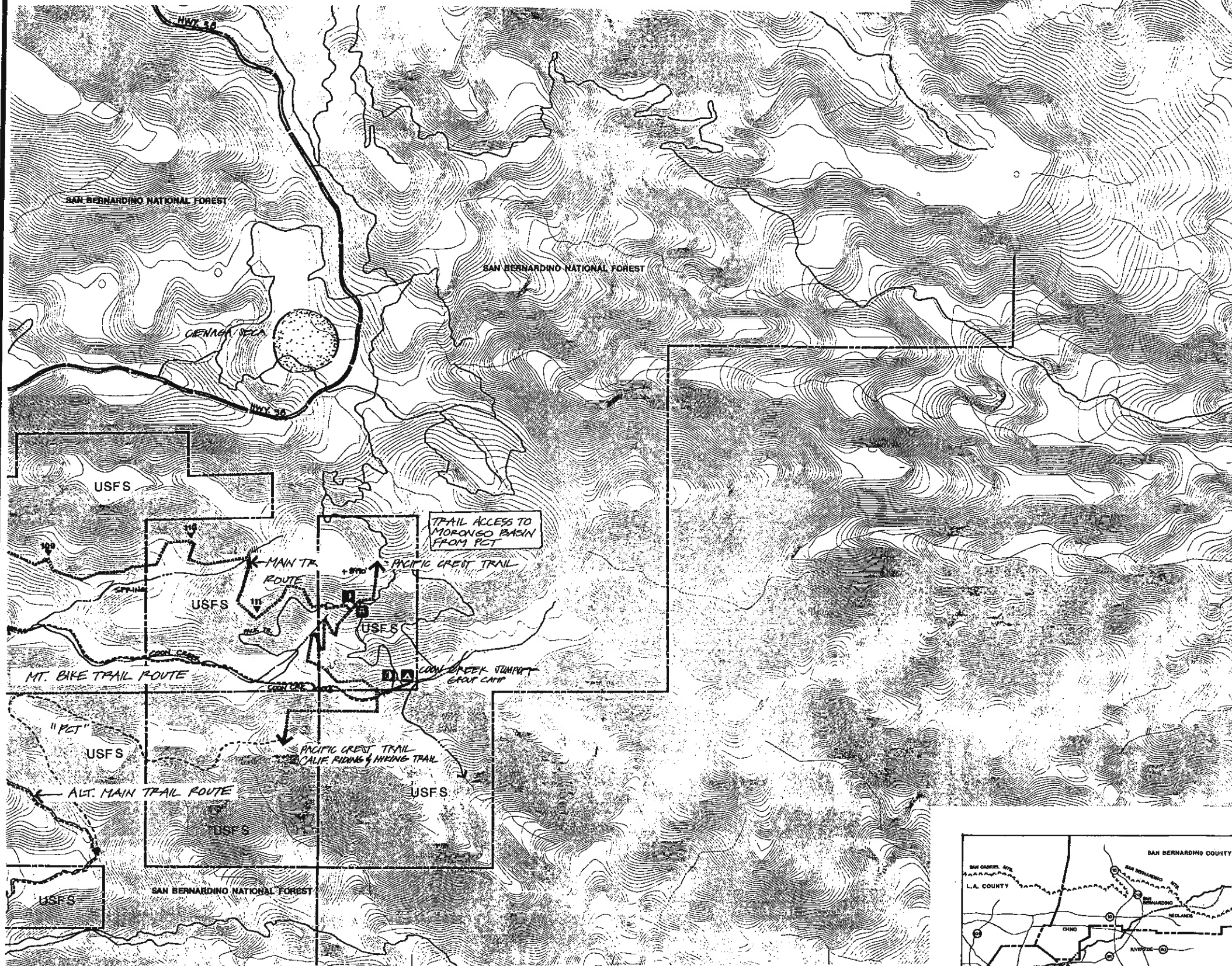
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





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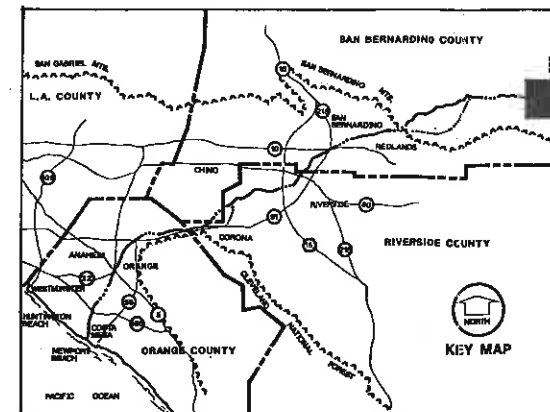
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SHEET 1 OF 14

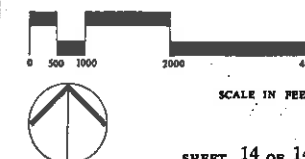
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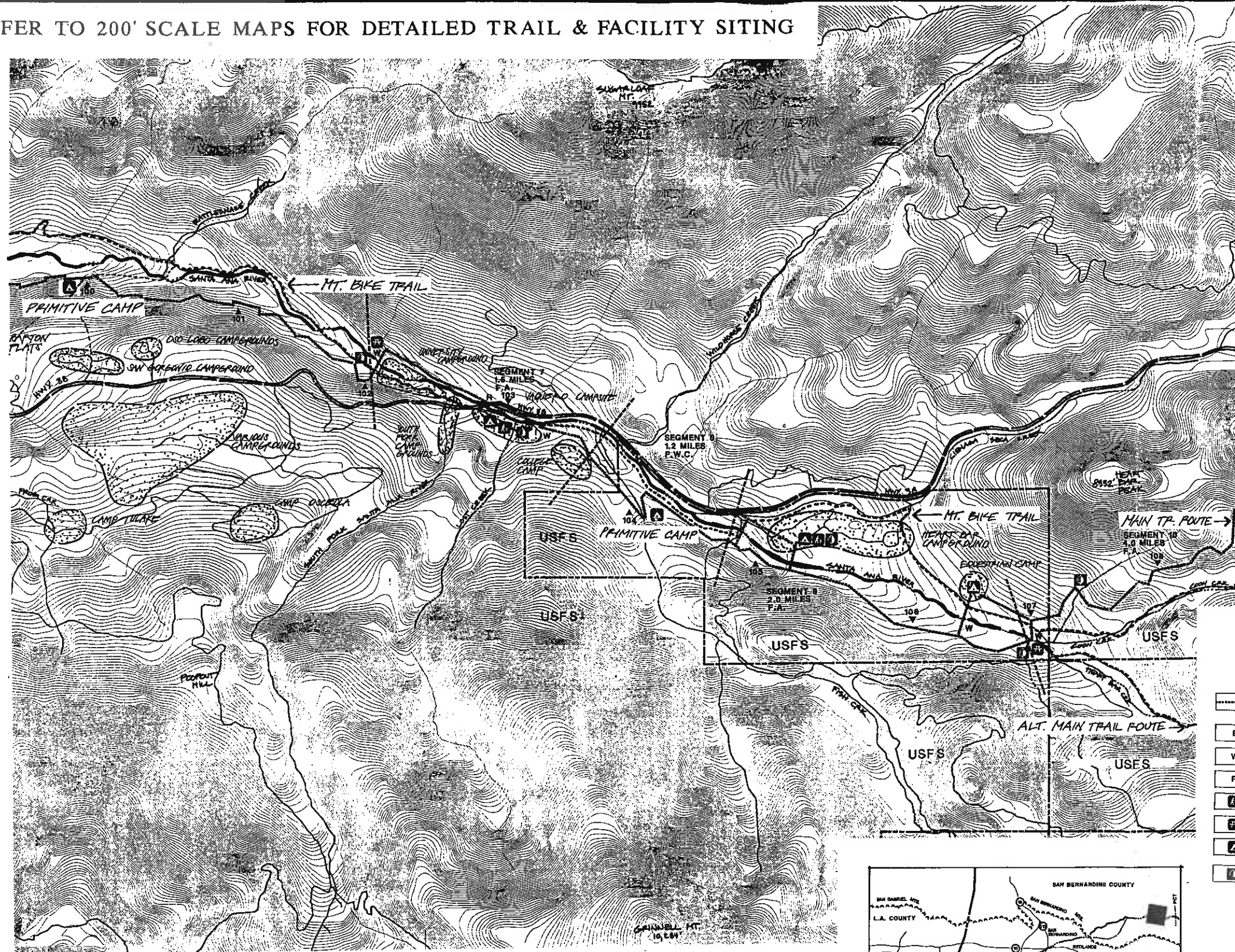










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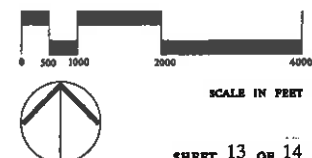
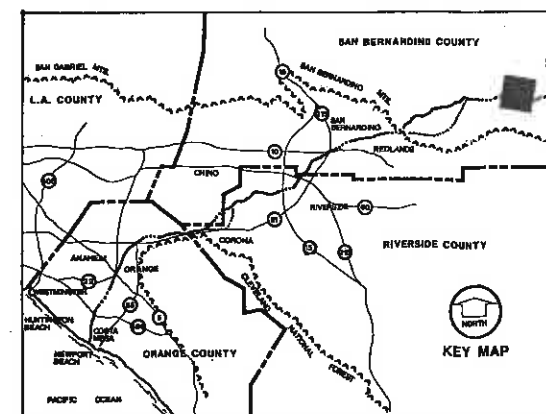


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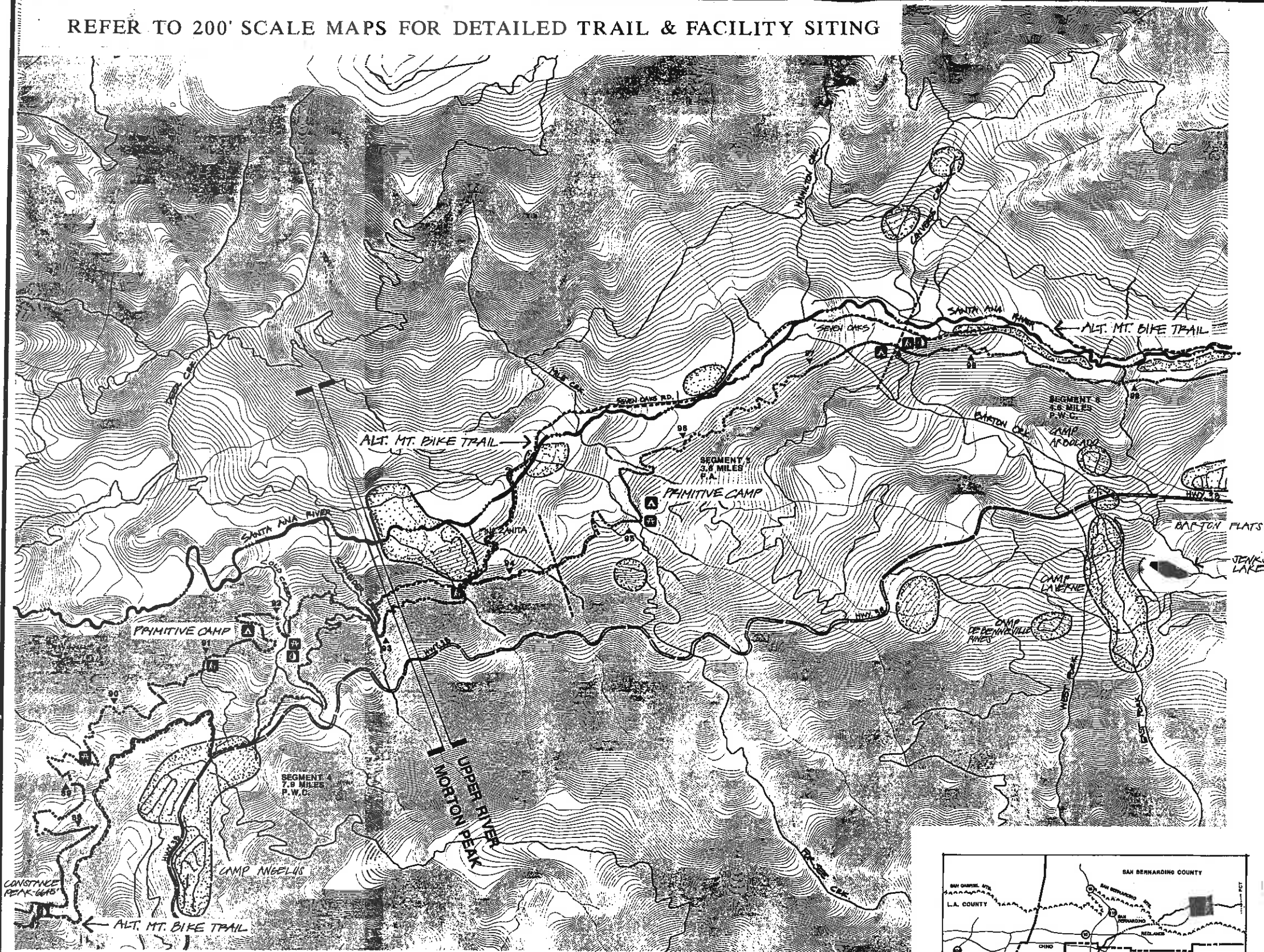
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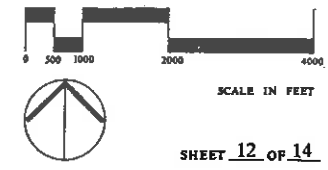
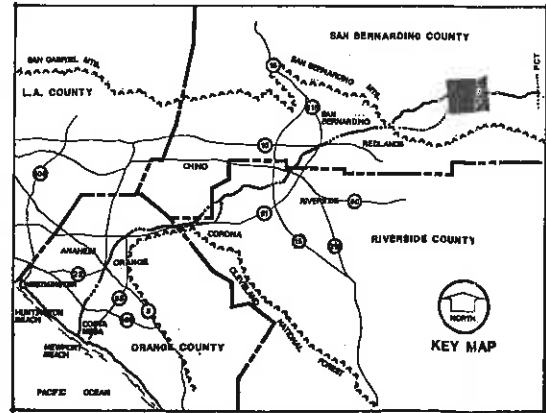
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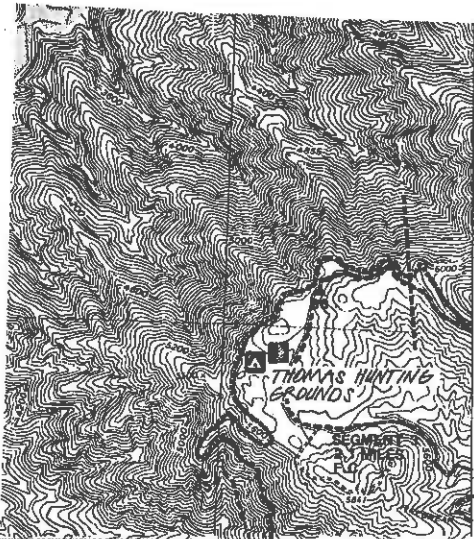
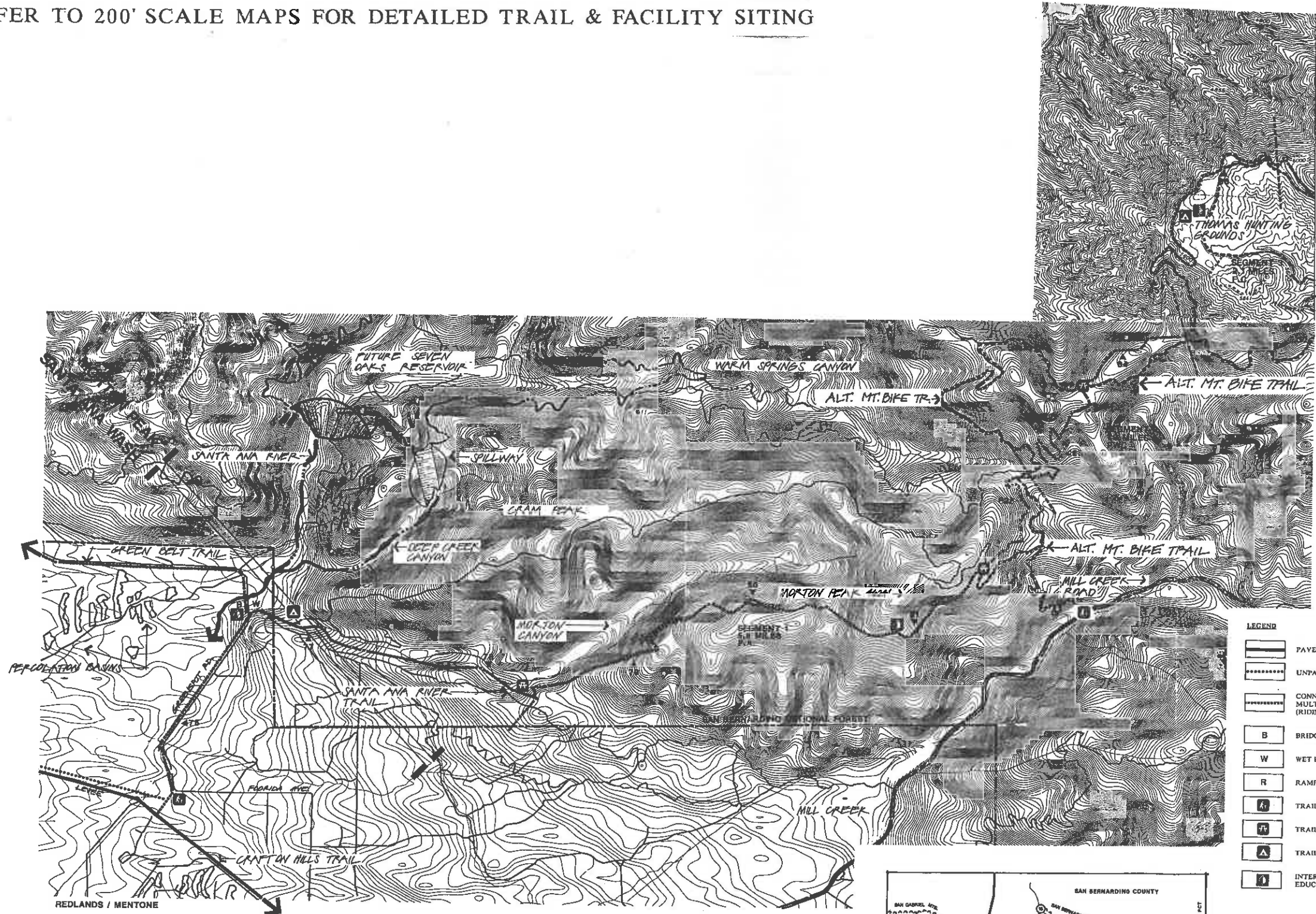
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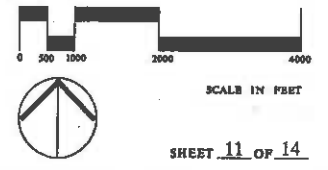
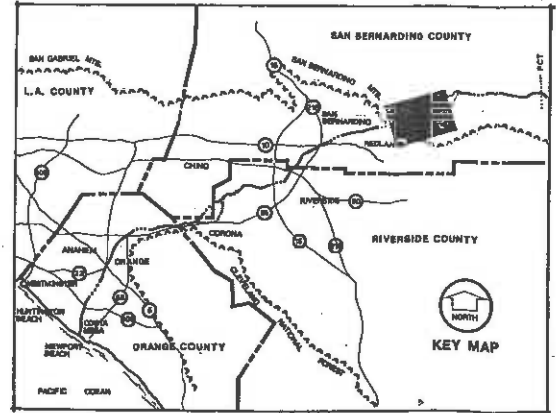
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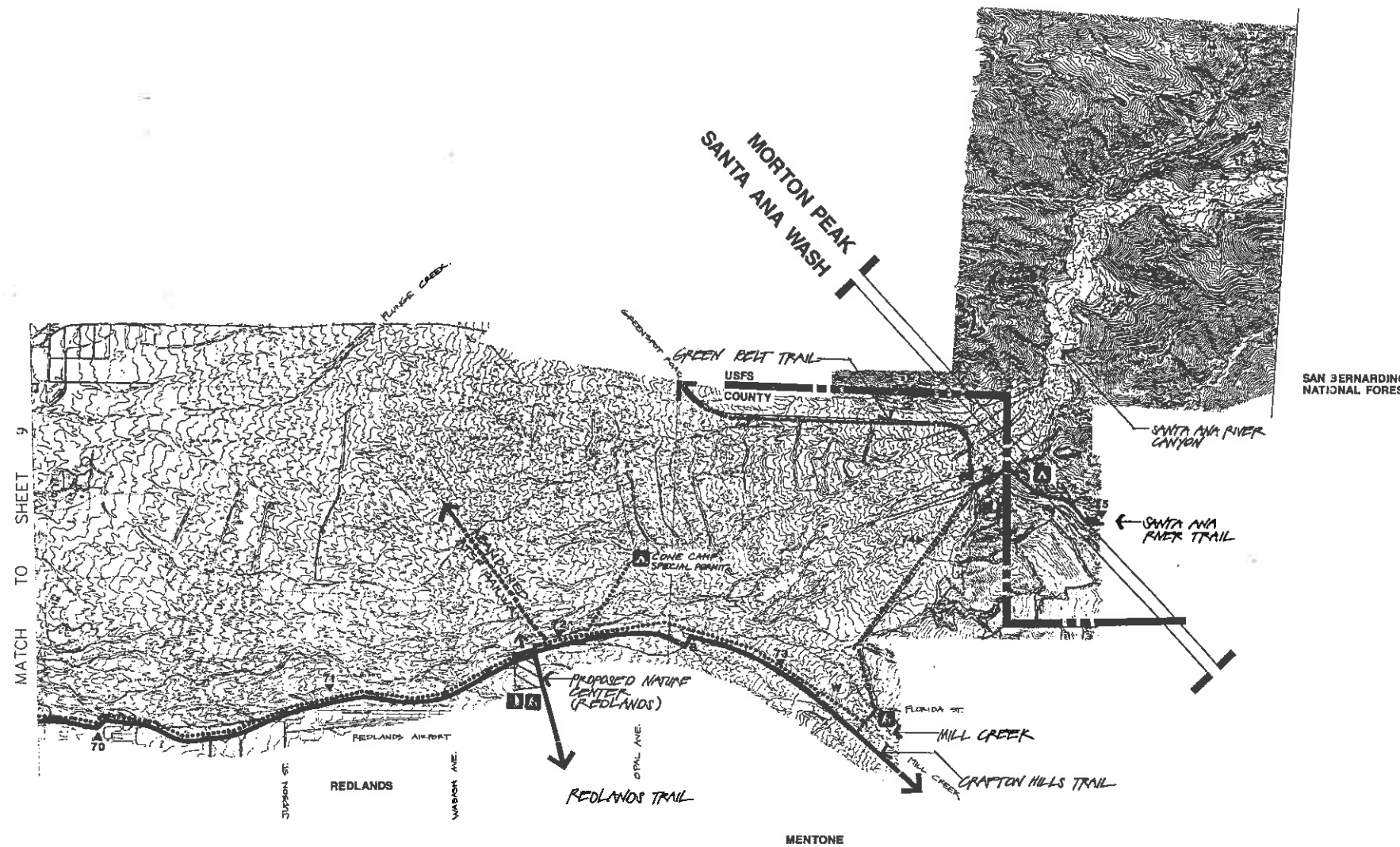
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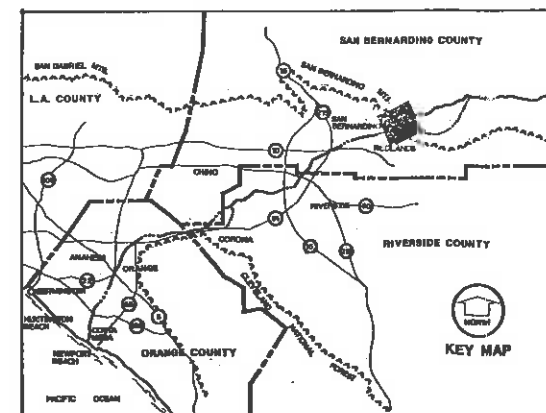
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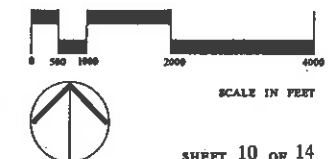
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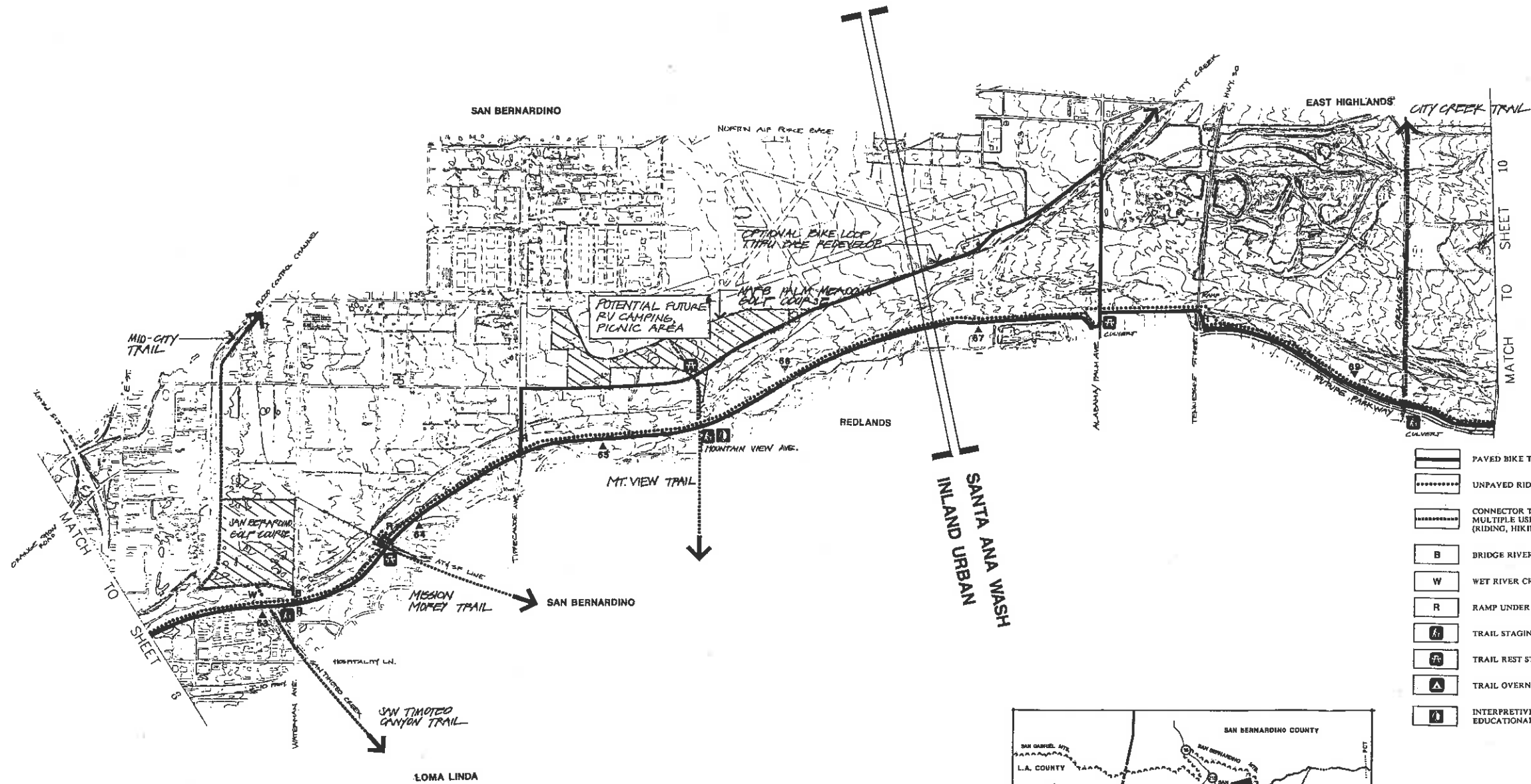












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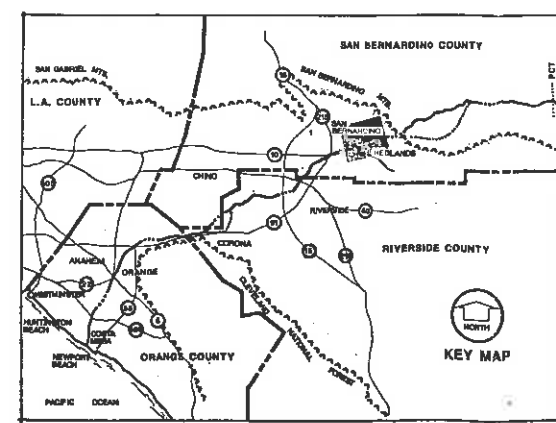


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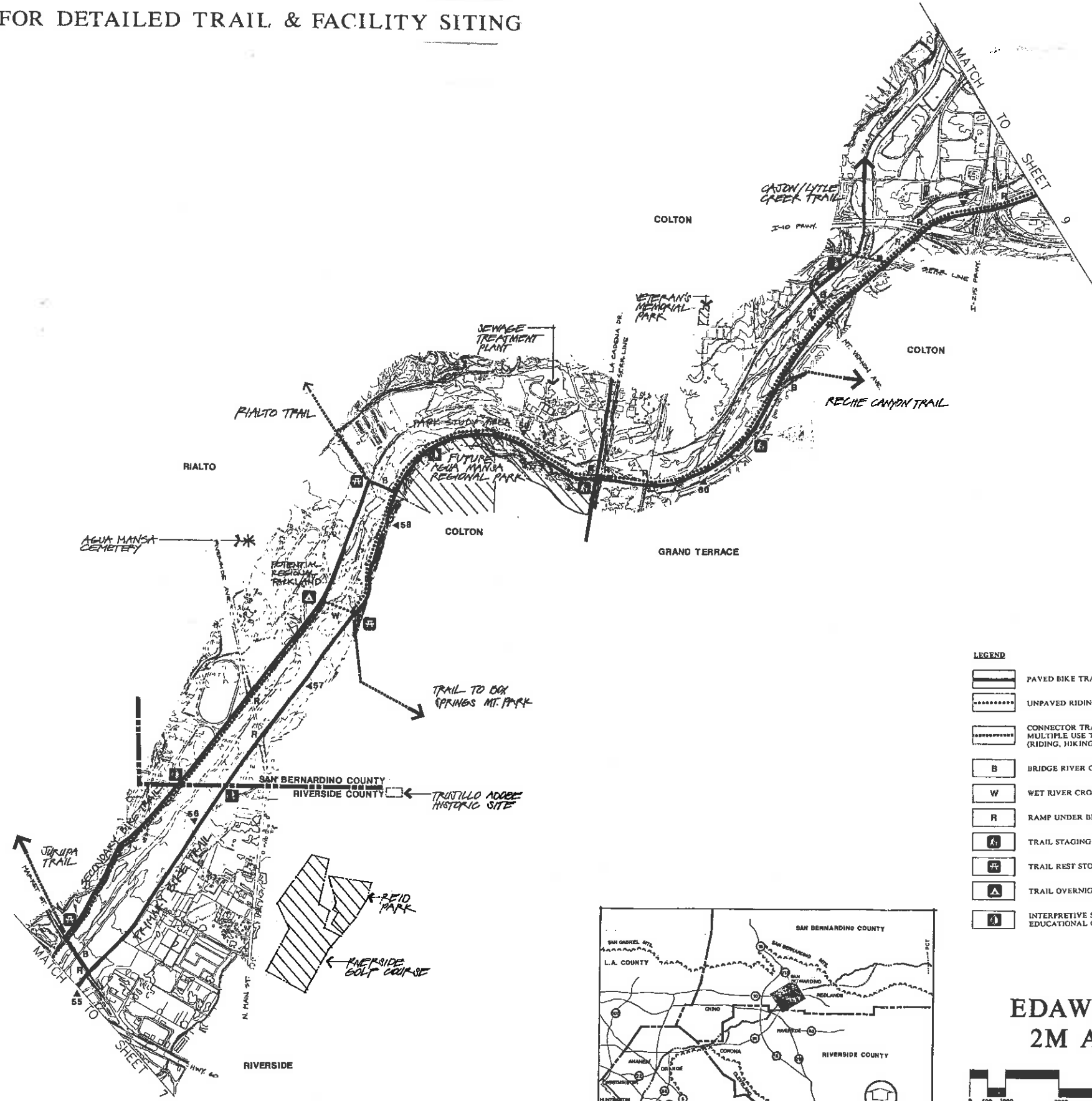


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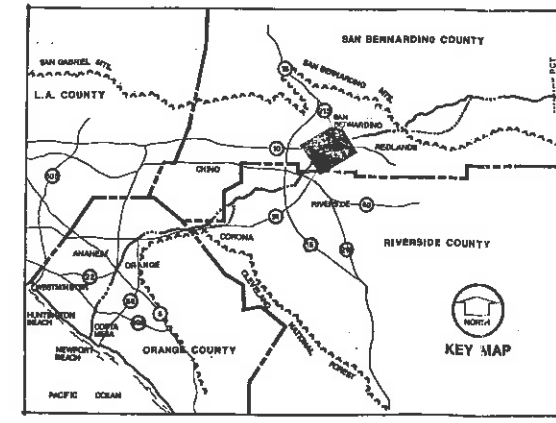


SHEET 9 OF 14

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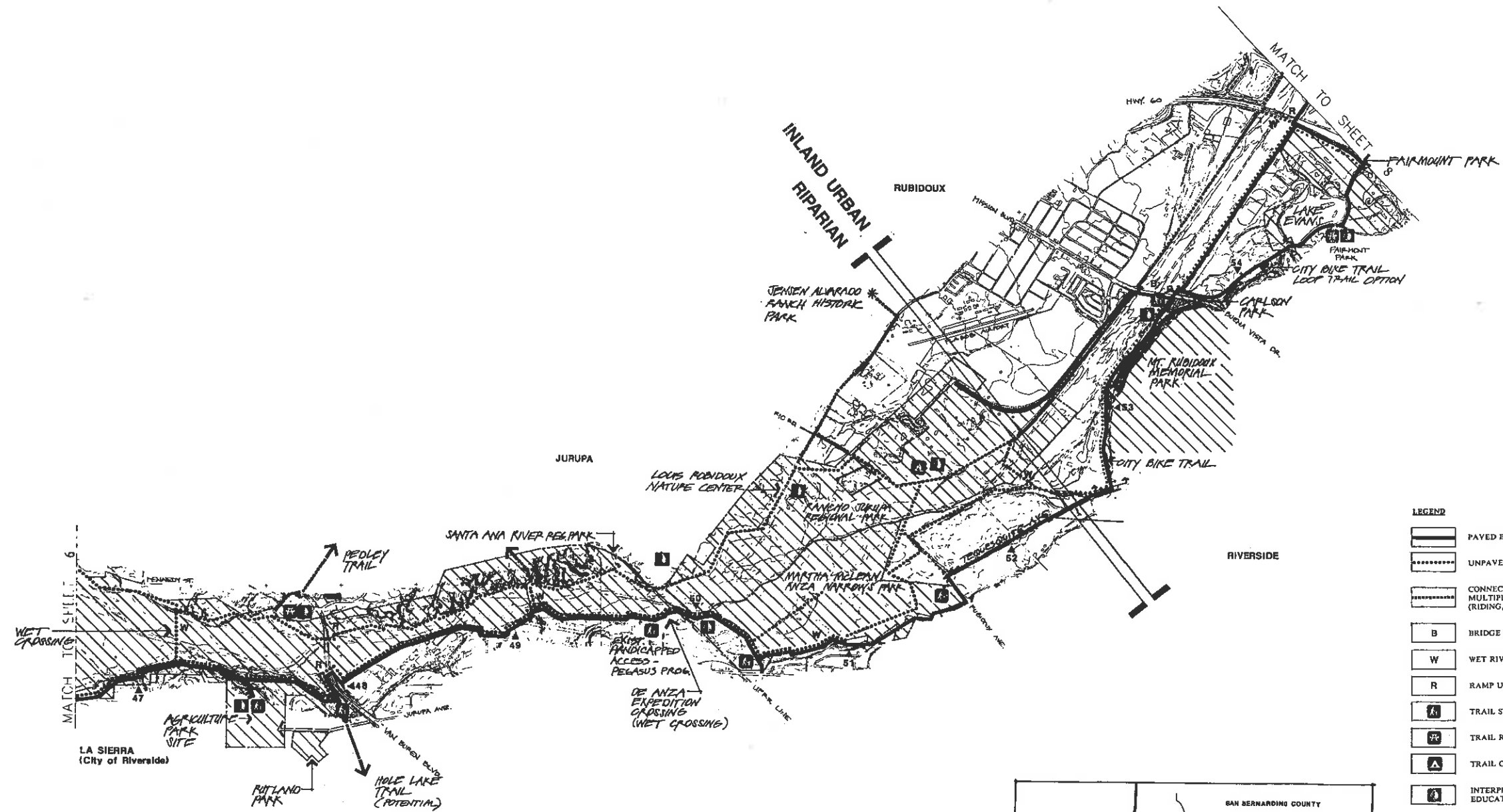
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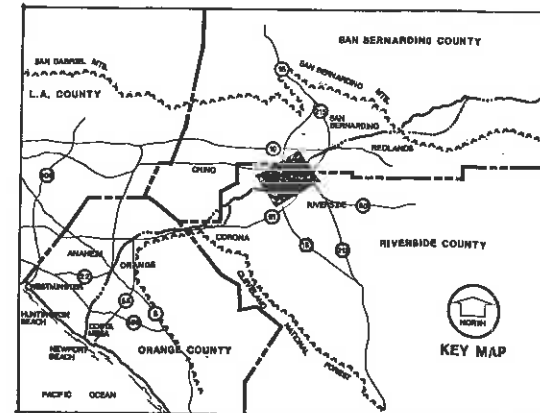
SHEET 8 OF 14

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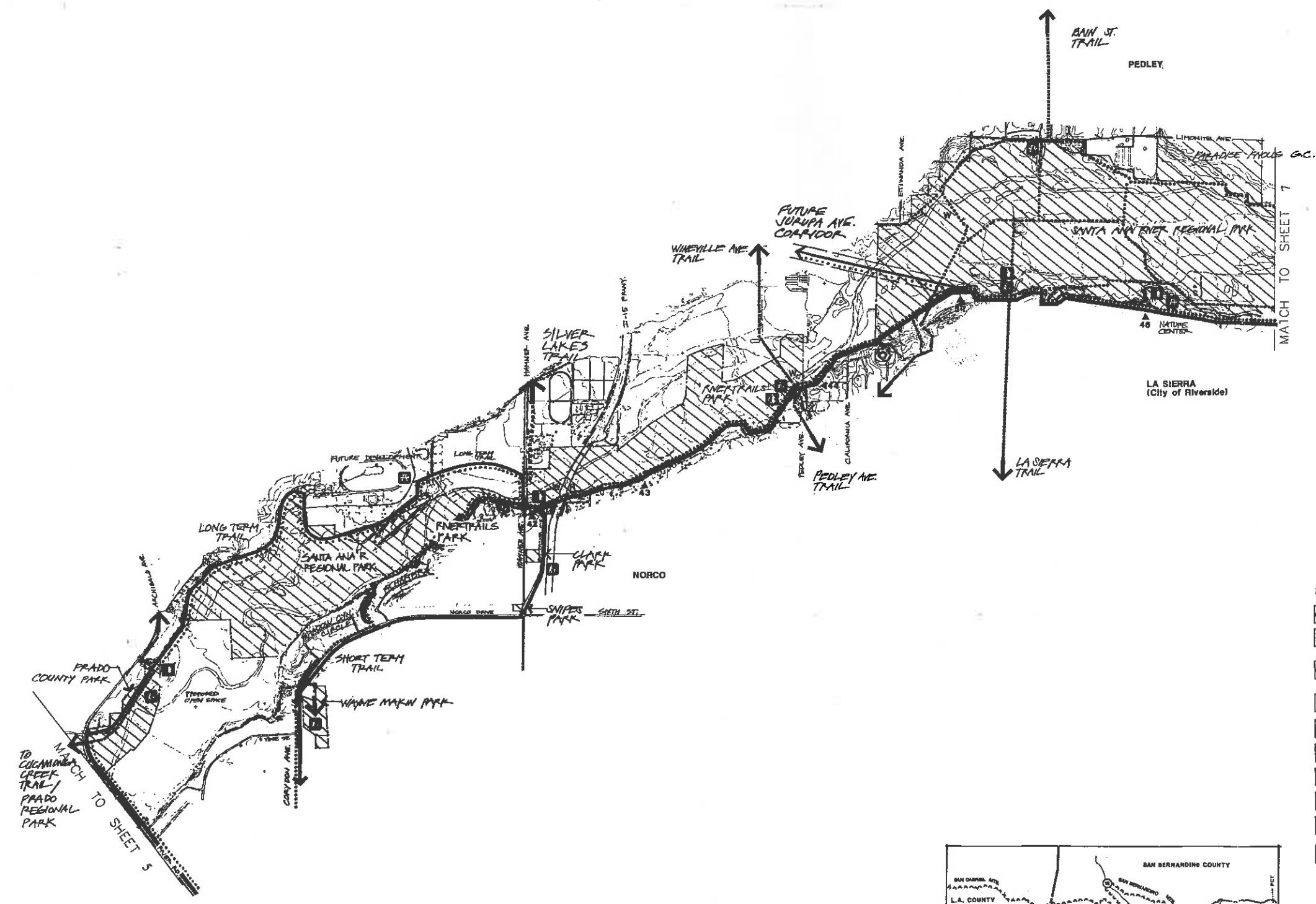


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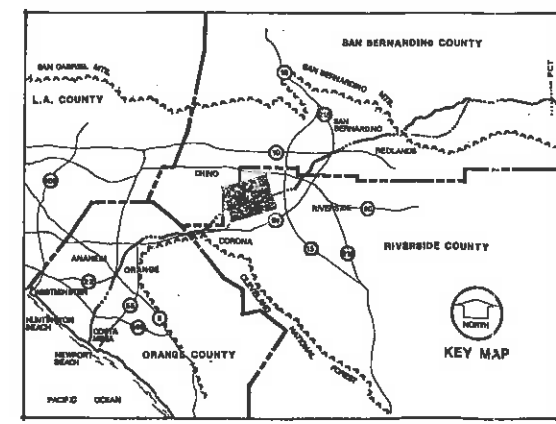


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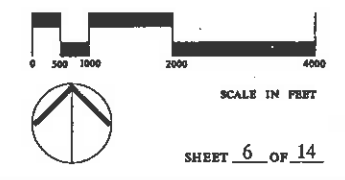


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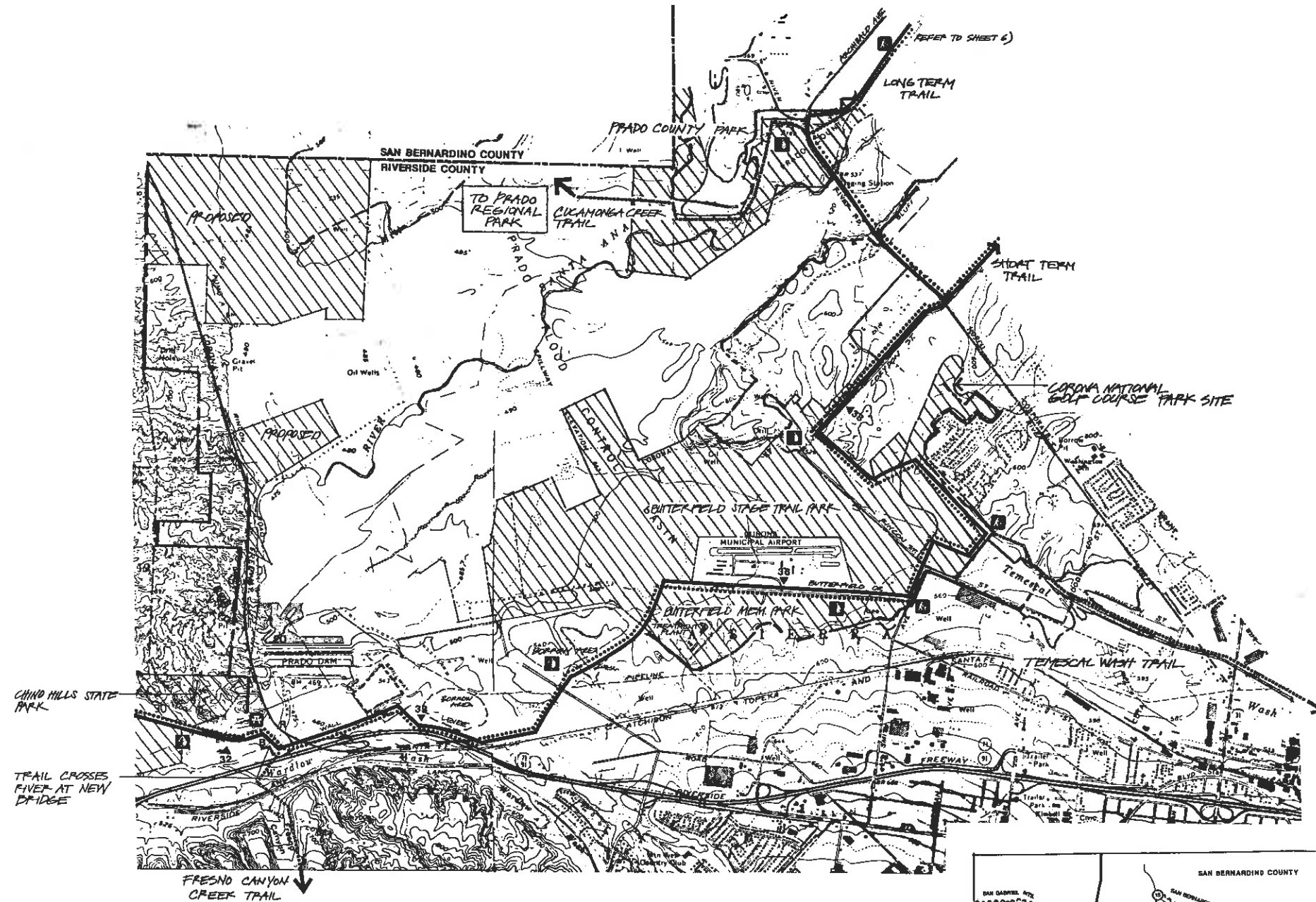


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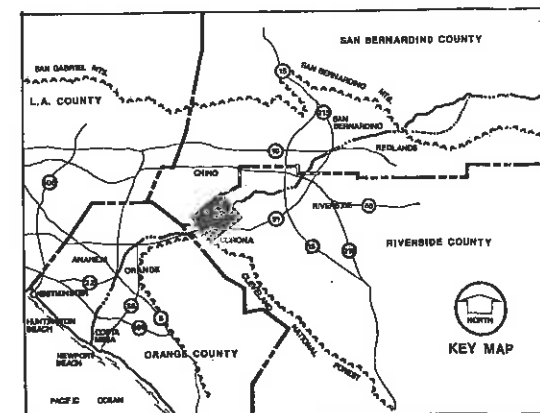


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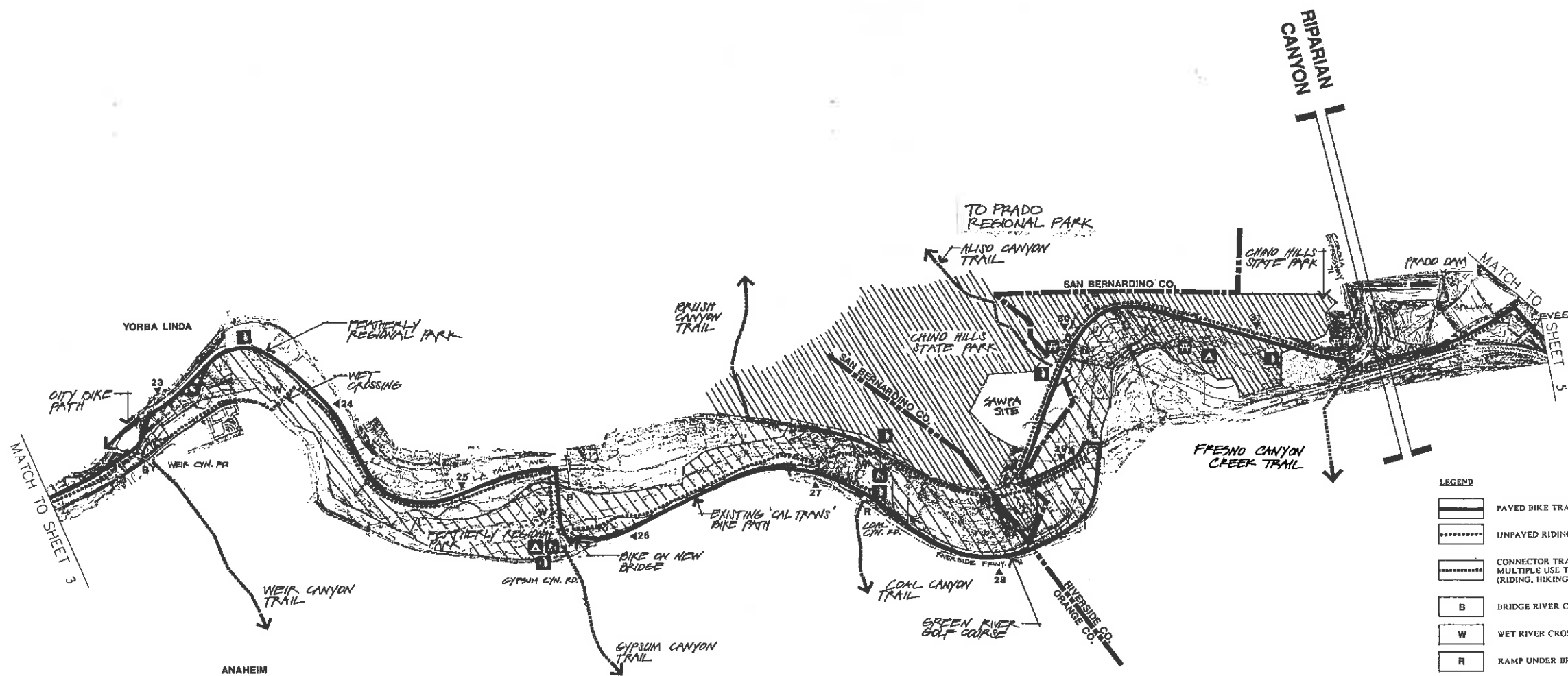
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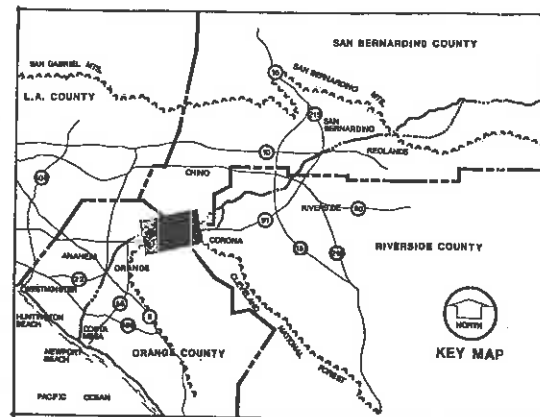
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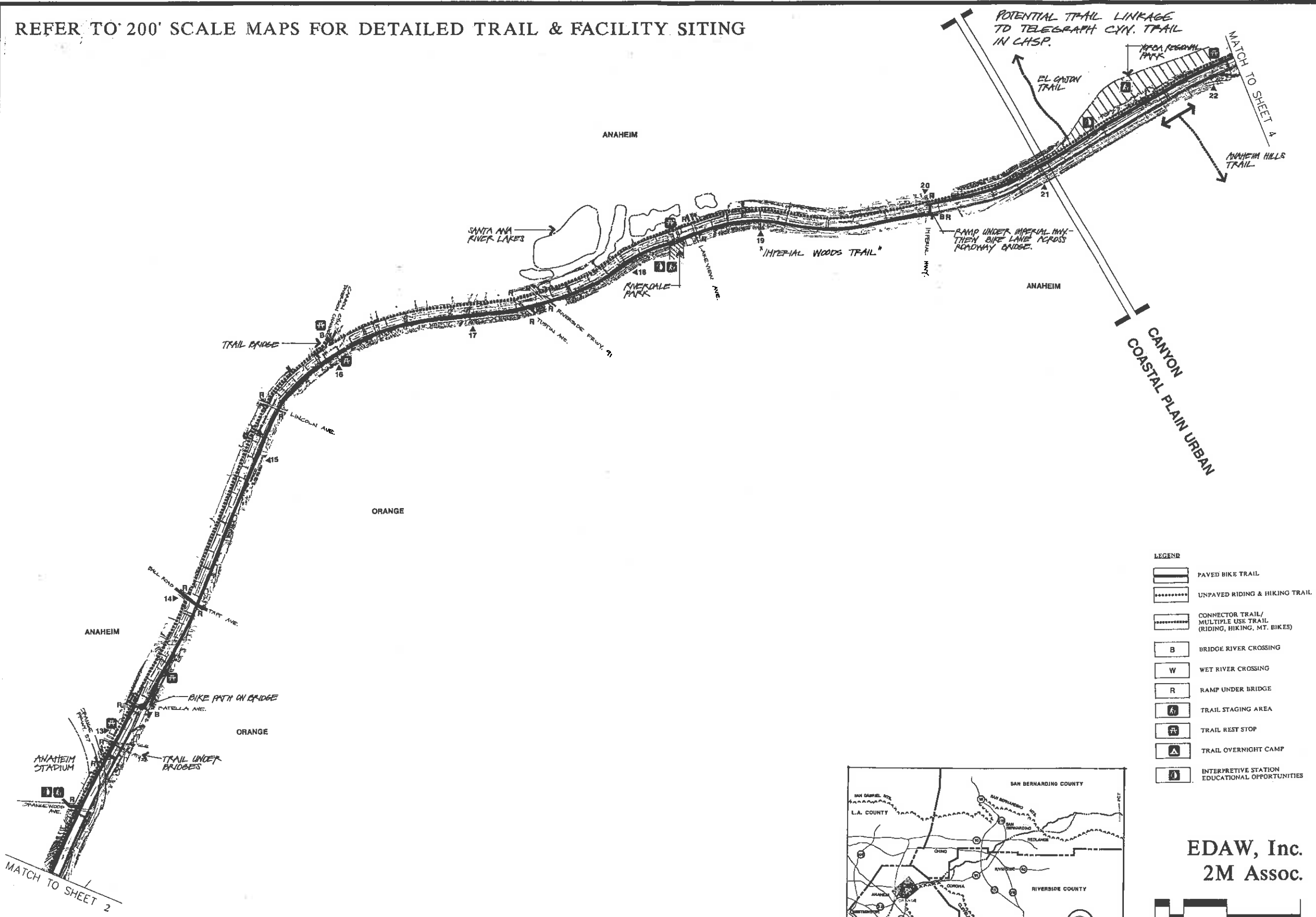
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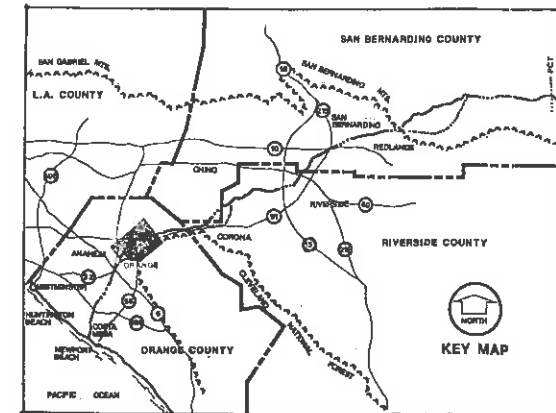
SHEET 4 OF 14

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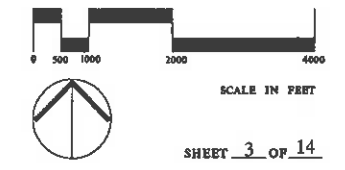
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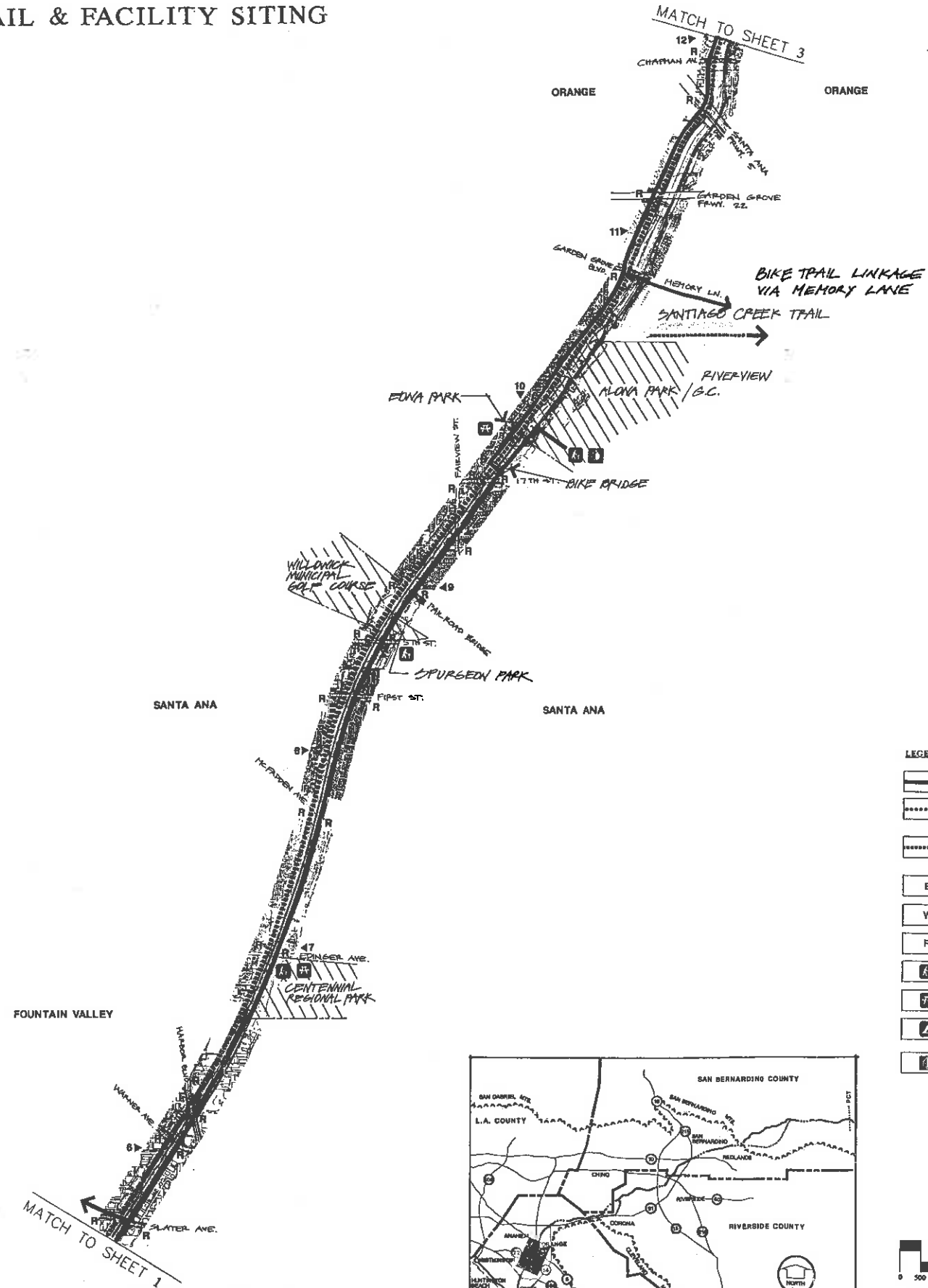


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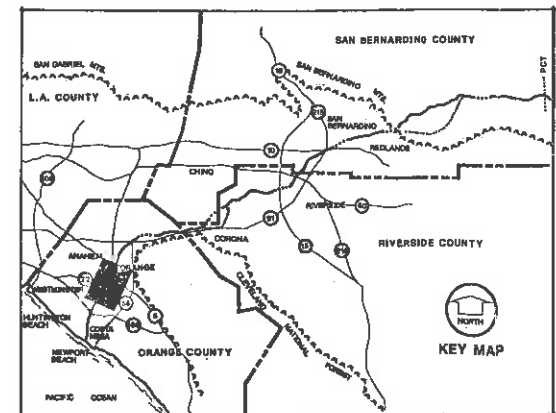


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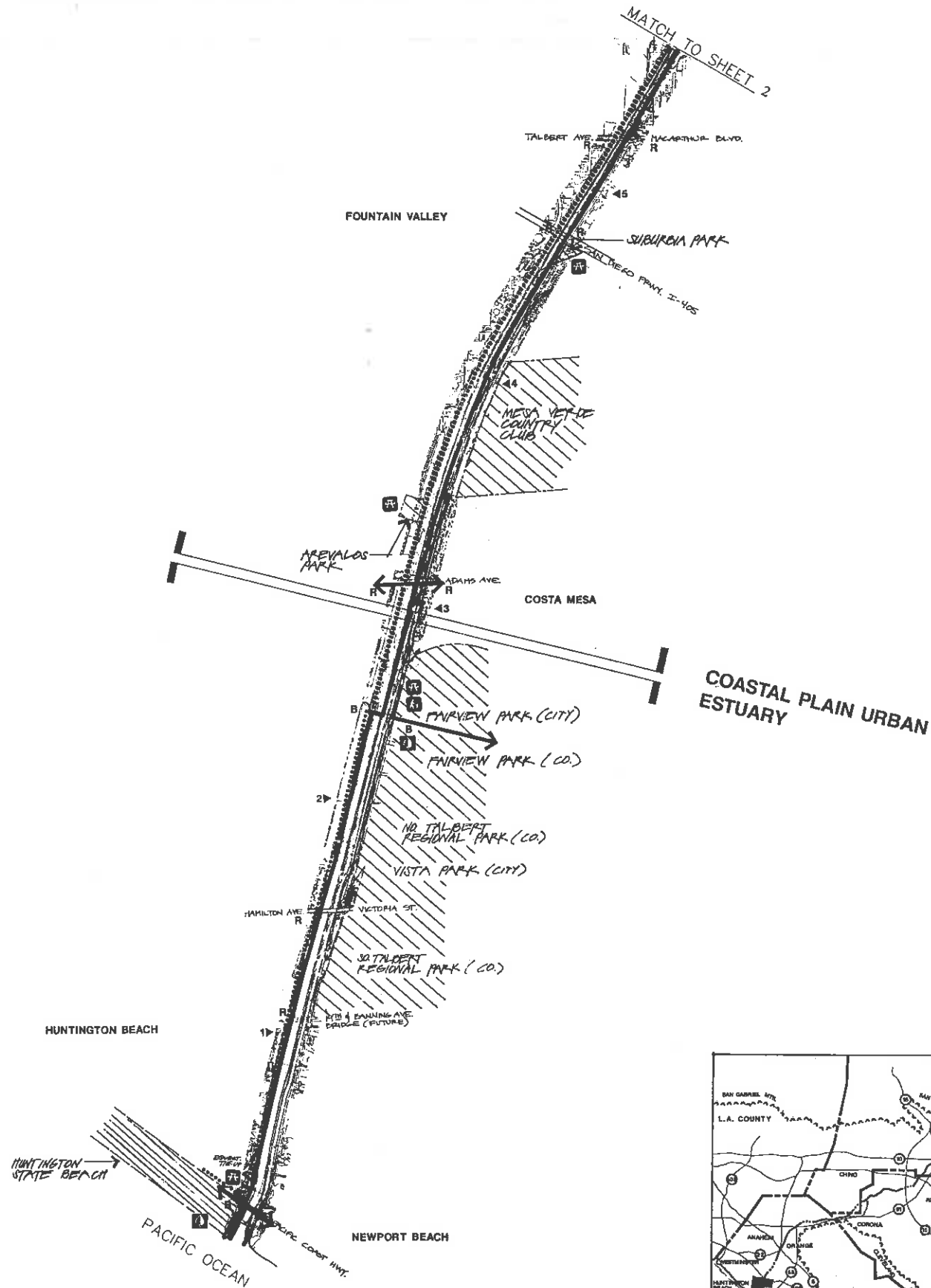
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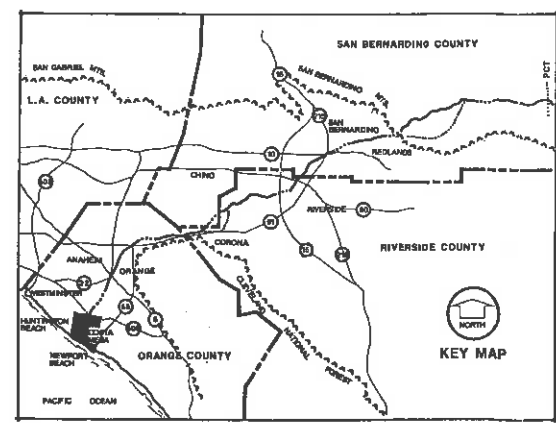
SHEET 2 OF 14

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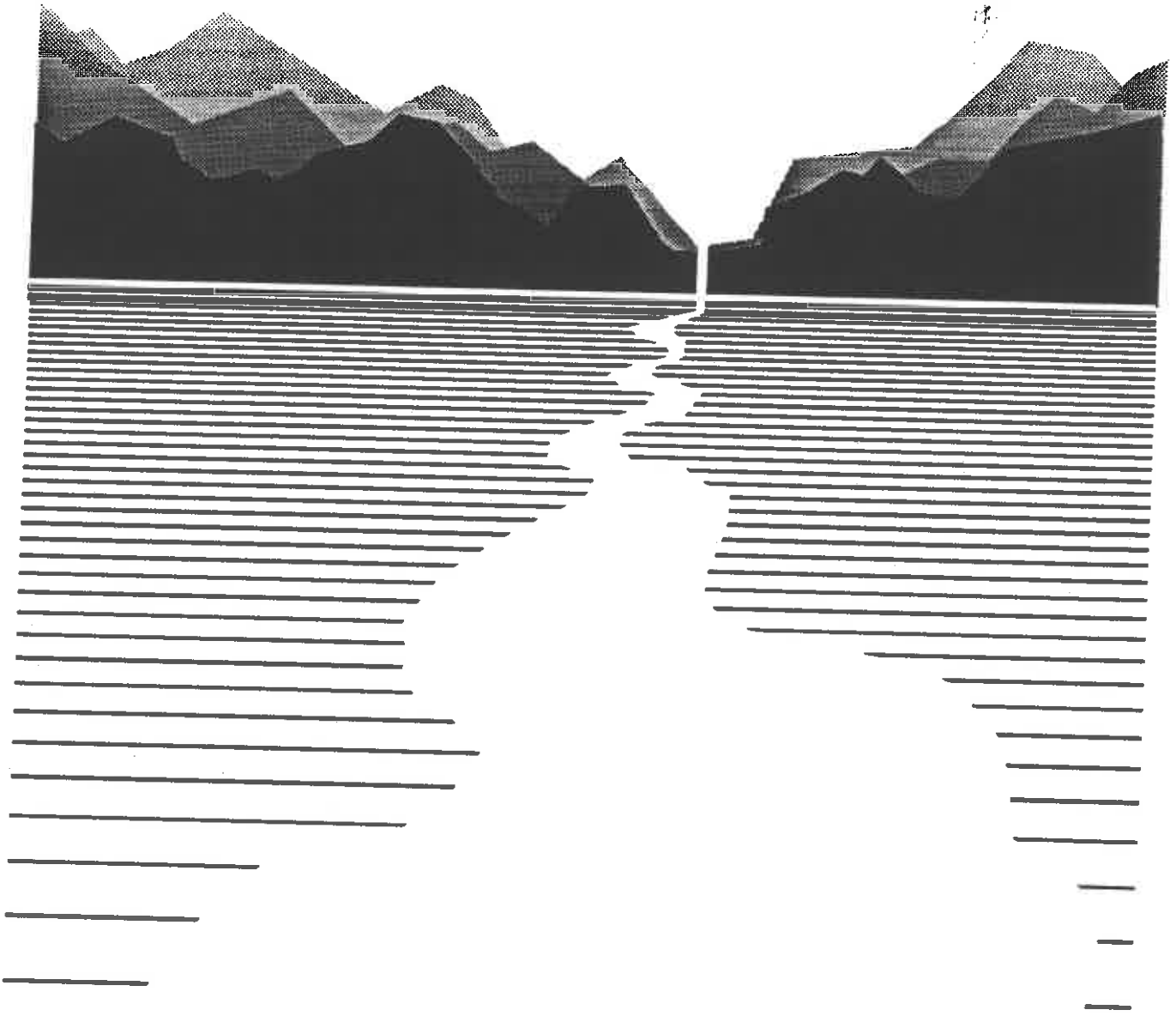


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SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
Orange, Riverside, & San Bernardino Counties



5.0 Signage

5.0 SIGN PROGRAM

A sign program, referred to as "Signage", is needed to clearly identify the trail from its surroundings and the 32 feeder trails which link with the system. The sign program for the Santa Ana River National Recreation Trail should be unique given its regional significance and its continuing National Recreation Trail status as the trail gets constructed.

The sign program which has been developed is in two components. The first component is the trail segment which will be managed by the three counties and the cities. The second section is the U.S. Forest Service. Sign elements, such as the trail logo, would appear on both the County and City signage and U.S. Forest Service signage.

This program is patterned after an existing sign program constructed in the early 1980's in an urban area of Colorado. The history of material maintenance, vandalism and theft has been very good. The materials have maintained their appearance after years of harsh weather and being located within an urban context.

5.1 State Park Sign Program

For State parkland areas, preliminary sign plans within State park boundaries will need to be submitted for approval to the Huntington Beach or Chino Hills District. The District will route plans to the various agencies within the State Parks Department for response and approval. Plans should reflect the precise location of the sign along the trail, sign verbiage, quantities and sign style.

Any and all trail signs within the park will need to be coordinated before placement and implementation in the field. The actual graphics proposed in Section 5.2 represent no problem. However, the cost of the signs will need to be determined by the Trail Management Group.

5.2 County/City Sign Program

The major sign program elements consist of two sign types:

- Large river boulders with sandblasted graphics.
- Post and panel signs with clear polycarbonate (Lexan) info. panels.

Sandblasted River Boulders. These signs would be used at the following locations for the following information purposes:

- Trail start/finish points
- County start/finish points
- Park entry points
- Trail identification/logo

- Points of interest
- Mileage Markers
- Elevation Markers
- Cultural Sites/Points of Interest
- Feeder trail junctions

Post and Panel Signs. These signs would be used for a variety of informational purposes. These would include:

- Trail maps/directory
- Trail sign with logo
- Rules and regulations
- Acknowledgements
- Warning signs/user information
- Informational/Educational signs
- Directional signs

Specific information about the sign program follows in the Sign Guides. Other sign elements, such as the environmental interpretive program signage, is discussed in the Interpretation and Education Chapter (6.0).

5.3 Sign Guides

Design Goals

- Harmonize with the natural environment; blend in with surroundings but remain visually effective. Benches, tables, and all wood items should be stained to match sign post.
- Utilize natural materials: wood, boulders
- Overall design to be unique to Santa Ana River corridor
- Low-key, soft approach
- Durable, maintainable, vandal and theft resistant materials

Construction Methods and Materials

- Large river boulders with sandblasted graphics, large enough not to be stolen or rolled away. If smaller boulders are used, they should be put into a concrete pad and covered with dirt to resist theft.
- Post and panel system with wood posts and backing panels stained neutral gray
- Clear polycarbonate (Lexan) information panels with silkscreened graphics on reverse side; soft colors used except on warning signs. Lexan panels should be "sandwiched" between two non-screened panels for potential replacement in case of vandalism to the outside layer.
- Refer to individual sign drawings for more information

Logo Design Goals

- Easily recognizable and remembered, unique
- Simple, uncomplicated
- Accommodate various applications and fabrication techniques
 - Sandblasting
 - Silkscreen printing
 - Offset printing
 - Embossing
 - Wood carving
 - Metal cutouts
- No single use or amenity given inappropriate attention

Typography Design Goals

- Compatible with sign design goals
- Suitable for all graphic applications, signage, printing, etc.
- Readily available from typesetters, computer fonts and transfer type
- Soft, friendly character
- Multiple weights, from light to extra-bold

5.4 Silkscreen Printing Specifications

Santa Ana River Trail Directory. The overall dimension is 32" X 56" and the edge of the "tufak" panel. Image to be silkscreened on the reverse side of 1/8" thick, clear "tufak." This panel would then be "sandwiched" between two non-screened panels for protection in case of vandalism. Damaged panels could be easily removed and replaced. An example of the screening process is listed below.

There are seven overlays. Each overlay is numbered and the color is called out. The following table specifies the order in which each overlay is to be silkscreened on the reverse side of the clear "tufak." Number one indicates the overlay which is silkscreened first and is closest to the "tufak."

Overlay	Order of Silkscreen	Color
1	1 (closest)	white
2 & 3	2	black
4	3	red
5	4	blue
6	5	green
7	6 (furthest)	tan

Descriptive Signage. The overall dimension is 28" X 32" and the edge of the clear "tufak" panel. Image to be silkscreened on the reverse side of 1/8" thick, clear "tufak." An example is listed below.

There are three colors to be used in the sign; black, white, and blue. An example is listed below. Each color is to be assigned accordingly:

- | <u>Black</u> | <u>White</u> | <u>Blue</u> |
|--|--|--|
| <ul style="list-style-type: none"> • Santa Ana River Trail
 • Sign feature, (e.g., "Fish" symbol) | <ul style="list-style-type: none"> • Sign name, (e.g., "Kids Fishing Pond") | <ul style="list-style-type: none"> • 1/2" rules above and below sign name and at bottom |

Trail User Warning Signs. The overall dimension of 36" X 36" and the edge of the clear "tufak" panel. Image to be silkscreened on the reverse side of 1/8" thick "tufak." An example is listed below.

There are four overlays. Each overlay is numbered and the color is called out. The following table specifies the order in which each overlay is to be silkscreened on the reverse side of the "tufak." Number one indicates the overlay which is silkscreened first and is closest to the "tufak."

Sign	Overlay	Order of Silkscreen	Color
Final Warning Sign	1b	1 (closest)	white
	3	2	white
	2b	3 (furthest)	standard highway red
First Warning Sign	1a	1 (closest)	Black
	4	2	black
	2a	3 (furthest)	standard highway yellow

Trail Signs. Each graphic board, (such as "Yield to Pedestrians" and "Santa Ana River Trail") is at finished size and labeled. Images are to be printed white on the reverse side of a clear "tufak" panel.

5.5 Sandblasting Specifications

General Notes:

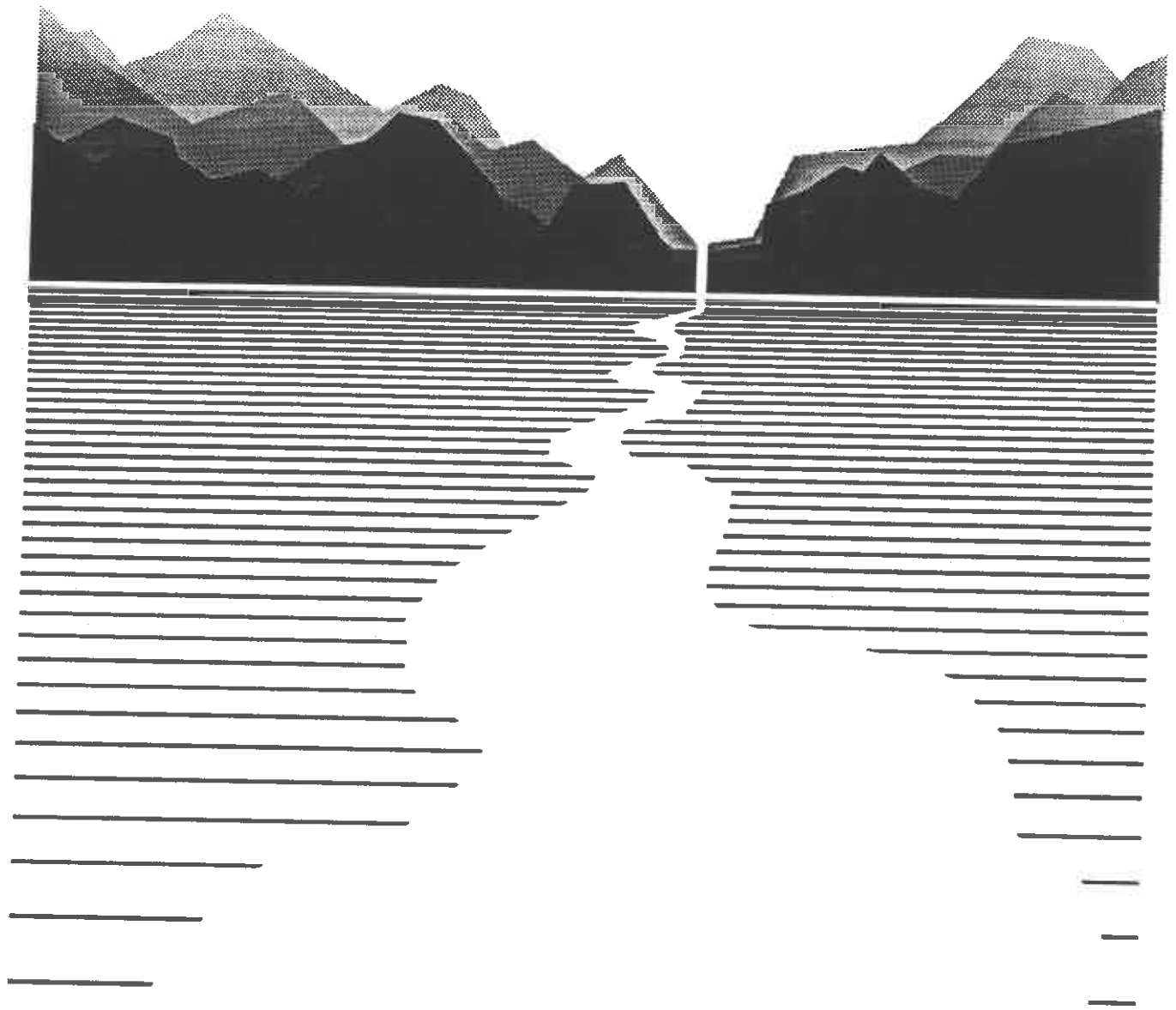
Each graphic board (ie., 1 mi., "Santa Ana River Trail" and "Agua Mansa Regional Park") is at finished size and labeled. Image to be sandblasted to 1/2" depth and finished with a very light spray of black lithachrome while stencil is still in place. This is to give the signs a weathered appearance. Sandblasting to be done with 30 grit silica sand under 80 to 100 psi pressure. Stencil material to be 3M sandblast stencil or equal. Utilize appropriate safety precautions and trained experienced personnel only.

5.6 National Forest Service Sign Program

Signage within the National Forest boundary will include USFS regulation sign design with the trail logo attached where applicable to identify the trail. Effort needs to be made to clearly identify this trail as being unique from other trails, such as the Pacific Crest Trail.

Trail signage should be included at the following locations and for the following uses: trail location, directional signs, trail facilities, mileage markers, elevation markers and trail begin/end signs.

A typical USFS sign design which would also include the trail logo design is found in chapter 12.0, Design Standards, in the National Forest section.



6.0 Interpretation & Education

6.0 INTERPRETATION AND EDUCATION

" A series of agricultural communities were found along the Santa Ana. Disappointed gold seekers established the first one near the coast. They called it Anaheim. . . The climate proved to be excellent for oranges. The Santa Ana became the 'string' on which the 'beads' were strung: Santa Ana, Orange, Corona, Riverside, Redlands."

Frank E. Moore, I Came from Redlands

An increased understanding of the surrounding environment enhances the public's appreciation and enjoyment of natural and cultural aspects of that environment. This section identifies themes for the natural and cultural resources unique to the Santa Ana River corridor, and outlines interpretive programs and facilities appropriate for the presentation for those themes.

The Santa Ana River corridor presents the trail user a cross section of the natural and cultural environments of the San Bernardino Mountains, the Inland Empire and South Coast environments. Diversity is paramount. Diversity is created by natural settings, cultural conditions, and the mix between the two.

The Santa Ana River is one of three regional drainages with similar characteristics. The other two are the Los Angeles River and the San Gabriel River. It is the largest of the three both in length and drainage area.

6.1 Existing Conditions

For many years public recreation suppliers such as the U.S. Forest Service, State Parks Department and County Park Departments have offered "interpretive" services. These have been either through provision of short trails, signs, or programs led by trained interpretive specialists.

In 1984 the California State Department of Education amended its science framework and revised its guidelines for teaching science education in hopes of gaining scientific literacy for all California students. This event has resulted in our schools moving outdoors into nature's laboratory, to enhance the teaching of science.

There are over 18 school districts that are positioned adjacent to or surrounding the Santa Ana River. There are also a number of colleges and other educational institutions near the river that could benefit for interpretive and educational reward from the access provided by the Santa Ana River Trail. In the San Bernardino National Forest there are many numerous private camps in the Barton Flats area that would benefit from the Trail. These are listed in Table 6-1.

In addition to school programs, there are a number of public and private service institutions, such as hospital programs for emotionally disturbed children, that could benefit from public access to the open space amenities found along the river corridor.

The majority of the river corridor, however, has remained a relatively unused resource due to lack of access, funds, curricula, and a dedicated facility.

The demand for outdoor education is on an upward trend and is borne by the success of the two outdoor science programs operated by the Orange County Department of Education. The first is the Environmental Field Study Program that is conducted in six locations within the County. The second is the Outdoor Science School offered to sixth grade students and located in Barton Flats. Sixteen thousand students went through the program in 1989. Camps Arbolado, Edwards, and Mile High Pines are rented by the District to accommodate the programs. Both programs are "booked up". School districts from outside the county, when space is available, use the services provided. Problems faced by the Department are lack of locations to go that have specific facility designs for educational groups; and in the case of the Outdoor Science School, lack of overnight space.

6.2 General Education and Interpretation Goals

The general goals for science instruction include: achieving scientific attitudes; achieving rational and creative thinking processes; achieving communicative skills; and advancing scientific knowledge. As these relate to the trail system, goals include:

- Opportunities should be provided along the Santa Ana River for "hands-on" science education and research. These opportunities should be developed for all levels of our educational systems.
- Selected trail-related features should be provided to foster within the visitor an appreciation of land stewardship. The character of the river corridor has been and will continue to be influenced by both natural and cultural dynamics. People's use and management of the river environment, and how this relationship has changed the river's landscape over time, should be made "observable" to the general public.
- Encouragement should be provided for school programs and the general public to become actively involved in conserving the river's natural resources.
- Opportunities should be made available to train prospective teachers during student teaching or methods courses.

6.3 Themes

The benefits that local schoolchildren will receive from outdoor environmental education along the Santa Ana River corridor are many. The students will directly experience a functioning ecological system, bringing the natural world closer than any number of films or videos can do. They will learn of the natural processes that sustain plants, wildlife, and humans. They will use scientific methods as they view river water under a microscope, conduct field surveys for wildlife, or inventory plant species. They will strengthen math skills as they measure the growth and height of trees. They will learn to develop hypotheses and test them against experience. There will be opportunities for interdisciplinary teaching: for example, the river may be studied from the perspectives of agriculture, water resources and pollution, hydrology, economics, ecology, geology, and Indian history.

A thematic, sequential, grade-level curriculum and series of activities for teachers' use should be developed. These should be designed to directly relate to the California State Science Framework and Addendum.

The overall educational and interpretive theme for the trail stresses the appreciation of the river as a regional feature made of a series of inter-related natural settings and management practices. General themes for any interpretation of river resources include:

- Why the Santa Ana River Trail was established
- Uses of waters and the effects on the river
- The future of the land, land use, and the environment
- Historical land use/management practices and its effects on the river
- Historic peoples, their places and times
- Diversity along the river, both natural and manmade
- Habitat and niche relationships
- Migration patterns of birds and mammals
- Plant and habitat succession
- Energy flow in and between ecosystems

Figure 6-1 segments the Santa Ana River into a series of eight river reaches, each with its own unique set of natural and cultural characteristics. Additional educational themes for each of these segments and a listing of the historic and natural resources along the river corridor are provided in Figures 6-2 through 6-9 respectively.

6.4 Education and Interpretation Facilities

Education facilities assist in teaching our children, our teachers, and ourselves about science, technology, individuals, and society. In learning about and from the natural and cultural resources of the river, however, it must be remembered that the river corridor itself is the premier education

facility. Active volunteer participation and educational programs should be called upon to conduct projects that revegetate, restore, and enhance disturbed landscapes. Where possible, construction and management of trails and other access facilities specifically designed for formal educational use should be spearheaded by school districts and volunteer groups. Emphasizing this "hands-on" grassroots thrust builds within the visitor a sense of stewardship for resources that transcends the day and spans the generations.

Educational facilities that would enhance use of the river's resources are shown throughout Figures 6-2 through 6-9. Seven natural science/interpretive centers are shown at:

<u>Approx. Mile</u>	<u>Location</u>
2.5	Fairview Park
26.0	Featherly Regional Park Nature Center
40.0	Prado County Park (existing)
46.5	Hidden Valley Wildlife Area
51.5	Rubidoux Nature Center (existing)
72.5	Redlands Nature Center
105.0	Heart Bar Ranch

Other educational facilities associated with the trail include: plant propagation areas associated with the Hidden Valley Wildlife Area; education trails and outdoor classrooms for school classes; interpretive points for the general trail user and at major staging areas; natural areas for scientific research, such as within the Prado Basin; and, places to study the effects of human activities on water quality such as at the Highway 38 crossings in the Headwaters/Upper River reach and other recreation areas where water contact recreation occurs.

6.5 Programming

Though the master plan provides ample facilities for education and interpretation activities, local school districts should cooperate to jointly fund and employ science specialists to be based permanently at each of the centers identified in the plan.

A Santa Ana River Trail and Education Guide should be developed by the private sector for use both by school districts and for general distribution to the trail user.

TABLE 6-1: Schools and Educational Institutions

Orange County

- Orange Unified School District
- Placentia Unified School District
- Anaheim City School District
- Santa Ana Unified School District
- Fountain Valley School District
- Newport Mesa Unified School District
- Huntington Beach City School District
- Garden Grove Unified School District
- UC Irvine
- California State University Fullerton
- Santa Ana College
- Orange Coast Community College
- Southern California College

Riverside County

- Alvord Unified School District
- Corona-Norco Unified School District
- Jurupa Unified School District
- Riverside Unified School District
- UC Riverside
- Riverside Community College
- California Baptist College
- Loma Linda University - La Sierra Campus

San Bernardino County

- Bear Valley Unified School District
- Yucaipa Joint Unified School District
- Redlands Unified School District
- San Bernardino City Unified School District
- Colton Unified School District
- Loma Linda University
- California State University, San Bernardino
- Crafton Hills College
- Santiago College

- University of Redlands
- San Bernardino Community College

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TABLE 6-1: Schools and Educational Institutions (continued)

San Bernardino National Forest

- YMCA of Greater Whittier
- American Diabetes Association
- Centinela Valley YMCA
- Redlands Family YMCA
- Campfire Inc.
- Boy's Club of Pasadena
- Anaheim Family YMCA
- Boy's Club of San Gabriel Valley
- YMCA of Metropolitan Los Angeles
- Long Beach Area Council, BSA
- San Gorgonio Girl Scout Council
- West Gabriel Valley YMCA
- U.C.L.A. Unicamp
- Campfire Council of the Foothills

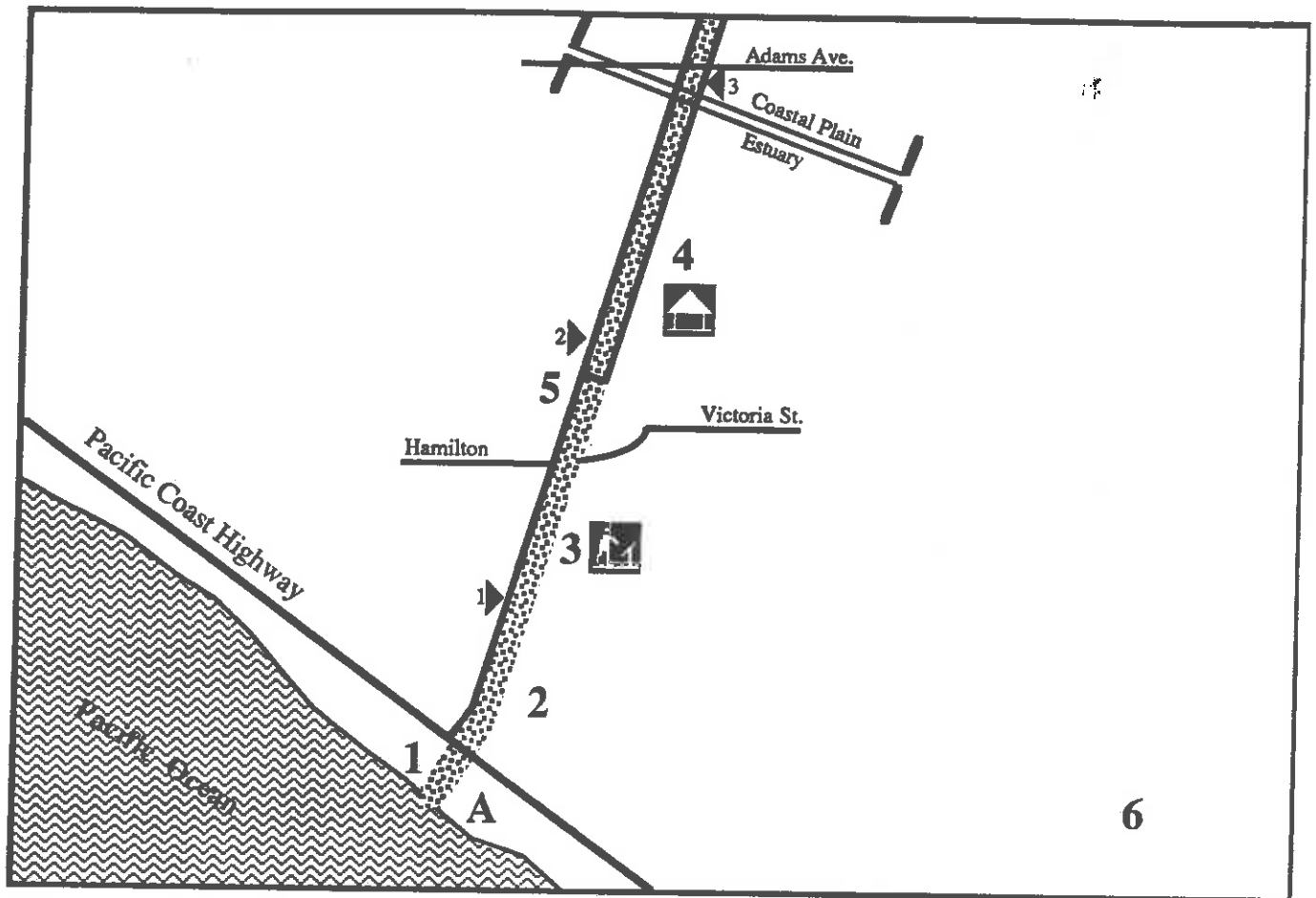


Figure 6-2: Estuary

Map Key	Feature
	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

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TABLE 6-2: Estuary

Educational Themes: The ending of a long journey
 Tidal estuary ecosystems
 Saltmarsh restoration
 Lost ships

Map Key	Approx. Trail Mile	Feature
A	0.0	Shipwrecks: A number of shipwrecks are known to have occurred at the mouth of the Santa Ana River.
1	0.0	Essential Least Tern Habitat Preserve: at Huntington State Beach (also at Bolsa Chica)
2	0.5	Saltwater Marsh/Wetland Restoration: 92 acre Corps of Engineer mitigation area for the "Santa Ana Mainstem Project"
3	1.5	Freshwater Marsh/Wetland Restoration: South Talbert Regional Park (County of Orange)
4	2.0	Wetland Creation: North Talbert/Fairview Regional Park (County of Orange)
5	1.7	Tidal Zone: upper limits of area typically influenced by fluctuation of tides

6 -- **Upper Newport Bay Wildlife
Sanctuary:** Newport Bay
(County of Orange and
California Department of Fish
and Game)

6 -- **San Joaquin Freshwater
Marsh Preserve:** one of a few
areas in Orange County that
comprise about 250 acres of
freshwater marsh where
historically there were thousands
of acres. (U.C. Irvine)

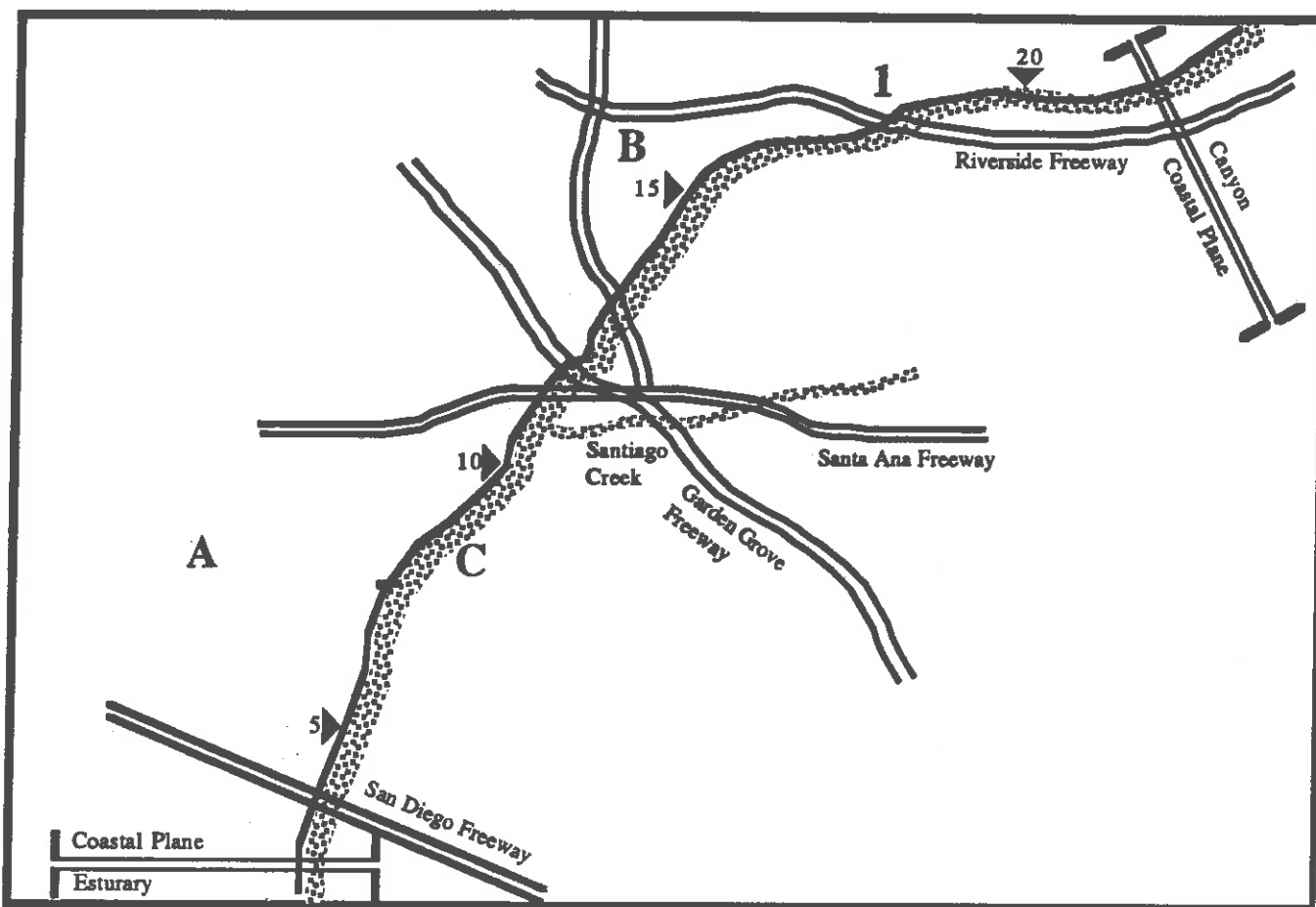









Figure 6-3: Coastal Plain

Map

Key Feature

- | | |
|---|------------------------------------|
|  | Santa Ana River |
|  | Santa Ana River Trail |
|  | Trail Mile Marker |
|  | Interpretive / Education Trail |
|  | Education / Natural Science Center |
|  | Cultural Feature |
|  | Natural Feature |

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TABLE 6-3: Coastal Plain

Educational Themes:
 The river and modern civilization - farming and urban development
 Flooding and flood control
 The importance of groundwater

Map Key	Approx. Trail Mile	Feature
A	10.0	Westminster Courthouse: site of Mendez vs. Westminster 1946 school desegregation case.
B	15.0	Santa Ana Valley Irrigation Company Waterworks: circa 1870
C	8.0	Pacific Electric Railroad Bridge: built in 1905, it consists of two Pegram steel truss spans, the structure is an excellent example of a pin connected and riveted through truss; one of the few structures to survive the 1916 flood; an integral part of the transportation history of Orange County and a unique example of a bridge building type in California.
1	17.5-19.0	Santa Ana River Lakes: groundwater recharge basins

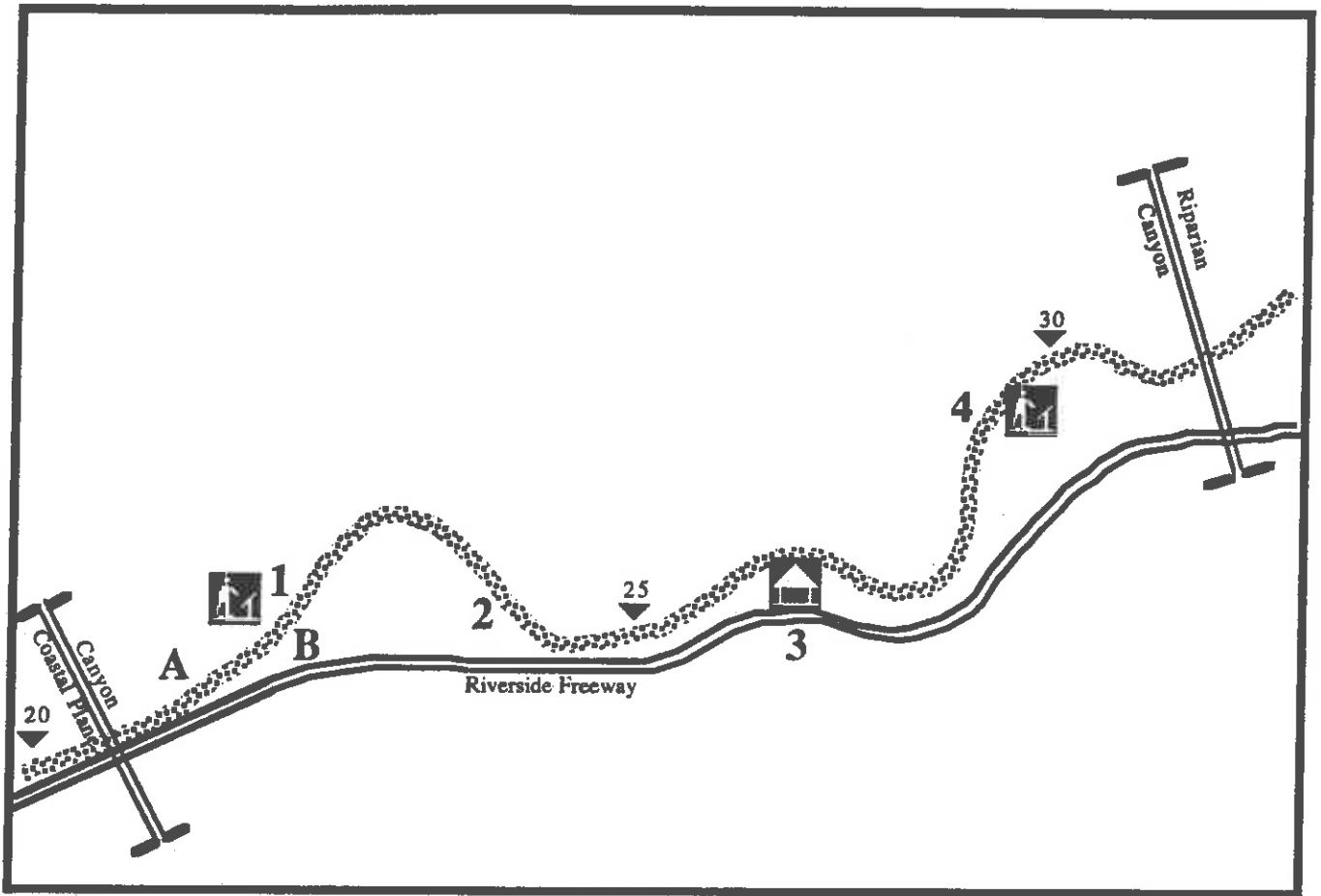









Figure 6-4: Canyon

Map

Key Feature

	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

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TABLE 6-4: Canyon

Educational Themes: Climax riparian gallery forest
 Habitat rehabilitation
 Freshwater aquatic biology
 A crossroads of upland and
 riverine ecosystems

Map Key	Approx. Trail Mile	Feature
A	21.0	Yorba Adobe / Yorba Cemetery: at Yorba Regional Park (County of Orange), the cemetery is the burial place of several prominent California pioneers.
B	22.0	Santa Ana Valley Irrigation Ditch: constructed by the Felizes in the late 1860's, the ditch was purchased by SAVI in 1879. The site is now mostly destroyed. Cajun Canal: constructed in 1875 the completed canal was 16 miles long and capable of irrigating over 3,000 acres. After financial troubles, the canal became part of the Anaheim Union Water Company which operated it until 1968. Portions of the canal still exist at the northern edge of the canyon.
1	23.0	Anaheim Wetlands: 10 acres of manmade freshwater woodlands (Anaheim Parks Department) that demonstrates the sensitive balance of water quantity, water

quality, and sedimentation that is required for a healthy wetland ecosystem to be sustained.

2 23.0-27.5 **Featherly Regional Park:** mature riparian forest rich in aquatic and avian wildlife (County of Orange).

3 27.0 **Gypsum Canyon Culvert:** used by a variety of wildlife species to move between the river environment and the canyon.

4 25.0-31.0 **Chino Hills State Park:** an example of the natural landscape and environment that existed before urban development.

Primary educational themes include: natural neighborhoods share the Chino Hills; native plants and animals find refuge; a color for every season; the modern world imperils the Chino Hills; and management works to restore the natural past.

Secondary themes include: geological forces mold the landscape; surprising fossil footprints; and the earth hides black gold; a harvest ground for Native Americans; and two centuries of cattle grazing.

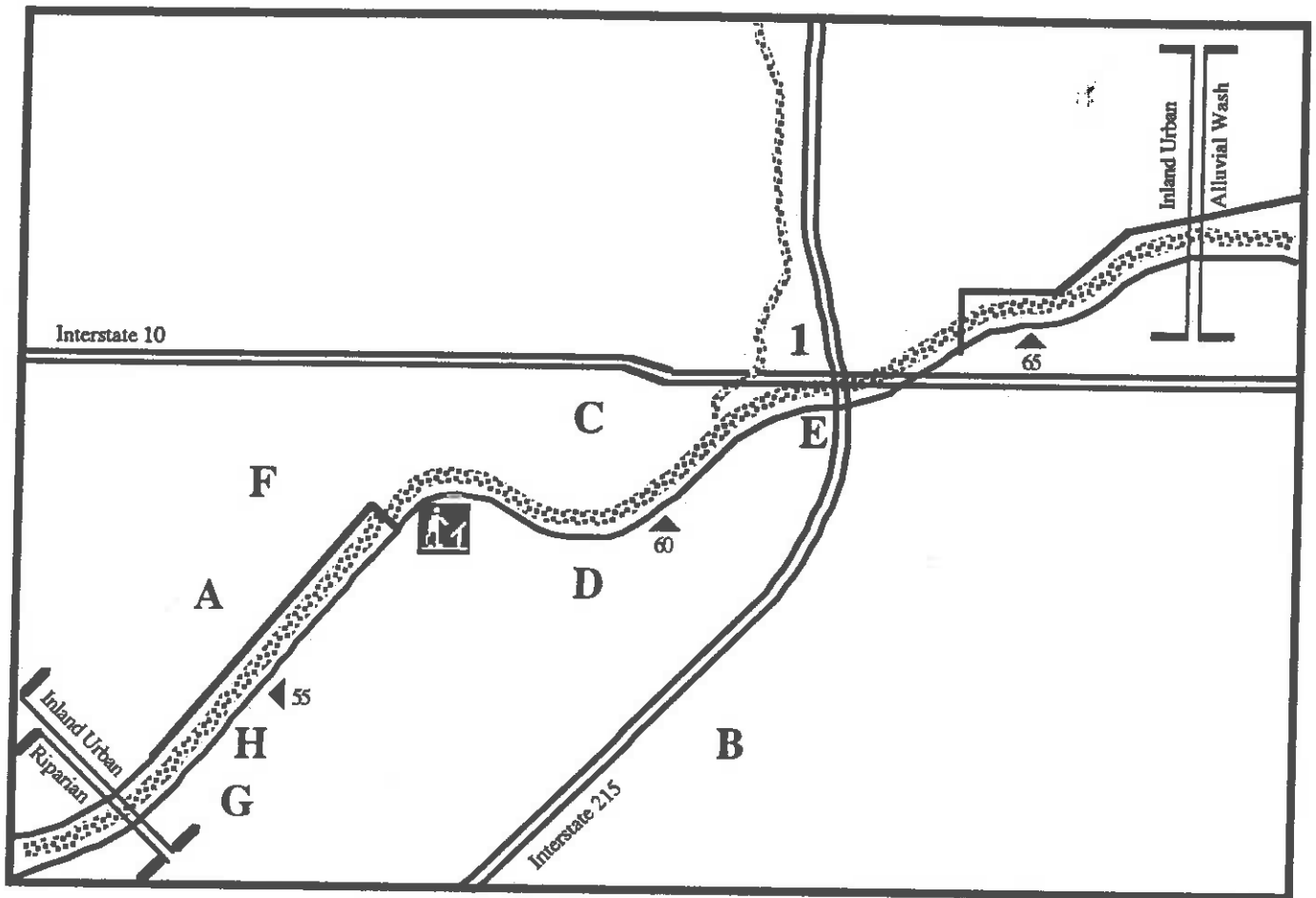







Figure 6-6: Inland Urban

Map Key	Feature
	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center

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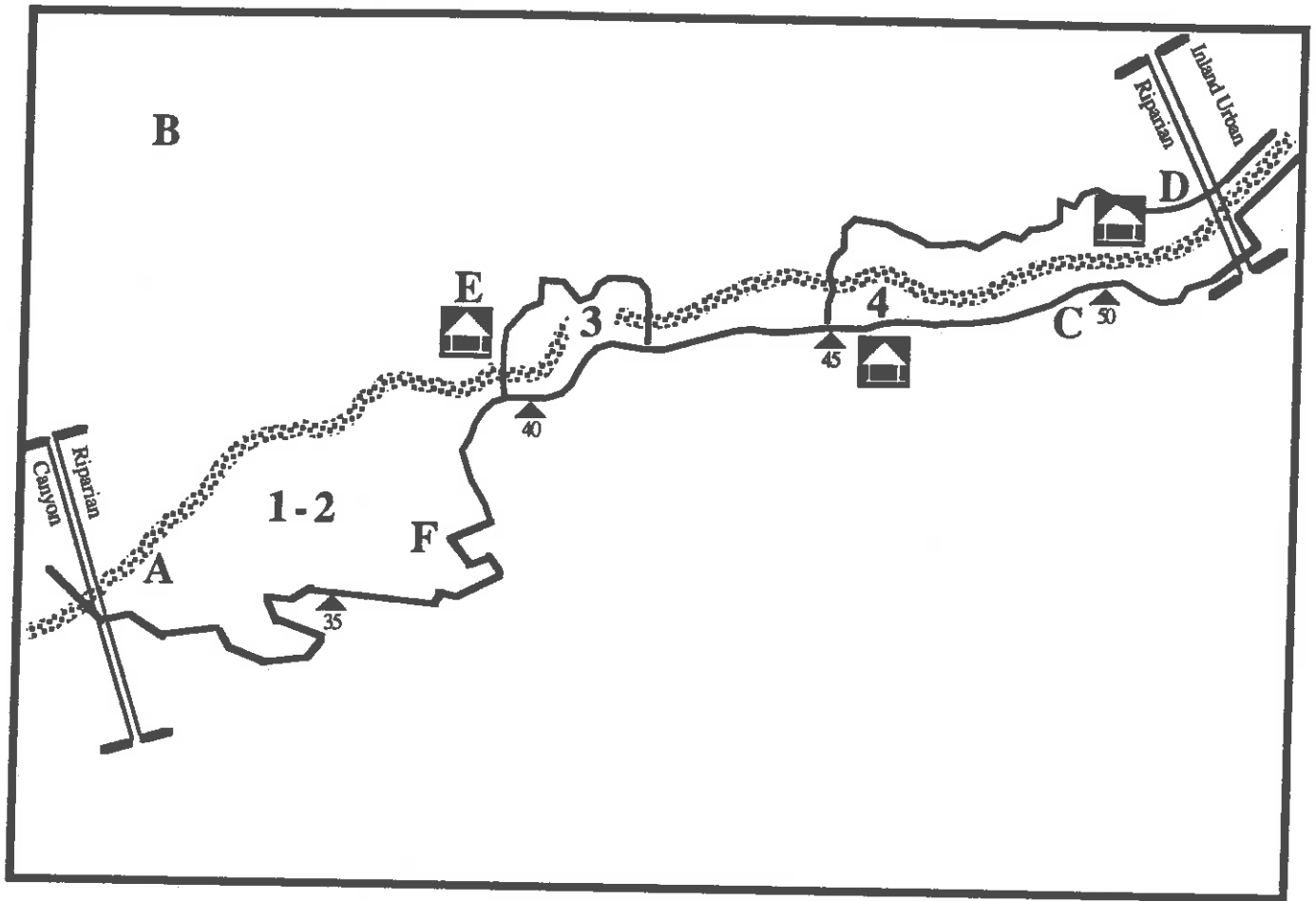









Figure 6-5: Riparian

Map

Key Feature

	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

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TABLE 6-5: Riparian

Educational Themes: Southern cottonwood / willow riparian landscapes
 Endangered species and the need to protect them
 Woodlands and water quality
 Migratory waterfowl
 The Rancho era

Map Key	Approx. Trail Mile	Feature
A	33.0-37.0	Prado Dam
B	--	Yorba Slaughter Adobe: built in 1850, an example of early California architecture.
C	50.0	De Anza Crossing: at Anza Narrows Regional Park (County of Riverside); on January 1, 1776, the first party of colonists to come overland to the Pacific coast crossed here.
C	50.0	Union Pacific Railroad Bridge: built in 1903, the bridge is still in use today and has withstood numerous floods.
D	53.0	Jensen-Alvarado Adobe: a living history park and museum. Home of Cornelius Jensen who purchased the property from Louis Rubidoux in 1865, built the brick house in 1868 and later a winery.
E	--	Prado County Museum: in Prado Regional Park (County of Riverside).

- | | | |
|---|-----------|--|
| F | 38.0 | Butterfield Stage Trail: stage route through Corona and Chino Hills. |
| 1 | 34.0-43.0 | Prado Basin: Southern California's largest riparian landscape with a extreme diversity of wildlife; important resource for migratory waterfowl and such rare, threatened, and endangered species as Least Bells Vireo, Western Yellow Billed Cuckoo, and Burrowing Owl. |
| 2 | -- | Least Bells Vireo: listed Federal Endangered Species; numerous nesting sites within the Prado Basin. |
| 3 | 39.0-50.0 | Quicksand: a common occurrence along the river in this reach |
| 4 | 46.0-47.0 | Hidden Valley Wildlife Area: owned by the Wildlife Conservation Board and managed by the California Department of Fish and Game. |

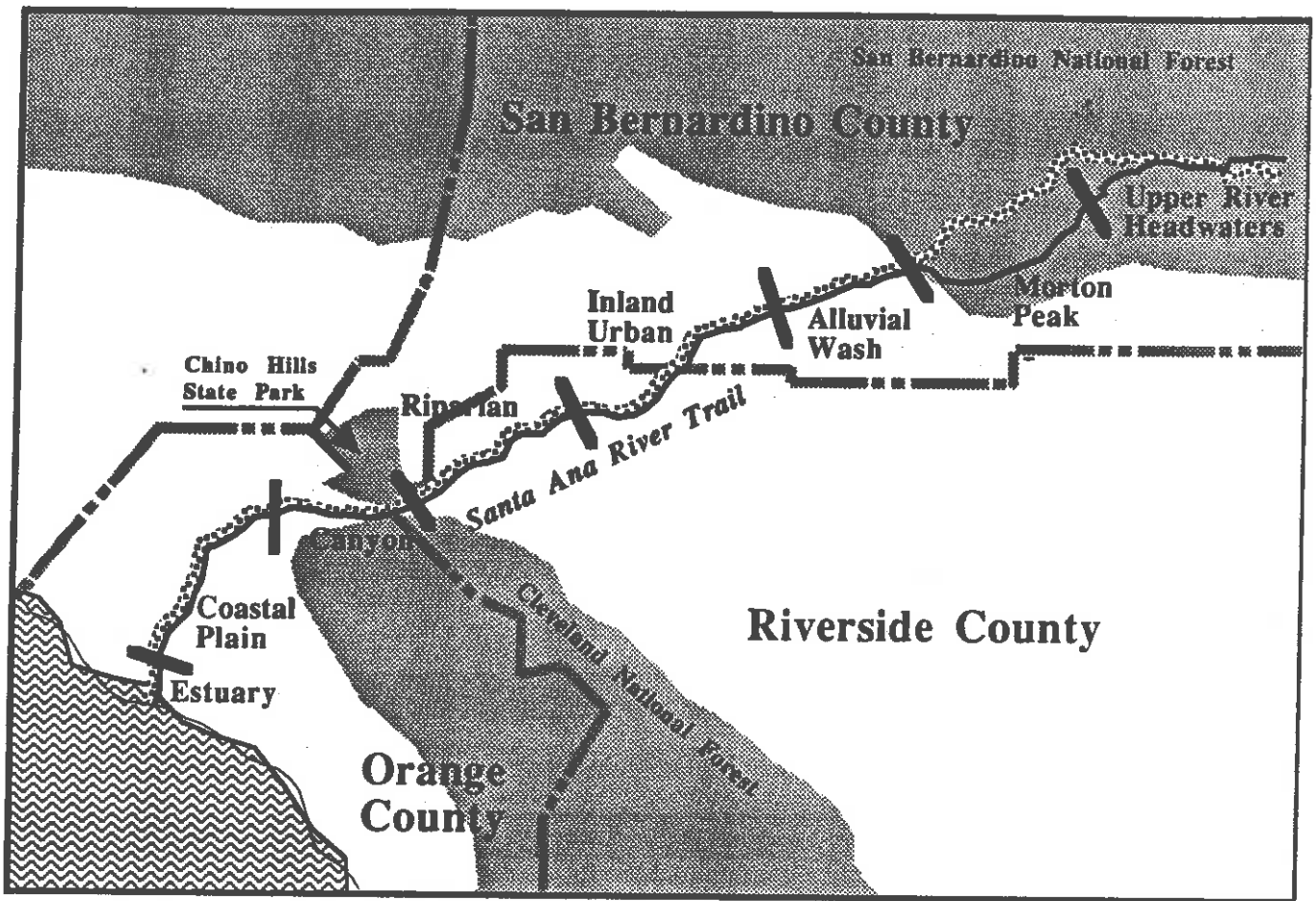


Figure 6-1: Educational Settings

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TABLE 6-6: Inland-Urban

Educational Themes: Hispanic culture and its legacy - the "Inland Empire"
 The hidden water below the stream In between the mountains;
 in between the faults; earthquakes
 Coastal sage plant communities

Map Key	Approx. Trail Mile	Feature
A	57.5	Agua Mansa Cemetery and County Museum: remnant of Agua Mansa community destroyed by floods in late 1800's; replica of the original chapel exists.
B	--	Bandini-Cota Adobe: National Register Historic Site; stage route stop in late 1880's and rich in Native American and archaeological artifacts; one of six ranchos occupying the San Bernardino Valley; granted to Juan Bandini in 1838. Part of a 32,000 acre Rancho Jurupa grant that included both banks of the Santa Ana River from the mouth of Cucamonga Wash to Slover Mountain in present day Colton.
C	61	South Colton Barrio: 1.3 square mile community reflecting trends of Chicano working class history. San Salvador Area: contains two of California's oldest Hispanic communities.

- D 59.5 **Lime Kilns:** near Holly Street on bluffs overlooking the river. Agua Mansans dug holes, as though for wells, with depth equal to the height of the bluff and hollowed the burning chamber to a wider diameter. Then they tunneled into the base of the bluff to meet the pit and complete the furnace. Two kilns in good state of preservation.
- E 62.5 **Route 66:** Chicago to the east and Los Angeles to the west.
- F -- **Portland Cement Plant:** 1917 strike against the Portland Cement Company by Chicano workers organized as "Trabajadores Unidos".
- G 53.0-54.0 **Mount Rubidoux:** prominent 1300' high mountain now a Memorial Park (City of Riverside); scenic overlook providing vistas over the City of Riverside and the Santa Ana River. Famous for the Easter sunrise service started by the builder of the Mission Inn.
- H 54.0 **Buena-Vista / Mission Bridge:** local historic landmark in Carlson Park (City of Riverside) consisting of the original bridge monuments marking the entrance to the City of Riverside.
- I 62.5 **San Jacinto Fault:** one of Southern California's major faults

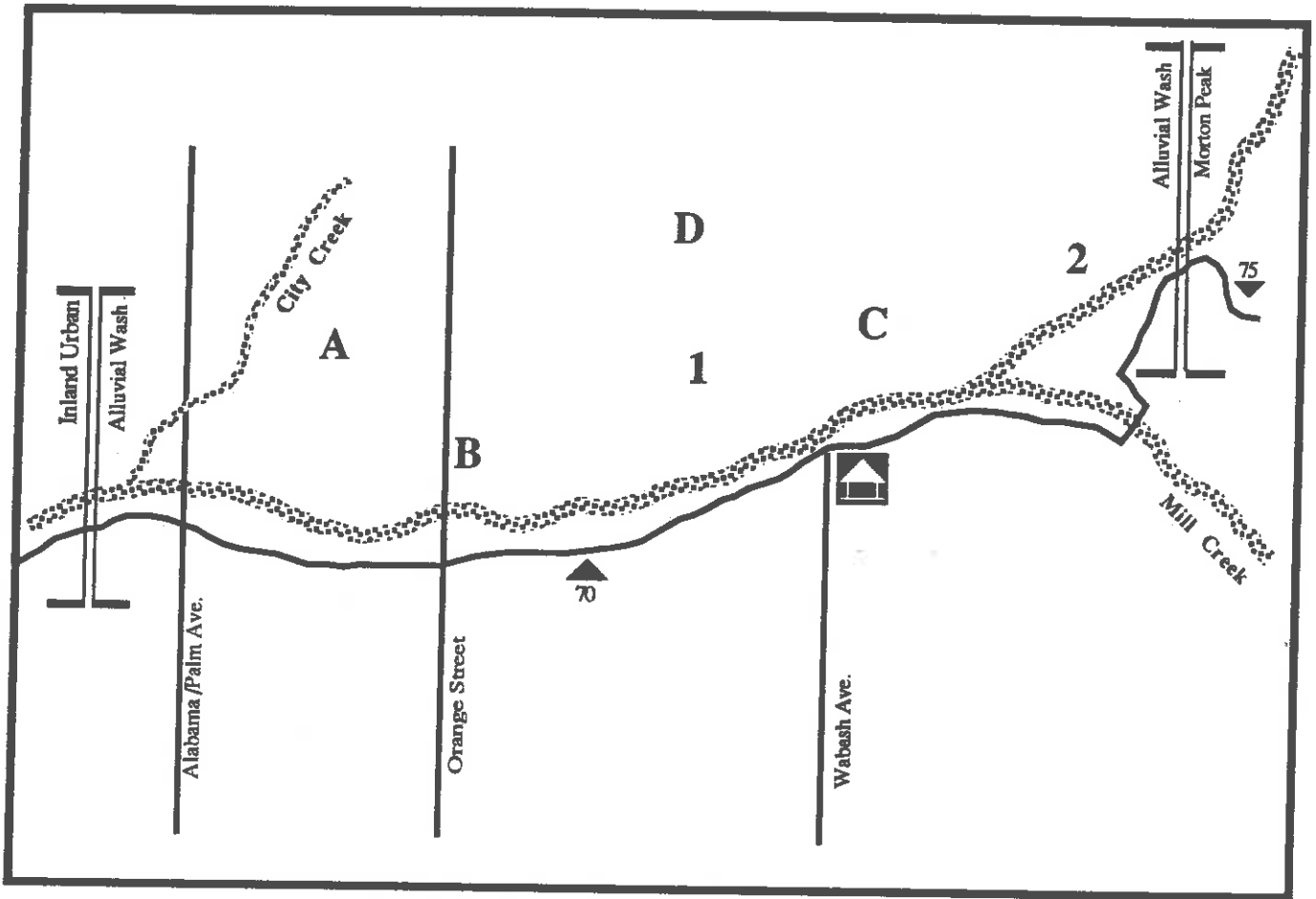









Figure 6-7: Alluvial Wash

Map

Key Feature

	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

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TABLE 6-7: Alluvial Wash

Educational Themes: Use of water for groundwater recharge
 The role of rare plants
 The value of sand and gravel

Map Key	Approx. Trail Mile	Feature
A	67.0-69.0	Sand and Gravel Mining: the source of most urban development.
B	69.0	Francis Cuttle Wier Dam: under the Orange Street Bridge, constructed in 1932 by Civilian Conservation Corps; used to spread water.
C	72.5	Cone Camp: first buildings erected in 1930-31 by the San Bernardino Valley Water Conservation District; Civilian Conservation Corps Camp from 1931-1938.
D	70.0-75.0	Seven Oaks Dam Borrow Area: Wash area gravel to be used for construction of Seven Oaks Dam (Corps).
1	70-72	Rare Plants: the Santa Ana Woolly Star (<u>Eriastrum densifolium sanctorum</u>) that occurs only on sandy beaches along the river; and the Slender-horned Spineflower (<u>Chorizanthe leptoceras</u>), one of the most severely endangered plants in Southern California is a small prostrate annual.

2 --

San Andreas Fault: California's longest and most active fault line.

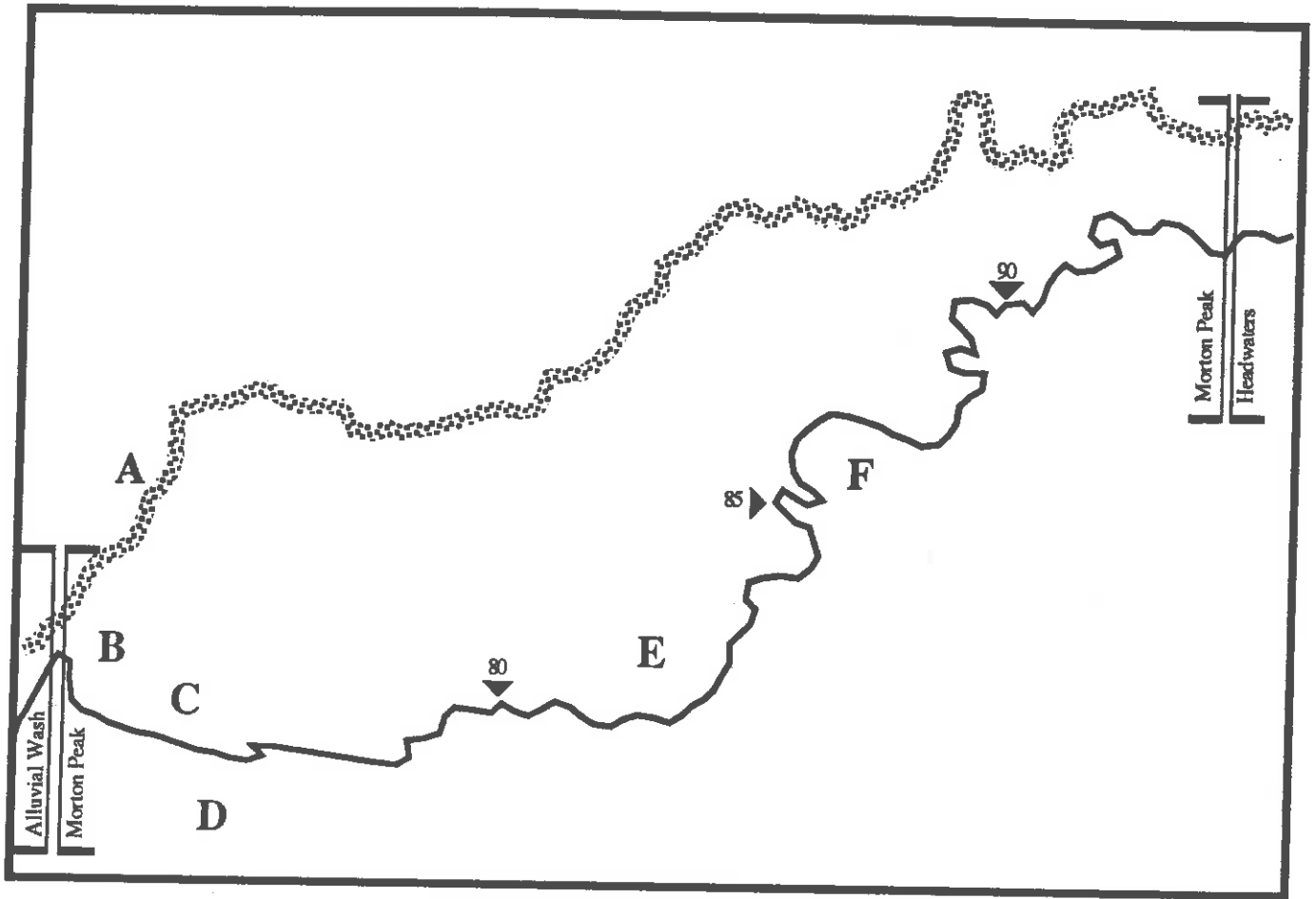









Figure 6-8: Morton Peak

Map

Key Feature

	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

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TABLE 6-8: Morton Peak

Educational Themes: Use of water for farming and hydroelectric power
 Gateway to the high country
 Chaparral habitat

Map Key	Approx. Trail Mile	Feature
A	73	Seven Oaks Dam: proposed Corps of Engineers dam in canyon area.
B	73	Southern California Edison Company Santa Ana Canyon Powerhouse System: powerhouse #1 completed in 1898.
B	73	Santa Ana Canyon Trail/Road: early route to upper Santa Ana River; route taken by Benjamin Wilson when he discovered Bear Lake; subsequent use by bear hunters, trappers, and prospectors. Heyday of road from 1900 to 1916 as gateway to Bear Lake Resorts; subject to frequent flooding.
B	73	Greenspot Road Bridge: built in 1912 as a crossing on the Mojave River near Victorville; moved to Santa Ana River in 1933.

- C 74.5 **Redlands Canal:** begun in 1885;
6.7 miles long
- Bear Valley Highline Canal:**
operational in 1889;
- D 75 **Sunrise/Brown Ranch:**
established in early 1880's and
is the oldest continually
inhabited site in Mill Creek
Wash.
- E 82 **Morton Peak / Morton Peak**
Lookout: built in 1933-34 by
Civilian Conservation Corps.
- F 85-86 **Thomas Hunting Ground:**
popular in late 19th and early
20th century area for deer
hunting; named for either Everett
Thomas (Angeles and San
Bernardino Forest reserve
supervisor from 1902 to 1905)
or, more likely, Mark Thomas
who accompanied W.O.
Goodyear of the California
Geological Survey on the first
known ascent of San Gorgonio
Mountain on June 2, 1872.

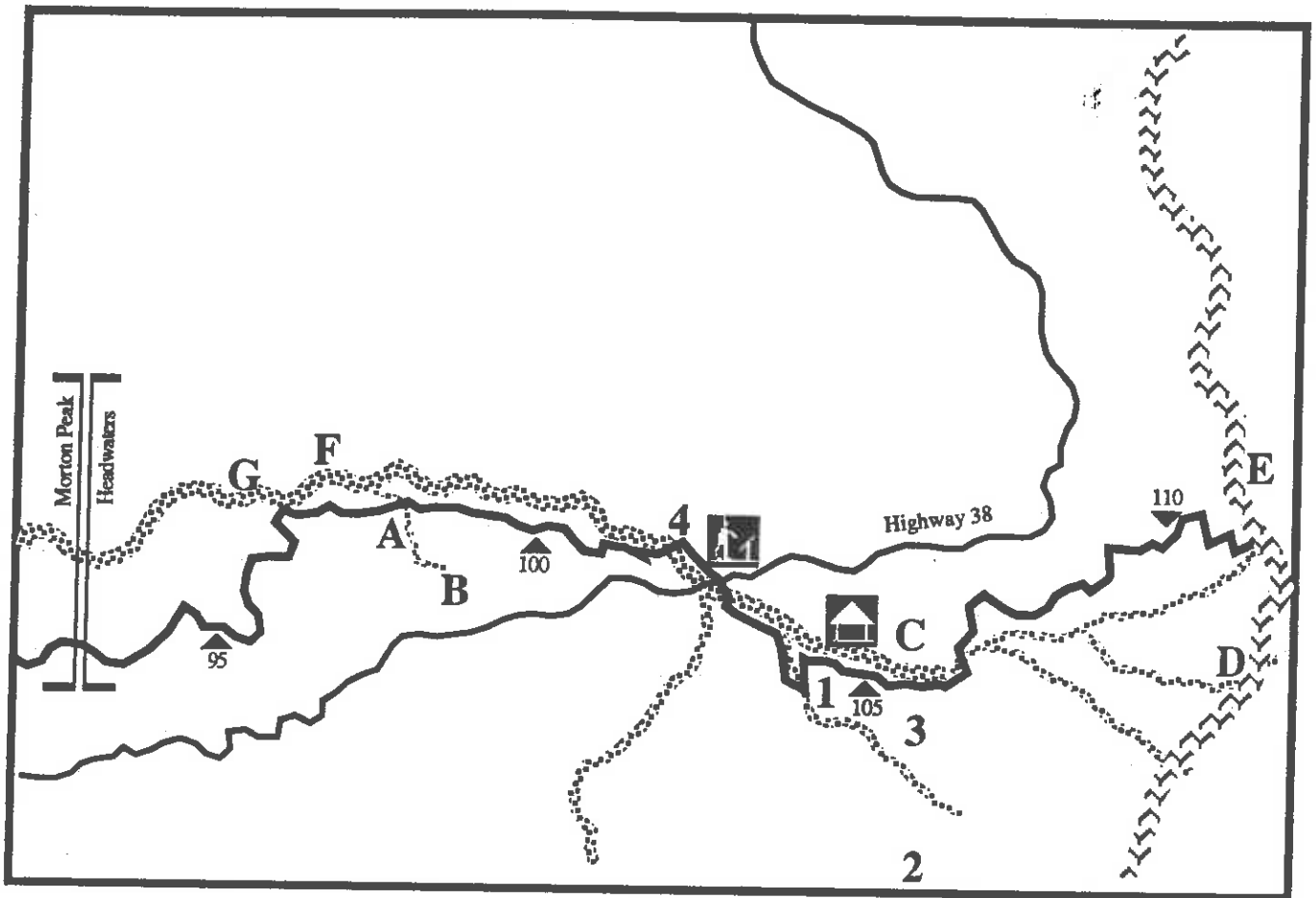


Figure 6-9 Headwaters / Upper River

Map

Key Feature

Key	Feature
	Santa Ana River
	Santa Ana River Trail
	Trail Mile Marker
	Interpretive / Education Trail
	Education / Natural Science Center
	Cultural Feature
	Natural Feature

Santa Ana River Corridor Trail System Master Plan

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TABLE 6-9: Headwaters / Upper River

Educational Themes:

- Native American mountain life (Serrano culture)
- Historic settlement and resort patterns
- Logging, grazing and recreation effects on landscape and habitat
- The Pacific Crest / The origins and paths of water
- Mixed coniferous and mountain riparian habitats
- Clean, cold water and its fishery

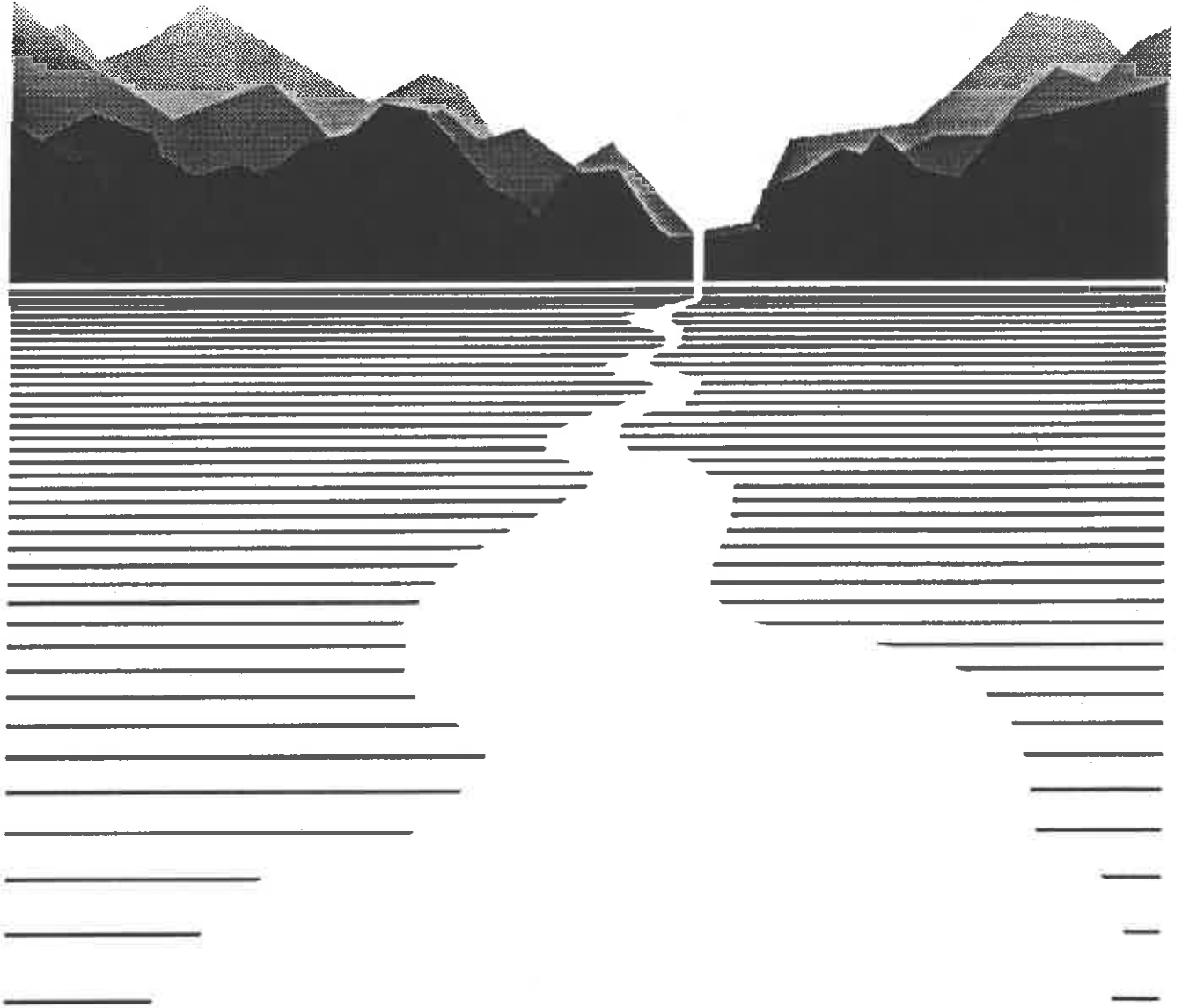
Map Key	Approx. Trail Mile	Feature
A	98	Barton Sheep Trail: West Fork of Barton Creek (aka Peralta Creek) used to drive sheep to the mountains for the summer; first drive in 1862 under the guidance of a Mexican sheepherder named Peralta.
B	98-100	Barton Flats: summer grounds from 1962 to 1880's for sheep of Dr. Benjamin Barton, a leading pioneer of the San Bernardino Valley.

Santa Ana River Corridor Trail System Master Plan

TABLE 6-9: Headwaters / Upper River (continued)

Map Key	Approx. Trail Mile	Feature
C	105.0	Big Meadows/Heart Bar Ranch: first settled by Mormon's in mid-1850's; homesteaded by Charles Martin and Willie Burton who registered the "heart bar" brand on January 14, 1884; cattle grazing; members of the infamous McHaney gang. 1/2 interest bought by Al "Swarty" Swarthout in 1907; cattle sometimes driven up fish creek and down to Whitewater Station via. Mission Creek.
D	110	Coon Creek Jumpoff: a private cabin and outbuildings built on Forest Service lands by mistake.
E	110	Pacific Crest National Scenic Trail: at elevation 8600', the Santa Ana River trail joins this approximately 2400 mile trail extending from the Mexican to Canadian Borders.
F	98.0	Seven Oaks: named by C. Matthew Lewis after his birthplace
G	--	Apuritaimibit: Serrano village site.

- 1 104.5 **Santa Ana River:** formed by
confluence of Coon Creek and
Heart Bar Creek.
- 2 **San Gorgonio Mountain:**
11,499' high and highest
California mountain south of the
Sierra; also called "Old
Greyback".
- 3 106.0 **Big Meadow:** mountain meadow
that attracted early interest for
summer grazing of first sheep
and then cattle.
- 4 101.0 -
106.0 **Mountain Riparian Plants:** the
linear plant along the Santa Ana
River that exemplifies the way
"riparian" plants change as the
river moves towards the ocean.



7.0 Marketing

7.0 MARKETING

"To try to get results without a plan is like driving in a strange city without a map"

The focus of "marketing" the Santa Ana River Trail is to increase public and political support for the trail system and to identify those marketing tools that will assist in realizing the social and economic benefits the trail can have for both the individual user and the communities surrounding the trail.

7.1 Objectives

The following objectives apply to the initial marketing activities associated with the Santa Ana River Trail:

- provide immediate visibility for the trail as a regional, cooperatively sponsored public amenity with a broad base of support and appeal.
- portray the trail as a vital "investment" to the health and well being of all citizens and communities surrounding the trail.
- develop a sense of "high priority" need for adopting, funding and building the trail.
- highlight and link the recreation benefits of the trail with the benefits that trail access to the river environment provides for science education.
- target initial marketing efforts in a manner that assures adoption of the trail concept by those political entities that have not as yet sanctioned and incorporated the concept into their planning efforts.

The following objectives, though not necessarily exclusive from initial marketing efforts, apply to the on-going marketing of the Santa Ana River Trail:

- educate those with skeptical views about trails and trail use to dispel the real fears that may be held but are known not to be based on actual fact.
- develop a sense of continuity for political and financial commitment needed to assure success.

- provide continuing "event" opportunities for sharing credit with all involved for the success of the entire trail as each new aspect of the trail is realized.
- encourage development of multi-media educational presentations about the values of the river that in turn develops a sense of stewardship among the citizenry.

Develop programs for "direct" marketing, and "indirect" marketing.

7.2 Marketing Tools

The following "tools" useful for marketing the trail should be developed and maintained by the Santa Ana River Management Group for use by the Outreach Coordinator (see also Section 10.0 - Management, Operations and Maintenance).

7.2.1 Master Mailing List

The foundation of any marketing plan is a mailing list. Many types of organization and individuals should be included on the Santa Ana River Trail list. The overall list should be organized into the following sub-lists:

- recreation and land management agencies
- related regulatory agencies
- elected representatives
 - federal
 - state
 - county
 - city
 - school districts
- individual county/city park and recreation commission members and task forces
- trail user groups and organizations
- individual trail users
- individual landowners
- organization camps
- business and corporate sponsors (existing and potential)
- funding sources
- media (newspapers/television/radio)
- chambers of commerce

The mailing list should be cross-coded by county and city such that either blanket mailings or geographically specific, targeted mailings may be made.

7.2.2 Media Events

Three types of media events should be organized: initial Master Plan announcement (see Section 7.3); ribbon cutting events with the opening of each new trail segment; and associated with each occurrence of the Crest to Coast Trail Event.

7.2.3 Image Poster/Brochure

A separate poster/brochure was developed for this project. Its purpose is to promote continued funding for the project.

7.2.4 Press Releases

A regular flow of press releases should be developed about the trail. At a minimum, this should be done quarterly. Opportunities include, but are not limited to:

- Each time the master plan is "adopted" by a county, city, or special district trail into their plans and policies.
- With the initiation and completion of new studies about the river. These include research studies by local schools and agencies.
- After additional lands for the trail are acquired.
- With the completion of each trail segment.
- For the Crest-to-Coast Trail Event.
- Announcements of sponsorship or funding agreements.
- Awards announcements (see Section 7.2.8)

A reoccurring theme should be "the Santa Ana River Trail has taken one more step towards becoming a reality today with. . ."

7.2.5 Newsletter

To be produced by the open membership Santa Ana River Trail Council (see Section 8.3) with technical support from the Outreach Coordinator and financial support from business/corporate sponsors, a quarterly newsletter should be developed and sent to the entire mailing list. The focus of the newsletter should be on the progress of implementation, characterizing new trail segments and opportunities, and grass-roots actions needed in upcoming months.

7.2.6 Video Tape

Two versions of a educational video tape should be produced about the river trail system. They should be produced for presentation and use by local television stations as a public service (i.e. a twenty-six minute maximum length).

The target audience for the first version would be elected officials and the general public. It should highlight: the current opportunities provided by the existing river trails; the overall interpretive/educational themes for the river trail system (see Chapter 6.0); and the overall goal of a continuous corridor trail and the support that exists for it.

The second version would be targeted for in-classroom use by local school districts and emphasize the natural and cultural relationships of the river.

7.2.7 Interpretive and Science Education Guides to the Santa Ana River Trail

Like the video tape, private sponsorship should be sought for a general purpose trail guide about the natural and cultural history of the river corridor.

Second, sponsored by all the school districts along the river corridor, a research grant should result in a guide to the rivers natural and cultural resources, keying them to the concepts outlined in the State Science Framework Curricula.

7.2.8 Publication in Recreation Related Journals

As the trail system progresses towards completion, articles about the trail, its successes and management challenges, should be developed by individual recreation supply agencies for professional publications as appropriate.

7.2.9 Awards

There are numerous professional and community service awards programs that occur each year. Many aspects of the trail planning, design, and programmed use could qualify for special recognition.

7.3 Initial Marketing Activities (1990)

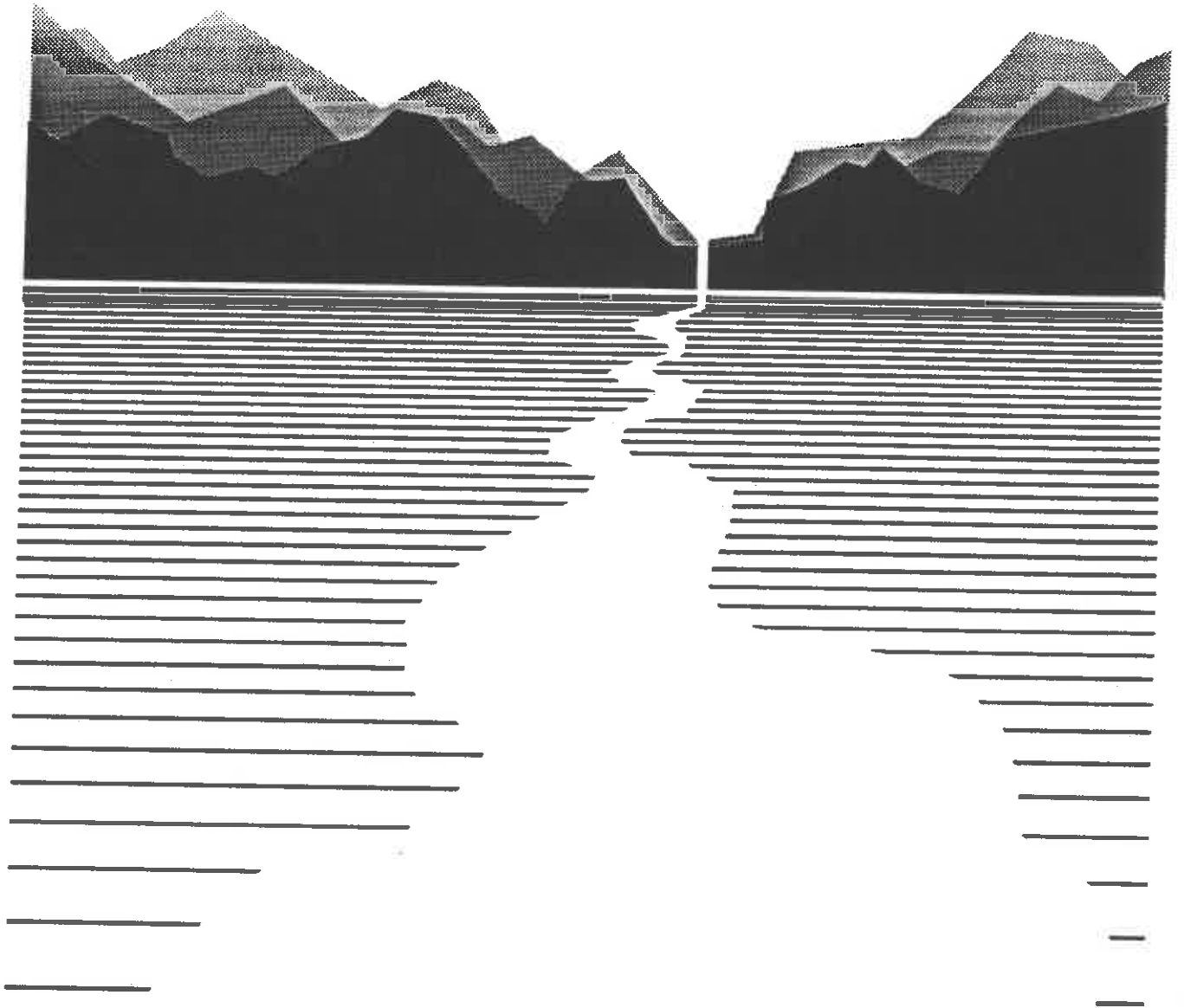
A marketing program is an ongoing activity. Responsibility for initiating marketing activities will be with the agency Trail Management Group and its Outreach Coordinator (see Section 10.2). Later leadership for the marketing effort should be by the Santa Ana River Trails Council. Table 7-1 outlines activities and responsibilities for initiating the marketing program.

7.4 Ongoing Marketing Activities (1991 and beyond)

Specific marketing targets should be re-defined on a year-by-year basis in cooperation with the Santa Ana River Trails Council (see Chapter 8.0).

TABLE 7-1: Initial Marketing Activities

Responsibility	Marketing Task
Outreach Coordinator Group Trail Council	Develop the comprehensive mailing list as outlined in Group Trail Council Section 7.2.1
Management Group Outreach Coordinator Trail Committee	Conduct a Joint City/County/State/Federal/Boards Education Media Event. After either the Master Plan by the land management agencies as policy or "Resolutions" supporting the Master Plan have been obtained from related agencies (such as School Districts see Table 11-1), a press conference/media briefing should be conducted to "announce" the plan and outline its goals, objectives, and social and economic benefits. It should be made clear that sponsorship for the Master Plan is multi-jurisdictional. Ideal timing for the event would be in Spring, 1991.
Outreach Coordinator	Work with the Tri-County Conservation League and others in the Trail Council to develop a first edition of a Santa Ana River Trail Newsletter to include the Image Poster/Brochure. Later editions should be produced by the Outreach Coordinator and volunteer members of the Task Force.
Outreach Coordinator Staff of Special Districts	Present the Master Plan to seek supporting resolutions (see also Chapter 11.0).



8.0 Public Involvement

8.0 PUBLIC INVOLVEMENT

The purpose of this element is to identify citizen groups and government agencies who have an interest in the Santa Ana River Trail system. A schedule for involvement and strategy for increasing citizen interest in continuing the planning process and implementing individual trail components is identified.

8.1 Objectives for Involvement

The basic objectives for involving members of the public in the planning, implementation, and programming of the trail are:

- to recognize the absolute role of grassroots support in affecting political and community acceptance of the trail system.
- to incorporate ideas and suggestions for how the trail should be built, operated, and maintained.
- to develop and nurture "volunteerism" for the vital assistance to agencies that can be provided in all aspects of trail planning, operations, marketing, and use.

8.2 Master Plan Workshops

The preparation of the Master Plan involved four community workshops. The minutes of these workshops are found in the Appendix, Chapter 14.0.

8.3 Santa Ana River Trail Council

An "open membership" Council of trail interests should be formed as the follow-up organization to the Santa Ana River Task Force. The organization of the Santa Ana River Trail Council would be one of the major responsibilities of the Outreach Coordinator (see Chapter 10.0, Figure 10-1 for the general composition of the Trail Council and how it relates to the overall management of the trail system including the Outreach Coordinator and the Trail Management Group). Tables 8-1 through 8-5 list agency and group members of the Council.

The charge of the Santa Ana River Trail Council is to work with the overall Trail Management Group (composed of Orange County, Riverside County, San Bernardino County and San Bernardino National Forest) and the Outreach Coordinator to recommend policies, as needed, for the trail system. Other key responsibilities of the Council are to assist in marketing and calling to action support for the trail when it is needed. The intent of the Council is not to replace existing inter-agency working

relationships, such as those that may exist on cooperative projects between county and city parks departments. The intent of the Council is to provide a common forum for all the interests involved with the Santa Ana River Trail to share ideas, resolve conflicts, and provide technical and volunteer support.

8.3.1 Trail Council Meetings

There should be quarterly, sub-regional meetings of the Council on an annual basis. Each of these should be small sessions located and organized around the progress within each of the three counties involved. This is to encourage local participation in the Council by as wide a support base as possible. The meetings will update all on the progress of local trail plans and the state-of-trail use.

The fourth meeting of each sub-regional group should be an annual event for the entire Council membership. It will focus on system-wide progress and issues of concern common to many or most of the parties involved. The location for the annual meeting will rotate among the counties and the San Bernardino National Forest.

8.3.2 Council Newsletter

Working with volunteers, the Outreach Coordinator will oversee the publication of a quarterly newsletter about plans, land use proposals, and policy development that affects the trail.

TABLE 8-1: Santa Ana River Trail Council/Federal, State, County and Municipal Agency Members

Federal Agencies

- National Park Service
- Corps of Engineers, Los Angeles District
- U.S. Fish and Wildlife Service, Region
- U.S. Forest Service

State Agencies

- Department of Parks and Recreation
- Chino Hills State Park
- Huntington State Beach
- Department of Fish and Game, Region
- Department of Education
- Department of Transportation
- State Office of Historic Preservation

County Agencies

- Orange County, Harbors, Beaches and Parks Division
- Riverside County Parks Dept.
- San Bernardino County Regional Parks Dept.

Cities

- Huntington Beach
- Newport Beach
- Costa Mesa
- Fountain Valley
- Anaheim
- Yorba Linda
- Orange
- Corona
- Norco
- Riverside
- Rialto
- Colton
- Grand Terrace
- Loma Linda
- San Bernardino
- Highland
- Redlands

TABLE 8-2: Santa Ana River Trail Council / Special District Members

Land Management / Regulatory Districts

- Chino Hills CSA 19
- Jurupa CSA
- Orange County Flood Control District
- Riverside County Flood Control and Water Conservation District
- San Bernardino County Flood Control District
- San Bernardino Valley Water Conservation District
- Orange County Water District

Schools / School Districts

- Orange County
 - Orange Unified School District
 - Placentia Unified School District
 - Anaheim City School District
 - Santa Ana Unified School District
 - Fountain Valley School District
 - Newport Mesa Unified School District
 - Huntington Beach City School District
 - Garden Grove Unified School District
 - UC Irvine
 - California State University Fullerton
 - Santa Ana College
 - Orange Coast Community College
 - Southern California College

- Riverside County
 - Alvord Unified School District
 - Corona-Norco Unified School District
 - Jurupa Unified School District
 - Riverside Unified School District
 - UC Riverside
 - Riverside Community College
 - California Baptist College
 - Loma Linda University - La Sierra Campus

- San Bernardino County
 - Bear Valley Unified School District
 - Yucaipa Joint Unified School District
 - Redlands Unified School District
 - San Bernardino City Unified School District
 - Colton Unified School District
 - Loma Linda University
 - California State University, San Bernardino
 - Crafton Hills College
 - Santiago College
 - University of Redlands
 - San Bernardino Community College

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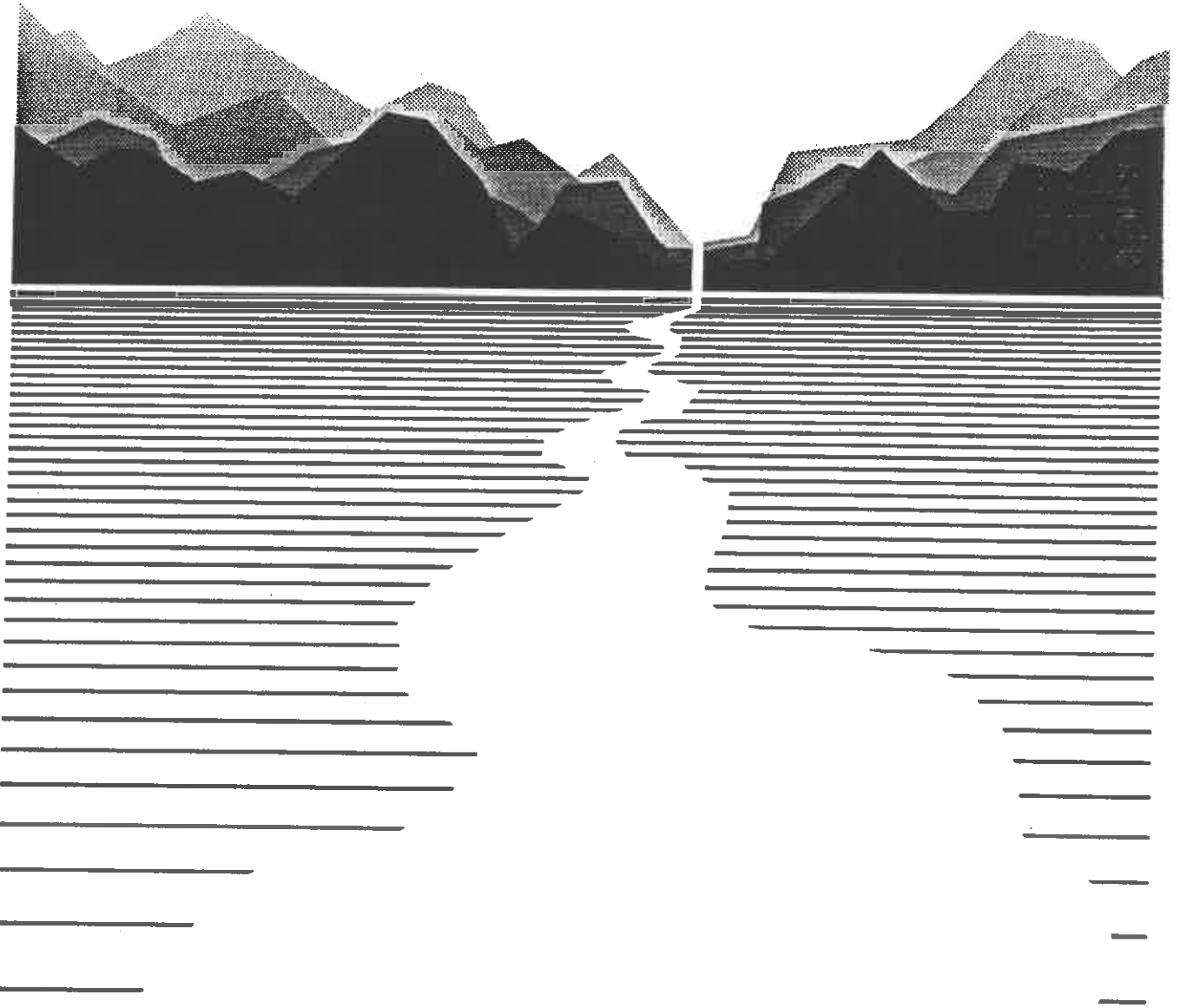
TABLE 8-3: Santa Ana River Trail Council / User Group Members

- Tri-County Conservation League
- Riverside Recreational Trails
- Mira Loma / Jurupa Horsemans Clubs
- Norco Horsemans Association
- Whippin River Pony Club
- Rocky Hills Rider Club
- Bicycle Club of Irvine
- Redlands Bicycle Club
- Others (to be developed)

TABLE 8-4: Santa Ana River Trail Council Camp/Homeowners Associations

Barton Flats Camping Association

- YMCA of Greater Whittier
- American Diabetes Association
- Centinela Valley YMCA
- Redlands Family YMCA
- Campfire Inc.
- Boy's Club of Pasadena
- Anaheim Family YMCA
- Boy's Club of San Gabriel Valley
- YMCA of Metropolitan Los Angeles
- Long Beach Area Council, BSA
- San Geronio Girl Scout Council
- West Gabriel Valley YMCA
- U.C.L.A. Unicamp
- Campfire Council of the Foothills



9.0 Economic Benefits

9.0 ECONOMIC AND USE BENEFITS

This element overviews the many rationale that show the benefits to local government, communities, and businesses along the trail system. An approach is outlined for evaluating the most significant external benefits of the trail system. The purpose of this section is to demonstrate that need for the Santa Ana River Trail system is acute and that the benefits of the system, once in place, will not only satisfy a need but prove to be a valuable investment of public resources.

9.1 Two Views to the Value of Regional Trails

The first view of benefit assessments associated with regional trails has traditionally been based on the number of users of that trail system. User related benefits are assigned through a series of economic factors: the costs of providing recreation related services; the willingness to pay for the opportunity of enjoying a particular recreation activity as measured by the quantity and price of commodities needed and bought for that activity; the primary and secondary benefits associated with the related employment generated by the trail use; or, the ability of a given recreation activity to generate user fees. These may be viewed as "direct" benefits derived from the private market sector philosophy that when a private good is purchased the buyer is purchasing the benefits derived from that good. Public officials, under the close scrutiny of an ever increasingly watchful public eye, have demanded increasingly objective criteria to support their financing decisions. Hence the reliance on user-related dollar values as the principle rational for decision making. However, the reason trails and related park and open space lands tend to be publicly provided in the first place is because all benefits are not related to the "direct" economics of the marketplace. Trail related lands and facilities provide a "public good" whose evaluation is not found in the roles of fees, goods and services.

The second view sees that there are significant additional "external" benefits of trail networks that have no place in the traditionally used economic logic of the private market sector. Trails and the outdoor recreation and education experiences they support, have "merit" beyond their economic value. All society benefits from the toning that outdoor experiences affords our physical and mental health. Additionally, there are economic benefits that are not related to those "purchased" by the trail user and not accountable in the traditional approaches to cost/benefit analyses related to park and recreation facilities. A significant example of an external benefit is found in the increase in property values, derived from increased amenity values, of lands immediately surrounding a public facility.

9.2 Economic Benefits

Reliable data about the number of users does not exist for the Santa Ana River Trail as an entire system as that system is not now in place. Some counts have been made in Orange County that have rendered the typically produced projections of benefits by the Corps of Engineers as, at best, questionable (see Section 9.2.1).

The approach taken here is to evaluate the economic benefits of the trail to the community at large: governments that rely on property taxes to sustain their ability to function; and landowners of all types on who place great value on their property as an investment. This is done by estimating changes in land values, hence the tax base, of property along the river that can be assigned to the trail system. This approach be evaluated, as done here, on a county level or it also permits calculations to be made on an individual municipal level if needed at a later time. Land value assessments may also can be updated over time as land uses and property values change.

Though significant economic activity can be stimulated by use of a trail, for example through the purchases of bicycles or horse feed or the like, it would be hard to proportion these expenses between the Santa Ana River Trail and other trails used within the region. The increase in property values accrued from the presence of the trail more than outweighs the increase in economic activity generated by the trail.

For the recreationist, conservationist, and educator on whose use of trails unit values are determined hardly need to be convinced about the value of public access along a river system.

9.2.1 Economic Benefits from Property Values

Various studies have been conducted throughout the United States involving the increase in land values near trails, linear greenways, and parks. Some of their findings have been:

- The increment in "residential" property values attributed to park related amenities decrease as the distance away from the park increases. Most studies have found that location effects are negligible beyond 1000 to 3000 feet from a park. (Spickard, Steven, "The Economic Benefits Generated for the East Bay Community by Its Regional Park System: A Report to the East Bay Regional Park District." 1978
- Property value increases have been estimated of: 33% of value within 40 feet and 9% of value at 2,500 feet away from Pennyback Park in Philadelphia (Hammer, Coughlin and Horn, "Research Report: The Effect of a Large Park on Real Estate Value." Journal of the American Institute of Planners, July 1974.); the average property value adjacent Boulder Colorado's greenbelt is about 32% higher than those 3200 feet away (Correll, Mark et. al, "The Effects of Greenbelts on Residential Properties: Some Findings on the Political Economy of Open Space," Land Economics, May 1978); in Columbus Ohio the value of Whetstone Park and the Ohio River was estimated at 7.35% of selling price (Kimmel, Margaret, "Parks and Property Values: An Empirical Study in Dayton and Columbus, Ohio.); and property values near the Burke-Gilman Trail in Seattle by an estimated 6.5% (Seattle Engineering Department, Office for Planning, Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime, May 1987.).

Numerous other examples exist.

Table 9-1 provides an estimate of property values along the river corridor that will be the primary beneficiaries of the Santa Ana River Trail. Shown are acreage calculations, a range of existing property values by land use type, and the increase in value to lands within a one-eighth mile distance of the Santa Ana River Trail system. Clearly, economic benefits would likely also accrue to some degree to properties further from the river. This would particularly be valid, for example, for lands off of feeder trails. At one-eighth of a mile (about 135 yards or a 2-3 minute walk), however, it could fairly be assumed to be the "primary" corridor of the trail.

A multiplier of 6.5% is used. This is based on the lower estimate shown from other studies from around the country (Burke Gilamn Trail, Seattle, Washington).

Figures shown for San Bernardino County stop at the San Bernardino National Forest boundary. Only those private lands immediately adjacent to one of the proposed Santa Ana River Trails and on which taxes are paid are included. Area calculations do not include: the actual riverbed and associated floodway lands; public lands such as parks, wildlife areas, wastewater treatment facilities, airports, highway rights-of-way, and major utility corridors; golf courses; or private lands that are physically separated from the trail by either the river, freeways or railroads.

A range of between \$139.7 million and \$201.8 million dollar value increase can be attributed to the "primary" property adjacent to trail. In the case of Orange County, where the trail is already in place and where land use patterns are relatively fixed, this benefit has already been greatly realized and will likely increase only marginally with additional trail amenities in place. In Riverside and San Bernardino Counties much of the land around the river is ranch land, lying vacant, or underdeveloped. Land uses are quickly changing. This estimate, then, is likely only a fraction of what the future holds in store.

9.2.2 Use Related Economic Benefits

No specific records are maintained for annual use on the existing sections of the Santa Ana River Trail. Table 9-2 compares the "estimated" maximum use for bicyclists projected by the U.S. Army Corps of Engineers for the Lower Santa Ana River with the actual use observed and documented. In 1988, the Corps using a traditional use-model, projected that a total monthly use during the peak summer season would be approximately 11,160 bicyclists. However, recent bicycle trail counts by Orange County EMA contradict the Corps' estimates. Actual monthly total of 47,164 average daily trips in July, 1988 were recorded. During the "off season" month of April, 42,168 total trips were calculated.

Santa Ana River Corridor Trails Master Plan

TABLE 9-1: Estimated Land Value Increase With Trail (by County)*
(Feb. 1990)

Feature	Orange County	Riverside County	San Bernardino County	Total
Private lands within 1/8 mile of trail	2,520 acres	1,900 acres	1,630 acres	6050 acres
Estimated land value (\$1,000's)				
- Low estimate	\$1,489,600	\$ 443,000	\$ 217,600	\$2,150,200
- High estimate	2,009,100	720,200	367,350	3,096,650
Increase in value assigned to trail @.065% (\$1,000's)				
- Low estimate	\$ 96,824	\$ 28,795	\$ 14,144	\$ 139,763
- High estimate	130,592	46,813	23,878	\$ 201,282

Source: 2M Associates

*Notes

- Land use patterns are derived from aerial photographs dated January, 1988.
- Estimates are based on the following range of values:

	County		
	Orange	Riverside	San Bernardino
Light Industrial	\$ 10-15/sf	\$ 4- 6/sf	\$ 2- 5/sf
Office Park	\$ 15-17/sf	10-15/sf	10-15/sf
High Rise Office	\$ 25-30/sf	-	-
Commercial	\$ 17-21/sf	12-15/sf	12-15/sf
Developed	\$ 800,000 -	\$300,000 -	\$100,000 -
Residential	1,000,000/acre	450,000/acre	150,000/acre
Undeveloped/Farm/Ranch	\$ 75,000 -	\$ 50,000 -	200,000/acre
		225,000/acre	

- Estimates shown are for land with or without basic infrastructure improvements; estimates do not include any building improvements.

Santa Ana River Corridor Trails Master Plan

TABLE 9-2: Comparison of Use Estimates and Actual Use on The Lower Santa Ana River*

	<u>Corps of Engr. Projections (1)</u>		<u>Actual Use at Specific Locations</u>		
	Peak Month	Peak Season	<u>Suburbia Park (2)</u>		<u>Pacific Coast Highway (3)</u>
			April	July	Memorial Day
ADT Weekdays	-	-	830	1,333	-
ADT Weekends	-	-	3,196	2,563	9,617*
Monthly Total	11,160	-	42,168	47,164	-
Season Total	-	36,828	-	-	-

Sources:

- (1) U.S. Army Engineering District. Phase II General Design Memorandum, Santa Ana River Mainstem Feature, Appendix D. August, 1988.
- (2) County of Orange EMA, Traffic Engineering. Staff Memorandum. July 27, 1988.
- (3) Bicycle Club of Irvine. 1989

Economic benefits of a Santa Ana Corridor Trail system can also be found indirectly through the user's interest in the system. This interest is reflected the time and monies individuals are willing to spend to use the trails. Based on the limited sample of bicyclists, between 450,000 and 550,000 average annual trips are likely to take place along the trail. Assuming that each two trips counted represents one bicyclist, between 225,000 and 275,000 "user days" are represented. The economic value assigned to trail users is approximately ten dollars (based on a \$9.20 dollar value used by the California Department of Parks and Recreation in their 1984 report The Recreation and Leisure Industry's Contribution to the California Economy). This converts to an approximately \$2,250,000 to \$2,275,000 annual business revenue generated.

9.3 Trends, Demand and Trail Use

9.3.1 National, Statewide and Regional Trends

The Santa Ana River, as it leaves its mountain origins and enters the alluvial plain to the west, has etched out a series of landscapes that are easily accessible from over 15 cities and urbanizing county lands as shown on Figure 9-1. The last fifteen years have seen a wealth of national and statewide legislation aimed at preserving the health of our rivers, water quality, and riverine wildlife habitat. The National Environmental Policy Act, Clean Water Act, Emergency Wetlands Resources Act and California Environmental Quality Act are but a few examples that demonstrate a changing awareness about the value of our natural heritage and the opportunities afforded by it for public recreation and educational pursuits.

There are three broad rationales for a developing trail along the Santa Ana River. These are:

Recreation: providing opportunities for a variety of recreation experiences that are trail related and are near-to-home.

Education: including the opportunities within the river corridor for educating our young, conducting scientific research, and re-creating the body and spirit by being outdoors. These experiences also build in the citizenry a sense of stewardship.

Conservation: relating to the broader concept of a Santa Ana River Greenway through which the trail would pass that encompasses the replenishment of ground water, the availability of clean water for domestic consumption, the recognition of flooding, the provision of minerals for regional growth, the saving of soils, and the preservation of habitat diversity and life that the river's environs support. Another significant conservation value created by the trail system, is the improvement in air quality that would result from commuter use of the system.

The lands around the Santa Ana River from Redlands downstream either have or are in the process of urbanizing. Regionally, Riverside and San Bernardino Counties are experiencing and are poised for a rate rapid growth unprecedented within the state as shown in Tables 9-3 and 9-4.

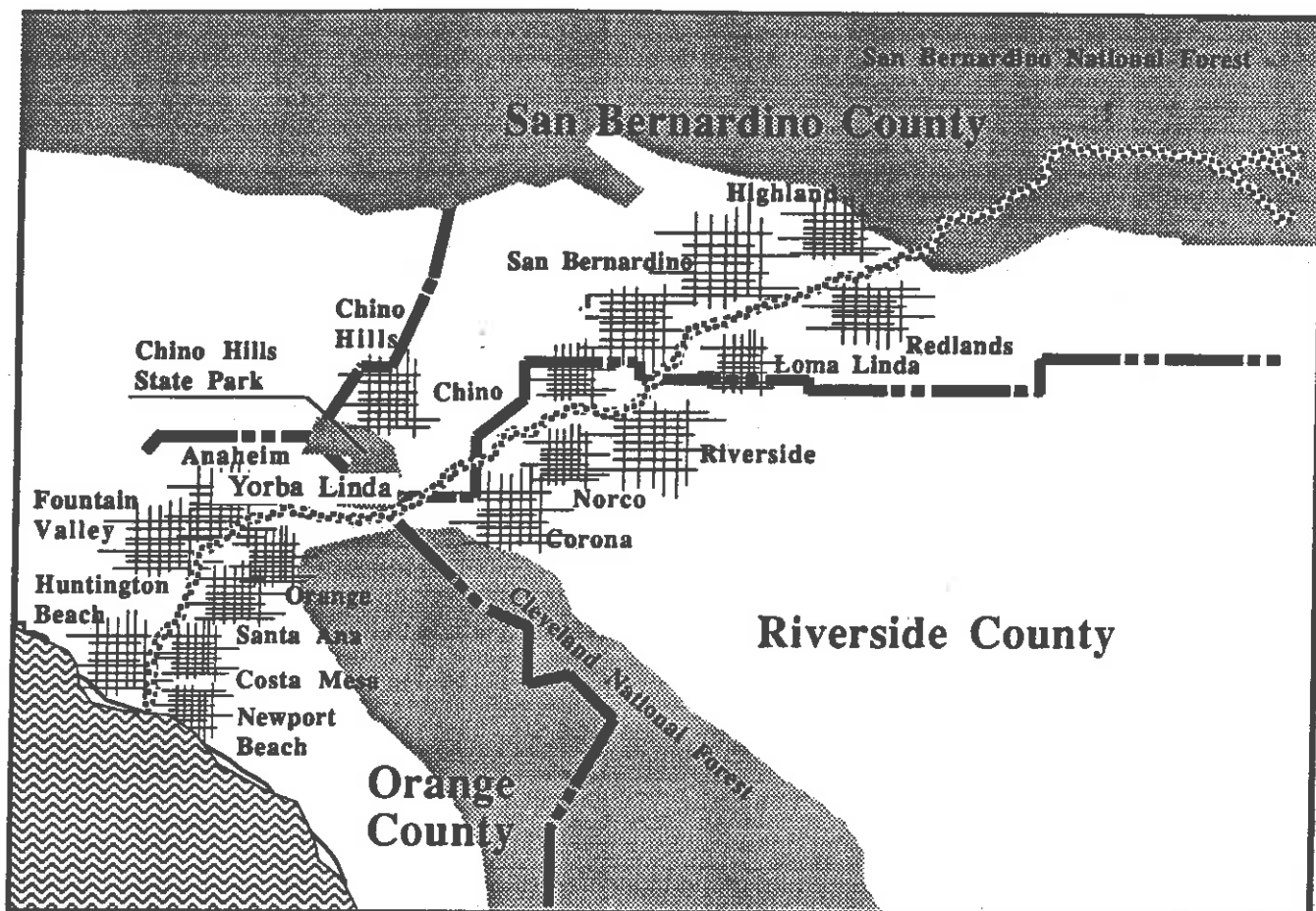


Figure 9 -1: Regional Context

Santa Ana River Corridor Trail System

EDAW inc.



TABLE 9-3: Recent Population Growth by County

Area	Population		Growth Rate	
	1980	1989	1980 1989	1988 1989
Orange co.	1,942,900	2,301,200	18.4%	1.9%
Riverside Co.	668,700	1,062,700	59.9%	7.8%
San Bernardino Co.	902,900	1,378,800	52.7%	6.7%
Regional Total	3,514,500	4,742,700	34.9%	5.5%
Statewide	23,668,049	29,063,000	23.0%	2.6%

Sources:

State of California, Department of Finance, Demographics Research Unit. 1990.

County Supervisors Association of California. California County Facts Book. 1987.

Santa Ana River Corridor Trails Master Plan

TABLE 9-4: Population Projections by County

Area	<u>Projected Population/Growth Rate</u>		
	1989	2000	2010
Orange Co.	2,301,200	2,599,200/12.9%	2,833,800/23.1%
Riverside Co.	1,062,700	1,350,000/27.0%	1,646,300/54.9%
San Bernardino Co.	1,378,800	1,661,100/20.5%	1,978,900/43.5%
Regional Total	4,752,700	5,610,300/18.0%	6,459,000/35.9%

Source: State of California, Department of Finance, Demographics Research Unit. 1990.

The population change that the region is experiencing is having a proportionate effect on the demands being placed on the Santa Ana River corridor. These demands include the need to: recharge aquifers, conserve and guarantee a long-lasting water supply; provide a safe environment from flooding and erosion for those who live and work along the river corridor edges; mine rock, sand, and gravel resources that enable urban growth; ensure habitat diversity within a resource of state and national significance; and provide opportunities for outdoor education and recreation.

Education within the state has redirected toward a renewed emphasis on science. In 1984 the California State Department of Education amended its Science Framework and revised its guidelines for teaching science education. This was done to ensure a basic scientific literacy for all California students. This event has resulted in our schools moving outdoors into nature's laboratory to enhance classroom instruction. It has proven to be a very effective method for educating both our young and our teachers. The experience of learning becomes that much stronger and more memorable when outside the classroom.

9.4 Trail Need Profile

The need for outdoor recreation environments such as that presented along the river trail system is clearly evident on a national, state, and local basis. Because of the scale of this concept, the Santa Ana River Trail has merit from all these perspectives.

9.4.1 National

In 1987 the President's Commission of Americans Outdoors concluded a two year evaluation of how Americans can have appropriate places to do what they want to do outdoors. Some of the Commission's key conclusions call for the preservation of wetland landscapes and the provision for outdoor recreation opportunities close to home and associated with natural landscapes and open space areas. The Commission said:

"More and more, outdoor recreation occurs close to home, in or near towns and cities, where 80 percent of us soon will live. . . so more and more the solutions must be found close to home by such means as land trusts to preserve riverfronts and landscapes. Further, we recommend that communities create a network of greenways. . ."

"our commission found many threats to opportunities for enjoying the outdoors: exotic pollutants, loss of space through urban growth, and disappearance of wetlands."

A example of the trend to enjoy urban riverine lands is found in a recent U.S. Fish and Wildlife Service study. It was discovered that 74% of Americans over sixteen years of age participate in non-hunting, wildlife-related recreation activities, such as observing, feeding or photographing animals. Three quarters of these (58 % of the survey) deliberately go out to watch, feed or take pictures of wildlife within one mile of home. They do this by having the accessibility provided by trails.

9.4.2 California

The California Recreational Trails Act (Public Resources Code - Div. 5, Chapter 1, Article 6 as amended) required the California Department of Parks and Recreation to prepare the California Recreational Trails System Plan. In 1978 the Legislature adopted the riding and hiking, and the bicycling elements of the California Recreational Trails Plan. Both of these elements specifically identify the Santa Ana River as a trail opportunity of statewide significance. Furthermore, the Public Resources Code (Section 5075.3) establishes that priority in the allocation of funds be assigned, among other criteria, to routes that are in proximity or accessible to major urban areas of the state.

The 1981 California Recreation Policy (approved by the California Park and Recreation Commission on April 10, 1981 and adopted by the Director of the Department of Parks and Recreation on July 15, 1981) and the California Recreation Plan, outline issues and actions that should be taken to meet the public's outdoor recreation needs. In 1987 the California Department of Parks and Recreation supplemented the California Recreation Plan with a survey of attitudes, opinions and values regarding outdoor recreation. Some of the findings particularly important to the trail concept include:

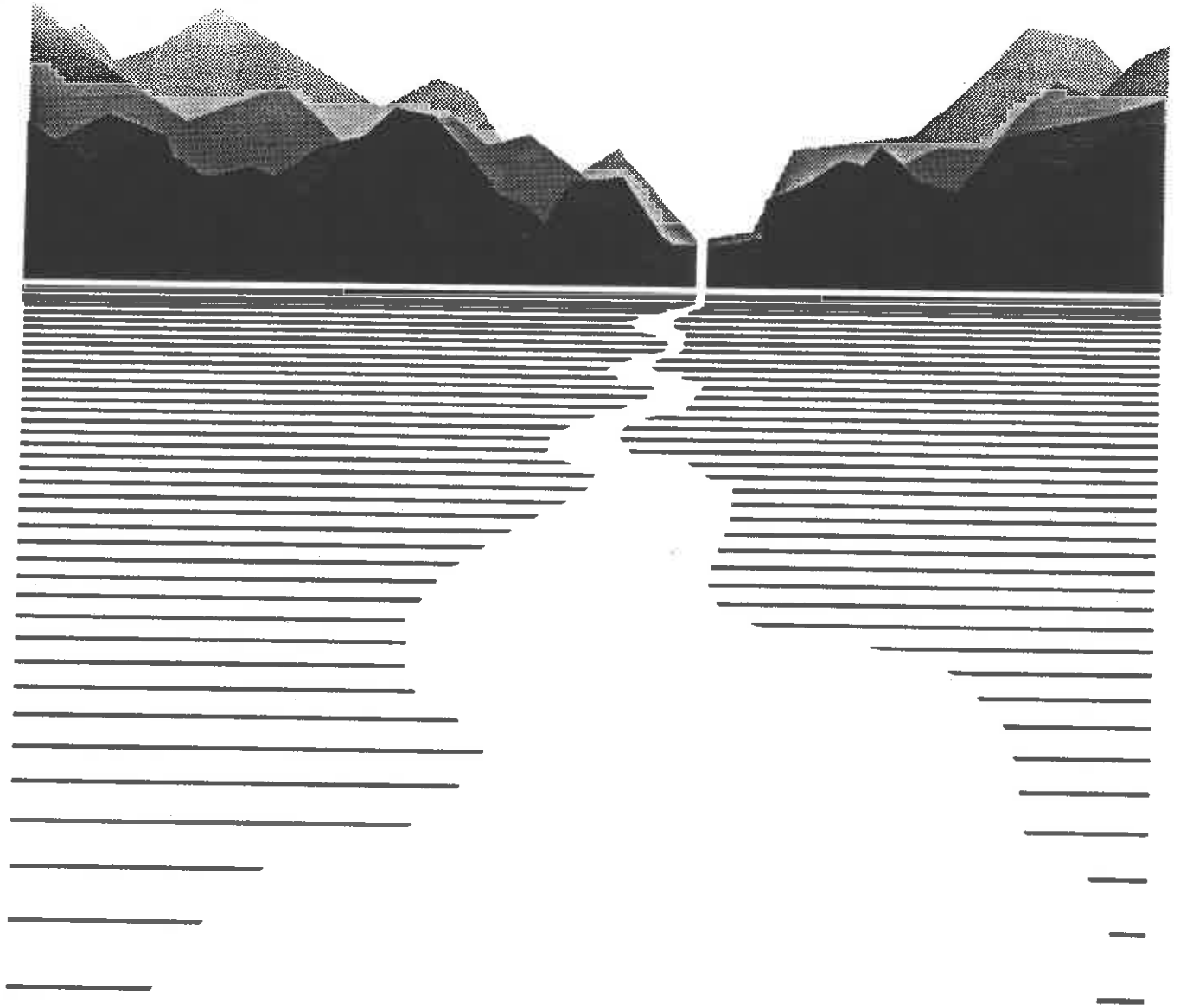
- Although highly developed parks and recreation areas are visited the most often, Californians prefer to visit nature-oriented parks or reserves for meeting their outdoor recreation needs.
- Californians strongly support (76%) the protection of the natural environment for outdoor recreation, closely followed by the preservation of natural areas for use by future generations (75%). Further, Californians strongly believe that destruction of the natural environment is a significant problem in the state (64.4%). The majority also strongly or moderately agree that government at all levels should provide access to waterfront properties, including rivers (78.1%).
- Based on latent demand and public support, Californians believe that eight outdoor recreation activities should have top priority for the expenditure of public funds: walking; bicycling; camping in developed sites with tent or vehicle; bird watching/general nature study/visiting natural areas; picnicking in developed sites; beach activities; outdoor cultural events; and visiting museums and historic features. Four of the top five activities are trail dependent or related.
- When park and recreation issues are involved, Californians are undeniably more similar than different, regardless of income, education, location, or gender.
- Even in light of tight budgets, almost three-fourths of Californians believe that spending should be increased for the protection and management of natural and cultural resources.

9.4.3 Regional

Closer to home, the San Bernardino County recently completed a survey relating to park, recreation and cultural activities. In it two of the three highest expressions of need were bicycle trails and natural areas, with senior citizen centers equally high on the list of fourteen facility types.

Table 9-3, as previously shown, overviews recent population statistics for the three county region of the Santa Ana River corridor. This region has grown by over 34% in the last ten years, exceeding the statewide growth rate of 23% for the same period. Riverside County is the fastest growing county in the state. Orange, San Bernardino, and Riverside Counties are the states' third, fifth, and seventh most populous counties respectively.

Table 9-4, as previously shown, shows population projections for the three counties for the next ten and twenty year periods. Though the current rapid expansion is expected to slow, the pace of growth will still be, by all standards, frenzied.



10.0 Management, Operations & Maintenance

10.0 MANAGEMENT, OPERATIONS AND MAINTENANCE

This chapter outlines a set of policies for jurisdictional sharing of ongoing management, operations and maintenance of the corridor trail system.

10.1 Goals

From a user's perspective, continuity is the key goal of a long distance trail. As with image and design standards, operations and maintenance should not change abruptly. The overall goal of this plan and the policies supporting it are based on one continuous trail system. To achieve that goal, an extremely effective form of agency cooperation and collaboration is required.

10.2 Organization

At the heart of a successful, multi-jurisdictional trail system is a willingness on the part of all involved to communicate with each other and cooperate in addressing all aspects of trail development and management (see also Section 11.1). The preparation of this Master Plan represents that spirit of coordination between numerous Federal, State, County and local agencies. It provides each agency along the river with a clear understanding of what the trail environment and trail experience will be outside its individual jurisdiction. This Master Plan, because it is comprehensive, provides an overview perspective that demonstrates the ambitious nature of this project and the scale of impact the trail will have on the regional environment.

The public and private interests in the Santa Ana River Trail are many and varied. Figure 10-1 shows a framework that recognizes this variety of interest and the statewide, indeed national, significance of the trail. This significance should be the driving force in implementing this Master Plan. Emphasizing such significance will hasten the actual funding and development of the trail and will encourage the traditional user to frequent the trail and invite new trail users as well. A broad organizational perspective will assure that more traditional, parochial attitudes about trails do not prevail as they, no matter how well intentioned, often lead to discontinuity and frustration.

The sections below explain how this organizational approach relates to the ongoing involvement by agencies and the public.

10.2.1 Planning, Operations and Maintenance

The most significant progress in the actual development of the Santa Ana River Trail over the last twenty years has been related to flood control improvements along the river by agencies not necessarily having recreation as their principal focus. The logical agents for assuring that this Master Plan is fully implemented, operated, and maintained are the San Bernardino National Forest and San Bernardino, Riverside, and Orange Counties. To a great extent, their efforts to date in enhancing the development of the trail system and managing it have been moderately effective, although most of these actions have been done autonomously. These agencies are shown in the Organizational

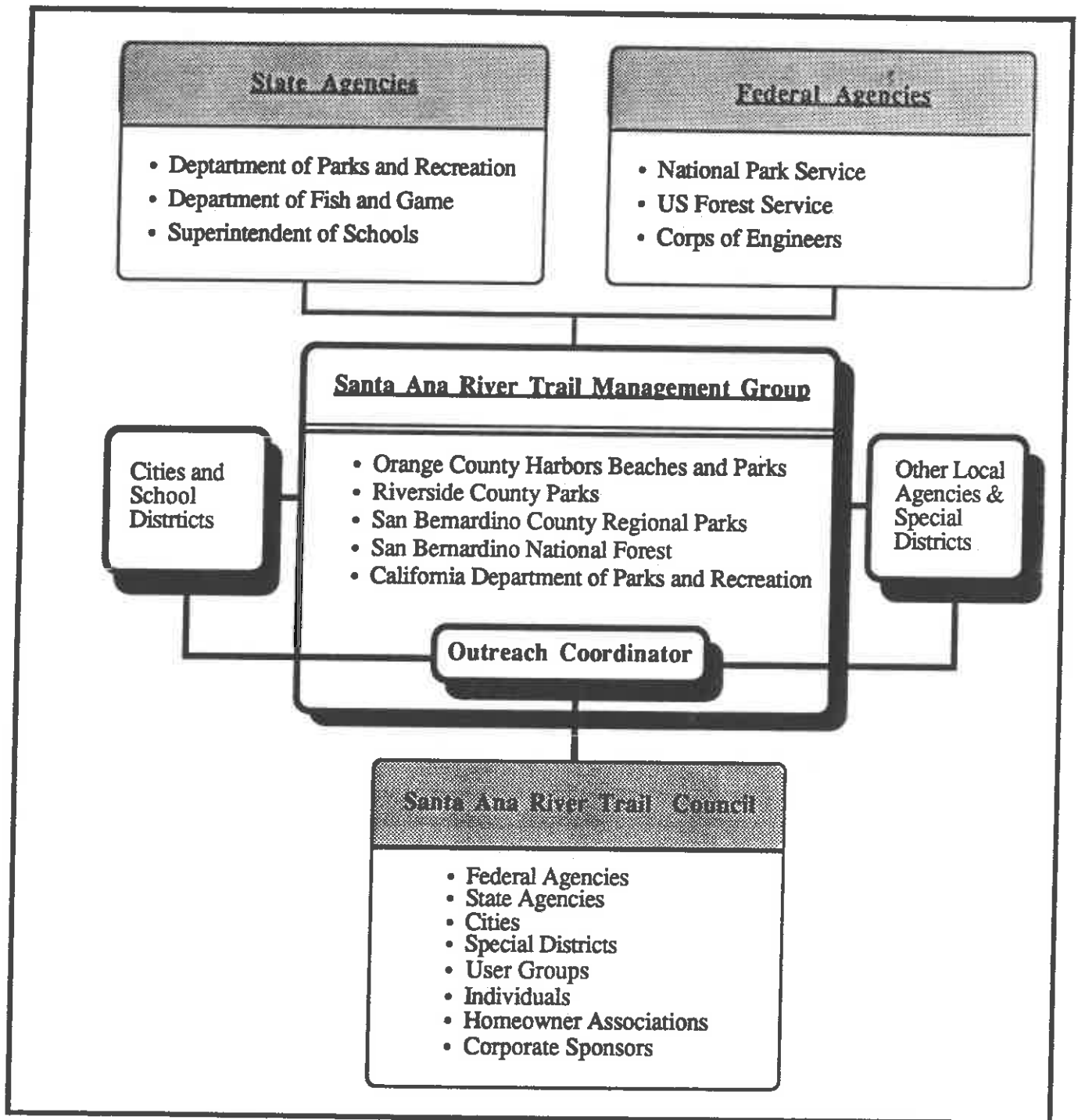


Figure 10-1: Trail Management Organization

Santa Ana River Corridor Trail System

EDAW inc.



Framework as the **Trail Management Group**. Because of its ongoing role as a funding source for acquisition and improvements and the fact that the Santa Ana River Trail is included in the Statewide Trail System Master Plan, a representative of the California Department of Parks and Recreation is also included in this group. The National Forest and the three counties should continue their individual leadership roles in guiding development and providing ongoing operations and management of the trail facilities within their own jurisdictions. This group is uniquely positioned to assure the continuity of management that is needed to avoid, from the user's perspective, a series of disjointed trail link experiences.

Each of the Trail Management Group organizations has people whose responsibilities include coordinating trail funding and development within the purview of their individual jurisdictions. These trail coordinators should continue their individual roles in working with the State and local cities in implementing this Master Plan within their jurisdiction. They (including the California Department of Parks and Recreation Statewide Trails Coordinator) should meet annually, at a minimum, to coordinate such items as funding requests to state and federal agencies and inter-jurisdictional management policies. The annual Statewide Trails conference conducted in the spring of each year provides the ideal opportunity for a concurrent meeting of the trail management group.

Other overall management structures for similarly scaled greenway/trail projects have been considered in the preparation of this Master Plan include: an autonomous Santa Ana River Park and/or Open Space District; a state-sponsored conservancy; and private non-profit management. However, after consideration, these options were deemed not appropriate for the Santa Ana River Trail under the philosophy that if the current structures are working, they do not need to be altered.

10.2.2 Coordination and Public Involvement

It is recognized that the Santa Ana River Trail is not the only trail for which the Management Group agencies are responsible. Nor is the Santa Ana River Trail corridor the only corridor of statewide or national significance demanding attention within each jurisdiction. Implementing, operating, and maintaining the Santa Ana River Trail system in a smooth fashion to guarantee a successful trail network is a complex task. It requires the traditional relationships typical at all levels of government for funding, acquisition, development, and maintenance. However, it also requires a continued interest and involvement of trail advocates to complement agency abilities. This interest is useful for such items as monitoring trail use, evaluating physical conditions, and keeping abreast of adjacent land use activities that may affect the trail environment.

Given the scale and complexity of the interests involved with the Santa Ana River Trail corridor, the Management Groups' responsibilities include the need to reach out to the entire community and coordinate its interest in the trail and its use. Because of the regional nature of the Santa Ana River Trail, this community of constituents is broader than the traditional "public trail user" typically associated with parks and recreation within one locale. This community is not interested in the limitations placed on agency personnel by jurisdictional boundaries and budgetary constraints. This community is interested in supporting the development of a trail, related access facilities, and programming that provide real opportunities for easy use. Taking advantage of this community

support will greatly facilitate the implementation of the trail system and use of it. To do so, however, requires an open line of communication. To recognize and build on this interest, an **Outreach Coordinator** role is shown under the responsibility of the Management Group. The specific responsibilities associated with this role include:

- serving as a contact point for citizen questions about the trail and as a facilitator for citizen involvement (see Section 11.2.4).
- managing activities of the Trails Council including the organization of meetings and the production of newsletters (see Section 8.3).
- organizing the ongoing Crest-to-Coast Trail Ride.
- coordinating system-wide marketing activities involved with the trail (see Section 7.0).
- reaching out to non-traditional trail constituents (including the business community, landowners, and educators) about the trail.
- assessing projects for volunteer involvement and facilitating volunteer projects.

Functionally, the role of the Santa Ana River Outreach Coordinator is not to take the place nor assume the normal staff responsibilities of individual trail coordinators working for each Management Group agency. Practically, there are a number of ways that this responsibility can be shared by the management group members. These are:

- Enter into a joint-powers agreement that recognizes the ongoing need for communications and outreach on a regional scale. Using existing staff, rotate the responsibility for effecting the outreach program between the three counties on an annual or bi-annual basis (to coincide, for example, with the Crest-to-Coast Trail Ride).
- Enter into a joint-powers agreement and publicly fund a new position titled "Santa Ana River Trail Outreach Coordinator" to be housed within one of the three county parks organizations. Management Group agencies would be expected to share costs with the individual cities and special districts within their jurisdiction.
- Enter into a joint-powers agreement for a new position titled "Santa Ana River Trail Outreach Coordinator" to be housed within one of the three county parks organizations. Using Federal, State, County and local sources, provide public "seed funding" for the first three years (100% for first year; 80% for second year; 50% for third year) for the position. Specifically identify one charge of the position to solicit private sector sponsorship from such organizations as the Tri-County Conservation League, trail user groups, and the business/corporate community for the continuance of the position.

10.3 Operations and Maintenance

From the user's standpoint, consistency of trail operations and maintenance assures consistency of trail use and experience. Keeping trails free of debris and hazards, security "presence" by rangers, litter disposal and control, and facility repairs all influence the quality of the trail experience.

Maintenance of the trail will be the responsibility of the U.S. Forest Service and Counties and the Trail Management Group. Where the trail or ancillary facilities fall within existing park and open space areas of other agencies, trail maintenance should be provided by the U.S. Forest Service or counties through Joint Powers/Revenue Sharing Agreements with those entities.

Table 10-1 overviews the minimal level of staffing envisioned specifically for the trail and its related day-use facilities. Part time rangers shown outside the National Forest envisioned as "bicycle" rangers to patrol the trail on weekends, holidays and during the summer recreation season. They are targeted for the most heavily used sections of the trail. They would be complimented by a "roving" ranger in a motor vehicle.

Based on current costs experienced by Orange County, total annual costs for trail maintenance activities will likely average approximately \$10,000/mile for paved bicycle trails with the majority of that dedicated to weekly sweeping activities. Equestrian and hiking trails maintenance can average approximately \$5,000 per mile. However, through "trail days" events and "adopt a trails" programs, volunteer and user group assistance can greatly offset this cost.

Santa Ana River Corridor Trails Master Plan

TABLE 10-1: Minimum Staffing Levels: Operations and Maintenance

Agency / Area	Personnel / Average Annual Cost*	
	Trail Ranger	Maintenance
<u>Orange County</u>		
- Ocean to Centennial Park	1 @ 50% / \$25,000**	
- Centennial Park to Anaheim Stadium	1 @ 50% / \$25,000	
- Entire trail within County	1 @ 100% / \$60,000**	2 @ 100% / \$90,000
- Sheriff patrol	1 @ 50% / \$30,000***	
<u>Riverside County</u>		
- Prado Dam to Hidden Valley Wildlife Area	1 @ 50% / \$30,000	
- Hidden Valley Wildlife Area to county line	1 @ 50% / \$30,000**	
- Entire trail within County	1 @ 100% / \$60,000	2 @ 100% / \$90,000
- Sheriff patrol	1 2 50% / \$30,000***	
<u>San Bernardino County</u>		
- County line to Interstate 10	1 @ 50% / \$30,000	
- Entire trail within county	1 @ 100% / \$60,000	2 @ 100% / \$90,000
- Sheriff patrol	1 2 50% / \$30,000***	
<u>San Bernardino National Forest</u>		
- Seven Oaks to Heart Bar Ranch	1 @ 50% / \$25,000	

* Average Annual Costs include: personnel salary; overhead; related equipment such as trucks; walkie-talkies, etc. Assumes no new maintenance facilities; existing or new maintenance areas / corporation yards associated with regional parks to be used.

** Indicates immediate priority need.

*** Hourly salary only

10.4 Trail System Management Issues and Policies

There are a number of issues related to any regional trail and greenway system that demand a set of logical policies in order to avoid conflict and confusion to the users and management. These issues, and management guidelines regarding each are provided on the following pages.

10.4.1 Security

Issue Discussion: Security is a common concern expressed by individuals who live next to a proposed trail. Often these fears are based on problems that already exist along the river corridor. This is because the river is an attraction with or without a trail system. As urban areas along the river grow, incidents of illegal use of the river and all the accompanying hassles associated with that use will also grow if nothing is done. The continuation of this type of use will nurture the fears that an official trail would compound those problems. Just the opposite is the case. It has been shown that the best security patrol of a trail system is provided by use of the trail.

One result of a continuous trail along the Santa Ana River is that people's use of the trail corridor for public education and recreation will be directed to areas where such use is appropriate. By providing both the facilities for public access and the management that will accompany access, the effect is one of controlling use. Examples throughout the country have demonstrated that many of the perceived fears about vandalism, security and reduced land values are just that. . . perceived. Trails have proven to be community assets.

Studies concerning attitudes of private property owners adjacent to public trails and greenways include: A Trail Study - Neighborhood and User Viewpoints and Maintenance Summary, East Bay Regional Park District; Converted railroad trails: The Impact on Adjacent Property, Leonard Mazour; and Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime, Seattle Office of Planning.

The parks departments of Orange, Riverside, and San Bernardino Counties do not employ trained law-enforcement officers on their staff, relying on their respective County Sheriffs' office for provision of services.

Management Guidelines:

- The Santa Ana River trail is for day use only.
- Trail security will be provided in two ways: continued use of County Sheriff's for law enforcement activities as needed; provision of Trail Rangers by each county during prime summer recreation periods, all weekends, and major holiday's as needed.
- The public/private edge of the trail corridor, where ample buffer space does not exist between the trail and private improvements, will be clearly defined by the use of appropriate fencing materials.

10.4.2 Points of Access / Public Access Control / User Conflicts

Issue Discussion: Major trail staging areas are generally located within existing or proposed parks and recreation areas or along major highways. However, numerous access points are envisioned at connecting points with other trail systems. The trail system is intended to be readily available to all users. However, uncontrolled access is a major concern of neighbors abutting the trail. Trail users may wander off the trail in areas where it is not desirable from a management perspective. These include sensitive habitat and private land areas. Where intensive use of the trail occurs, and separate trails are not possible for equestrians and bicyclists, an increased risk exists of user conflicts. Controlling illegal off-highway vehicle use is always a challenge to regional trail systems.

Management Guidelines:

- The trails within the system are for non-motorized use only, except for authorized maintenance and emergency vehicle access needs. Trail entry points will be designed to discourage motorized vehicle use.
- Use of the trail is limited to daylight hours only.
- All trail system facilities should be designed for "whole access" where possible. Some portions of the trail system may not be accessible to people of all ages and abilities due to wet crossings conditions or topographic constraints.
- Private access points to the Santa Ana River Trail should be by authorization only.
- Fencing designed for wildlife movement should be provided around trails to clearly delineate the trail corridor or between trails where the need exists to separate uses.

10.4.3 Trail Corridor Width / Adjacency to Urban Development

Issue Discussion: Concerns arise where the trail corridor is a minimal width adjacent to private property. Topographic separation, such as exists with a trail on top of a distinct levee system, provides a clear definition for the trail user of what is public space. Where topography, fences and development do not exist, this definition may not be so evident.

Where the trail alignment is not within an exiting park or open space area the potential for a quality trail experience is diminished. Along the Santa Ana River corridor, particularly in the urbanizing areas of Riverside and San Bernardino counties, opportunities exist to define a trail corridor not as a minimum width, but as part of a larger "greenway". The result for the trail user is an experience of being surrounded by nature rather than on the edge between civilization and nature.

Management Guidelines:

- The "trail corridor" width will vary based on existing development patterns surrounding the trail alignment and on the character of existing and proposed flood control features. Where no development or levees now exist, a minimum 300' buffer zone for any structures should be planned around the trail. (Also see Chapter 12.0, Design Standards).
- A continuous Santa Ana River "Greenway" corridor that precludes urban development should be defined to be inclusive of: lands within the 100 year floodplain of the river; all existing riparian vegetation surrounding the river; rare, threatened, or endangered plant or animal ranges; rock, sand and gravel resource areas; riverbottom and alluvial areas suitable for groundwater recharge; historic and archaeological sites; and a buffer zone around the Santa Ana River Trail as defined above. The General Plans of Riverside and San Bernardino Counties, and the Cities of Riverside, Colton, San Bernardino, Highland, and Redlands should be amended as necessary to include the greenway concept. Specific planning attention should be given to the following areas: from the Mission Blvd. Bridge in Riverside upstream to the proposed Agua Mansa Regional Park in the City of Colton; La Cadena Avenue to Mount Vernon Avenue in the City of Colton; and E Street in San Bernardino to Greenspot Road in Redlands.

10.4.4 Water Source Development

Issue Discussion: It is desirable to provide potable water at regular intervals. The goal of the plan is to provide water at a minimum of 3 to 5 mile intervals. The plan shows that water will be provided at each trail staging area and most rest stops. In the urban areas of the trail this is not likely a problem. However, in sections of the San Bernardino National Forest, this may not be possible. This is particularly true for the Morton Peak section of trail and to a lesser extent along the Upper River section. Options that exist include: horizontal wells, vertical wells, powered pumps, hand pumps and/or holding tanks and trucked-in water. Any "developed" source of water falls under the Clean Water Act and requires regular testing and monitoring. Development of water or the monitoring of them may prove to be disproportionately expensive, especially for equestrian stock tanks.

Management Guidelines:

- Provide safe drinking water where practical at trail staging areas and other key points of access, and along the trail where sources are readily available, including subsurface water.
- Where problems of water availability and quality exist where sources are not developed, the public should be informed at points of access warning the trail user of problems.

10.4.5 Trail Camp Development

Issues: The goal of providing a continuous trail from the Pacific Crest Trail to the Pacific Ocean implies to the trail user that a continuous trip is possible. Given other long distance opportunities available in the region, it is likely that the majority of trail use will be oriented to day use activity with the "through" user being the exception and not the norm. Clear exceptions to this will be group use, such as the Crest-to-Coast Trail Event. Operations of camping areas require a relatively major investment in management time and expenses over that of day-use facilities.

Management Guidelines:

- Overnight use related to the trail system will rely on the ten existing and proposed camping areas operated either by the National Forest, State Parks, or Orange, Riverside, and San Bernardino Counties along or near the trail corridor.
- One additional overnight facility specifically oriented to trail use will be developed near the eastern end of the Santa Ana Wash section at Cone Camp (SBVWD). This facility will be for group use and available only on a reservation basis.

10.4.6 Permits / Regulation

Issue Discussion: Some aspects of trail use will require permits; beach access for equestrians, overnight camping at certain locations, and major group events. For the trail user, spending extensive time in obtaining permits limits the potential for use. Inconsistencies in permitting procedures and costs exacerbate the situation.

Management Guidelines:

- Permitting will be handled on a County and National Forest level. Individual counties will coordinate permitting activities with the appropriate land managing agency.

10.4.7 Vegetation / Habitat Enhancement

Issue Discussion: Much of the trail corridor is a "disturbed" landscape. Little shade and related amenities provided by vegetation exist. In Orange County, where some vegetation is present, it is often composed of water-loving ornamental exotics. The appeal of the trail system and value of the greenway to wildlife would be greatly enhanced with additional plantings.

Management Guidelines:

- Trail-related plantings should be primarily native to the Santa Ana River corridor.
- Plantings at campgrounds, staging areas and rest stops have the highest priority.
- Revegetation of disturbed areas should be used as opportunities for "hands on" science education and should be incorporated into the interpretive/educational aspects of the trail system plan. Encouragement should be provided for school programs and the general public to become actively involved in both plant propagation and planting.
- There should be a comprehensive management plan prepared for the trail and river environment based on plant communities, individual species, availability of surface and ground water, and climate conditions. The management plan should concentrate on preserving mature riparian and wetland communities, creating new ones where conditions permit within the river's floodplain, and on creating new upland environments that compliment the river corridor.
- In order to maintain the diversity of native species, plantings associated with the trail activities should consist, as much as practical, of propagules collected from species indigenous to the river corridor.
- Altered plant associations along the trail corridor that are not being used for active recreation should be restored as much as practical to conditions that would exist had natural processes not been disrupted.
- Where trail facilities need to be sited in or near riparian or wetland environments, they should be placed in previously disturbed or altered areas, not in undisturbed natural areas.
- A long range objective of removing invasive exotic plants, such as giant reed, that have become established along the river corridor should be pursued. Ideally, removal of exotic species should be done at one time. An important element of the long-range exotic species eradication programs should be an active revegetation program using species historically indigenous to the immediate area. Revegetation as part of any restoration program should begin, where practical, prior to removal of exotic species, and should proceed gradually to maintain overall biomass.
- For State parkland, any proposed landscaping within the park boundaries shall have to be by the policies established within the general plan of Huntington State Beach or Chino Hills State Park. Refer to policies regarding: Plant Life, Prescribed Burning, Fire Suppression, Exotic Plant Species Control, and Rare or Endangered Species.

10.4.8 Water Quality

Issue Discussion: Though not directly related to the trail, the quality of water in the Santa Ana River greatly affects the quality of the trail experience. It is a major component of the microclimate of the river corridor that in itself has an attracting influence. Most of the water in the river today from Redlands downstream is either from wastewater treatment plant discharge or urban runoff. The trail system will provide better access to the river. It will also entice the more adventurous to engage in water-contact recreation whether it is legally permitted or not.

Management Guidelines:

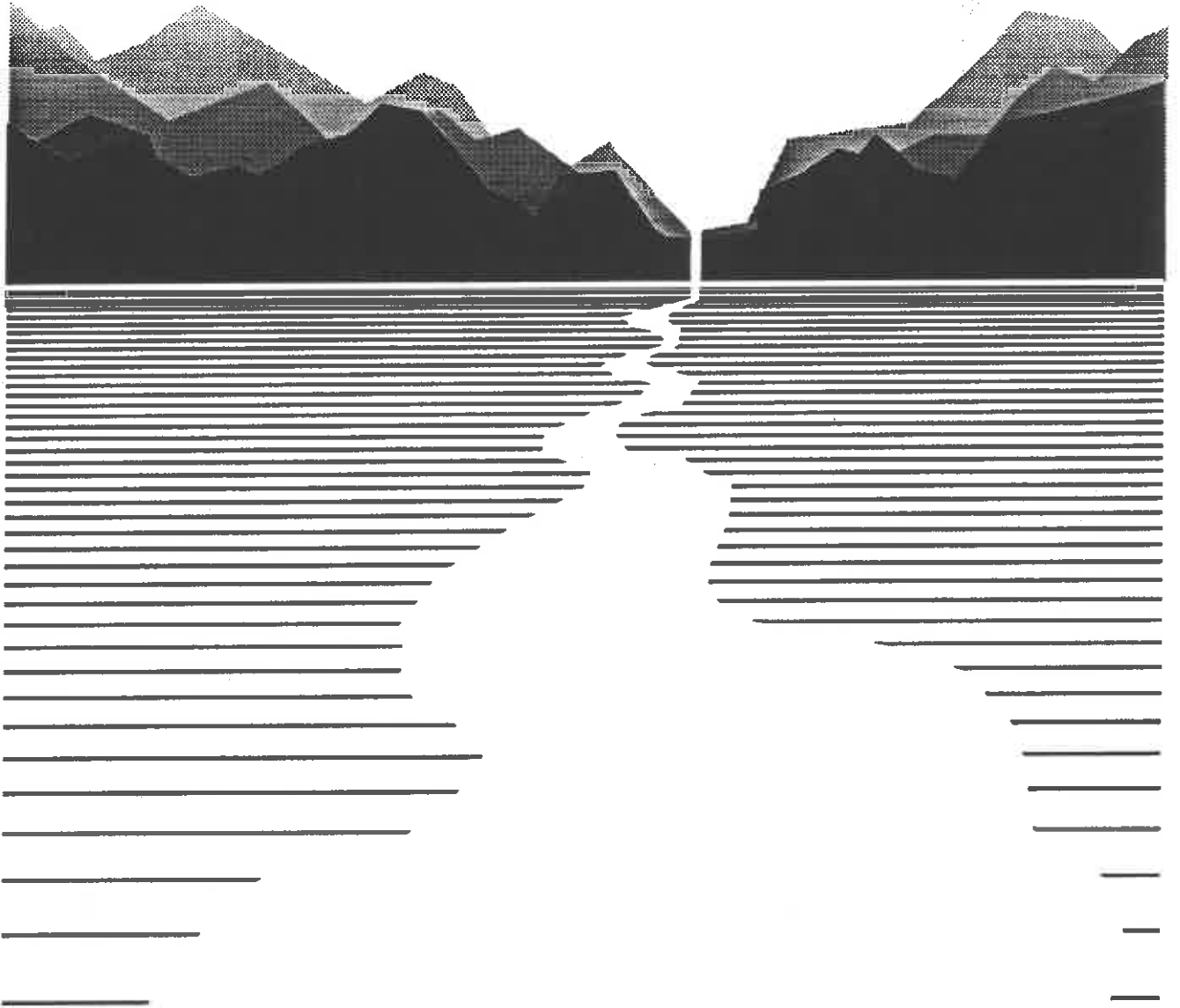
- High water quality is important to the river and its resources. Monitoring points should be established along the trail system by the various water districts to evaluate water quality, channel flows, channel depths and movements, and sediment rates on an ongoing basis. Other monitoring points should be established upstream and downstream from major park/recreation areas to evaluate the effects of park use on water quality.
- All staging areas should be drained away from the river into either existing systems or detention basins.
- Water quality improvement programs under the jurisdiction of the Santa Ana Regional Water Quality Control Board should be supported through the Trail Management Group and Trail Council.

10.4.9 Erosion Control / Bank Stabilization

In certain areas the trail alignment will be at the edge or within the floodplain of the river. Depending on the situation, it may be desirable to "stabilize" the trail alignment. The effects of over-engineering the trails may conflict with natural characteristics of the surrounding river landscape and resource values.

Management Guidelines:

- Non-structural erosion control and bank stabilization techniques should be used. Use of rip-rap and other structural measures should be minimized and utilized only as a last resort technique, even if this means that occasional minor trail repair and/or trail reconstruction may be necessary in order to conserve resource values.



11.0 Implementation

11.0 IMPLEMENTATION

This section provides an overview of funding sources and strategies on how to obtain them. Recommendations for phasing and the incremental implementation of the trail system are outlined. Construction and design cost estimates are provided for initial and future trail-related phase activities. Model-ordinances/regulations for protection and implementation of the trail corridor are provided in this chapter.

Continued delay in adoption and implementation of this trails plan will increase costs markedly due to higher land costs and lost trail connections. There is of course the danger that increased costs can be cited as reasons for not completing the project. Therefore, the trail should be completed as soon as possible. This workbook identifies completion within a 20-year period, or by, the year 2010. Every effort should be made to speed up this process to the extent possible. Priority trail segments and projects are noted.

11.1 Implementation Philosophy

The Santa Ana River Trail has long been recognized for its broader significance, for example, by the State Department of Parks and Recreation. Many other individual agencies, over time, have been working on their own to develop the trail as budgets permit or the river is re-engineered and channelized. However, this approach misses the opportunity presented through unanimous support and ongoing cooperation. To grasp and take advantage of this opportunity mandates that the trail be not only accepted by typical recreation supply agencies, but by any and all interests associated with the Santa Ana River. It is this unanimous support that will greatly ease the abilities of each and every interest to fund, develop, maintain, and most importantly, use of the trail. It is this support on which the following actions are based.

11.2 Initial Steps

11.2.1 General Plans and Supporting Resolutions

A significant prelude to all actions associated with the trail system, and in particular the funding of the system, is to ensure that this master plan is formally adopted into the plans and policies of the landowner agencies, jurisdictions associated with the management of the river and its environs, and the special interests that would benefit from a continuous Santa Ana River Trail. This would include General Plans, Specific Plans, Area Plans and Community Plans. Table 11-1 outlines these and the status of the concept of a Santa Ana River Trail in their plans and policies.

Where attitudes and policies do not now exist supporting the trail concept, they should be sought immediately upon completion of this Master Plan.

Santa Ana River Corridor Trail System Master Plan

TABLE 11-1: Status of River Trail in Agency Plans and Policies

Agency	Trail Recognition				
	General Plan		Nothing	Supporting Resolution	
	Adopted	Pending		Yes	No
Federal Agencies					
- National Park Service				x	
- Corps of Engineers, Los Angeles District	x				
- U.S.Fish and Wildlife Service, Region _			x		
State Agencies					
- Department of Parks and Recreation	x				
- Huntington Beach State Park			x		
- Chino Hills State Park	x				
- Department of Fish and Game, Region 5					x
- State Lands Commission					x
- Water Resources Control Board					x
- Department of Education					x
Counties					
- Orange	x				
- Riverside	x				
- San Bernardino				x	
Cities					
- Huntington Beach					
- Newport Beach					
- Costa Mesa					
- Fountain Valley					
- Anaheim					
- Orange					
- Corona	x				
- Norco			x		
- Rialto					
- Colton			x		x
- Loma Linda				x	
- San Bernardino	x				
- Highland			x		
- Redlands	x				

Santa Ana River Corridor Trail System Master Plan

TABLE 11-1: Status of River Trail in Agency Plans and Policies

Agency	Trail Recognition				
	General Plan		Supporting Resolution		
	Adopted	Pending	Nothing	Yes	No
Related Districts					
- Chino Hills CSA 19					X
- Orange County FCD				X	
- Riverside County FCWCD					X
- San Bernardino County FCD					X
- San Bernardino Valley Water Conservation Dist.					X
- Orange County Water District				X	
- Orange County Dept. of Education					X
- Riverside County Office of Education					X
- Alvard USD					X
- Corona-Norco USD					X
- Jurupa USD					X
- Riverside USD					X
- San Bernardino County Superintendent of Schools					X
- Bear Valley USD					X
- Yucaipa Joint USD					X
- Redlands USD					X
- San Bernardino USD					X
- Colton USD					X
- Tri-County Conservation League				X	
- Barton Flats Camping Association					X

11.2.2 National Recreation Trail Status

The National Trails System Act (Public Law 90-543) allows for the designation of trails meeting certain criteria as National Recreation Trails (see appendix for a description of the application process). Relative to the Santa Ana River Trail, designation can only be made for a trail that is ready for public use.

The following trail sections should be immediately nominated for designation:

<u>Trail Segment</u>	<u>Agency</u>
0.0 - 26.0 Ocean to Gypsum Canyon Road	Orange County
26.0 -28.0 Gypsum Canyon Road to Green River Road/Golf Course	CALTRANS
Fairmount Park to Tequesquite Ave.	City of Riverside
Heart Bar Ranch to South Fork Campground	San Bernardino National Forest
Rancho Jurupa Park/Santa Ana River Regional Park (except for portions already designated)	County of Riverside

11.2.3 Sand and Gravel Reclamation / Restoration Plans

All counties, particularly San Bernardino County, should immediately incorporate the trail system into any use conditions involved with the permitting of required sand and gravel reclamation and mitigation plans.

11.2.4 Link Trails

Link trails bring the community to the resource, in this case the Santa Ana River Trail. Link trails are a vital element in making any regional trail a viable, well-used one. Land use changes and development of any type along and near the Santa Ana River Trail provide the opportunity to link neighborhoods to the regional trail system. This is particularly relevant to Riverside and San Bernardino Counties where development is taking place at a relatively feverish pace. Although Orange County development patterns are fairly well established, there remain a few areas in Anaheim and the upstream end of the County where open spaces are being developed. Opportunities are also presented for link trails as the redevelopment of older industrial areas and construction of new office parks along the river progresses.

There are two key activities that encourage linkage of trail development. The first is the inclusion of link trails into the development process. Ideally, the counties and cities along the Santa Ana River Trail should adopt General Plan amendments and zoning ordinances that would require all planned development within a 1/4 mile band surrounding the trail to include the provision of access to the trail.

There are two key activities that encourage linkage of trail development. The first is the inclusion of link trails into the development process. Ideally, the counties and cities along the Santa Ana River Trail should adopt General Plan amendments and zoning ordinances that would require all planned development within a 1/4 mile band surrounding the trail to include the provision of access to the trail.

The second key is the oversight necessary to enforce the development review. All land use and development activities along the river should be evaluated by the appropriate jurisdictions for inclusion of link trails. However, this scrutiny requires a great deal of vigilance over land use changes and development proposals. Often projects may slip through the cracks for a variety of reasons, not the least of which is a jurisdiction's inability to constantly monitor in a timely fashion all the activities that might take place simultaneously. This is where members of the public who advocate trails can play an important role. Neighbors often know about projects before an agency might. Trail users often see the impacts of projects on a trail environment from a perspective that the agency planning and development staff person behind the counter, no matter how well intentioned, may not. Public vigilance and support at public hearings about the need for link-trail access is a vital complement to agency review. The Outreach Coordinator (see Section 10.2) will play an important role in serving as the public's clearinghouse for active proposals where the public's involvement could result in additional link trails.

11.3 Acquisition

The vast majority of the trail alignment is within already owned and managed public lands or flood control easements.

Table 11-2 lists the sections of trail alignment and staging areas that require additional land or easement acquisition. Trail segments already within floodway easement are assumed to be in public management. Recommended techniques for acquiring the lands are shown.

Condemnation shall not be used to acquire lands for the trail or related access/staging needs.

11.4 Funding

Attached Tables 11-3 to 11-5 overview the appropriate funding methods to use in acquiring, developing, and maintaining the trail system facilities. Although any of these funding sources could be employed to implement this Master Plan, the primary target funding sources for the initial steps of the Master Plan are listed with in Section 11.5.2. Major sources that should be used to implement typically available funds for trail acquisition and development (i.e. general fund revenues of cities and counties, impact fees, park and open space assessments, and state park bond grants) are briefly discussed below.

11.4.1 Development Dedications

Of the techniques available for acquiring and developing the trail corridor, taking advantage of private development trends will prove to be the most beneficial in realizing the trail in Riverside and San Bernardino Counties. Use-benefits of the trail extend well beyond the actual trail corridor, lending an argument for regional impact fees, similar to that now in place in Riverside County, to be adopted by the cities along the corridor. Land dedications and trail improvements by developers whose lands incorporate the trail alignment should be sought for any aspects of the trail system at the time that development is proposed, regardless of its priority as outlined in Section 11.5.2.

Santa Ana River Corridor Trail System Master Plan

TABLE 11-2: Acquisition Needs and Techniques

Location (Trail Mile)	Purpose	Owner	Acquisition Techniques
Orange County			
12.7	Staging Area	Anaheim Stadium	- Easement - Use Agreement
Riverside County			
28.7 - 29.2	Trail (dual)	Trail on an exist- ing sewer line/road access easement per Corps (State, the COE, SAWPA)	- Easement
32.0 - 33.1	Trail (dual)	Private/Corps of Engineers (COE)	- Easement
36.6 - 37.6	Trail (dual)	Private	- Easement - Lease w/ Option to Buy - Fee Simple Acquisition
40.0 - 41.4	Trail (dual)	Private	- Easement/ - Lease w/ Option to Buy - Fee Simple Acquisition
40.7	Staging Area	Private	- Fee Simple Acquisition
43.3	Staging Area	Private	- Fee Simple Acquisition
43.3 - 43.9	Trail (dual)	Private	- Easement - Lease w/ Option to Buy - Fee Simple Acquisition

TABLE 11-2: Acquisition Needs and Techniques (continued)

Location (Trail Mile)	Purpose	Owner	Acquisition Techniques
47.7	Staging Area	Private	- Fee Simple Acquisition
HWY 60 to County Line (West Side)	Trail (Equestrian) Alt. Trail (Bicycle)	Private	- Easement - Fee Simple Acquisition
San Bernardino County			
County Line to Riverside Ave.	Trail (Equestrian) Alt. Trail (Bicycle)	Private	- Easement
57.8 - 58.1	Trail (Dual)	Private City of Riverside	- Easement - Lease w/ Option to Buy - Fee Simple Acquisition
58.7 - 59.6	Trail (Dual)	Private	- Easement - Lease w/ Option to Buy - Fee Simple Acquisition
59.7	Staging Area	Private	- Fee Simple Acquisition
60.2	Trail (Dual)	Southern Pacific	- Easement
66.0	Staging Area	Private	- Fee Simple Acquisition
66.7 - 67.6	Trail (Dual)	Gage Canal	- Developer Dedication - Easement

Santa Ana River Corridor Trail System Master Plan

TABLE 11-2: Acquisition Needs and Techniques (continued)

Location (Trail Mile)	Purpose	Owner	Acquisition Techniques
68.7 - 69.0	Trail (Dual)	J. Hunter Smith Gordon B. Lane	- Developer Dedication - Easement
69.7 - 71.5	Trail (Dual)	Private	- Developer Dedication
73.1	Equestrian Campground (Cone Camp)	SBVWCD	- Special Use Permit/MOU
73.3 - 73.9	Trail (Bike) on levee & Equest. at toe	SBVWCD	- Easement - District Dedication
74.2 - 75.6	Trail - Multi-use along Greenspot Road Corridor	SBVWCD	- Easement - District Dedication
San Bernardino National Forest			
75.6 - 78.4	Trail - Multi-use	SBVWCD	- Easement - District Dedication - Land Exchange
75.8	Overnight Campground- Morton Canyon	SBVWCD	- District Dedication - Land Exchange
Between Cold Creek & Kilpecker Creek	Trail - Multi-use	Private	- Land Exchange - Easement

Santa Ana River Corridor Trail System Master Plan

TABLE 11-3: Funding Trail Related Land Acquisition

Mechanism	<u>Preferred Options</u>		
	Ranking		
	1	2	3
Government Financing Methods			
- General Obligation / Revenue Bond			X
- General Fund Appropriation		X	
- Real Estate Transfer Tax			X
- Land Gains Tax			X
- Sale of Tax Default Property	X		
- Payment in Lieu of Dedication		X	
- Special Assessment District		X	
- State Bond Initiatives	X		
(e.g. WCB/State Parks)			
- Sand and Gravel Endowment Tax	X		
- Private Donations	X		
- Developer Dedications	X		
Non-profit / Land Trust Financing		X	

TABLE 11-4: Financing Trail Development

Mechanism	Preferred Options		
	Ranking 1	2	3
Federal Programs			
- Land and Water Conservation Fund	x		
- Federal Highway Administration Commuter Grants	x		
- NEA/Design Arts Program			x
State Programs			
- CALTRANS/Prop. 116 Bond Act	x		
- DWR/Urban Stream Restoration Program		x	
- State Park Bond Acts	x		
County/Municipal Programs			
- General Obligation/Revenue Bond			x
- General Fund	x		
- Redevelopment Agency (Norton AFB)	x		
- Benefit Assessment Districts	x		
- Concessionaire			x
- Developer Fees/Development Permit Requirement	x		
- Private Donations	x		
- Special Interest Group/Volunteer Projects		x	
- Sand and Gravel Endowment Tax	x		

TABLE 11-5: Financing Trail Operations and Maintenance

Mechanism	<u>Preferred Options</u>		
	Ranking		
	1	2	3
County/Municipal Programs			
- General Obligation/Revenue Bond			X
- General Fund	X		
- Creation of County Park/Open Space Districts	X		
- Local Benefit Assessment District		X	
- Wastewater Assessment Tax	X		
- Concessionaire/Revenue Agreements		X	
- Private Donations/Sponsors	X		
- Special Interest Group/Volunteer Agreements		X	
- Endowment Program		X	
- Entrance Fees			X

11.4.2 Proposition 116/Federal Highway Bicycle Commuter Grants

With the passage of Proposition 116, the California Department of Transportation (CALTRANS) will administer 20 million dollars of grants to local jurisdictions specifically for bicycle commuter trail facilities. In addition, the 1991 State Budget includes 4.5 million dollars in Federal Highway (FHA) Bicycle Commuter Grants. These sources should be targeted, in a coordinated fashion by the Trail Management Group (see Section 10.2), for bicycle trail facility improvements in the system from the City of San Bernardino downstream to Anaheim.

11.4.3 Sand and Gravel Extraction Conservation Fund

Much of the river's sand and gravel resources in San Bernardino County has been identified by the State as regionally significant. It is these resources that provide the infrastructure and buildings that are a vital link to the region's growth. A Sand and Gravel Endowment Fund, should be established and administered by the County. This would be a "per ton" assessment from the sand and gravel industry with a specific goal of acquiring lands and providing for the landscape/habitat improvements associated with the trail's river environment within the general reach being mined (approximately miles 66 to 77).

11.4.4. Park and Open Space Districts

Both Riverside County and San Bernardino Counties are now (July, 1990) actively pursuing the creation of tax-based Open Space and Recreation Districts. Though not exclusively oriented around the Santa Ana River, the creation of these districts would facilitate the acquisition, development, and most importantly, the annual funding of trail-related operations and maintenance costs. The realization of these districts is critical for this Master Plan to flourish.

Operating and maintaining trails is much different than managing park areas. In a strict comparison that uses the acreage involved, trails are typically more expensive to operate and maintain than comparably sized use areas. This greater cost is a function of the linear quality of the trail facility. A park ranger, for example, can observe use in a five acre area of a park often just by turning around, which may take only the matter of a few seconds. Along a trail corridor that is forty feet wide, this same surveillance will require the ranger to walk or ride about a mile. This is one reason why consistent, annual funding for operations and maintenance of trails is historically the most elusive funding portion of the acquisition/development/operations equation. When faced with financial cutbacks, experience at all levels of government has shown that trails are the first part of an overall recreation system to be eliminated from annual "general fund" budgets.

As the regional population of the Santa Ana River Corridor continues to grow (see Section 9.3.3), associated development will narrow the opportunities available to the public for trails, even though the public need and desire for trails will increase. Ongoing operations and maintenance funding is essential to a successful trails program and public acceptance of it. Under-maintained or under-managed trails will quickly lead to a decrease of use. Successful use of trails has proven to be the trail managers' best ally against vandalism and misuse of facilities. The importance of having an annual revenue flow that could be specifically assigned to recreational trails, as would be the case with the creation of the Park and Open Space Districts, can not be overstated.

11.5 Phasing of Detailed Trail Planning and Development

11.5.1 Phasing Overview

The purpose of the sequence of actions described below is to identify the system components to be included in the Initial Phase and those to be completed during Future Phases. The Initial Phase is defined as those activities which should occur within the first ten years. Actions to be taken immediately (FY 1991-93) are indicated with an asterisk (*). All signage recommendations are to be initiated only after designation of the trail section as a National Recreation Trail (see Section 11.1.2). Beyond, ten years, the remaining components are grouped into Future Phases. Existing trail modifications identified in the Corps of Engineers Santa Ana River Mainstem Project GDM II Report are assumed to be existing (planned) or to be implemented by the Corps and are therefore not included in this prioritization.

The Phasing Plan was developed to provide each County with specific actions that will provide for more cohesive trail development along the entire stretch of the river. Recognizing that trail development to-date has progressed at different rates in each County and within the National Forest, the phased tasks below reflect the needs found in each area. Continued expansion and trail connectivity, the addition of significant components which are needed now, and completion of on-going projects are generally included in the Initial Phase. Future Phases include completion of the entire system.

The general goals of the Initial Phase in each County are summarized as follows:

Initial Phase General Goals

- Orange County
 - Widen existing bike trails in high use areas.*
 - Provide for an equivalent equestrian/hiking trail from Fairview Regional Park to the Pacific Coast Highway (PCH) with a turn-around/tie-up area immediately northwest of Pacific Coast Highway (PCH).
 - Provide additional trail staging areas to allow for better access by trail users and to reduce impacts on existing neighborhood parks.*
 - Provide trail rest stops at intermediary points to encourage through trail use.
 - Institute signage and landscaping program.
 - Assume operational management of existing CALTRANS trail.*
 - Monitor Corps trail reconstruction efforts.*

- Riverside County
 - Encourage State parks to install the proposed River Flat Facilities to include an equestrian trail head, equestrian facilities, group campground, and day-use facilities.
 - Construct the Corona segment of the trail from below Prado Dam to River Road at the Corona/Norco City boundary and coordinate with the Corps and CALTRANS.
 - Construct Corps trails below Prado Dam.
 - Establish a near term Bike Lane/Equestrian Trail system through Norco on the south side of the river.*
 - Perform detailed planning and design of Bicycle and Equestrian/Hiking Trails from Van Buren Blvd. westward into Hidden Valley Wildlife Area.

- Upgrade existing equestrian trails in Norco's Rivertrails Park, and the County's Santa Ana River Regional Park, Rancho Jurupa Regional Park and Martha McLean - Anza Narrows Regional Park.
- Complete on-going Bicycle Trail projects from Van Buren Blvd. to Tequesquite Ave. in Riverside.*
- Construct Equestrian Staging Area and Bicycle Staging Area near Van Buren Blvd./Doolittle Ave.
- Construct Bicycle Trail from Buena Vista Drive/Mission Blvd. to County line on the eastern levee.
- Institute signage and landscaping program.

San Bernardino County

- Construct Bicycle Trail and Equestrian/Hiking Trail from County line to La Cadena Drive and the proposed Agua Mansa Regional Park Staging Area.*
- Construct trail staging areas at the future Agua Mansa Regional Park.*
- Construct dual trails from La Cadena Drive to the Reche Canyon Channel area.
- Construct trail staging area at Washington Street in Colton.
- Perform detailed planning and design from Reche Canyon Channel in Colton and the I-215/I-10 Interchange to the Redlands Airport area.
- Perform detailed planning and design for 3 staging areas in Redlands and San Bernardino.
- Establish Cone Camp as special permit use campground.*
- Institute signage and landscaping program.
- Evaluate the potential to expand public open space along the Santa Ana River corridor.

San Bernardino National Forest

- Maintain on-going trails development program for the Camp Angelus to South Fork segment and Heart Bar to PCT segment.*
- Establish trail linkage alignment from Mill Creek area to Morton Peak route.
- Institute signage program with logo.
- Add staging, rest areas and campgrounds.

11.5.2 Detailed Phasing Plan: Initial Phase

The following is a detailed listing of projects by County for the Initial Phase (1 to 10 years). Reference by plan sheet number and milepost is made for more detailed siting information. Immediate or near-term actions are noted with an asterisk (*).

Orange County Section

Mileposts

0-7.0

- Widen existing bike trail from ten feet to a minimum twelve feet from Pacific Coast Highway to Centennial Regional Park to better accommodate heavy bicycle traffic. (Sheets 1-7).* Funding: COE Mainstem Project Cost Sharing; Caltrans Prop. 116 and FHA Commuter Grant.

- 0.0 • Provide for an equestrian turn-around/tie-up point at Pacific Coast Highway north of the highway bridge for special permit users. (Sheet 1). Funding: General Fund; Private Donations, and State Park Bonds.
- 7 • Provide a trail staging area at Centennial Regional Park.* Funding: State Park Bonds; General Funds.
- 0-2.3 • Provide approx. 2.3 miles of equestrian trail from Fairview Regional Park to Pacific Coast Highway. (Sheets 1-3). Funding: General Fund; Private Donations; and State Park Bond money.
- 10 • Provide signage and bicycle racks at trail rest stop at Edna Park. (Sheet 10). Funding: Private Donations, General Fund.
- 12.7 • Provide a trail staging area at Anaheim Stadium. (Sheet 12). Funding: CALTRANS Prop. 116 and FHA Commuter Grant; General Fund; Cost Sharing with City of Anaheim; Private Donations.
- 18.2 • Provide a trail rest stop for equestrians/hikers at Santa Ana River Lakes for the through trail user. (Sheet 17). Funding: State Park Bonds; General Funds.
- 18.3 • Provide for signage and trail staging at Riverdale Park. (Sheet 17). Funding: Private Donations; General Fund.
- 21.1 • Expand existing trail rest stop at Yorba Regional Park. (Sheet 20). Funding: Private Donations; General Fund.
- 21 • Provide for signage and trail staging at Yorba Regional Park. (Sheet 20). Funding: Private Donations; General Fund.
- 26.6 • Provide for equestrian trail staging for the general public at Featherly Regional Park near Coal Canyon Rd. (Sheet 25). Funding: State Park Bonds.
- 25-27.4 • Resurface, stripe and sign existing Caltrans trail from Gypsum Canyon Rd. to Green River Rd. (2.5 miles). (Sheets 23-25). Funding: CALTRANS Prop. 116 and FHA.
- 0-27.4 • Institute signage and landscaping program. Coordinate landscape enhancement within Chino Hills State Park with Park General Plan policies. Funding: COE Mainstem Project; Private Donations; General Fund; DWR Stream Restoration Grant.

Riverside County Section

Mileposts

- 30.0 • Provide a trail staging area and overnight camping facilities (including equestrian) in the Santa Ana River Flats area of Chino Hills State Park. (Sheet 47). Funding: State Parks General Fund; State Park Bonds.
- 30.0 • Provide 0.5 miles of dual trail and a seasonal bridge (to be determined) in the Santa Ana River Flats area. (Sheet 27). Funding: COE Mainstem Project; State Parks General Fund; State Park Bonds.
- 30.8 • Construct a bicycle trail rest stop below Prado Dam. (Sheet 28). Funding: CALTRANS Prop. 116/FHA Commuter Program grant.
- 30.9 • Construct a 250' trail bridge below the SR-71/91 Freeway interchange. (Sheet 28). Funding: CALTRANS Prop. 116/FHA Commuter Program Grant; CALTRANS Construction Program.
- 30.8-31.6 • Construct dual trail from below Prado Dam to the spillway - 0.8 miles. (Sheet 28). Funding: COE Mainstem Project; County Regional Impact Fees.
- 31.6-33.7 • Construct 2.1 miles of dual trail from the Prado Dam spillway to Butterfield Drive in Corona. (Sheet 29). Funding: COE Mainstem Project; County Regional Impact Fees; Cost Sharing with City of Corona.
- 33.7-36.7 • Construct 3.0 miles of dual trail from Butterfield Dr./Clearwater Ave. to Corydon St./River Rd. in Corona. (Sheet 30 to 31). Funding: COE Mainstem Project; County Regional Impact Fees; Cost Sharing with City of Corona.
- 36.7-41.6 • Provide signage along Corydon Ave., Norco Drive and Old Hamner Ave. for bike route (Class III) and existing equestrian trail use through Norco. (2.5 miles). (Sheets 31-35).* Funding: County Regional Impact Fees.
- 44.2-52.6 • Rehabilitate 8.7 miles of existing equestrian/hiking trail. (Sheets 37 to 43). Funding: County Regional Impact Fees.
- 44.8-47.9 • Conduct detailed planning and design of dual trails - 3.1 miles from La Sierra Trail east to Van Buren Blvd. (Sheets 37 to 39). Funding: County Regional Impact Fees; Cost Sharing with City of Riverside.
- 47.2 • Conduct detailed planning and design of equestrian staging area at Agriculture Park. (Sheet 39). Funding: State Park Bond Grant; County Regional Impact Fees; Cost Sharing with City of Riverside.
- 39 • Construct equestrian/hiking trail ramp on north side of Van Buren Blvd. (Sheet 39). Funding: County Regional Impact Fees; General Fund; State Park Bond Grant.

- 47.9-50.8 • Construct 2.9 miles of dual trail from Van Buren Blvd. to Anza Narrows Regional Park. (Sheets 39-41). Funding: State Park Bond Grant; County Regional Impact Fees.
- 47.9 • Construct Bicycle Trail Staging Area on west side of Van Buren Blvd. (Sheet 40). Funding: CALTRANS Prop. 116/FHA Commuter Grant; City of Riverside Revenue Sharing.
- 50.8-52.9 • Construct 2.1 miles of bike trail from Anza Narrows Regional Park to Tequesquite Ave. (Sheets 42-43). Funding: CALTRANS Prop. 116/FHA Commuter Grant; County Regional Impact Fees; Cost Sharing with City of Riverside.
- 54-56.5 • Construct 2.4 miles of bike trail from Mission Blvd. bridge to the County line. (Sheets 44-45). Funding: CALTRANS Prop. 116/FHA Commuter Grant; County Regional Impact fees.
- 55.1-55.3 • Construct bike ramps under Highway 60 and Market Street bridges. (Sheets 45-60). Funding: CALTRANS Prop. 116/FHA Commuter Grants.
- 27.4-56.5 • Institute signage and landscaping program. Funding: Private Donations; General Fund; Park & Open Space District Revenues; DWR Urban Stream Restoration Grant.

San Bernardino County Section

Mileposts

- 56.5-59.8 • Construct 3.3 miles of bike trail from County line to future Agua Mansa Regional Park near La Cadena Drive with 1 bridge ramp at Riverside Ave. (Sheets 46 to 47).* Funding: State Park Bond Act Grant; General Fund/Park and Open Space District Revenues; Cost-sharing with City of Colton.
- 59.8-60.9 • Construct 1.2 miles of dual trail from future Agua Mansa Regional Park to Washington St. in Colton. (Sheets 48 to 49). Funding: State Park Bond Act; General Funds/Park and Open Space District Revenues; Cost Sharing with City of Colton.
- 59.8-60.9 • Construct trail staging areas at future Agua Mansa Regional Park site* and Washington St./Reche Canyon Channel. (Sheets 48 to 49). Funding: State Park Bond Act Grant; General Funds/Park & Open Space District Revenues.
- 59.8-60.1 • Construct 2 bridge ramps at La Cadena/SP RR bridges and at ATSF RR bridges. (Sheet 48). Funding: State Park Bond Act Grant; General Fund/Park and Open Space Revenues; Cost Sharing with City of Colton.
- 62.7-72.7 • Conduct detailed planning and design of 10 miles of dual trail from "E" Street to Redlands Airport. (Sheets 50 to 60). Funding: General Fund/Park and Open Space District Reviews; Cost Sharing with City of Redlands; San and Gravel Endowment Tax.

- 63.3-72.7 • Conduct detailed planning and design of 4 trail staging areas at future San Timoteo Creek Trail, Mt. View Trail, City Creek Trail and proposed Redlands Nature Center at Opal Ave and two rest stops at Alabama St. and Mission Morey Trail. (Sheets 51 to 60). Funding: General Fund/Park and Open Space District Revenues; Cost Sharing with City of Redlands; Sand and Gravel Endowment Tax.
- 73 • Plan for continued special permit use of SBVWCD's Cone Camp site, upgrade site. (Sheet 60).* (Funding: (to be determined)).
- 60.9-62.7 • Perform engineering design analysis and agency coordination for 1.8 miles of dual trail, a trail ramp under Mt. Vernon Ave. and 0.5 miles of trail ramp under the I-10 Freeway Interchange and SPRR line bridge. (Sheets 49-50). Funding: CALTRANS Prop. 116/FHA Commuter Grant; General Fund/Park and Open Space District Revenues.
- 56.5-75.6 • Institute signage and landscaping program.

San Bernardino National Forest

Milepost

- 75.6-110.2 • Institute signage of trail with logo.
- 89.1-110.2 • Complete on-going trail development on schedule. This includes the segment from South Fork Campground west to Camp Angelus and from Heart Bar east to the Pacific Crest Trail. (Sheets 69 to 80).
- 74.2-75.6 • Establish trail route and campground agreement with SBVWCD from Greenspot Road to the approved Morton Peak trail alignment. (Sheet 62 to 63).
- Trail staging area west of Camp Angelus. (Sheet 69).
- Rest stop at Cold Creek. (Sheet 70).
- Trail staging area at Forsee Creek Road. (Sheet 71).
- Trail staging area and overnight campground with equestrian facilities at Barton Creek/Seven Oaks area. (Sheet 72).
- Trail linkage to future Barton Flats Interpretive Center. (Sheet 74).
- Expand and enhance South Fork trail staging areas (3). (Sheet 75).
- Trail staging area/interpretive point at the Coon Creek confluence. (Sheet 78).
- Rest stop at the Pacific Crest Trail. (Sheet 80).
- Improve group facilities at Coon Creek Jumpoff. (Sheet 80).

Note: Future Riverside County and San Bernardino County Park and Open Space District funds, dependent upon upcoming voter approval of district formation, may be used for a wide range of trail improvements.

11.5.3 Detailed Phasing Plan: Future Phases

The following are actions designated for future phases (beyond 10 years). Their priority will be dependent upon the progress made during the initial phase, available funding and continuing trail connectivity expansion. The overall goal is to make continuing progress in establishing a through trail system with priority given to trail linkage between Norco and Riverside, eastward expansion of San Bernardino County trails from Colton to Mill Creek, and trail amenities for completed segments such as additional staging areas and rest stops. Long term segments, such as the northern Norco bluff area to be funded by developers and the County and the I-215/10 Freeway interchange, would be engineered and built. The future phase actions are listed below by County:

Orange County Section

- Provide a second trail bridge at the Fairview Park river crossing for non-bicycle use due to increasing trail use. (Sheet 3).
- Provide a trail rest stop at Arevalos Park. (Sheet 4).
- Provide additional trail rest stop facilities at Suburbia Park. (Sheet 5).
- Provide trail staging area facilities at Spurgeon Park. (Sheet 9).
- Provide a trail rest stop on the north-west bank near the Carbon Canyon Diversion Channel, oriented towards equestrian users. (Sheet 15).
- Improve Imperial Hwy. bridge for a bike trail with barrier. (Sheet 19).
- Provide a trail rest stop on the east river bank near Santa Ana River Lakes. (Sheet 17).
- Provide a bicycle oriented trail staging area at Featherly Regional Park at Gypsum Canyon Rd. (Sheet 23).
- Complete signage and landscaping programs.

Riverside County Section

- Provide a trail rest stop at the junction with Aliso Creek Trail in Chino Hills State Park. (Sheet 26).
- Construct an equestrian staging area at the Corona National site. (Sheet 30).
- Construct a bicycle staging area at Butterfield Stage Park at or near Smith Ave. (Sheet 30).
- Construct and/or rehabilitate 1.4 miles of equestrian and hiking trail through River Trails Park (Norco) from Shadow Canyon Circle north to Old Hamner Avenue. (Sheets 34 to 35).

- Provide a trail staging area within Wayne Makin Park, location TBD. (Sheet 32).
- Construct 4.9 miles of bike and equestrian/hiking trail through the Norco area from Corydon St./River Rd. to the north side of the river then eastward to Hamner Ave. (Sheets 33 to 35).
- Provide a trail rest stop on the north side of the river west of Hamner Ave. (Sheet 34).
- Provide a bicycle trail staging area at Clark Park or in conjunction with the Caltrans Park and Ride area in Norco with route signage at Old Hamner Ave. (Sheet 35).
- Provide a trail staging area at Prado County Park. (Sheet 32).
- Construct 6.2 miles of dual trail from Hamner Ave. to Van Buren Blvd. (Sheets 35-39).
- Provide trail staging areas at Pedley Avenue Trail, La Sierra Trail and Agriculture Park. (Sheets 36 to 39).
- Provide trail rest stops at the Bain St. Trail and Pedley Trail near Van Buren Blvd. (Sheets 37 to 39).
- Rehabilitate the old clubhouse facility at Hidden Valley Wildlife Area (currently used by lessee) into a potential Nature/Science Education Center. (Sheet 38).
- Provide a separate trail staging area within Martha McLean - Anza Narrows Regional Park. (Sheet 41).
- Expand group equestrian campground facilities at Rancho Jurupa Regional Park. (Sheet 42).
- Provide a trail staging area within Martha McLean-Anza Narrows Regional Park on the east side of the river at Tequesquite and Rubidoux Aves. (Sheet 42).
- Construct 0.5 miles of bike trail along levee and 1.0 mile of Class II bike trail along Crestmore Ave. with new road realignment project to access Rancho Jurupa Park and Riverside Terrace softball complex. (Sheet 44).
- At Buena Vista/Mission Blvd. bridge, accommodate separated bicycle trail with barrier. (Sheet 44).
- Provide expanded trail staging facilities within Riverside's Carlson Park. (Sheet 44).
- Provide trail rest stop at Fairmont Park and 1.0 mile of alternate bike trail loop. (Sheet 44).
- Provide 1.2 miles of bike trail, a rest stop at the Jurupa Trail, and at the Market Street bridge accommodate a separated trail with barrier to the County line as the Agua Mansa Enterprise Zone develops to accommodate future commuter bike travel as well as recreational use. (Sheets 45-46).

San Bernardino County Section

- Construct 2.1 miles of long term secondary bike trail, trail rest stops at the Rialto Trail and the Box Springs Mt. Trail, and a trail bridge (950 ft.) as the Agua Mansa Enterprise Zone develops to accommodate commuter bike travel as well as recreational use from the County line to the Rialto Trail. (Sheets 46-47).
- Provide for an overnight campground when the future Agua Mansa Regional Park is developed (assumes land on the west side of the river (City of Riverside) becomes parkland). (Sheet 47).
- Construct trail ramp underneath Mt. Vernon Ave. and trail bridge across Reche Canyon. (Sheet 49).
- Construct 1.9 miles of dual trail from Washington St./Reche Canyon Channel to "E" Street using existing maintenance roads where possible and building a trail ramp underneath the I-10 Freeway and Southern Pacific RR bridges. Ramp approx. 0.5 miles long. Ramp underneath "E" Street. (Sheets 49-50).
- Construct dual trail from "E" Street to the Redlands Airport totalling 10 miles. (Sheets 50 to 60).
- Construct trail ramps underneath bridges including Waterman Ave., AT & SF Rail Line, Tippecanoe Ave. and Tennessee Ave. and construct trail culverts underneath Alabama/Palm Ave. and Orange St. (Sheets 51 to 58).
- Construct trail bridge across San Timoteo Creek. (Sheet 51).
- Construct 4 trail staging areas at San Timoteo Creek Trail, Mt. View Trail, City Creek Trail and Redlands Nature Center (proposed). (Sheets 51 to 60).
- Construct 2 trail rest stops at the Mission Morey Trail (Sheet 52) and Alabama St. (Sheet 56).
- Provide a secondary bike trail loop through the existing Norton AFB as it is redeveloped for non-military use to include: 4.3 miles of bicycle trail, a rest stop with picnic area and potential trail camping, widening Tippecanoe Ave. bridge to accommodate a separate trail with barrier and a low-flow trail crossing at Alabama Ave./Palm Ave. (Sheets 53 to 56).
- Construct 1.5 miles of bike trail on levee from the Redlands Nature Center (proposed) to the linkage with the Crafton Hills Bike Trail. One bridge needed to cross levees (100'). (Sheets 60 to 61).
- Construct a trail staging area on County land at Greenspot Rd./Florida Ave. at the juncture of the Santa Ana River Trail, Greenbelt Trail, Crafton Hills Trail and U.S.F.S. trail access. (Sheet 61).
- Provide 1.4 miles of multi-use trail parallel to along Greenspot Rd. from Mill Creek to the Morton Canyon/USFS boundary point. (Sheets 61 to 62).

San Bernardino National Forest

- Complete the trail system from Camp Angelus westward to the valley floor at Greenspot Road. Approximately 13.5 miles. (Sheets 62 to 69). (MP 75.6-89.1).
- Rest Stop at trail to the current Landmark Land Greenspot Project. (Sheet 64).
- Rest Stop at Morton Peak. (Sheet 65).
- Rest Stop between Morton Peak and Thomas Hunting Grounds. (Sheet 66).
- Overnight campground with equestrian facilities at Thomas Hunting Grounds. (Sheet 67).
- Trail staging area north of Constance Peak. (Sheet 68).
- Rest Stop at South Fork area education loop trail. (Sheet 75).
- South Fork education loop trail - 0.7 miles. (Sheet 75).
- Rehabilitate the old Heart Bar Ranch as a potential "working ranch park". (Sheet 77).
- Develop a science education center at Heart Bar Ranch with 2.4 miles of nature trails. (Sheet 77).
- Overnight campground at Morton Canyon (SBVWCD land). (Sheet 62/63).

11.6 Preliminary Draft Cost Estimate

The section identifies a rough cost estimate for the Initial Phase (first 10 years) and for Future Phases (beyond 10 years). Refer to the Phasing Plan for additional information about projects. The cost estimate is broken down by County. This should be used for planning purposes only. Additional engineering, detailed design and environmental studies will be required to provide a more detailed cost estimate. A five percent contingency is added to the higher cost estimate figure.

11.6.1 Cost Estimate Summary

Initial Phase (10 Years)	Cost	(\$1,000's)
• Orange Co.	\$ 2,565 -	\$ 2,715
• Riverside Co.	\$ 6,120 -	\$ 6,425
• San Bernardino Co.	\$ 3,390 -	\$ 3,560
• U.S. Forest Service	<u>\$ 1,220 -</u>	<u>\$ 1,280</u>
Initial Phase Estimate	\$13,295 -	\$13,980

Future Phases (Beyond 10 years)

• Orange Co.	\$ 2,325 -	\$ 2,440
• Riverside Co.	\$10,295 -	\$10,810
• San Bernardino Co.	\$ 9,245 -	\$ 9,705
• U.S. Forest Service	\$ 1,730 -	\$ 1,820
Future Phases Estimate	\$23,595 -	\$24,775
TOTAL COST ESTIMATE	\$36,890 -	\$38,755
	(\$37 to \$39 Million)	

* Costs exclude land acquisition for non-trail open space purposes, costs of operations and maintenance, and management costs. Trail modifications by the Corps of Engineers in Orange County are previously assumed. Costs are for preliminary planning purposes only. For example to create a continuous public parkway or greenway along the river in San Bernardino County would significantly increase the costs for that County. Proposed Nature or Science Education Center costs are not included. These are assumed to be separate projects.

11.6.2 Initial Phase (10 years)

Milepost and sheet numbers are provided for facilities for reference. Costs shown (1990) are for non-volunteer labor and materials. Volunteerism should be used to the fullest extent possible to significantly reduce the estimated cost.

Orange County Section

**Estimated Cost
(1000's)**

Facilities

• Widen 7 miles of bikeway (MP 0-7). (Sheets 1-7).	\$ 140	—
• Equestrian tie-up rest area north of Pacific Coast Hwy. (MP 0). (Sheet 1).	\$ 20	
• Add 2.3 miles of equestrian trail and modify one bridge ramp near the ocean, (MP 0-2.3). (Sheets 1-3).	\$ 65	—
• Trail staging area at Centennial Regional Park (MP 7). (Sheet 7).	\$ 100	
• Trail staging area at Alona Park (MP 10). (Sheet 10).	\$ 200	

• Rest stop improvements at Edna Park. (MP 10). (Sheet 10).	\$ 50
• Trail staging area at Anaheim Stadium. (MP 12.7). (Sheet 12).	\$ 250
• Trail rest stop for equestrians/hikers at Santa Ana River Lakes (MP 18.2). (Sheet 17).	\$ 50
• Trail staging improvements at Riverdale Park (MP 18.3). (Sheet 17).	\$ 50
• Expand trail rest stop at Yorba Regional Park (MP 21.1). (Sheet 20).	\$ 50
• Trail staging and signage at Yorba Regional Park (MP 21). (Sheet 20).	\$ 100
• Equestrian trail staging area at Featherly Regional Park (MP 26.6). (Sheet 25)	\$ 150
• Resurface, stripe and sign Caltrans trail- Gypsum Cyn. Rd. to Green River Rd. - 2.5 miles (MP 25 - 27.4). (Sheets 23-25).	\$ 10
Subtotal:	\$1,185

Signage Program

• Lump sum at \$10K X 10 yrs.	\$ 100
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Landscaping Enhancement Program

• Lump sum at \$100K/year X 10 yrs.	\$1,000
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Trail Structures

• Modify existing bridge ramp near ocean to accommodate dual bicycle and equestrian trails.	\$ 50
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Land Acquisition/Right-of-way

• Anaheim Stadium staging area (MP 12.7).	\$ 250
Total Cost	\$2,585
+ 5% Contingency	<u>\$ 130</u>
Initial Phase Estimate	\$2,715

Riverside County Section

Facilities

• Construct Santa Ana River Flats trail staging area and overnight campground with equestrian facilities (Chino Hills State Park to construct). (MP 30). (Sheet 27).	\$ 700
✓ • Construct Santa Ana River Flats trail linkages - 0.5 miles and seasonal bridge. (Chino Hills State Park to construct) (MP 30). (Sheet 27).	\$ 50
✓ • Construct 3.4 miles of dual trail per Corps plans to below Prado Dam. (MP 27.4-30.8) (Sheet 26-28).	\$ 600
✓ • Construct 0.8 miles of dual trail from below Prado Dam to Spillway New Levee. (MP 30.8 - 31.6). (Sheet 28).	\$ 140
✓ • Construct 2.1 miles of dual trail from Prado Dam Spillway New Levee to Butterfield Drive/Clearwater Dr. (MP 31.6-33.7). (Sheet 28-29).	\$ 370
• Construct Prado Dam area rest stop for bicyclists. (MP 30.8). (Sheet 28).	\$ 50
✓ • Construct 3.0 miles of dual trail from Butterfield Dr. to Corydon St./ River Rd. (MP 33.7-36.7). (Sheet 29-31).	\$ 525
• Signage along 2.5 miles of Corydon Ave./ Norco Drive. (MP 36.7-41.6). (Sheets 31-35).	\$ 5
✓ • Rehabilitate 8.7 miles of existing trail. (MP 44.2-52.6). (Sheets 37-43).	\$ 10

• Design 3.1 miles of trail from La Sierra Trail east to Van Buren. (MP 44.8-47.9). (Sheet 37-40).	\$ 100
• Design equestrian staging area and access at Agriculture Park. (MP 47.2). (Sheet 39).	\$ 20
• Construct 2.9 miles from Van Buren to Anza Narrows Regional Park. (MP 47.9-50.8) (Sheet 40-41).	\$ 915
• Bicycle Trail Staging Area at Van Buren. (MP 47.9) (Sheet 40).	\$ 250
• Construct 2.1 miles of trail from Martha McLean-Anza Narrows Regional Park to Tequesquite Ave. (MP 50.8-52.9). (Sheet 41-43).	\$ 435
• Construct 2.4 miles of trail from Buena Vista Ave. to County line. (MP 54-55.3) (Sheet 44-46).	\$ 385
Subtotal:	\$4,555

Signage Program

• Lump sum at \$10K/year X 10 years	\$ 100
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Landscaping Enhancement Program

• Lump sum at \$100K/year X 10 years	\$1,000
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Trail Structures

• Ramps at Van Buren Blvd., Hwy. 60 and Market Street. (MP 47.9, 55.1, 55.3).	\$ 450
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Land Acquisition/Right-of-Way

• MP 28.7-29.2 (SAWPA)	\$ 30
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Total Cost	\$6,120
<u>± 5% Contingency</u>	<u>\$ 305</u>
Initial Phase Estimate	\$6,425

San Bernardino Section

Facilities

• Construct 3.3 miles of dual trail from County line to Agua Mansa Regional Park. (MP 56.6-59.8). (Sheet 46-48).	\$ 575
• Construct 1.2 miles of trail from Agua Mansa Regional Park to Washington St. (MP 59.8-60.9). (Sheet 48-49).	\$ 210
• Construct trail staging areas at Agua Mansa Regional Park and at Washington St./Reche Cyn. Channel area. (MP 59.8-60.9). (Sheets 48-49).	\$ 400
• Design 10.0 miles of dual trail from "E" Street to Redlands Airport. (MP 62.7-72.7). (Sheets 50-60).	\$ 180
• Design 4 staging areas at San Timoteo Creek, Mt. View Trail, City Creek Trail and Redlands Nature Center/Opal Ave. and 2 rest stops at Alabama St. and Mission Morey Trail. (MP 63.3-72.7). (Sheets 51-60).	\$ 95
• Prelim. design studies of 1.9 miles of trail from Washington Street/Reche Cyn. Channel to "E" St. (MP 60.9-62.7). (Sheets 49-50)	\$ 25
Subtotal	\$1,485

Signage Program

• Lump sum at \$5K/year X 10 years	\$ 50
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Landscaping Enhancement Program

• Lump sum at \$100K/year X 10 years	\$1,000
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Trail Structures

• Construct ramp at Riverside Ave. (MP 57).	\$ 150
• Construct ramp at La Cadena/SP RR bridges. (MP 59.8)	\$ 250
• Construct ramp at ATSF RR bridge. (MP 60.1)	\$ 150
• Design ramp at Mt. Vernon Ave. (MP 61.6)	\$ 15
• Design ramp under SPRR bridge and I-10 Freeway bridge (0.5 miles long). (MP 61.9- 62.4).	\$ 100
Subtotal	<hr/> \$ 665

Land Acquisition/Right-of-Way

• Trail easement. (MP 57.8-58.1).	\$ 20
• Trail easement. (MP 58.7-59.6).	\$ 60
• Fee acquisition for staging area. (MP 59.7).	\$ 100
• Trail easement (MP 60.2)	\$ 10
Subtotal	\$ 190

Total Cost	\$3,390
<u>± 5% Contingency</u>	<u>\$ 170</u>
Initial Phase Estimate	\$3,560

U.S. Forest Service Section

Facilities

• Construct segment 5 including 12.0 miles of trail from the South Fork area to near Camp Angelus. (MP 89.1-101.1). (Sheets 69-75).	\$ 120
• Construct segment 7 including 4.0 miles from the Heart Bar area to the Pacific Crest Trail. (MP 106.2-110.2). (Sheets 78-80).	\$ 40
• Trail flagging and planning activities.	\$ 25

• Construct 4 trail staging areas near Camp Angelus (Sheet 69), Forsee Creek Road (Sheet 71), Barton Creek/Seven Oaks area (Sheet 72), Coon Creek confluence (Sheet 78).	\$ 400
• Construct 2 rest stops at Cold Creek (Sheet 70) and the Pacific Crest Trail (Sheet 80).	\$ 20
• Construct overnight campground at Barton Creek/Seven Oaks (Sheet 72).	\$ 400
• Trail linkage at Barton Flats to future interpretive center (Sheet 74).	\$ 15
• Expands 3 South Fork staging area (Sheet 75).	\$ 20
• Improve Coon Creek jumpoff facilities. (Sheet 80).	\$ 60
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Subtotal:	\$1,100

Signage Program

• Lump sum at \$5K/year X 10 years	\$ 50
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Landscaping Enhancement Program

• Lump sum at \$5K/year X 10 years	\$ 50
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Trail Structures

• None Included (major).	\$ 0
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Land Acquisition/Right-of-way

▪ Easement - 3200 ft. west of Kilpecker Creek (private land)	\$ 0
Total Cost	\$1,220
+ 5% Contingency	<u>\$ 60</u>
Initial Phase Estimate	\$1,280

11.6.3 Future Phases (Beyond 10 Years)

Milepost and/or sheet numbers are provided for facilities for reference. Costs shown (1990) are for non-volunteer labor and materials. Volunteerism should be used to the fullest extent possible to significantly reduce the estimated cost.

Orange County Section

Facilities

• Arevalos Park trail rest stop. (MP 3.2) (Sheet 4).	\$ 75
• Suburbia Park trail rest stop expansion. (MP 4.7). (Sheet 5).	\$ 50
• Spurgeon Park trail staging area. (MP 8.9). (Sheet 9).	\$ 250
• Trail rest stop at Santa Ana River Lakes. (MP 18.1). (Sheet 17).	\$ 50
• Trail rest stop at Carbon Canyon Channel. (MP 16). (Sheet 15).	\$ 50
• Featherly Regional Park bicycle trail staging area. (MP 24.9). (Sheet 23).	\$ 250
Subtotal	<u>\$ 725</u>

Signage Program

• Lump sum at \$10K for 10 years	\$ 100
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Landscaping Enhancement Program

• Lump sum at \$100K for 10 years	\$1,000
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Trail Structures

• Imperial Highway bridge improvements to accommodate a bike trail with barrier. (Sheet 19).	\$ 300
• Second trail bridge at Fairview Park. (Sheet 3)	\$ 200
Subtotal	<u>\$ 500</u>

Land Acquisition/Right-of-way

• None included.	\$ 0
Total Cost	\$2,325
+ 5% Contingency	\$ 115
Future Phases Estimate	\$2,440

Riverside County Section

Facilities

• Aliso Creek Trail primitive rest stop at Chino Hills State Park. (Sheet 26). (MP 29.2).	\$ 30
• Construct equestrian staging area at Corona National Golf Course site and a bicycle trail staging area at Butterfield Stage Park. (MP 34.3-34.9). (Sheet 30).	\$ 400
• Construct equestrian/hiking trail from north of Shadow Canyon Circle to Old Hamner Ave. - 1.4 miles with potential environmental mitigation up to 5:1 ratio assumed. (MP 36-41.6). (Sheets 31-35).	\$ 210
• Construct Wayne Makin Park trail staging area. (MP 38.7). (Sheets 32 and 33).	\$ 150
• Construct 4.9 miles of dual trail through the Norco area on the north bluff as the area develops. (MP 36.8-41.7). (Sheets 31-35).	\$ 980
• Construct trail rest stop in Norco Bluff area (Sheet 34). (MP 40.5).	\$ 75
• Bike trail staging area at Clark Park or Caltrans Park and Ride at Old Hamner Ave. (MP 41.7). (Sheet 35).	\$ 100
• Prado County Park trail staging area. (MP 38.5). (Sheet 33).	\$ 200
• Construct 6.2 miles of dual trail from Old Hamner Ave. to Van Buren Blvd. with 3.1 miles of potential environmental mitigation up to 5:1 ratio assumed (west of La Sierra Trail). (MP 41.6-47.8) (Sheets 35-40).	\$3,100

• Trail staging areas at Pedley Ave. Trail, La Sierra Trail and Agriculture Park. (MP 43.2-47.2). (Sheets 36-39).	\$ 400
• Trail rest stops at Bain St. Trail and Pedley Trail near Van Buren. (MP 45-47.2). (Sheet 37-39).	\$ 150
• Rehabilitate old clubhouse at Hidden Valley Wildlife Area into a potential Nature/Science Education Center. (MP 45.7). (Sheet 38).	Not Included
• Martha McLean - Anza Narrows Park trail staging area. (MP 50.6) (Sheet 41).	\$ 125
• Expand equestrian campground at Rancho Jurupa Regional Park. (MP 52). (Sheet 42).	\$ 150
• Construct trail staging area at Tequesquite and Rubidoux Avenues. (MP 51.9). (Sheet 42)	\$ 150
• Construct 1.5 miles of bike trail into Rancho Jurupa Park from Mission Blvd. (MP 53-54). (Sheets 43-44).	\$ 225
• Carlson Park trail staging facilities. (MP 54). (Sheet 44).	\$ 100
• Fairmount Park trail rest stop. (MP 54.6) (Sheet 44).	\$ 100
• Fairmount Park bike trail loop addition. (MP 54.6-55.1). (Sheet 44).	\$ 170
• Construct westerly secondary commuter bike trail from Market Street to the County line - 1.2 miles. (MP 55.3-56.5). (Sheets 45-46).	\$ 210
• Jurupa Trail rest stop. (MP 55.3). (Sheet 45).	\$ 50
Subtotal	<hr/> \$7,075

Signage Program

• Lump sum at \$10K for 10 years	\$ 100
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Landscaping Enhancement Program

- Lump sum at \$100K for 10 years \$1,000

Trail Structures*

- Dual trail addition to Hamner Ave. bridge - retrofit. (Sheet 35). \$ 400
 - Trail bridge near the SR-71/91 Interchange near Prado Dam. (Sheets 27-28) \$ 350
 - Bike trail crossing at Buena Vista/Mission Blvd. bridge - retrofit. (Sheet 44). \$ 400
 - Bike trail crossing at Market St. bridge- retrofit. (Sheet 45). \$ 400
- Subtotal \$1,550

* Trails on future Limonite Ave. bridge extension not included.

Land Acquisition/Right-of-Way

- Easement - MP 32.0-33.1 (Sheet 29) \$ 70
- Easement - 1.1 miles, Stagecoach St. to River Rd. (Sheet 31). \$ 70
- Easement - 1 mile - OCWD near Norco bluffs. (Sheet 31). \$ 60
- Easement - 1.1 miles, River Road to CRC Plant. (Sheet 33). \$ 70
- Easement - MP 40.5-41.4 (Sheets 34-35) \$ 60
- Fee - Trail rest stop at Norco - north bluff area. (Sheet 34). \$ 50
- Fee - Pedley Ave. trail staging area - MP 43.3 (Sheet 36). \$ 50
- Easement - MP 43.3-44.0. (Sheet 36). \$ 50

• Easement - MP 55.1-56.5. (Sheets 44-46).	<u>\$ 90</u>
Subtotal	\$ 570
Total Cost	\$10,295
+ 5% Contingency	<u>\$ 515</u>
Future Phases Estimate	\$10,810

San Bernardino County Section

Facilities

- Construct 2.1 miles of secondary commuter bike trail in the Agua Mansa Enterprise Zone area from the County line to the Rialto Trail. (Sheets 46-47). (MP 56.5-58.6). \$ 315
- Construct a trail rest stop at the Rialto Trail. (Sheet 47) (MP 58.5). \$ 50
- Construct a trail rest stop at the Box Springs Mt. Trail. (Sheet 47). (MP 57.8). \$ 50
- Provide an overnight campground at the future Agua Mansa Regional Park on land west of the river. (Sheet 47). (MP 47.8). \$ 600
- Construct 1.9 miles of dual trail from Washington St./Reche Canyon Channel to "E" Street. (Sheets 49-50). (MP 60.8-62.7). \$ 300
- Construct dual trail from "E" Street to the Redlands Airport/Opal Ave.- 10 miles. (Sheets 50-60). (MP 62.7-72.7). \$1,570
- Construct 4 trail staging areas at San Timoteo Creek Trail, Mt. View Trail, City Creek Trail and at proposed Redlands Nature Center. (Sheets 51-60). (MP 63.4-72.7). \$ 720
- Construct 2 trail rest stops at the Mission Morey Trail and Alabama St. (Sheets 52/56). (MP 64.1-68.2) \$ 140

• Provide a secondary bicycle trail through the redeveloped Norton AFB complex - 4.3 miles, and one trail rest stop. (Sheets 53-56). (MP 65.1-68.1).	\$ 700
• Construct 1.5 miles of dual trail on levee from the proposed Redlands Nature Center to link up with the Crafton Hills bike trail.	\$ 225
• Construct a trail staging area at Greenspot Rd./Florida Ave. (Sheet 61). (MP 74.3).	\$ 200
• Construct 1.4 miles of two parallel multiple use trails (equestrian, hiking, mountain bicycles) from the Crafton Hills Trail to the USFS boundary at Morton Canyon. (Sheets 61-62). (MP 74.2-75.6).	\$ 75
Subtotal	\$4,945

Signage Program

• Lump sum at \$15K for 10 years	\$ 150
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Landscaping Enhancement Program

• Lump sum at \$100K for 10 years	\$1,000
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Trail Structures

• Construct a seasonal trail bridge from the Rialto Trail to the future Agua Mansa Regional Park - approx. 950'. (MP 58.6). (Sheet 47).	\$ 200
• Construct a trail bridge across Reche Canyon Channel - approx. 250'. (MP 61). (Sheet 49).	\$ 200
• Construct a trail ramp underneath the Mt. Vernon Ave. bridge. (MP 61.4). (Sheet 49).	\$ 150
• Construct a trail ramp underneath the SP RR bridge and the I-10 Freeway bridge below a vertical concrete wall - approx. 0.5 miles long. Assume low flow use only. (MP 61.9-62.4). (Sheet 50).	\$ 600

• Construct trail ramp underneath the "E" Street bridge. (MP 61.8-62.3). (Sheet 50).	\$ 150
• Construct 3 trail ramps underneath bridges at the AT & SF RR line, Tippecanoe Ave. and Tennessee Ave. (MP 63.4-68.8). (Sheets 51-57).	\$ 500
• Construct 2 trail underpass culverts at Alabama/Palm Ave. and Orange St. (MP 68.2-69.9). (Sheets 56-58).	\$ 300
• Construct a trail bridge across the San Timoteo Creek Channel - 150'. (MP 63.3) (Sheet 51).	\$ 125
• Add a bicycle trail with barrier to the Tippecanoe Ave. bridge. (MP 65.1). (Sheet 53).	\$ 300
• Construct low-flow trail crossing at Alabama St./Palm Ave. (MP 68.2). (Sheet 56).	\$ 20
• Construct levee bridge east of the Redlands Nature Center. (MP 73.2). (Sheet 61).	\$ 75
Subtotal	\$2,620

Land Acquisition/Right-of-Way

• Easement - (MP 56.4-58.7). for a secondary commuter bike trail. (Sheets 46-47).	\$ 150
• Fee - Mt. View Trail staging area - 1 acre. (MP 66). (Sheet 54).	\$ 50
• Easement - (MP 66.7-67.6). (Sheets 54-55).	\$ 60
• Easement - (MP 68.7-69.0). (Sheets 56-57).	\$ 20
• Easement - (MP 69.7-71.5). (Sheets 57-58).	\$ 120
• Easement - (MP 73.3-73.9). (Sheet 61). SBVWCD.	\$ 40

• Easement - (MP 74.2-75.6). (Sheets 61-62). SBVWCD.	\$ 90
	<hr/>
Subtotal	\$ 530
Total Cost	\$9,245
± 5% Contingency	<u>\$ 460</u>
Future Phases Estimate	\$9,705

U.S. Forest Service Section

Facilities

• Construct Segments 1-4 of approx. 13.5 miles of mountainous trail from the USFS boundary at Morton Canyon to the trail end point near Camp Angelus. (MP 75.6 to 89.1). (Sheets 63-69).	\$ 160
• Construct overnight campground at Morton Canyon mouth area. (MP 75.8). (Sheets 62-63).	\$ 400
• Construct trail rest stop at the trail junction with the proposed trail to the Landmark Land Co. Greenspot project. (Sheet 64).	\$ 5
• Construct 3 trail rest stops at Morton Peak area (Sheet 65), between Morton Peak and Thomas Hunting Grounds (Sheet 66) and the South Fork area nature/science education loop trail (Sheet 75).	\$ 30
• Construct an overnight campground with equestrian facilities at Thomas Hunting Grounds (Sheet 67).	\$ 450
• Plan and construct four primitive trail camps at Cold Creek, Foresee Creek, Barton Flats and Heart Bar areas.	\$ 40
• Plan and design approximately 30 miles of mountain bike trail using existing mountain trails and roadways.	\$ 60
• Construct a trail staging area north of Constance Peak (Sheet 68).	\$ 100
• Construct a nature/science education loop trail near the South Fork area - approx. 0.7 miles. (Sheet 75).	\$ 15

- Reconstruct/rehabilitate the Old Heart Bar Ranch as a "working ranch" park and develop a new science center at the complex with 2.4 miles of nature trails. (Sheet 77). Not Included

Subtotal \$1,260

Signage Program

- Lump sum at \$10K/year for 10 years \$ 100

Landscape Enhancement Program

- Lump sum at \$10K/year for 10 years \$ 100

Trail Structures

- None Included (major). \$ 0

Land Acquisition/Right-of-Way

- Easement - approx. 2.8 miles from the USFS boundary at Morton Canyon eastward and campground area. (SBVWCD) \$ 270

Total Cost \$1,730
 ± 5% Contingency \$ 90
\$1,820

11.6.4 Cost Sources and Assumptions

The following cost estimate sources and assumptions were used in this section.

Sources

- County of Riverside Road Dept. Estimates, 1989.
- City of Riverside Public Works Estimates, 1990.
- Corps of Engineers Estimates, 1988.
- USFS - San Bernardino National Forest Estimates, 1990.
- Cost Data for Landscape Construction, Kerr Assoc., 1989
- EDAW, Inc. and 2M Associates, 1990.

Assumptions

Costs (\$1000's)

Trails

- Multiple Use Trail \$25 - \$50 per mile
- Forest Trail (USFS) \$ 7 - \$10 per mile
- Bicycle and Dual Trail - flat/easy \$150-\$175 per mile
- Bicycle and Dual Trail - moderate difficulty, some slope \$200-\$250 per mile
- Bicycle and Dual Trail - difficult w/slope \$300-\$350 per mile
- Bicycle and Dual Trail - difficult w/slope and with potential mitigation at a 5:1 ratio, slope stabilization \$700-\$725 per mile
- Equestrian/hiking trail \$25 - \$30 per mile
- Equestrian/hiking trail with potential mitigation at a 5:1 ratio \$150-\$175 per mile

Land

- Right-of-Way Easement
 - Urban \$60 - \$70 per mile
 - Forest \$25 - \$35 per mile
- Fee Land Acquisition
 - Lowland \$20 - \$25 per acre
 - Upland \$50 - \$60 per acre
 - Developed/Planned \$250-\$275 per acre

Trail Structures

- Trail Bridges
 - Small to 100' long \$75 - \$85 each
 - Large over 100' long \$0.8- 1.0 per foot
- Trail ramps - 1 side \$150 to \$200 each
- Trail culvert underpasses \$100 to \$150 each
- Major ramps under freeways (ie. I-10) \$500 to \$700 each

Trail Facilities

- Rest stops
 - Urban \$50 - \$100 each
 - Forest \$10 - \$15 each
- Staging Areas
 - Bicycle, urban \$200-\$300 each
 - Equestrian, urban \$150-\$250 each
 - Forest \$100 each

- Campgrounds
 - Urban, varies \$600-\$800 each
 - Forest, varies \$450-\$600 each

11.7 Trail Ordinance Policy

To insure the success of the Santa Ana River Trail and to provide for its implementation, governmental entities including Counties and Cities, need to enact provisions within their authority. These are typically done as Component Elements of General Plans, Area Plans and Specific Plans.

Different governmental entities include language in different Elements or Plans to accommodate trail system. These then become an Ordinance. In Orange County, for example, bicycle trails are recognized within a Component of the Transportation Element, while equestrian and hiking trails are provided for within the Recreation Element. These documents set forth the policy statements that are then accommodated within developer agreements or other public planning processes. Sometimes governments include trails within the Parks and Recreation or Land Use Element. Riverside County has a specific section in the Land Use Element of the General Plan called the "Santa Ana River Corridor Land Use Policies." Each entity needs to identify the appropriate policy document to include language related to the trail system.

In developing a draft trail language, bicycle trails of the Santa Ana River Trail Master Plan should be accommodated within a Component of the Transportation Element of the City or County. Attached is a copy of the Orange County "Master Plan of Countywide Bikeways Component". This can be used as a model for other governmental entities. Reference is made to the "Planning and Design Criteria for Bikeways in California", CALTRANS, which is the standard used for this trail system.

The following is a "Santa Ana River Corridor Trails System Master Plan Component" for bicycle, equestrian and hiking trails. This should be modified as needed by local entities and included in the Land Use, Open Space and/or Parks and Recreation Elements specific to each agency.

11.7.1 Sample Model Ordinance

Chapter _____. Santa Ana River Corridor Trail System Master Plan Component.

A. Introduction

1. Background

In 1989, the Counties of Orange, Riverside and San Bernardino along with the U.S. Forest Service, the National Park Service, and several other entities including many Cities along the river, commissioned a trails master plan study of the Santa Ana River. The study extended from the Pacific Ocean in Orange County to the headwaters of the river and the Pacific Crest Trail in the San Bernardino National Forest. This regional trail system master plan was the first detailed study of its kind to analyze the entire length of the river, some 110 miles long, for bicycle, equestrian and hiking use.

The Master Plan was completed in 1990 to guide regional trail development along the river in the three counties.

This Santa Ana River Corridor Trail System Master Plan Component of the _____ Element is adopted as ordinance. It incorporates the goals, objectives and policies of the master plan report as approved in 1990.

2. Purpose

The Santa Ana River Corridor Trail System Master Plan Component provides policies and programs for the purpose of directing the future development and operation of a continuous multi-purpose, public trail system to meet the growing needs and desires for recreation, science education, transportation and open space of residents of the three county region.

The Santa Ana River Corridor Trail System Master Plan identifies bicycle, equestrian, hiking and multi-purpose trails over a 110-mile corridor. This includes existing and proposed regional trail alignments and connection to the many regional feeder trails. The Santa Ana River Trail connects an entire network of other regional trails, community trails, and National Forest trails. It is a vital link to the entire trail system of the region including both incorporated and unincorporated areas of the three county area.

3. Definitions

The Santa Ana River Trail Corridor is made up of specific trail components. These consist of the following:

- Bicycle trails; Class I, II or III standards.
- Equestrian and Hiking Trails
- Multi-use Trail
- Mountain Bike Trail
- Trail Staging Areas
- Trail Rest Stops
- Campgrounds
- Primitive Trail Camps
- Nature/Education Centers
- Feeder Trail Connections

(Specific design guidelines to be added by each jurisdiction/agency.)

B. Goal, Objective and Policies

1. Goal

The goal of the Santa Ana River Corridor Trail System Master Plan is to provide a useful and efficient multi-use trail system to meet the recreation, science education, transportation and open space needs and desires of the Santa Ana River region. The goal of the Master Plan is to:

- Provide for continuous safe trail linkage from the Pacific Ocean to the Pacific Crest Trail in the San Bernardino National Forest.
- Provide trail linkage to regional and sub-regional feeder trail systems, where appropriate.
- Provide multi-use trail opportunities within the trail system for hiking, running, bicycle, horseback and wheelchair.
- Provide nature trail and environmental education interpretive opportunities, where appropriate, within the trail system.
- Provide for the protection of open space natural resources including wildlife habitat and cultural resources. Ensure that trail use, locations and management are consistent with the protection of natural, scenic and aesthetic values.
- Develop trail opportunities for persons of all levels of ability. This would include persons with a variety of physical capabilities and limitations and user needs in a manner consistent with state and federal regulations.
- Provide for different mechanisms to implement the trail system including acquisition, development, operations, maintenance and management programs.

2. Objective

To implement and maintain a public system of regional bicycle, equestrian, hiking and multi-use trails along the Santa Ana River Corridor as depicted in Figure _____ (Trails Map) which meets the recreation, science education, transportation and open space needs and desires of the citizens of the three County area.

3. Policies

The Santa Ana River Corridor Trail System Master Plan shall be developed in accordance with the following policies.

A. Acquisition and Development

1. The dedication of right-of-way and construction of public regional bicycle, riding and hiking trails shall be pursued as a condition of approval of development projects (i.e., irrevocable offers of recreation easements) within a 1/4 miles zone of the unincorporated and incorporated areas along the Santa Ana River Corridor.

2. The anticipated cost of regional bicycle, riding and hiking trails, including acquisition, development, maintenance, and operation shall be considered in the process of making acquisition decisions.
3. Regional bicycle, riding and hiking trails shall, to the extent possible, be designed and constructed to afford access to law enforcement, fire, emergency, and maintenance vehicles.
4. Regional riding and hiking trails along natural watercourses or flood control channels shall, where feasible, be located outside the 25-year flood plain with bicycle trails located at the edge of or outside the 100-year flood plain, where feasible and practical.
5. Land banking of right-of-way or land acquisition in the form of irrevocable offers for recreation easements for regional bicycle, riding and hiking trail corridors by City, County, State and federal agencies shall be encouraged to provide a continuous trail system network.
6. Expansion of existing regional Santa Ana River trail facilities shall be sought where attractive opportunities exist and where the Master Plan has identified needed trail facilities.
7. Regional bicycle, riding and hiking trail linkages shall be sought with County, State and federal recreation facilities and municipal and local trail systems along the Santa Ana River corridor.
8. A public open space corridor along the trail system route shall be highly encouraged and should be acquired at or before the time of trail development. Criteria for open space acquisition shall include:
 - a. Opportunities for viewpoints and scenic vistas.
 - b. Areas of significant public open space quality including sensitive habitat and riparian areas, geologic formations, cultural sites and agricultural areas.
 - c. Open space to buffer trail routes from existing or future urban development encroachment.
 - d. Flood plain preservation.
9. Trail development and right-of-way acquisition should occur in a logical manner and be coordinated by the Santa Ana River Coordination Group. The Santa Ana River Corridor is a valuable open space and recreational resource which should be preserved where possible. Trail development should be utilized to acquire a public open space corridor along the river and to enhance existing degraded portions of the river and prevent further environmental damage.

B. Operations and Maintenance

1. Regional bicycle, riding and hiking trails within the unincorporated area and within all County regional recreation facilities shall be operated and maintained by the County of _____. Regional bicycle, riding and hiking trails within municipalities may be operated and maintained by a combination of funds from the County of _____ and municipal funds.
2. Operation and maintenance may be handled by County or City maintenance crews or by private contract when analysis shows that savings will result.
3. The natural and man-made environment of the Santa Ana River regional trail system shall be protected from deterioration due to overuse.
4. The County of _____, in cooperation with other agencies and volunteers, shall provide user education and exposure to the location and historical features of regional bicycle, riding and hiking trails. This may be accomplished through interpretive programs, exhibits, publications and other activities authorized by the Santa Ana River Coordination Group.

C. Intergovernmental Coordination

1. The County of _____ may assist local agencies in the planning of the Santa Ana River Trail and in regional feeder trails which will meet identified regional recreation needs.
2. The County of _____ should request cities to participate in the assessment of opportunities for consolidation, exchange of services and other approaches for reducing the cost of the delivery of recreation and commuter trail facilities and services.
3. Cooperation and liaison shall be maintained to encourage consistency between other agency trail components and the Santa Ana River Trail.

D. Implementation Programs

1. Acquisition and Development

- a. Description: The Implementation Program implements the Santa Ana River Trail System (Figure ____). The program strives to serve the varied recreation needs and desires of all residents of the County region by linking open space and recreation facilities countywide and between counties, enhancing activities therein, and promoting alternative transportation modes.
- b. Action:
 - 1) Acquire and develop trail linkages through conditions of approval (e.g., irrevocable offers of recreation easements with improvements).
 - 2) Develop trails in accordance with County design criteria.

3) Offers of fee and right-of-way dedication shall be placed in a land bank maintained by the County of _____ and reviewed annually by the Board of Supervisors for acceptance, contingent upon financial capability of the County of _____ to assume operation and maintenance costs.

c. New or Existing Program: Existing

d. Implementation Schedule: Ongoing

e. Responsible Agency: County of _____

f. Source of Funds: 1) Open Space District or _____
Department

2) Municipalities

3) Grants

4) Gift

2. Operation and Maintenance (O&M) Program

a. Description: The operation and maintenance of the Santa Ana River regional bicycle, riding and hiking trails is a joint effort undertaken by the three Counties, US Forest Service and various municipalities. The program is to maintain the trail system in optimal condition and to prevent trail deterioration due to overuse.

b. Action:

1) Continue to explore additional public and private funding sources necessary to operate and maintain the Santa Ana River regional trail network.

2) Continue to explore opportunities for cooperative agreements with other agencies and volunteers to operate and maintain the Santa Ana River regional trail network.

3) In cooperation with other agencies, provide interpretive programs, exhibits, publications and activities authorized by the Board of Supervisors which inform residents about the regional bicycle, riding and hiking trails (i.e., their location, historical features).

c. New or Existing Program: Existing

d. Implementation Schedule: Ongoing

e. Responsible Agency: County of _____

- f. Source of Funds:
 - 1) Open Space District or _____ Department
 - 2) Municipalities
 - 3) Grants
 - 4) Gift
 - 5) Corporate Sponsorships

3. Financing Program

a. Description:

The Financing Program provides the financial planning basis for the acquisition, development, operation and maintenance of the Santa Ana River regional bicycle, riding and hiking trails. This program is included in the Capital Projects Program and an Operation and Maintenance Financing Plan of the County of _____ which are updated annually. This plan identifies the fiscal capacity of the County of _____ to acquire, develop, operate and maintain new regional open space lands and facilities including public regional bicycle, riding and hiking trails.

b. Action:

- 1) Annually update the Board-approved Capital Projects Program and the Operation and Maintenance Financing Plan.
- 2) Annually update the County of _____ Open Space/Recreation/Special Districts Program Report.
- 3) Coordinate with County of _____ Public Works and Planning for the acquisition, development, operation and maintenance of the Santa Ana River regional bicycle, riding and hiking trails.

c. New or Existing Program: Existing

d. Implementation Schedule: Ongoing

e. Responsible Agency: County of _____

- f. Source of Funds:
 - 1) Open Space District or _____ Department
 - 2) User Fees
 - 3) Grant Revenues
 - 4) General Fund

- 5) County Service Area Funds
- 6) Developer Endowments
- 7) Gifts
- 8) Corporate Sponsorships

4. Intergovernmental Coordination Program

a. **Description:** The Santa Ana River Corridor Trail System Master Plan is a regional trail system in scope. It is a public trail system of a statewide significance that traverses three counties without regard for jurisdictional boundaries and therefore, intergovernmental coordination is necessary for successful implementation. To provide for a successful, efficient and logical expansion of the trail system, the Santa Ana River Coordination Group has been established to coordinate activities of other jurisdictions along the corridor. This includes the various municipalities, the three Counties, State Parks Dept., Corps of Engineers, and the US Forest Service among others. The Coordination Group shall meet on a regular basis and coordinate the trail-related activities along the river corridor.

b. **Action:**

Solicit cooperation from municipal, County, State, federal, and other agencies and landowners/developers in implementing the Santa Ana River regional bicycle, riding and hiking trail network.

c. **New or Existing Program:** Existing

d. **Implementation Schedule:** Ongoing

e. **Responsible Agency:** County of _____

f. **Source of Funds:** 1) Open Space District or
_____ Department

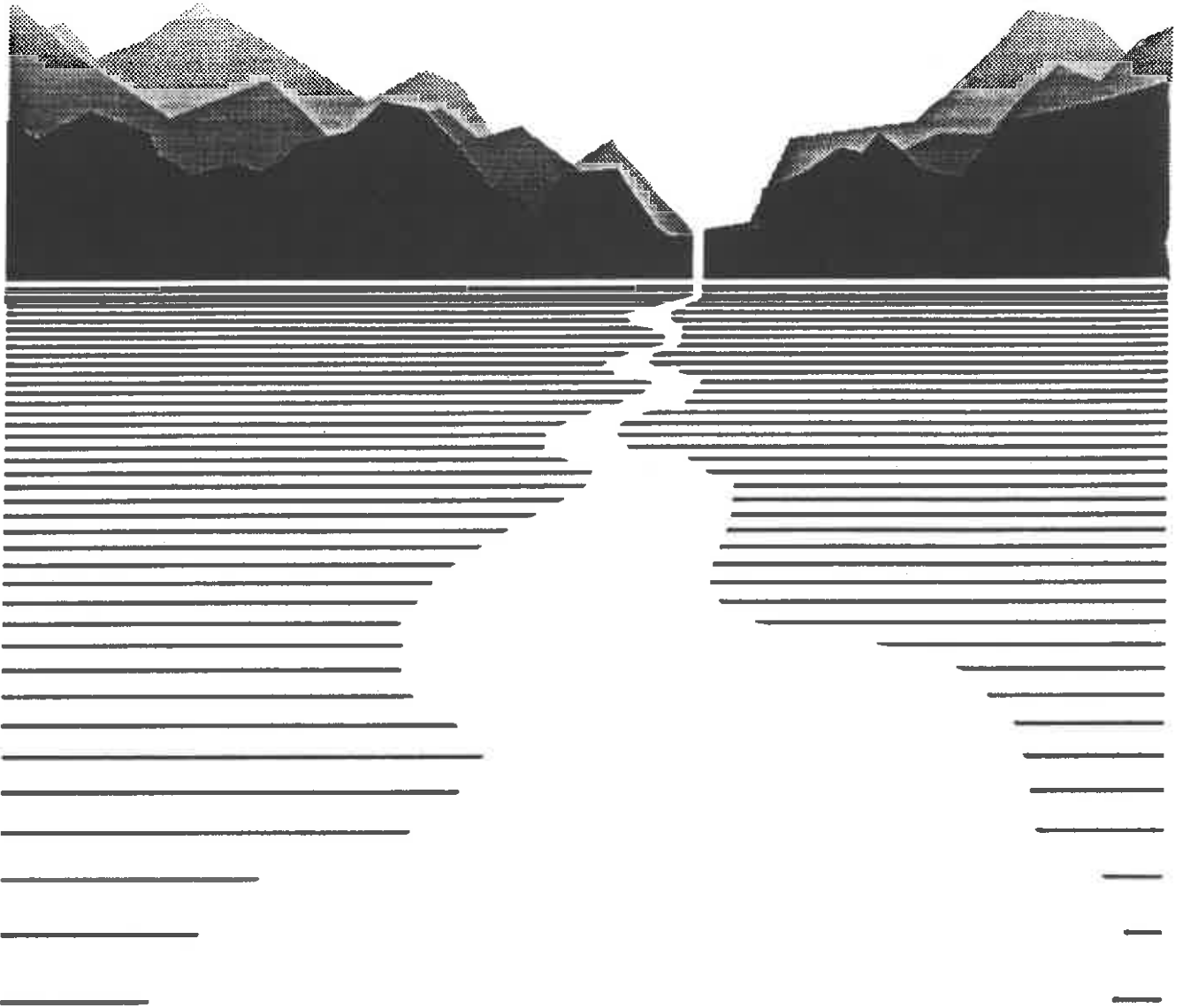
2) Municipalities

3) Grants

4) Gifts

11.7.2 Developer Agreements

Attached in the Appendix are sample developer agreements for trails and public open space. These may be edited to acquire recreational open space, trails dedications or facilities. These are included for future reference material.



12.0 Design Standards

12.0 DESIGN STANDARDS

Design Standards are overall guidelines for trail and trail-related construction to be utilized by the various entities along the 110-mile route of the Santa Ana River Trail. The purpose of the design standards are the following:

- To provide trail design continuity
- To provide trail user identity
- To provide trail user safety and convenience
- To promote National Recreation Trail designation
- To minimize trail hazards, trail deterioration and liability
- To minimize trail operations and maintenance costs
- To protect open space resources

This section deals with construction-related standards related to the Santa Ana River Trail which crosses many different types of terrain and land use. These standards are meant to be as thorough as possible, however it is difficult to cover every situation. In addition, some flexibility will be needed. Therefore, the standards should be taken as a guide, rather than a formula. Specific site conditions must be evaluated by on-site teams and the proper design standard applied to each condition. If a specific standard does not exist, individual judgement will be needed.

This chapter is organized into two sections. The first deals with the valley region from the ocean to the National Forest boundary, some 77 miles. This accounts for about 70% of the trail system. The second section deals with the National Forest section which encompasses 30% of the trail system.

• Valley Region

- Right-of-way
- Bicycle Trails
- Equestrian/Hiking Trails
- Multiple-use Trails
- Feeder Trails
- Trail Staging Areas
- Trail Rest Stops
- Campgrounds

• The San Bernardino National Forest Region

- Trails
- Trail staging Areas/Trail Heads
- Trail Rest Stops
- Campgrounds

• Landscape Program

- Plant listing for Valley Region

12.1 The Valley Region

12.1.1 Rights-of-Way

In the long-term, the Santa Ana River Trail should form a linear greenway and in many areas, it will be possible to acquire wide rights-of-way particularly within flood easements. When a man-made or natural corridor exists, the entire corridor should be considered for acquisition. In places where a natural corridor does not exist, a right-of-way should be acquired wide enough to provide a buffer between the trail and existing or future adjacent development. A minimum width of 300 feet is desirable. There is no maximum width since trail conditions vary.

Much of the trail route passes through land which is already developed. In such areas, where space is limited, the trail corridor will need to be narrow. The rights-of-way should always be wide enough for safe passage of users, for signage, fencing, and the possibility of landscaping. For a single-use or double-use trail, these restricted rights-of-way should be no narrower than 20 feet. A right-of-way for all three uses (hiking, riding, bicycling) should be no narrower than 30 feet (40 feet preferred), to allow separation of users. Obviously, such narrow corridors provide access but do not create a linear greenway. Adjacent landowner may also be impacted.

The trail management entity may acquire necessary rights-of-way by purchase of fee title, by easement, or by agreement (use permit, license, contract). Acquisition by purchase will be documented by grant or deed recorded with the County Recorder. Agreements may or may not be recorded. Most acquisitions will be from private owners, and most agreements will be with public agencies. The two are discussed separately.

Rights-of-Way on Publicly Owned Lands: Agreements should be as long term as possible. (Trails which receive National status must have a ten-year minimum term.) Revocable permits should be avoided. Where this is not possible, the right to revoke the permit should be available to both parties, upon sixty (60) days written notice. Renewal procedures should be specified. Responsibility for liability resulting from trail activity and use may be assumed by the

Management agency. Agreements should contain minimal restrictions regarding design, construction, and operation of the trail. Reasonable restrictive requirements may include installation of gates, fencing, landscaping, signs, and other minor construction specifications.

Specific right-of-way requirements vary with the type of trail and the topography. Generally, if the public property is a linear space such as the river, an agreement covering the full corridor width is preferred. If the trail is across open land, a route must be defined, and may be simply a location may attached to the agreement. In the latter case, provisions for necessary minor trail rerouting must be included within the agreement.

Rights-of-Way on Privately Owned Lands: Fee simple is the most desirable form of title for acquisition from private owners. Fee ownership allows management operating flexibility which may not be guaranteed in easements. The property rights may be acquired by purchase or donation of right-of-way, by dedication of rights-of-way during development, or by condemnation. Donations of rights-of-way are encouraged. Also, the three Counties will cooperate with cities by accepting usable trail rights-of-way which are part of the Santa Ana River Trail created by park dedication ordinances and by condition of subdivisions.

Trail Rights-of-Way Siting and Construction Considerations: The following are considerations for trail siting, trail additions or modifications, feeder trails and land acquisition.

- Site the trail alignment to maximize the use of open space, parks, and natural areas.
- Site the trail alignment to utilize existing linear rights-of-way, such as river channels, power line rights-of-way, etc.; these rights-of-way can accommodate trails.
- Coordinate feeder trail routes with local agency plans to connect local park and recreation facilities, and to serve additional regional trail needs.
- Encourage joint-agency projects, and promote the inclusion of trails within larger projects of other agencies, such as flood control channels, etc.
- Acquire enough land to provide scenic amenities and a buffer zone between the trail and adjacent lands.
- Preserve existing vegetation by removing only as much as necessary to accommodate the trail.
- Design trails with minimum environmental impact; follow the construction guidelines described in this master plan.

- Use signage sparingly; design signs to blend with surroundings.
- Avoid structures; where structures are necessary, design them to blend with the surroundings.
- Work with adjacent property owners to assure a mutually compatible design.
- Design the trail to require as little maintenance as possible over the long run.
- Separated grade crossings are highly preferable to ongrade crossings. Where separated crossings are not possible, the ongrade crossings must be carefully designed for maximum trail user safety.

12.1.2 Bicycle Trails

A. Introduction

Bicycle trail standards are to conform to the Caltrans Highway Design Manual, Chapter 1000 - "Bikeway Planning and Design" (1987) and the American Association of State Highway and Transportation Officials (ASHTO) "Guide For Development of New Bicycle Facilities" (1981). These documents should guide in bicycle trail design. Elements of these documents as applied to the Santa Ana River Trail are summarized in Section C below.

The bicycle trails element of the Santa Ana River Trail requires some additional design considerations. As with hiking and riding trails, the goal is to create a trail within a linear greenway. The bicycle trail will attract a wide variety of users.

"Bike Trail" is used as a general term to designate all facilities that explicitly provide for bicycle travel in some way or other. These facilities may be classified into the following three types:

- Class I Bike Trail:

A bike trail is a special pathway facility for the exclusive use of bicycles, which is separated from motor vehicle facilities by space or a physical barrier. A bike trail may be on a portion of a street or highway right-of-way or on a special right-of-way not related to a motor vehicle facility; it may be grade separated or have street crossings at designated locations. It is identified with guide signing and also may have pavement markings.

- Class II Bike Lane:

A bike lane is a lane on the paved area of a road for preferential use by bicycles. It is usually located along the edge of the paved area or between the parking lane and the

first motor vehicle lane. It is identified by "Bike Lane" guide signing, special lane lines, and other pavement markings. Bicycles have exclusive use of a bike lane for longitudinal travel, but must share it with motor vehicles and pedestrians crossing it.

- **Class III Bike Route:** A shared route is a street identified as a bicycle facility by "Bike Route" guide signing only. There are no special lane markings, and bicycle traffic shares the roadway with motor vehicles.

B. Siting Criteria

The Santa Ana River Trail's bicycle component contains several siting situations, including:

- Levee top
- Separate trail - Class I
- Combined trail with equestrian/hiking trail
- Bridge crossings with automobiles
- Class II Lanes or Class III Routes

The bicycle trails within or passing through the Chino Hills State Park and Huntington State Beach should be located in accordance with the general plans of each state park and shall use as a standard the California Recreational Trails Plan (CRTP). Any changes to the existing trails will have to comply with these standards as a minimum.

Class I Bike Trail Criteria: Ideally, the Santa Ana River Trail bicycle component should be a Class I trail. However, because of the level of development and the topography of the river corridor, not all of the route can be economically developed at least in the short-term. Class I trails carry out the concept of "linear greenways" more so than Classes II and III. To implement the Class I bike trails, these policies should be followed:

- Select the trail alignment to maximize the use of open spaces, parks, and natural areas.
- Select the trail alignment to employ existing linear rights-of-way, such as river channels, power line rights-of-way, etc.; these rights-of-way can often accommodate trails.
- Coordinate feeder trail routes with local agency plans to connect local park and recreation facilities and to serve additional local needs.
- Encourage joint-agency projects, and promote the inclusion of trails within larger projects of other agencies, such as flood control channels, etc.

- Acquire enough land to provide scenic amenities and a buffer zone between the trail and adjacent lands.
- Preserve existing vegetation by removing only as much as necessary to accommodate the trail; ensure that planting is part of trail site design, where appropriate.
- Design trails with minimum environmental impact; follow the construction guidelines described in this master plan.
- Use signage and striping sparingly; design signs to blend with surroundings.
- Avoid structures; where structures are necessary, design them to blend with the surroundings.
- Work with adjacent property owners to assure a mutually compatible design.
- Design the trail to require as little maintenance as possible over the long run.
- Separated grade crossings are highly preferable to ongrade crossings. Where separated crossings are not possible, the ongrade crossings must be carefully designed for maximum trail user safety.
- A Class I trail should be routed to make as few intersections with auto traffic as possible.
- Where a trail corridor accommodates hikers and/or equestrians in addition to bicyclists, separate paths must be provided for hikers and equestrians such as a levee top.
- Class I bicycle trails should not be visible from a road which offers an alternate facility, unless it has characteristics (including equal speed capability and good maintenance) which would make it the facility of choice for all cyclists.

Class II and III Criteria: In some situations, short-term Class I bike trails are not physically possible. Class II bike lanes or Class III bike routes may provide good on-street recreational cycling in these areas. Additional policies are required to govern the implementation of the on-street routes, including:

- Give high priority to streets with the following characteristics: scenic qualities, lesser traffic, acceptable grades, safe intersections, a route which has the right-of-way, directness of route, and pavement width sufficient to handle the volume of bicycles and autos on the route.

Bike routes may be striped when the traffic levels are high, the pavement width is adequate to accommodate a separate lane, or speeds of auto traffic are in excess of 30 mph.

Class III bike routes (signed only) are recommended when the trail is temporary, traffic levels are low enough, there is not sufficient width to stripe a separate lane, and where on-street parking needs to remain.

The bicycle trails element of the Santa Ana River Trail is intended to provide a continuous bicycle trail throughout the three-county area. Its goal is to develop a system of recreational trails which can be used by cyclists of all types.

C. Design Standards

Design Standards For Class I Bike Trails

The following are design standards for Class I bike trail design. Refer to Figure 12-1.

Design Speed: 20 mph for level and undulating stretches, 30 mph for long downhill stretches.¹

Maximum Grades: The maximum grade for bikepaths is 10%. Grades of 5% or less are most desirable.

Sight Distance:	<u>Speed (mph)</u>	<u>Stopping Distance (feet)¹</u>
	10	50
	15	80
	20	120
	25	160
	30	200

Curvature:	<u>Design Speed (mph)</u>	<u>Minimum Radius (feet)¹</u>
	15	35
	20	65
	25	100
	30	140

¹ From CalTrans "Highway Design Manual", Chapter 1000, Bike Routes.

The above table shows the necessary design radius for various design speeds. No adjustments for super elevation are included; the minimum radius can be decreased approximately 2% for each 0.01 foot/foot increase in super elevation. A super elevation of 0.05 foot/foot is the generally recommended maximum design value with 0.02 foot/foot the absolute minimum to allow for drainage.

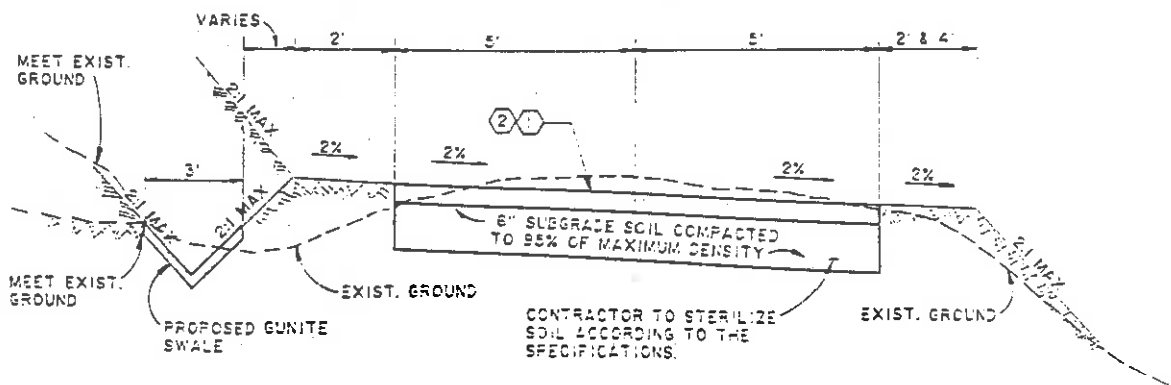
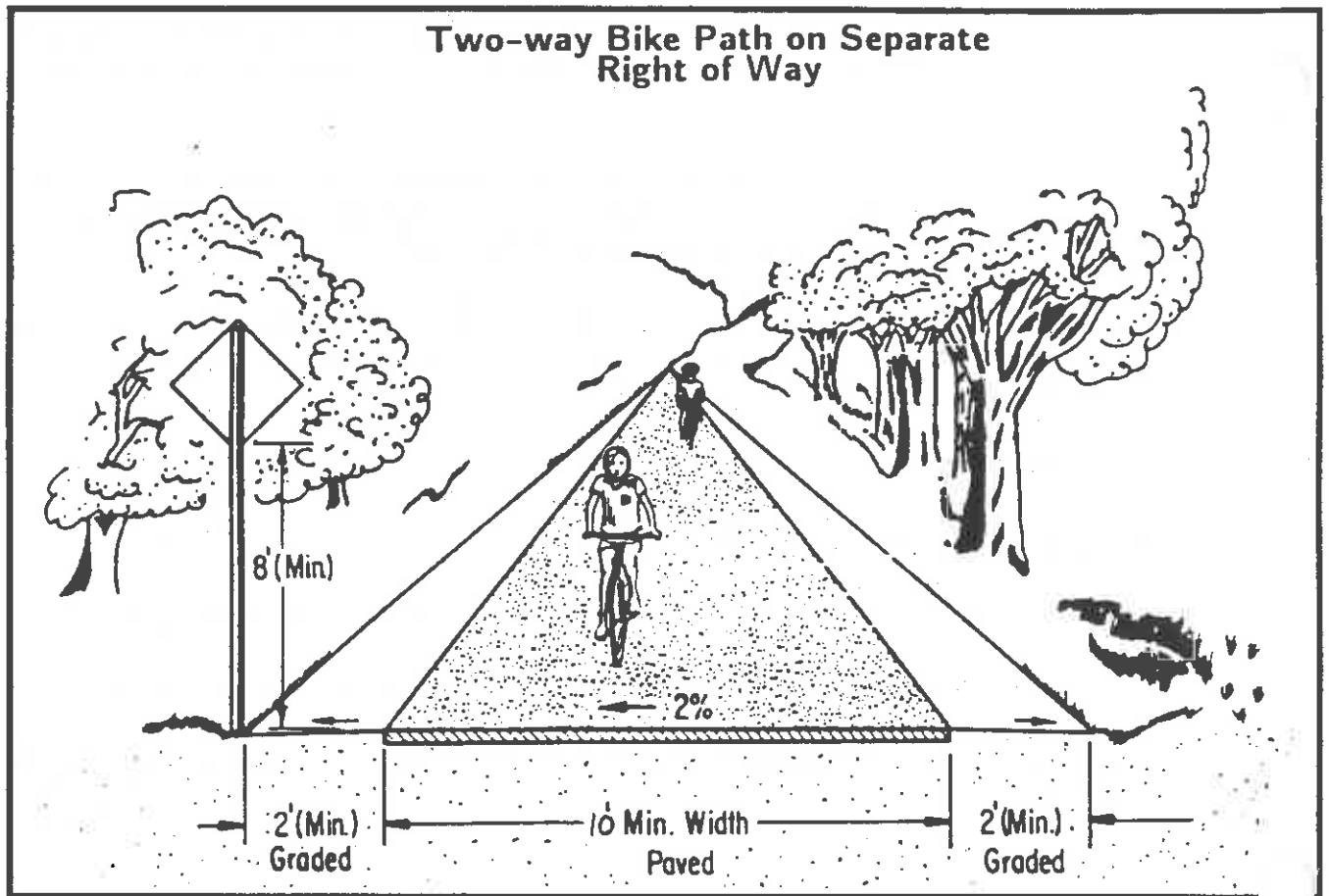


Figure 12-1 Bike Trail

Santa Ana River Corridor Trail System

EDAW inc.

Short, sharp curves should be avoided. Longer, gradual curves allow for greater sight distance and eliminate the need for bicyclists to abruptly adjust their speeds.

For potential high-speed bike trails where bicyclists would enjoy relatively uninterrupted travel, curves with radius of 100 feet or less should be widened about one to two feet to a maximum of four feet to allow for bicycle lean and greater maneuverability. See Figure 12-2.

Surfacing: Asphalt is the preferred surface for bicycling. It is smooth, relatively easy to maintain, and durable. Asphalt may be laid directly on the prepared subgrade, if the basement soil is of high enough quality. With poor quality basement soils, 4" of base rock is recommended.

Surface Drainage: An asphalt surface requires a minimum slope of 0.02 foot/foot for proper drainage. A banked bike path is preferred to a crown bike path because it is much simpler to construct and a more uniform surface can be achieved. Ordinarily, surface flow-off from the path will be adequately dissipated if the shoulders have gentle slopes. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be desirable on the uphill side to intercept the hillside drainage. In areas with a heavy surface runoff or poor subgrade drainage, culverts, drain tiles, or catch basins are advised.

Minimum Width, Clearance and Bridge Undercrossings: Exclusive bike trails generally will be designed as two-lane, two-way bike trails with a minimum paved width of ten feet. This width allows service vehicles adequate access for maintenance operations. A two-foot dirt or gravel shoulder on each side must also be provided. The minimum horizontal clearance from physical obstructions is 14 feet; the minimum vertical clearance from overhanging branches is 8.5 feet. When the bike trail is in combination with an equestrian trail, a minimum 6 foot buffer with fence barrier is required. On a levee top situation, the bike trail should be on top with no barriers obstructing maintenance vehicle access. Other parallel trails should be below the levee top on a separate grade such as at the toe of the levee. If equestrian use also shares the route, a separate path must be provided; equestrians and bicyclists are not generally compatible and the paths must be clearly separated. See Figure 12-4.

A center stripe at various intervals is necessary to separate opposing directions of travel. At areas with very steep grades, the bike path should be wider to allow for more maneuvering room for bicyclists coming down-hill at higher speeds.

Trails located adjacent to the river often need to cross underneath roadway, railway and pipeline bridges on aqueducts. Most Orange County bridges have trail ramps. Several new ones all along the route need to be constructed. A maximum 7% gradient is to be used. The tread should be asphalt or scored concrete, depending upon site conditions, for equestrian trails and asphalt or concrete for bike trails. Trail width will vary depending upon site conditions. Trail ramps or culvert underpasses should be used rather than at-grade road crossings. Refer to Figures 12-5 and 12-6. These facilities should be lighted.

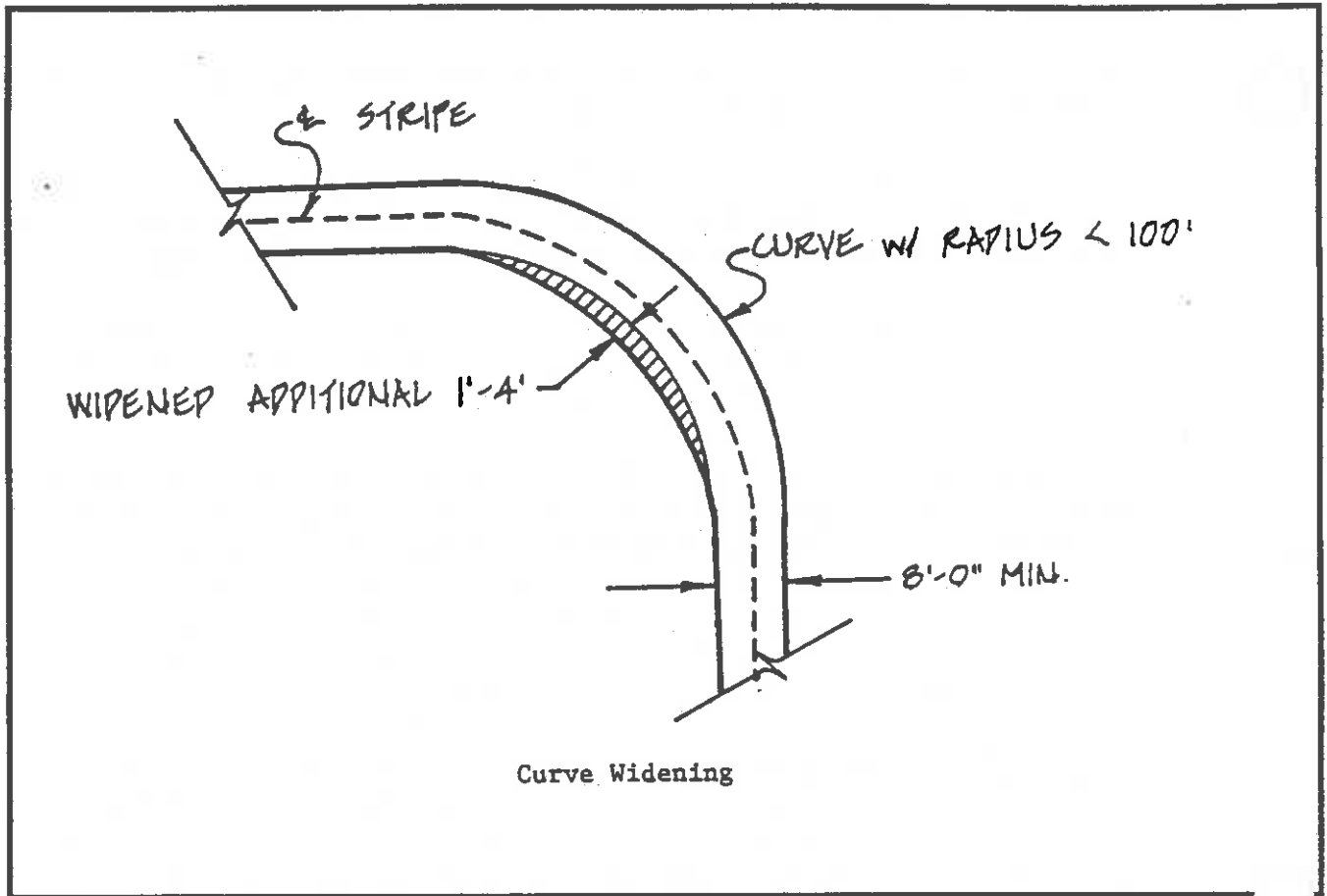


Figure 12-2 Bike Trail - Curves

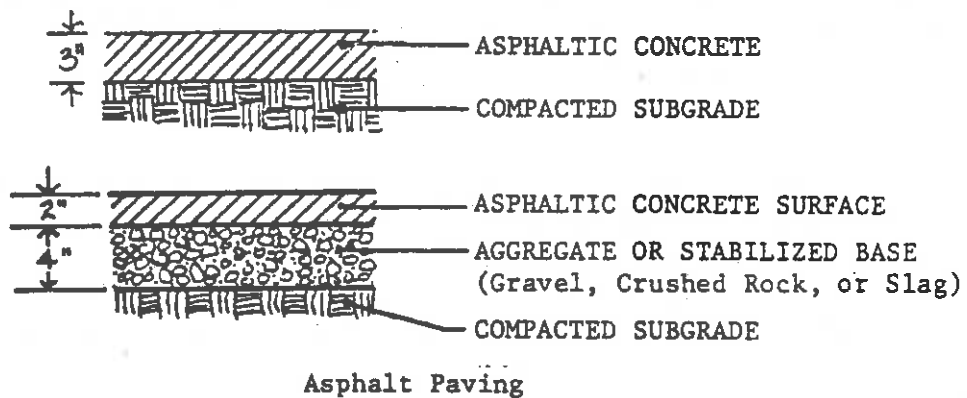


Figure 12-3 Bike Trail - Materials

Santa Ana River Corridor Trail System

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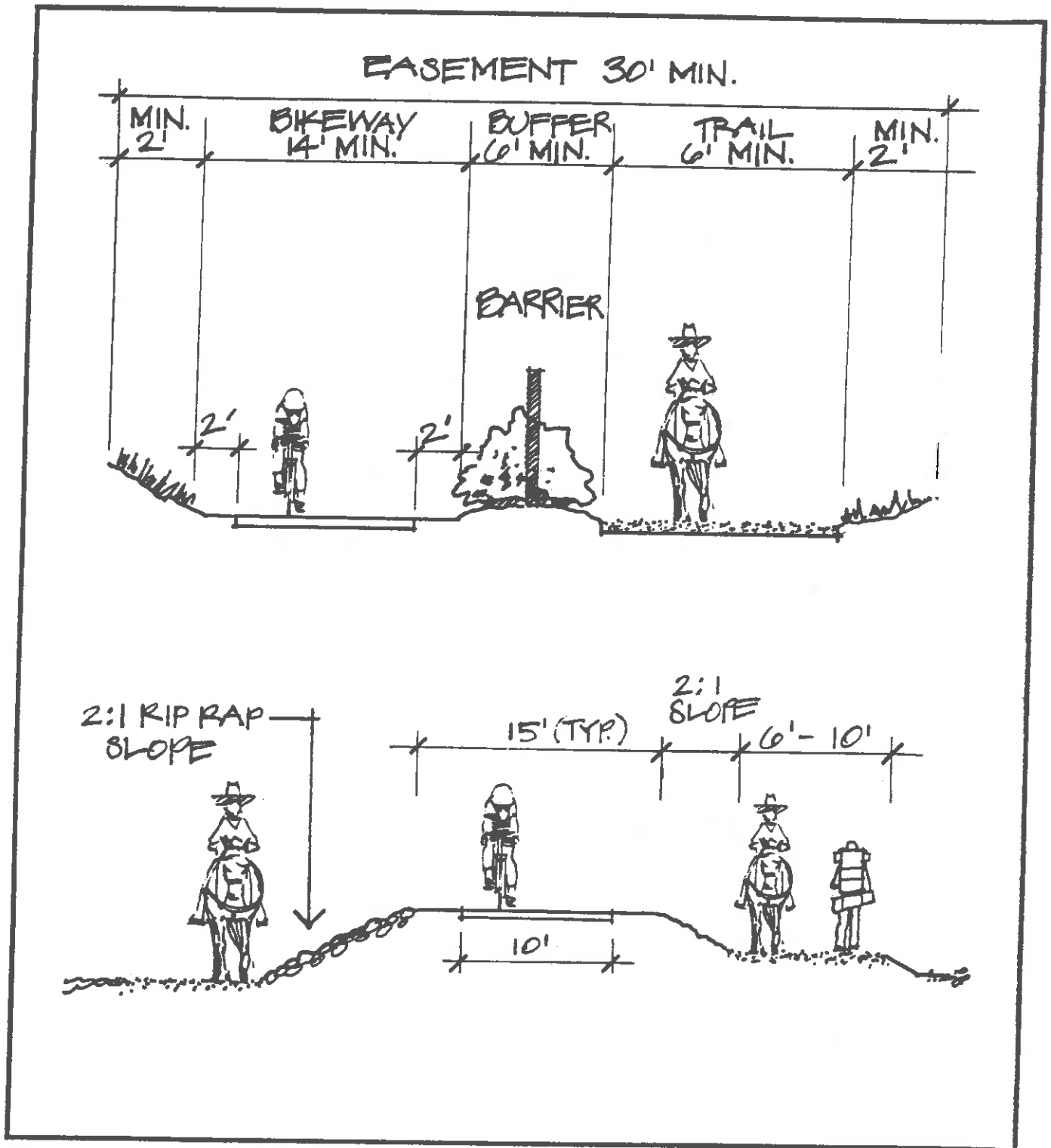


Figure 12-4 Combined Trail

Santa Ana River Corridor Trail System

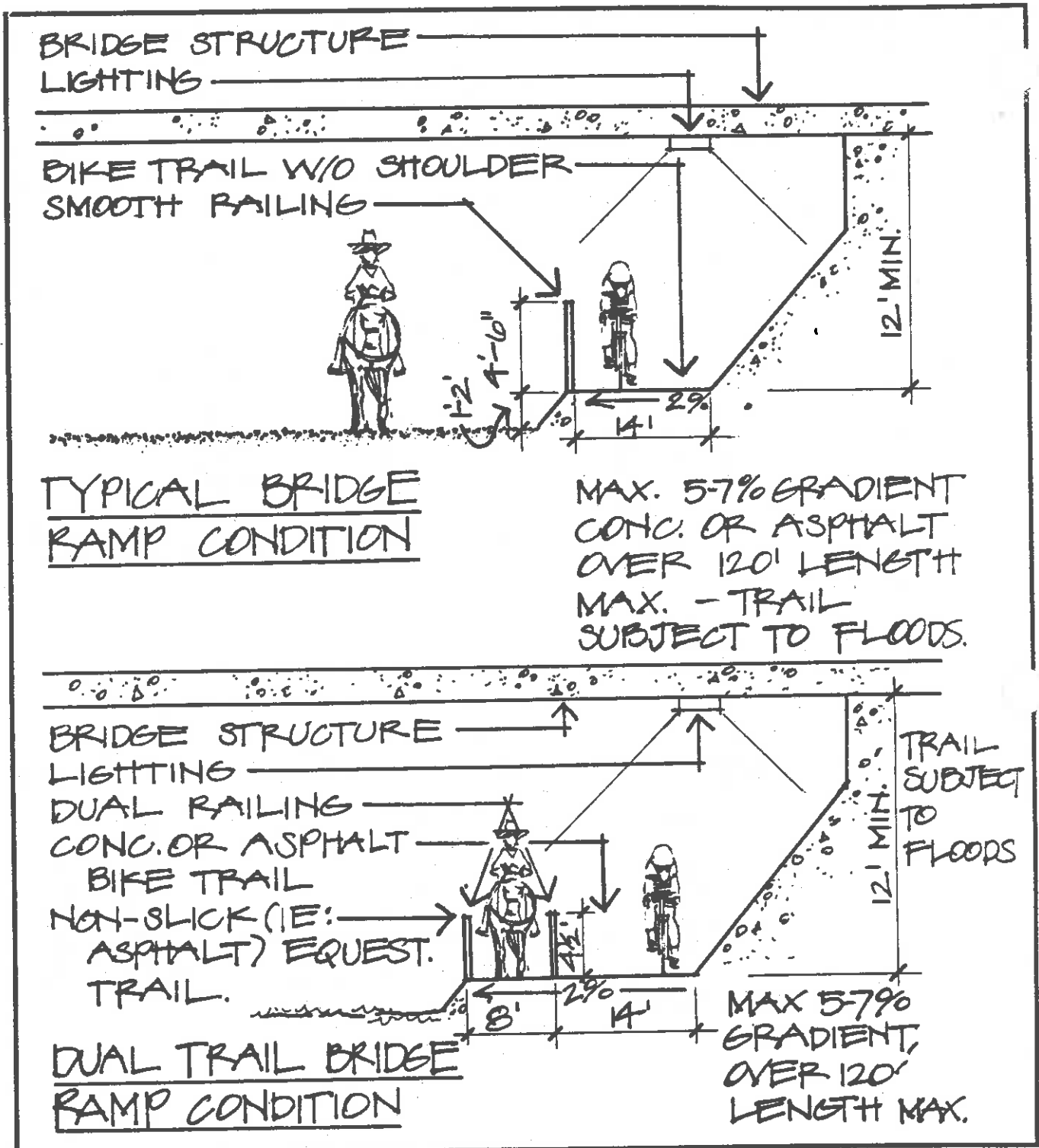


Figure 12-5 Trail Ramp Undercrossings

Santa Ana River Corridor Trail System

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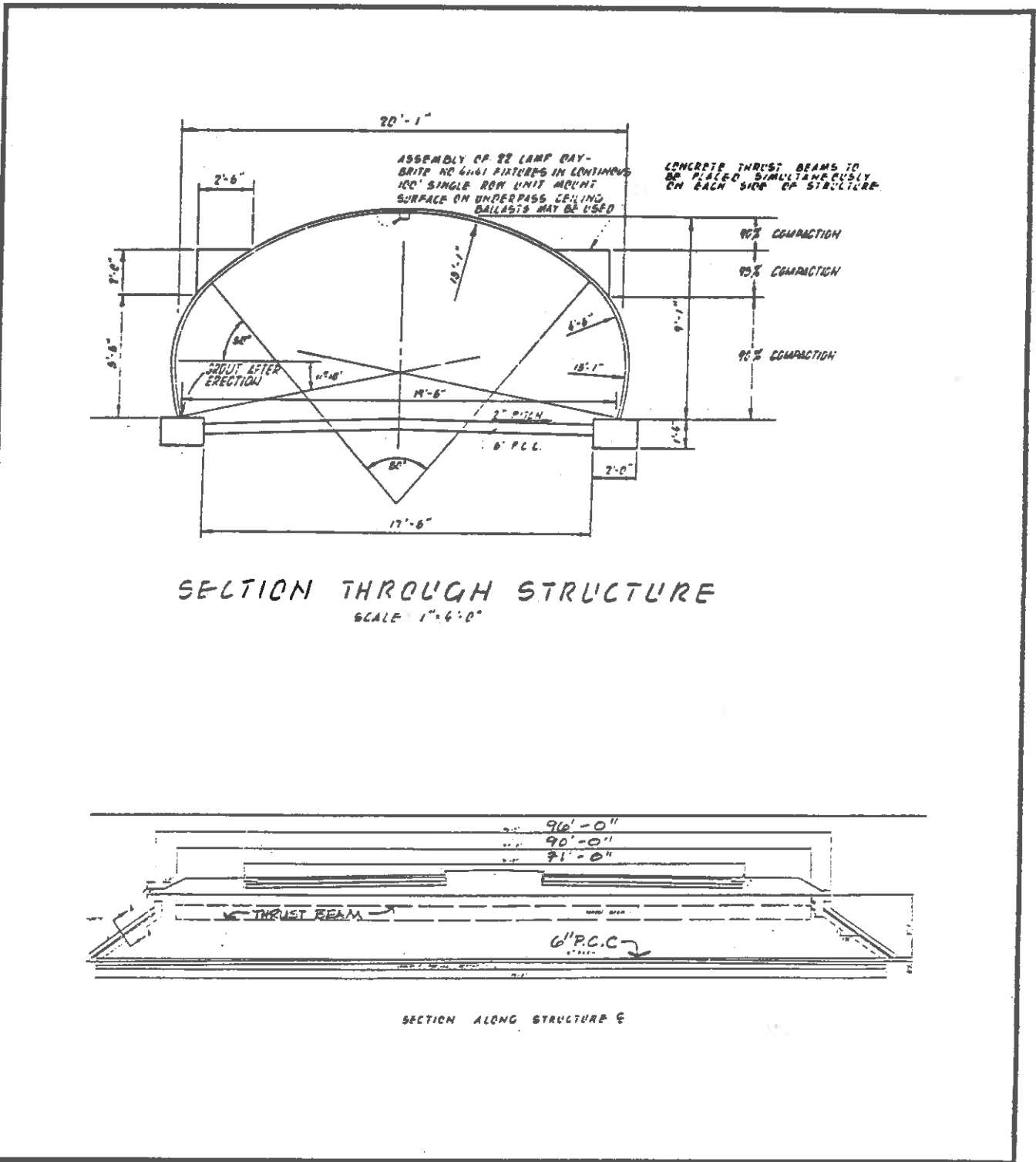


Figure 12-6 Trail Culvert Underpass

Santa Ana River Corridor Trail System

Barriers: Barriers or fences may be necessary on bike paths to separate cyclists from an adjacent hazard, or to prevent automobiles or motorcycles from entering the path. Barriers or fences along the edge of the bike path should be set back at least 2' from the edge of the pavement. If barriers are required on both sides of a bike path, the distance between them should be at least 14' to allow adequate passing room and space for service vehicles to operate. Fences should be at least 4 1/2' high because the cyclist has a high center of gravity. A lower barrier does not prevent a cyclist from falling over it. Suggested materials are chain link or wood; the fencing should be designed so that no protrusions are on the cyclist's side. Fences and barriers should be painted or signed to be visible by the cyclist, especially where they begin travel. Refer to Figure 12-7.

Bollards are used to prevent automobiles or motorcycles from entering a bike path, as well as to slow cyclists down when approaching an intersection. Spacing may be wider if the purpose is only to keep automobiles out. Refer to Figure 12-7.

Bridges: At drainage channel crossings, a trail bridge is required with a surface smooth enough for bicycling. The bridge should be at least 12 feet wide with railings 4 1/2 feet high, and should be strong enough to support a service vehicle. Where service access across the bridge is not required and where trail traffic is light, and if costs are prohibitive, the bridge may be narrower. Span bridges are recommended to reduce the debris buildup in the drainageway.

Intersections: Ideally, bike trails should be provided with separated grade crossings at intersections with automobile traffic. This may not be possible due to costs or topography. When on-grade crossings are unavoidable, it is desirable to locate the bike trail to take advantage of an existing traffic light, or to install one at the intersection. If neither a light nor a separated grade crossing is possible, the intersection should be signed with a stop sign or warning signs or it should be avoided. Crossing locations should be chosen to provide long sight distances for both the trail users and the drivers. Generally, the trail users will be required to stop; however, if a bicycle trail has a higher average daily volume of traffic than an intersecting street or highway, the traffic on the street or highway may be stopped to give the right-of-way to the traffic on the bike path. All intersection designs must be worked out with the traffic engineer of the city or county involved.

Environmental Considerations: Disturbance of the surrounding environment should be kept to a minimum and should not extend further than the immediate project area. Also, cuts and fills should be kept to a minimum. In certain areas culverts for wildlife passage should be provided. In many instances, either new landscaping or clearing would be desirable. Landscaping can be used for stabilizing slopes, creating physical or visual barriers, or providing shade. Clearing may be advisable for opening up views, creating rest areas, removing unwanted plants, or increasing sight distance.

Whole Access Needs: Bicycle and service trails also provide a surface smooth enough to be used by persons in wheelchairs or the not sure-of-foot. Design of bollards, trail gradient, tread material, trail width and other features should include these needs wherever possible.

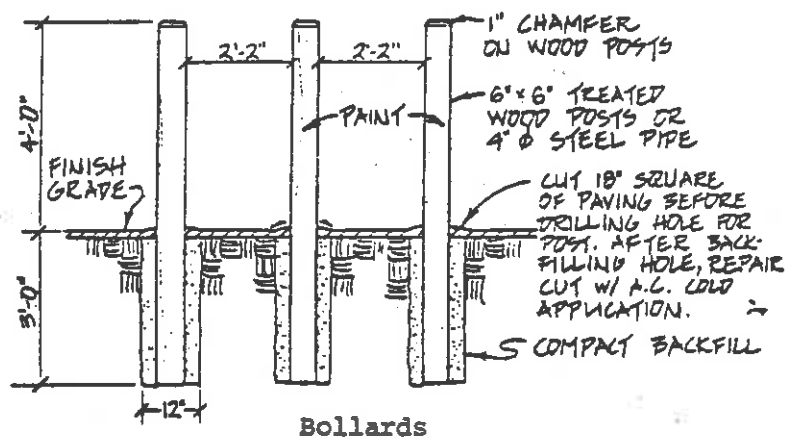
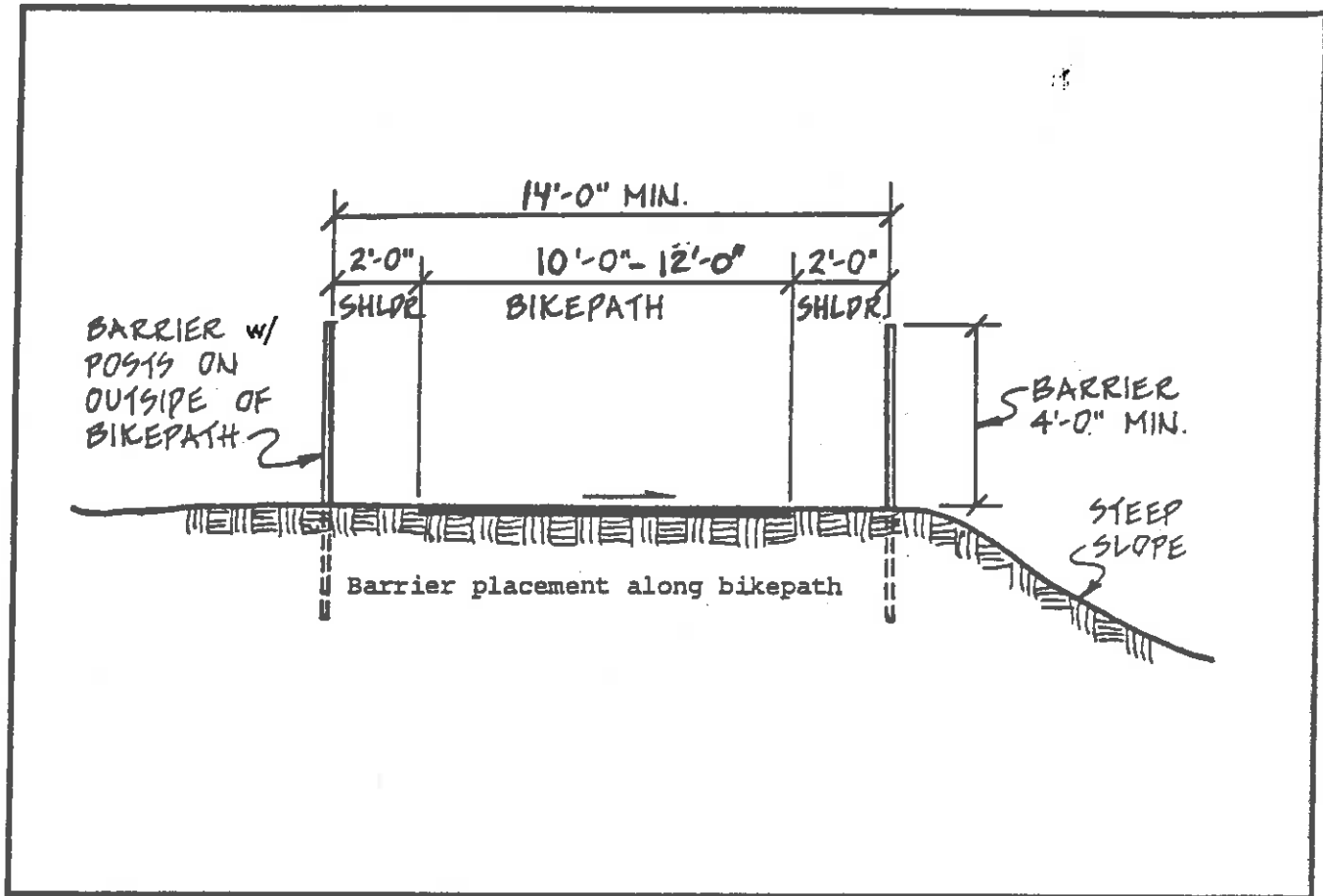


Figure 12-7 Barriers

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Design Standards For Class II/III Bike Routes

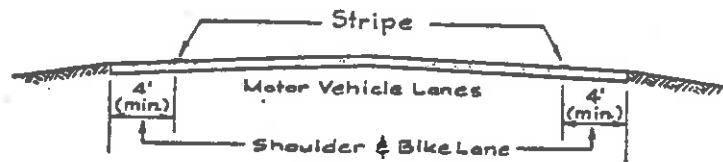
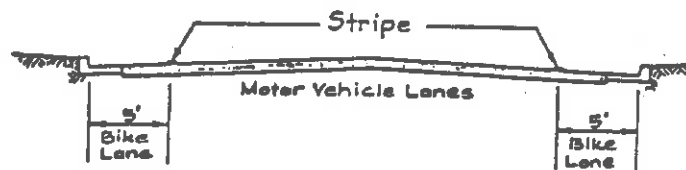
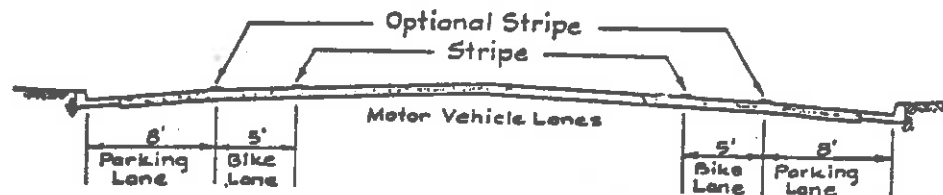
The following are design standards for Class II (lane) and Class III (route) design.

- **Design Speed:** Generally, streets are engineered for higher speeds than a bicycle travels, so most streets are suitable for bicycles.
- **Maximum Grades:** Select streets with grades of less than 10%. Where this is not possible, choose routes with the most gradual slopes.
- **Curvature:** Streets are generally engineered for higher speeds and larger U-turning radii than are required by bicycles. In certain situations, it may be advisable to widen a curve one to two feet, for greater maneuverability.
- **Surfacing:** Existing road pavements are usually adequate for bicycles. However, repave rough sections, patch holes, and make certain that the shoulder is clean and stable. A good standard is that any holes, cracks, etc. more than one inch deep should be repaired. Special care should be taken if the route crosses railroad tracks; a smooth surface is essential for bicycling. If a road is widened to accommodate a bike lane, the added paving should conform to standards for the type of roadway involved and should be paved the full width of the traffic lane and shoulder to avoid uneven seams and cracks.
- **Surface Drainage:** Low spots which collect water and any other situations with poor drainage should be corrected. When widening a road to provide a bike lane, proper drainage must be provided.

Precautions must be taken to assure that drainage structures do not obstruct the path of bicyclists. Grate structures that consist of bars running parallel to the curb can easily entrap a narrow bicycle wheel. These parallel bar grates must be replaced with those designed to allow bicyclists to cross safely. Acceptable designs include grates with bars perpendicular to the curb, zig-zagging bar grates, diagonal bar grates, or the existing parallel bar grates with cross strips welded on. Any design must not substantially reduce the ability of the inlet to intercept water.

- **Minimum Width and Clearance:** Class II bike lanes consist of delineating a separate lane on a roadway specifically for bicyclists. The minimum width for a bike lane is five feet. A bike lane is generally marked with a six-inch wide solid white line; the words "Bike Only" or a stencilled bicycle form may be added at intersections and other areas for clarity. Use signs to mark these routes; see section on signing. Minimum roadway widths to accommodate bike lanes are shown below, Figure 12-8.

Considerable controversy exists over the need for striping bike lanes on a street, as opposed to simply identifying a route along an existing street with adequate lane widths. Before a route is stripped, careful consideration should be given to simply designating the street as a route, with just directional and destination signs. The decision whether or not



Typical Bikelane Cross Sections on Two-Lane or Multi-Lane Highways

Figure 12-8 Bike Lanes

Santa Ana River Corridor Trail System

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to stripe the bike lane must be made in cooperation with the traffic engineers of the city or county involved.

Class III bike routes consist of guide signing on existing streets. Class III routes are especially suitable for streets with less than 1,000 vehicles per day, and slow speeds (less than 40 mph). Signing for Class III routes should give direction and destination information, and should be used sparingly.

A white line, delineating the right hand edge of the outer travel lane may be painted. This is not a "bike lane" stripe, but rather serves as a shoulder line, and separates the shoulder area from the travel lane. It also improves night visibility for both cyclists and automobiles.

Class III routes may be established on any street which meets the following land width/traffic volume criteria:¹

Average Daily Traffic	Peak Hour	<u>Acceptable</u>		<u>Preferred</u>	
		Outside Lane Width	Shoulder Width	Outside Lane Width	Shoulder Width
Less than 1,000 ADT	100	12	None	12	2
1,000-4,000	40	12	2	12	4
4,000-12,000	1,200	12	4	12	6
More than	1,200+	12	6	12	8

¹ Adapted from "Basic Concepts in Cycling Traffic Engineering," John Forester.

Barriers and Fences: Where a bike route is on a roadway crossing a bridge, or above a steep slope, a barrier may be necessary. Standard highway guard rails are not high enough to provide safety for the cyclist and should be replaced and supplemented with a higher safety fence at least 4'-6".

Bridges: If a bridge exists on a roadway designated as a bike route or lane, it should be wide enough to accommodate both automobiles and bicycles. Land widths should conform to the table above; if the bridge is not wide enough, it should be widened to provide a uniform lane width along the entire route.

Intersections: Bike routes through intersections should be designed for all types of bicyclists, accommodating those whose actions are similar to pedestrians and to motorists.

Class II and III bike trails should be routed along roads with the safest intersections. Traffic engineers should be consulted to redesign hazardous intersections.

¹ Adapted from "Basic Concepts in Cycling Traffic Engineering," John Forester.

Bicycle Trails Within State Parkland

Bicycle trails located within Chino Hills State Park and Huntington State Beach shall use as a standard the California Recreational Trails Plan (CRTP) as a minimum

12.1.3 Equestrian and Hiking Trails

The second trail component of the Santa Ana River Trail is the equestrian/hiking trail. The Santa Ana River Trail system is unique in that it shares two very different travel modes, both of which have high numbers of users.

Equestrians can be found throughout the region, even in densely populated Orange County where there are several stables located along the river. In the Norco-Jurupa area, there may be as many horseback riders as bicyclists. Equestrians are also very active in the San Bernardino Mountains. Due to the high equestrian use along the river and diminishing open space in the fast developing Inland Empire, the equestrian trail becomes a significant component. In some locations, dual trails are proposed where there is heavy trail use and several feeder trails.

Hikers, on the other hand, do exist but are relatively scarce. Most hiking is done on long trail hikes, such as the Crest to Coast Trail Event. However, with an established trail, use should increase.

Several good design references exist. The following should be consulted for trail design guidance as needed: (1) "A Trail Manual", East Bay Regional Park District, CA (1976) and "Master Plan of Regional Riding and Hiking Trails Component," Orange County, CA General Plan, Recreation Element.

The equestrian and hiking trails within or passing through Chino Hills State Park and Huntington State Beach should be located in accordance with the general plans of those parks. Trails shall be located and designed using the California Recreational Trails Plan (CRTP) standards as a minimum.

The following are design standards for this trail component.

Temporary Route Flagging: Required flagging should be done with easily removable plastic ribbon and/or marked stakes prior to construction, and should be removed when construction is completed.

Methods: Hand or machine construction is allowed. The trail should be constructed to also serve as a service trail where possible. Visible evidence of trail construction should be confined to the

trail tread. Construction should attempt to make as little impact on the natural environment as possible.

Grades: Grades should be held to a minimum. Steep grades are tiring for hikers and horsemen and create erosion problems. Grades of 7% to 8% or less are desirable; grades may be as great as 15%, but should be avoided or kept very short. Long, gradual switchbacks should be used rather than short, steep switchbacks. Horizontal clearance (shy distance) should be a minimum of 2' - flat ground, with upslope and downslope flatter than 4:1 slope. When the grade is steeper than a 4:1 slope, it should be a minimum of 4'.

Tread: Generally, tread width will vary between 6' and 10'. Refer to Figure 12-9. The tread width should be determined by the amount and intensity of use as well as topography and vegetation. If the tread is narrower, occasional passing areas must be provided at places with gentle slopes. Where the trail is parallel to a 10' bicycle trail, it may be 6' wide. Where the trail is away from the bicycle trail and out of sensitive habitat or steep slopes, it should be 10' wide.

In order to reduce erosion and, therefore maintenance problems, disturbance of the soil surface should be kept to a minimum. Only those rocks, stumps, and roots which interfere with passage should be removed.

The degree of cut allowed on a slope depends on the soil type, hardness, etc.; make slope cuts steep, but not so steep that erosion or loss of stability will result. Make transitions on all cuts so that the trail will be molded into the terrain. Construct the tread with provision for settling and sloughing. On side slopes, loose material which may slide onto the trail should be removed. Also, a berm of earth, rock, or wood on the outside edge of the trail may be necessary. Generally, a trail on a rubble or talus slope should be built out rather than cut into the loose material.

Steep areas may be handled by terracing or building steps. These must be reinforced with stone or wood. Steps simply cut into the slope should not be used, as these become slippery when wet, and eventually erode. If steps are part of the tread, they must be appropriate for the type of trail user. Steps can be negotiable by horses, but they must be broad, flat terraces, at least 3' deep.

Vertical Clearance: There should generally be a minimum of 12' vertical trail clearance beneath structures or tree limbs.

Vegetation: Vegetation should be preserved as much as possible to protect the aesthetic quality of the trail. Vegetation should be cleared to a height of 12' for a trail, and should be cleared to a minimum width of at least 5' at shoulder height. Pruning along trails should be selective. Good pruning practices should be followed, including cutting branches off flush with the limb, and stems flush with the ground. Stumps may be treated to prevent sprouting. Large limbs should be pruned flush with trunk and wounds sealed to prevent decay. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be cleared except from the actual tread. Spot spraying with herbicides is permissible when poison oak predominates or hand pruning is ineffective in keeping trails clear.

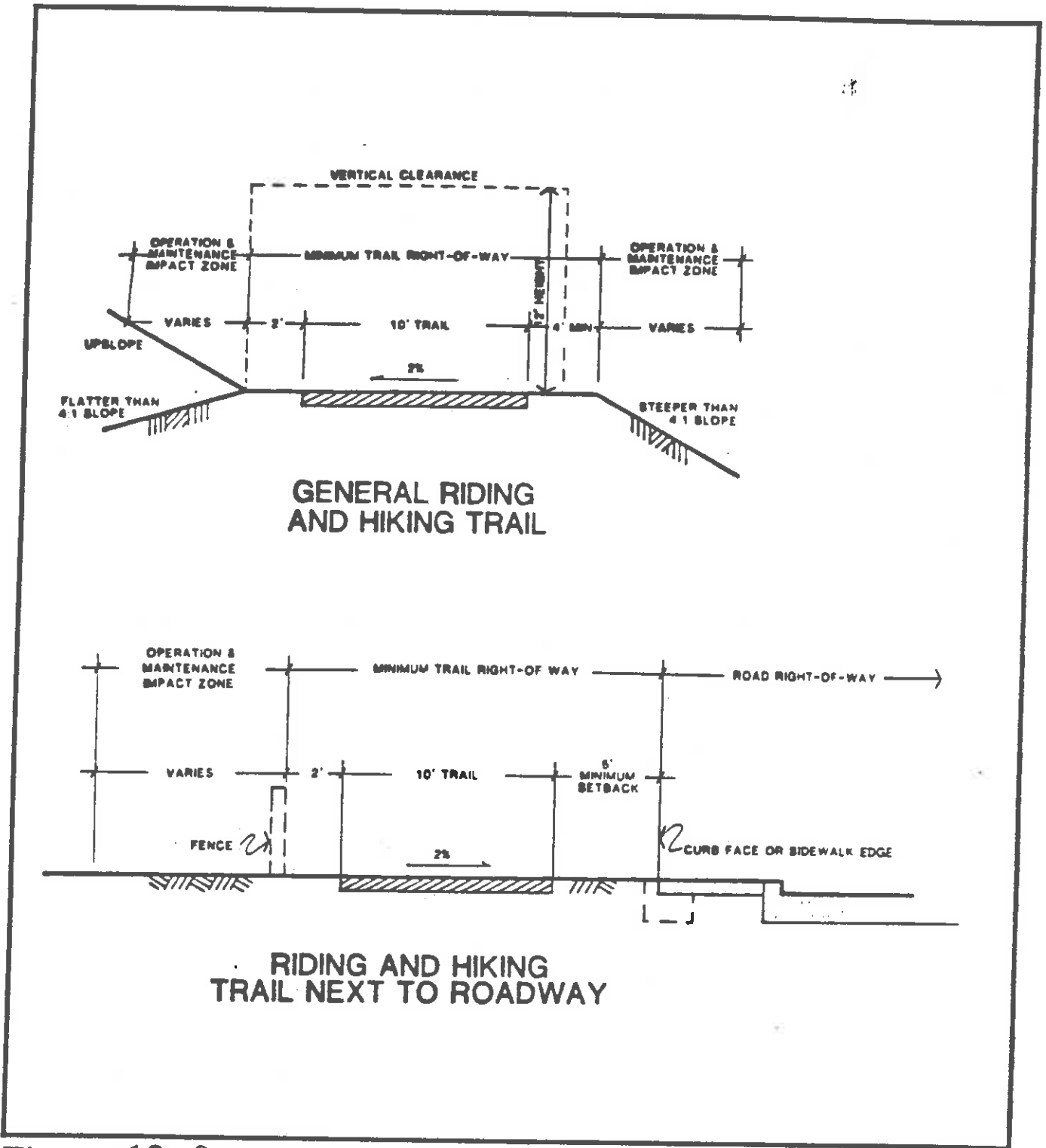


Figure 12-9 Equestrian & Hiking Trail

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Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the downhill side.

Vegetation should be allowed to return to cut slopes to increase stability. Where appropriate, any replanting should be in conformance with land use development plans of individual parks and vegetative management plans. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

Drainage: Drainage is the most important item in trail construction. It requires a special study of the precipitation, runoff, and drainageways in the area. Surface water must be diverted from the trail's surface before it builds up to an erosive force. The method used to drain a trail will depend on the quantity and speed of water and the type of soils in the area. The best and simplest drainage is to outslope the trail tread, 1%-3%. This allows the water to sheet off, rather than run in a stream. Low grades help prevent drainage problems; steep grades allow the water to run faster, building up erosive force. Minor rivulets crossing the trail tread can be directed along a water bar.

Trails crossing larger creeks, whether permanent or intermittent, will require a bridge or culvert. If a culvert is used, it is very important to prevent erosion at the outfall end by providing rip-rap or other hard surface for the water to hit first. If this is not provided, the water leaving the culvert will erode the surface below it, and eventually the fill around the downslope end of the culvert. Avoid causing off-trail drainage problems, such as erosion or siltation, by careful culvert placement.

Setbacks: There should be a minimum of a 5' setback from an existing or future curb face, edge of sidewalk, edge of paved or unpaved shoulder, and 6' as a buffer between bike trails and equestrian/hiking trails. There should be a minimum of 2' setback from walls or fences, more if at all possible.

Surfacing: The trail may be treated or surfaced in areas where: the dust caused by trail use presents a problem; it is needed to prevent erosion; or it is needed to improve slick or muddy conditions. The color and type of material chosen for surfacing, whether bark, gravel, oil coat, etc., shall be compatible with the environment through which the trail passes. The surfacing material must not create severe runoff or erosion problems. Decomposed granite at 4 inches deep is preferable.

Where the trail must cross at existing or proposed drainage channels, ramps or culverts, the trail materials should minimize slipping by horses and hikers. No metal or smooth surface concrete is recommended. Asphalt surface is the desired material for most trail conditions. Natural streambed crossings should be left as natural as possible. Scored concrete may be used also dependent upon unique site conditions.

Structures: Structures may include culverts, retaining walls, bridges, etc. If possible, structures should be avoided because of their high installation and maintenance cost. Ideally, trail structures should be a minimum of 10' wide and built using materials which blend into the environment.

Trail use by maintenance vehicles is preferable where possible. Structures should be as vandal-proof as possible. Use recessed bolt heads wherever possible. Where dual use by service vehicles is not practical, bridges shall be 4' wide or wider on a riding trail, and may be as narrow as 2' on a hiking trail. Refer to Figure 12-10. Fill dirt over culverts shall be a minimum of 4' wide.

Proximity to Roadways: In combined trail locations, the bicycle trail should be located closest to a roadway and the equestrian/hiking trail on the inside.

Fences: Fencing is necessary on some trails to prevent trail users from trespassing on adjacent lands, to protect sensitive habitat areas, within developed parkland or public areas, steep slope areas, bridges, golf courses, adjacent to roadways, or to protect the user from dangerous areas. Some of these problems may be avoided by selective location of the trail route, but there will be cases where fencing is the only solution. Refer to Figure 12-11.

Gates: Gates should be avoided whenever possible through careful routing, fencing or use of stiles. Gates for trail users should be four to five feet wide, and should be self-closing. They may be constructed of wood or metal; wood blends more naturally with the environment, but metal gates are more durable.

Vehicle gates are sometimes needed; these are usually made of metal pipe, but may be wood if appropriate. Vehicle gates near roads should be signed to prevent parking, and should be reflectorized. Wire gates may be installed for occasional access to grazing lands or for service or maintenance. All vehicle gates should be securely locked.

Barriers: Barriers to discourage motorcyclists from using the trail may include fences, stiles, and natural barriers. A trail which is used by hikers and riders can be made difficult for motorcyclists by creating a log barrier at the entrance. These are difficult to cross with a motorcycle, but may be stepped over by hikers and riders. Refer to Figures 12-12 to 12-15.

A pile of brush may be used across a bootleg trail, abandoned trail, or switchback shortcut to discourage use.

Barbed wire or other wire should not be used as a trail barrier.

12.1.4 Multiple Use Trails

Multiple use trails are designed for equestrians, hikers and sometimes mountain bikes. This designation is provided only for a segment of trail from Mill Creek to the U.S.F.S. boundary where trail jurisdictions change. The trail is not paved, but should be relatively smooth and free of barriers to allow for mountain bicycle use. Motorcycles are prohibited. Design standards included in the equestrian/hiking trail section apply. Where possible, mountain bikers should have their own trail or a separate two to four foot equestrian trail parallel to a two to four foot hiking/mountain bike trail. Vehicular access by maintenance vehicles is not required. In heavy trail use areas, a separate mountain bike trail route is proposed using existing mountain trails and roadways.

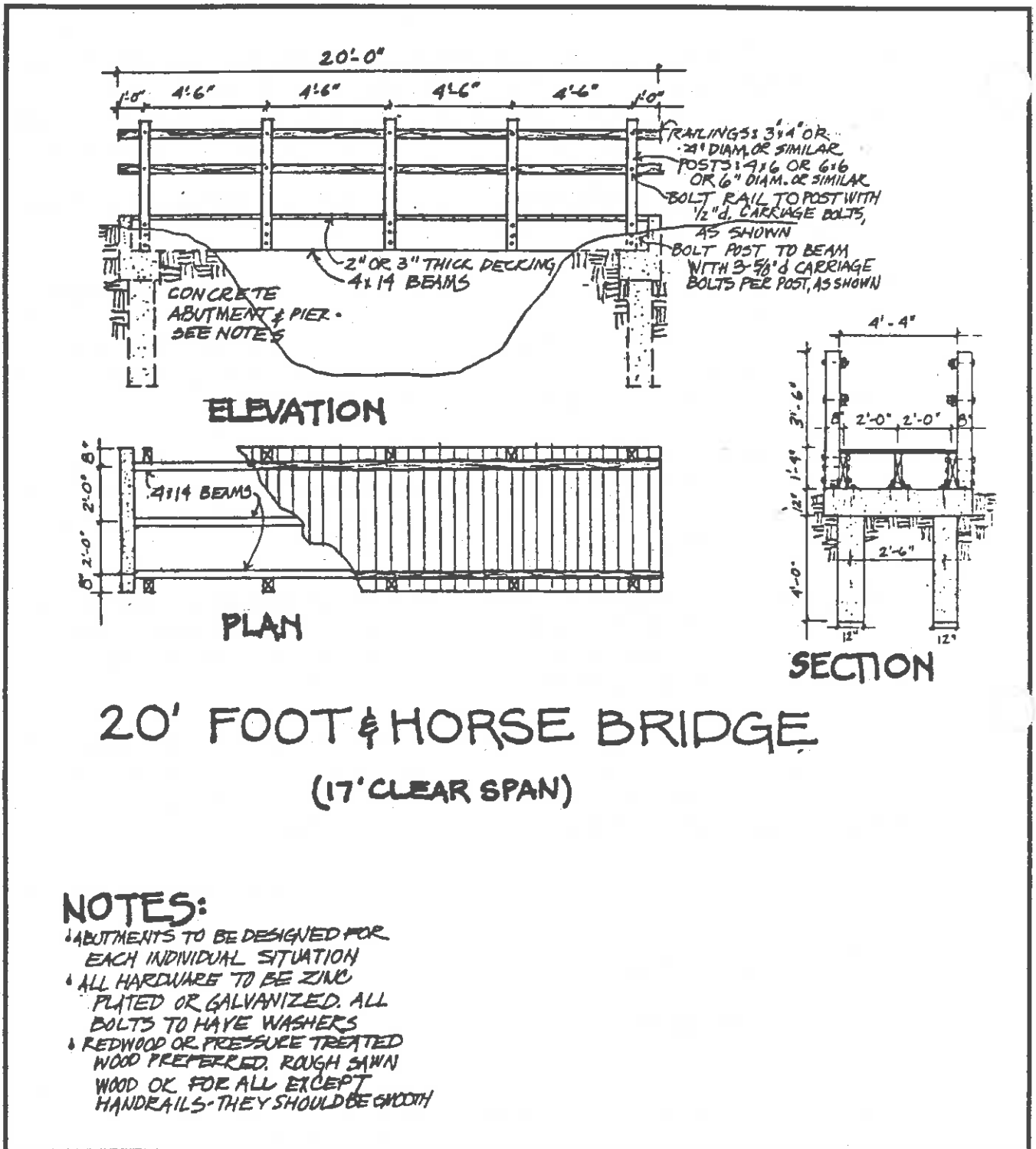


Figure 12-10 Bridges

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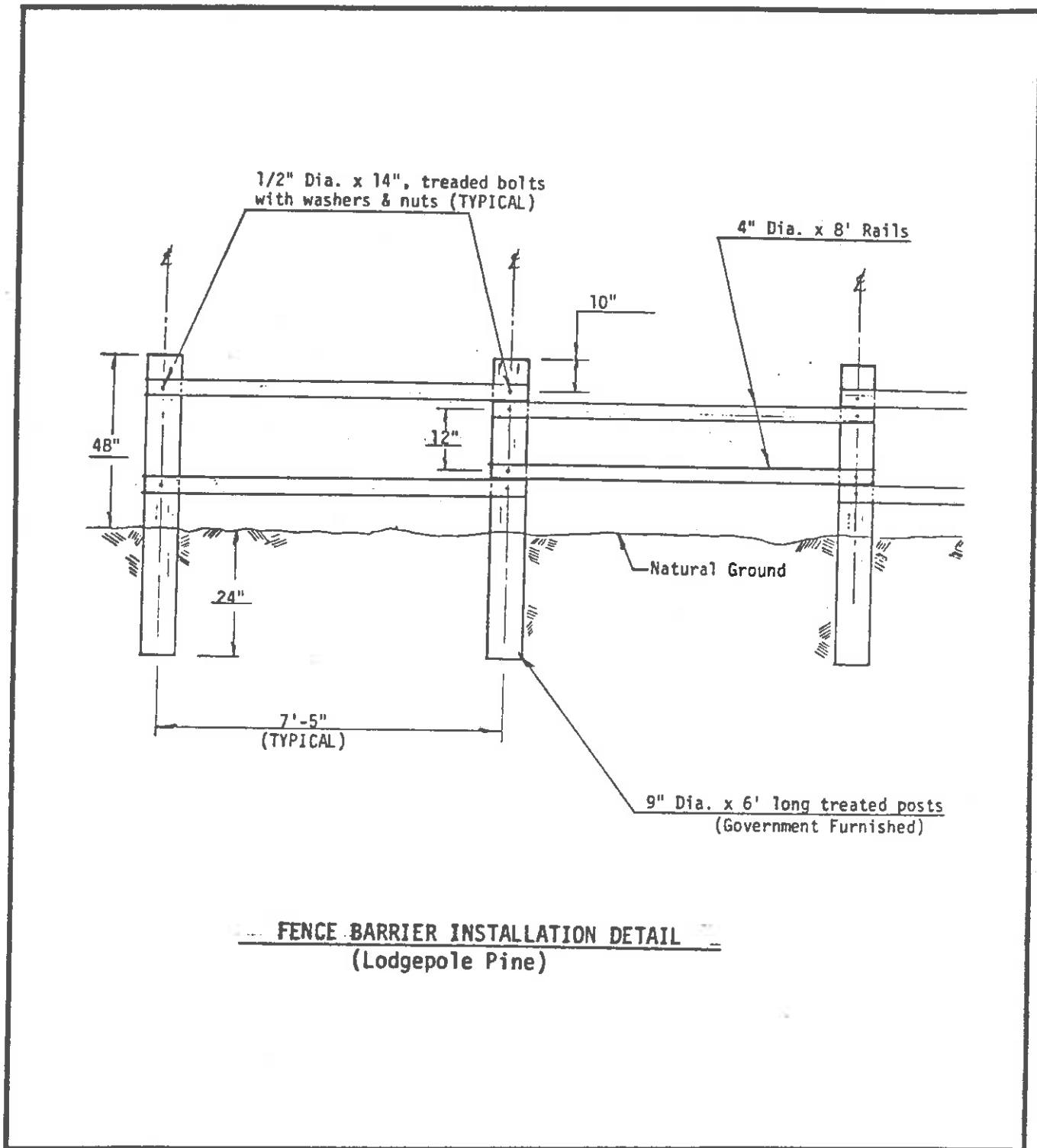


Figure 12-11 Fencing

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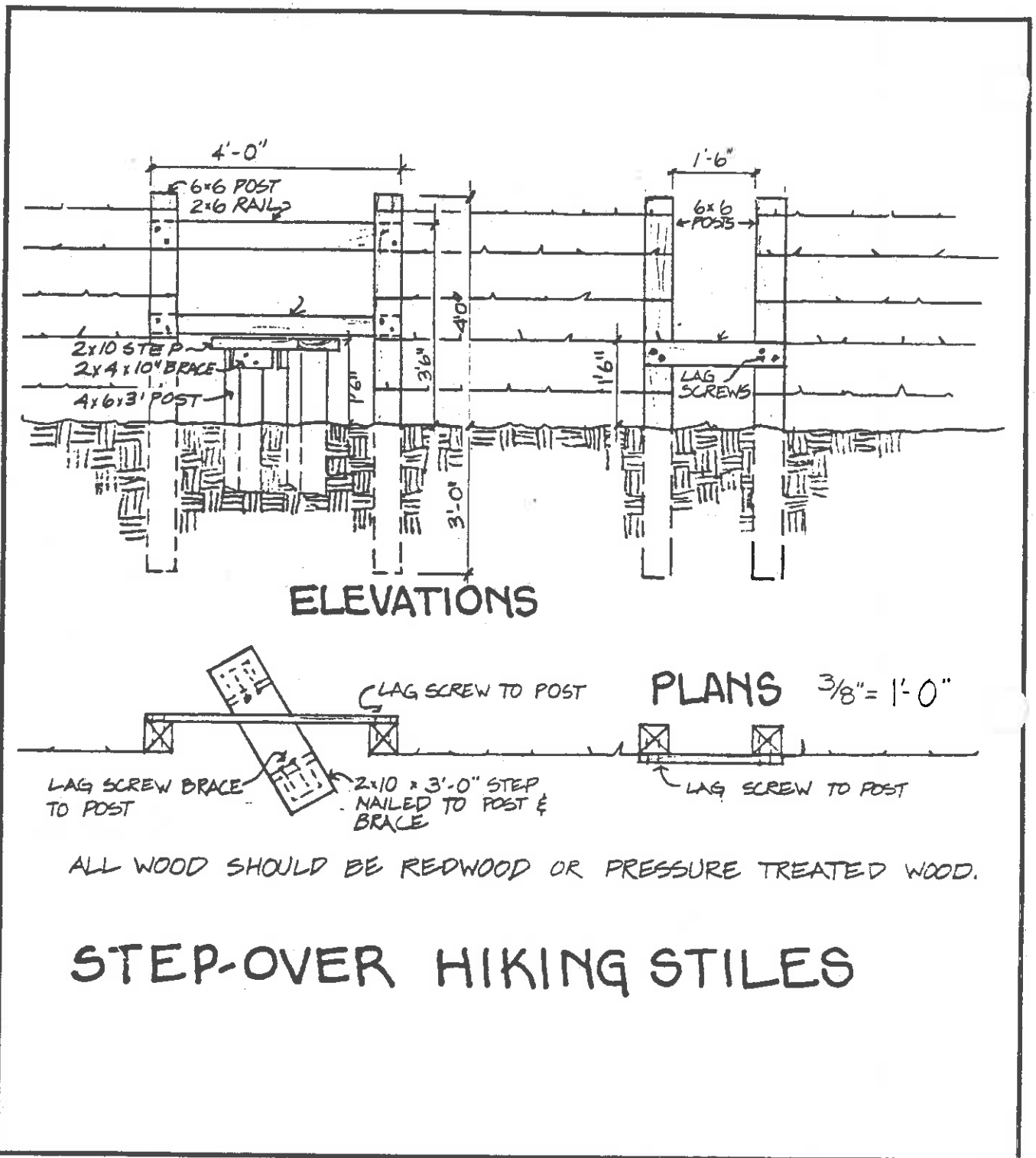


Figure 12-12 Fencing/Barrier – Step Over

Santa Ana River Corridor Trail System

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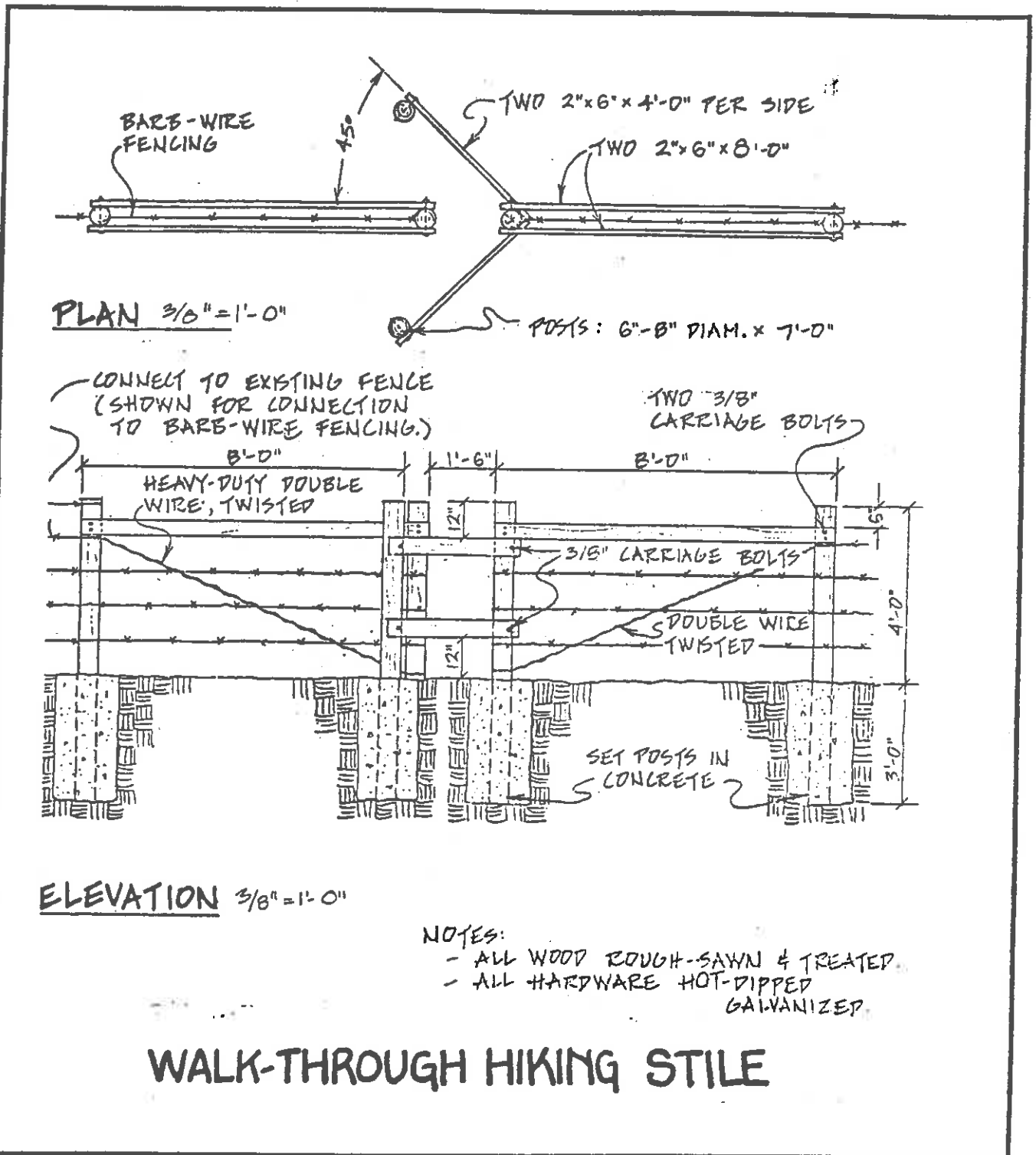


Figure 12-13 Fencing/Barrier - Walk Through

Santa Ana River Corridor Trail System

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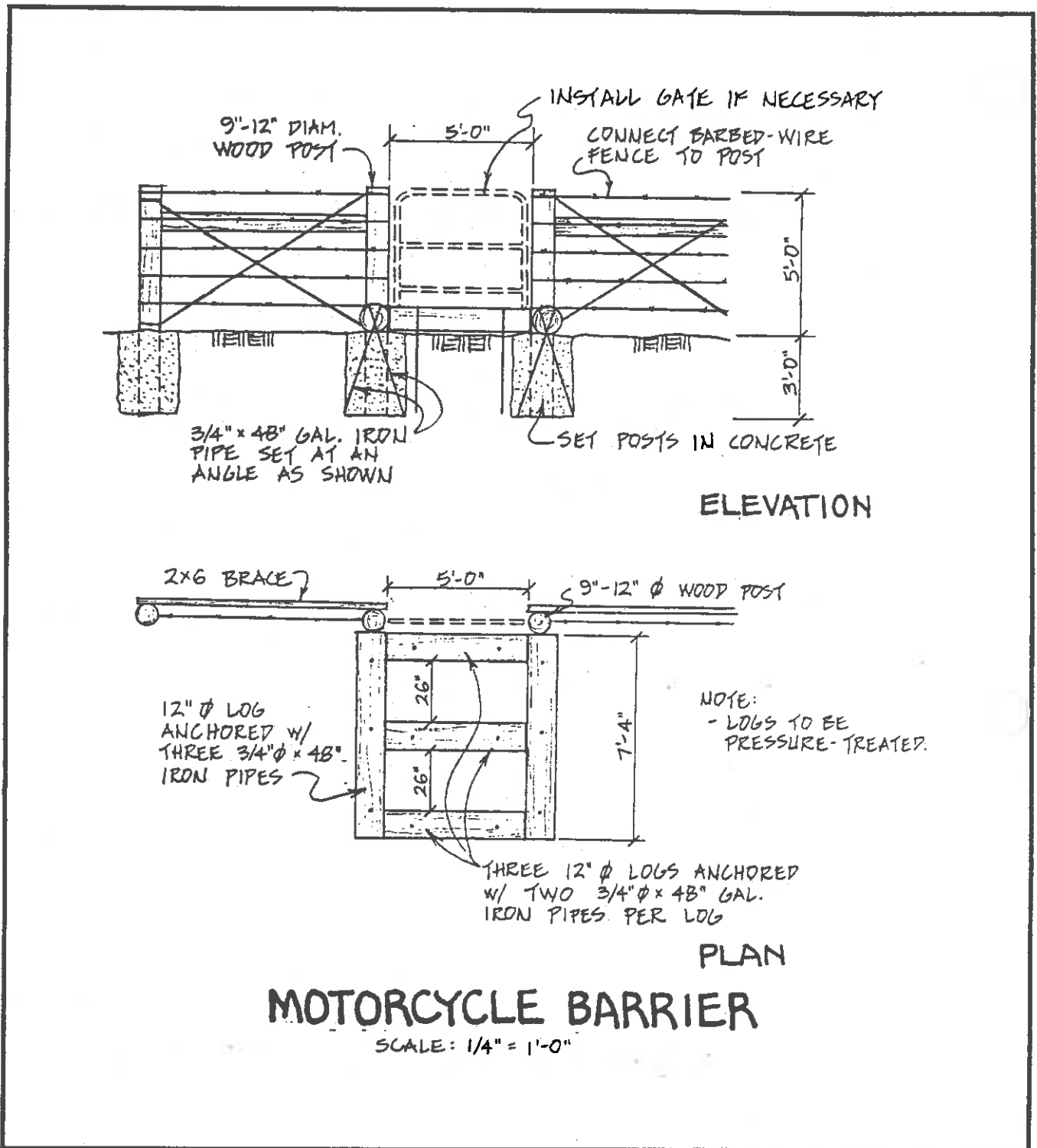


Figure 12-14 Fencing/Barrier – Motorcycle

Santa Ana River Corridor Trail System

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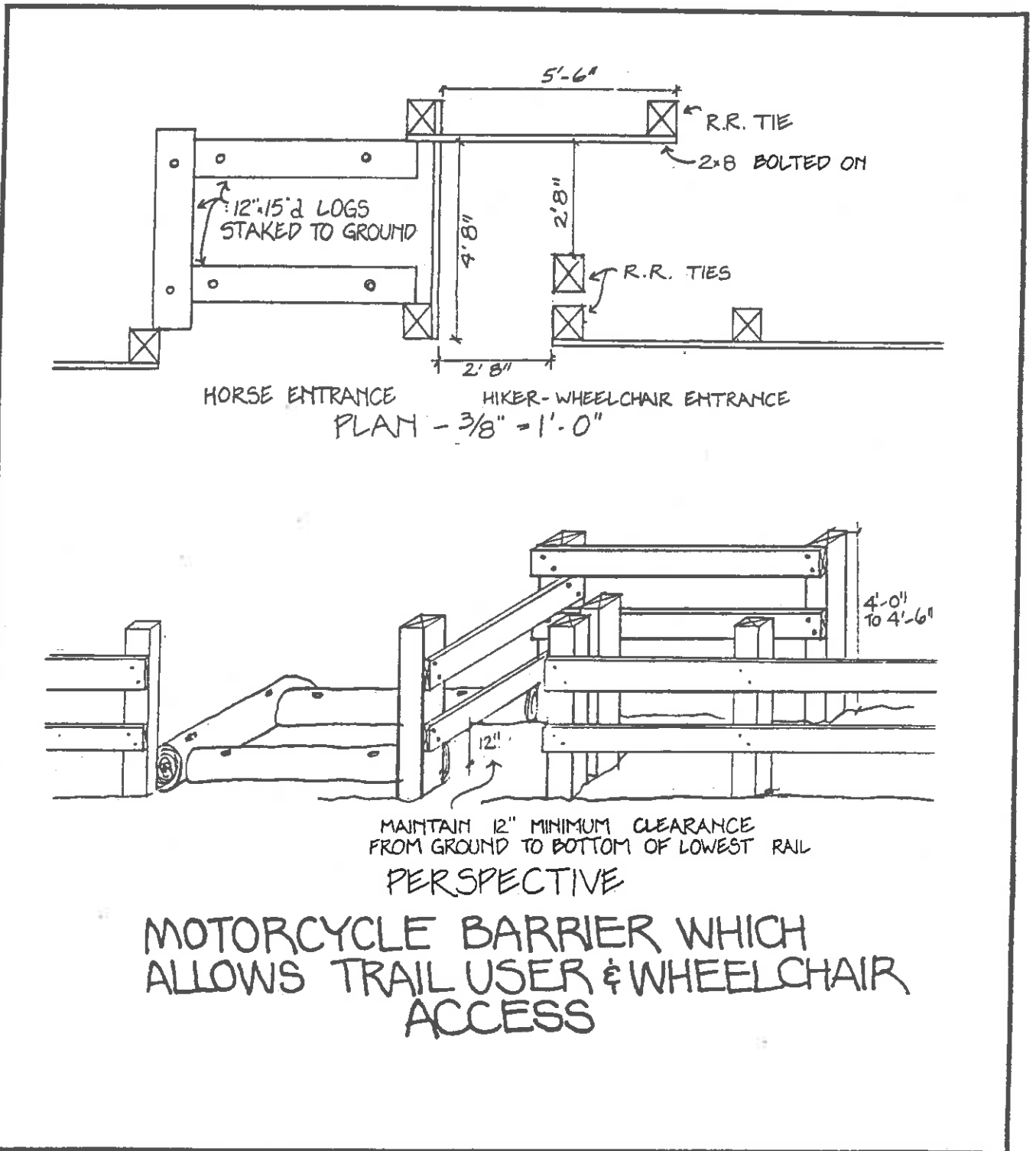


Figure 12-15 Fencing/Barrier – Cycle w/Whole Access

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12.1.5 Feeder Trails

Approximately 32 feeder trails access the Santa Ana River Trail over the 110-mile length of the trail. At these trail junctions, Santa Ana River Trail standards should apply. Additional study is needed to assess the specific trail routing and various uses of these feeder trails. Unless noted, these trails are assumed to be multiple-use trails with no paved bicycle surface. These trails would be managed by the jurisdiction within which they are located or may be included within the management structure of the Santa Ana River Trail.

12.1.6 Trail Staging Areas

Trail staging areas may vary in size depending upon the intervals, use, need, and physical location. They should be large enough to accommodate the amount and type of traffic the trail demands. If a particular trail segment is used only by small groups of hikers, equestrians or bicyclists, its size can be smaller - from 10 to 20 vehicles. If the trail segment receives heavy trail use by large groups, especially equestrians who utilize pickups and trailers, the staging area would need to accommodate up to 50 vehicles with consideration for trailers.

Given increasing demands along the trail over the next 20 years, staging areas should be designed with expansion capability in mind. Additional land, where feasible, should be acquired to accommodate expansion. They can be expanded as needed over the years.

Spacing of trail staging areas is dependent upon anticipated use and trail mode. In densely urbanized areas, staging areas should be located close together at approx. 1 1/2 to 3 mile intervals. In less populated areas, these can be 3 to 5 miles apart. A consideration is which side of the river the staging area is on. If both sides of the river generate trail users, staging areas on either side may be required. Where concentrations of equestrian or bicycle trail users exist, separate trail staging areas are desirable. These become particularly important during bike trail events or large equestrian rides. These large events should be accommodated at separate staging areas. Where trail use is more balanced, both trail users can be served from one facility. The plan identifies which type is proposed. See Chapter 4.0

Trail staging areas can range from 1/2 acre in size (20 cars) to 1 1/2 acres (50 cars). A typical facility should be approx. 1 acre in size. Roadway access is required for trail users and for maintenance vehicles. Equestrian staging areas will be larger to accommodate horse trailers, generally up to two acres in size.

Staging areas should be safe and should not duplicate existing facilities. Where existing parking exists, it should be utilized. However, effort needs to be made to provide for increased security so that trail users should be willing to park their vehicles and feel that both their car and themselves will be safe. This would include offstreet parking, lighting, fencing and trail ranger observation. These facilities would also be open during daylight hours only. They would be closed by gate at night to eliminate loitering and reduce vandalism and nuisance factors.

Facilities which should be provided at trail staging areas include the following:

- Picnic tables
- Rest rooms, where feasible
- Shade trees or structures
- Trash receptacles
- Water
- Signage
- Lighting
- Parking
- Fencing, if appropriate
- Turf area, if appropriate

The staging areas may include many other types of recreation facilities, if appropriate for the area. Where feasible, staging areas should be located within parkland areas accessible by arterial roadways. They should be located at the beginning and ending of the trail.

Where equestrian use is anticipated, additional facilities are needed. These should include:

- Parking stalls long enough for a vehicle and horse trailer and laid out so that straight ahead entrance and exit is possible
- Hitching posts
- Stock watering tank (approx. 10' dia.)

Utility needs would include water, sewer and electricity.

The trail staging area needs to have good drainage with well-drained, non-cohesive soils. Equestrian areas should receive a base layer of rock with approx. an inch of pea gravel on top with good gentle side slope drainage.

12.1.7 Trail Rest Stops

Trail rest stops are remote stopping points along the trail between staging areas for rest purposes, especially during the hot summer months. They should be located within existing parks if possible. No vehicular access is required since these facilities are geared toward the through trail user only. They should be spaced every 3 to 5 miles and may be oriented toward either bicycle or equestrian use, depending upon existing rest stops, which side of the river the rest stop is located and the dominant trail use in the area. Maintenance road access is required.

Facilities which should be included are the following:

- Water (varies)
- Picnic tables
- Trash receptacles

- Shade trees or structures
- Signage
- Rest rooms, or portable toilets where feasible

Equestrian-oriented trail rest stops should also have the following:

- Hitching posts
- Stock watering tank (smaller in size than staging area)

Rest stops are approximately 1/4 acre in size and are generally within flood easements or existing parkland.

There are no utility needs except water. Some remote spots may not have water.

12.1.8 Campgrounds

Campgrounds are needed for the through trail user during continuous travel, such as the Crest to Coast Trail Event, and for weekend or day use trail rides. Organized groups should be accommodated. During the Crest to Coast Trail Event, a five day trip, campgrounds are needed every 15 to 20 miles.

These would include campgrounds within existing or future regional parks, the National Forest or by themselves. Included are:

- Featherly Regional Park - Orange County
- Chino Hills State Park - Santa Ana River Flats* - Riverside County
- Rancho Jurupa Regional Park - Riverside County
- Agua Mansa Regional Park* - San Bernardino County
- Norton AFB Complex* - San Bernardino County
- Cone Camp (Special Permit Only) - San Bernardino County
- Morton Canyon - USFS
- Thomas Hunting Grounds * - USFS
- Seven Oaks/Barton Creek * - USFS
- South Fork - USFS
- Heart Bar - USFS
- Coon Creek Jumpoff (Special Group Use Only - Pacific Crest Trail) - USFS

* Future campgrounds

Depending upon the time one had to travel the trail, campgrounds would be selected based upon a day's travel by either bicycle, hiking or equestrian mode.

Small groups or individuals should be accommodated with no problem. Large groups would need to plan in advance and reserve appropriate facilities. Specific campground locations at regional

parks are determined in the master plan for each park. Groups would be accommodated at campgrounds which should be accessible by service vehicle, but away from heavily used areas of the park. They should be near the Santa Ana River Trail they serve.

Separate areas reserved for equestrians should be provided at equestrian-oriented campgrounds. If two regional park campgrounds are located near one another (such as Agua Mansa and Rancho Jurupa/Chino Hills State Park and Featherly), one should be designated the principal equestrian group campground and the other the bicycle-oriented group campground in order to accommodate large groups and to not duplicate facilities. Equestrian group campgrounds would be provided at Rancho Jurupa Regional Park and Chino Hills State Park. Bicycle group campgrounds would be located at Agua Mansa Regional Park and Featherly Regional Park. Small numbers of either type of trail user could be accommodated at all regional parks.

Some trail users, especially horsemen, enjoy travelling in large groups. These camps should be designed to accommodate up to 100 trail users in several small groups. These group camps would be available by reservation to organized youth or adult groups. Wood fires would be permitted where appropriate fire circles exist. Vehicles would be limited at the group campgrounds. Good road access is needed since large groups often bring in supplies by vehicle.

Facilities should include:

- Central Barbecue Pit/Fire Rings
- Toilet(s)
- Garbage Cans
- Hitching Rails - Equestrian Camps
- Potable Water
- Stock Watering Tank (min. 10' dia.) - Equestrian Camps
- Shelter (optional)
- Shade trees
- Tent Area

12.2 The San Bernardino National Forest Region

Trails within the San Bernardino National Forest fall under the jurisdiction of the U.S. Forest Service. Approximately 30% of the Santa Ana River Trail is located in the forest region, some 33 miles from Greenspot Road in the Santa Ana Wash area to the Pacific Crest Trail. Approximately one-half or 17 miles will have been completed by 1990.

The National Forest trails will be used by three types of users: hikers (backpackers and day use), equestrians (overnight trail riders, individuals or groups and day use) and mountain bikers (non-motorized, through trail users and day use). The later use is a relatively new outdoor sport which is becoming increasingly popular. The former two uses are common to the forest.

The trails should accommodate all three user types with enjoyment by all, adequate safety and low on-going maintenance costs. The trail should be two to four feet wide, depending upon

terrain and cross slope. When mountain bicycle use is heavy, dual or separate trails should be provided to separate mountain bikes from equestrians to minimize trail conflicts.

Trail pullouts or alternate bypasses should be provided at regular intervals to accommodate the different users and to allow for group events to pass. National trail designation, as anticipated, should increase user numbers which would indicate that a four foot trail width is needed in heavier use segments. The current trail standard is generally two feet. In addition, over time, the trail can be widened and modified as needed. Due to increased erosion from mountain bike and equestrian use, the trail should incorporate adequate erosion control measures and have minimal excessive slope.

Several good trail guidelines exist which can be used for reference. The guiding reference is "Standard Specifications for Construction of Trails", USDA, Forest Service - Engineering, EM-7720-102, (1984). Another good reference is "Trail Construction Guidelines", San Bernardino County Regional Parks Dept., which contains many details from several agencies. These two documents should provide design guidance for most any trail situation.

12.2.1 Design Standards For Trails

Temporary Route Flagging: All necessary centerline flagging or staking shall be done by Forest Service personnel prior to construction. Flags or stakes should be removed when construction is completed.

Methods: Hand or machine construction. The construction area should be confined to the trail tread to the extent possible. Construction should attempt to make as little impact on the natural surroundings as possible.

Clearing and Grubbing: Reference Section 910 of USFS Standard Specifications. This shall consist of clearing, grubbing, trimming, removal, and disposal of, or treatment of, live or dead timber, construction slash, and debris within the trail construction zone. Designated trees would be removed or preserved. Refer to Figures 12-16 and 12-17 for clearing limits. Specifications to be completed by USFS.

Vegetation should be preserved as much as possible to protect the aesthetic quality of the trail. Vegetation should be cleared to a height of 9' and should be cleared to a width of a least 5' at shoulder height. Pruning along trails should be selective. Good pruning practices should be followed, including cutting branches off flush with the limb, and stems flush with the ground. Stumps may be treated to prevent sprouting. Large limbs should be pruned flush with the trunk and wounds sealed to prevent decay. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be cleared except from the actual tread. Spot spraying with herbicides is permissible when poison oak predominates or hand pruning is ineffective in keeping trails clear.

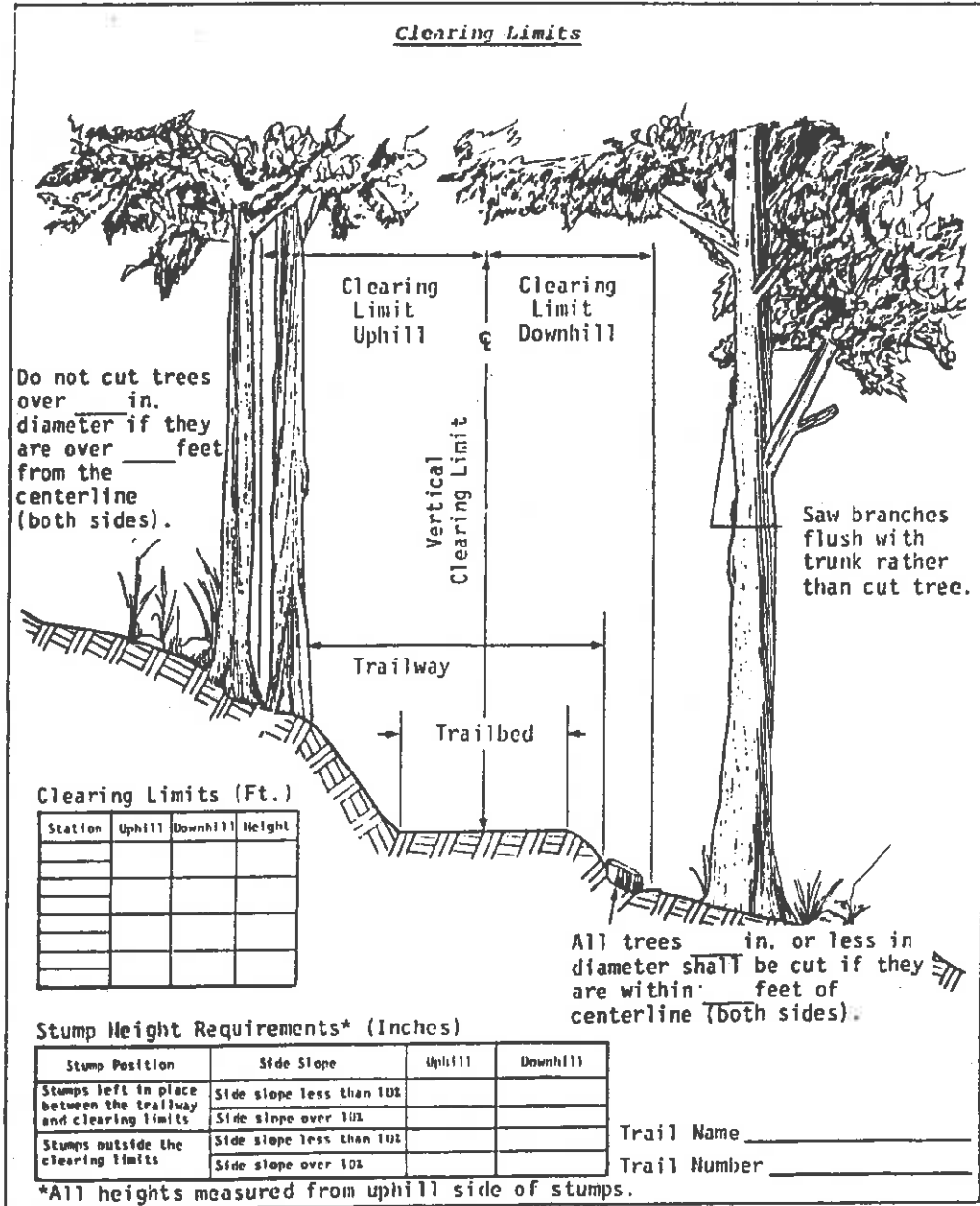
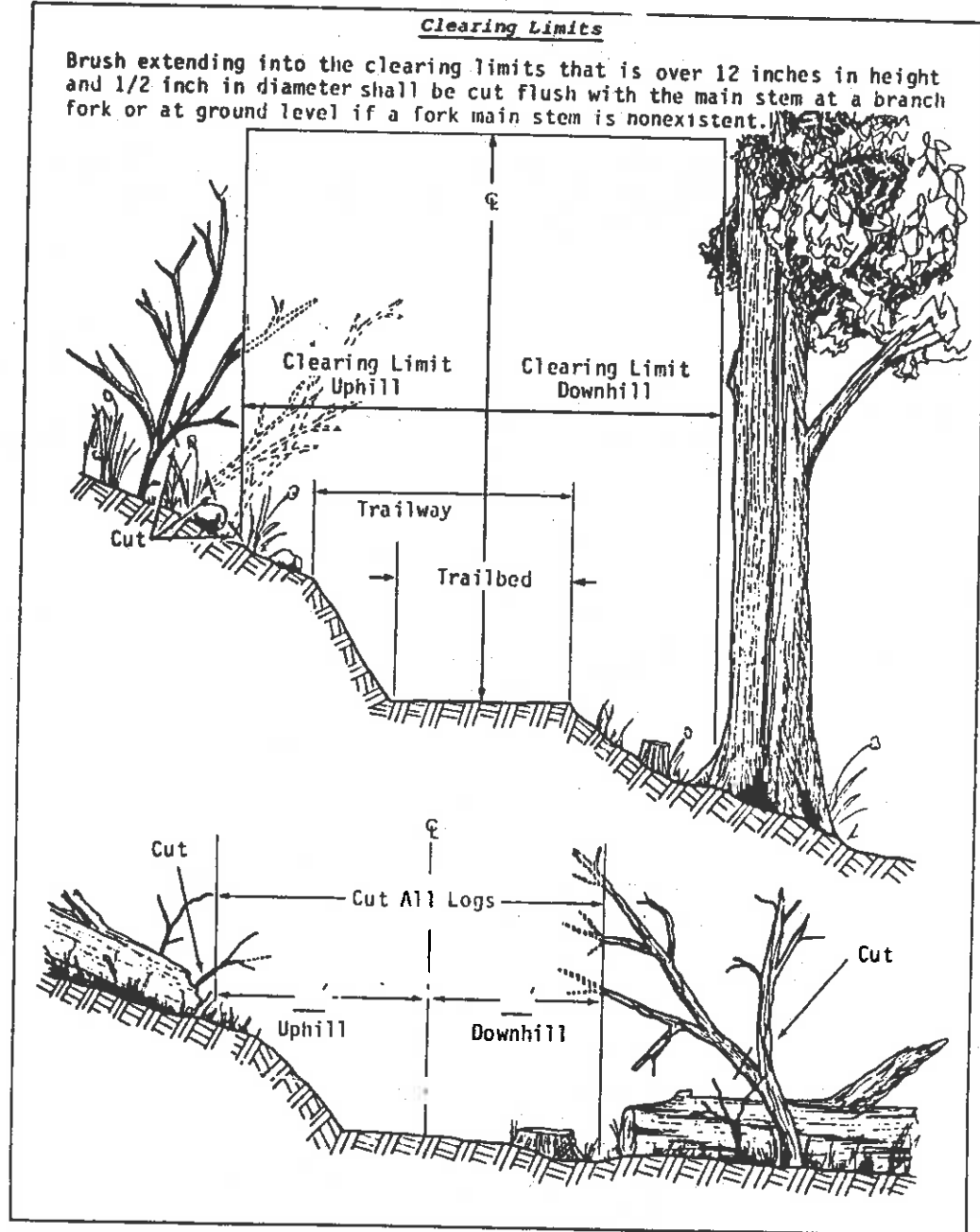


Figure 12-16 Multi-use Trail - Limb Clearing

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FS-7700-62 (6/84)

Figure 12-17 Multi-use Trail - Limb & Brush Clearing

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Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the downhill side.

Vegetation should be allowed to return to cut slopes to increase stability. Where appropriate, any replanting should be in conformance with land use development plans of individual parks and vegetative management plans. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

Excavation and Embankment: Reference Section 912 of Standard Specifications. Work would include excavation and placement of excavated material from the trail limits. Included is construction required to shape and finish the trailbed, ditches, backslopes, fill slopes, drainage dips, passing sections, stream fords, gully crossings, talus and rubble rock sections, and retaining walls. USFS personnel shall be indicated appropriate criteria on a milepost by milepost basis due to changing site conditions. Refer to Figures 12-18 to 12-24.

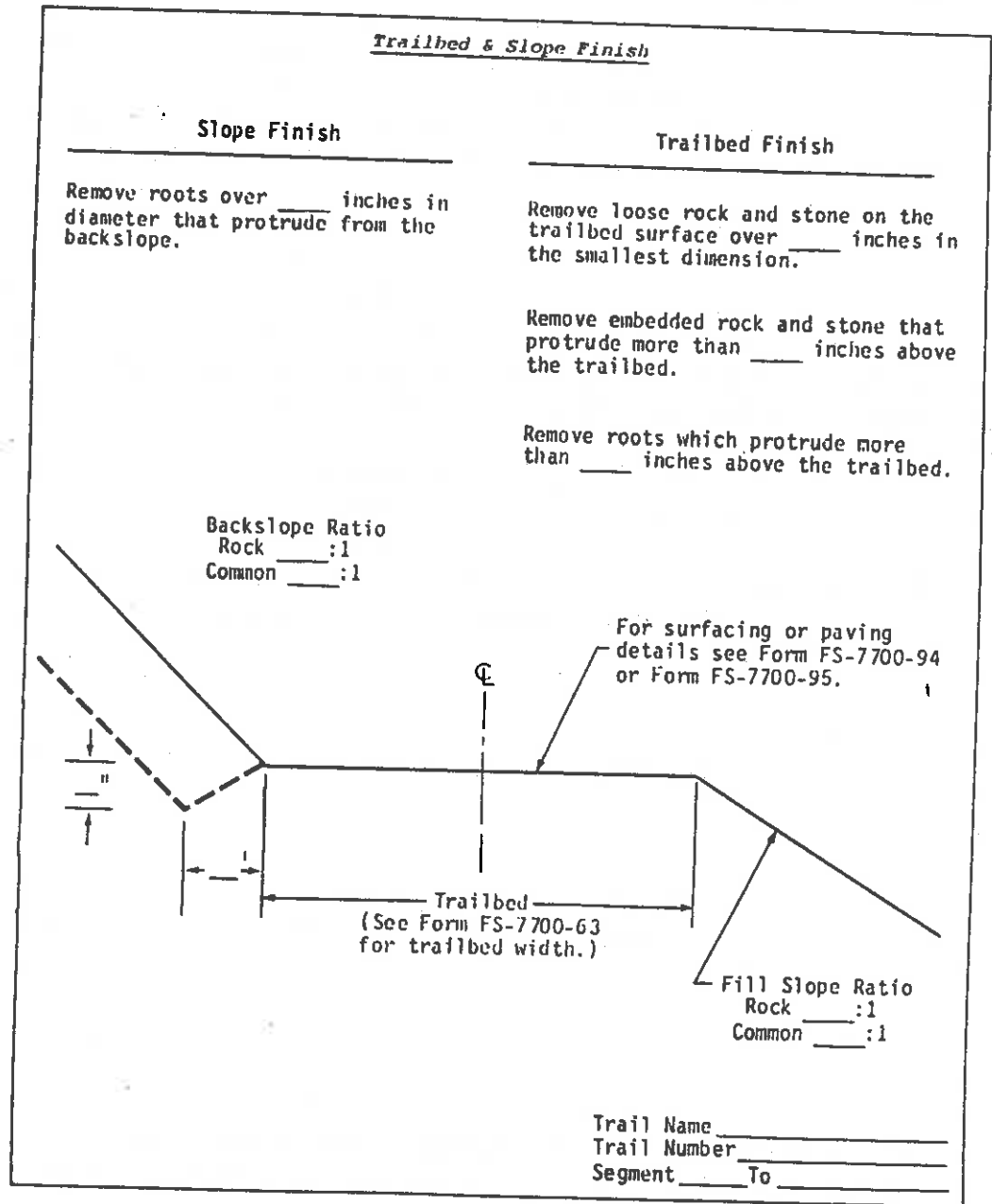
Grades: Grades should be held to a minimum. Steep grades are tiring for hikers, equestrians and mountain bikers. They also create erosion problems, especially from mountain bikes and equestrians when the soil is wet and loose. Grades of 0% to 5% are optimum. Grades of 7% to 8% or less acceptable. They may be as great as 15%, but should be avoided or kept very short. Long gradual switchbacks should be used rather than short, steep switchbacks. Refer to Figure 12-25.

Tread: Generally, tread width should be two to four feet. The tread width should be determined by the amount and intensity of use as well as topography and vegetation. In narrower tread areas, passing trails should be provided with gentle slopes. As trail use increases, trail width should be widened as needed.

In order to reduce erosion and, therefore, maintenance problems, disturbance of the soil surface should be kept to a minimum. Only those rocks, stumps, and roots which interfere with passage should be removed.

The degree of cut allowed on a slope depends on the soil type, hardness, etc.; make slope cuts steep, but not so steep that erosion or loss of stability will result. Make transitions on all cuts so that the trail will be molded into the terrain. Construct the tread with provision for settling and sloughing. On side slopes, loose material which may slide onto the trail should be removed. Also, a berm of earth, rock, or wood on the outside edge of the trail may be necessary. Generally, a trail on a rubble or talus slope should be built out rather than cut into the loose material.

Steep areas may be handled by terracing or building steps. These must be reinforced with stone or wood. Steps simply cut into the slope should not be used, as these become slippery when wet, and eventually erode. If steps are part of the tread, they must be appropriate for the type of trail user. Steps can be negotiable by horses, but they must be broad, flat terraces, at least 3' deep.



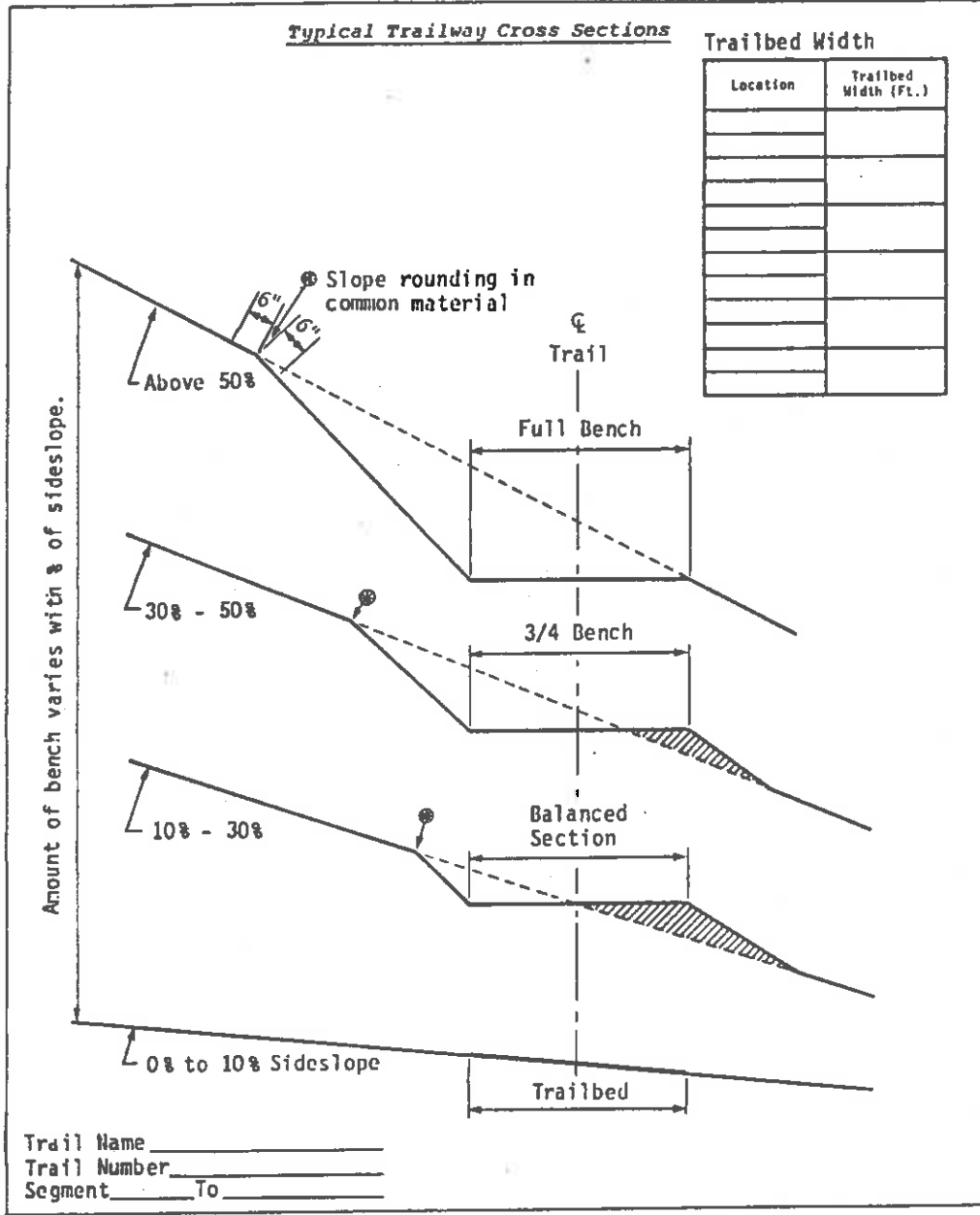
FS-7700-64 (6/84)

Figure 12-18 Trailbed

Santa Ana River Corridor Trail System

EDAW inc.





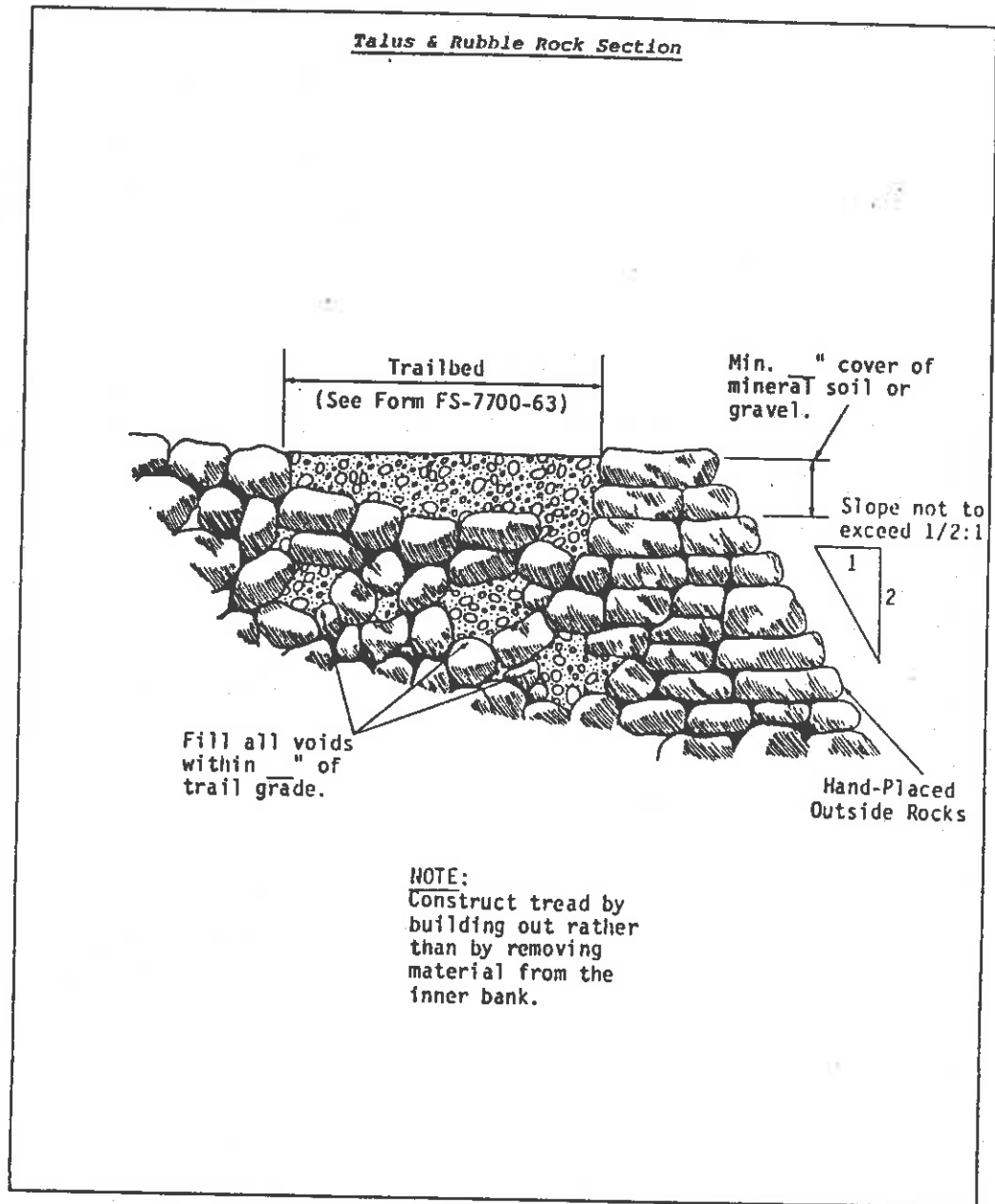
FS-7700-63 (6/84)

Figure 12-19 Trailbed - Cross Sections

Santa Ana River Corridor Trail System

EDAW inc.





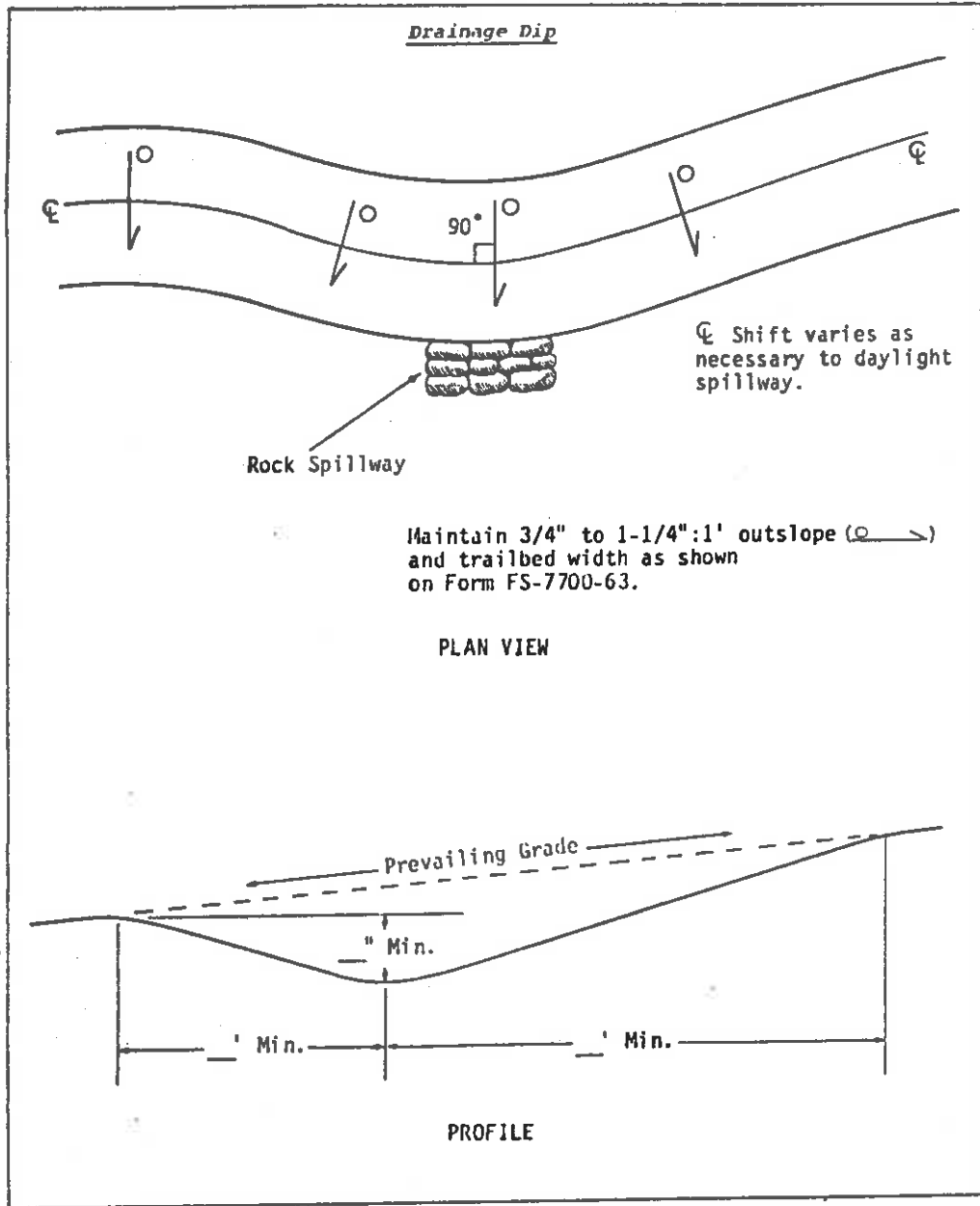
FS-7700-65 (6/84)

Figure 12-20 Trailbed - Rock

Santa Ana River Corridor Trail System

EDAW inc.





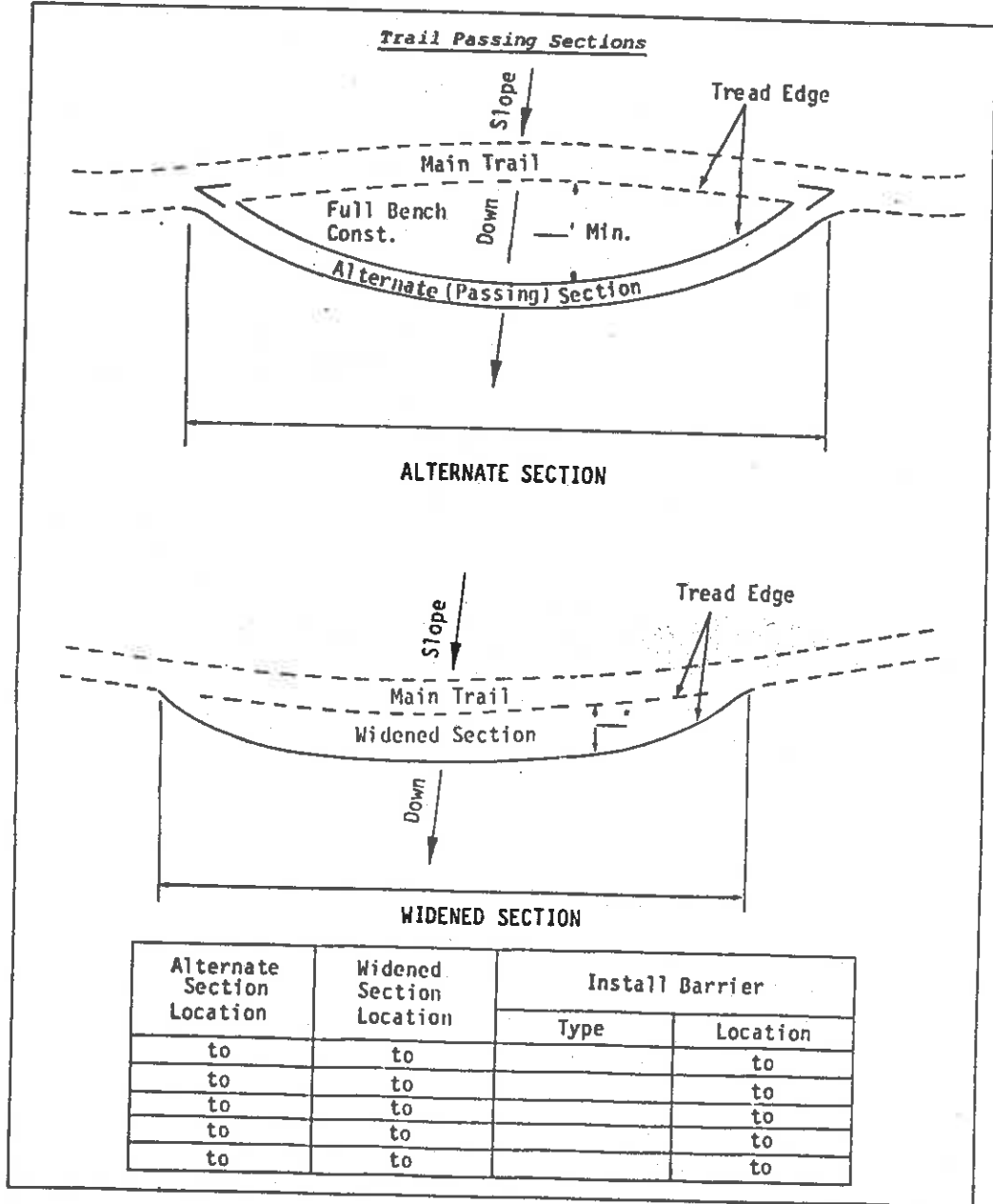
FS-7700-66 (6/84)

Figure 12-21 Trailbed

Santa Ana River Corridor Trail System

EDAW inc.





FS-7700-67 (6/84)

Figure 12-22 Passing Trail

Santa Ana River Corridor Trail System

EDAW inc.



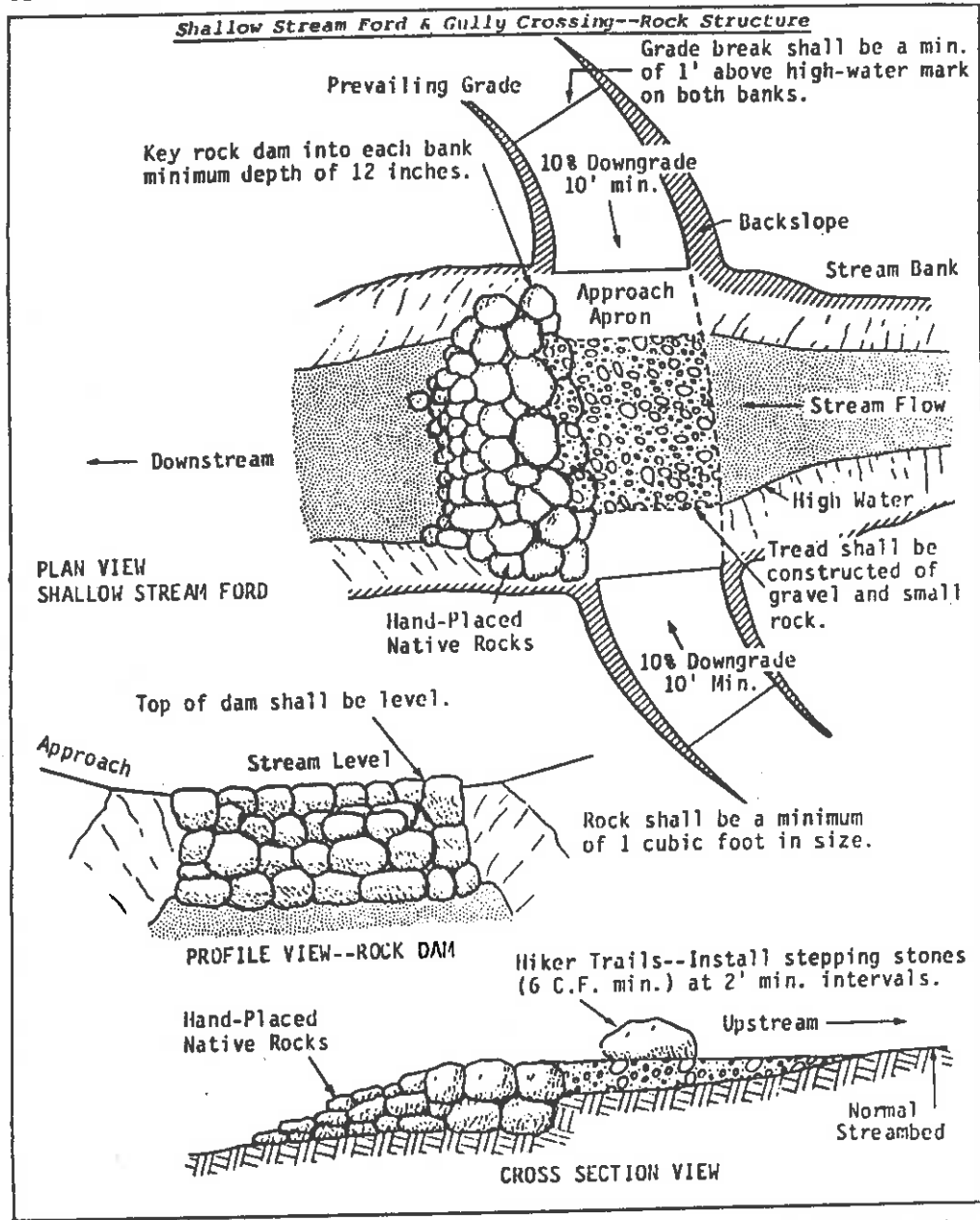


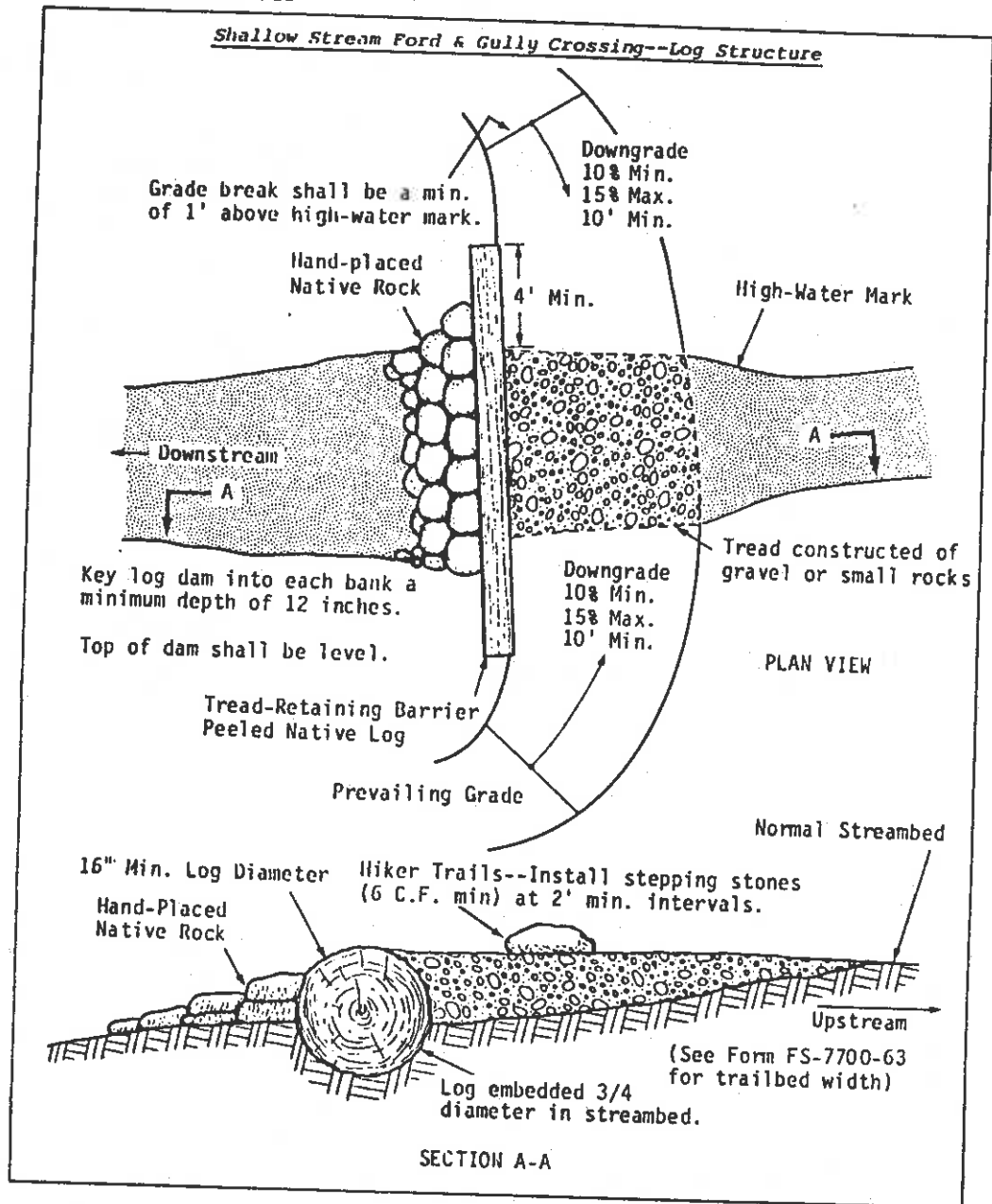
Figure 12-23 Wet Crossing - Rock

Santa Ana River Corridor Trail System

EDAW inc.



Shallow Stream Ford & Gully Crossing--Log Structure



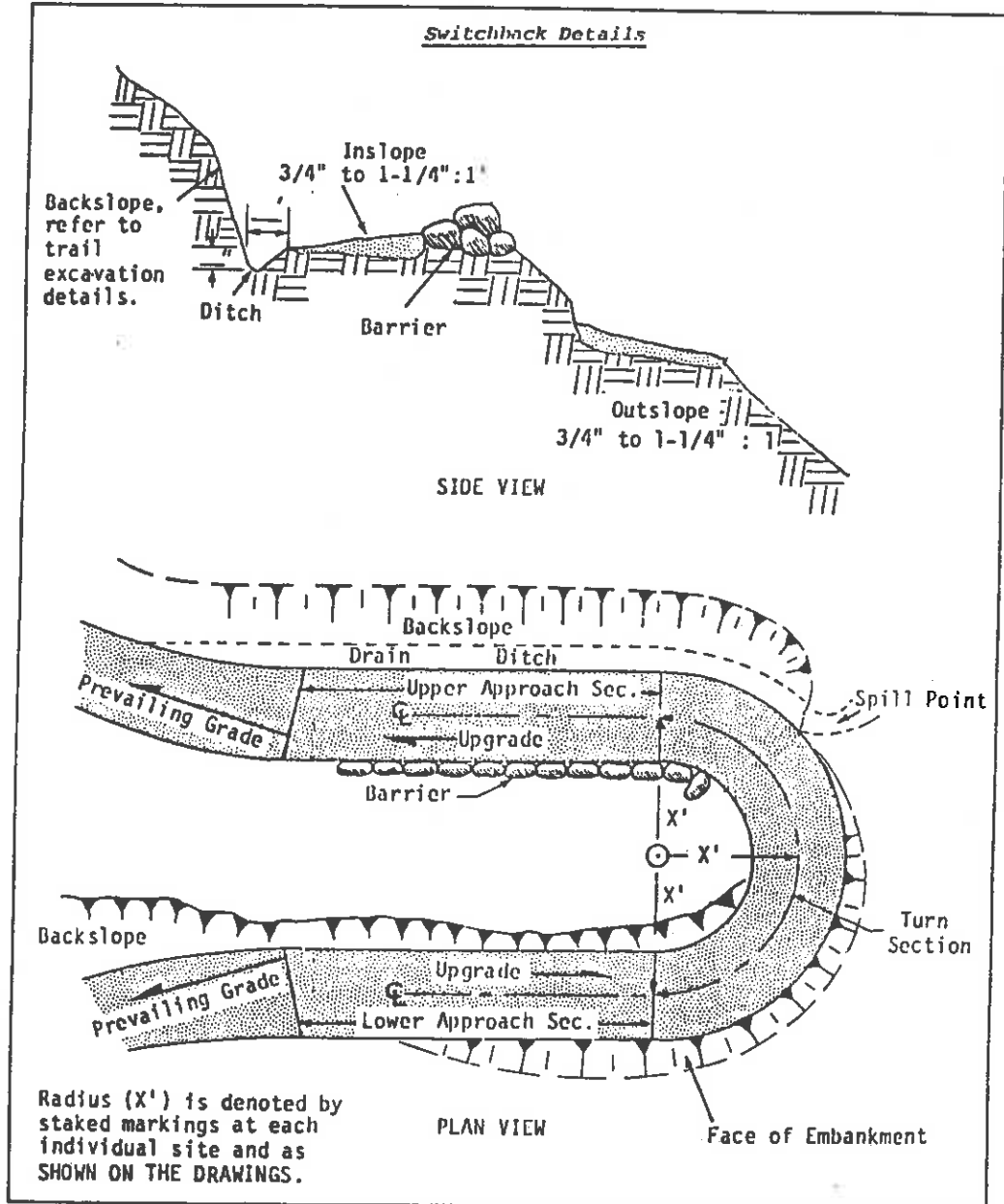
FS-7700-69 (6/84)

Figure 12-24 Wet Crossing - Log

Santa Ana River Corridor Trail System

EDAW inc.





FS-7700-71 (6/84)

Figure 12-25 Switchback Trail

Santa Ana River Corridor Trail System

EDAW inc.

Tread surface should generally be the natural soil or an aggregate. For aggregate use, refer to Figure 12-26, to be completed by USFS personnel. In some locations, bituminous surfacing, such as asphalt, may be required for short distances in high use areas or in moist soil conditions. Refer to Figure 12-27, to be completed by USGS personnel. In one particular situation underneath State Highway 38, a grouted rock trailway is required. Refer to Figure 12-28.

Drainage: Drainage is one of the most important items in trail construction. It requires a special study of the precipitation, runoff, and drainageways in the area. Surface water must be diverted from the trail's surface before it builds up to an erosive force. The method used to drain and tread will depend on the quantity and speed of water and the type of soils in the area. The best and simplest drainage is to outslope the trail tread, 1%-3%. This allows the water to sheet off, rather than run in a stream. Low grades help prevent drainage problems; steep grades allow the water to run faster, building up erosive force. Minor rivulets crossing the trail tread can be directed along a water bar.

Trails crossing larger creeks, whether permanent or intermittent, will require a bridge or culvert. If a culvert is used, it is very important to prevent erosion at the outfall end by providing rip-rap or other hard surface for the water to hit first. If this is not provided, the water leaving the culvert will erode the surface below it, and eventually the fill around the downslope end of the culvert. Avoid causing off-trail drainage problems, such as erosion or siltation, by careful culvert placement. Refer to Figures 12-29 to 12-31 to be completed by USFS personnel.

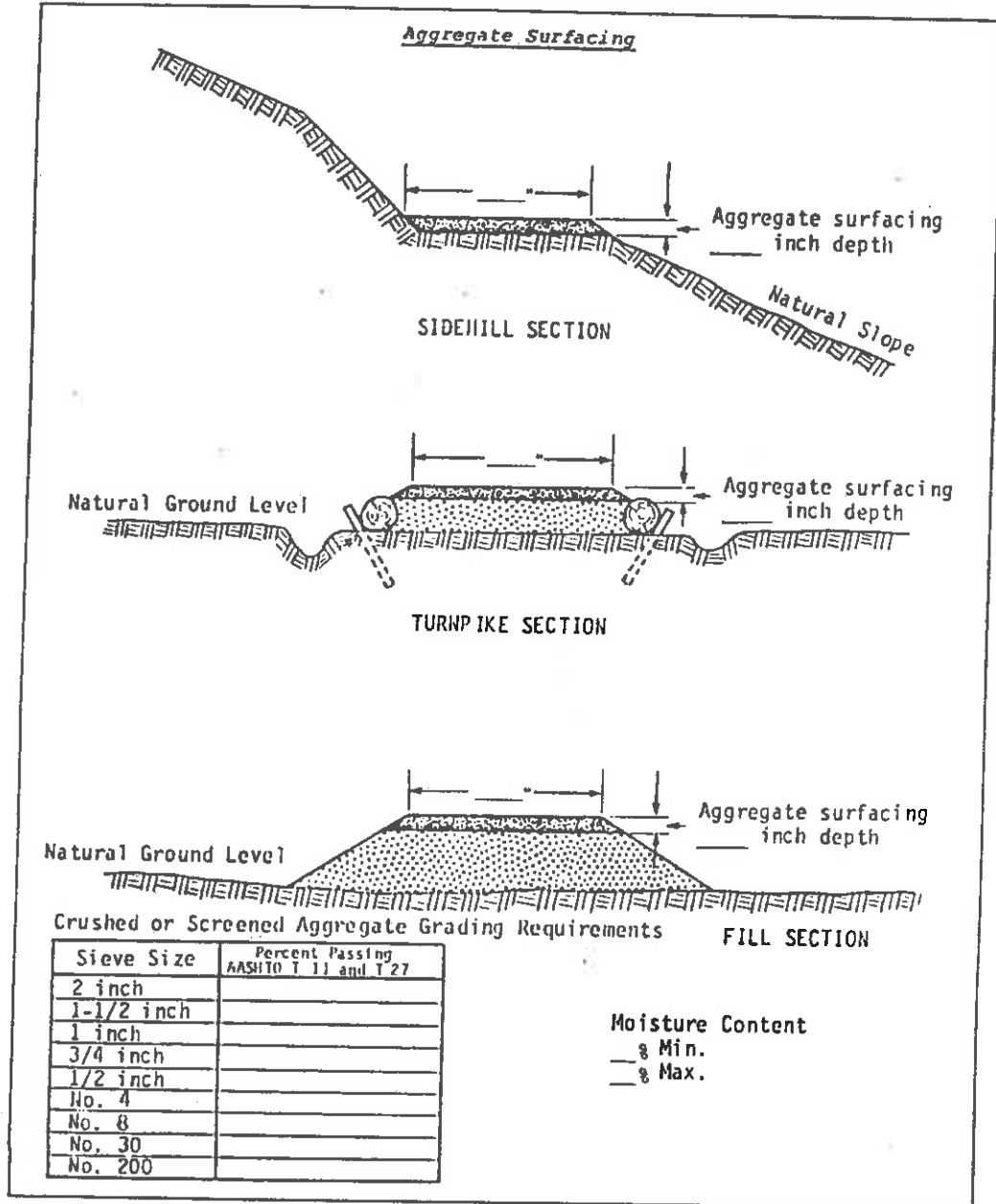
Trail Structures: Trail structures are often needed in the forest including retaining walls, bridges and trail stairways. If possible, structures should be avoided because of their high installation and maintenance cost. These structures should blend naturally into the environment. They should be as vandal-proof as possible. Use recessed bolt heads wherever possible. Bridges should be a minimum 4 ft. wide, where possible. Refer to Figures 12-32 to 12-35 to be completed by USFS personnel. Others may also apply per Standard Specifications.

Fencing: Fencing may be necessary on some trail segments to prevent trail users from trespassing on adjacent private land, to protect sensitive habitat areas or adjacent to staging areas. Refer to Figure 12-36.

Signage: Typical USFS signage is shown on Figure 12-37. Signage shall be placed where appropriate. Refer to Chapter 5.0, Signage. The trail logo should be added to standard USFS signage to clearly identify the trail.

12.2.2 Trail Staging Areas/Trail Heads

Trail staging areas or trail heads are locations where hikers can access the trail by vehicle, park their vehicle, and begin or end their trail experience. They will vary in size depending upon the interval, trail use, need and physical location. Staging areas should be large enough to accommodate the expected demand for trail use. They may range in size from 10-20 vehicle spaces for small staging areas to 50 vehicles where large groups are anticipated. Expansion capability should also be built into the site design and selection.



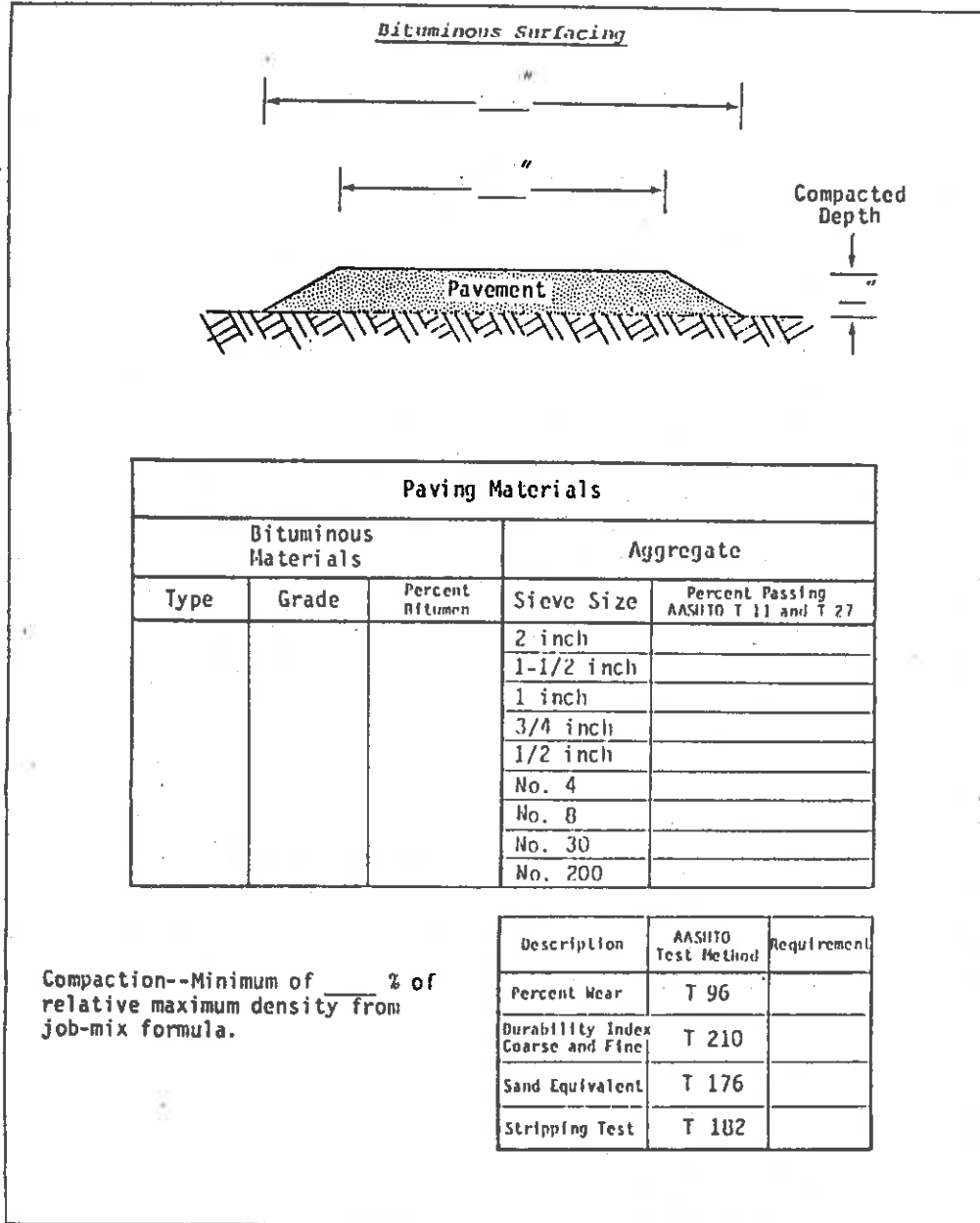
FS-7700-94 (6/84)

Figure 12-26 Aggregate Trail

Santa Ana River Corridor Trail System

EDAW inc.





FS-7700-95 (6/84)

Figure 12-27 Paved Trail

Santa Ana River Corridor Trail System

EDAW inc.



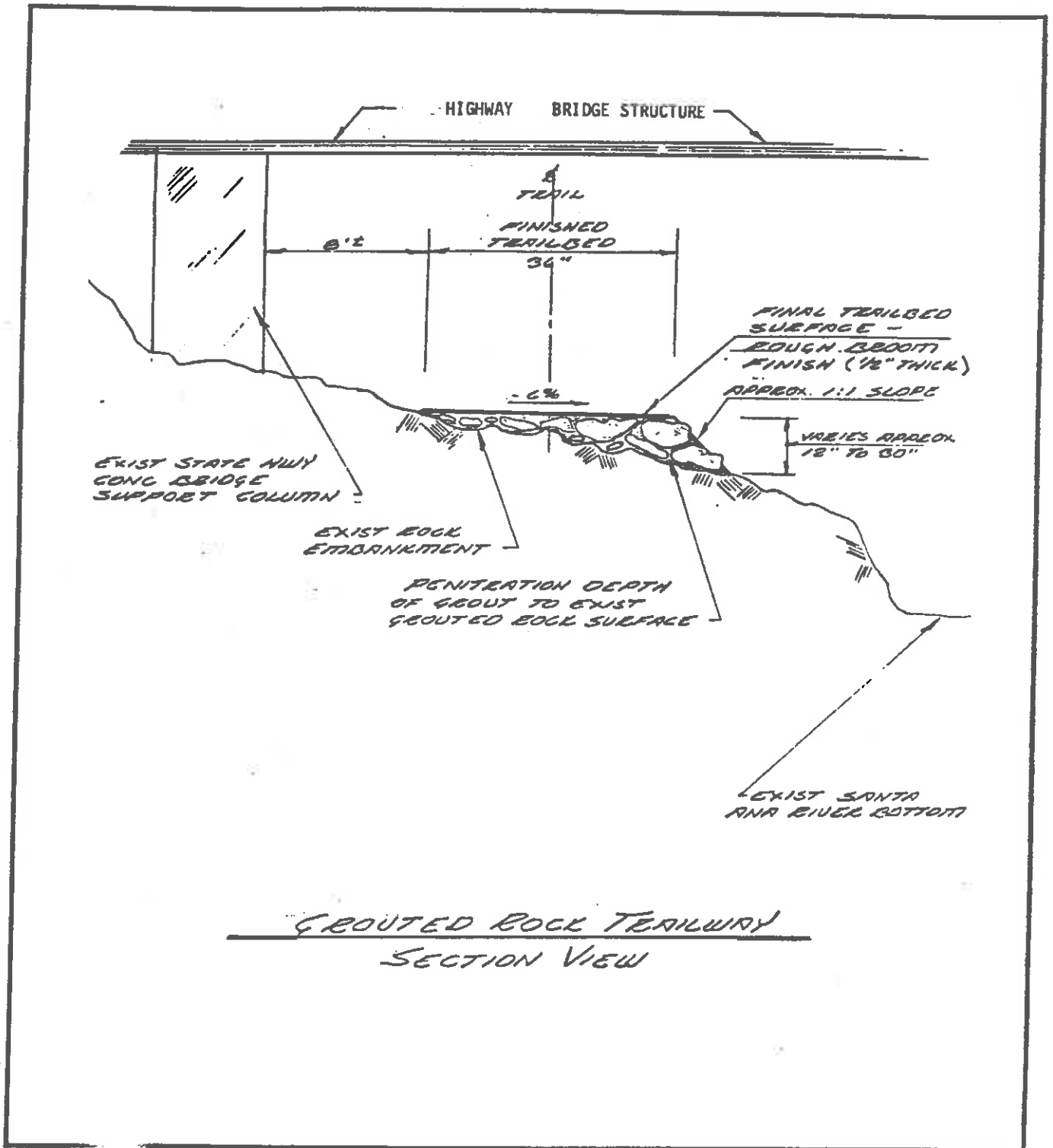
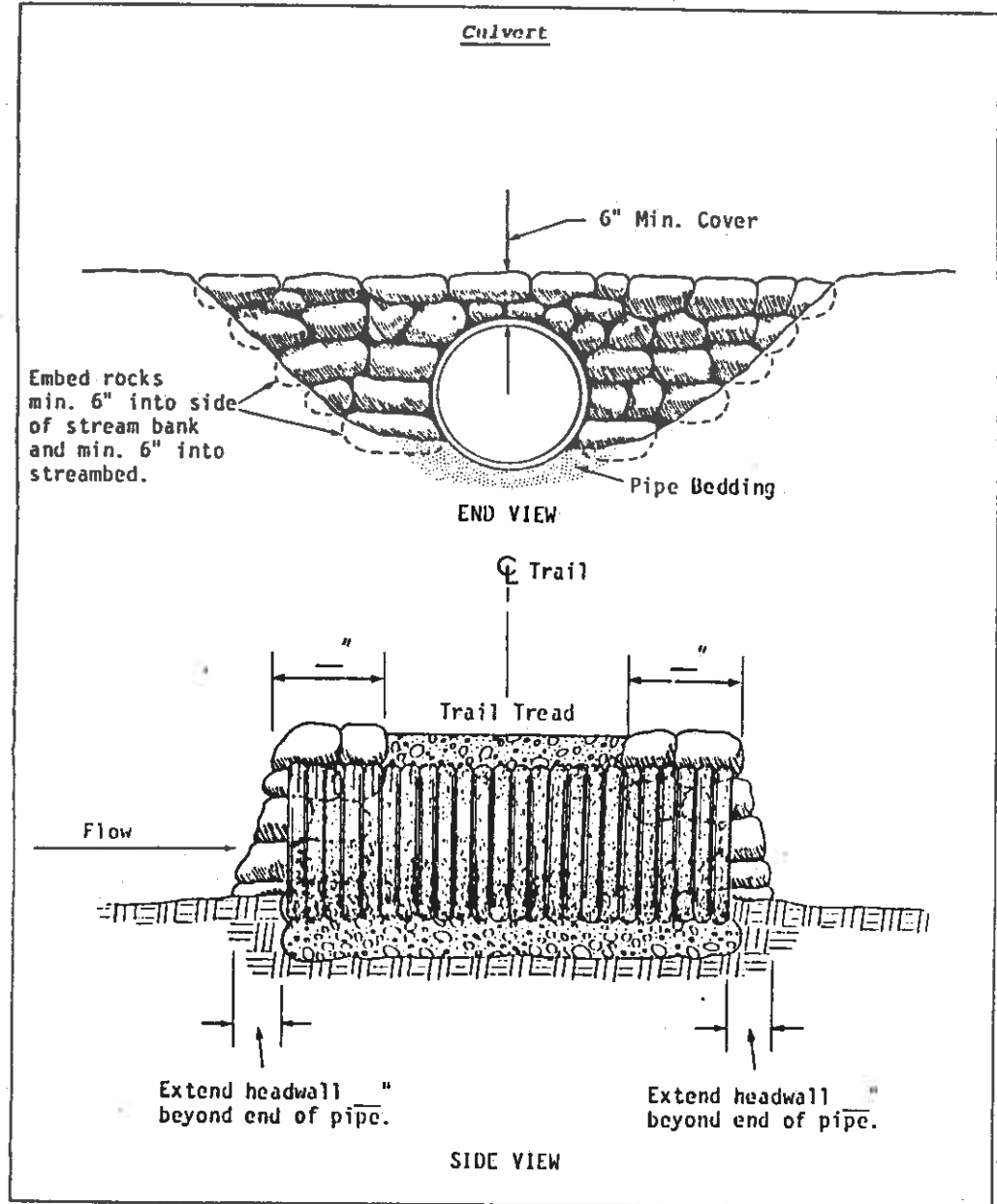


Figure 2-28 Grouted Trail

Santa Ana River Corridor Trail System

EDAW inc.





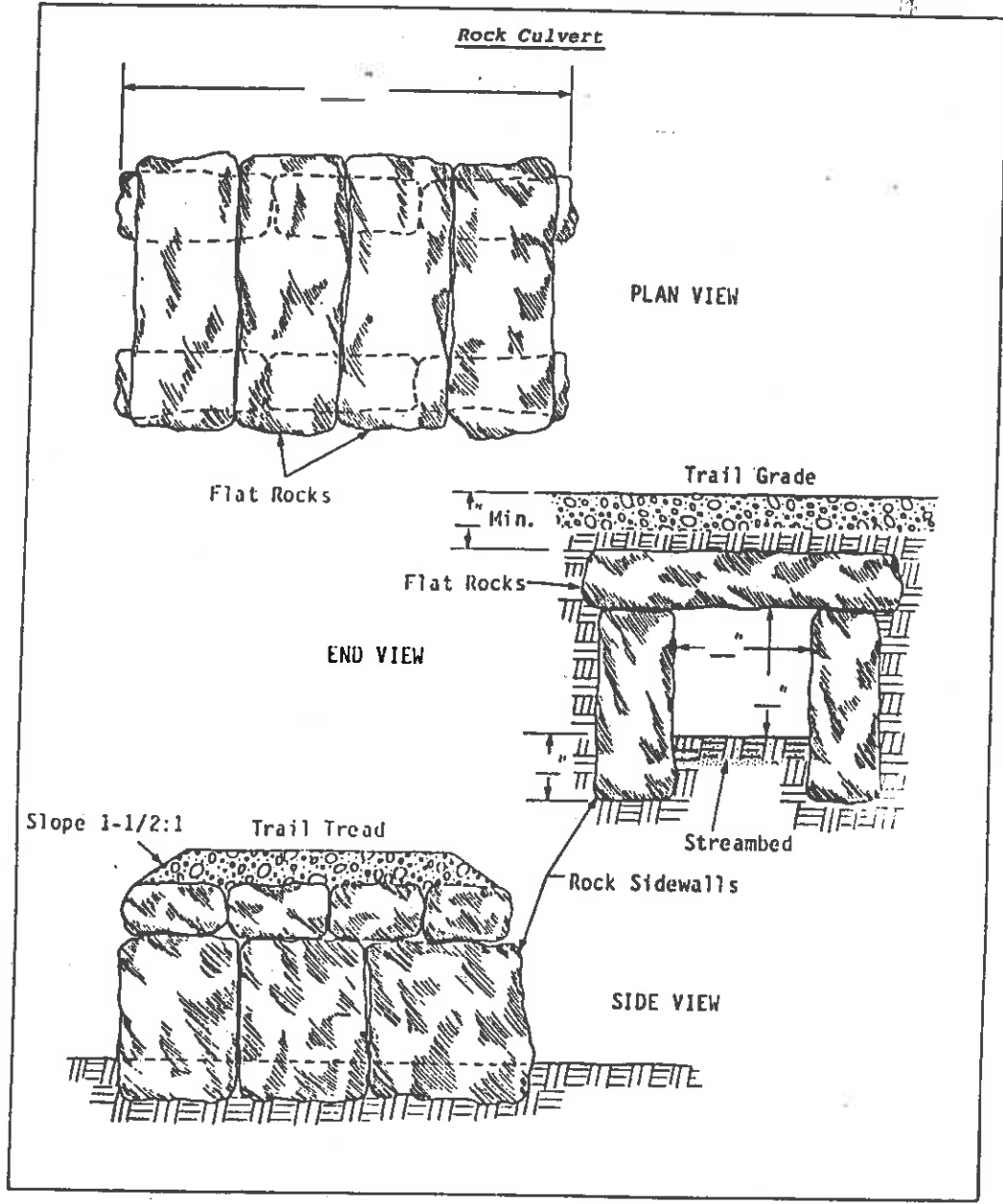
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Figure 12-29 Drainage - Culvert

Santa Ana River Corridor Trail System

EDAW inc.





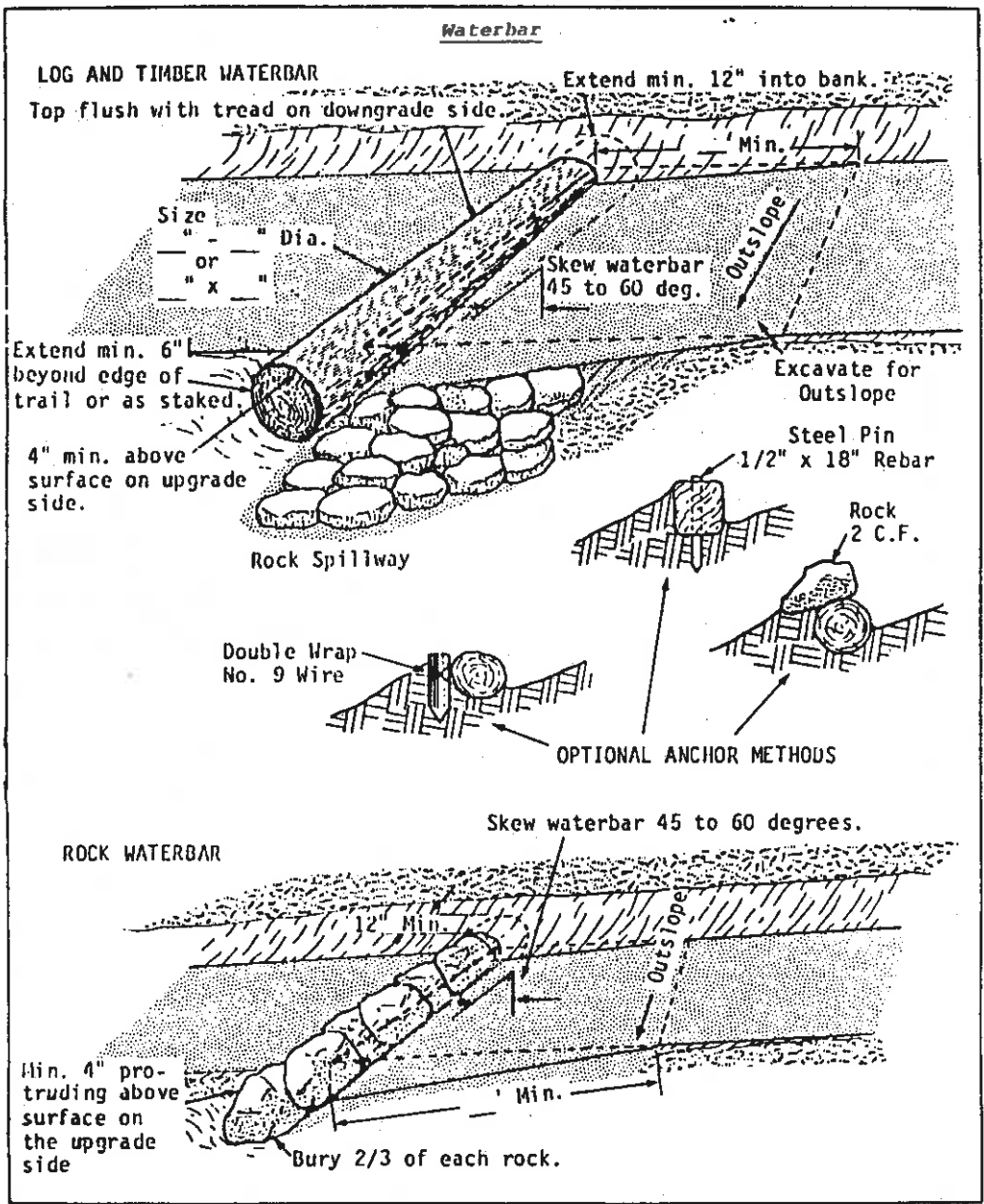
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Figure 12-30 Drainage - Rock Culvert

Santa Ana River Corridor Trail System

EDAW inc.





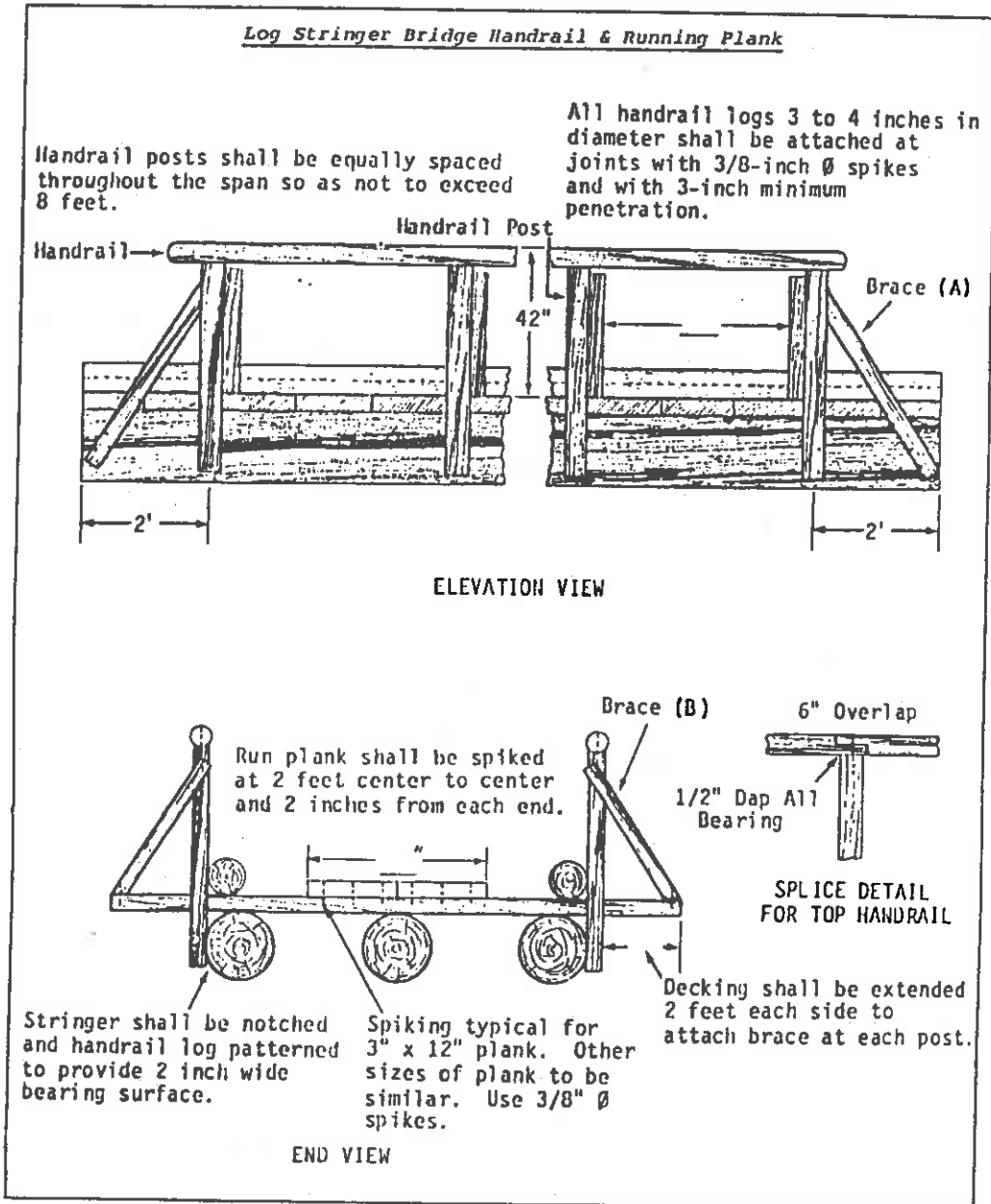
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Figure 12-31 Drainage - Waterbar

Santa Ana River Corridor Trail System

EDAW inc.





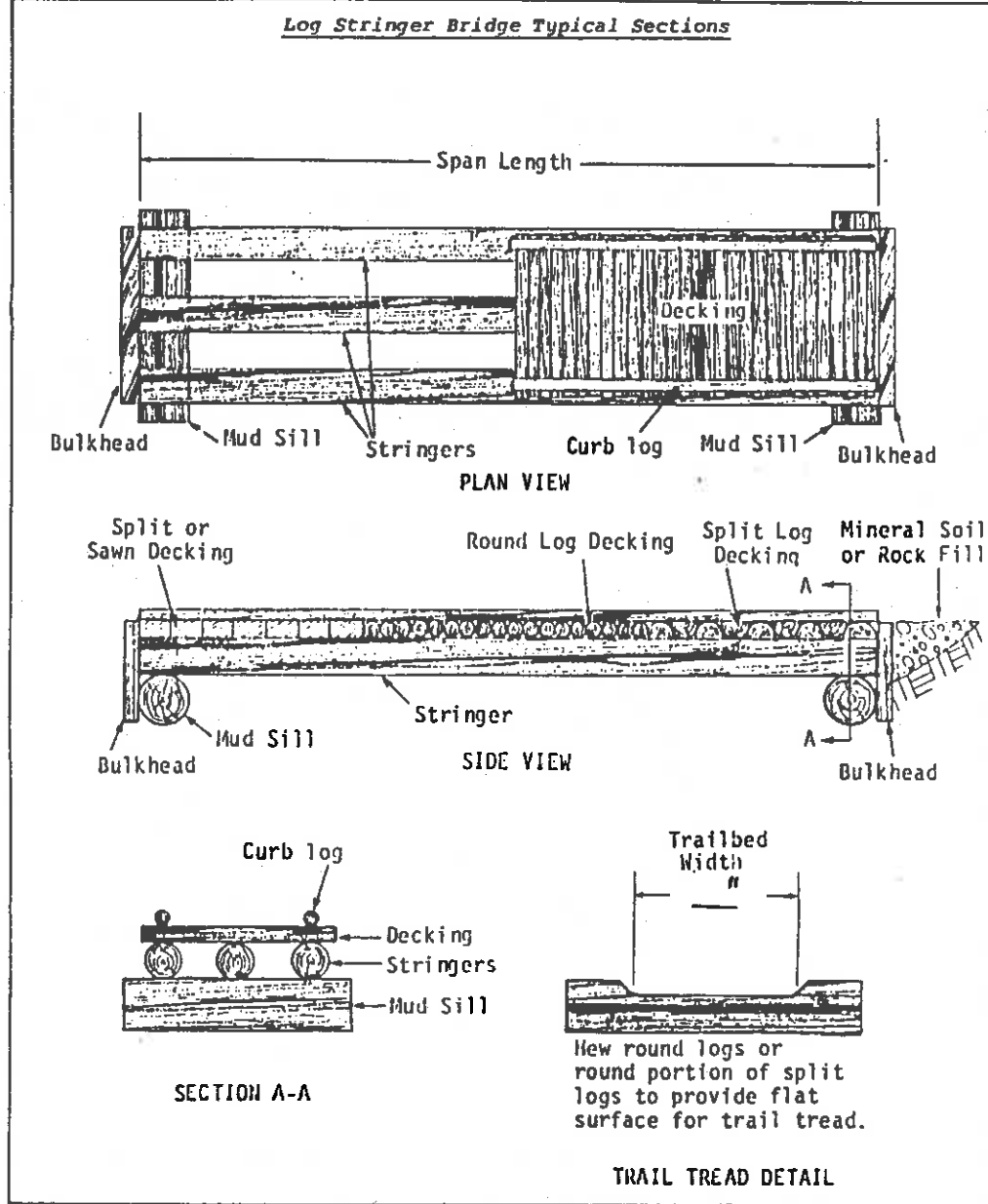
FS-7700-86 (6/84)

Figure 12-32 Bridges

Santa Ana River Corridor Trail System

EDAW inc.





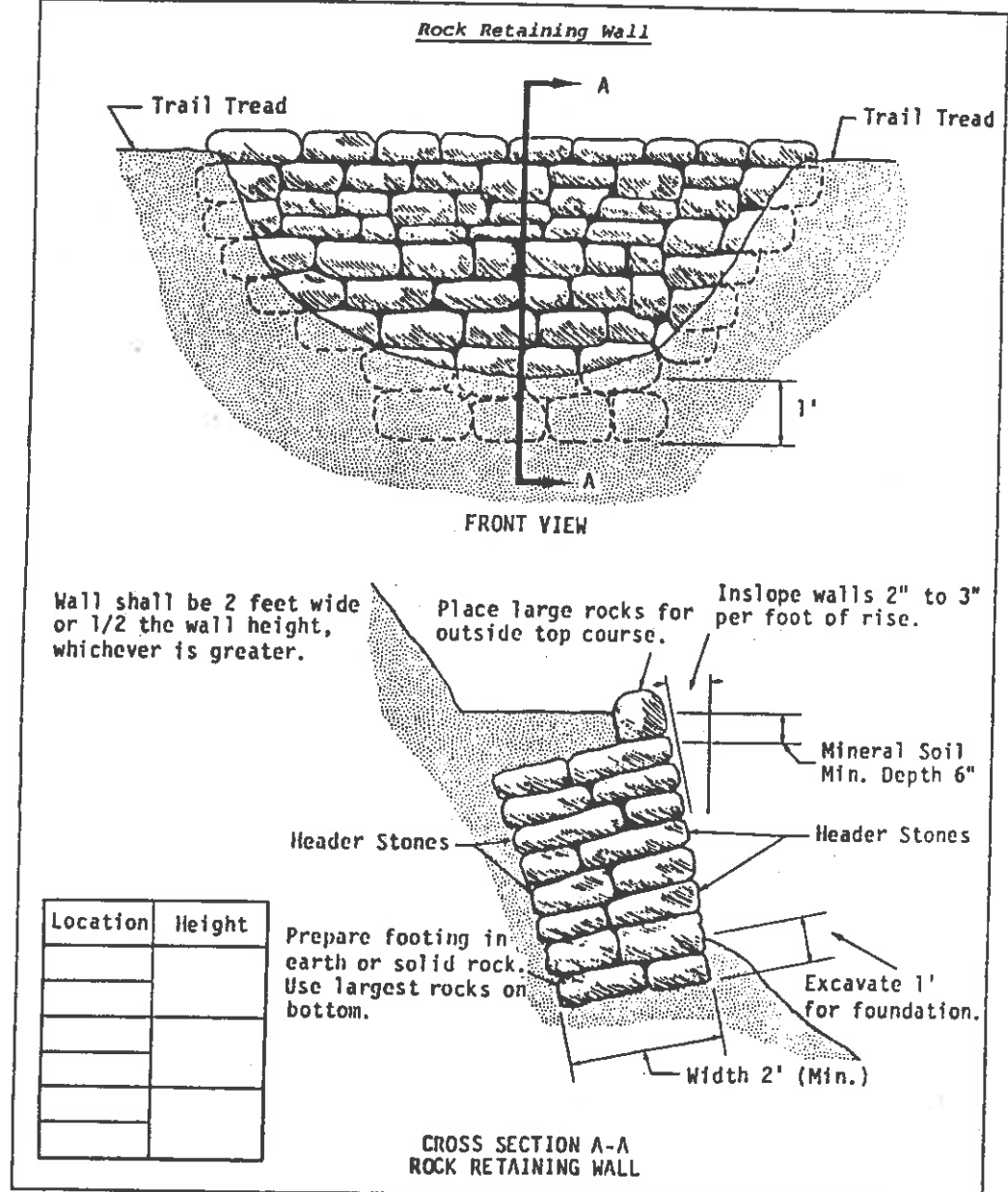
FS-7700-84 (6/84)

Figure 12-33 Bridges

Santa Ana River Corridor Trail System

EDAW inc.

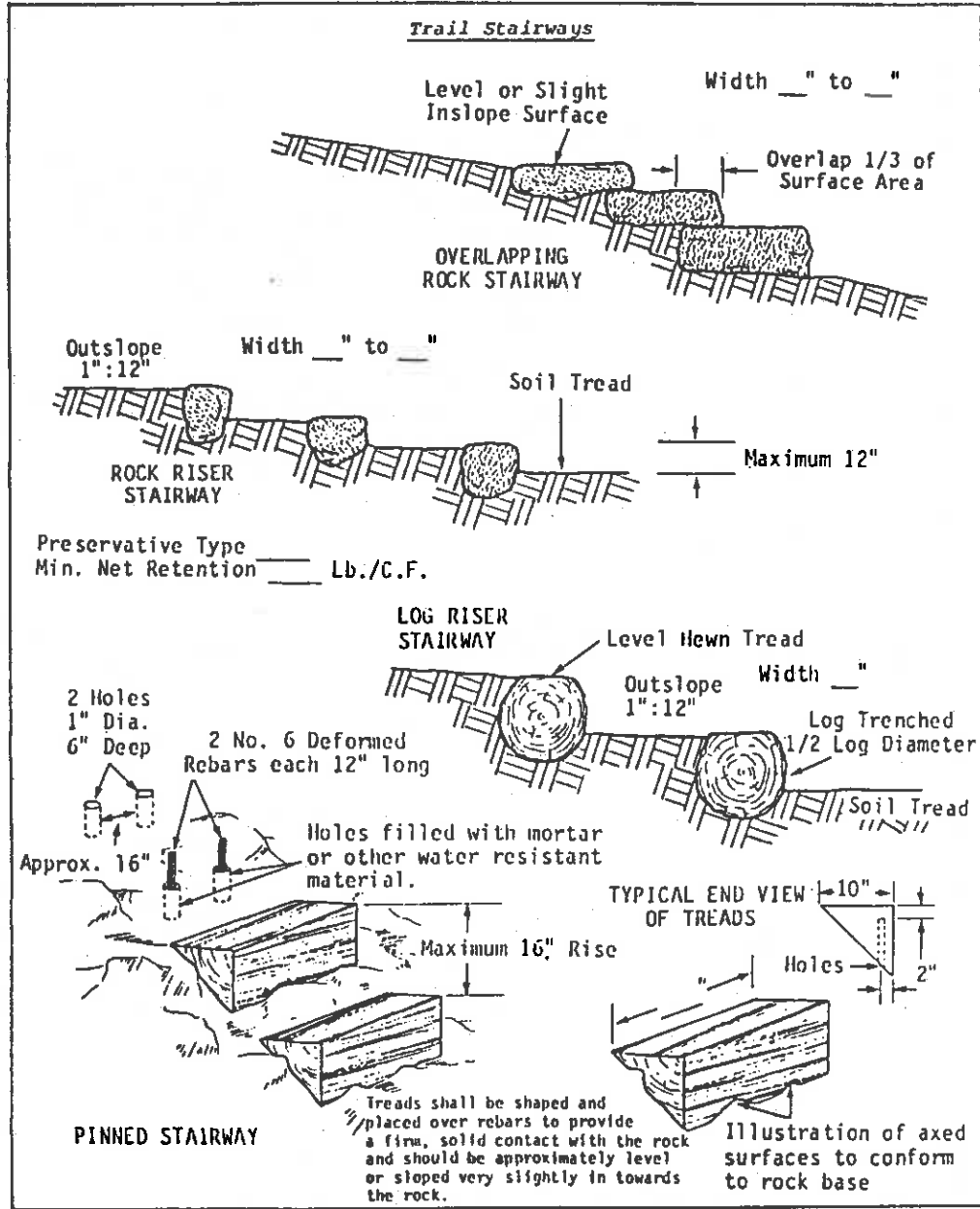




PS-7700-90 (6/84)

Figure 12-34 Slope Retention

Santa Ana River Corridor Trail System



FS-7700-91 (6/84)

Figure 12-35 Stairways

Santa Ana River Corridor Trail System

EDAW inc.



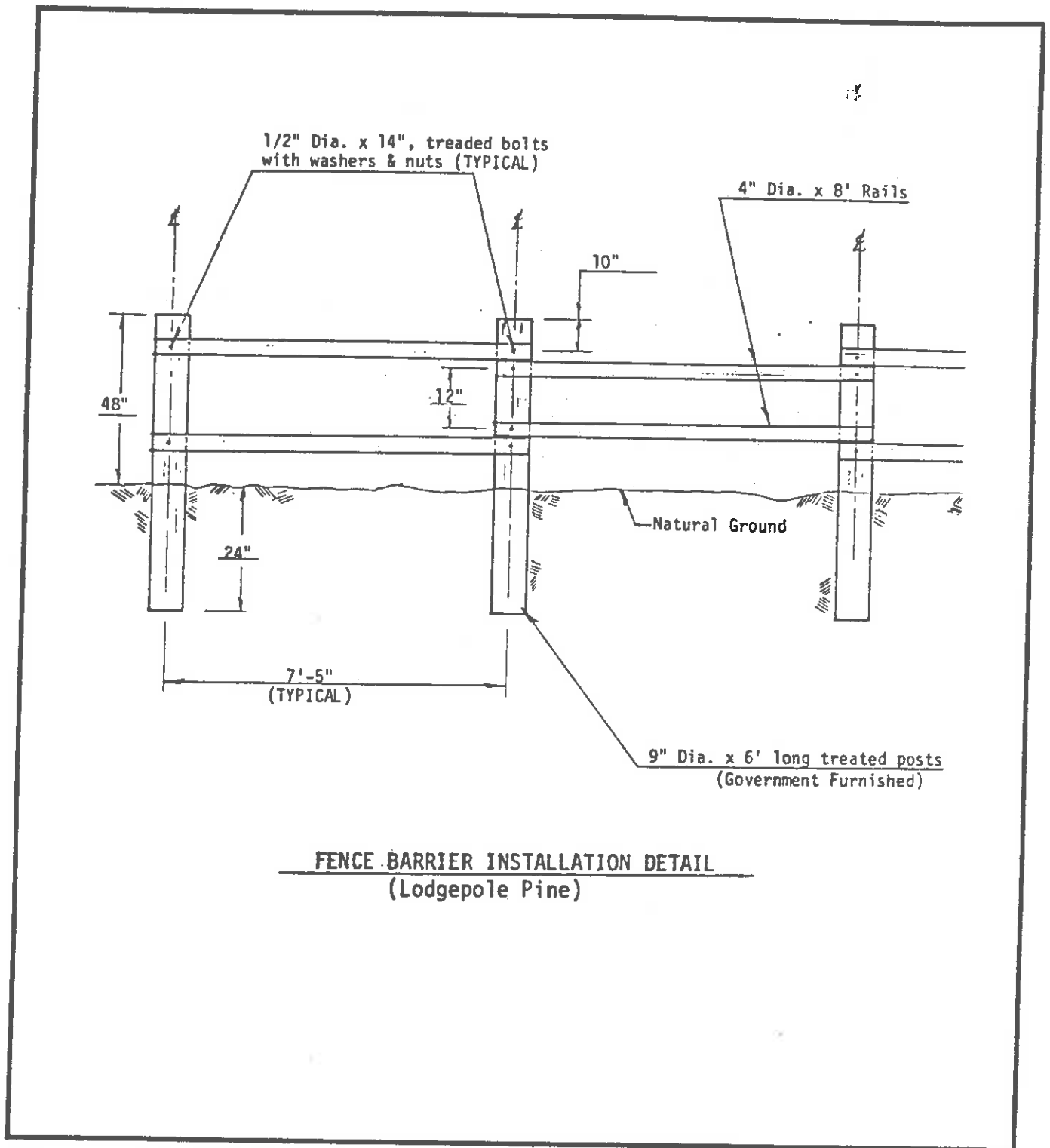
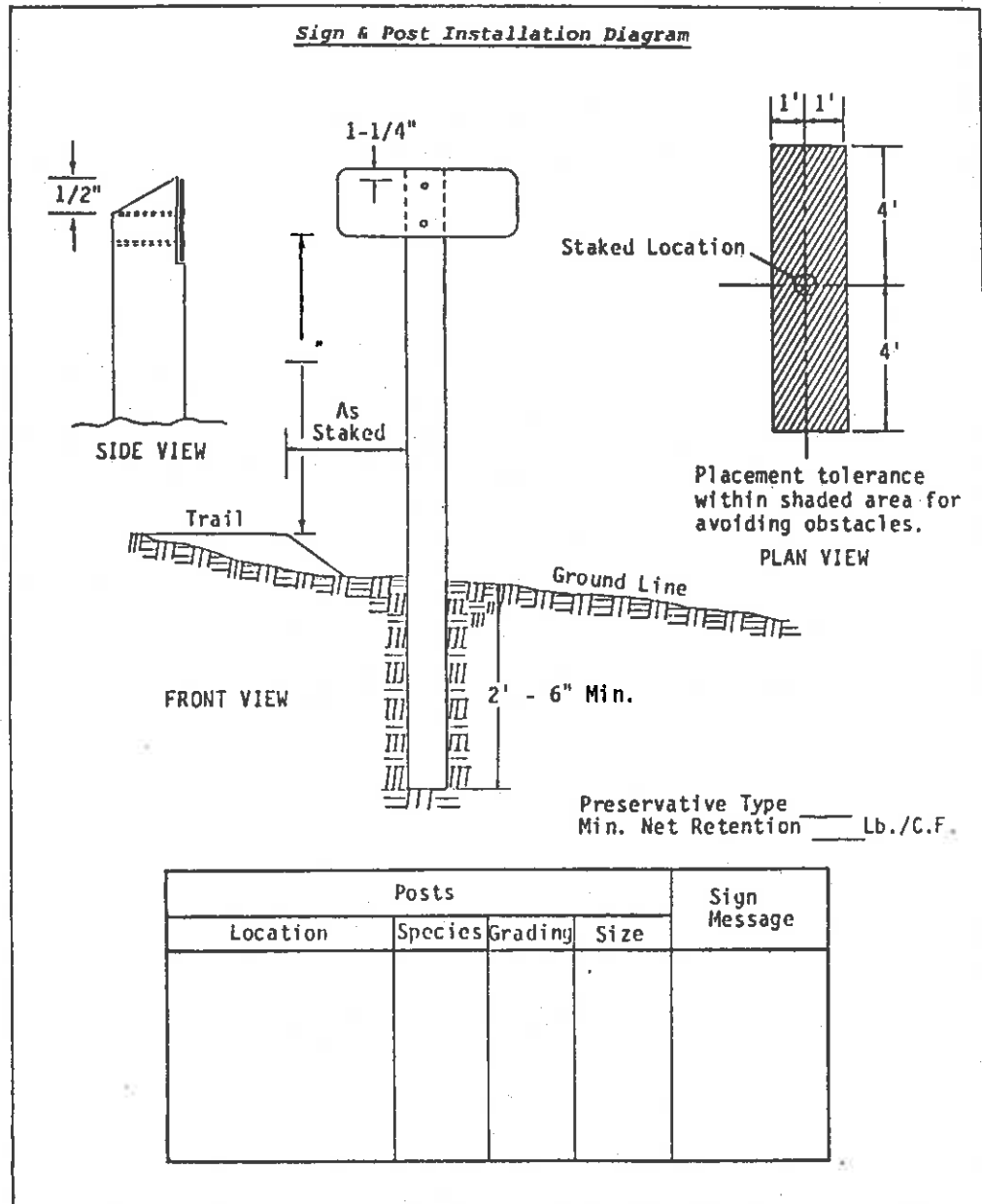


Figure 12-36 Fencing - Lodgepole Pine

Santa Ana River Corridor Trail System



FS-7700-96 (6/84)

Figure 12-37 Signage

Santa Ana River Corridor Trail System

EDAW inc.



Spacing of trail staging areas is dependent upon anticipated use and trail mode. In the forest area, they are located every 2 to 5 miles apart. This is to stimulate trail use, and provide greater access to cabin residents. Some more remote staging areas may be closed during portions of the year due to bad weather and road conditions. Equestrian users would be primarily at the Heart Bar Equestrian Group Campground area, a new Seven Oaks/Barton Creek staging area and at Coon Creek Jumpoff. Mountain bicyclists and hikers would use the staging areas at Coon Creek Jumpoff, Coon Creek/Heart Bar Creek confluence area, Heart Bar Ranch, Pinezanita area, and Camp Angelus area. A potential staging area also exists in Mill Creek Canyon along Highway 38 at Warm Springs Truck Road for mountain bicycles.

Trail staging areas can range in size from a 1/4 acre (15 cars) to 1 acre (50 cars). A typical staging area should be about 1/2 acre in size. Roadway access is required. Equestrian staging areas would be larger to accommodate horse trailers. Parking would be allowed overnight for a maximum number of days.

Facilities should include:

- Picnic tables
- Portable toilet or permanent restroom
- Signage
- Trash receptacles
- Water (if possible)
- Parking
- Hitching posts (Equestrian areas)
- Stock watering tank (at main equestrian staging areas)
- Parking stalls long enough for a vehicle and horse trailer straight ahead entrance and exit is possible (at main equestrian staging areas).

The area needs to have good drainage with well-drained, non-cohesive soils. Equestrian use areas should receive a base layer of rock with a topping of pea gravel.

12.2.3 Trail Rest Stops

Trail rest stops are provided at intervals along the trail where a maintenance road can access the site. These are remote stopping points. They are especially important in hotter, dryer areas such as the Morton Peak trail segment. Their interval spacing varies depending upon surrounding facilities such as campgrounds or staging areas. They generally range from 2 to 5 miles apart.

Facilities would be sparse including a water source, if possible, signage, and a picnic table.

12.2.4 Trail Campgrounds

Campgrounds are discussed in the previous section on the Valley Area. Existing USFS campgrounds would be used including:

- Heart Bar Campground and Equestrian Group Campground
- South Fork Campground
- Coon Creek Jumpoff - Group Special Use Permit Only

Additional proposed USFS campgrounds would include:

- Morton Canyon Mouth Area
- Seven Oaks/Barton Creek Area
- Thomas Hunting Grounds

These three new campgrounds are anticipated to be more rustic due to their more remote locations and be oriented towards equestrian trail users, but open to all trail users.

In addition, four "primitive trail camps" are proposed which would include only a fire ring and tent sites. No water would be provided and no vehicle access available. These camps would provide a wilderness environment, particularly for hikers and backpackers and scout groups.

Proposed trail camps include:

- Cold Creek Area
- Forsee Creek Area
- Barton Flats Area
- Heart Bar Area

12.3 Landscape Program - Valley Region

The Santa Ana River from the mouth of the river near Mill Creek to the Pacific Ocean covers a distance of approximately 77 miles. The environmental setting adjacent to the river ranges from the riparian and grassland biological communities in the middle reaches, through the intense and highly developed urban reaches with regional and neighborhood parks and water conservation operations, to the light and heavy industrial setting surrounding the lower and upper reaches. Some reaches already have highly developed landscape treatment, especially the southern levee along the Imperial Woods reach, while others have none. The development of an effective, landscape program for the entire Santa Ana River will be a highly visible issue and probably a politically sensitive one.

Beginning the program, the Army Corps of Engineers, under the Santa Ana River Mainstem Project, GDM II, will be implementing a landscape program to be constructed in ten different segments over an 8 year period. During preparation of plans and specifications, a definitive design would be prepared to develop a consistent and coordinated design approach for the entire river, and prescribe specific treatment for each site specific reach. The plans would include appropriate plant materials, primarily native, based on local needs and ecological evaluation. Irrigation needs will be based on utility availability and groundwater levels. Coordination with the three counties, the various cities, and local citizen groups will ensure that a landscape plan is developed that is responsive to environmental and trail user needs.

The landscape program would provide visual variety and special definition to break up the flat vistas and long reaches of sections which have been channelized. Plant materials would be the dominant factor in providing visual diversity and screening, and would be selected based on water use, longevity, maintenance, scale, color, and texture. Focal points would be developed for visual interest, and screening plant materials would be planted to protect privacy and preserve vistas in the urban areas. Landscape nodes would be developed where appropriate at street crossings and other highly visible segments of the channel. The intent of the landscape program would be to make flood control projects and the trail project blend into the local community, provide an appealing and enjoyable environment that would encourage trail use, and environmentally degraded sections of the river.

The proposed landscaping along the river should consist of native plant species appropriate for the Santa Ana River ecology. In limited areas, primarily outside the river zone and within urban lands, non-native species might be used. Recommended plant species are presented in the following table. A more definitive plant list of native and non-native plant materials including trees, shrubs, and ground covers, should be developed subsequent to site evaluations and inventory of existing established communities. The landscape plantings selected for each reach will not only reflect visual and aesthetic values, but will also be selected to provide soil and bank stabilization and erosion control. Irrigation systems of both a temporary and permanent type would be installed where required.

Plant selections within Chino Hills State Park should be coordinated with the recommendations and guidelines found in the Chino Hills State Park General Plan.

Drip irrigation systems would be installed where appropriate to minimize water use and reduce vandalism and theft of equipment. More extensive and detailed irrigation systems would be installed within greenbelt areas.

Landscape plantings would be primarily within the flood control rights-of-way, and would be planted in such a way as not to impact the operation and safety of the flood control levees or other features.

Recommended Plant Species Listing

<u>Common Names</u>	<u>Scientific Names</u>
TREES:	
Fremont Cottonwood	<u>Populus fremontii</u>
California Sycamore	<u>Platanus racemosa</u>
White Alder	<u>Alnus rhombifolia</u>
Black Cottonwood	<u>Populus trichocarpa</u>
Black Willow	<u>Salix gooddingii</u>
Sandbar Willow	<u>Salix hindsiana</u>
Red Willow	<u>Salix laevigata</u>
Arroyo Willow	<u>Salix lasiolepis</u>
Mexican Elderberry	<u>Sambucus mexicana</u>
Big Leaf Maple	<u>Acer macrophyllum</u>
California Buckeye	<u>Aesculus californica</u>
Palo Verde	<u>Cercidium floridum</u>
Fremontia	<u>Fremontia californicum</u>
California Walnut	<u>Juglans californica</u>
Catalina Ironwood	<u>Lyonothamnus floribundus</u>
Golden Oak	<u>Quercus chrysolepis</u>
Black Oak	<u>Quercus kelloggii</u>
SHRUBS:	
Mountain Mahogany	<u>Cercocarpus betuloides</u>
Common Buckwheat	<u>Eriogonum fasciculatum</u>
Deerweed	<u>Lotus scoparius</u>
California Sagebrush	<u>Artemisia californica</u>
Desert Encelia	<u>Encelia californica</u>
White Sage	<u>Salvia apiana</u>
Black Sage	<u>Salvia mellifera</u>
Dragon Sagewort	<u>Artemisia dracunculus</u>
Manzanita Louis Edmunds	<u>Arctostaphylos bakeri</u>
Spice Bush	<u>Calycanthus occidentalis</u>
California Lilac	<u>Ceanothus griseus 'Santa Ana'</u>
California Lilac	<u>Ceanothus 'Concha'</u>
California Lilac	<u>Ceanothus 'Ray Hartman'</u>
Bush Poppy	<u>Dendromecon rigida</u>
Coastal Buckwheat	<u>Eriogonum parvifolium</u>
Sulphur Flower	<u>Eriogonum umbellatum</u>
Toyon	<u>Heteromeles arbutifolia</u>
Tree Mallow	<u>Lavatera assurgentiflora</u>
Nevins Mahonia	<u>Mahonia nevinii</u>
Bush Monkey Flower	<u>Mimulus longiflorus</u>

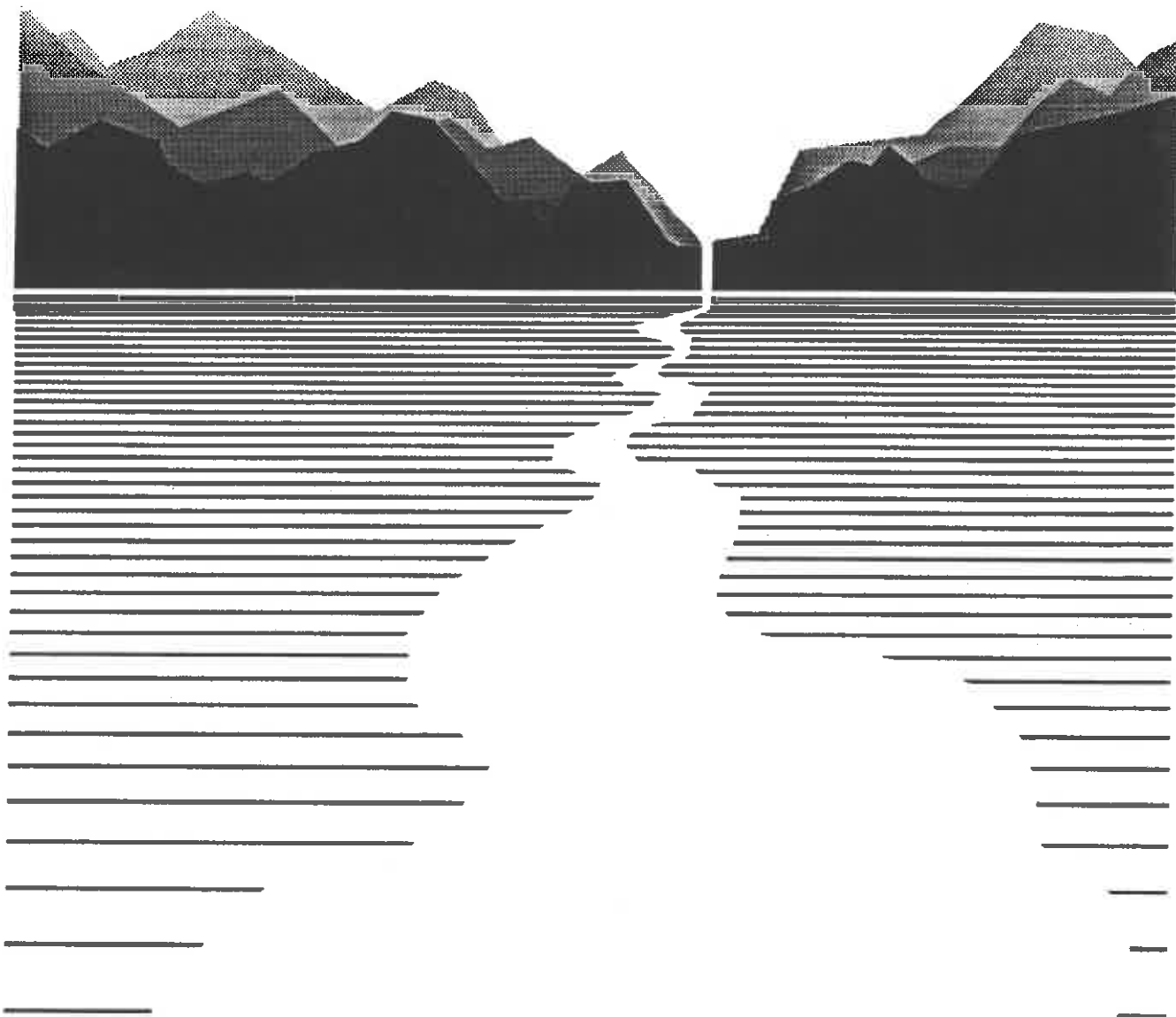
Red Monkey Flower
California Scrub Oak
Coffee Berry
Laurel Sumac
Fuchsia Flowering Gooseberry
Matilija Poppy
California Wild Rose
Woolly Blue Curls
Foothill Yucca

Mimulus puniceus
Quercus dumosa
Rhamnus californica
Rhus laurina
Ribes speciosum
Romneya coulteri
Rosa californica
Trichostema lanatum
Yucca Whipplei

GROUNDCOVERS:

Little Star Manzanita
Emerald Carpet Manzanita
Pacific Mist Manzanita
Point Reyes Manzanita
Coyote Bush
Point Reyes
Maritime Ceanothus
Sea Dahlia
Chalk Dudleya
Buckwheat species
Douglas Iris
Beach Evening Primrose
"Prostrata"
Blue Eyed Grass
Purple Needle Grass

Arctostaphylos edmundsii
Arctostaphylos Emerald Carpet
Arctostaphylos Pacific Mist
Arctostaphylos Point Reyes
Baccharis pilularis
Ceanothus gloriosus
Ceanothus maritimus
Coreopsis maritimus
Dudleya pulverulenta
Eriogonum sp.
Iris douglasiana
Oenothera cheiranthifolia
Salvia mellifera
Sisyrinchium bellum
Stipa Pulchra



13.0 Environmental Checklist

13.0 ENVIRONMENTAL CHECKLIST

This environmental checklist is meant to be an overall assessment of potential trail impacts that will need to be addressed during the implementation phase. The checklist is necessarily general due to the magnitude of the study. It is anticipated that each implementing agency will need to prepare individual assessments on specific projects and in some cases may need to prepare an EA or EIR/EIS, depending upon on-going site condition changes. Other requirements such as a Corps of Engineers 404 Permit, 1603 Permit with State Fish and Game Dept. or Section 7 Consultation may also be required.

13.1 Summary

The following is a brief summary of the more significant environmentally sensitive areas. This is followed by a summary by milepost segment of specific sensitive river areas.

Ocean Area. The Essential Least Tern Preserve and the Corps of Engineers' 92-acre Saltwater Marsh Restoration Project areas have been avoided in the ocean area. Proposed habitat enhancement projects at Fairview and Talbert Regional Park in the ocean area have also been avoided.

Santa Ana Canyon. The canyon area is environmentally sensitive due to the presence of wildlife dispersion corridors, such as those for mule deer. The river corridor is also a breeding area and a water and food source for wildlife. The most sensitive areas occur from approximately Brush Creek east to the Prado Dam area. In addition, the Anaheim Wetlands and Horseshoe Bend areas are sensitive habitats. Through this area, the Corps of Engineers trail alignment per the Santa Ana River Mainstem Project General Design Memorandum (GDM) II Report has been utilized. It is anticipated that this alignment would be designed to accommodate the needs of wildlife. Design details would likely include culverts and bridges to allow for wildlife cross travel. In addition, fencing where appropriate would be added to keep the trail user directly on the trail to avoid straying into sensitive habitat.

Landscape screening would likely be added as well in certain areas to reduce the presence of humans to sensitive areas during portions of the year. Signage would be placed, where appropriate, to regulate use of the trail and trail rangers would ride the trail to enforce trail rules. Consultation with State Fish and Game, US Fish and Wildlife Service, County of Orange and Corps of Engineers is required for this trail segment.

The Santa Ana River Trail is subject to realignment if it is found to encroach or cross into areas of significant environmental concern. Reference is made to the: Chino Hills State Park General Plan (policies regarding Rare and Endangered Plan Species, Animal Life Requiring Special Management Consideration, Cultural Resources, Paleontological Resources and Prescribed Fire Management, pages 37 to 42); and, the on-going Lower Santa Ana River Canyon Resource, Habitat, and Flood Plain Management Plan (Imperial Highway to Prado Dam), County of Orange EMA.

Prado Basin Corona. The trail traverses around the basin area through the Corona area. Least Bells Vireo nesting sites and sensitive habitat in the Corona Airport, Rincon Ave. and Butterfield Ave. areas have been avoided. No significant mitigation is assumed at this time.

Norco Bluffs - Shadow Canyon Circle to Old Hamner Ave. An equestrian/hiking trail is proposed along an existing trail corridor on the south bluff side near the toe of the slope through Rivertrails Park (City of Norco). Development at the top of the bluffs eliminates a high trail on the south side. This route would also connect to a trail route along Corydon St./Ave. and Norco Drive. It is anticipated that the existing dual equestrian street trail would be used and the street would also be signed for a Class III bicycle route. A long term dual trail system is also proposed on the north side of the river on the top of the bluff. This trail would be built as the area develops.

The river valley is the home to many sensitive bird species including Burrowing Owl, Least Bells Vireo, Western Yellow Billed Cuckoo and others which inhabit the Southern Cottonwood-Willow Riparian Forest and also utilize surrounding uplands.

The bluff trail would stay to the outside of the habitat area. Existing trails would be used where appropriate. Because only a small portion of the equestrian/hiking trail would be at the toe of the slope and that this trail would be the only trail in the more sensitive area, extensive grading and slope stabilization needed for a bicycle trail or a continuous dual trail would be significantly reduced. The trail can therefore be designed sensitively to respect the environment. Ongoing maintenance can also be reduced.

Nevertheless, some trail mitigation is assumed. Given similar situations further upstream in Riverside, a replacement ratio of up to 5:1 (5 acres replaced for 1 acre impacted) is anticipated for potentially impacted habitat. To mitigate potential impacts, replacement habitat would be created and maintained for a minimum of one year prior to any trail construction activities. Consultation with State Fish and Game, US Fish & Wildlife Service, County of Riverside and Corps of Engineers is required to identify impacts, if any, and to define mitigation.

East Norco - La Sierra Bluffs - Old Hamner Ave. to La Sierra Area/Hidden Valley Wildlife Area. This trail segment is similar in nature to the west Norco bluff area. However, the bluff toe area is more accessible and is less densely vegetated. This is apparently due to the remnants of a partial shelf which is an old Riverside to Corona aqueduct. The opposite side of the river is almost all private with many boggy areas. However, bluff stabilization is still a problem for both sides of the river. Development at the top of the bluffs through Norco eliminates a high trail in much of this area.

A dual trail is proposed for this trail segment, a bicycle trail with an adjacent equestrian/hiking trail separated by a fence and buffer. Existing trail routes are used where appropriate.

Some grading and slope protection with rip rap will be required for this segment. Mitigation again may be required for this segment as described for the west Norco bluff area.

Hidden Valley Wildlife Area/Santa Ana River Regional Park/Anza Narrows Regional Park/Rancho Jurupa Regional Park. Trails through these parks use existing trail routes and generally stay up above the more sensitive Southern Cottonwood-riparian woodland willow habitat areas. An existing sewer line alignment is used from Van Buren Blvd. to Rubidoux Ave. in Riverside. No significant mitigation is assumed at this time in this segment, other than operations and maintenance issues relative to the Hidden Valley Wildlife Area.

Agua Mansa/La Loma Hills Curve. This area contains a Southern Cottonwood - willow riparian forest area. The trail crosses the river at a proposed trail bridge to the Rialto Trail downstream of the more sensitive area and appears to avoid potential impact. No significant mitigation is assumed at this time.

Warm Creek/Santa Ana River Confluence. A riparian condition exists at the confluence of these two drainageways. This area contains Slender Horned Spine Flower, Pringle's Mondarella, Los Angeles Sunflower, Western Yellow Billed Cuckoo and other species. A trail ramp is required to pass underneath the Interstate 10 Freeway and a Southern Pacific Railway rail bridge. Because the ramp hugs a concrete retaining wall at the very edge of the area, no significant mitigation is assumed at this time.

Redlands/Santa Ana Wash Area. The wash area generally east of Mountain View Ave. is habitat to many sensitive plant species including: Riversidian Alluvial Fan Sage Scrub, Santa Ana Woolly Star and Slender Horned Spineflower. These habitat areas are typically avoided due to a bluff top trail for bicycles. Equestrian trails in the river bottom stay close to the bluff edge and avoid potential Corps mitigation areas identified in the Santa Ana River Mainstem GDM II Report. Trail signage and potential split rail fencing will be needed to guide trail users through more sensitive areas north of Mill Creek. The trail through the Greenspot Road area will need to be analyzed by biologists during the flagging stage prior to construction to avoid any potential impacts. No other significant mitigation is assumed at this time.

U.S. Forest Service Segment. An environmental assessment has been approved for this segment. No significant mitigation is assumed at this time. Spotted owl nesting sites have been observed within the trail corridor. Care needs to be taken to protect these sites.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

Orange County
MP 0 to 22 Ocean to
Weir Canyon Road.

Biological
Trail alignment and location is existing and will avoid Corps' saltwater marsh restoration project (92 ac.), proposed Fairview & Talbert Regional Park wetland projects, Victoria Pond and the Essential Least Tern Preserve. Trail avoids tidal influx area. Trail extends northward through water spreading basin areas along the levees without impact. The region east of Riverdale Park at Lakeview Ave. is general habitat to Black Rail and Long Eared Owl, both uncommon and declining bird species.

None anticipated at this time.

Cultural
The Yorba Adobe and Cemetery and SAVI water works ditch are in the vicinity of the trail with no known impact. Trail is existing. No other specific sites are known.

None anticipated at this time.

Natural Hazards
Trail ramps (existing) underneath birdies dip into floodplain and possible sand and debris accumulation. Trail avoid tidal influx.

Regular scheduled trail sweeping (on-going)

Urban
Trail follows existing route,

Widen existing bike trail for seven miles

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

to be modified by Corps of Engineers covered under adopted EIS. Major vehicular traffic interface avoided. Recommend providing a bike trail with Jersey barrier across Imperial Highway (similar to new Gypsum Canyon Bridge). Recommend widening the existing bike trail two to four feet from Ocean to Centennial Regional Park (seven miles) to better accommodate heavy bike traffic. Horse trails avoid congested beach area to river mouth.

near ocean - two to four feet.

Provide bike trail barrier at Imperial Highway bridge.

MP22 to 27.4 Weir Canyon Road to County Line

Biological
Sensitive habitat areas exist northeast of Weir Canyon Road, including the Horseshoe Bend Wildlife Enhancement Project (ten acres). Riparian community north and east through Featherly Regional Park to Coal Canyon Road. Horses and trails avoid bend area. Southern Willow scrub area near Weir Canyon Road avoided. The river bottom area and river edges are Southern Cottonwood - Willow Riparian Forest up to Gypsum Canyon area. South of the river is an area of Many Stemmed Dudleya,

Trail siting to be done in consultation with a biologist and on-going County Management Plan studies in the Canyon area.

Trail design mitigation measures to be developed during detailed design phase; may include: trail fencing; signage, landscape barriers; culverts and bridges for habitat corridor preservation; no construction during sensitive

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

a very rare and threatened plant species. This area avoided. Trail follows Corps proposed alignment and Caltrans trail (existing). Mule deer corridors exist, especially east of Brush Canyon. Many species use canyon area for food, water and nesting.

periods; and others per recommendation of biological experts.

None anticipated. Trail siting to be coordinated with the requirements of the Chino Hills State Park General Plan and the on-going study, the Santa Ana Canyon Resource Management Plan.

At Coal Canyon, south of the freeway, there is San Diego Horned Lizard habitat, an uncommon and threatened species - this area was avoided.

Wildlife culvert at Gypsum Canyon to be accommodated.

Cultural

Several old cart trails, the SAVI Ranch irrigation water-works and Cajon Canal are within the canyon area. There are no known impacts. These features should be interpreted.

None anticipated at this time.

Natural Hazards

Trail has some wet crossings. These may not be passable year-round.

Trail management and maintenance program to provide on-going program of

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

Portions of trail extending through or along the edge of the flood zone may be subject to damage in severe flood events.

trail upkeep during severe wet periods. Trail signage to warn of closures.

Urban

Joint-use of Caltrans trail by motor scooters a potential conflict with bicyclists.

Consider elimination of motor scooter use on trail; consult with Caltrans. Provide signage and speed regulation.

Riverside County
MP 27.4 to 37
County Line to
Corona-Norco
Boundary

Biological

River bottom area and river edge characterized by Southern Cottonwood-Willow Riparian Forest. Near Green River Road is an area of So. Sycamore-Alder Riparian Woodland. Below SR-71 is an area of Least Bells Vireo, a very rare and endangered species.

Specific trail siting to avoid the riparian forest, to the extent possible.

Trails should be screened in sensitive wildlife areas such as the dispersion areas.

Trails should avoid wildlife nesting and breeding areas, to the extent possible.

Near Scully Hill, the trail route per the Corps may conflict with two mule deer dispersion areas, especially west of the hill. Another one is a corridor on the north bank of the river near Coal Canyon Road. Trail

Trail siting to be done in consultation with a biologist and coordinated with on-going Orange County

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

avoids Least Bells Vireo nesting sites, as well as habitat for Western yellow billed Cuckoo, Orange Throated Whiptail and Black Shouldered Kite. Trails goes through Burrowing Owl habitat which covered the entire basic area. Site specific biological field observations will likely be needed during detailed trail siting.

Wildlife Management Plan studies.

Trail design mitigation measures to be developed during detailed design phase and may include: trail fencing, various types of signage, landscape barriers, trail bridges and culverts for wildlife cross migration; timing of construction to avoid breeding and nesting periods; and others as recommended by a biologist.

Section 7 consultation with SFG/Corps/USFWS is most likely required - with biological assessment.

Potential for an EA or EIR/EIS. Possible 404 Permit needed with the Corps.

Cultural
Butterfield Stage route in the area.

None anticipated at this time.

Natural Hazards

Refer to MP 22 to

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

Refer to MP 22 to 27.4

27.4

Urban

Trail crossing at Corydon St. in Corona.

Requires signage and/or stop sign.

To be determined during detailed siting.

Trail siting through the Corona National Golf Course site will be subject to the final recommendations of a pending land use study to be conducted by the City of Corona. Bicycle staging area shown at the corner of Butterfield and Smith Streets is coincident with existing little league fields which may be displaced by future Corps levee construction. Butterfield Stage Park is about 6 to 10 feet lower than the street elevation. Siting Modifications may be required at the time of implementation. The trail siting is also dependent upon pending Corps levee design in the area.

MP 37 to 45 Norco to Hidden Valley Wildlife Area

Biological

Trail to be sited to avoid sensitive riparian community in riverbottom area. Refer to MP 27.4 to 37 discussion - continues upriver. Area west of Stagecoach St. in Norco avoided - habitat to Willow Flycatcher and Least Bells Vireo. Bluff area from

Trail to be coordinated with Hidden Valley Wildlife Area Management Plan.

Specific trail siting to be done in consultation with a biologist.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

MP 41 to 45 is especially sensitive - general Least Bells Vireo habitat area. Trail hugs bluff toe along existing trails in Rivertrails Park. Equestrian trail only from Shadow Canyon Circle to Old Hammer Avenue to minimize impacts along existing trail. major trail route to be constructed on the bluff top on the north side as the area develops. Use of Norco Street trails emphasized to minimize potential river habitat impacts.

Trail grading and slope stabilization to be minimized. A 404 Permit with the Corps will likely be needed to construct trails east of Hammer Avenue in Norco.

Trail design to accommodate wildlife dispersion corridors from bluff tops to the riverbottom at major arroyos.

No trail construction to occur during sensitive breeding and nesting periods.

Section 7 Consultation with USFWS is most likely required - with a biological assessment to be prepared.

Potential for an EA or EIR/EIS.

Along existing trails, trails construction mitigation is anticipated north of Shadow Canyon Circle in Norco through Rivertrails

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

Park to the Hidden Valley area. Possible habitat replacement ratio of approximately 5:1 is anticipated given recent experiences upstream. New habitat would need to be created and maintained for a minimum of one year prior to any construction activity. Mitigation program to be determined with appropriate resource agency input.

Cultural
Trails follows old Riverside to Corona aqueduct route (bench).

None anticipated at this time.

Old Clubhouse at Hidden Valley Wildlife Area has the potential to become a Nature Center.

Natural Hazards
Refer to MP 22 to 27.4

Refer to MP 22 to 27.4

Urban
No significant impacts

None anticipated at this time.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

MP 46 to 57 Hidden Valley Wildlife Area to County Line

Biological

The river bottom area continues to be a dense riparian community as described previously up to approximately MP 52. From there northward the river vegetation becomes more alluvial within levees up to the County line. North of Highway 60 the river is almost all a barren sandy bottom condition with much of the water flow being underground. The riparian area is particularly dense in Martha McLean-Anza Narrows Regional Park with several boggy areas. Sensitive bird habitat continues northward within the riparian area. However, Least Bells Vireo habitat generally ends at MP 46. Trails follow existing routes and proposed County bikeway routes north of Van Buren Blvd.

Specific Trail siting to be done in consultation with a biologist.

Trail grading and slope stabilization will be required. The trail is generally on bluff tops, however, a 404 Permit from the Corps will likely be required. Many trails are existing but would be upgraded and widened.

Trail design should accommodate wildlife dispersion corridors from the bluff tops to the river bottom at major arroyo areas.

No trail construction should occur during sensitive breeding and nesting periods.

Section 7 consultation should not be required north of the Least Bells Vireo habitat area.

Segment/Mile Post

Issues/Discussion

Potential Significant
Mitigation

There is the potential for an EA or EIR/EIS, although less than the previous trail segment.

No mitigation for loss of wetlands is anticipated. However, further analysis is needed to verify this condition.

Cultural

The trail traverses the De Anza crossing - this point should be further interpreted as well as the 1903 Union Pacific Railroad bridge at the same location.

None anticipated at this time.

Federal trail access is provided to the nearby Jensen-Alvarado Adobe and the Louis Rubidoux Nature Center.

Mt. Rubidoux Memorial Park and Carlson Park/Buena Vista Bridge gateway - interpretive potential.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

Natural Hazards

Wild fires are a hazard within the river bottom area due to careless people, particularly in the dense giant reed stands and willow thickets.

The trail management plan should address emergency trail access. The trails will be designed for vehicle egress in case of fire.

Boggy areas exist within the river bottom and are constantly changing. Trails should be routed or modified with these changing conditions.

Trail maintenance crews should constantly be observing the trail condition for potential hazards and post warnings of known hazardous areas. Trail modifications will be needed over time. Trail Rangers will patrol the trail daily.

Urban
None.

None.

San Bernardino County
MP 57 to 67 County Line to Santa Ana Wash Area

Biological

River is generally in a sandy barren condition. Some riparian areas north of the Edison powerline ROW at La Loma Hills bend to La Cadena Drive and at the confluence of Warm Creek and the Santa Ana River by Interstate 10 and 215. North of La Cadena Dr. is an area of Los Angeles Pocket Mouse habitat on the north side of the river, rare only.

No significant mitigation anticipated.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

At the confluence of Warm Creek, habitat may exist for Slender Horned Spine Flower and Pringles Mondarella, both very rare and endangered. Also San Diego Horned Lizard, Los Angeles Sun Flower, Western Yellow Billed Cuckoo and Gambell's Yellow Creeper-habitat continued generally within existing concrete floodwalls. The trail will ramp down north of Mt. Vernon Ave. to the north side of I-10 along the toe of the easterly wall face.

A biological assessment of the confluence area may be required to determine the current habitat status of this area. Mitigation measures may result from this analysis.

East of Waterman Avenue, exists habitat of the California Black Rail - this area should not be significantly impacted.

None.

South of Norton AFB near the power plant is a Sycamore Alluvial Woodland. Within the river bottom is an area of Santa Ana Woolly Star, extremely rare and endangered. The trail is on the bluff top edge and should avoid these habitats.

None.

South and east of Norton AFB is an area of Riversidian Alluvial Fan

None.

<u>Segment/Mile Post</u>	<u>Issues/Discussion</u>	<u>Potential Significant Mitigation</u>
MP 67 to 75.6 Santa Ana Wash to USFS Boundary	Sage Scrub, rare and endangered. The trail will avoid this area.	None.
	<u>Cultural</u> Agua Mansa Cemetery and County Museum exist nearby - interpretation potential. San Salvador area exists nearby containing two of the state's oldest Hispanic communities - interpretation potential. Bandini-Cota Adobe exists nearby. A National Register Historic Site - interpretive potential. Lime Kilns near Holly Street at the bluffs - interpretive potential. San Jacinto Fault near I-10 Freeway - interpretive potential.	None.
	<u>Natural Hazards</u> Potential flood hazards and sand accumulation on trail at ramps underneath bridges during major flood events.	Regular scheduled trail sweeping needed (on-going). Potential short-term closure.
	<u>Urban</u> None	None.
	<u>Biological</u> At the confluence with City Creek and within most of the river bottom area is habitat for Riversidian Alluvial Fan Sage Scrub. A narrow band of Santa Ana Woolly Star is found east of Church St., both of which	None.

Segment/Mile Post

Issues/Discussion

Potential Significant Mitigation

are rare and endangered. East of the treatment plant at Alabama Street is also Santa Ana Woolly Star area. The trail will avoid all these areas.

East of the Redlands Airport are vast areas of Slender Horned Spine Flower, an extremely rare and endangered species. The bluff edge/levee location of the trail minimizes impacts.

Along Greenspot Road, the trail goes through an area of potential Santa Ana Woolly Star.

At the mouth of Morton Canyon, a campground is proposed. A few Sycamore stands exist in this area.

Cultural

Francis Cuttle Weir Dam at Orange Street crossing - 1932 CCC project. Interpretive potential.

Cone Camp, a 1930-1 CCC camp is a proposed Special Use Only Campsite for special events. Now owned by SBVWCD.

Greenspot Road bridge -

Detailed trail siting should be done in consultation with a biologist.

Detailed trail siting should be done in consultation with a biologist.

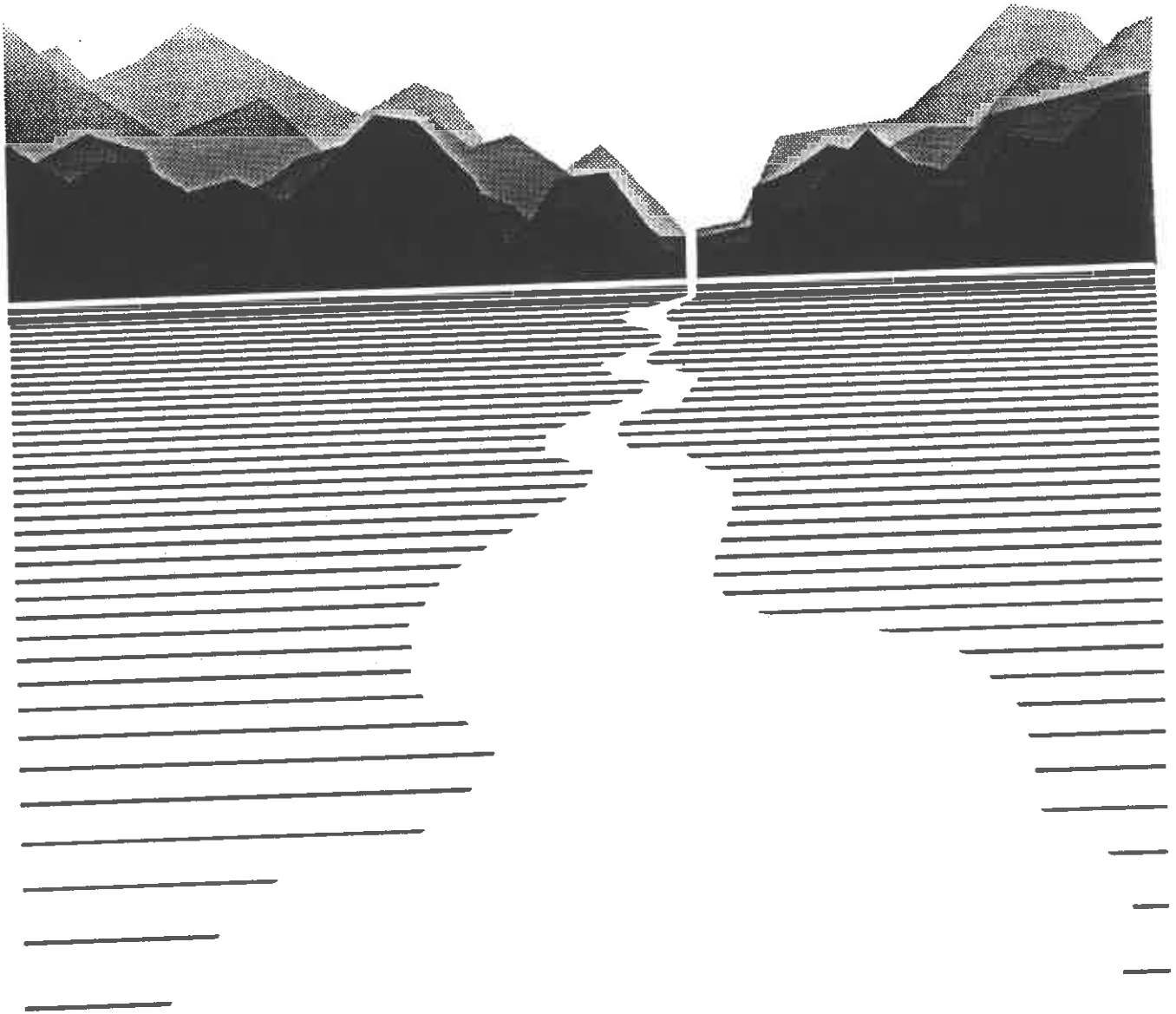
Campground siting should avoid the driplines of the Sycamore stands.

None.

Coordinate use with SBVWCD.

None.

<u>Segment/Mile Post</u>	<u>Issues/Discussion</u>	<u>Potential Significant Mitigation</u>
	1912 Mojave River bridge - interpretive potential.	
	Redlands and Bear Valley Highline Canal - 1885. Interpretive potential.	None.
	<u>Natural Hazards</u> Trail crosses Mill Creek - a wet crossing. Potential trail route closure during storm events.	Warning signage needed during storm events.
	<u>Urban</u> None.	None.
U.S. Forest Service MP 75.6 to 110	Environmental Assessment has already been completed.	On-going investigations regarding the Spotted Owl shall be used to route trail through sensitive areas.



Appendix

14.0 APPENDIX

Attached are the following materials:

- 14.1 Study Workshop Minutes
- 14.2 Implementation Materials:
Bikeways Component,
Developer Agreements,
National Recreation Trails,
Easements
- 14.3 Sign Program


14.1 Study Workshop Minutes

EDAW, Inc. .
275 West Hospitality Lane, Suite 309
San Bernardino, California 92408
(714) 888-2697

MEMORANDUM

To: Gerry Newcombe, S. Ber. Co. Regional Parks
Paul Romero, Riverside Co. Parks
Bob Fisher, Orange Co. Harbors, Beaches & Parks
Henry Rowlan, National Park Service

c: Patrick Miller, 2M Assoc.
Amanda Hosler, EDAW
Jared Ikeda, EDAW
File

From: Charles Everett 

Date: August 10, 1989

Re: Santa Ana River Corridor Trail System Master Plan
TAC/CAC Workshop No. 1 Minutes
Held August 9, 1989 at Riverside
County Parks Dept.
EDAW Job. No. 0N003.01
89-12-3604

The first Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC) Workshop was held August 9. Attached are agendas for both meetings, attendance sign-in sheets and a framework outline for the upcoming concept plan. This was the first of four workshops.

The workshops were started by introductions from Gerry Newcombe from San Bernardino Co. Regional Parks. Then the consultant team of EDAW/2M Assoc. gave an overview of the project, presented the planning process, the schedule, the goals and objectives and a slide show of the issues and challenges along the entire stretch of the river. The presentation was made by Jared Ikeda, Charles Everett and Patrick Miller.

Following a break, participants in the workshop were asked to identify their unique issues and concerns to start off the project. The following is a summary of the comments received.

TAC Workshop (3:00 to 5:00 PM)

City of Loma Linda

- o Saw the river as a unique regional recreation opportunity.
- o Desired trail and open space linkage to San Timoteo Creek with connection to Live Oak and Yucaipa.
- o Other trail linkages may have potential.

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Gertrude Hagum, Tri-County Conservation League

- o Desired a restored native wildlife habitat corridor along the river; could use native plant species along trail. Could use volunteer help.

City of Corona

- o Desired trail linkage to the city which has no current direct access.
- o City has a lot of biking interests.
- o City to provide new Master Plan to identify trail linkages, such as Temescal Wash.
- o City has 1,200 acre lease land near river for recreational use.
- o River seen as a regional recreational resource.

San Bernardino County Regional Parks

- o Desire trail linkage to several creeks such as City Creek, Lytle Creek, Warm Creek, Mill Creek.
- o Should consider closing of Norton AFB and potential future use/golf course at the base/RR bridge access.
- o County has received a grant to build a bike trail from the County line north to Agua Mansa Park (proposed). Will delay to get further input from this study.
- o Upcoming Open Space Element study - trails is a component.
- o County has no trail dedication requirements at this time.

National Park Service

- o Keen interest in public involvement.
- o Need to get increased public support and input.
- o Will supply 20 reports of other projects identifying standards, details and policies and several brochures.
- o Looking for innovative ways to promote trails, additional rationale for implementation.

State Fish and Game Dept.

- o Interested in establishing wildlife corridors in urban areas, trails could assist in this effort, tie streams together.
- o State is acquiring 91 acres of COE mitigation land for saltmarsh restoration at the mouth of the river near Fairview and Talbert Regional Park.
- o Sensitive habitat of yellow-billed cuckoo and least bells vireo is a trail siting concern.
- o Will review their material and send to consultant.

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City of San Bernardino

- o City in the process of establishing a city trail system master plan with trails connecting to the river. They will provide a preliminary layout of trails. Timeframe for study is 1 year.
- o City starting to revise development codes to get trail dedications.
- o General Plan recently updated.
- o History of high trail use at the base of the San Bernardino Mountains.

City of Redlands

- o City planning parks and trails along the edge of the river; copy of Master Plan provided.
- o City envisions an "emerald necklace" of trails and open space through the city including Live Oak, San Timoteo Creeks and into Yucaipa.
- o Interested in Crafton Hills trail system linkage to the river trail.
- o City holds open space commission meetings weekly.
- o CSA 110 corridor will require trail dedication.
- o Need to interface with private entities in upper river area such as So. Cal. Edison and water districts.

U.S. Forest Service

- o Developed their mountain trail plan 10 years ago on USFS lands with an adopted EA. Only small sections constructed to-date.
- o Mountain bikes need to be considered; not a real problem yet, but will be in the future. These cause increased erosion, ruts, speed a problem, user intimidation, enjoyment conflicts. May want parallel trails.
- o Need to expand interpretive element of trail plan in USFS lands.
- o May desire to reroute trail at Sunrise Ranch project instead of going to Greenspot Bridge.
- o Issue of cabin lessees and adjacent trails a problem. This issue plus riparian wildlife values caused trails to be sited away from river edge.
- o USFS to supply copy of adopted EA.

City of Riverside

- o City has completed bike path from Fairmont Park to Tequesquite Ave., soon to be extended to Anza Narrows Park. County to extend it from there to Van Buren Blvd.
- o Equestrian users mainly concentrated along the river.
- o City doing a biking and hiking plan to be completed in 7 months.

City of Colton

- o Trail access a problem across I-215 and RR tracks as discussed earlier.
- o Desire trail linkage to Reche Canyon.
- o City developing a linear park near the river with native species.
- o Desire linkage to future Agua Mansa Park, Agua Mansa Cemetery.
- o Should consider Agua Mansa Enterprise Zone plans.
- o Lime Kilns located somewhere in Agua Mansa area; City investigating.

County of Riverside

- o Interested in the trail's impact on wildlife.
- o Interested in trail interpretive program.
- o Need to review County's recent General Plan of Riding and Hiking Trails for trail linkage to the river.
- o County in the process of extending the trail from Anza Narrows Park to Van Buren Blvd. Next step should be from Fairmont Park north to the County line.
- o County now has a trail assessment fee of \$50 per new house or permit in unincorporated areas. These funds to be used for trail acquisition.
- o Want trail linkage into Rancho Jurupa Park/Jensen Alvarado Adobe/Nature Center.
- o RFP coming out for Master Plan of Parks and an Ecosystem Management Plan.
- o County's goals are:
 - Use this plan as a catalyst to get State Funding
 - be sensitive to habitat areas
 - consider transportation opportunities, ie. commuter bike trail
 - link parks and the river
 - utilize good design to reduce O & M
 - provide for multi-use trail
- o Interpretive facilities can be expanded - currently used heavily by schools - get 50,000 students/year and they are booked up year-round.
- o County has a lot of habitat areas mapped (Jan Young to provide to consultant).

CAC Workshop (7:00 to 9:00 PM)

Issues discussed include:

- o At the Van Buren Bridge to the Hamner Bridge, equestrians can't use the north side of the river in the winter due to trail access conflicts created by private groups. They build dikes to stop water flows forcing horses to enter the river - high danger of quicksand. Can't access trails on Norco side of the river. Want access to the Hamner Bridge and a trail on the north side of the river.
- o Quicksand a real problem in the river. It is constantly changing. Wet crossings change due to river alignment shifts and quicksand.
- o Concerned about the need to retain trails through least bells vireo habitat.

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- o Water flows seem to be getting deeper due to increasing effluent discharges. Getting worse with more and more hook-ups from new development. Concern for wet crossings and quicksand. Need to be flexible in trail locations and wet crossings.
- o There is a definite need for better trail signage, informational signage, mileage counts etc. A user guide also needed.
- o The Agriculture Park (City of Riverside) not really accessible to horse trailers - existing road goes through residential area. Future Jurupa Ave. extension will help.
- o Discussion was held of Forest Service trail plan and how it avoids the proposed Seven Oaks Dam.
- o Concern about not being able to use Flood Control District dikes and levees for equestrian/hiking use. Need to coordinate with Flood Control District to gain use of their facilities for trails. Districts seem to favor only use of levees if paved asphalt trail is provided. Does not help unpaved horse trails. Two Counties should assume the added trail liability just as Orange County has.
- o Concern about water quality in the river. Treated effluent should be of better tertiary quality, especially if trail use is increased with wet crossings.
- o Concern about not being able to hike or ride the river without being harassed by private interests prohibiting access. Some horse owners are angry about biking and hiking groups. Things are getting worse than better it appears. Multi-use trail is needed, not just for equestrian use.

Santa Ana River Corridor Trail System Master Plan
Technical Advisory Committee Workshop #1 (8/9/89)

AGENDA

- **Introductions**
- **Project Overview**
- **Planning Process**
 - o **Concept Plan**
 - o **Preliminary Plan**
 - o **Final Plan**
- **Schedule**
- **General Goals & Objectives**
- **River Overview & Planning Challenges (Slides)**
- **Break (5 min.)**
- **Discussion: Individual Comments by Agency**

**Santa Ana River Corridor Trail System Master Plan
Preliminary Concept Plan Framework (8/9/89)**

Corridor Segments

- Upper River (PCT to Seven Oaks)
- Morton Peak (Seven Oaks to Greenspot Road Bridge)
- Santa Ana Wash (Greenspot Road Bridge to Alabama Street)
- Inland Urbanizing (Alabama Street to Rancho Jurupa Park)
- Riparian (Rancho Jurupa Park to Prado Dam)
- Canyon (Prado Dam to Yorba Regional Park)
- Coastal Plain (Yorba Regional Park to Pacific Ocean)

Trail Alignments (Conceptual)

- Paved (Bike & Hiking)
- Unpaved (Equestrian & Hiking)
- Multiple Use

River Crossings

- Bridge
- Wet

Staging Areas

- Equestrian/Hiking
- Bicycle/Hiking

Trail Rest Stops

- Water
- Restrooms
- Picnic Areas

Trail Camps

- Overnight Stops

Side/Connector Trails (Existing & Proposed)

- Regional
- Local

TAC WORKSHOP #1
8-9-89

SANTA ANA RIVER CORRIDOR TRAIL WORKSHOP

WORKSHOP ATTENDEES

NAME	PHONE #
CHUCK EVERETT, EDAW	714-888-2697
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AMANDA HOSLER, EDAW	714-660-8044
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Hertende Hagum - Reporter, Redlands Daily Facts + Editor	714-792-3631
Glenn Duayer - Tri-Co. Conservation League Newsletter	714-79-24866
Den Rodriguez - City of Redland	714-7528
Terry Nielsen - City of Riverside	782-5305
Bill Cunningham - City of Redlands	7939556
JEFF WEINSTEIN - Riv. Co. Parks	787-2551
Mark Pywell - City of Loma Linda	7992830
Annie F. Ramos - City of San Bernardino	384-5030
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John McEachern - San Bernardino Reg. Parks	387-2594
Reg Henderson - Nat. Park Service - Rivers & Trails Conserv. Assist.	415-556-5751
Henry Rowlan - " " " " " " " " " "	" " " " " " " " " "
Barbara Wormser - City of Redlands	792-7763
FRANCES ENKOWI - U.S. FOREST SERVICE	714-794-1122
ROBERT SHUKER - USFS SAN GABRIEL DISTRICT	714-794-1123
TEX FULTS - CITY OF RIVERSIDE	782-5305
Erin Snyder - City of Colton	370-5086

Cyrene Clippin

Diane Falconer

JANN YOUNG

Gerry Newcomb

DICK BOBERTZ

Greg Ballmer

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Riverside Co Parks 787-2551

Riverside County Parks 787-2551

~~787-2551~~ ~~SBLOSB~~ ~~PARKS~~ 787-2594

REDLANDS 798-7555

Box Springs Mountains Conservation Area
Riverside: and Tri-County Conservation League
6860554

CAC Workshop #1
8-9-89

NAME	Organization	Phone
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Vicki Long	Citizen Miraloma	685-2941
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Spike Leach	CITIZEN Miraloma	685-8132
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MEMORANDUM

To: Gerry Newcombe, San Bernardino Co. Regional Parks
Paul Romero, Riverside Co. Parks
Bob Fisher, Orange Co. EMA Harbors, Beaches and Parks
Peg Henderson, National Park Service

c: Patrick Miller, 2M Assoc.
Jared Ikeda, EDAW, Inc.
Dan Herman, EDAW, Inc.
✓ Charles Everett, EDAW, Inc.
File

From: Steve Cast

Date: November 9, 1989

Re: Minutes of TAC/Interagency Workshop No. 2 and CAC/Public Workshop No. 2 for the
Santa Ana River Corridor Trail System Master Plan
EDAW Job No. 0N003.01

Committee Workshops No. 2 were held Nov. 9 at 3 pm for the Technical Advisory Committee (TAC) and subsequently at 7:00 p.m. for the Citizen Advisory Committee (CAC). Both were held at the Senior Center in the city of Corona. Each workshop reviewed Phase One Concept Plans for the Santa Ana River Corridor Trail System. Handouts included an Agenda and List of Discussion Issues. The Agenda, List of Discussion Issues and Sign-in Sheets are attached.

Both workshops followed the same agenda and included introductions from Gerry Newcombe of San Bernardino County Regional Parks, and the consultant team with Jared Ikeda and Charles Everett of EDAW and Patrick Miller of 2M Associates.

Following introductions, the Concept Plan identifying general trail locations, trail types, feeder trails and facilities was presented. The trail system was developed from an Opportunities and Constraints Analysis which was explained in conjunction with the Concept Plan presentation.

Technical Advisory Committee Workshop

The following is a summary of the comments received from the TAC workshop. These comments are grouped according to the overall trail corridor segments or environments as identified in the Concept Plan.

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Estuary

Riverside County Parks Department felt the equestrian trail should reach the ocean instead of terminating at Costa Mesa's Fairview Park. Consultants EDAW/2M indicated that due to health and safety issues, the State Parks Department would not allow equestrian access to the beach. Orange County Department of Harbors, Beaches and Parks confirmed that policy. EDAW/2M will investigate if coastal access could be made by horse to limited areas of the beach or by special permit.

Coastal Plain Urban

National Park Service commented the study showed a great deal of work to date but asked how the study was addressing landscaping requirements. EDAW/2M indicated the Preliminary Master Trail Plan at 200 scale will examine those site specific issues. Use of native plant materials was discussed.

Orange County Department of Harbor, Beaches and Parks felt the proposed station locations were adequate and added that additional parking with trail access at future industrial/commercial developments might be considered in the Master Plan and could be made a condition of project approval.

Canyon

California Department of Fish and Game indicated a preference for native plant material in all riparian area landscaping concepts.

Riparian

Army Corps of Engineers also recommended use of indigenous plant materials that are low in water consumption in order to maintain structural integrity of earthen levees and dams throughout the river system. Additionally, the Corps advised the river is navigable with seasonal flows. Consultant 2M commented this information may affect river ownership and will investigate this issue.

Riverside County Parks Department indicated there was a change in the Chino Hill State Parks campground site as indicated on the General Plan. EDAW/2M will acknowledge this change on future maps. County lands at the tip of the Chino Hills State Park would be used for river right-of-way and would not be available for parkland.

Corona Parks and Recreation inquired whether extensive mapping of ecologically sensitive areas was performed. EDAW/2M will indicate these areas more specifically at 200 scale. This data is included in the Corps' Mainstem Project GDM II material. In addition, State Fish and Game provided new data for review at the workshop.

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Corps of Engineers advised that further mitigation areas have been added after GDM II. The Corps additionally recommended that the Chino Creek Trail be located through the Chino Hills State Park due to a lack of access north and east of Route 71. The Corps added there will be no future access between the Prado dam and its spillway. The Corps advised to site the trail on the south side of the spillway and follow a new levee at the 594' contour. Another new levee is expected to follow Airport Avenue through Rincon and tie into the 'Cheese Factory'. The Corps asked if this direction would pose a Caltrans problem. EDAW/2M responded that it would not.

The Temescal Wash Trail will be the main connector trail through Corona. Corona Parks and Recreation agrees the proposed staging area at the Temescal Trail junction is a good location. The department commented further indicating there are limited options for trail locations in Corona and the city of Norco.

The Corps of Engineers suggested the City of Norco be contacted as soon as possible because land is rapidly being purchased for development and trail options may be lost.

Inland Urban

Riverside County Parks Department expressed concern for the need of a main connector trail route for commuter bicyclists from Riverside County to San Bernardino County. Continuation of the trail along the easterly levee by Fairmount Park was recommended in addition to a Fairmount Park bypass loop trail.

San Bernardino Regional Parks indicated the San Bernardino General Plan is planning for the "Agua Mansa industrial enterprise zone" that would incorporate trail linkages from parking areas of businesses and would consequently provide incentives for business development. Trails should be on both sides of the river south of La Cadena Avenue. San Bernardino Regional Parks commented that Norton Air Force Base would be a good place for a staging area. A loop trail system through the base reuse area might be considered.

Santa Ana Wash

National Forest Service recommended the Preliminary Master Plan should propose 'ideal open space' areas adjacent to trails. This would create documentation for future planning.

Tri-County Conservation League recommended that consultants utilize the Cone Camp site for consideration of an overnight campground site, in lieu of perhaps the future Redlands Nature Center site.

Morton Peak

San Bernardino Valley Water Conservation District recommended contacting the BLM at Palm Springs for potential impacts on its management plan in the area of the Mill Creek/Santa Ana River confluence area.

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U.S. Forest Service noted that it might be appropriate to have the trail align with roads where proximity was close. Several groups voiced concern over the lack of trail proximity to the river. Regarding this issue, consultants advised that the trail system in the National Forest had been previously sited many years ago and should not be significantly altered due to the trail selection criteria used by the USFS and the need to revise the EA. EDAW/2M suggested that perhaps links or loop options from the proposed trail to the river be proposed to the Forest Service. The Forest Service commented there is an extensive history in the area of the Pacific Crest Trail and would provide opportunities for interpretation. Riverside County Parks Department felt mileage and elevation information should also be provided along the trail as points of interest.

Workshop adjourned at 5:15 p.m.

Citizens Advisory Committee Workshop

The CAC workshop convened at 7 pm with 28 attendees representing various area group and individual interests. The following is a summary of their comments by overall trails corridor segments or environments identified in the Concept Plan.

Estuary

Most agreed the equestrian trail should have an ocean destination. See TAC comments also.

Coastal Plan Urban

Because of heavy use and little space in this area, a suggestion was offered to alternate weeks for trail use by different users of the trails. Responding to this suggestion, others felt this policy would be difficult to enforce and did not acknowledge the commuter bicyclist needs.

Long Beach/Cerritos area bike trail up the San Gabriel River was cited as a poor example of a trail system. The system was considered unpleasant because of its narrow trails of concrete and lack of landscaping.

Canyon

Consultants asked what an ideal length would be between equestrian staging areas with trailer parking facilities. Responses indicated that 10 miles would be ideal and no more than 25 miles.

Comment was made regarding the difficulty of horses to walk on concrete and to cross low overpasses. Asphalt was a good material to use. Scored concrete was slippery. Wood was a maintenance problem.

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Consultants clarified that trail staging areas were defined by vehicular/trailer parking requirements as opposed to rest stops which may not have parking.

At Featherly Park, comment was noted of a proposal to HBP to have a private concessionaire take over the entire park. It was suggested to consultants that they confirm that the proposed staging area at the park remain public and accessible to the trail system. EDAW/2M Associates indicated that the County has not discussed this proposal and that it may be only for the campground area only.

Riparian

Several confirmed there was no existing safe trail crossing at River Road. A signal would be needed if this route was used.

Attendees suggested to route trails along Corydon Road trail option rather than along the powerline trail option. Bicycles would remain on the street as secondary bike lanes. The existing horse trail might use this route or the bluff trail route option.

Question was raised why the City of Norco was not invited to participate in the workshop. San Bernardino County Regional Parks indicated the City of Norco had been invited several times and has declined to participate in the study. Contact would be made again.

Comment was made to potentially add bluff protection (rip rap) for the bluff routes rather than site the trail on the City's Corydon/Norco Drive streets and horse trails. Several attendees commented they prefer river bottom equestrian trails to a Corydon Street trail. Members of the Norco Trails Committee indicated they have tried to get bluff protection for 20 years but that the Corps of Engineers have been an obstacle.

Due to safety reasons, several persons voiced concern about mixing horse trails with bicycle trails unless there was adequate width and separation.

Several attendees indicated the trails should follow both sides of the river where feasible. This would allow for a trail system to be dedicated as the land is developed (i.e., dairy lands) and would avoid future land use conflicts.

Comment was noted that at the Hamner intersection in Norco, equestrians must cross the street twice with limited standing room for horses if the Norco/Corydon route is selected. This would be analyzed at 200' scale.

It was noted that the trail for hikers should be analyzed at proposed wet crossings. Consultants might consider remedial measures for hikers at wet crossings such as small bridges.

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Inland Urban

Again it was noted that horses have difficulty walking on concrete. Asphalt is a recommended alternative paving material for horse trails. This is important at the ramps under the freeway/rail line.

Santa Ana Wash

No significant comments

Morton Peak

No significant comments

Upper River

No significant comments

AGENDA

**Santa Ana River Corridor Trail System Master Plan
Phase One: Concept Plan
Committee Workshop No. 2
Corona Senior Center
November 9, 1989**

- o Introductions** San Bernardino Co. Regional Parks Dept.
- o Project Status** EDAW
- o Concept Plan Elements** 2M Associates
 - Overview - What is a Concept Plan
 - Trail Types
 - Staging Areas
 - Rest Stops
 - Overnight Camps
 - Interpretive Facilities
- o Concept Plan and Issues***
 - Discussion** EDAW/2M Associates
 - Estuary Section
 - Coastal Plain Urban Section
 - Canyon Section
 - Riparian Section
 - Inland Urban Section
 - Santa Ana Wash Section
 - Morton Peak Section
 - Upper River Section
- o Next Step - Phase Two** EDAW/2M Associates

*List of Issues (page 2)

**List of Discussion Issues
Santa Ana River Trail System**

**Committee Workshop No. 2
November 9, 1989**

<u>River Section</u>	<u>Map Sheet</u>	<u>Issues- Concept Plan Level</u>
Estuary	-	-
Coastal Plain Urban	-	-
Canyon	-	-
Riparian	5	Prado Dam Area
	5	Trail Route Options to River Road
	6	Trail Route Options - Norco Bluff Area
Inland Urban	8	Freeway Interchange/ SPRR Line Obstacles
	9	Norton AFB Area Loop
Santa Ana Wash	10	Bike Trail Terminus/Start of Multi-use Trail
	11	Trail Route Options to USFS Lands
Morton Peak	-	-
Upper River	12-13	Campgrounds, Trail Staging Areas, River Access

Comments:

CAC

SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN

NAME	REPRESENTING	PHONE #
Gertrude Hagum	Tri-County Conservation League	792-3631
Greg Ballmer	" " " "	686 0554
MARIE BRADLEY	RIVERSIDE RECREATIONAL TRAILS	688-6780
LAURATO PEPESON	" " "	687-3386
Wm. M. Leonard	Concerned w/ Historic Aspects	" "
Claudia Wild	Riverside Recreational Trails	359-0099
Lou Ann Humphrey	Me	751-1762
Barbara Lynn	Me	685-3031
SPike Leach	TRAILS	685-8132
B. AND EVELYN CLARK	Mountain Bikers	774-4981
SUSAN GOSLAR	Mira Loma/Jurupa Horsemen's Club	714-685-4961
MELANIE COWARD	Horse tails - Riverside	714-780-3743
ALLEN COWARD	Equestrian - Riverside	714-780-3743
Bill Richie	Self.	714-735-3845
CHUCK CUSHMAN	Self.	714-734-7149
LARRY CUSHMAN	NORCO STREET & TRAIL COMMISSION	714-734-7149
JERRY RALSTON	NORCO STREET & TRAIL COMMISSION	714-737-8976
Jonathan Jones	City of Corona - Parks Dept	714-736-2400
Peg Henderson	National Park Service	415-556-5751
Lynn Taylor	Riverside Recreational Trails	714-351-4186
Kathi Clous	Riverside Recreational Trails	714-351-4186
Terry Baker	WHIPPIN RIVER PONY CLUB COMMISSIONER Norco Horsemen's Association	714-272-0864
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Lou Wilson-Williams	ETI Corral #20	714-926-2311

TAC

SANTA ANA RIVER CORRIDOR TRAIL SYSTEM MASTER PLAN
NOVEMBER 9, 1989

NAME	REPRESENTING
PATRICK MILLER	ZM ASSOCIATES
Audrey Scranton	USFS Mill Creek R.D.
Jeanine DeWald	CA Dept. of Fish & Game
Reg Henderson	National Park Service
EVELYN CLARK	MOUNTAIN BIKERS
TED KARR	CORPS OF ENG., Los Angeles Dist.
Yoshi Kawasaki	County of Orange, Harbors, Beaches & Parks
SAM FORN	RIVERSIDE COUNTY PARKS DEPT
JEFF WEINSTEIN	RIVERSIDE COUNTY PARKS DEPT
Gertrude Hagum	Tri-County Conservation League
PETER J. RUSHER	San Bernardino Valley Water Conservation Dist
PAM ELLIOTT	ELLIOTT/MALONEY
JIM Manning	County Park & Rec Director

CAC

Norm Sneed

Rocky Hill Riders
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737-7309

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MEMORANDUM

To: Gerry Newcombe, San Bernardino Co. Regional Parks Dept.
Bob Fisher, Orange Co. EMA, Harbors Beaches and Parks District
Paul Romero, Riverside Co. Parks Dept.
Peg Henderson, National Park Service, Rivers and Trails Cons. Assist.

c: Patrick Miller, 2M Assoc.
Dan Herman, EDAW, Inc.
Steve Cast, EDAW, Inc.
File

From: Charles A. Everett

Date: March 14, 1990

Re: Minutes of TAC/CAC Workshop No. 3, March 8, 1990
Santa Ana River Trail System Master Plan
EDAW Job No. 0N003.01

Two workshops were held on March 8, 1990 at the County of San Bernardino offices. The first was a workshop with the Technical Advisory Committee (TAC) at 3-5:00 p.m. The second was a workshop with the Citizens Advisory Committee (CAC) and the general public at 7-9:00 p.m. This was the third series of workshops on this project. Attached are agendas and sign-in sheets for the workshops.

The minutes are organized by issue discussions as follows:

TAC Workshop

1. In the Redlands area, Caltrans is preparing drawings to widen Highway 30 across the river. It is probably too late to effect the plans. However, they should be contacted to see if a trail ramp can be included.
2. An old abandoned rail line exists across the Santa Ana Wash area north of the proposed Redlands Nature Center/Opal Avenue. This may be a potential trail link to Highland. Part of the land is owned by the SBVWCD. This linkage might be explored further (i.e., the Rails To Trails Program).

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3. In the Redlands area, it was discussed that both the equestrian and the bicycle trail be located on the bluff top rather than have the equestrian trail in the river bottom/toe of the bluff. Reasons include: potential trail access limits due to water flows or boggy areas; greater difficulty for horses in the sands; desire of Redlands to accommodate both trail uses on the bluff top; and improved linkage with North-South trails. This will be accommodated in the next set of plans.
4. There was continuing discussion of beach access by equestrians at the mouth of the river in Huntington Beach. A State Parks decision not to allow continuous equestrian access was discussed. "Permit Only" use was discussed with an equestrian tie-up area east of Pacific Coast Highway (PCH). This was generally agreed upon. "Permit Only" use would begin at the tie-up area, instead of the Fairview Park river bridge crossing. Dual trail ramps under roadway bridges would need to be accommodated. One last discussion with State Parks (Ross Henry) would occur to reconfirm State Park's previous decision.
5. It was discussed that increased trail use would likely occur as the system nears completion. This includes equestrians and bicyclists. Therefore, through trail use should increase. Sections such as in Redlands where there is almost no existing use are likely to become quite busy. This would argue for a complete dual trail system the entire length.
6. The Forest Service indicated that there should be a separate mountain bike trail through the Morton Canyon/Peak area. A USFS plan showing the alignment apparently exists. This will be investigated and included in Phase III.
7. The trail alignment west of Hamner Avenue in the Norco area was discussed. It was reiterated that this segment would have higher maintenance costs. The Corps suggested that Riverside County should get involved now in the acquisition process for the Mainstem Project to insure trail continuity. There is also apparently pending legislation to provide bluff stabilization through the Norco area. A bill to be authored by Senator Brown may provide funding for the stabilization. The trail construction may be accommodated through this future legislation.
8. An overnight campground in the East Valley/Redlands area was discussed. Cone Camp (SBVWCD land) is proposed for permit only use. Another full-time campground was discussed as well. Yucaipa Regional Park, some +6 miles away, is a potential site but generally too far away and would require trail linkage. It was decided to add back into the plan a campsite at the mouth of Morton Canyon. This is private land inside the USFS boundary and would require a land swap or other means of acquisition by the USFS.

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Re: **Minutes of TAC/CAC Workshop No. 3, March 8, 1990**
Santa Ana River Trail System Master Plan
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9. Ramps under bridges were discussed. Appropriate signage should be included to regulate bicycle speed and to caution trail users of potential conflict or congestion. Possible wider ramps with dual trail use will be considered. Refer to the proposed section in the Design Guidelines chapter of the workbook.
10. The proposed funding breakdown by County/USFS for the trail coordination effort was discussed. It was determined that a precise percentage breakdown would be determined later in an equitable manner and the workbook text would reflect this change.
11. The management group meeting schedule was discussed. It was suggested that each County group should meet quarterly and the entire group should meet only annually. This would provide greater emphasis at the county level rather than "overload" the process by having the entire group meet to try to solve the many issues of the entire 110-mile length. This will be considered.
12. The City of Corona recommended that interpretive and/or staging areas be considered at the Corps' proposed Prado Dam borrow pit area (reuse component) and the City's firing range site at Rincon/Corydon Street.
13. The Corps' proposed mitigation area for the Santa Ana River Wooleystar may have been modified. This will be reinvestigated for the Redlands area.

CAC Workshop

1. There is the potential that trails located on the levee tops may become blocked by maintenance vehicles. The trail should be designed to accommodate vehicle access and maintenance. Levee top widths will be reinvestigated with the Corps. A 14 foot wide blade tractor is sometimes used. This may affect dual trails with a fence separating the bike trail from the equestrian trail.
2. Equestrian trail ramp material was again discussed. The debate is between the use of scored concrete versus asphalt. We will poll State Parks and other trail providers to get additional opinions for further consideration.
3. At the I-10 Freeway/SPRR proposed trail ramp, it was suggested that the ramp be only one foot above the riverbottom to limit the distance of fall in the event of an accident. This should be able to be accommodated.

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Re: **Minutes of TAC/CAC Workshop No. 3, March 8, 1990**
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EDAW Job No. 0N003.01

4. Lighting under roadway bridges at the trail ramps was discussed. Some bridges are quite wide and therefore block sunlight. Lighting would aid trail users, especially in dual trail use situations and where bicyclists tend to speed up at the down ramps. This should not be a problem to implement.
5. Dual trail use on the bluff tops in the Redlands area was discussed. Refer to item No. 3, TAC Workshop.
6. The different types of trail users at various staging areas was discussed. An asterisk(*) was used to denote those staging areas which are purely equestrian use only. Other staging areas are available as well, depending upon their location in relation to the equestrian trail. This will be clarified in the workbook.
7. Camping in the East Valley/Redlands area was discussed. Refer to Item No. 8 in the TAC workshop.
8. An alternative trail alignment was discussed through the proposed Greenspot Landmark Land project in addition to or in place of the current Morton Canyon/Peak trail alignment. This will be further investigated. However, it was the general consensus that the Morton Canyon/Park trail alignment should remain the primary route. The Landmark Land route should be considered as a secondary trail alignment to provide a loop trail opportunity and to provide greater trail access for future residents of the proposed project and in the Yucaipa/Mentone area.
9. Potential trail use conflict due to deer hunting in the USFS/Thomas Hunting Grounds area was discussed. It was decided that warnings, user education and potential trail closure are all options to consider. It was not believed that closure was necessary. Signage and education were deemed appropriate measures.
10. Trail width in the USFS lands was discussed. The USFS engineering branch would be recontacted to further discuss the issue of widening the trail to four feet.
11. Additional background data on financing alternatives was requested. This would be provided in the Appendix of the next workbook edition in Phase III.

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March 14, 1990
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Re: **Minutes of TAC/CAC Workshop No. 3, March 8, 1990**
Santa Ana River Trail System Master Plan
EDAW Job No. 0N003.01

12. Relocation of the secondary bike trail through the Norton AFB reuse area was discussed. This is due to the need to relocate some golf holes away from the clear zone of the runway. The adjacent levee provides a good location for the bike trail. In addition, a staging area may be considered in the reuse area in addition or in place of the proposed rest area.
13. The widening of Greenspot Road in the future was discussed. This may be required due to the growth anticipated in the area. There may be the opportunity to construct the trail through this area at the same time. No schedule for roadway widening currently exists.

TAC

SIGN-IN SHEET

Santa Ana River Trail
Workshop
March 8, 1990

Name	Organization	Address	Phone
Genie F. Roman	City of San Bernardino Parks & Recreation Dept.	5477 N. Sierra Way	384-5030
Gertrude Hogum	Tri-County Conservation League	1317 College Ave, Redlands 92374	792-3631
Jim Richardson	City of San Bernardino Administration	300 North "D" St.	384-5270
LAUREN FICARO	EAST ORANGE OPEN SPACE MANAGEMENT CO.	11202 MEARS BRIDGE	997-4349
Jim Manning	City of Corona	8.5 N 16th St. Corona	736-2490
Gerry Newcombe	SBCD Reg. Parks CORPS OF ENGINEERS OPERATIONS B.D.	825 E. 3rd St. San Bernardino	808 387-25
TED LARR		PUBOX 2711 LOS ANGELES	(213) 899-5635
JASON ELIASON	CITY OF LOMA LINDA National Park Service	15541 BARTON Rd. 92354 4500 Golden Gate Ave Bx 76063	(714) 799-283
Peg Henderson	Rivers & Trails Cons. Assn.	San Francisco, CA 94102	415-556-575
Jeanne C. Peckold	Dept of Fish & Game	11527 Marine Dr. Hemet 92344	(714) 766-1952
FRANCES ENKAWI	U.S. FOREST SERVICE	34701 MILL CREEK RD MENTONE, CA 92359	714-794-1123
Bill Cunningham	City of Redlands		79 39558
JEFF WEINSTEIN	Riv Co. PARKS	P.O. Box 3507, Riv. 92519	787-2551
DAVID LOVELL	SB Co. FLOOD CONTROL DIST	825 East Zand Street, SB 92415	387-2737
Musa Ghaly	" "	" " "	387-2597
PANDY SOLIS	CITY OF RIVERSIDE PARK NREL, Park Ranger	3900 Main, Riv. 92501	782 5305
TOM POTOWN	TRI-COUNTY CONSERV LEAGUE	3045 HAVERHILL CT. RIVERSIDE 92506	886-9925

CAC

SIGN-IN SHEET

20
attended

Santa Ana River Trail Workshop March 8, 1990

Name	Organization	Address	Phone
Tom Johnson	Assn. Woodruff	Redlands 300 E. State 92373	798-055
Lou Dudney	Equatrain Trails Inc.	P.O. Box 1611 Apple Valley 92507	247-6911
Geno J. Mander	Boy Scouts of America	1208 W. 6th St. Redlands 92374	798-3530
MURK PEARSON	RIVERSIDE RECREATIONAL TRAILS CSHA TRAILS COMMITTEE	6322 L. SIERRA RIV. 10525 ROBINSON	687-9385
MARIE BRADLEY	RIVERSIDE RECREATIONAL TRAILS	RIVER, CA 92505	688-6780
KATHRYN WECHTER	REDLANDS TRAILS COM.	12876 HIGHVIEW DR REDLANDS	794-1899
Gertrude Hagum	Tri-County Conservation League	1317 College Ave. Redland 92374	792-363
BRUCE HARTLEY	CITY OF CORONA	815 W. 6th Corona 91720	714-736-2103
Beth Hartley	City of Anaheim	200 S. Anaheim Blvd. Anaheim 92805	(714) 999-51
Jonathan Jones	City of Corona	815 W. 6th St. Corona 91720	714-736-25
Reg Henderson	National Park Service - Rivers & Trails Conservation Assn.	480 Golden Gate Ave. Ex. 36063 San Francisco CA 94102	415-556-575
GENE McMEANS	CITIZEN	2025 Glenwood Ave. Corona 92724	825-9588
Chuck Sander	Equatrain Trails	2990 S. Alameda	862-115
JOANNE COFFEE	Yuccipa City Task Force	9848 Azurite Yucca 109	797-3572
Joy & Lloyd DUNN	City of Corona	1438 Mariposa, Corona 91719	737-9922
FRED V. CONTADI	SAN BERN. COUNTY	825 THIRD ST	387-2807
MINA GHALY	San Bernardino County	825 E. 3rd St	387-2597

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MEMORANDUM

To: Gerry Newcombe, San Bernardino Co. Regional Parks Dept.
Bob Fisher, Orange Co. EMA, Harbors Beaches and Parks
Paul Romero, Riverside Co. Parks Dept.
Peg Henderson, National Park Service, Rivers and Trails Cons. Assist.

c: Patrick Miller, 2M Assoc.
Amanda Hosler, EDAW, Inc.
Dan Herman, EDAW, Inc.
File

From: Charles A. Everett

Date: June 28, 1990

Re: Santa Ana River Trail System Master Plan
TAC/CAC Workshop No. 4 Minutes and
Phase III Written Comments
EDAW Job No. 0N003.01.02

This memo serves as minutes to the fourth and final Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC) Workshop which was held June 14th at San Bernardino County's offices. Attached are the agenda and attendance sign-in sheets.

The workshops included an introduction by San Bernardino County and were conducted by Charles Everett (EDAW, Inc.) and Patrick Miller (2M Assoc). They focused on resolving remaining trail system issues. Comments were solicited from those attending.

In addition, several agency or organization letters were received with comments to the Phase III Workbook, 200' scale trail maps and a draft poster design. These comments are also summarized in this memo.

Technical Advisory Committee

1. The report should be checked for consistency in the use of the name Santa Ana River Woolly Star.
2. Signage should be added to trail ramps underneath bridges to caution riders of either a narrower crossing or the use of concrete or asphalt material which may become slick or worn.

MEMORANDUM

Gerry Newcombe

June 28, 1990

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Re: **Santa Ana River Trail System Master Plan
TAC/CAC Workshop No. 4 Minutes and
Phase II Written Comments
EDAW Job No. 0N003.01.02**

3. If an asphalt trail ramp is constructed, a header should be added of concrete to reduce ramp deterioration.
4. The debate over the use of concrete or asphalt equestrian ramps continued. The general consensus was for the use of asphalt. It was decided that selection of material would be determined later, specific to each site condition, during the design phase.
5. The follow-on trail management structure was debated. This included the Trails Coordinator position and the use of the Trails Council. It was generally agreed upon that a "Trails Coordinator" was a much needed position. The focus of this position would be to act as a "clearing house of information" and a "facilitator". Whether this position was provided by each County or one person for the entire trail corridor was left undetermined. Riverside County will have a new trail coordinator specifically for its County. Other questions included who is this person's boss, who funds this position and is the position necessary?

The Trails Coordinating Council was also discussed. It was felt by many that the current Council has not functioned very well including a 10-year period where it did not meet at all. This Council needs to be strengthened and the proposed Management Group would be a way of doing this. Further discussion with Riverside County would occur on this issue.
6. The use of effluent should be encouraged to establish native and drought tolerant landscaping along the trail system. Once established, the use of irrigation can be eased off.
7. The Corps mitigation area in the East Valley area in San Bernardino County is now pretty well solidified. The trail will need to be coordinated with mitigation plans as they are implemented. This is particularly important in the Tennessee Avenue area. The SBCFCD shall provide EDAW with a revised map of the new mitigation area. Also, Cone Camp and its feeder trail will need to be coordinated. The trail may be possible if coordinated.
8. The proposed campsite at Morton Canyon was discussed. It was agreed to keep the campground as proposed for potential long-term implementation. A campsite is required in this region and is most important if the Cone Camp site is unusable. Both sites are on SBVWCD property.
9. EDAW will review the proposed USFS campsites on the 2000' scale plans for consistency with the 200' scale plans.

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Re: **Santa Ana River Trail System Master Plan
TAC/CAC Workshop No. 4 Minutes and
Phase II Written Comments
EDAW Job No. 0N003.01.02**

10. EDAW will review page 13-3 for consistency with the proposed bluff top trail location.
11. EDAW will review page 12-20 wording to read: "USFS personnel shall indicate appropriate criteria on a mile post by mile post basis."
12. The abandoned ATSF rail line in San Bernardino, California, should be considered a potential feeder trail as shown on the 200' scale maps.
13. Check consistency for use of the name "Angelus Oaks" instead of the old name "Camp Angeles".

Citizens' Advisory Committee

1. The use of asphalt or concrete (scored) for equestrian ramps was discussed. It was mentioned that the pros/cons of each material be listed and that the future design phase determine the most appropriate material to be used for each specific site.
2. The trails coordinator position was discussed. The position was fully supported with the primary role being one of a "facilitator". The position could be fully funded at first with annual decreases in funding to be replaced by private/corporate sponsorship.
3. Adjacent residents of a proposed City of Riverside trail from Martha McClean-Anza Narrows Regional Park to Rubidoux Ave. questioned the trail routing near their homes. The trail route had been selected previously by the City's Public Works Department. An alternative route may be possible which may impact a wetlands zone. Until the route is resolved, both alternative alignments could be shown on the plan. Additional discussion with Councilman Ron Loverage has occurred.
4. The high cost and need for trail maintenance was discussed. This is currently a real problem. Trails are not being adequately maintained and annual volunteer maintenance groups are not fully satisfying the need. Due to the high cost, volunteerism needs to be stressed in the plan.
5. The problem of multi-use trails was discussed. It was emphasized that equestrians and bicycles need to be separated wherever possible. This has been a major goal.
6. A proposed equestrian center and racetrack is to be located in the Norco area north of the river and west of Hamner Ave. Trail access should be shown to this future facility.

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7. The Executive Summary chapter should include an expanded section on implementation and include adoption of the plan in each jurisdiction's General Plan and an emphasis on continued trail coordination.

Phone or Written Comments

1. City of Redlands: Review city boundaries on plan sheets 59 and 61 and revise as needed.
2. City of San Bernardino: Referenced use of the name Robidoux for the County's nature center. The spelling with an "o" is correct.

Include the City of San Bernardino as having a supporting resolution in page 11-5.
3. Adkan Engineers: Information on Tentative Tract 25718 to be annexed to Norco was provided. Revisions to the proposed Jurupa Ave. bridge extension vs. a Limonite Ave bridge was also provided. This information has been incorporated into the plans.
4. Rancho La Sierra: Received a request for trail information from this project proponent which is initiating the project again near the Hidden Valley area. The land owner expressed a strong desire to work with the City and County in providing trail facilities within their project and access to the river trail.
5. City of Corona: Received comment on the trails through Corona with no significant issues noted.
6. National Park Service: Received a few redlined pages for final editing and clarification. No significant revisions noted. Very pleased with the report.
7. M. Lauren Ficaro: Received comments for consideration including the following:
 - Need to stress the need to act quickly so as to avoid loss of trail linkage due to development and future higher costs.
 - Cost estimates seem high for construction and maintenance; intergovernmental relations will be needed so that these costs can be reduced. Volunteerism can also reduce costs.

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- Need for a trails coordinator position was stressed which could provide a liaison between County positions and regional/local trail linkages.
 - Wet crossings for equestrians was discussed. Alternative routes would be appreciated or some method of assuring crossings during high water times.
 - Trail access to Santiago Creek in Orange County is not possible at the mouth of the creek due to urban development. Access via existing streets (Garden Grove Blvd.) might be noted to get around this barrier.
 - Equestrian access to the river in Orange County was noted. Existing access is being lost due to the development of stables. Greater access is needed and loop trail options. (A review of the 200' scale maps would provide greater detail of these options.)
 - Staged implementation of trail staging areas should be considered. Full service facilities could be provided after the access is provided.
 - Additional joint use/equestrian oriented facilities should be considered in Orange County between Fairview Park (Costa Mesa) and Featherly Regional Park. (Several are noted on the plans.)
8. San Bernardino County Regional Parks Department: The following comments were received:
- Executive Summary. Delete Fontana and add Corona and Anaheim to the list of participating agencies. Review development cost total (page 1, 8).
 - Implementation Chapter - page 11-4. Strengthen the section on the park and open space districts for Riverside and San Bernardino Counties - fact sheet provided. Expand tables 11-2,3,4 and 5 and select the most viable options and provide more specific recommendations for their use.
 - Poster Mock Up. Should be provided in full size, revise list of agencies, consider a full color for logo, add as a benefit "reduction in smog by lowering VMTs", revise agency name, add telephone numbers.
 - Per State Fish and Game, page 10-8, recommend removal of giant reed be done all at once.

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* 9. State Department of Parks and Recreation: Received the following comments:

- Plan is excellent. Unfortunately they have not reviewed the plan prior to Phase III. Reviewed the plan in context with Huntington State Beach and Chino Hills State Beach general plans.
- Ch. 12 Design Standards. Trails need to be sited in accordance to State plans and use California Recreation Trails Plan standards as a minimum through state-owned land. Trail sitings do conform to State plans. These trails are subject to realignment if found to impact environmental sensitivity. This is subject to future detailed trail design.
- Introduction Chapter, reference 2 state parks; explain loss of park land to C.O.E. project (this is County property lost); list trails entering Chino Hills State Park specifically.
- Reduced Trail Plans (14) - suggest use of cross hatch to clearly identify State Park (pattern only meant to identify all public open space and not limited to State lands); State now owns land down to Bush Creek at rail line; more clearly associate Aliso Canyon and Bush Creek trails as entering the State Park. Reference Telegraph Canyon trail and trail head which could provide a loop opportunity within the State Park and the river trail.
- Sign Program (Ch. 5) - don't like the use of the word "signage", now a commonly used term. Sign plans would need to be coordinated and submitted to the State for approval.
- Interpretive Education (Ch. 6) - Revise Figure 6-1, 6-2.
- Management/O&M (Ch. 10) - State Parks suggest that they obtain equal representation on the Management Board. (They will be on the Coordinating Council).
- Implementation (Ch. 11) - Revise page 11-13 to encourage continued State development of trail facilities, MP 26.6 questions duplication of equestrian facilities (one noted is already existing at Coal Canyon); any landscaping should be coordinated with State Parks General Plan for Chino Hills. (In fact, all aspects of trail development within State Park property must be first coordinated with the State).

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10. Riverside County Parks Department: Received the following comments:

The poster mock up reduction was reviewed and specific criticisms were noted. A review of a full-scale poster would have aided in this review by the County. The County requested that the poster be simplified, be more concise and more appealing. EDAW will consider these specific comments and include some of the County's recommendations in a revised full-size poster. Considerations in the poster include overall cost and folding patterns which dictate how the poster is designed.

Specific final workbook text edit comments were noted.

Should expand text regarding State Park guidelines for special equestrian use permits to enter Huntington State Beach.

The County is uncomfortable with the management structure proposed including an overall trails coordinator and potential JPA. They requested fine-tuning of Ch. 10. The County will be recontacted. (A JPA is not proposed.)

AGENDA

Santa Ana River Corridor Trail System Master Plan
Phase III: Final Master Plan
Final Workshop No. 4
June 14, 1990

- Introductions
- Project Status
- Project Issue Discussion
 - Mountain Bike Trail - USFS
 - Norco Area Trails
 - Redlands Area Trails
 - Riverside Area Trails
 - Equestrian Ramp Material
(concrete versus asphalt)
 - Management Group Structure and
Implementation
- Other Issues (Open Discussion)

San Bernardino County
Regional Parks Dept.

EDAW

EDAW/2M Associates

SANTA ANA RIVER CORRIDOR TRAILS MASTER PLAN
 6/14/90 (20) TAC

NAME/AGENCY	ADDRESS	PHONE #
CHARLES EVERETT	EDAW INC. IRVINE	714-660-8044
PATRICK MILLER / ZM	1780 SONOMA AVE, BERKELEY	415-524-8132
TOM BROWN TCCCL	3045 HAWK HILL CT. RIVERSIDE	(714) 686-9925
LARS H. CARPELAN	5932 Elith Ave	(714) 684-8343
Gertrude Hagum	1317 College Ave, Redlands	(714) 792-363
DENTON TURNER	400 CIVIC CENTER DRIVE	(714) 834-3812
JEFF WEINSTEIN	RIV CO. PARKS, P.O. Box 3507 Riv. Co. 92517	(714) 684-6936
KIM CLINTON	CITY OF HIGHLAND 2718 E. BASELINE	(714) 864-8732
Phil Krause	S.B. CO. Regional Parks	(714) 381-2594
TED CARIZ	CORPS OF ENGINEERS	(213) 894-5635
ROBERT SHUCKER	MILL CR. RANGE STA. USFS	714 7941123
Annie F. Ramos	Parks, Rec. & Con. Serv. Dept. 549 N. Sierra Way S.B.	(714)-384-5030
DAVID LOVELL	825 E. 3 rd ST., S.B.	714-387-2737
Ken Miller	San Bernardino Co Flood Control	(714) 387-2623
MARVIN HUTCHINSON	SANTA ANA RIVER TRAILS TASK FORCE 13586 FRMONT, YUCAIPA	(714) 795-5933
DONALD L. JACKSON	10500 ELLIS AVE, FOUNTAIN VALLEY ORANGE COUNTY WATER DISTRICT	(714) 963-5661
ART CREEF	CITY OF RIALTO	(714) 820-2530
CAROLE WESSON	OPEN SPACE COMMITTEE 1733 CHAPARRAL RD, REDLANDS	(714) 793-4726
Greg Ballmer / Tri-County Cons. League	5894 Grand Ave, Riverside	(714) 686 0554
Jonathan Jones	City of Corona 814 W. 6th St Corona	714 726 2441

6/14/90

CAC

SANTA ANA RIVER CORRIDOR TRAILS MASTER PLAN

NAME/ORGANIZATION	ADDRESS	PHONE #
TRICK MILLER /ZM	1780 SONOMA, BERKELEY 94707	415-524-8132
Bertrude Hagum ^{Reporter} Redlands Facts	317 College Ave, Redlands 92374	714-792-3631
Bettina McLeod	303 S. 4th St Redlands 92373	714 792 6840
JERRY RALSTON	CITY OF NORCO STREETS & TRAILS COMMISSION 5338 TRAIL ST. NORCO	714-737-8976
MARIE BRADLEY	RIV. RECREATIONAL TRAILS CSHA TRAILS COMMITTEE 10525 ROBINSON RIV. 92505	714-688-6780
LAURA PEARSON	6322 LA SIERRA AVE RIVERSIDE CA 92505	(714) 687-3386
Ingrid Lagula	35841 Eureka Ave Yucanpa Ca 92399	(714) 797-8550
Nick Butler	35841 Eureka Ave Yucanpa Ca 92399	(714) 797-8550
Carl Giddings	35240 San Carlos Yucanpa Ca 92399	714-795-1075
Lyn Branker	31189 Alta Vista Dr Redlands Ca 92373	714 794-3771
Harold Taylor	5998 Londonderry Dr Riverside CA 92504	714 683-8779
JACK DALMAN	5355 GRASSY TRAIL DR RIVERSIDE 92504	714 686-2579
Reg Henderson	National Park Service San Francisco	415 556-5751
CHUCK EVERETT	EDAW Inc, IRVINE CA	714-660-8044

14.2 Implementation Materials

NATIONAL RECREATION TRAILS

*Information and
Application Procedures
for Designation*

U.S. Department of the Interior
National Park Service

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



U.S. DEPARTMENT OF THE INTERIOR
National Park Service

NATIONAL RECREATION TRAILS
INFORMATION AND APPLICATION PROCEDURES FOR DESIGNATION

I. PREFACE

The story of the American trail is as old as the story of America itself. Trails played an important role in the early settlement of our country. Pioneers and explorers followed game and Indian trails in opening up new frontiers. In those days, trails abounded, but they meant only one thing--a way to get from one place to another. They were the superhighways of early America and usually followed the most direct, not necessarily the most scenic, route to a destination.

Today, numerous types of trails play a vital role in the lives of many Americans. Some of these same trails will provide opportunities for future generations seeking a wide variety of outdoor recreation experiences.

This booklet addresses one type of trail, the national recreation trail. The purpose of this booklet is to promote the addition of more trails into the National Trails System. The procedures and the criteria for designation are explained to enable citizens' groups, conservation groups, public officials, and other trails-minded individuals to complete and submit an application for national recreation trail designation.

National recreation trail designation carries with it the prestige and notoriety of the National Trails System. The trail becomes a component of the system without a long study process. National recreation trails offer a wide range of trail-related activities through the efforts of a number of different trail sponsors. Often, resultant favorable publicity has brought attention to communities, furthered outdoor recreation opportunities in many localities, and provided for some protection to the trail itself.

By January 1983, 719 national recreation trails, ranging in length from under 1/4 mile to 213 miles, had been designated. They are located on abandoned railroad rights-of-way, old logging roads, park and forest lands, islands, streams, etc. They accommodate hikers, bicyclists, skiers, canoeists, horseback riders, blind persons, persons in wheelchairs, and motorized vehicle enthusiasts such as motorcyclists and snowmobilers. Ownership and administration represent a full range of interests--Federal, State, and local governments, quasi-public organizations, and the private sector.

II. LEGISLATIVE MANDATE

The National Trails System Act of October 2, 1968 (Public Law 90-543), as amended, established the following mandate for a national system of trails:

"In order to provide for the ever-increasing outdoor recreation needs of an expanding population and in order to promote public access to, travel within, and enjoyment and appreciation of the open air, outdoor areas, and historic resources of the Nation, trails should be established (i) primarily, near the urban areas of the Nation, and (ii) secondarily, within scenic areas and along historic travel routes of the Nation, which are often more remotely located."

The intent of the Act is to provide the means for attaining the above-mentioned objectives by instituting a national system of trails and by prescribing the methods by which, and standards according to which, additional components may be added to the system.

III. NATIONAL TRAILS SYSTEM

The National Trails System is composed of four types of trails: national recreation trails, national scenic trails, national historic trails, and connecting or side trails. National recreation trails provide for numerous outdoor recreation activities in a variety of urban, rural, and remote areas. They may be designated by the Secretary of the Interior or by the Secretary of Agriculture where lands administered by that agency are involved.



National scenic trails, like the Appalachian Trail and the Pacific Crest Trail, are long-distance trails that provide for maximum outdoor recreational pursuits and for the protection and enjoyment of nationally significant scenic, historic, natural, or cultural

features and qualities. In addition to the aforementioned trails, the Ice Age Trail, North Country Trail, and the Continental Divide Trail have been designated as national scenic trails with designated mileage totalling 11,800 miles. National historic trails include the Oregon Trail, Lewis and Clark Trail, Mormon Pioneer Trail, Iditarod Trail, and the Overmountain Victory Trail. They are extended trails that provide identification and protection of the historic route and its historic remnants and artifacts as well as provide for public use and enjoyment. Designated mileage for the national historic trails totals 9,200 miles. National scenic trails and national historic trails are designated only by the Congress. Side trails provide additional points of public access to national recreation, national scenic or national historic trails, while connecting trails provide connections between such trails.

The Department of the Interior and the Department of Agriculture cooperate in the administration of the National Trails System. The Secretary of Agriculture has delegated the responsibility for national recreation trails on land administered by that agency to the Forest Service. The National Park Service is responsible for the overall administration of the national recreation trails program on all other lands, including non-Federal.

The National Trails System Act directed the Secretaries of the Interior and Agriculture to encourage States and local governments, as well as private interests, to establish trails on lands in or near urban areas and directed the Secretary of Housing and Urban Development to encourage the planning of recreation trails in connection with urban recreation and transportation planning.

IV. BACKGROUND

Nationwide surveys of year-round recreation activities have revealed that an overwhelming majority of Americans engage in some form of trail-related outdoor recreation activity. Bicycling, walking or jogging/running for pleasure, hiking, backpacking, and horseback riding accounted for a considerable portion of the total summer recreation participation.

In the last decade, bicycling, jogging/running, and walking have gained millions of enthusiasts. Many communities have been presented with both the benefits and problems of trails activities which demand attention because of either overburdened or too few trail facilities.

Another trail-related boom occurred with the motorized recreational vehicles such as motorcycles, mopeds, trail bikes, snowmobiles, dune buggies, and all-terrain vehicles. Proper trail planning and development is essential in providing suitable areas for such motorized vehicles while avoiding the user-related conflicts and resource impacts now present in many areas.



7. CRITERIA

An interagency task force developed, and the Secretaries of the Interior and Agriculture adopted, the following criteria supplementary to those in the National Trails System Act for national recreation trails:

Readiness

A trail must be ready for public use before it can be designated as a national recreation trail.

Availability

A national recreation trail can be in or reasonably accessible to urban areas, or within existing Federal and State parks, forests, or other recreation areas. "Reasonably accessible" is interpreted to mean available for day use or within approximately 2 hours travel of urban areas.

Length

National recreation trail length may vary depending on use and purpose, but it must be continuous. It may be short, perhaps one-half mile in length (example: wheelchair trails for the handicapped, trails for the blind), or it may extend many miles and incorporate urban-rural characteristics (example: canal towpaths).

Location

Wherever possible, the significant natural and cultural features of the surrounding area should be incorporated into the trail network. A national recreation trail may be located on land or water as long as the trail reasonably provides

for public safety. Examples of possible trail locations are: streams or stream valleys and their flood plains; utility rights-of-way such as natural gas lines and power lines; abandoned railroad or other rail rights-of-way; easements for underground cables; areas around reservoirs, irrigation or transportation canals; or along levees and flood dikes.

Design and Use

A national recreation trail must be designed according to accepted design and construction standards commensurate with the type of use anticipated. A trail may be designed solely for hikers, horseback riders, bicyclists, or motorcycle riders or, where practicable, for a combination of uses. Special provisions may be made for use by the handicapped.

Certification

Before a trail is designated as a national recreation trail, the agency administering the trail must certify that the trail will be available for public use for at least 10 consecutive years following designation. Supporting documents such as property titles, leases, or easement agreements must also be finalized and included as part of the application.

Following the required 10-year period, the trail may be recertified in perpetuity if the applicant/administering agency so requests in writing.

Management/Administration

The trail administrator must submit trail management information covering such items as fire protection, maintenance, police surveillance, rules and regulations, and other related matters. Although a trail's primary purpose should be for recreational use, other uses, such as power lines, sheep driveways, logging road operations, etc., may be permitted if they do not substantially interfere with the nature and purpose of the trail.

National recreation trails and related facilities are open to all who respect the trail rules and regulations. A reasonable user fee may be charged.

VI. APPLICATION PROCESS

The governmental unit or private organization which owns or administers the land and water on which the trail is located is responsible for submitting an application for national recreation trail designation. However, this does not preclude another agency or organization from maintaining or operating the trail.

Except for applications from the Forest Service and the land managing agencies of the Department of the Interior, applications for national recreation trail designation must be submitted to the regional office of the National Park Service (NPS) serving the trail locale. A sample application format and a list of NPS regional office addresses and their jurisdictions are included in the back of this booklet.

Interior's land managing agencies (Bureau of Land Management, Fish and Wildlife Service, Bureau of Indian Affairs, and National Park Service) and the Forest Service process trail applications through their respective offices.

However, the National Park Service provides technical assistance to any agency desiring to designate a national recreation trail on its lands or waters. The Service also maintains the nationwide inventory of NRTs.

National recreation trail applications are reviewed by the NPS national recreation trails coordinators in the regional offices and the Washington Office to ensure that the trails meet the established criteria. In addition, the NPS regional trails coordinator provides the appropriate State Liaison Officer with a copy of the application for review and comment.



If a trail application is in order, the regional office is encouraged to conduct an on-site inspection with the applicant and appropriate governmental representatives. If the trail is eligible for inclusion in the National Trails System, the Service recommends that favorable action be taken by the Secretary of the Interior.

When the application is approved by the Secretary, a letter and certificate are prepared indicating that the trail has been designated as a component of the National Trails System. A trail dedication ceremony is usually planned by the trail's administrator.

If the trail does not meet the criteria, the applicant is informed and allowed time for correction of the deficiency. If the deficiency is not corrected within a specified period of time, the application is returned.

Each national recreation trail may be marked with the national recreation trail symbol. An illustration of the symbol, which has been registered with the U.S. Patent Office, is shown on the next page.



UNIFORM MARKER FOR
NATIONAL RECREATION TRAIL

11. CONGRESSIONAL AND STATE NOTIFICATIONS

When national recreation trails are designated, Congressional members and State Liaison Officers are notified by the respective agencies. Subsequently, the designation information is released to the media.

SAMPLE APPLICATION FORMAT FOR
NATIONAL RECREATION TRAIL DESIGNATION

I. Name of Trail

II. Agency or Organization Responsible For:

1. Submitting Application
2. Operation and Maintenance

III. Location

1. Attach maps of the approximate scale, showing the general location of the trail route and its proximity to urban areas.
2. Describe where the trail is in relation to urban areas and give the population within a 2-hour driving distance of the trail.

IV. Description

1. Indicate whether the trail is a single segment or a portion of a larger trails system or network.
2. Give length of trail to be designated.
3. Describe the trail and related features, including such items as vegetation, terrain, recreation facilities, significant natural and cultural features, environmental intrusions, etc.
4. Describe ownership of the trail right-of-way. If under lease, give tenure and any special terms of the lease. Include a copy of property title, lease, or easement agreement when appropriate. (Note: The trail must be in existence and available for public use for at least 10 consecutive years following designation).

5. Briefly describe the design and construction standards of the trail (e.g., width of the right-of-way, tread width and surface, safety features, etc.)

V. Use

Discuss the types of recreational and nonrecreational uses within the trail right-of-way and any possible changes in use.

VI. Administration and Management

1. Indicate if a user fee is charged and, if so, state the amount of the fee.
2. Describe the management scheme for the trail (e.g., maintenance, fire protection, police surveillance, rules and regulations, etc.).
3. Discuss existing or potential problems, including probable solutions.

VII. Other

Include a sampling of photographs depicting the trail and its use. (Black and white 8" x 10" photographs are preferred).



VIII. Certification

Include the following statement:

I hereby certify that: (1) I am duly authorized to represent the agency or organization noted below, and (2) the trail is in existence and will be available for public use for at least 10 consecutive years beyond the date it is designated as a component of the National Trails System.

Applicant
(Agency) _____

By _____
Signature Title

Address _____

Date _____

East Bay Regional Park District

OPTION TO PURCHASE RECREATIONAL TRAIL EASEMENT

19____, between _____,
("GRANTOR") and EAST BAY REGIONAL PARK DISTRICT ("PARKS").

1. OPTION TO PURCHASE. For payment of \$100.00, GRANTOR grants to PARKS the option to purchase the recreational trail easement described in the attached Exhibit "A".

2. OPTION PERIOD. The option shall be exercisable by PARKS by written notice mailed to GRANTOR at the address below, before 5:00 P.M. on _____, 19____.

3. PURCHASE PRICE. The total purchase price shall be \$_____
IN CASH AT CLOSE OF ESCROW (includes option payment).

4. TITLE. Title to the trail easement shall be conveyed to PARKS at close of escrow free and clear of all liens, restrictions, rights and conditions of record, other than current taxes, public utility easements and those encumbrances acceptable to PARKS.

5. ESCROW; TITLE INSURANCE; PRORATIONS

(a) Escrow. In the event this option is exercised, an escrow shall be opened with _____

Escrow shall close within sixty (60) days from the date of exercise of this option.

(b) Costs and Prorations. All costs of escrow (including costs of reconveyances) shall be paid by PARKS.

(c) The Grant of Recreational Trail Easement shall be in the form set forth in the attached Exhibit "A".

GRANTOR

GRANTOR

ADDRESS: _____

EAST BAY REGIONAL PARK DISTRICT
a Public Agency

By _____ President

Date _____

11500 Skyline Boulevard
Oakland, CA 94619

Recording Request By:

When Recorded Mail To:

GRANT OF RECREATIONAL TRAIL EASEMENT

the owner(s) of the real property described below, hereinafter called "Grantor", for a good and valuable consideration paid by the EAST BAY REGIONAL PARK DISTRICT, a California Special District, hereinafter called "District", hereby grants to District an easement and right of way to enter upon and traverse the land hereinafter described, for the purpose of constructing, operating, and maintaining a recreational trail to be used by the general public for hiking, bicycling and equestrian use. Said easement to include, but not limited to, the right to construct and maintain fences and gates or other controls structures along the route of said easement, but shall exclude the use of motorized vehicles except as may be required in the original construction, and from time to time thereafter to police, inspect and maintain the trail.

Such easement shall cover the following described lands:

FOR DESCRIPTION, SEE EXHIBIT "B" ATTACHED HERETO.

IN WITNESS WHEREOF, Grantor has executed this instrument this _____
day of _____, 19__.

USFS/PCT Easement

I - B - 2

Leave 2.1/2 inches blank at top, Required by County Recorder's.

EASEMENT DEED FOR A TRAIL

THIS EASEMENT, dated this _____ day of _____, 19____,
from _____
County of _____, State of _____,
hereinafter called "Grantor" to the United States of America, hereinafter
called "Grantee".

WITNESSETH:

Grantor for and in consideration of _____,
received by Grantor does hereby grant to Grantee and its assigns, an exclusive
easement for (a trail)(trails) over and across the following described lands in
the County of _____, State of _____.

T. _____ N., R. _____ E., M.D.M.

Section _____, _____;
Section _____, _____.

The exclusive easement hereby granted is for the construction, reconstruction,
maintenance and full, free and quiet use and enjoyment of (a trail)(trails)
over and across the above described premises according to the following
(general course and distance) (course and distances) (centerline description)
(Exhibit "A" attached hereto and made a part hereof):

(INSERT OR ATTACH DESCRIPTION)

Date The width of easement(s) shall be _____ feet, _____ feet on each side of the
centerline(s), or more if necessary to accommodate cuts and fills. The
boundary lines of easement(s) shall be prolonged or shortened to begin and end
on, and conform to, the property lines of the above described lands.

The acquiring agency is the Forest Service, United States Department of
Agriculture.

The Grantor may use any trail on this easement as provided by Federal and State
laws, rules, and regulations.

(RESERVATIONS)

() Insert appropriate wording.

10/86

Correct as to consideration, description and conditions.

Forest Supervisor

If the Regional Forester determines that (this)(these) trail easement(s), or any segment(s) thereof, (is)(are) no longer needed, the trail easement(s) traversed thereby shall terminate. The termination shall be evidenced by a statement in recordable form furnished by the Regional Forester to the Grantor or successors or assigns in interest.

IN WITNESS WHEREOF, Grantor has executed this Easement Deed on the day and year first above written.

(APPROPRIATE ACKNOWLEDGEMENT)

Note: The first paragraph will always state "herein called Grantor" in the singular even if multiple Grantors. The use of the singular is acceptable for multiple Grantors as it is indicated that collectively they will be referred to as "Grantor". This avoids the necessity of changing later references in Deed to either singular or plural.

Rails to Trails Conservancy

Model Adjacent Owner Easement

EASEMENT

THIS EASEMENT made this 28th day of January, 1987, by and between LA SALLE NATIONAL BANK as Trustee under Trust Agreement dated October 8, 1971 and known as Trust No. 43123 (hereinafter "LA SALLE") and the COUNTY OF DU PAGE, a body corporate and politic created and existing under and by virtue of the Laws of the State of Illinois (hereinafter "COUNTY").

W I T N E S S E T H

WHEREAS, the COUNTY has acquired the former right-of-way of the Chicago, Aurora and Elgin Railroad which is now referred to as the DuPage Parkway (hereinafter "PARKWAY"); and

WHEREAS, the PARKWAY is used by the COUNTY as a transportation and recreation corridor, namely a foot and bicycle path; and

WHEREAS, the COUNTY is always desirous of enhancing the utility, availability, accessibility and scope of the PARKWAY; and

WHEREAS, LA SALLE believes that it is the owner, in fee simple, of certain real estate situated in Naperville Township in the County of DuPage, State of Illinois that is directly adjacent to various portions of the PARKWAY; and

WHEREAS, the COUNTY desires to obtain an easement from LA SALLE over said property in Naperville Township that is adjacent to the PARKWAY for the purpose of establishing, operating and maintaining in perpetuity a transportation corridor for recreational purposes, namely a path to be used for hiking, bicycling and/or horseback riding among other things.

NOW, THEREFORE, in consideration of the foregoing preambles, the mutual covenants contained herein and for ten (10) dollars and for other good and valuable consideration, the sufficiency of which is agreed to by the parties, LA SALLE hereby grants to COUNTY a non-exclusive perpetual easement over the following described property for the purpose of using said property as a transportation corridor for recreational purposes, namely a path to be used for

hiking, bicycling and/or horseback riding, among other things:

A strip of land 25 feet wide, located in Section 6, Township 38 North, Range 9 East of the Third Principal Meridian, the westerly line of said strip of land is described as follows: Commencing on the easterly line of the former Chicago, Aurora and Elgin Railroad right-of-way at its intersection with the northerly right-of-way line of the Illinois Toll Highway (I-5); thence northwesterly along said easterly line a distance of 1147.44 feet to the place of beginning; thence North 37° 1' 24" West a distance of 551.26 feet; thence North 1° 20' 30" East a distance of 179.6 feet; thence South 86° 18' 25" West a distance of 163.2 feet; thence North 37° 00' 09" West a distance of 797.01 feet to the southerly line of Bilter Road.

The foregoing grant of easement is made and expressly conditioned upon the COUNTY using the premises for only those purposes hereinbefore enumerated. The abandonment of said use for a period of more than two (2) years by the COUNTY shall cause the above described easement to terminate.

This grant is also made and expressly conditioned upon the COUNTY beginning the construction of the aforementioned path by November 30, 1987. Said path shall be completed within a reasonable time from the commencement of the construction. Failure by the COUNTY to begin path construction by November 30, 1987, or to complete the path within the above mentioned reasonable time shall cause the above described easement to be abandoned.

Further, COUNTY agrees to indemnify and hold LA SALLE, its beneficiary and their respective officers, partners, agents and employees harmless from and against any and all loss, cost, damage or expense (including reasonable attorneys fees and expenses) with respect to death or injury to persons or damage to property arising out of or in connection with the COUNTY'S construction and use of the premises as a hiking, biking and horseback riding path. Said indemnification and hold harmless shall not apply in those instances where death, injury or property damage is due to or caused by the negligence of LA SALLE, its beneficiary, officers, partners, agents and employees.

The covenants and agreements, herein contained, shall inure to the benefit of and be binding upon the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto set their hands and seals all as of the day and year first above written.

LA SALLE NATIONAL BANK,
not personally but as
Trustee as aforesaid

COUNTY OF DU PAGE

BY: 
Its: VICE PRESIDENT

BY: 
CHAIRMAN, COUNTY BOARD

ATTEST: 
Its: ASSISTANT SECRETARY

ATTEST: 
COUNTY CLERK

This instrument is executed by LaSALLE NATIONAL BANK, not personally but solely as Trustee, as aforesaid, in the exercise of the power and authority conferred upon and vested in it as such Trustee. All the terms, provisions, stipulations, covenants and conditions to be performed by LaSALLE NATIONAL BANK are undertaken by it solely as Trustee, as aforesaid, and not individually and all statements herein made are made on information and belief and are to be construed accordingly, and no personal liability shall be asserted or be enforceable against LaSALLE NATIONAL BANK by reason of any of the terms, provisions, stipulations, covenants and/or statements contained in this instrument.

LaSALLE NATIONAL BANK as trustee as aforesaid, and not personally, has executed the foregoing document at the direction of authorized parties for the sole purpose of binding the trust estate under said trust. No personal liability is assumed by or may be asserted hereunder against said Bank personally.

ORANGE COUNTY GENERAL PLAN

TRANSPORTATION
ELEMENT

MASTER PLAN OF
COUNTYWIDE
BIKEWAYS
COMPONENT



LAST REVISION

A. BACKGROUND

On March 16, 1971, the Board of Supervisors directed the Planning Department and the Road Department to "report....on (bicycle) trails and park areas across the County of Orange, including alternative modes of implementation, and a study of bicycle ways in urban areas of the County." A skeletal route system was developed through extensive coordination efforts with local jurisdictions, private developers and citizen committees. On September 29, 1971, the Board of Supervisors established a countywide plan for bikeways based on the feasibility study and the skeletal route system prepared by the Planning Department. In November, 1973, the Countywide Bikeways Element and related Map were designated as a component of the Recreation Element of the General Plan. Although the proposed Countywide Bikeways Element was supposed to address the transportation aspect of bicycle travel, primary emphasis was on the development of recreation-oriented trails.

Since the writing of the initial Countywide Bikeways Element, traffic congestion, air pollution and energy costs have become more serious problems, thus creating a more favorable condition which makes the bicycle a more practical alternative mode of transportation. This was reflected in the guidelines for regional bikeway funding programs (SB 821 and SB 244) which accorded priority to those projects which improved bicycle access to employment and commercial facilities as well as recreational areas. The Orange County Board of Supervisors established a similar policy emphasis on September 23, 1980, when the Master Plan of Countywide Bikeways was shifted from the Recreation Element to the Transportation Element of the General Plan.

If the bicycle is to reach its full potential as an alternative transportation mode for commuting, shopping, as well as for recreation, then a comprehensive planning effort is necessary. The Master Plan of Countywide Bikeways addresses the problems and issues involved in the planning, design and implementation of an integrated system of bicycle facilities.

B. PURPOSE OF THE MASTER PLAN OF COUNTYWIDE BIKEWAYS

The MPCB serves as the basis for developing a regional bikeway system which offers an alternative transportation mode for the residents of the County. Emphasis is placed on bicycle routes that work with other transportation modes (e.g., transit, carpool) to serve places of employment and commercial areas. Another purpose of the MPCB is to encourage the recreational aspects of bicycling, since it is the second most popular recreational activity in the County (as indicated in the 1979 Orange County Recreation Needs Study).

The Master Plan of Countywide Bikeways (MPCB) provides the policies and practices which help to define the role of bicycle travel within Orange County. The MPCB defines a network of bikeways which encompass a coordinated state and county regional bikeway system complemented by local (city) bike routes. The Master Plan of Countywide Bikeways supports General Plan policies and covers both the incorporated and unincorporated areas of Orange County. Coordination of the plan development and implementation process with Orange County cities is an important part of the process.

C. GOAL OF THE COUNTYWIDE BIKEWAYS COMPONENT

The goal of the Countywide Bikeways Component of the Transportation Element is:

TO DEVELOP AND IMPLEMENT A COMPREHENSIVE BIKEWAY PLAN THAT MAXIMIZES THE OPPORTUNITIES FOR NON-MOTORIZED VEHICLE TRANSPORTATION AND MEETS THE RECREATION NEEDS OF THE CITIZENS OF ORANGE COUNTY.

D. POLICIES OF THE COUNTYWIDE BIKEWAYS COMPONENT

The determination and implementation of basic policies are a key part of the planning process. This section defines and describes five major bikeway policies that guide the implementation of this Component of the Transportation Element. These bikeway policies provide the link between General Plan goals and policies of those programs designed to accomplish transportation objectives. Policies and programs established in other elements of the General Plan also contribute to achieving bikeway policies.

It is a policy of the County of Orange:

1. Transportation/Recreation Policy

To develop a bikeway network which provides non-motorized alternatives for travel as well as recreational opportunities.

Policy Implementation Practices and Programs

- o Through the subdivision process, design bike routes to connect residential areas with major activity centers (employment, educational, civic) by requiring the dedication of right-of-way and construction of designated countywide bikeways as conditions of development.
- o Plan bike routes to provide access to recreational areas such as regional parks, beach areas, and major tourist commercial/recreational facilities (Disneyland, Knotts, etc.).
- o Plan a bikeway network to interface with other modes of transportation (e.g., transfer stations and park-n-ride lots) in order to encourage and support the use of bicycling and reduce the use of motor vehicles.
- o When determining bike trail alignments, encourage the development of scenic vista points and rest areas where feasible and appropriate.

2. Safety and Convenience Policy

To develop a bikeway network which maximizes the safety and convenience of users of that system.

Policy Implementation Practices and Programs:

- o Design and construct bikeways in accordance with Caltrans and County standards in order to minimize potential conflict with pedestrians and motor vehicles.
- o Wherever possible, design one-way bike paths thereby minimizing conflict at intersections and reducing the hazard of bicyclists traveling against traffic.
- o When reviewing site plans for major activity centers, encourage the provision of bike racks, showers, lockers and other storage facilities at destinations, where practical and economically feasible.

3. Intergovernmental Coordination Policy

To promote coordination between the County, its cities, and other appropriate agencies in providing an integrated bikeway system.

Policy Implementation Practices and Programs:

- o Through cooperative studies with cities, plan, develop and maintain a network of countywide trails in both incorporated and unincorporated areas.

4. MPCB Map Review Policy

Review and update the MPCB as needed in order to assure compatibility with the other elements of the County General Plan and city plans.

Policy Implementation Practices and Programs:

- o Revise the Countywide Bikeways Plan to reflect changing conditions as part of the Transportation Element Amendment.
- o Through the subdivision process and site plan review, evaluate proposed development projects for compatibility with the MPCB.

5. Funding Policy

To actively seek all available means of financing bikeways including state and federal grants.

Policy Implementation Practices and Programs:

- o In addition to seeking government funds (e.g., S.B. 821, Caltrans bike lane funds, County Road, Harbors, Beaches and Parks) and private grants, require developers to provide bikeways within their projects as conditions of approval.

E. PLAN CONCEPTS

The map depicting the Master Plan of Countywide Bikeways indicates the general location and classification of all existing and proposed regional bikeways in Orange County. (Appendix D)

A description of each facility type and its design standards follows. The discussion on design standards is meant for planning purposes only. The Caltrans publication "Planning and Design Criteria for Bikeways in California" can be referenced for clarification and specific detail on design speeds, signing, striping and other related design issues. This document has been adopted by EMA for the design of bikeways. An EMA-adopted addendum to the Caltrans document can be found in Appendix B. Additional information can be found in the County's adopted Standard Plans and in Appendix C which provide basic guidelines regarding appropriate bikeway class designation.

Regional Bikeway System Characteristics

1. Class I Bikeway (Bike Path or Trail)

A bike path is a facility which is physically separated from the roadway and designated primarily for the use of bicycles, with crossflows by pedestrians and motorists minimized. Bike paths serve corridors not served by streets and highways or where there is sufficient right-of-way to construct a separate facility. They can provide both recreational opportunities or potentially commuter routes. These facilities often bridge gaps in the system caused by man-made or natural barriers. They often utilize abandoned railroad tracks, utility easements, river beds or parks.

Width

The minimum paved width of the two-way Class I Bikeways listed on the Master Plan of Countywide Bikeways should be 10 feet with a 2-foot wide graded area immediately adjacent to each side of the trail pavement (see Figure 1).

In instances where there is restricted right-of-way due to physical limitations, such as a narrow bridge or severe topography, an 8-foot wide bike path is permissible. In such instances the graded area adjacent to the bike path may be reduced from the required 2 feet.

2. Class II Bikeway (Bike Lanes)

A bike lane is a striped lane on the paved area of a road for preferential use of bicycles. It is usually located along the edge of the paved area outside the motor vehicle travel lanes or between a parking lane and the first motor vehicle travel lane. A bike lane delineates the right-of-way assigned to the bicyclists and motorists and provides for more predictable movements by each. A bike lane is identified by a "Bike Route" or "Bike Lane" sign, special lines, and "Bike Lane" stencils on the pavement. Bike lanes are one-way facilities.

Widths

A bike lane must be a minimum of 4 feet wide and should provide at least 3 feet between the traffic lane and the longitudinal joint at the concrete gutter, since the transition between the gutter and street may not be smooth (see Figure 2). On arterial highways without curbs and gutters a minimum of 4 feet is required.

Where parking is permitted, a minimum width of 12 feet is required to accommodate both the parking lane and the bike lane. The bike lanes must be at least 5 feet wide and located between the motor vehicle travel lane and the parking lane (see Figure 3). If bike lanes are to be located on one-way streets, they should be placed on the right side of the street minimizing left turn conflicts with motorists.

3. Class III (Bike Routes)

A bike route is a bicycle facility identified by "Bike Route" guide signing only. There are no special lane designations and bicycle traffic shares either the roadway with motor vehicles or the sidewalks with pedestrians, and, in either case, bicycle usage is secondary. Bike routes are established as a means to connect discontinuous segments of bikeways not served by Class I or II bikeways.

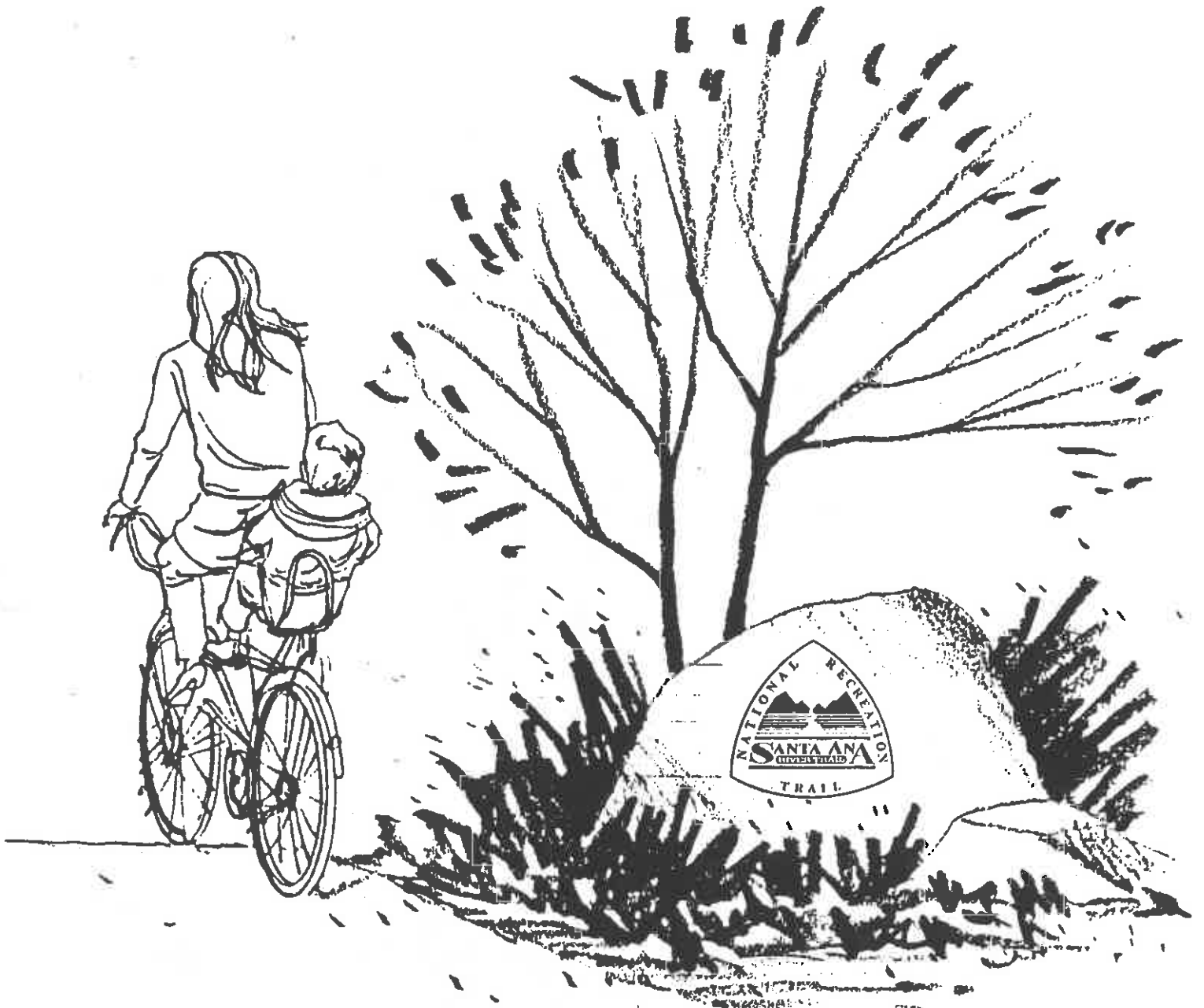
14.3 Sign Program

PREFERRED LOGO DESIGN



LOGO

SANTA ANA
RIVER TRAIL
EDAW 2-9-90



ELEVATION
3/4" = 1'

APPRDX. BOULDER SIZE:
4' L. x 3' W. x 4' H.

SANDBLASTED GRAPHICS
1/2" DEPTH. TINT W/
LITHACHROME

TRAIL I.D.

SANTA ANA
RIVER TRAIL



Agua Mansa
Regional Park

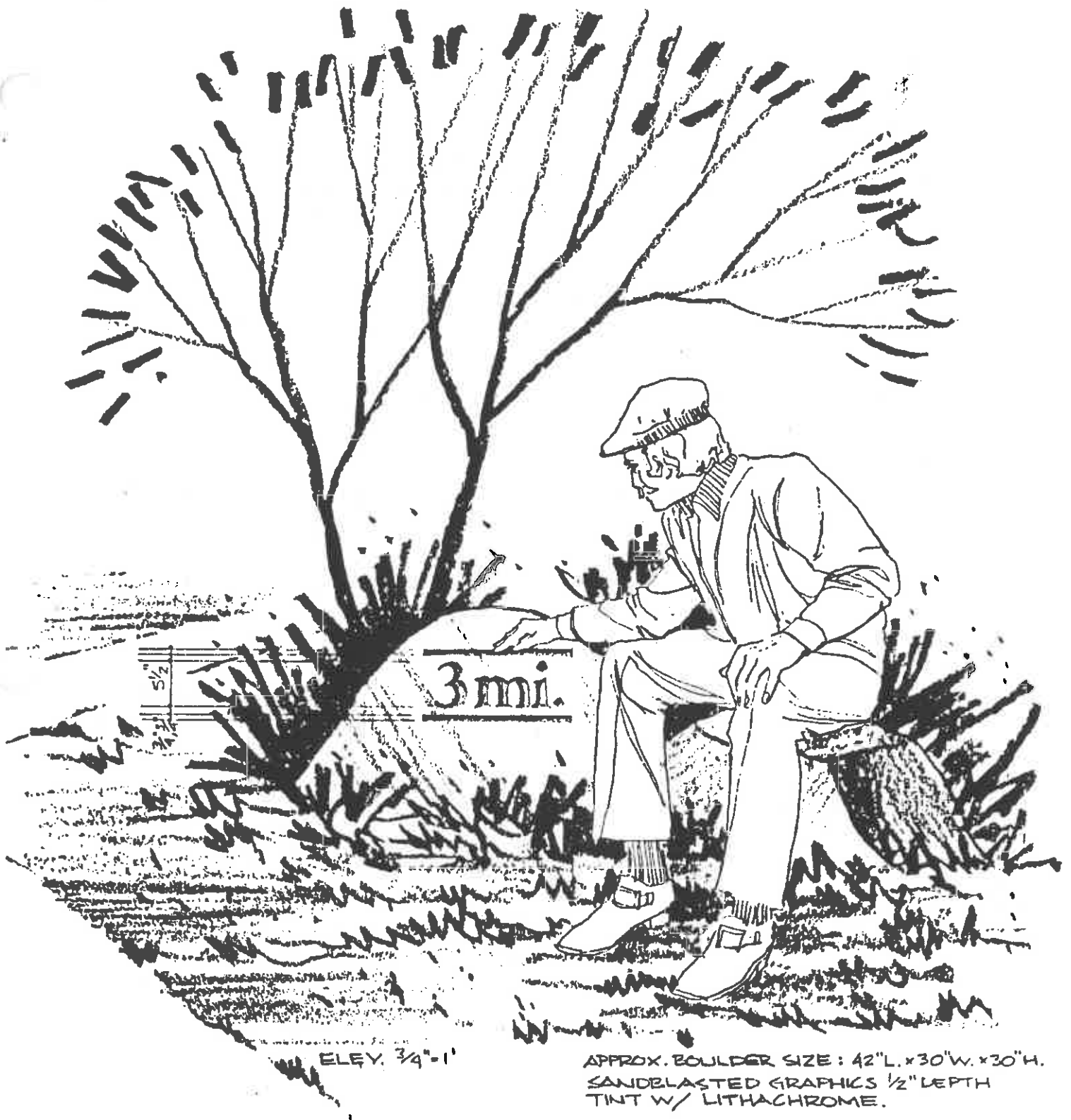
APPROX. BOULDER SIZE:
4' L. x 3' W. x 4' H.

ELEVATION $\frac{3}{4}$ " = 1'

SANDBLASTED GRAPHICS
 $\frac{1}{2}$ " DEPTH. TINT W/
LITHACHROME

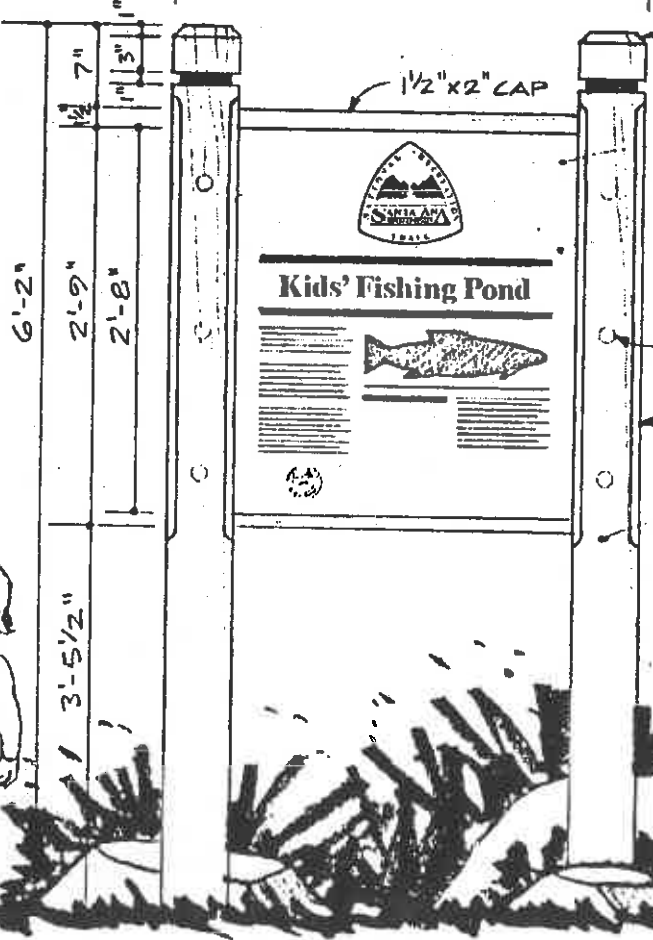
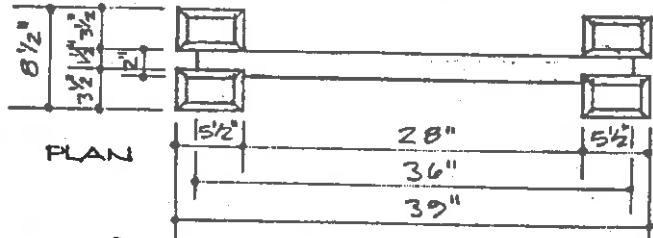
POINT OF INTEREST I.D.

SANTA ANA
RIVER TRAIL

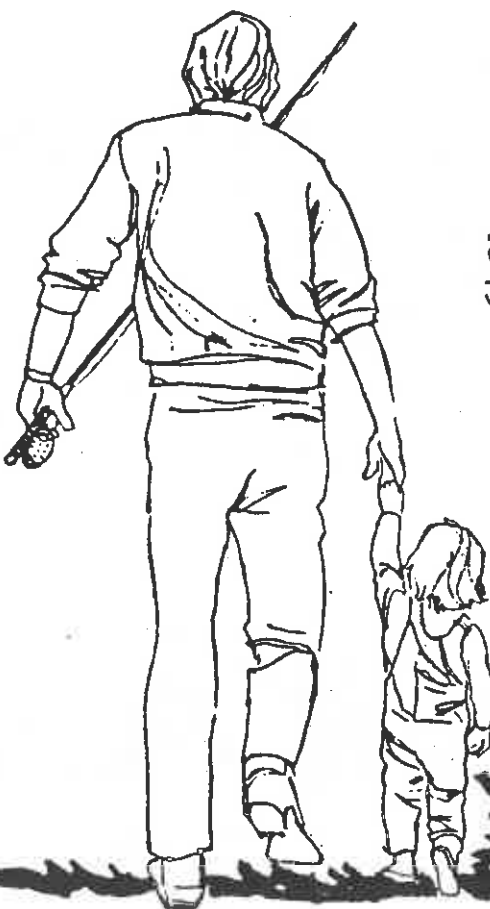


MILEAGE & ELEVATION MARKER

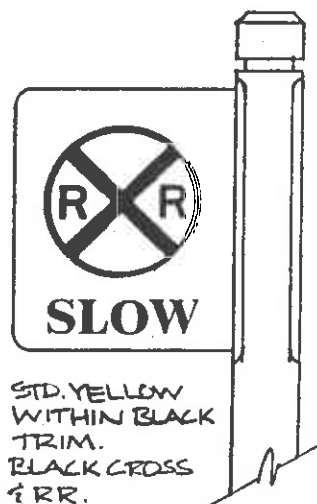
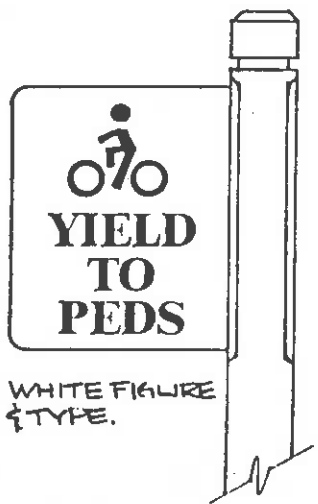
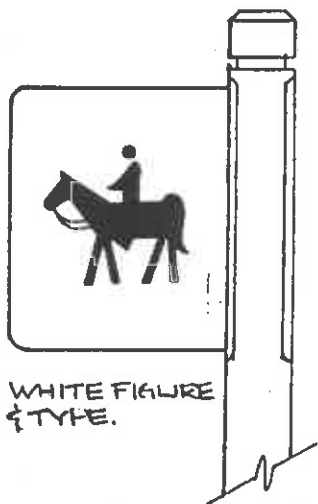
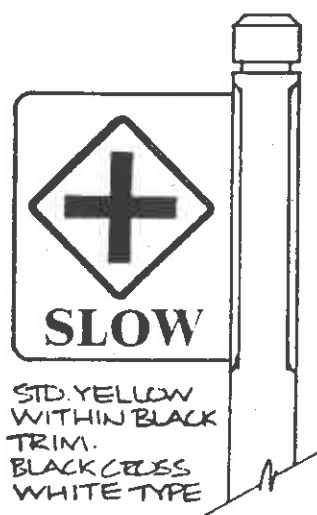
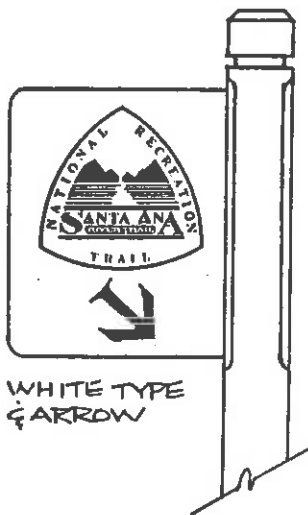
SANTA ANA
RIVER TRAIL
EDAW 2-9-90



- 1" x 45° CHAMFER
- 1/2" x 2" CAP
- 6-2x6s LAMINATED TO FORM 36" x 33" PANEL
- 32" x 28" TUFAX PANEL W/ SILKSCREENED GRAPHICS ON BACK.
- THRU BOLT C/SINK & PLUG, 12" O.C
- 1" x 45° CORNER CHAMFER, 3 CORNERS EACH 4x6
- DOUBLE 4x6 POST. STAIN MED. GRAY. MOUNT W/TIMBER ANCHOR & 30" x 12" φ CONC. FOOTINGS.



DESCRIPTIVE SIGNAGE
 SANTA ANA
 RIVER TRAIL
 EDAW 2-9-90

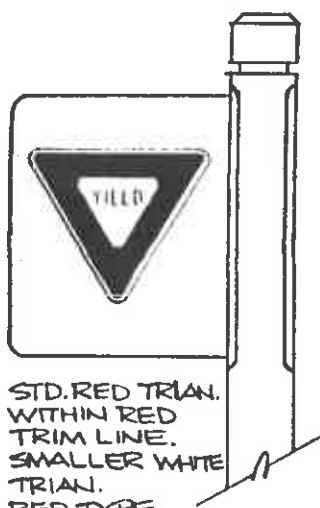
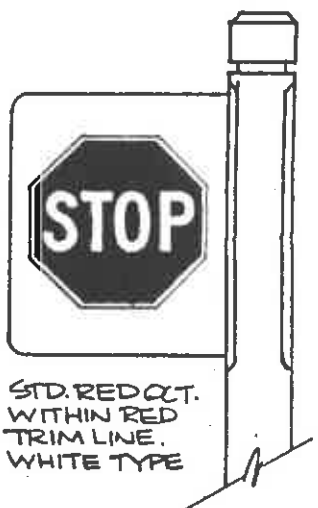


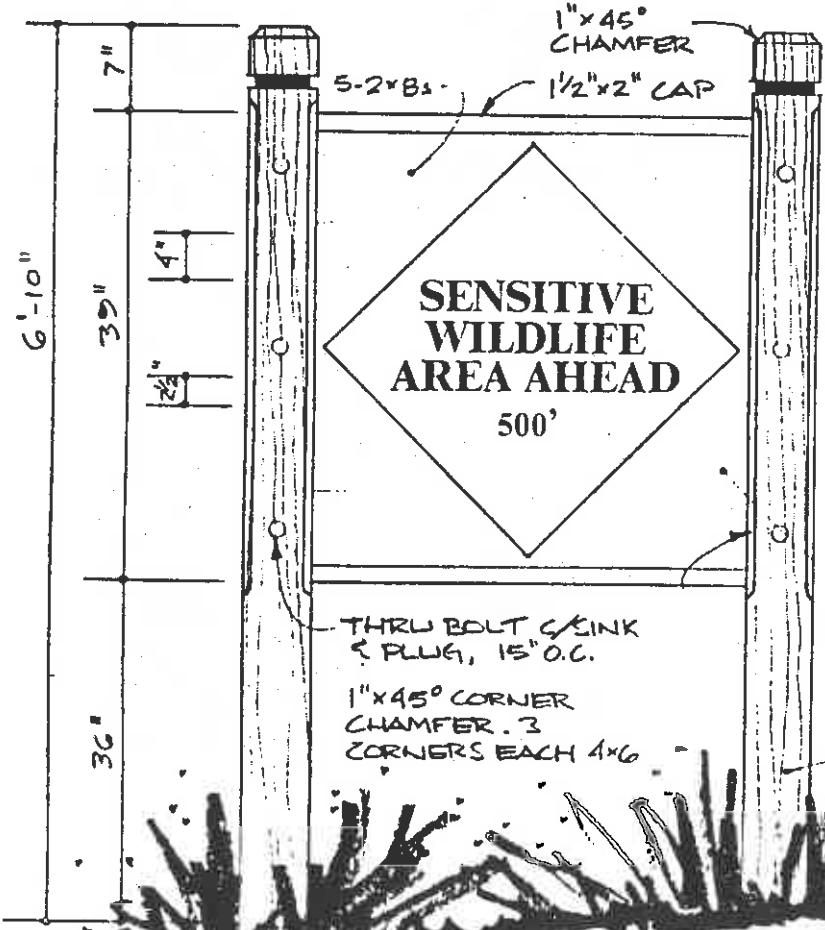
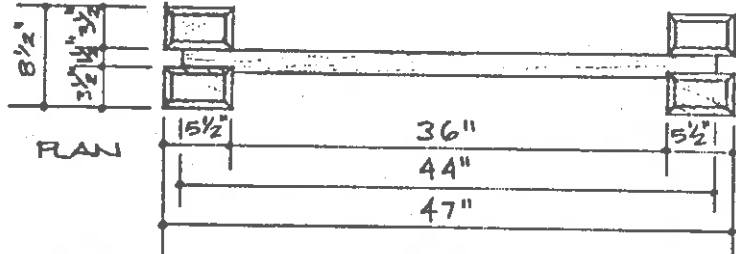
3/4" = 1'

NOTE:
ALL TRAIL SIGN PANELS TO BE CLEAR
18" x 24" TUFAC W/ SILKSCREENED
GRAPHICS ON BACK ATTACHED TO WOOD
PANELS.

TRAIL SIGN GRAPHICS

SANTA ANA
RIVER TRAIL
EDAW 2-9-90



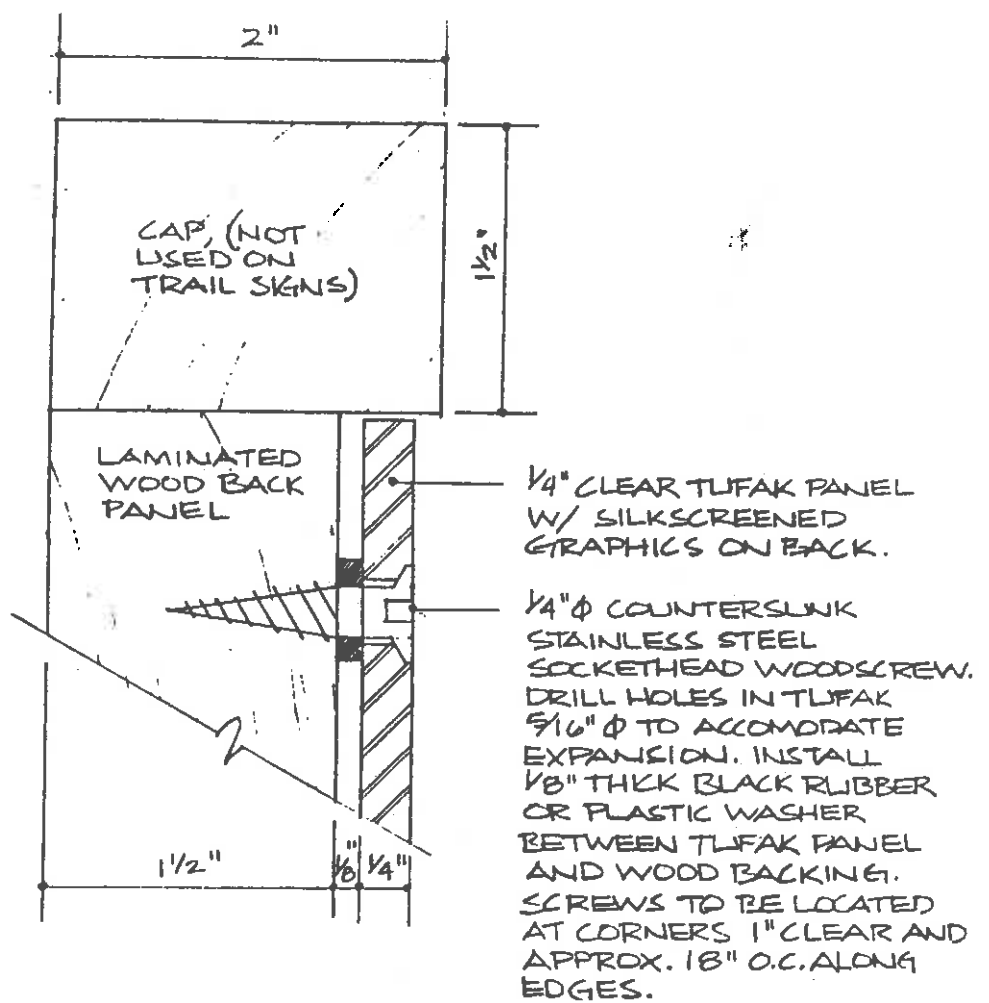


36" x 36" LEXAN PANEL W/ SILKSCREEN GRAPHICS ON BACK. "DAM AHEAD" - YELLOW DIAMOND W/ BLACK TYPE, TAKE OUT - RED DIAMOND W/ WHITE TYPE

DOUBLE 4x6 POST, STAIN MED. GRAY. MOUNT W/ TIMBER ANCHORS & 30" x 12" φ CONC. FOOTINGS.

ELEVATION 3/4" = 1'

TRAIL USER WARNING
SANTA ANA RIVER TRAIL
EDAW 2-9-90



PANEL MOUNTING

FULL SCALE

GENERAL NOTES

WOOD - 4x6s TO BE #2 AND BETTER S4S DOUG. FIR.
 2x6s TO BE #2 AND BETTER S4S HEM-FIR.
 2x4s TO BE STANDARD AND BETTER S4S HEM-FIR.

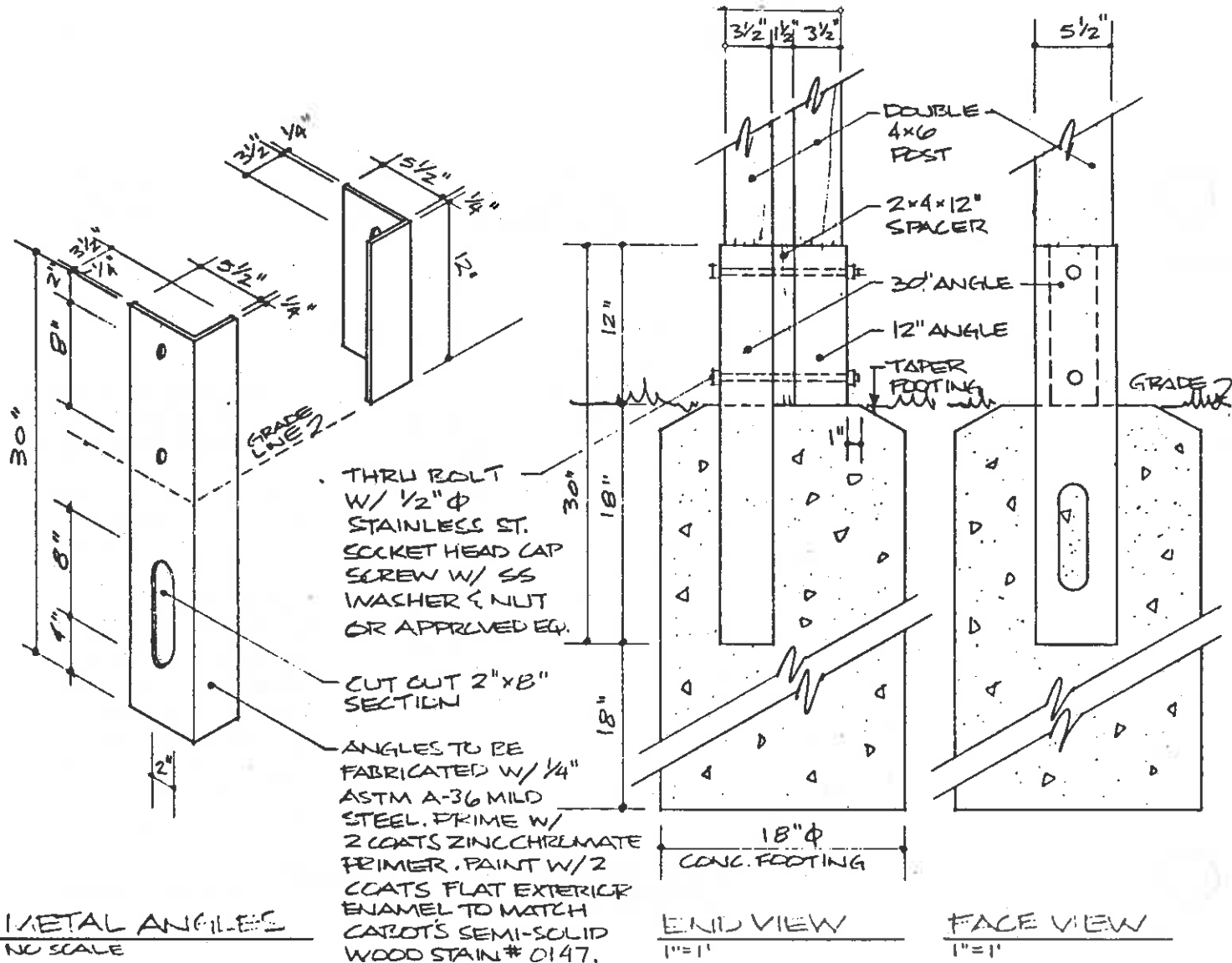
ALL WOOD TO BE SANDED SMOOTH AND STAINED W/ CABOT'S SEMI SOLID WOOD STAIN #0147.

SILKSCREEN INKS TO BE OPAQUE AND SUITABLE FOR EXTERIOR APPLICATION ON TUFAC. SEE ARTWORK AND PRINTING SPECS FOR COLOR INFORMATION.

CONTRACTOR TO SUBMIT COLOR SAMPLES FOR APPROVAL FOR ALL SILKSCREENED GRAPHICS AND WOOD STAIN.

GENERAL NOTES / PANEL MTG.

SANTA ANA
 RIVER TRAIL
 EDAW 2-9-90

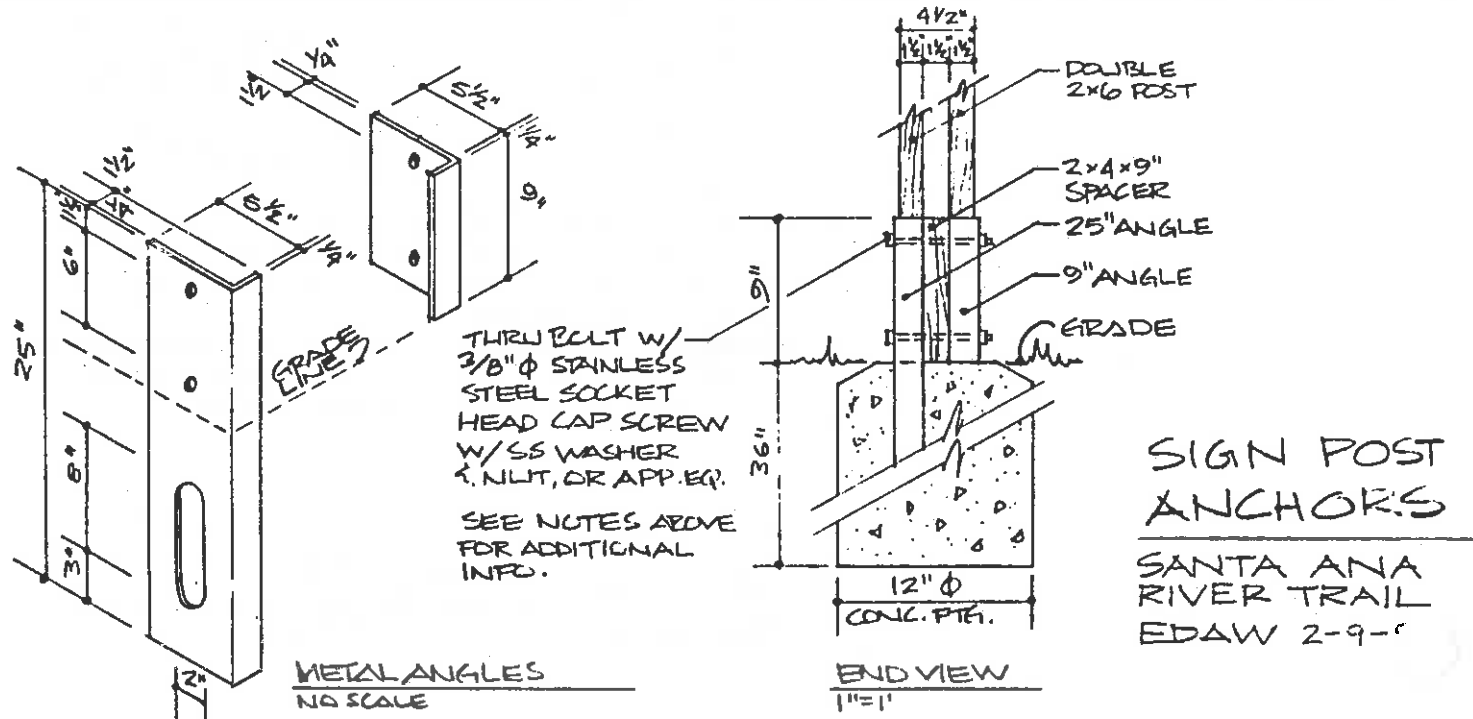


METAL ANGLES
NO SCALE

END VIEW
1"=1"

FACE VIEW
1"=1"

ANCHOR FOR DOUBLE 4x6 POST



METAL ANGLES
NO SCALE

END VIEW
1"=1"

SIGN POST ANCHORS

SANTA ANA RIVER TRAIL
EDAW 2-9-0

ANCHOR FOR DOUBLE 2x6 POST

**abcdefghijklmnop
opqrstuvwxyz**

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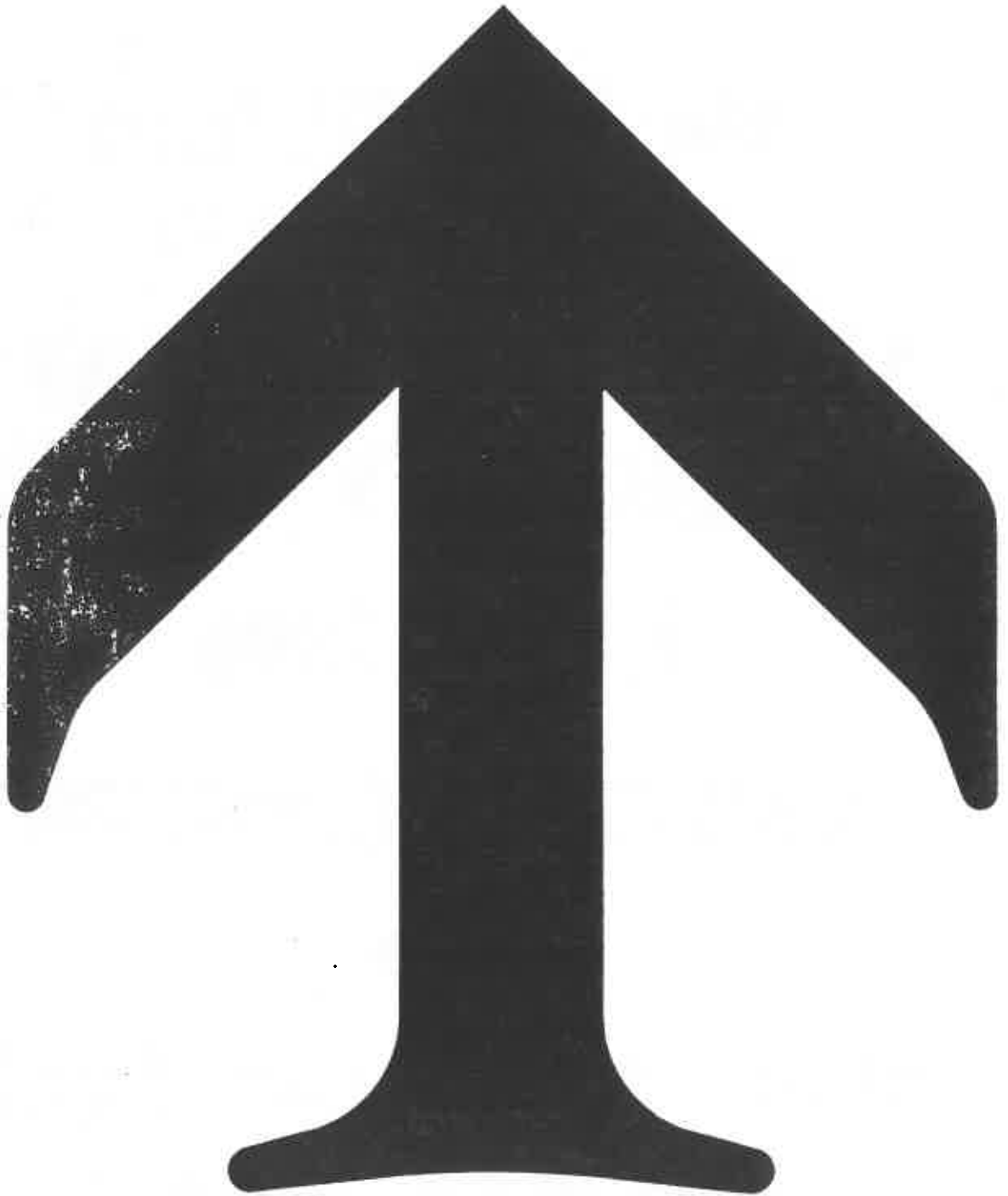


Santa Ana River Trail

**SANTA ANA
RIVER TRAIL**

TYPOGRAPHY

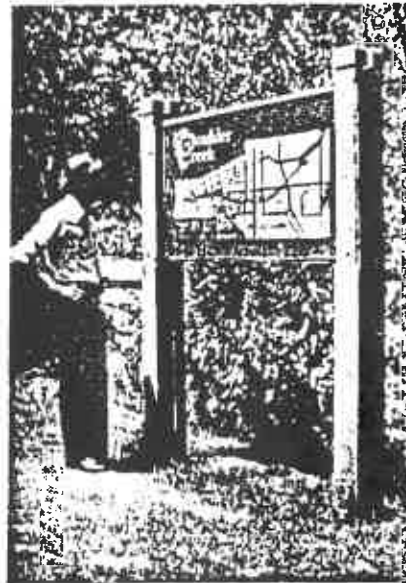
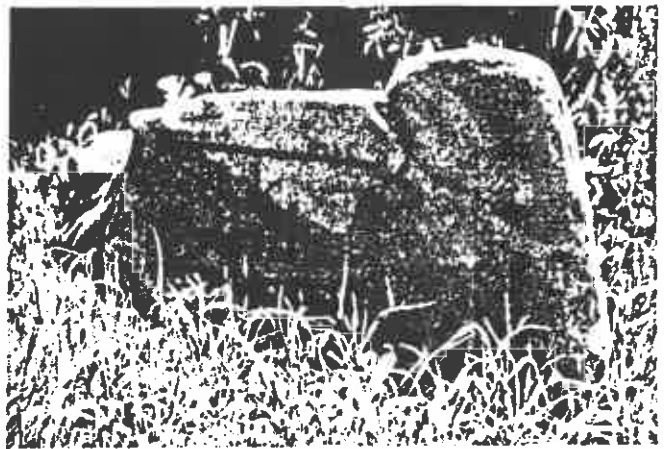
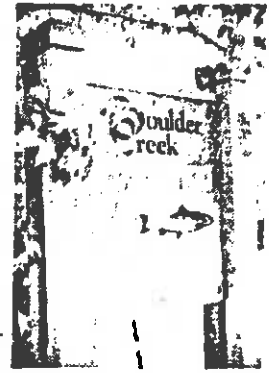
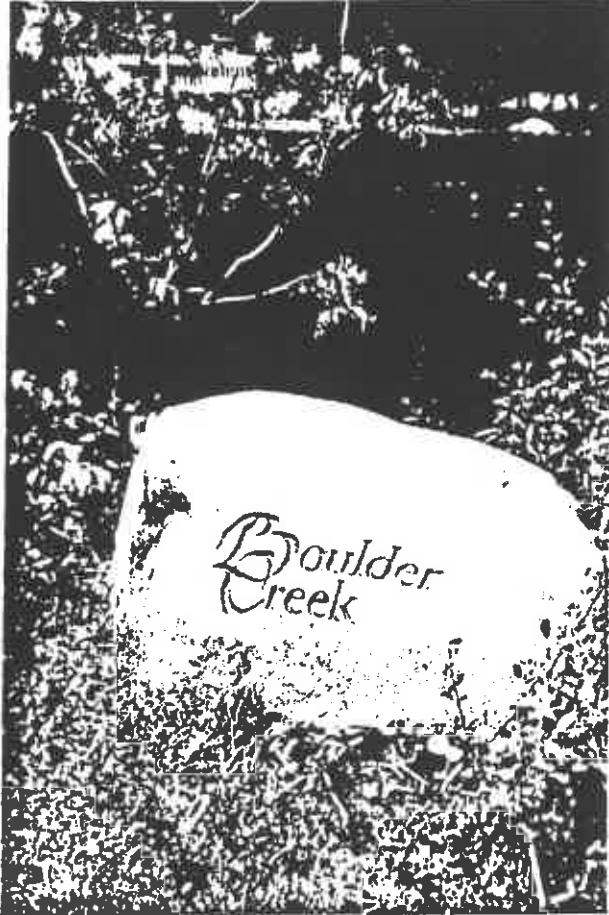
**SANTA ANA
RIVER TRAIL
EDAW 2-9-90**



DIRECTIONAL ARROW

SANTA ANA
RIVER TRAIL
EDAW 2-9-90

EXISTING
SIGNAGE PROGRAM
ON-SITE



COMPLETED INSTALLATION

Boulder Creek
Boulder, Colorado
EDAW

National Forest Service

Signage within the National Forest boundary will include USFS regulation sign design with the trail logo attached where applicable to identify the trail. Effort needs to be made to clearly identify this trail as being unique from other trails, such as the Pacific Crest Trail.

Trail signage should be included at the following locations and for the following uses: trail location, directional signs, trail facilities, mileage markers, elevation markers and trail begin/end signs.

A typical USFS sign design which would also include the trail logo design is found in chapter 12.0, Design Standards, in the National Forest section.

USDA - Forest Service

