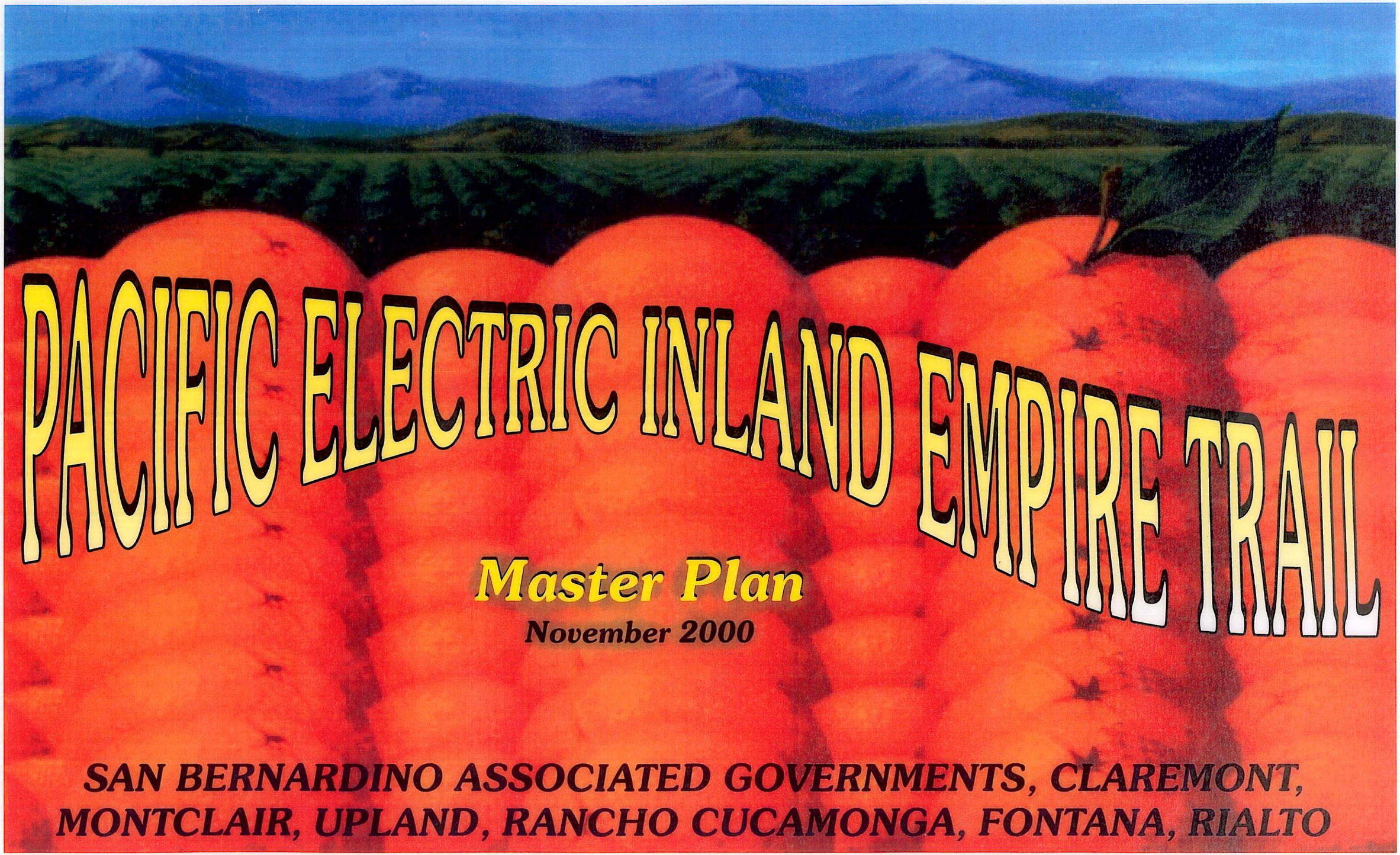
PACIFIC ELECTRIC INLAND EMPIRE TRAIL
Master Plan
November 2000
SAN BERNARDINO ASSOCIATED GOVERNMENTS, CLAREMONT,
MONTCLAIR, UPLAND, RANCHO CUCAMONGA, FONTANA, RIALTO

PACIFIC ELECTRIC INLAND EMPIRE TRAIL

Master Plan

November 2000

Prepared for: ***City of Claremont, City of Montclair, City of Upland, City of Rancho Cucamonga, City of Fontana, City of Rialto And San Bernardino Associated Governments.***

Prepared By: BOYLE Engineering Corporation *In Association with* alta *And* Lyon Caponong, Inc. LANDSCAPE ARCHITECTS

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Introduction

The City of Rancho Cucamonga, acting as the lead agency, has joined together with San Bernardino Associated Governments (SANBAG) and surrounding cities of Claremont, Montclair, Upland, Rancho Cucamonga, Fontana and Rialto, to develop a multi-purpose trail that would stretch from Claremont to Rialto. Boyle Engineering Corporation in association with ALTA Planning and Lyn Capouya, Inc. Landscape Architects was retained to develop this Master Plan for the Pacific Electric Inland Empire Trail.

The vision for the trail can be summarized in the following statement: To build a multi-purpose trail linking cities from Claremont to Rialto along the famous Pacific Electric Railway Line. To Create a trail opportunity for users to experience nature and enjoy exercise while exploring the history and culture of the area and to preserve the corridor for future transit needs.

The purpose of the trail is to provide recreational and alternative transportation opportunities for cyclists, pedestrians, runners, and equestrians. Trail users would enjoy exercise, convenient access to public facilities, and shopping while exploring the history and culture of the area. The participating cities, in conjunction with SANBAG, will be pursuing Federal, State and Local funding to build the trail.

The Pacific Electric Railway was once the world's largest interurban and street railway system, extending from Los Angeles to its outlying regions. The building of the railway through the Inland Empire was crucial to the development of the area, particularly to support the agricultural industry that fueled the local economy.

The Pacific Electric right-of-way runs east-west through the valley. The 21-mile long rail trail would begin in downtown Claremont and end in downtown Rialto. In 1991, the Pacific Electric Railway right-of-way was purchased from the Southern Pacific Railroad. The portion of right-of-way in San Bernardino County was assigned to SANBAG.

Under terms of the purchase agreement with Southern Pacific the railroad reserved the right to operate freight service over the active portions of the line. After the sale of the right-of-way and the transfer to SANBAG, Southern Pacific Railroad made two applications to discontinue use filings ending most freight service. Only the easternmost 2.3 miles of track on the line, in Rialto remain in active freight service

In 1991, SANBAG adopted a policy preserving the right-of-way for potential future transit use. In 1994, SANBAG adopted another policy allowing possible joint use of the right-of-way. Joint use is defined as bikeways or trials, flood control channels, pipelines and other utilities. The SANBAG policy clearly states that the primary use of the right-of-way is for rail transit purposes. However, SANBAG also states that the agency wishes to encourage compatible uses within the right-of-way which further public purposes and improve the quality of life.

To facilitate the preparation of the Master Plan, the Design Team assisted in forming and managing a technical advisory committee (Project Advisory Committee) comprised of representatives from Rancho Cucamonga, Claremont, Montclair, Upland, Fontana, Rialto, and SANBAG. The purpose of the committee was to provide input during the planning and conceptual process, and represent their local city's interests and perspectives.

The Project Advisory Committee met regularly to review progress and help guide the development of the Master Plan. One of the initial tasks of the Project Advisory Committee was to refine the "Vision Statement" for the project and to define goals and objectives for the Master Plan. The goals and objectives are summarized below:

Pacific Electric Inland Empire Trail Goals and Objectives

- Satisfy Funding Requirements
  Commuter Enhancements
  Recreation Opportunities
- Enhance Safety
  Street Crossings
  Visibility
- Comply with requirements of American with Disabilities Act (ADA)
- Enhance linkages to other facilities
  Trails
  Schools
  Parks
  Transit
  Activity Centers
- Enhance Orientation/Navigation
  Signage
  Trail Markers
  Benchmarks
- Celebrate History
- Maximize Quality and Benefit to Communities
- Minimize Maintenance Requirements
- Maintain 45' wide Reserve for future Rail Corridor

In addition to the Project Advisory Committee, input and feedback was obtained from the general public and potential trail users. Public participation in the planning process was facilitated through a User Survey/Questionnaire, Press Releases, an Internet Web Site and two Public Workshops.

The User Survey/Questionnaire had a total of 515 responses, 67 of these received electronically via the Internet Web Site. It also provided a unique perspective on how some people currently use the Pacific Electric Railway right-of-way and how prospective users would utilize the Pacific Electric Inland Empire Trail.

The Design Team also completed a Trail User Needs Analysis of existing and potential trail users in the area to ensure that the project meets the needs of all ages and abilities.

The Public Workshops were very successful in gathering public input. There was a tremendous amount of discussion by the attendees and "standing room only" at the second Workshop. Most potential user groups were represented and many valuable insights were gained helping guide the direction of the Master Plan.

Friends of the Pacific Electric Inland Empire Trail

A grass-roots organization has been formed called the Friends of the Pacific Electric Inland Empire Trail. The group's Mission Statement is "To promote, support and enhance the building of the Pacific Electric Inland Empire Trail." This type of effort is a tremendous benefit to the trail planning efforts. Trail projects with proven support are more likely to receive federal and state funding. The email address for The Friends of the Pacific Electric Inland Empire Trail is : Friends_of_PET@att.net

Master Plan Structure

This Master plan document begins with a description of the methodology used. Next is a summary of the existing conditions with an analysis. This is followed by design guidelines for the project and design alternatives. The alternatives evaluation and selection is followed by a cost analysis, financing options and a suggested phasing plan.

Master Plan Methodology

The Design Team used the following eight-phase methodology to prepare the Master Plan for the Pacific Electric Inland Empire Trail:

Phase	Description
1.	Base information and data collection
2.	Formation of a Project Advisory Committee to set policy and guide the project
3.	Development of Project Goals, Objectives and Design Guidelines
4.	Extensive inventory and analysis of existing conditions along the 21-mile Pacific Electric Railway right-of-way
5.	Development and screening of design alternatives for the Pacific Electric Inland Empire Trail
6.	Selection of a preferred alternative
7.	Implementation plan based on probable funding sources
8.	Preparation of the Master Plan

Each phase is described in greater detail below.

Phase One - Data Collection
Previous bikeway, pedestrian, and equestrian plans, other local and regional documents, such as the SANBAG Regional Bikeway Study and the Citrus Regional Trail Study, local bikeway and trail master plans, and right of way data have been gathered. These documents serve as important sources of baseline information, history, and starting points for this project. Building on and remaining consistent with the requirements and constraints from local general plans and other adopted plans ensure a quick start and rapid progress for this effort.

Phase Two - Project Advisory Committee
The Design Team assisted in forming and managing a Project Advisory Committee comprised of representatives from Rancho Cucamonga, Claremont, Montclair, Upland, Fontana, Rialto, and SANBAG. The purpose of the committee was to provide input during the planning and conceptual process, represent their local perspectives, and assist in building support for the final recommendation. The value of this committee was that it allowed early identification of obstacles, and served as a forum for identifying realistic solutions.

Phase Three - Project Goals, Objectives and Design Guidelines
The Design Team worked with staff and the Project Advisory Committee to develop consistent overall project goals and objectives building on existing documents. These were presented at Project Advisory Committee meetings for review and included:

Vision Statement, summarizing the overall goals and objectives of the project and vision of the completed system and future linkages to other multi-use trails in the region.

Objectives, or directions, are specific statements that help guide the planning and design of the project. They also help to evaluate alternative proposals to determine how closely they meet the project objectives. For example, one objective may be to "develop a system that minimizes conflicts with automobiles at unprotected crossings."

Design Guidelines and Operating Standards were developed based on established local, regional, state, and Federal standards and requirements. Standards were used as a framework for the planning and design process and ultimate institutional/administrative arrangement within the Corridor that will manage the future system. The standards addressed the following issues: trail design, trail width and surface options; trail crossings, traffic engineering, safety, security, connectivity access, operation and maintenance standards; easements and corridor aesthetics. Draft project guidelines, objectives and standards were submitted to the staff, Project Advisory Committee, and affected parties for review and comment.

Phase Four - Inventory and Analysis
An inventory of the existing Pacific Electric corridor was conducted in a six-tier process.

Tier one included meeting with representatives of the Project Advisory Committee and others (City and County staff) to discuss the corridor, street connections to property, potential parking and staging areas, structures presently on property, bicycle parking facilities and/or changing facilities in the vicinity of the trail, connections to transit, availability of automobile parking, location of sensitive areas, remnant parcels appropriate for beautification or enhancement, and existing maintenance roads and trails. The Design Team then conducted three field surveys, including photographing and recording of all observed relevant site conditions.

Tier two consisted of comparing our field notes, photographs, and drawings with the available maps, aerial photos, plat maps, and other documents to ensure that the base map accurately reflected existing conditions. Meeting with local planning, parks and recreation staff, and others, the Design Team assembled all relevant materials on planned and proposed recreational trails and parks.

Tier three was a synthesis of field data and printed data into base mapping using digitized aerial photographs and AutoCAD. Maps were produced showing the existing and proposed improvements along the Pacific Electric Railway Corridor. Opportunities and constraints were clearly identified as were the overlap and conflicts between various plans.

Pertinent information was mapped on large-scale color aerial photographs obtained from the municipalities along the corridor, the County of San Bernardino and Arrowhead Mapping, with annotation developed in AutoCAD version 14.

Tier four involved the conducting of public workshops. Two Public Workshops were held to inform people about the Master Plan effort and to solicit input and feedback. The first Workshop focused on a description of the Master Plan process and the existing conditions. The second Workshop was devoted to possible design alternatives for each component of the trail such as: trail design, trail location, fencing, site furnishings, and landscape.

Tier five involved a survey of Potential User Groups. The Design Team conducted a survey to determine the needs and concerns of people who were unable to attend the Project Advisory Committee meetings or Public Workshops. The Design Team also provided the Cities with a copy of the survey to be sent out to residents via inclusion in City mailings. This survey asked specific questions such as, "how often do you ride/walk?," "why don't you ride/walk more often?," "what are your chief concerns?," and "what types of improvements would you like to see?"

On the back of this survey was a map of the area: respondents were asked to mark down the routes they most often rode/walked, and to identify points of interest. The survey responses were compiled and discussed with the Project Advisory Committee. A summary of the responses is included in this Master Plan document.

In **Tier six**, the Design Team completed a needs analysis of existing and potential trail users in the area to ensure that the project meets the needs of all ages and abilities.

Phase Five - Alternative Trail Designs
While the alignment of the multi-use trail was confined to the Pacific Electric abandoned railroad corridor, there were still a variety of issues that resulted in the need to further evaluate design options. Constraints along the corridor required consideration of alternative alignments, plus a mechanism that could effectively evaluate each alternative and assist decision-makers. These constraints include numerous street crossings,; the potential need to replace the grade separations structure at Foothill Boulevard in Rancho Cucamonga and Fontana; objections from potential neighbors, security of the right-of-way, integration with other bikeways, potential future rail service, and environmentally sensitive areas.

Each alternative was developed to enough detail so that relevant environmental, cost, safety, and other items could be identified. A decision matrix with clearly described criteria was used to evaluate each alternative, with a final recommendation on the preferred conceptual alignment summarized and presented to the Project Advisory Committee (PAC).

A key ingredient to success was the multiple screening of alternatives with the PAC to isolate those alternatives that merited further review. Without this step, time and resources may have been wasted and the public could be unnecessarily confused. The screening effort focuses on fatal flaws, which may be in the form of environmental, cost, aesthetics, function, safety, or maintenance impacts. Out of this process the preferred alternative (possibly with sub-options) emerged, allowing the consultant team, staff, and the public to focus on one potential project.

The preferred alternative was screened according to the following evaluation criteria:

Aesthetics
An alternative may contain features that add to the experience of the trail user, such as attractive vegetation, decorative fencing, etc.

Historical Context
Design features of some alternatives include references to the rich history of the Pacific Electric right-of-way, and could include markers, kiosks, railroad equipment, gateways, and small interpretive areas.

Transit and Community Connections
Elements of some alternatives include connections to nearby transit centers and commercial areas such as central business districts, or major activity centers such as schools, colleges, and parks. This connectivity would be accomplished with signage and information kiosks.

Functionality/Efficiency
Trail users will resist using a facility that does not follow their general desire lines, or requires changes from a multi-use path to riding on busy streets. Functionality reflects both existing design standards and the facts of trail user needs, such as lighting, integration with pedestrian crossings, rest areas and information on distance traveled. It includes the need for access to the trail and to other nearby destinations, and the type of cross section provided to accommodate a variety of trail users and volumes.

Future Railroad Options
The anticipated population growth in the Inland Empire may provide the catalyst for reestablishment of rail service along the corridor. The proposed master plan should incorporate the applicable criteria and recommendations of the FHWA/FRA Federal Best Practices Study, as well as CPUC and SCRRA requirements, with particular attention paid to sections of the project anticipated to be 25 feet or closer to active or proposed rail lines.

Environmental Impacts
Pre-mitigate the project to the extent feasible, thereby considerably reducing the amount of work required by the EIR consultant.

Support Features
Design elements on some alternatives may include support features such as benches, bicycle parking, drinking fountains, changing facilities, and restrooms.

Cost
Cost of the alternative is always a critical component, especially where crossing improvements, fencing, or other expensive infrastructure improvements are being considered.

Trail Crossings
Alternative crossing options should be evaluated using traffic speed, visibility, and volume data. CALTRANS, AASHTO, TRB and other sources.

Safety and Security
Safety and security are key components for any pathway that has roadway crossings, on-street segments, and/or is located in an urban environment away from the public eye. A standardized methodology was used in reviewing accident data, police reports, crime statistics, and other data to make a determination on the relevant safety and security of each option, and strategies to address those concerns.

Consistency with Local Plans
The Design Team relied upon the experience of our team members, Alta Consulting, and managers of the San Bernardino County Regional Bikeway Master Plan to evaluate local bikeway and trail plans and policies and determine the compatibility/conflict with the proposed Pacific Electric Inland Empire Trail.

Multiple Use
The Pacific Electric Inland Empire Trail multi-purpose path may have multiple users which may impact its overall feasibility, especially from a required width and location perspective. Multiple users include bicyclists, equestrians, walkers, joggers, roller-bladers, maintenance vehicles, and/or security vehicles.

Evaluation and screening of the preferred concept was accomplished by constructing a decision-matrix that scored the concept by the criteria described above. A preferred concept was presented to the public for review and comment at the second public workshop.

Phase Six Selection of Preferred Alternative
The preferred alternative was developed using digitized aerial photo-base maps at a scale of 1" = 300'. The trail concept designs clearly show the trail alignment, crossings, and other details required for evaluation. Landscaping opportunities were addressed through the identification of typical materials and applications along the corridor, along with supporting narrative descriptions. (See landscape design)

The design team prepared an order-of-magnitude opinion of probable cost for the design, construction, and operation of the proposed facilities for the preferred alternative. Costs were broken down by each segment, discreet categories (such as fencing, paving, lighting, etc.), and responsibility. For example, segments that would be on-street rather than on the Pacific Electric right-of-way were segregated out so that local agencies responsible for implementing improvements would be able to budget their resources.

The Design Team then evaluated the Preferred Alternative in terms of anticipated environmental issues and regulations. Our team has completed numerous CEQA and NEPA environmental studies of multi-use path projects and knows exactly how to pre-mitigate a project, how to avoid sensitive areas, and how to anticipate concerns from agencies such as Caltrans. Except where endangered habitat is potentially impacted, most bike path projects are able to receive a mitigated negative declaration through the Initial Study format. This is especially true for pathways on abandoned railroad corridors and on-street bikeways, where the right-of-way has been degraded or already in use for transportation.

Phase Seven Implementation Plan
Funding is much more likely from all sources when it comes from a variety of local, State, Federal, public, and private sources.

The Design Team identified potential matching and major funding sources, compiled criteria and requirements, designed this study to serve as an appendix to the funding application, and related anticipated schedule of funding to the prioritized list of segments. Costs of the phased improvements were compared to funding needs, so that long-term programming for local matching funds can be accomplished. The Design Team explored funding options from public and private sources, contacting our network of funding specialists around the U.S. to determine the availability and requirements for grants.

A Phasing Plan was developed identifying the likely phasing of the project so that an accurate financing and funding strategy could be completed. Phasing of distinct segments was based on: (a) funding availability and requirements; (b) other programmed transportation improvements; (c) eliminating an immediate bottleneck or safety hazard; and (d) ensuring that the system grows rationally rather than as a series of disconnected pieces over time.

Phase Eight Prepare Master Plan Document
This Master Plan Document consists of all of the existing conditions and alternatives analysis materials developed previously, plus materials recorded in public workshops and an appendix of technical background data. The document contains a justification for the location of each major segment of the proposed bike path, especially when it leaves the right-of-way. In addition, the plan documents, in sufficient detail, outline the feasibility, cost, and timing, of implementing the preferred alignment.

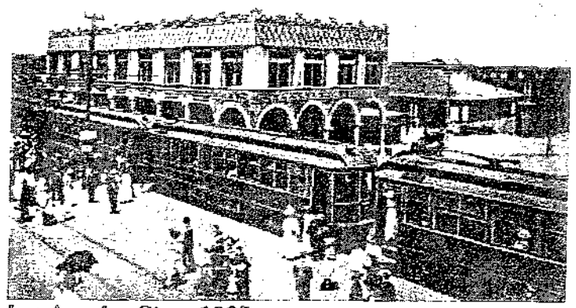
Existing Conditions

History of the Pacific Electric Railway
San Bernardino Line Baldwin Park Branch

The Beginning

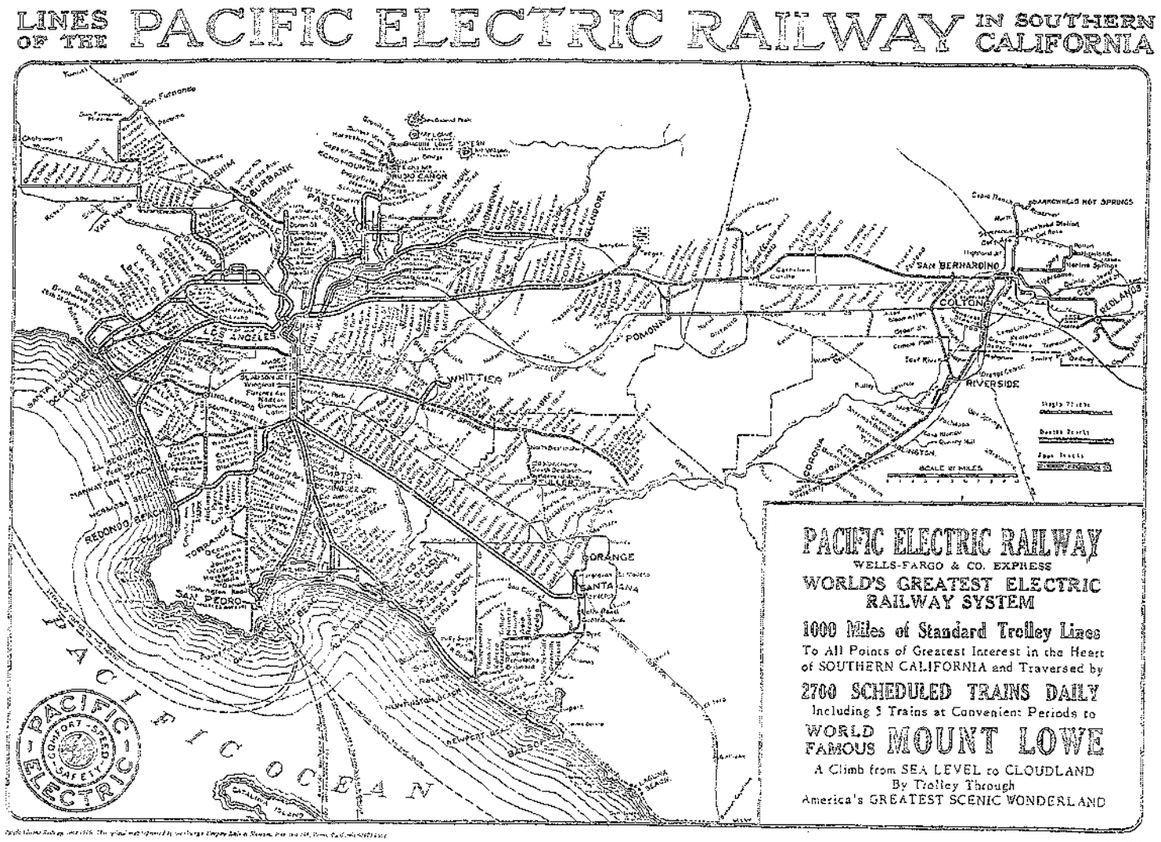
The Pacific Electric Railway Company dates back to 1899. Pacific Electric lines once stretched from Santa Monica to Newport Beach on the coast and east to Redlands and Riverside. The San Bernardino Line was Pacific Electric's longest line. It was unique in that it was the company's only 1200-volt electrified line and the line on which the system's highest average speeds were consistently maintained.

The San Bernardino Line, with its several branches, did more than any other line to give Pacific Electric the distinction of being classified as a true interurban operator. Stations on the San Bernardino Line, in order, were Claremont, Upland, Alta Loma, Etiwanda, Fontana and Rialto, where Riverside cars cut off running south via Bloomington to Riverside.



Los Angeles Circa 1905

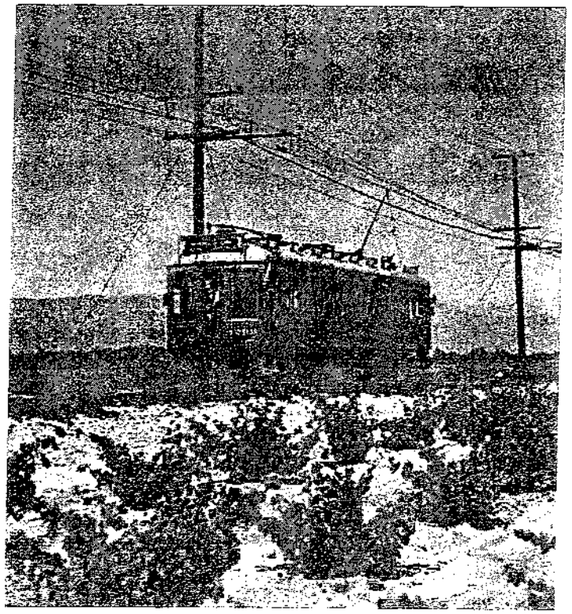
Construction of the San Bernardino Line began in 1906 and ultimately connected Pacific Electric's Northern District with lines of its Eastern District (San Bernardino, Redlands, and Riverside). Next came the construction of the Pomona-Claremont-Upland segment (built by the Ontario & San Antonio Heights Railway which Pacific Electric absorbed in 1912); this line opened for service on December 1, 1910.



Pacific Electric Railway 1926 Route Map

By about 1912, farmers north of the existing railway line were beginning to realize the need for a railway line closer to their farms and ranches. The farmers were hauling their fruit by horse and wagon to the packinghouse at Cucamonga and Upland, but it was a long, slow haul.

On April 11, 1912, a committee was elected to secure right-of-way for the Pacific Electric Railway Company north to the loamosa area (now northern Rancho Cucamonga). The committee consisted of Captain Peter Demens as Chairman, Dr. Reid, Ernest Goerlitz, C. F. Thorpe, Henry Albert, Frank A. Kelly, and Robert Wagner. They attended meetings in San Bernardino, Upland, and Etiwanda, and held many conferences with railroad officials in Los Angeles. The Pacific Electric Railway was already completed from Los Angeles to Upland. The next extension would be shorter, traveling straight through Cucamonga to San Bernardino. However, the committee was able to persuade the officials that a railway line was needed farther north.



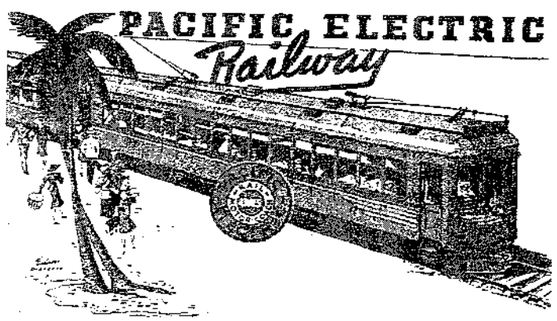
loamosa/Alta Loma area of Rancho Cucamonga

Money was needed to obtain this right-of-way, and the loamosa committee solicited funds from property owners on a per acre basis as follows: citrus orchards, $15.00; deciduous fruit and vineyards, $10.00; grain land, $5.00; mountain land $1.00. Ranchers and Farmers from the areas that are now Upland, Rancho Cucamonga and Fontana all contributed. A total of $19,434.42 was raised.

Even before the right-of-way alignment was completely settled, the Railway Company applied to the committee for a name for the new northern station. Several names were suggested, and a letter was sent to all subscribers to the railway asking for their vote. An overwhelming majority selected the name Alta Loma in April 1913. Initially, the station had temporary offices in a packinghouse building until the $10,000 station building was completed on April 1, 1915.

By February 1913, enough money was appropriated to build the extension closing the 20-mile gap between Upland and San Bernardino. Work actually began on June 7, 1913, when the contractors (Grant Bros.) started grading. Rails were laid east from Upland and had reached Attendee on January 25, 1914. The line was formally opened for service on July 11, 1914. Pacific Electric patrons had immediate access to points reached by the affiliated San Bernardino Valley Traction Company, including Highland, Colton, Patton and Redlands. Riverside was reached via a connecting line built from Rialto to Riverside by the Crescent City Railway Company. This connection line opened for service on March 24, 1914.

On November 28, 1914, Pacific Electric Railway Company offered a $50 prize for a name and a suitable symbol for a new all-day trolley trip being offered from Los Angeles to Redlands. Thus was born the famous "Orange Empire Trolley," destined to become Pacific Electric's outstanding excursion, with service beginning January 3, 1915. The Orange Empire train left 6th & Main at 9:00 AM arrived at Rialto at 10:36 AM and at Riverside at 11:00 AM.



Pacific Electric Advertisement

In 1927, trains from Los Angeles to San Bernardino typically operated on a two-hour headway with modifications to meet requirements of travel. Practically all trains consisted of two cars, one of which cut off at Rialto and operated to Riverside while the other continued on to San Bernardino. Two of the San Bernardino trains were operated as strictly limited trains. These were "The Angel City Limited", inbound to Los Angeles and "The Citrus Belt Limited" outbound to San Bernardino. These made the Los Angeles-San Bernardino run in 1 hour 45 minutes.

Moving Freight as Well as People

Pacific Electric began hauling freight on the San Bernardino Line almost immediately after its opening. This business down through the years became one of Pacific Electric's most lucrative sources of income. San Bernardino was one of Pacific Electric's "big three" freight lines along with Los Angeles Harbor and El Segundo.

The principal freight hauled on the San Bernardino Line was citrus, followed by cement, oil, gravel, and manufactured products. As of 1928, a freight train left State Street Yard daily at 1:45 PM, picked up citrus cars en route and delivered them to the Southern Pacific-Union Pacific at Colton, then returned to State Street with cement cars from the Southern Pacific Yard at Colton, the Union Pacific at Poole Yard, and the Atkinson Topeka & Santa Fe rail facility at San Bernardino. All perishable freight originating east of San Dimas went to San Bernardino, while perishable freight originating west of San Dimas went to Los Angeles.

The Pacific Electric San Bernardino Line was directly competing with the Santa Fe Railroad for most of its freight business, especially citrus products. Most packinghouses were already Santa Fe patrons, and to reach them, Pacific Electric had to lay its rails so as not to interfere with Atkinson Topeka & Santa Fe spurs. In some instances this resulted in Pacific Electric spur tracks at far ends of packinghouses or in other undesirable locations. Santa Fe continued to get most of the business. To combat this, Pacific Electric brought about the construction of new packinghouses at more advantageous locations such as Alta Loma and Upland.

Some of Pacific Electric's fastest freight movements combined its two heaviest lines, the Harbor and the San Bernardino. When citrus crops were threatened by freezing weather, oil-fired orchard heaters were brought in, burning night and day as long as they were needed. A constant supply of fuel oil was essential to the citrus growers. Pacific Electric gave heater oil trains priority over all other freight, speeding them from the Harbor to Redlands area in five hours. It took 2,000 carloads of oil to make one filling of heaters.

By 1938, freight trains left San Bernardino at 7:00 PM, made the trip to Southern Pacific's yards at Colton, then took the San Bernardino Line west to State St Yard, arriving at 3:30 AM. On the return trip the crew left State Street at 10:30 PM, followed the San Bernardino Line beyond La Verne, took perishables to Colton and returned to San Bernardino, signing-off at 6:30 AM. During World War II, so heavy did freight movements become that several steam locomotives were leased from Southern Pacific; these were always double-headed with the electric motors, so trolley-actuated signals could operate.

The nation's last interurban Railroad Post Office (RPO) service was operated by Pacific Electric on it's San Bernardino Line. This RPO service was inaugurated comparatively late, being started on September 2, 1947. It left Los Angeles at 12:45 P.M. and San Bernardino at 4:40 P.M., taking three hours for the trip. It did not operate on Sundays or holidays. This last RPO ceased operation on May 6, 1950.

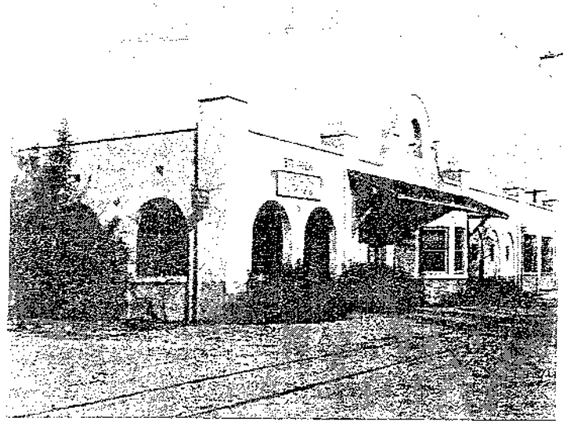
The San Bernardino Line was the first of Pacific Electric's major lines to be given over to the diesel-electric locomotive 100%. On October 1, 1951, all operations between Los Angeles and San Bernardino were dieselized and the trolley wire was removed shortly thereafter. A major job was converting crossing signals from trolley activated-Direct Current to low voltage track circuit operation. It took six weeks after dieselization before this conversion was completed, and in the interim diesels either were equipped with trolley poles or dragged a dead electric locomotive, with enough current being maintained in the trolley wire to activate the signals.

On November 30, 1951, all substations and electrical energizing facilities on the San Bernardino Line were taken out of service and the San Bernardino Line had completed its transition from a high-speed interurban operation to a low-speed diesel freight line.

Station Architecture

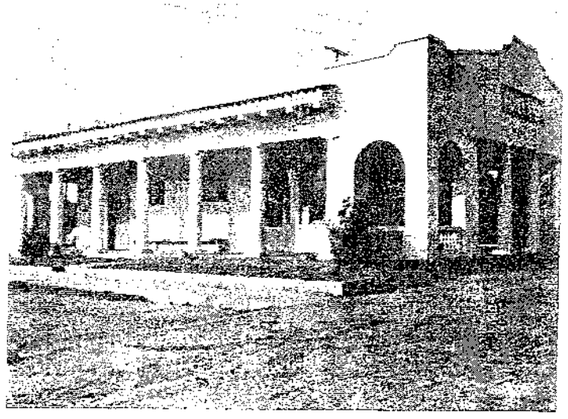
Stations between Upland and San Bernardino were a more substantial type of building, not the usual wooden type typical of Pacific Electric standards of the "pre-1911" era. Etiwanda, Alta Loma and Rialto had concrete stations costing about $10,000 each. Fontana had a huge concrete structure built in co-operation with a real estate company. The Claremont, Upland, Etiwanda, Rialto and a portion of the Fontana Station remain.

Claremont Station

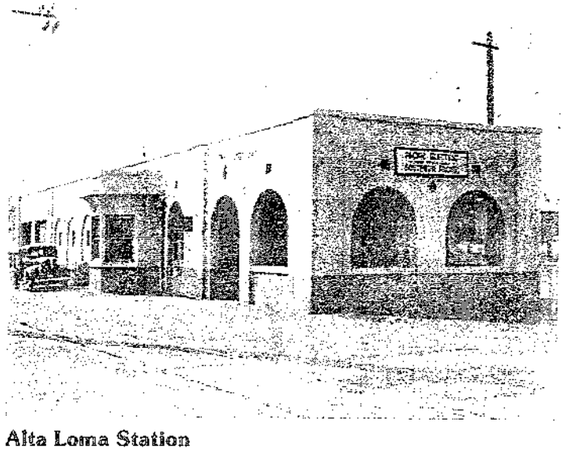


Etiwanda Station

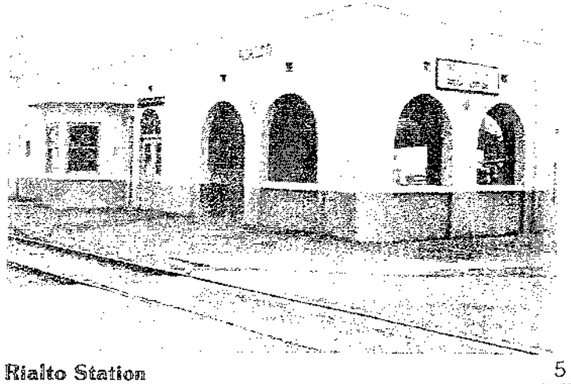
Upland Station



Fontana Station



Alta Loma Station

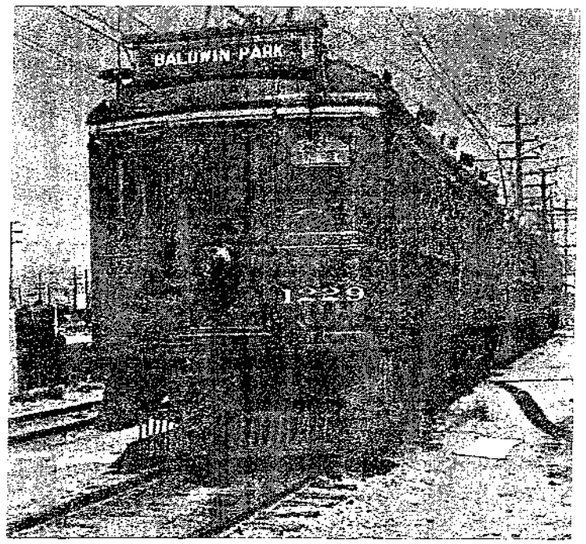


Rialto Station

End of the Line

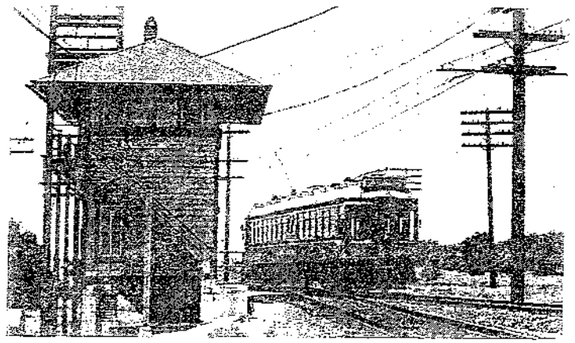
The first abandonment of rail passenger service occurred on July 20, 1936, when San Bernardino-Redlands service was discontinued; rail was removed from Redlands to Sunkist, with that portion from San Bernardino to Sunkist kept to serve packing houses. Regular service was abandoned on June 9, 1940, between Riverside and Rialto. On the same day passenger service on the Los Angeles-San Bernardino Line was cut to four round trips daily, with the service being provided by rehabilitated cars. An augmented bus service that tied in with the rail schedules was used.

On November 1, 1941, rail passenger service beyond Baldwin Park was discontinued, except for rush hour service through to Covina. The last car left San Bernardino for Los Angeles at 6:45 P.M.; the last car from Los Angeles pulled into the San Bernardino at 9:30 P.M.



Pacific Electric Baldwin Park Branch


Station Interior 1940's


Train at Claremont Tower

Special passenger trains rolled through to San Bernardino at various times up to 1950. During World War II numerous troop trains made the complete trip, while the post-war sessions of the Los Angeles County Fair at Pomona were served by Pacific Electric passenger trains; four-car trains were run as needed, with as many as eight such trains running on Saturdays and Sundays.

At the end of World War II, the Mayor's office in Los Angeles hired consultants to make proposals to meet the postwar transportation needs of Los Angeles metropolitan area. The consultants' reports were presented to an audience of 800 civic and business leaders in 1945. This meeting prompted the Los Angeles Chamber of Commerce to organize a committee to boost the rapid transit plan: the Rapid Transit Action Group (RTAG). RTAG had the support of Pacific Electric Railway and Los Angeles Transit Lines.

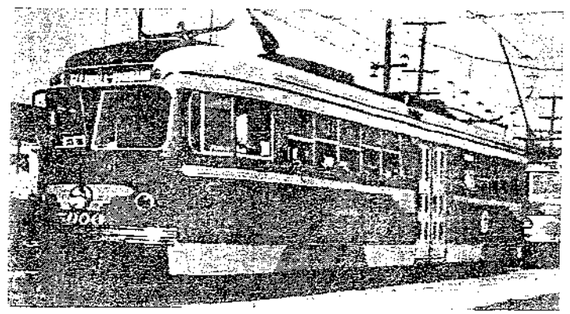
RTAG drew up the enabling legislation for RTAG's proposed "Metropolitan Rapid Transit District" and proposed to have the governor call a special session of the state legislature in 1948 to consider the proposal. With the establishment of the state gas tax after the war, the region was gearing up for massive freeway construction. This created an opportunity to acquire rapid transit rights of way at relatively low cost by placing them in freeway medians. The state Public Utilities Commission stated in a 1947 report: "It is estimated that rail rapid transit in a freeway can be provided at approximately 15% to 20% additional to the cost of the freeway alone, while a separate rapid transit system would cost several times this amount."

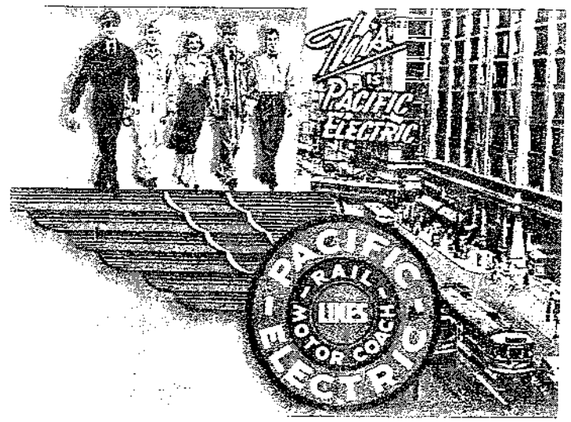
"Light Rail Rapid Transit" seems the appropriate name for RTAG's proposal given that it would have combined Pacific Electric Railway's surface rights of way (with grade crossings and low-level boarding) with grade-separated sections enjoying third-rail current collection and high-level platforms. The RTAG brochure prepared at the time included a detailed description of a new generation of rail equipment to replace Pacific Electric's aging fleet on the improved system. The proposed rail vehicle was to have a seating capacity of approximately 110. The low-slung RTAG cars were to be capable of loading both from street level and car-floor-height platforms.

Pacific Electric had made clear its intention to convert to bus if the RTAG initiative failed. (In 1947 Pacific Electric's bus operations made a slight profit while its rail passenger operations lost $3 million.) Los Angeles then faced what was perhaps the most significant crossroads in its transportation history. The RTAG plan proposed to retain parts of ten Pacific Electric lines as part of its new light rail rapid transit system including the San Bernardino/Baldwin Park Line. The RTAG rapid transit plan projected an eventual financial breakeven point on rail operations, but the initiative failed.

In 1953, Pacific Electric Railway Company sold its passenger business to Metropolitan Coach Lines (MCL), and in 1958 MCL sold out to the Los Angeles Metropolitan Transit Authority (LAMTA). LAMTA was chartered to create a rapid transit network based upon bus routes. LAMTA transferred ownership of the former Pacific Electric Railway Lines to the Southern Pacific Railroad for use as a freight line on its Baldwin Park Branch, running between Baldwin Park and San Bernardino. The demand for freight service in the corridor declined due to competition from trucks and other factors. The Southern Pacific Railroad sought to reduce its real estate holdings and raise capital by selling back much of the Baldwin Park Branch. The escrow closing for the Southern Pacific Baldwin Park Branch was in April 1991. The Los Angeles County Transportation Commission, now Los Angeles County Metropolitan Transit Authority (LACMTA) negotiated the deal and assigned the portion of right-of-way in San Bernardino County to the San Bernardino Associated Governments (SANBAG).

Under terms of the purchase agreement with Southern Pacific, the railroad reserved the right to operate freight service over the active portions of the line. After the sale of the right-of-way and the transfer to SANBAG, Southern Pacific Railroad made two filings to discontinue freight service with the Interstate Commerce Commission, which were approved. The first was to discontinue freight service between the Los Angeles County Line and 11th Avenue in Upland. The second was to discontinue freight service between 11th Avenue in Upland and a point east of Cactus Avenue in Rialto. With these two filings only the easternmost 2.3 miles of track on the line remain in active freight service today.


Pacific Electric Motor Coach

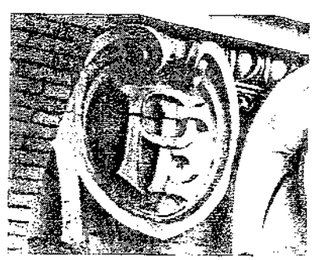


1940's Advertisment

In 1991, SANBAG adopted a policy preserving the Baldwin Park Branch right-of-way for potential future transit use. In 1994, SANBAG adopted another policy allowing possible joint use of the Baldwin Park Branch right-of-way. Joint use is defined as bikeways or trails, flood control channels, pipelines and other utilities. The SANBAG policy clearly states that the primary use of the Baldwin Park Branch right-of-way is for rail transit purposes. However, SANBAG also states that the agency wishes to encourage compatible uses within the right-of-way, which further public purposes and improve the quality of life.

In 1999, 100 years after the start of the Pacific Electric Railway, the six cities containing portions of the old San Bernardino Line; Claremont, Montclair, Upland, Rancho Cucamonga, Fontana and Rialto along with SANBAG joined together to develop a master plan for a 21-mile multi-use trail. In 2000, the City of Rancho Cucamonga, acting as lead agency for the project, retained a team lead by Boyle Engineering Corporation to prepare a Master Plan for a multi-use trail linking Claremont to Rialto.

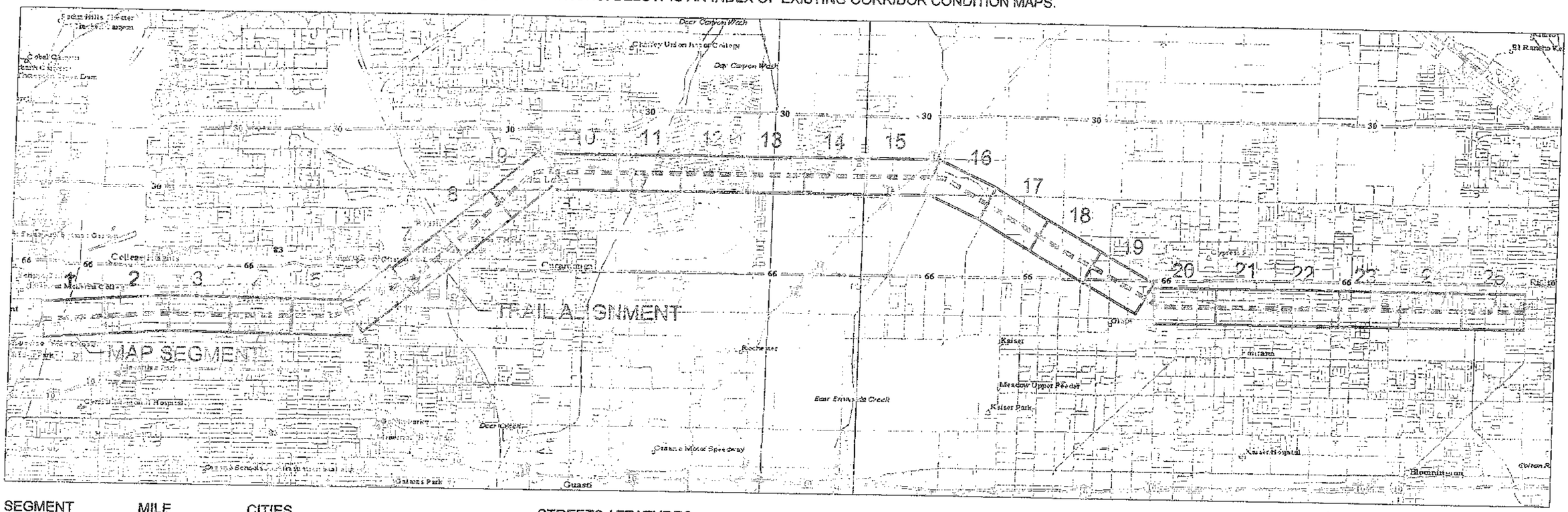
Sources: The Electric Railway Historical Association of Southern California, San Bernardino Associated Governments, The History of Alta Loma, California 1880-1980 by Martha Gaines Stoebe



SITE INVENTORY / SITE ANALYSIS

EXISTING CORRIDOR CONDITIONS

OUR TEAM CONDUCTED AN EXTENSIVE FIELD AND LITERATURE REVIEW OF THE PACIFIC ELECTRIC CORRIDOR WITH THE PROJECT LIMITS. THE FOLLOWING PAGES CONTAIN MAPPING AND PHOTOS DEPICTING EXISTING CORRIDOR CONDITIONS. BELOW IS AN INDEX OF EXISTING CORRIDOR CONDITION MAPS.



SEGMENT	MILE	CITIES	STREETS / FEATURES
1	0.0 - 0.7	CLAREMONT / UPLAND / MONTCLAIR	CLAREMONT BLVD / MONTE VISTA AVE. / MONTCLAIR TRANSCENTER
2	0.7 - 1.5	MONTCLAIR / UPLAND	CENTRAL AVE. / S. BENSON AVE. / HILLSIDE HIGH SCHOOL
3	1.5 - 2.4	UPLAND	MOUNTAIN AVE.
4	2.4 - 3.2	UPLAND	SAN ANTONIO AVE. / 2ND AVE.
5	3.2 - 4.1	UPLAND	2ND AVE. / 11TH AVE.
6	4.1 - 4.9	RANCHO CUCAMONGA	ARROW ROUTE / FOOTHILL
7	4.9 - 5.7	RANCHO CUCAMONGA	FOOTHILL / CARNELIAN AVE. / VINEYARD AVE.
8	5.7 - 6.5	RANCHO CUCAMONGA	VINEYARD AVE. / HELLMAN AVE.
9	6.5 - 7.1	RANCHO CUCAMONGA	BASE LINE ROAD / ARCHIBALD AVE.
10	7.1 - 7.6	RANCHO CUCAMONGA	ARCHIBALD AVE. / HERMOSA AVE.
11	7.6 - 8.7	RANCHO CUCAMONGA	HAVEN AVE. / DEER CREEK CHANNEL / CENTRAL PARK SITE (FUTURE)
12	8.7 - 9.5	RANCHO CUCAMONGA	MILLIKEN AVE. / KENYON WAY / CENTRAL PARK SITE (FUTURE)
13	9.5 - 10.4	RANCHO CUCAMONGA	ROCHESTER AVE. / DAY CREEK CHANNEL / ELLENA PARK
14	10.4 - 11.3	RANCHO CUCAMONGA / ETIWANDA	VICTORIA PARK LN. / ETIWANDA AVE.
15	11.3 - 12.1	FONTANA	EAST AVE. / INTERSTATE 15
16	12.1 - 13.0	FONTANA	ETIWANDA CHANNEL / HERITAGE CIRCLE / BASE LINE ROAD
17	13.0 - 13.8	FONTANA	CHERRY AVE.
18	13.8 - 14.7	FONTANA	HEMLOCK AVE. / SULTANA AVE. / FOOTHILL BLVD
19	14.7 - 15.5	FONTANA	FOOTHILL BLVD. / CITRUS AVE.
20	15.5 - 16.4	FONTANA	CITRUS AVE. / JUNIPER AVE. / SEVILLE PARK
21	16.4 - 17.2	FONTANA	SIERRA AVE. / PALMETTO AVE. / ELEMENTARY SCHOOL (PRIVATE)
22	17.2 - 18.1	FONTANA	TAMARIND AVE. / LOCUST AVE. / CONTINUATION HIGH SCHOOL
23	18.1 - 18.9	RIALTO	MAPLE AVE. / CEDAR AVE.
24	18.9 - 19.8	RIALTO	CACTUS AVE.
25	19.8 - 20.3	RIALTO/SAN BERNARDINO	WILLOW AVE. / RIVERSIDE AVE.

SEGMENT INDEX MAP

SCALE 1"=300'

PACIFIC ELECTRIC WORLDS WONDERLAND LINE

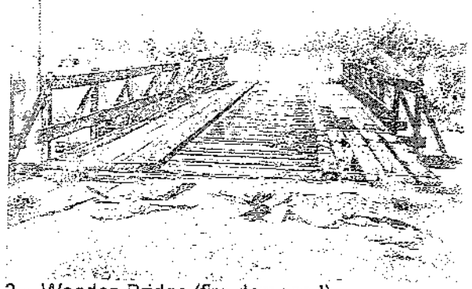
EXISTING CORRIDOR CONDITIONS

SEGMENT: 1

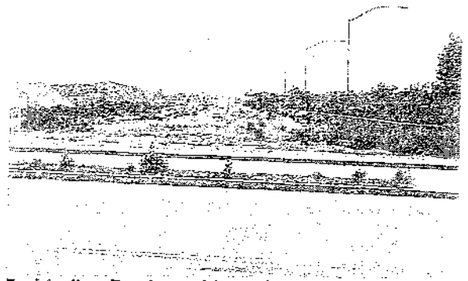
MILE 0.0 - 0.7

CITIES: CLAREMONT/MONTCLAIR/UPLAND

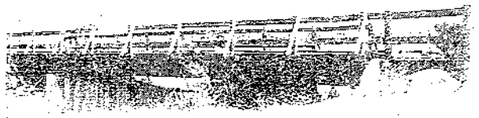
1 - First Street - Village of Claremont



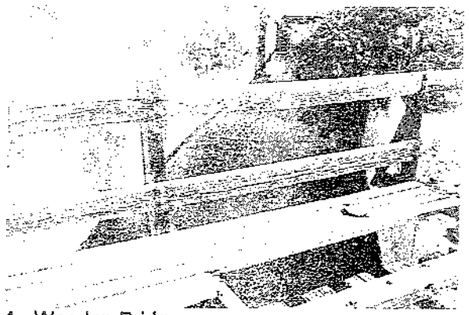
3 - Wooden Bridge (fire damaged)
Sand and gravel mining operation
to the east



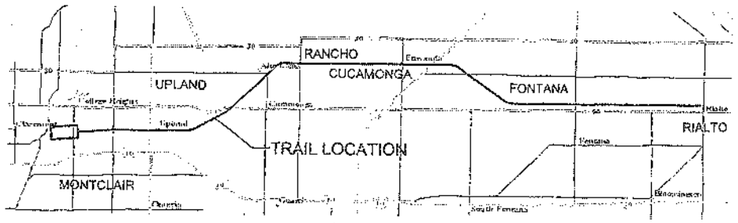
5 - Median Barrier at Monte Vista Ave
Left: Sand mining piles
Right: Metrolink Parking Lot



2 - Remnant Wooden Bridge
(fire damaged)

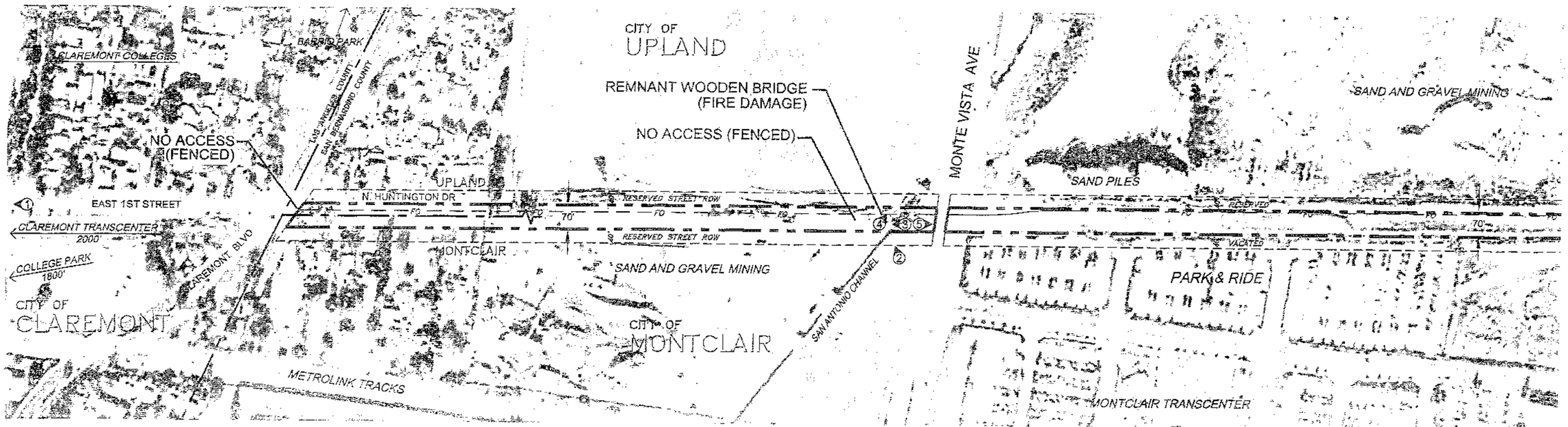


4 - Wooden Bridge
San Antonio Channel crossing



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

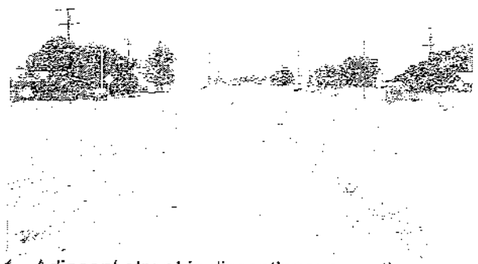
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

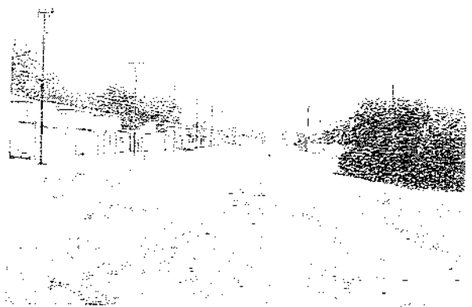
SEGMENT: 2

MILE 0.7 - 1.5

CITIES: MONTCLAIR/UPLAND

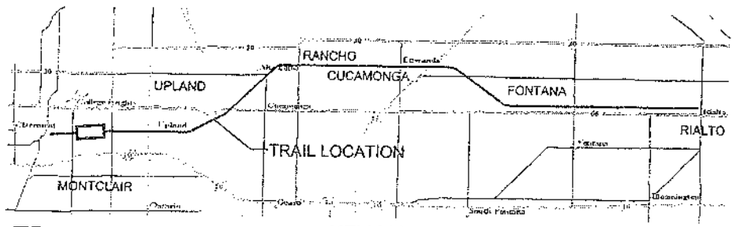


1 - Adjacent street is discontinuous, portions vacated and built on.



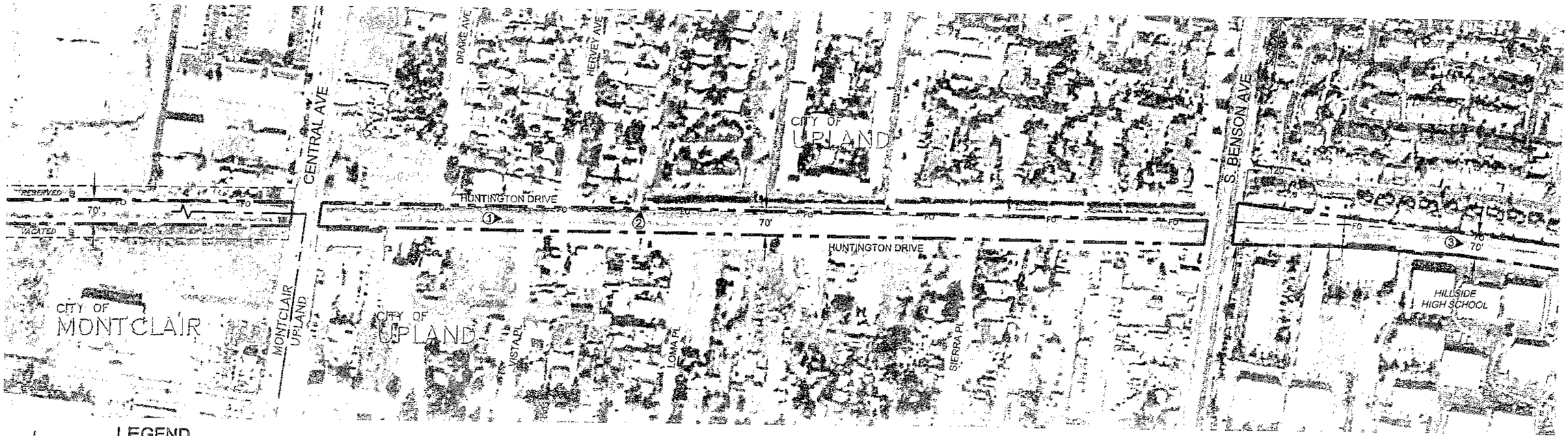
3 - Building setback from right-of-way varies.

2 - Nieghborhood link opportunity.



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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SCALE 1"=300'
IMAGE DATE: JANUARY 1999

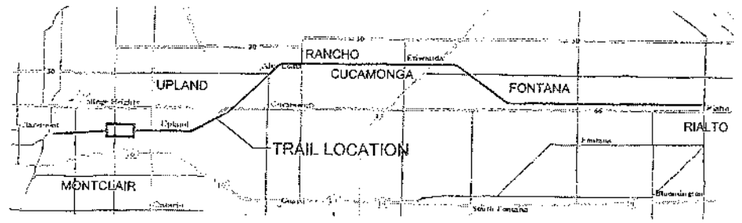
EXISTING CORRIDOR CONDITIONS

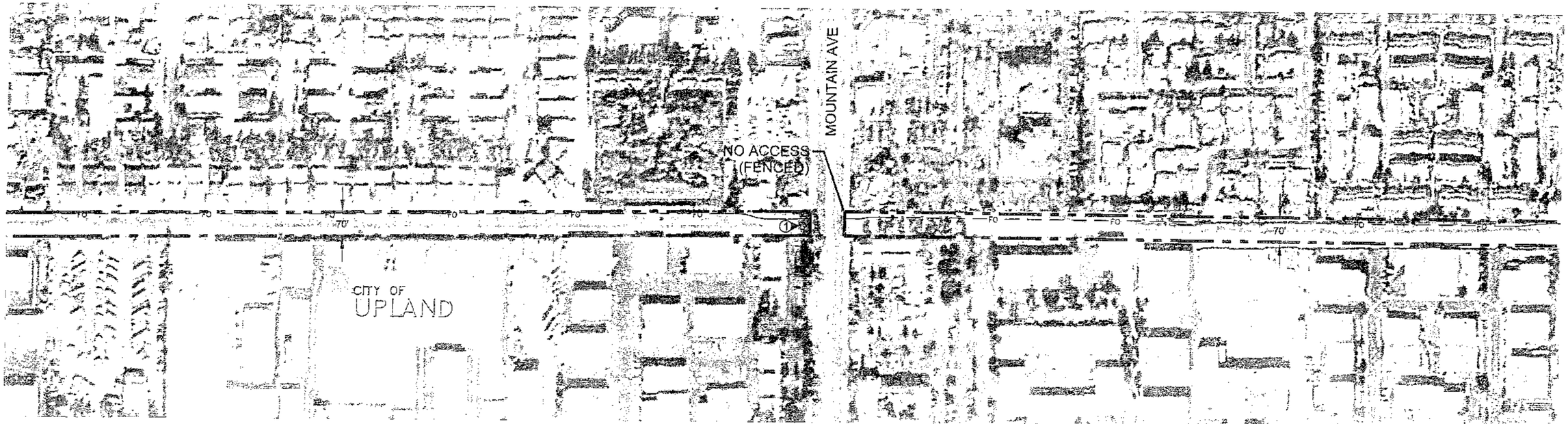
SEGMENT: 3

MILE 1.5 - 2.4

CITY: UPLAND

1 - Mountain Ave. No access / illegally fenced.





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SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 4

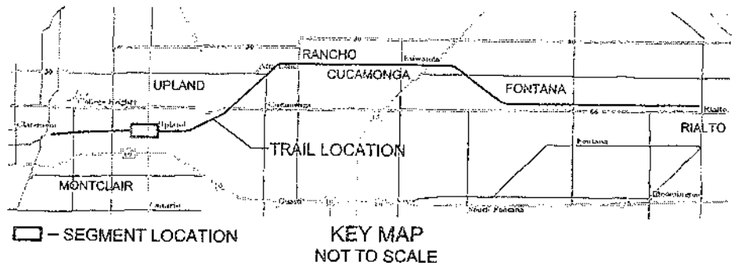
MILE 2.4 - 3.2

CITY: UPLAND

1 - Trees define edges of trail

3 - Euclid Ave. No median break

2 - Homes oriented towards right-of-way



KEY MAP
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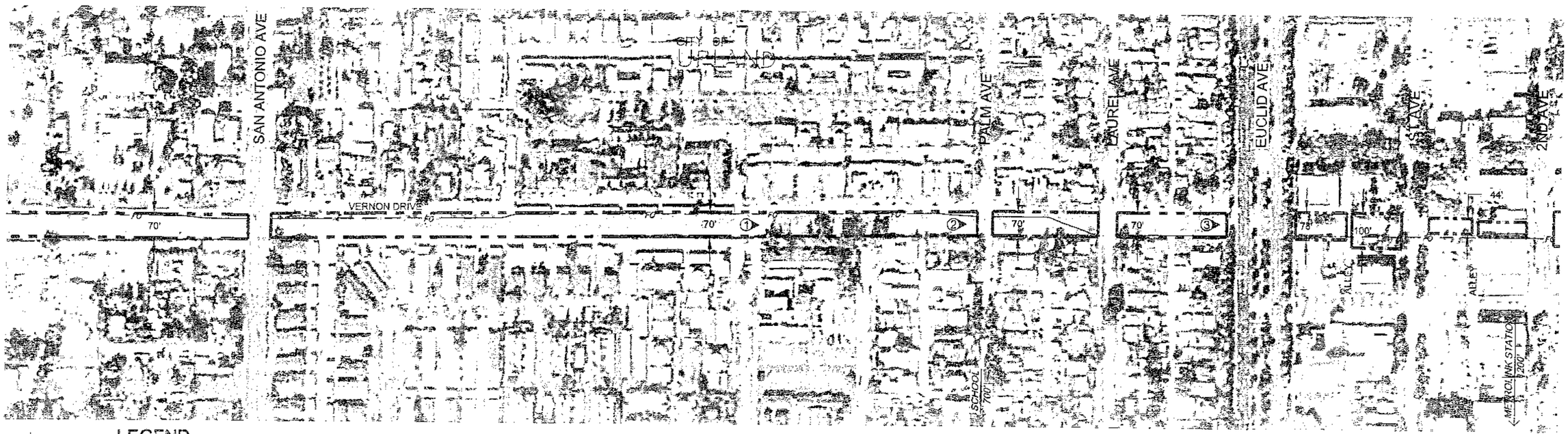

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SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 5

MILE 3.2 - 4.1

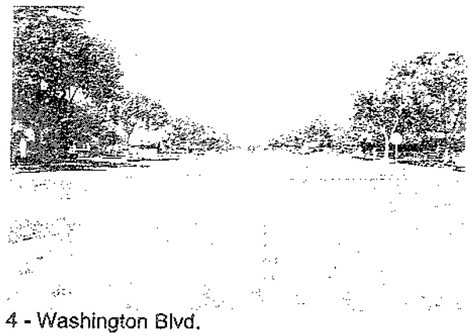
CITY: UPLAND

1 - Right-of-way utilized for access

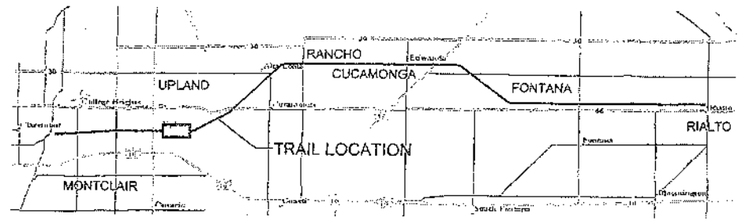
3 - 5th Ave. End existing bike trail.

5 - Washington Blvd. Homes oriented towards right-of-way

2 - 3rd Ave. Existing bike trail--adjacent to SANBAG non-op parcel "O"

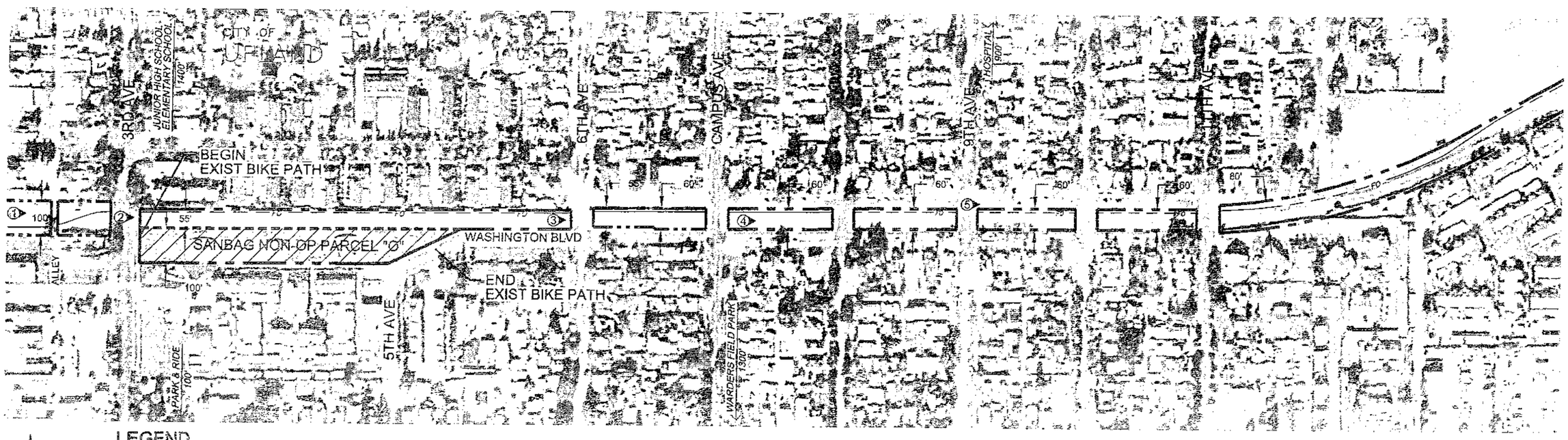


4 - Washington Blvd.



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



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- ◁① PHOTO LOCATION AND VIEWPOINT

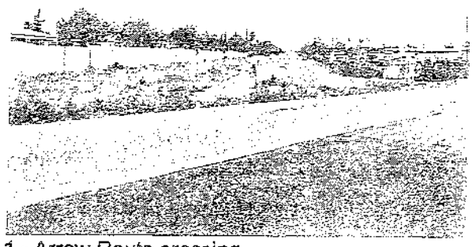
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 6

MILE 4.1- 4.9

CITY: RANCHO CUCAMONGA

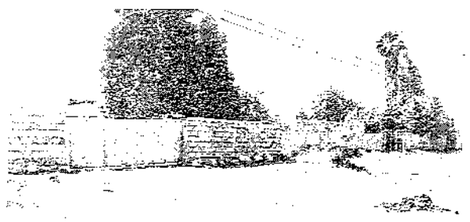


1 - Arrow Route crossing

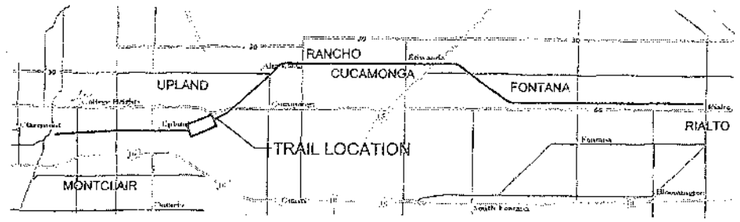
3 - Grove Ave crossing

5 - Right-of-way utilized as driveway

3 - Arrow Route crossing

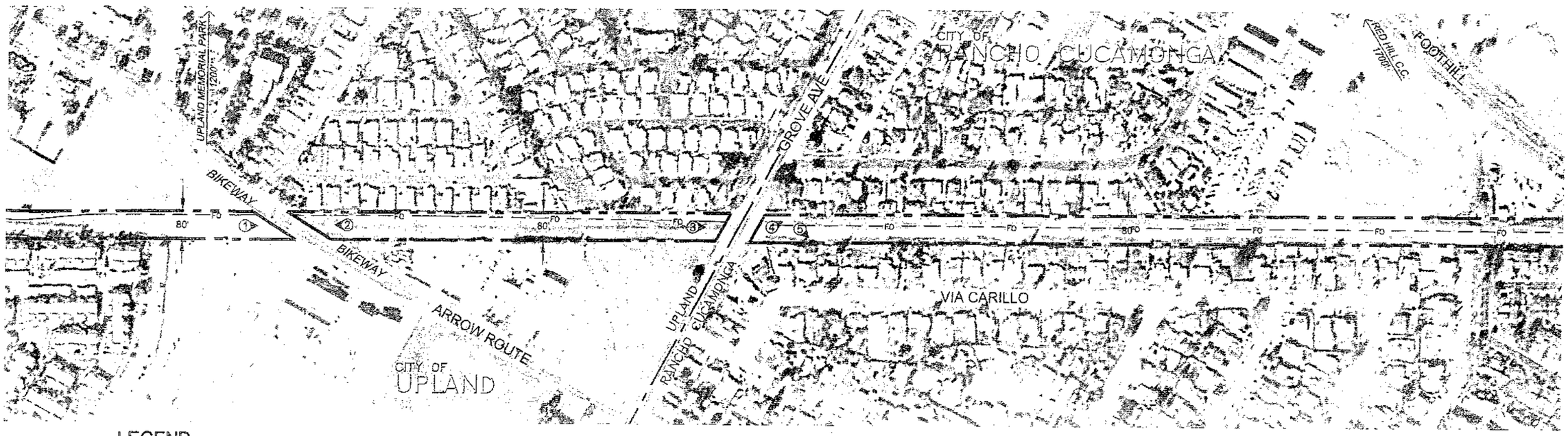


4 - Right-of-way utilized as driveway



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ◁① PHOTO LOCATION AND VIEWPOINT

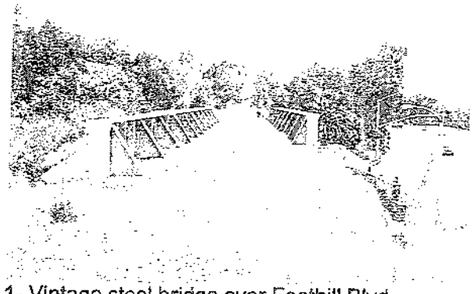
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 7

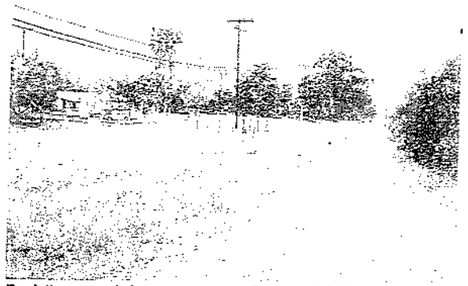
MILE 4.9 - 5.7

CITY: RANCHO CUCAMONGA



1- Vintage steel bridge over Foothill Blvd

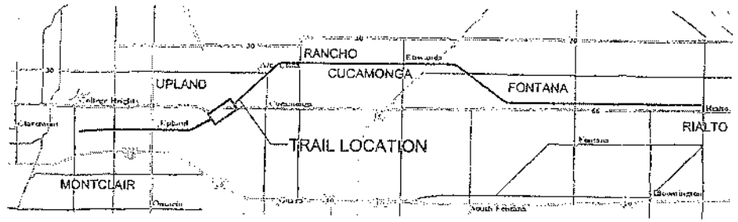
3 - Channel Crossing - no protective railings



5 - Vineyard Ave access - Potential Trailhead / Equestrian staging area

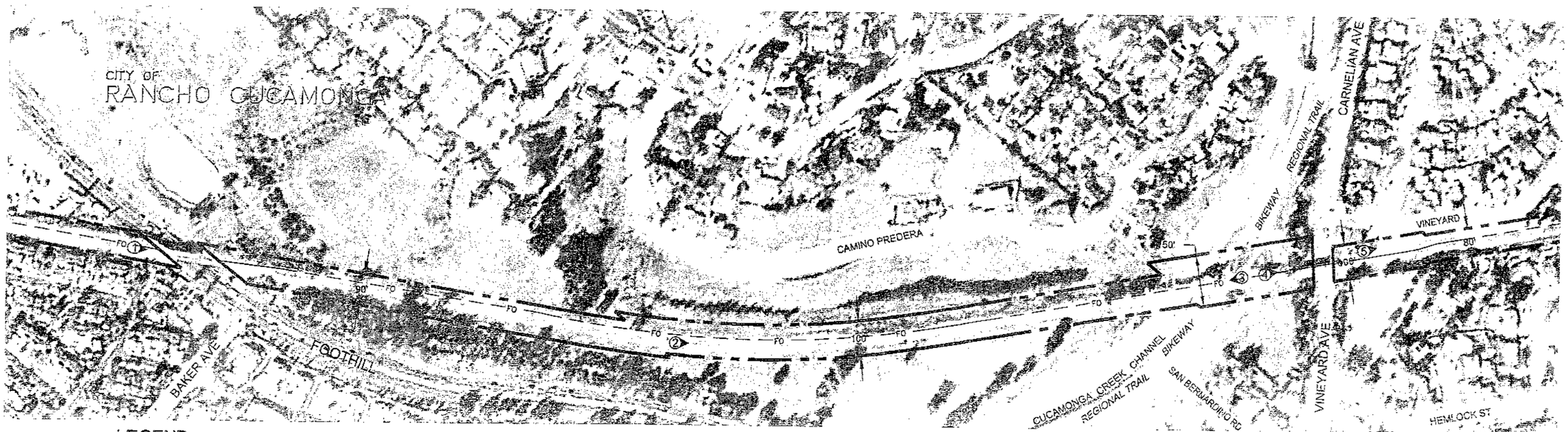
2 - Open vistas to the southeast; Rural character

4 - Bridge over Vineyard Ave



SEGMENT LOCATION

KEY MAP
NOT TO SCALE



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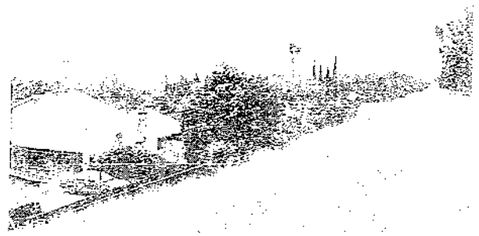
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 8

MILE 5.7 - 6.5

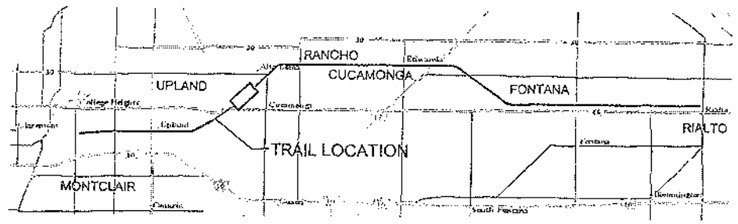
CITY: RANCHO CUCAMONGA



1 - Raised railbed / Open view to the southeast

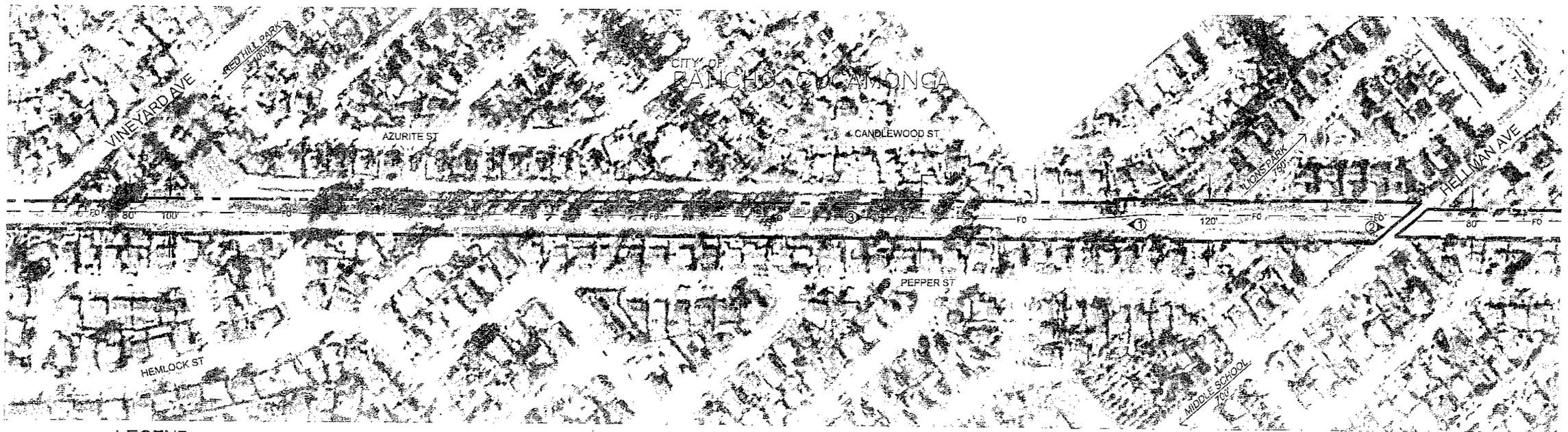
3 - Steep slope on left (north side)

2 - Hellman Ave crossing



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 9

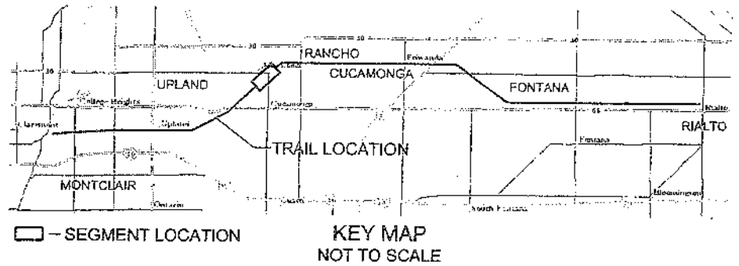
MILE 6.5 - 7.1

CITY: RANCHO CUCAMONGA

1 - Base Line Rd crossing

3 - Archibald Ave crossing

2 - Amethyst St crossing - Open drainage channel adjacent to tank site



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
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- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

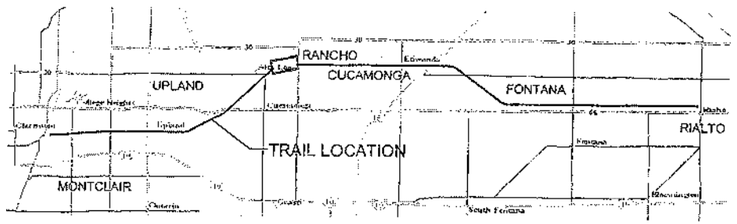
SEGMENT: 10

MILE 7.1 - 7.6

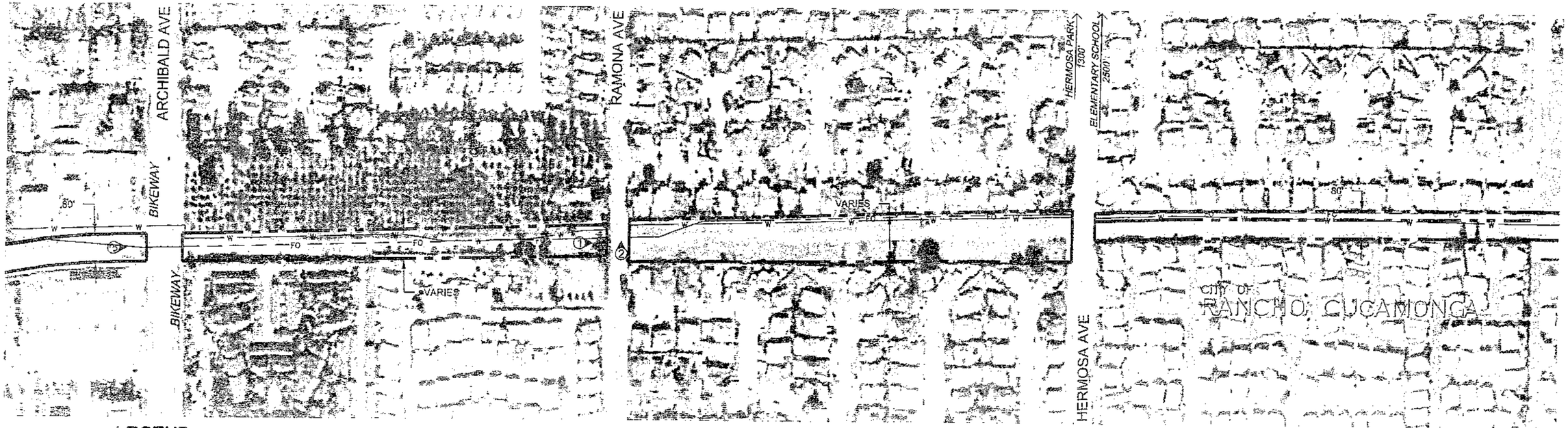
CITY: RANCHO CUCAMONGA

1 - Ramona Ave crossing

2 - Open drainage channel along Ramona Ave



KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

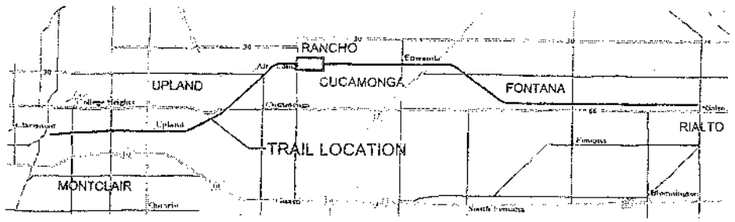
SEGMENT: 11

MILE 7.6 - 8.7

CITY: RANCHO CUCAMONGA

1 - Haven Ave crossing

2 - Haven Ave crossing



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

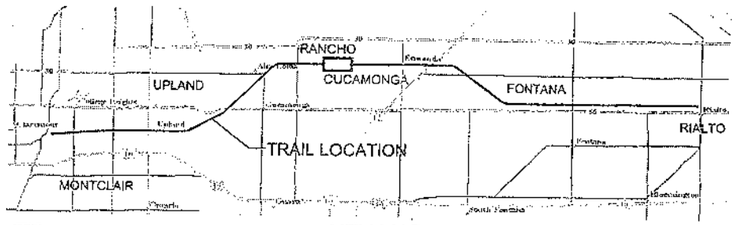
SEGMENT: 12

MILE 8.7 - 9.5

CITY: RANCHO CUCAMONGA

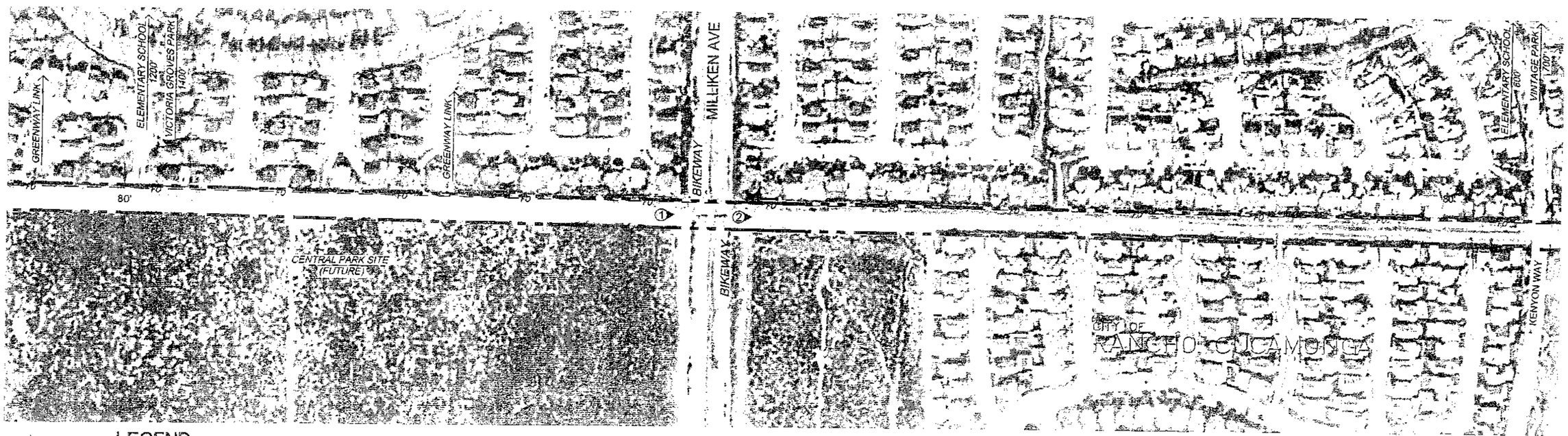
1 - Milliken Ave crossing

2 - Adjacent landscaping



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
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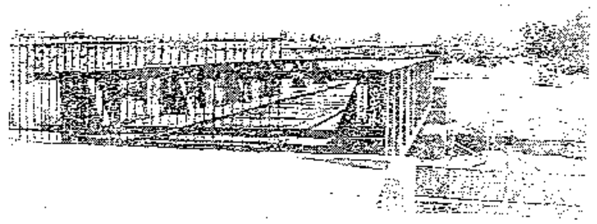
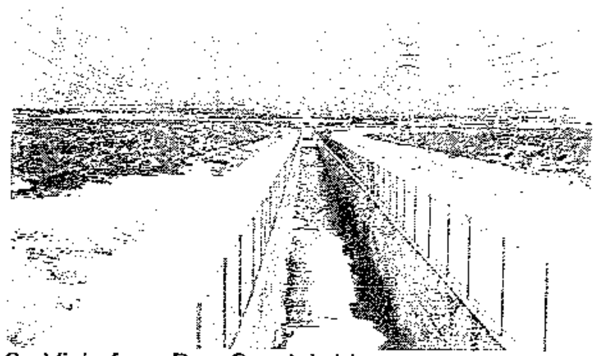
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

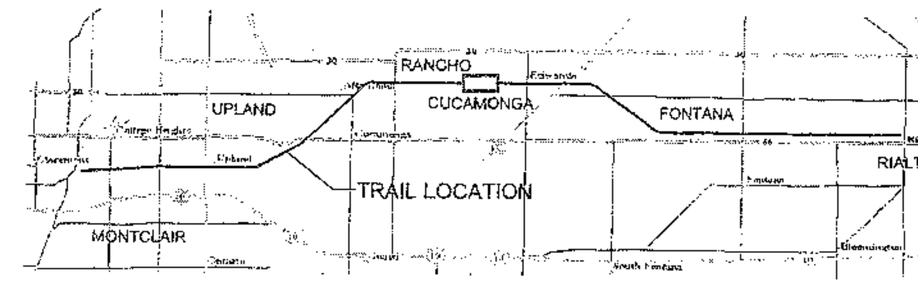
SCALE 1"=300'
IMAGE DATE: JANUARY 1999



1 - Steel bridge over Day Creek channel

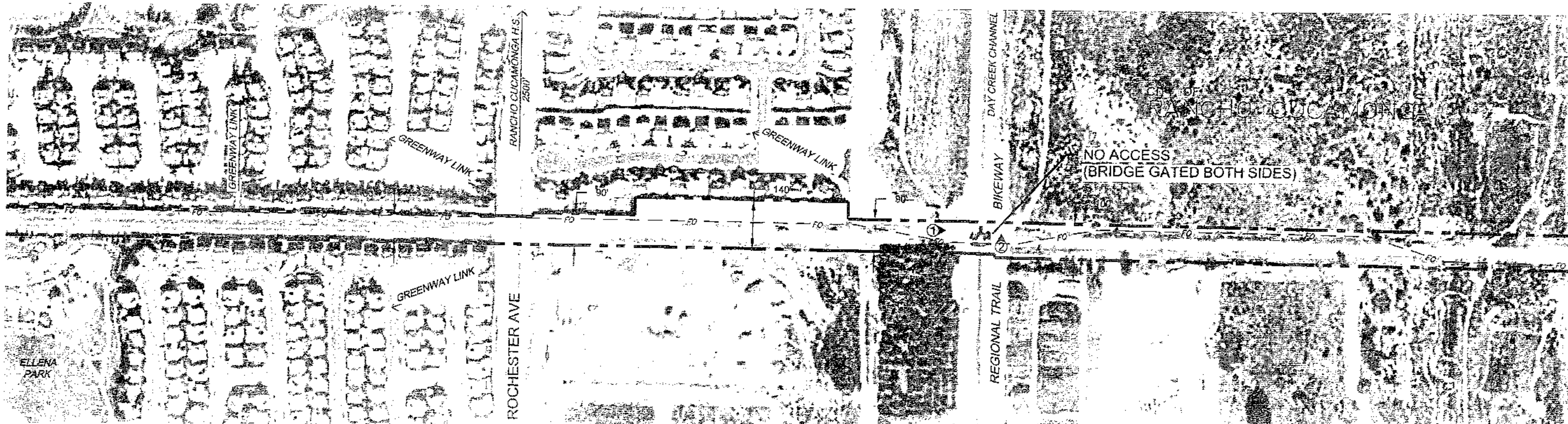


2 - Vista from Day Creek bridge



▭ - SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- —FO— SPRINT FIBER OPTIC LINE
- —W— WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 14

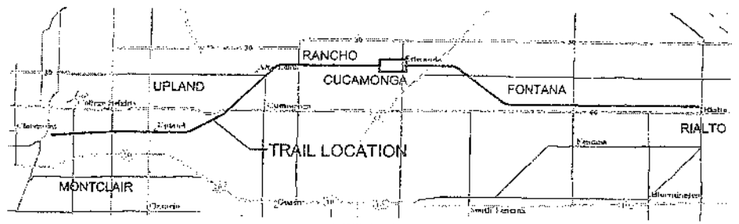
MILE 10.4 - 11.3

CITY: RANCHO CUCAMONGA (ETIWANDA)

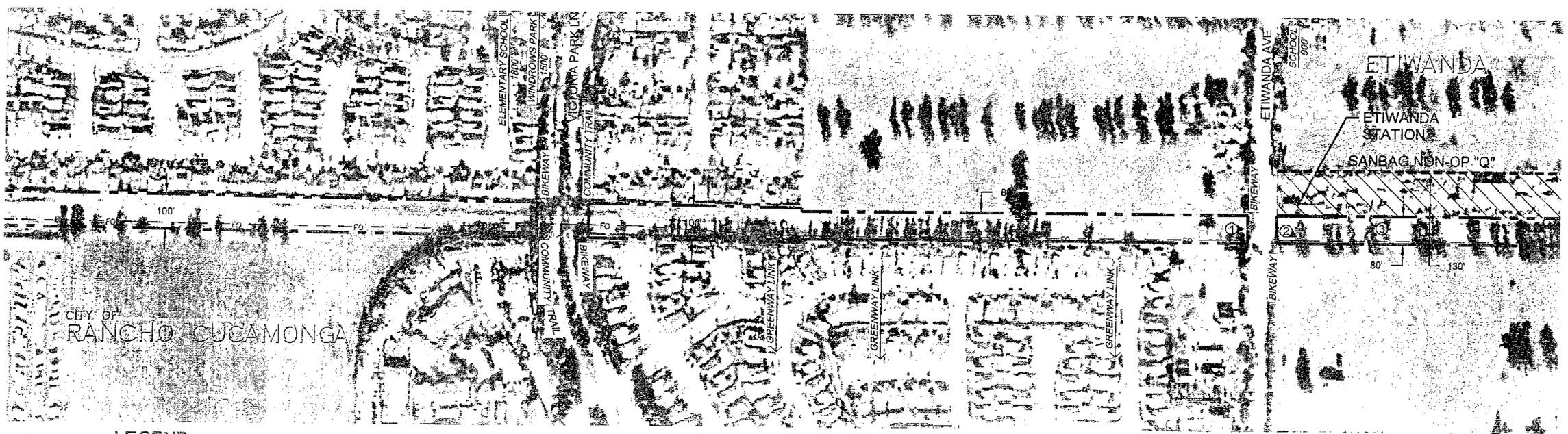
1 - Etiwanda Station

3 - Lumberyard at Etiwanda Station

2 - Mature trees



KEY MAP
NOT TO SCALE



LEGEND

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- STREET RIGHT-OF-WAY
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- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

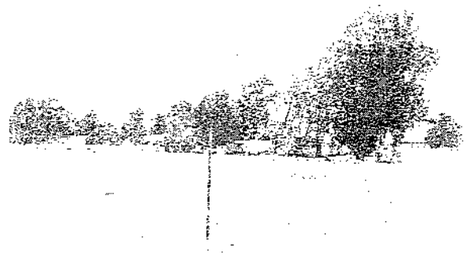
EXISTING CORRIDOR CONDITIONS

SEGMENT: 15

MILE 11.3 - 12.1

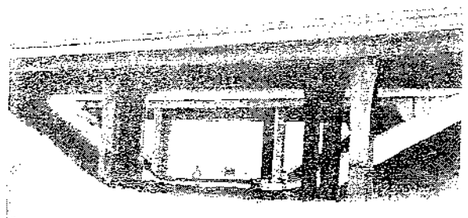
CITY: FONTANA

1 - Winery across Base Line Rd

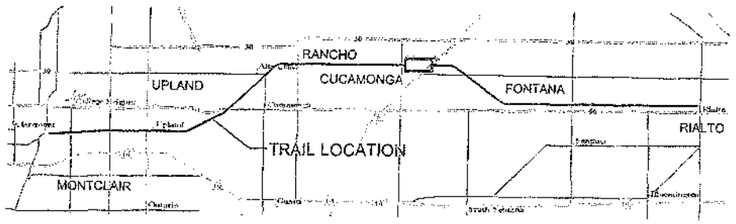


3 - Rural character

2 - Active vineyard

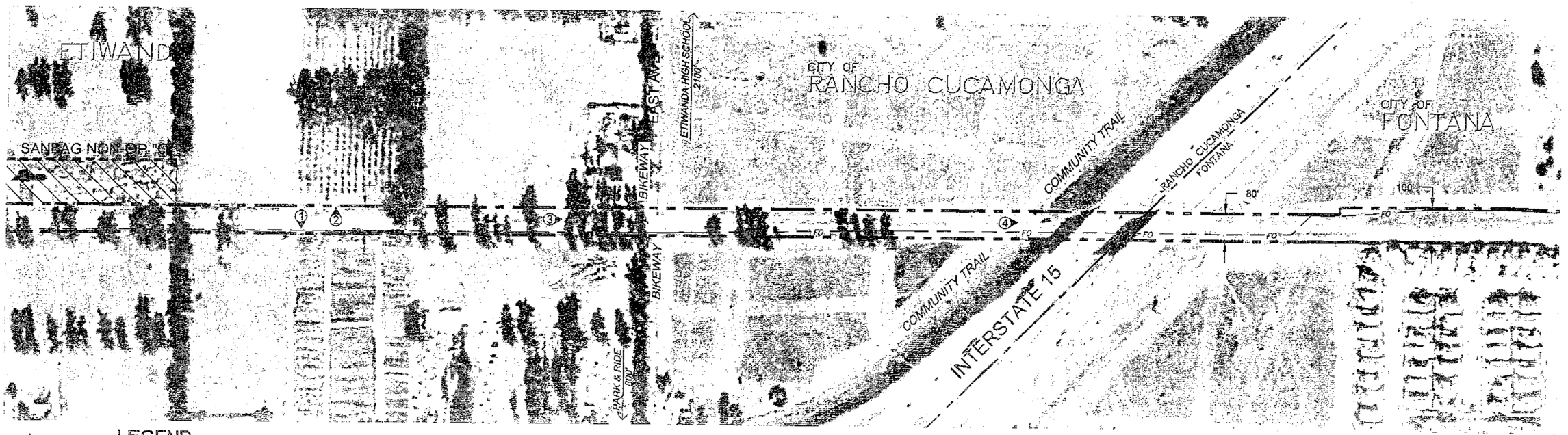


4 - Safe crossing of Interstate 15



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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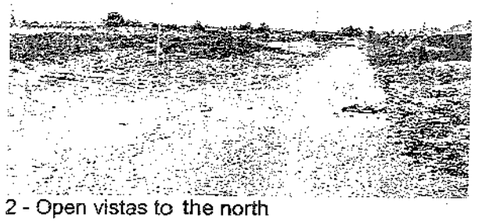
- ① PHOTO LOCATION AND VIEWPOINT

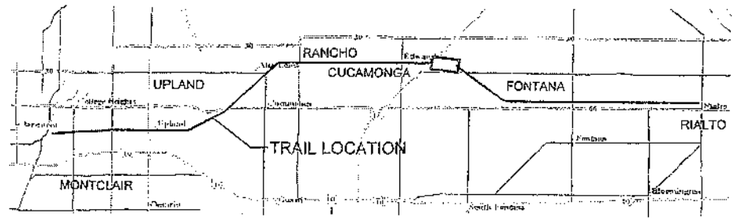
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

SEGMENT: 16
MILE 12.1 - 13.0
CITY: FONTANA

1 - Heritage Circle link

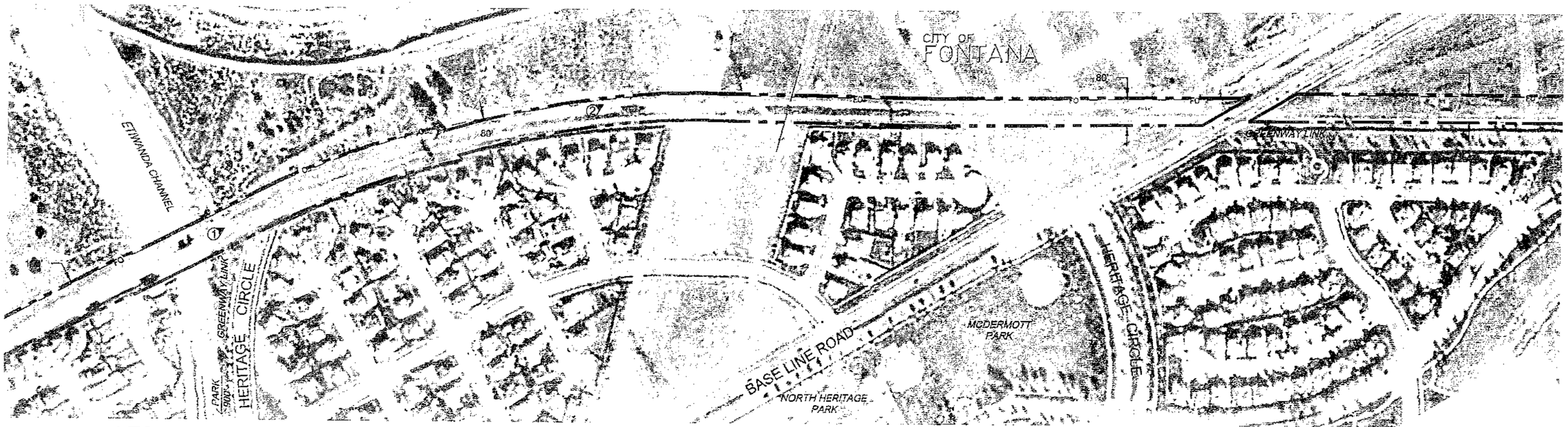


2 - Open vistas to the north



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

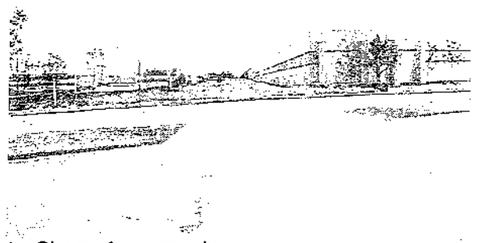
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

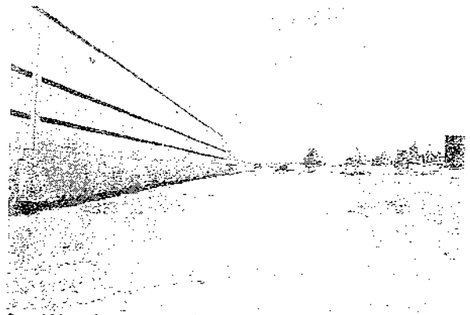
SEGMENT: 17

MILE 13.0 - 13.8

CITY: FONTANA

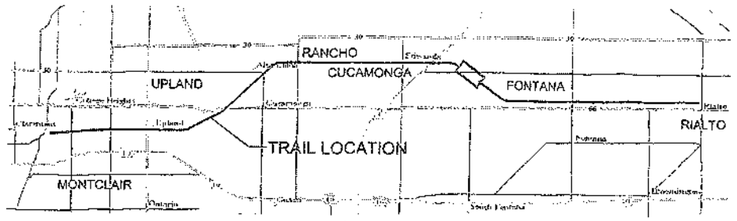


1 - Cherry Ave crossing



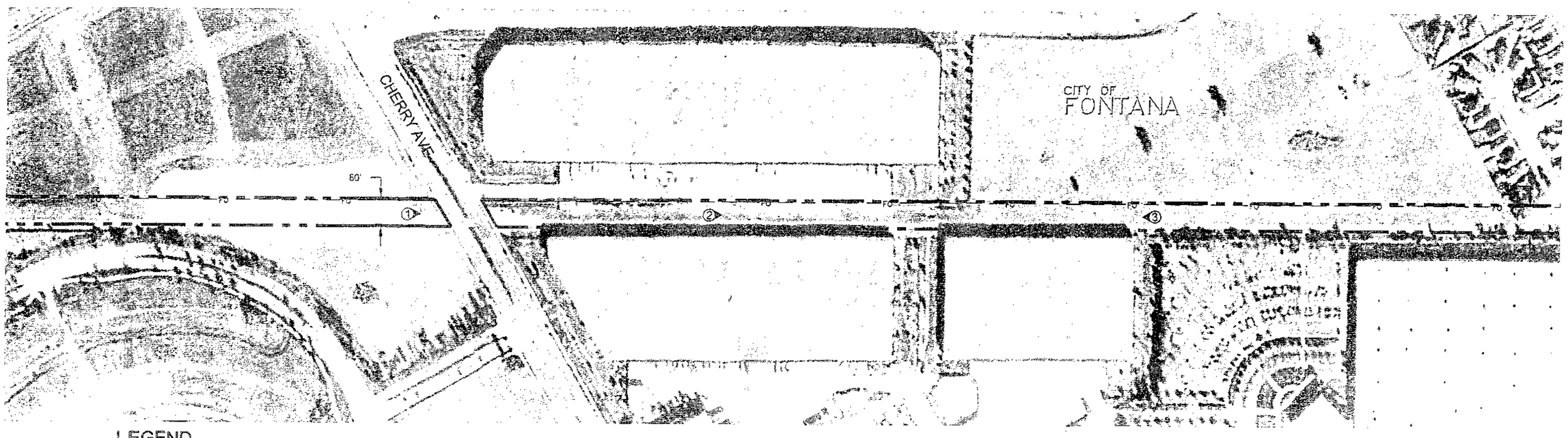
3 - Warehouse encloses space

2 - Warehouse district



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
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- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

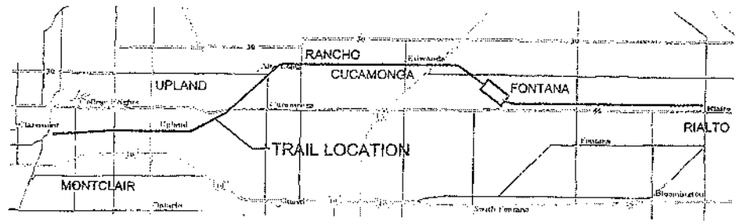
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

SEGMENT: 18
MILE 13.8 - 14.7
CITY: FONTANA

1 - Elementary School 450' from right-of-way

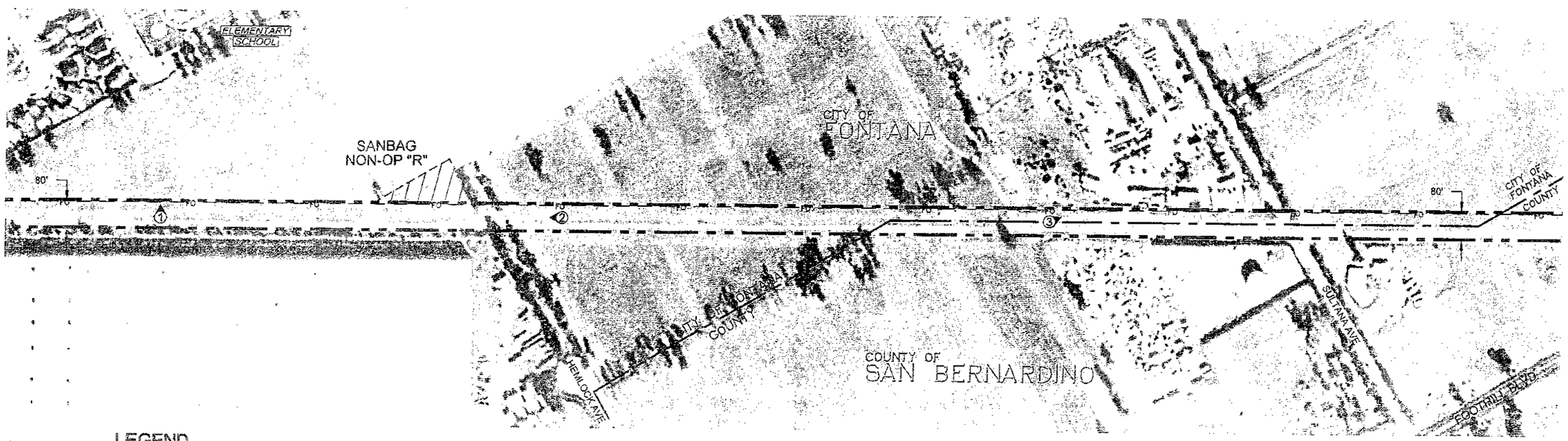
3 - Right-of-way utilized for access to storage yard

2 - Hemlock Ave crossing



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

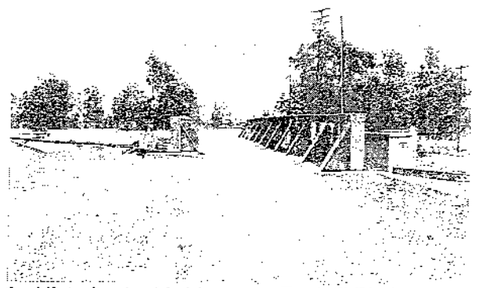
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 19

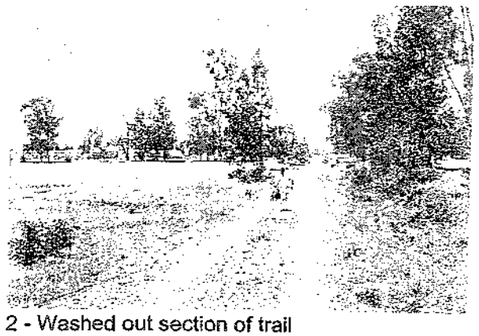
MILE 14.7 - 15.5

CITY: FONTANA



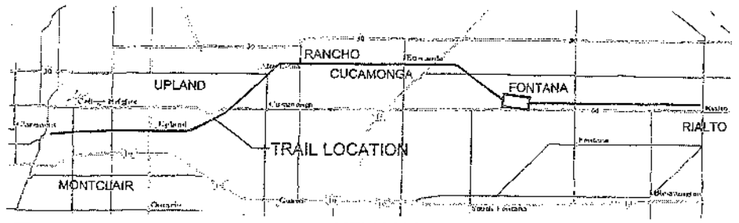
1 - Historic steel bridge over Foothill Blvd

3 - Storage Facility



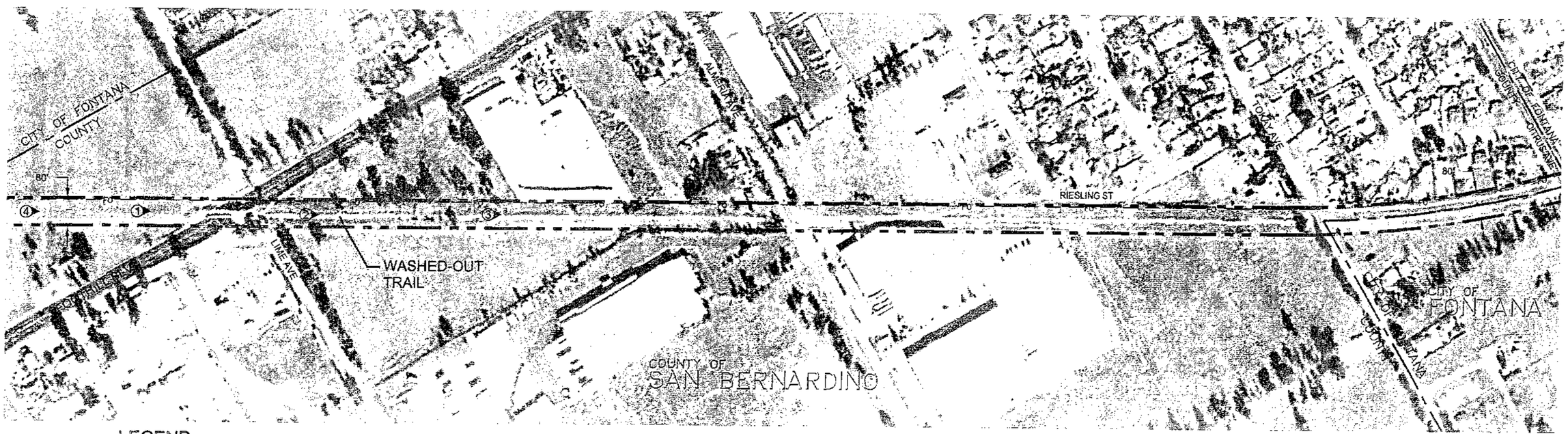
2 - Washed out section of trail

4 - Rural character



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

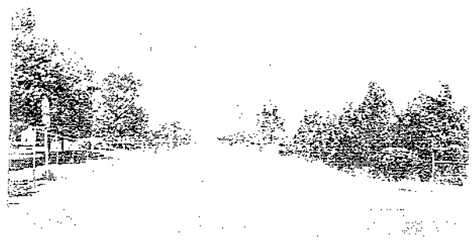
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

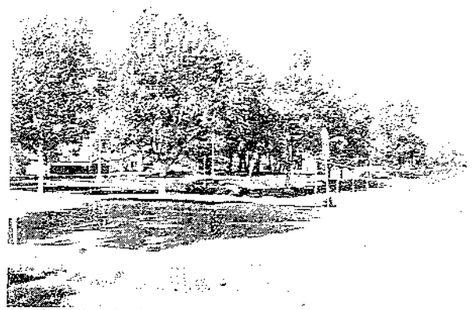
SEGMENT: 20

MILE 15.5 - 16.4

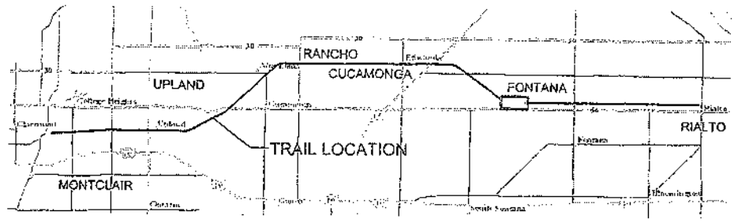
CITY: FONTANA



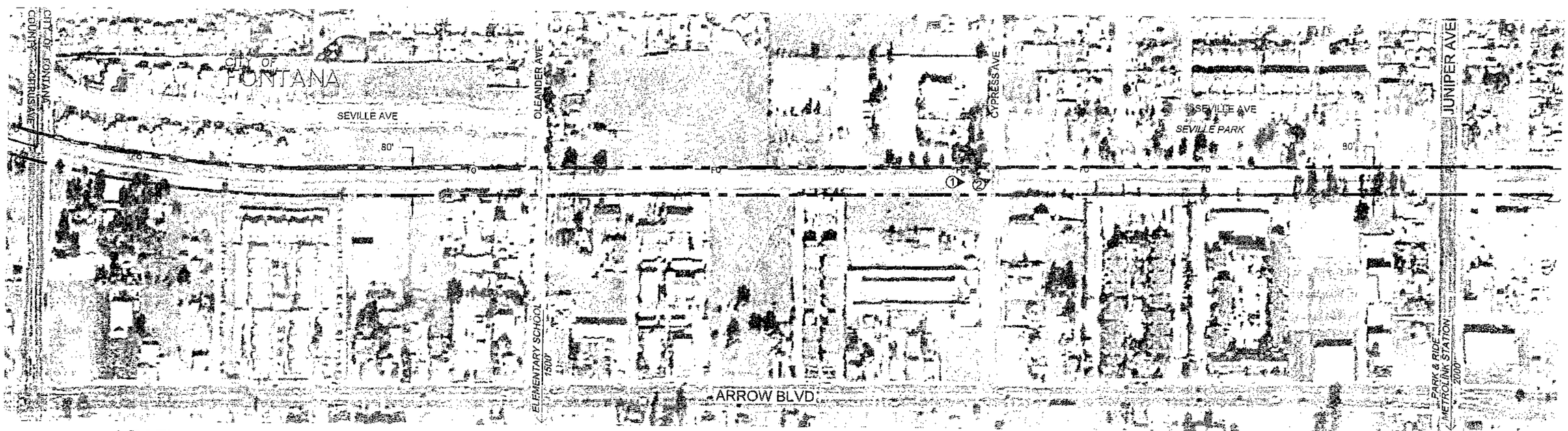
1 - Cypress Ave crossing



2 - Seville Park



KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

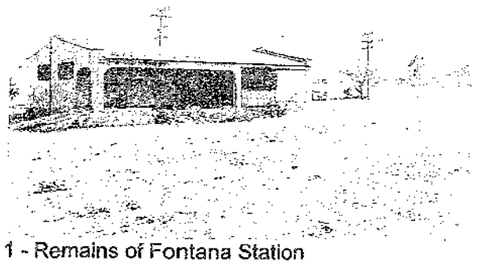
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 21

MILE 16.4 - 17.2

CITY: FONTANA



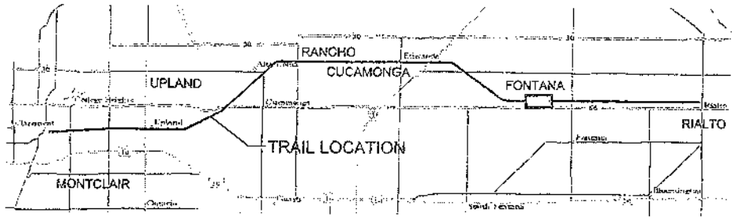
1 - Remains of Fontana Station

3 - Sunkist warehouse

5 - Across Palmetto Ave / Middle School sports field

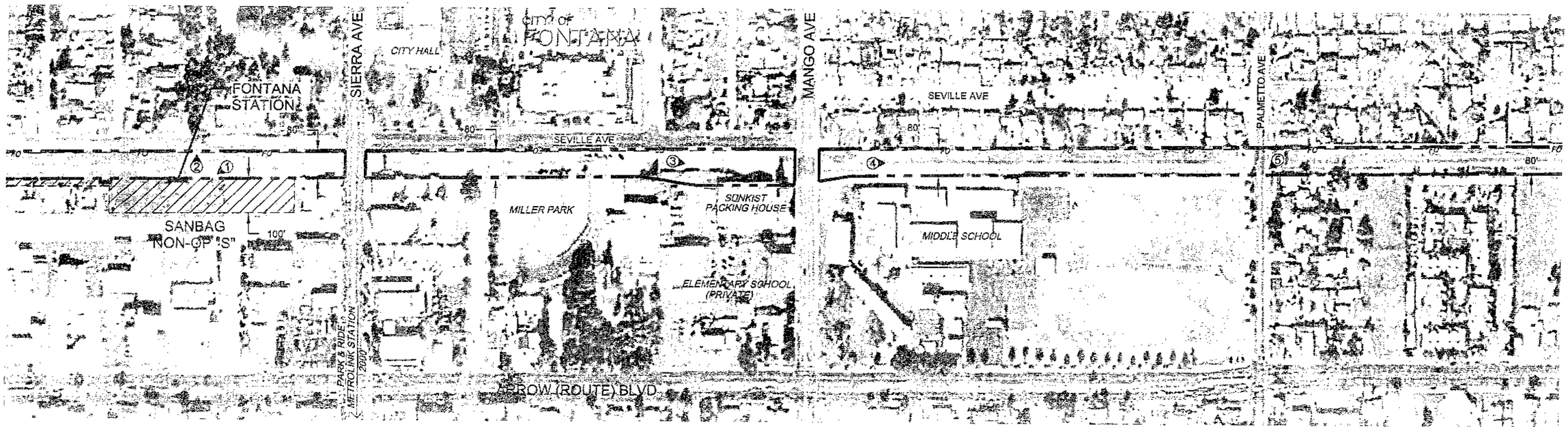
2 - Tree-lined side steet

4 - Adjacent middle school



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

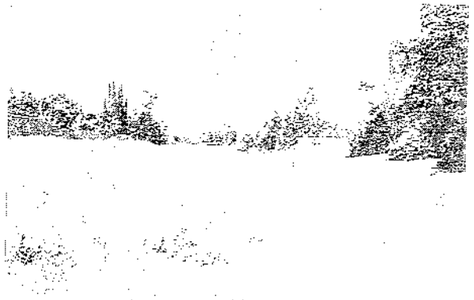
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

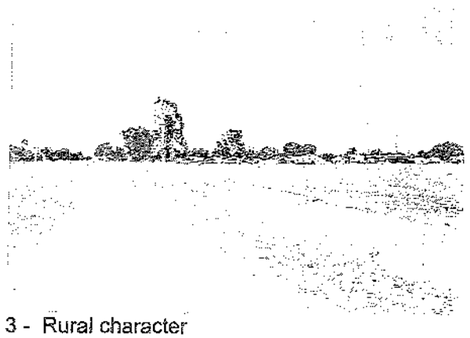
SEGMENT: 22

MILE 17.2 - 18.1

CITY: FONTANA

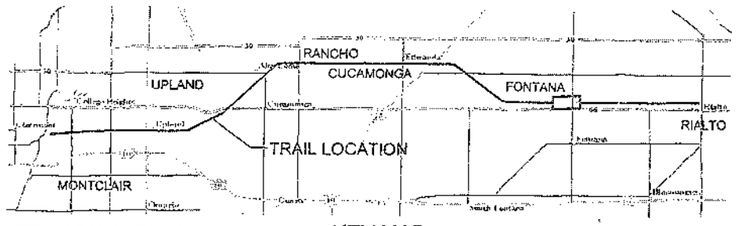


1 - Masonry screen wall

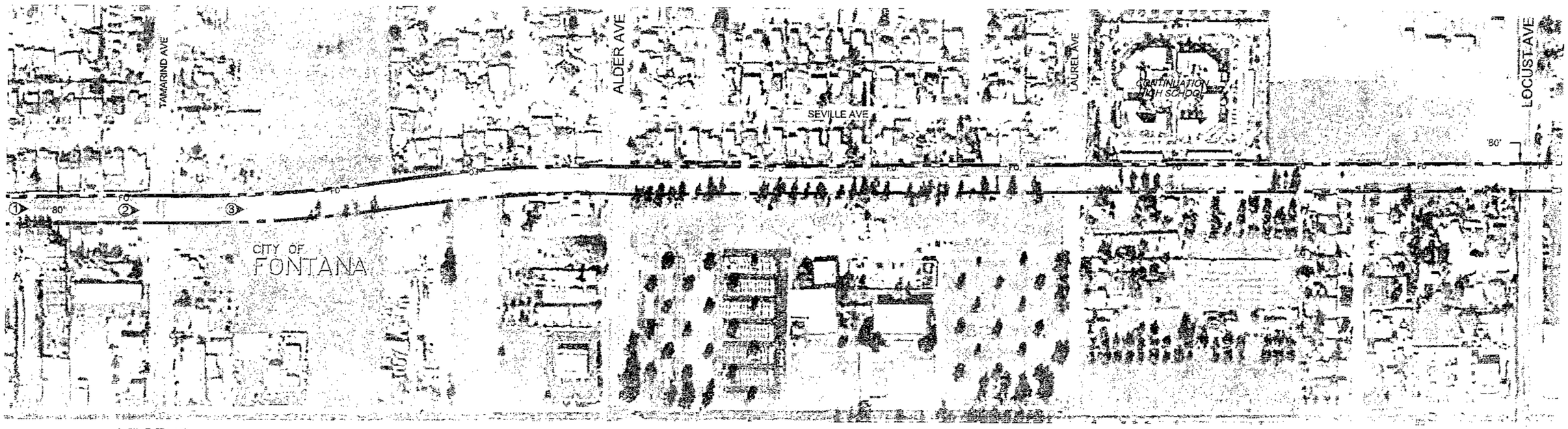


3 - Rural character

2 - Tamarind Ave crossing



KEY MAP
NOT TO SCALE



LEGEND

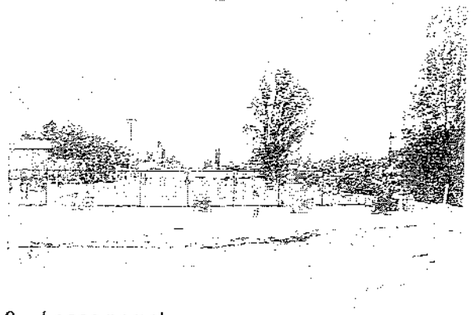
- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

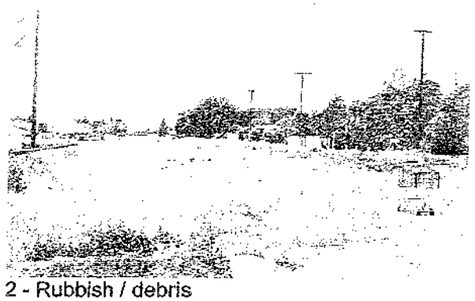
SEGMENT: 23
MILE 18.1 - 18.9
CITY: RIALTO

1- Gravel ballast

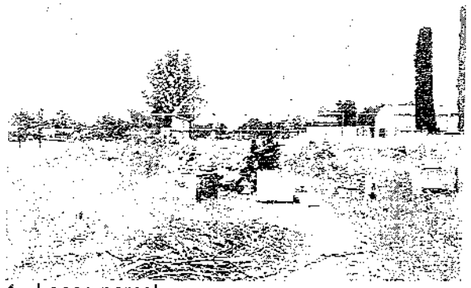


3 - Lease parcel

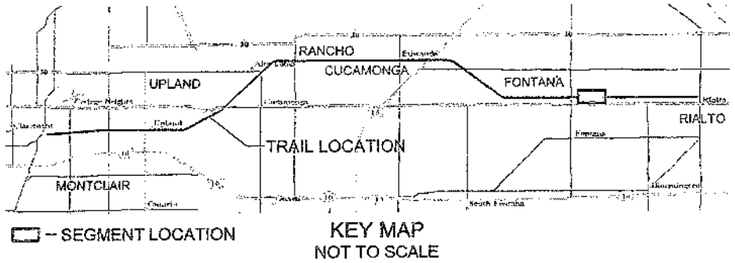
5 - Remnant vineyard



2 - Rubbish / debris

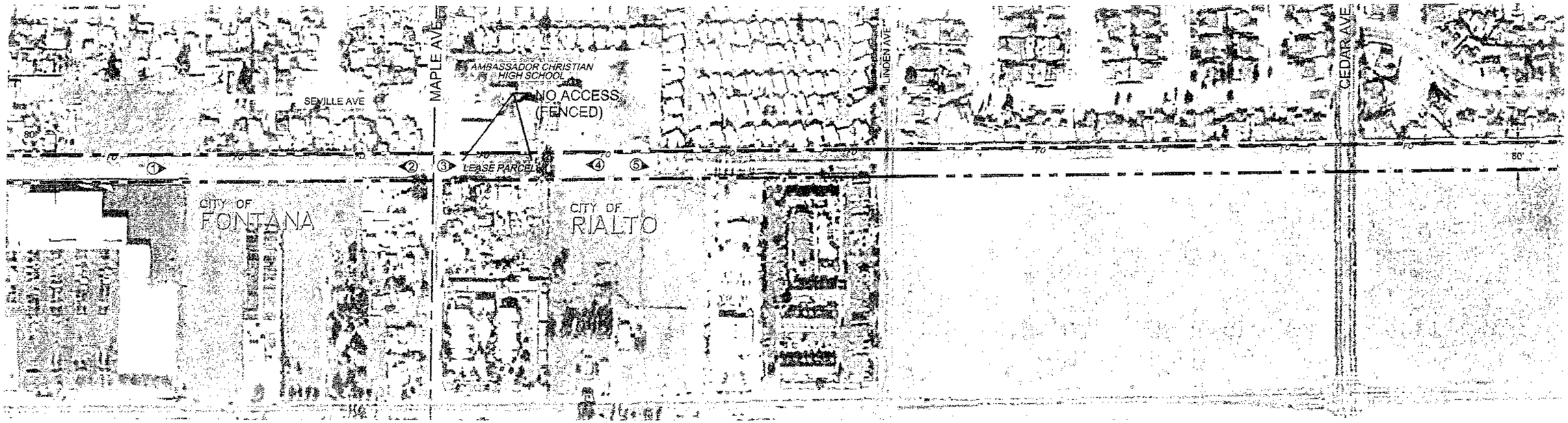


4 - Lease parcel



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

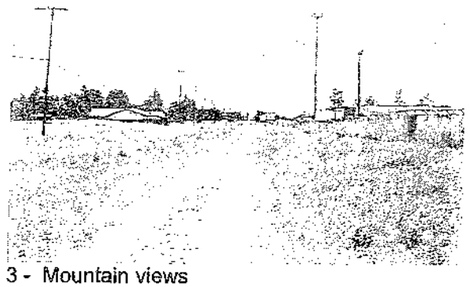
EXISTING CORRIDOR CONDITIONS

SEGMENT: 24

MILE 18.9 - 19.8

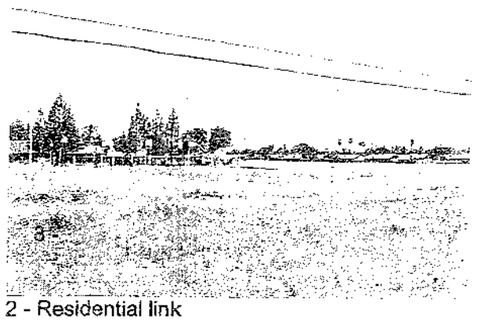
CITY: RIALTO

1 - Open field



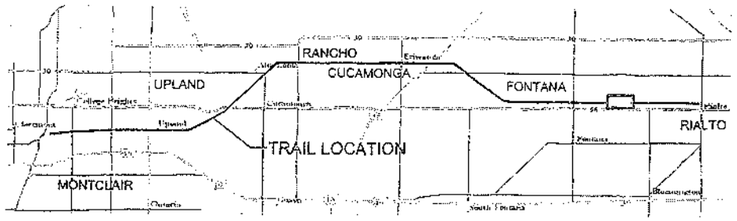
3 - Mountain views

5 - End of active rail (from east)



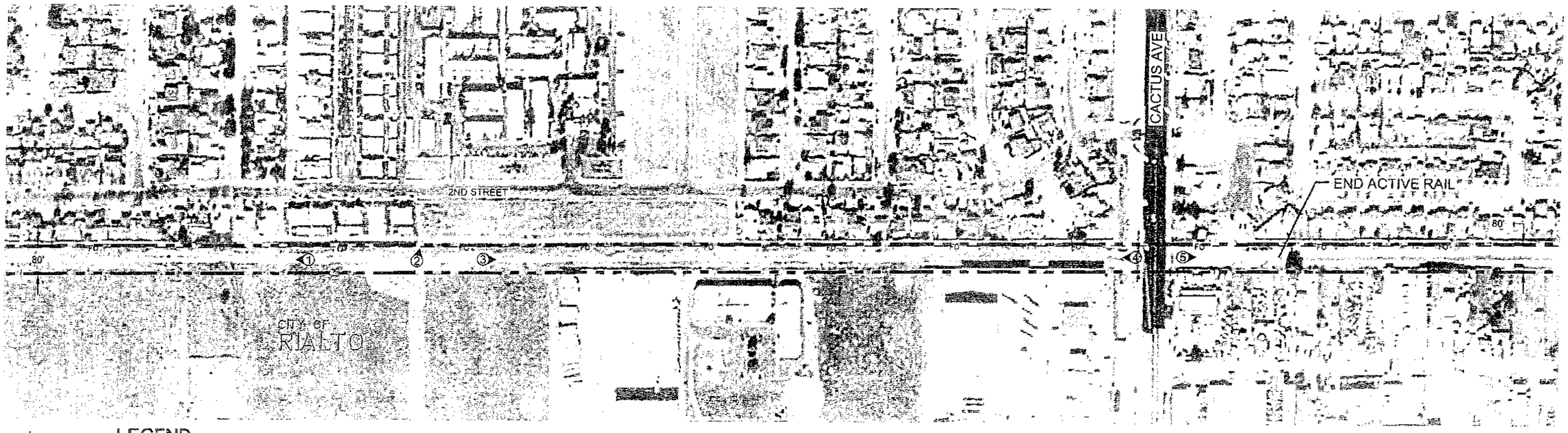
2 - Residential link

4 - Industrial Building
Water/drainage facilities



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

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- STREET RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- FO — SPRINT FIBER OPTIC LINE
- W — WATER LINE
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

EXISTING CORRIDOR CONDITIONS

SEGMENT: 25

MILE 19.8 - 20.3

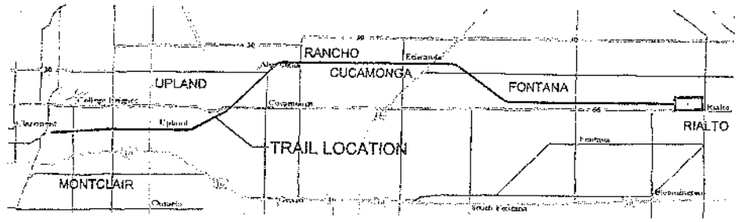
CITY: RIALTO/SAN BERNARDINO

1 - Active rail and siding

3 - Active rail / Residential

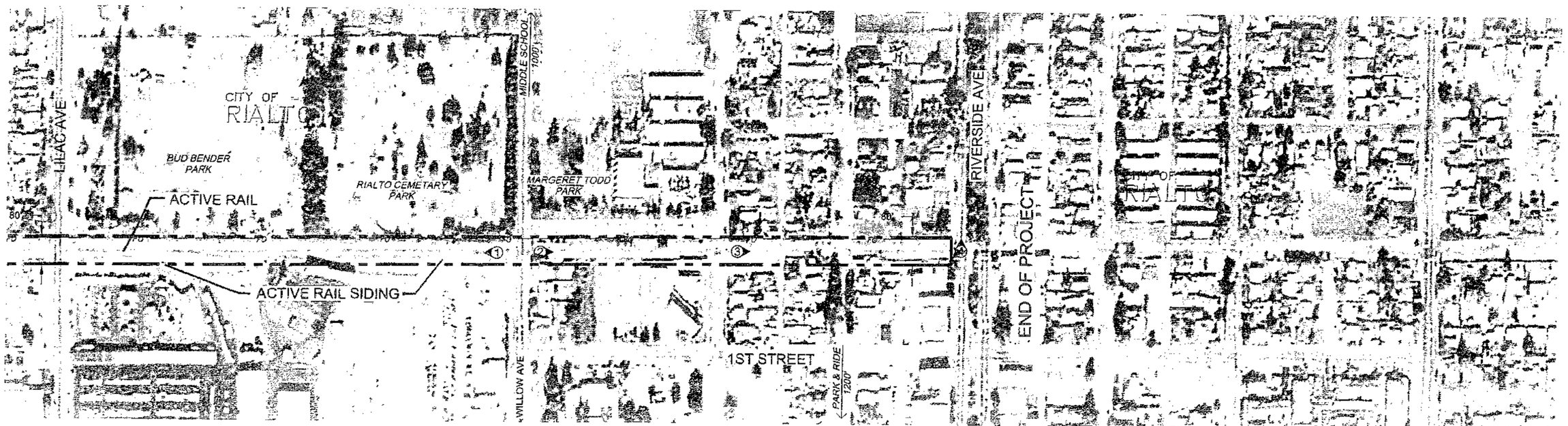
2 - Active rail

4 - Riverside Ave / End of project



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- RAILWAY RIGHT-OF-WAY
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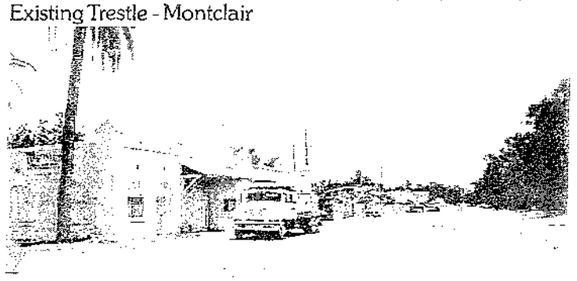
- SANBAG NON-OP PROPERTY
- ① PHOTO LOCATION AND VIEWPOINT

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

Opportunities and Constraints

Unique design opportunities in the former Pacific Electric Railway Corridor include some remnant historic railway elements such as rail bridges, some rail in a few streets, and Pacific Electric Stations in Etiwanda and Rialto. These can all be used to develop a rich design theme based on the history of the Pacific Electric Railway. Other historic structures in or adjacent to the right-of-way include the former Sunkist Packing house and a portion of the once spectacular Fontana Depot both in the City of Fontana.

Existing Trestle - Montclair



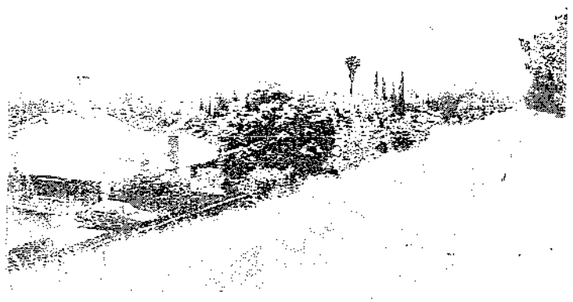
Etiwanda Station - Rancho Cucamonga

Sunkist Packinghouse - Fontana

Washington Boulevard - Upland

Another opportunity for a link to history is in Upland where beautifully restored homes along Washington Boulevard line both sides of the former Pacific Electric Railway. In this area the right-of-way ran down the center median parkway. This is one of the few areas remaining where homes face the right-of-way rather than back up to the corridor. This setting evokes images of a simpler time when Pacific Electric trains transported people from the rural bucolic suburbs to the busy center of Los Angeles to work.

There are several areas along the right-of-way where nearby historic areas can be linked to the Pacific Electric Inland Empire Trail to create a continuity of historic districts. The area around the Etiwanda Station in Rancho Cucamonga is particularly suited to the possible continuation of an historic theme. Several buildings have been restored. Some historic houses have been moved to the area and the City of Rancho Cucamonga has ambitious plans to expand the historic district. Another possible historic district adjacent to the Pacific Electric Inland Empire Trail is in downtown Fontana.



Looking SW East of Vineyard - Rancho Cucamonga

There are also some opportunities created by natural topography. As the right-of-way moves east after Upland into and through Rancho Cucamonga, the rail corridor climbs up in elevation allowing expansive views out over the valley. Some of the channelized creek beds and transmission corridors also provide extensive views to the mountains.

Just east of Vineyard, the right-of-way diverges from the adjacent road alignment creating an area large enough to be used as a trail head or equestrian staging area. Currently northeastern Rancho Cucamonga and western Fontana still have a rural character. The remnant agricultural fields, dirt roads and large trees evoke a rustic character lost in much of Southern California.

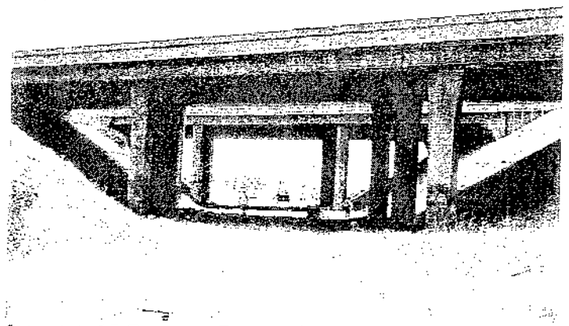
Potential Staging Area at Vineyard - Rancho Cucamonga

The right-of-way passes near several parks and schools allowing an opportunity to link these facilities. Parks with restrooms , drinking fountains and parking are also a potential asset.

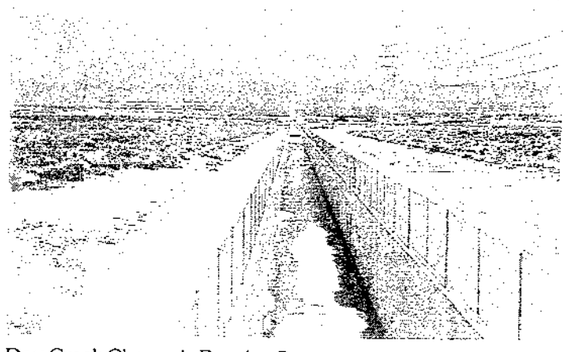
School Site - Fontana

The Interstate-15 overpass is currently an asset, allowing uninhibited east/west travel along the right-of-way. Although, it may be a challenge to accommodate both the trail and future rail under Interstate-15 with the geometric limits of the undercrossing.

Etiwanda Area - Rancho Cucamonga

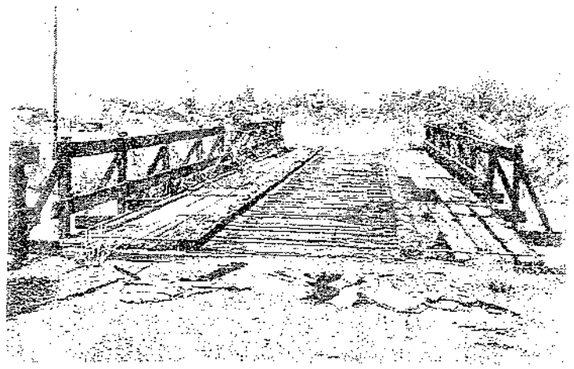


Interstate 15 Crossing - Rancho Cucamonga

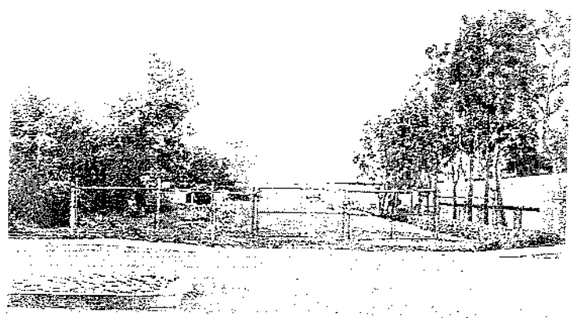


Day Creek Channel - Rancho Cucamonga

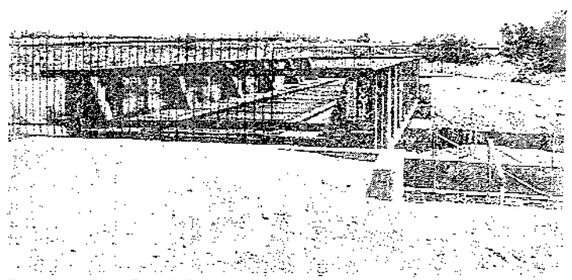
Potential constraints that must be overcome in designing the multi-use trail include three locations where fencing blocks through access on the right-of-way. One such area is the sand and gravel mining operation in eastern Montclair, between the LA County line and Monte Vista Avenue. The second location is at Mountain Avenue and the third is the bridge over Day Creek Channel in Rancho Cucamonga.



Sand and Gravel Mining - Montclair



Restricted Access at Mountain Avenue - Upland

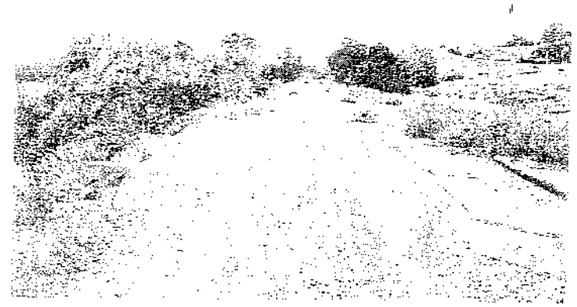


Fence at Day Creek Bridge - Rancho Cucamonga

Busy street crossings are potential constraints that must be addressed. High volume traffic situations that are not currently grade separated need to be studied to determine the safest crossing. Some streets such as Base Line Road cross at non-perpendicular angles complicating the design. Some streets no longer have median breaks where the former Pacific Electric Railway tracks crossed. This fact also complicates the design solution.

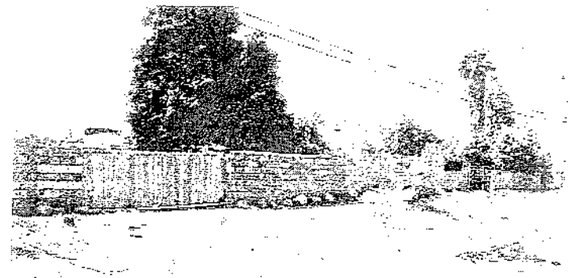
Arrow Route crossing - Upland

Day Creek Boulevard Median - Rancho Cucamonga

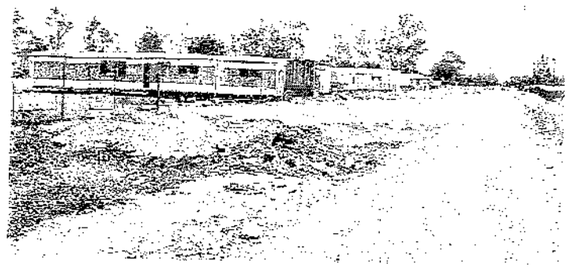


Flood Control Channel Crossing - Rancho Cucamonga

Flood control channels and culverts pose a potential constraint because there are not railings or barriers preventing access from the right-of-way. This must be addressed because the facilities are often attractive to children.



Right-of-way as Alley - Rancho Cucamonga



Right-of-way as Alley - Fontana

There are a few areas where the existing right-of-way is being used as an alley for access to the rear of adjacent properties. Most of these are residential although there is a commercial access off the right-of-way in Fontana.

Leased Right-of-way Private School Site - Rialto

In Rialto a private school has a lease for a portion of the right-of-way. This parcel is currently being used as a playground for the school. The site is fenced and currently blocks east/west access along the right-of-way.

Also in Rialto the last 2.3 miles of right-of-way has active freight rail (see below). This is a single track and a siding that serves a lumber company. Other potential constraints that must be considered include existing water lines and fiber optic cable in the right-of-way.

Active Freight Rail - Rialto

User Needs Analysis

The Pacific Electric Inland Empire Trail will be used by thousands of recreational and commuter cyclists, pedestrians, and equestrians, as demonstrated by the success of multi-use trails already constructed in Southern California and other parts of the country. Each user group has specific needs that will directly affect the planning and design of the Pacific Electric Inland Empire Trail. For example, most pedestrians prefer to walk on a softer surface on a meandering, shaded trail. Most bicyclists prefer to ride on a firmer surface with fewer curves, while in-line and roller skaters require a hard asphalt or concrete surface. Equestrians prefer an unpaved surface that they do not share with bicyclists or other wheeled users.

Future pedestrian, equestrian, and bicycling activity in the corridor will range from intense to low depending on the location and time of year or week. Some activities will be limited to specific areas, such as equestrian use in Rancho Cucamonga. Current activities can be categorized into the following groups:

Commuters

A common profile will consist of employed adults, adult students, and school children. Adult commuters are typically seasoned bicyclists and walkers, who can move at or above average speeds and maneuver across busy arterial roadways. Often these commuters prefer to ride on-street rather than on a bike path: the Pacific Electric Inland Empire Trail should be designed to be attractive to both the casual and serious bicyclist. School children will be slower moving and less adept at crossing busy streets, meaning that new street and rail grade crossings must be designed with them in mind. Access points from the trail to schools, neighborhoods, employment centers, and nearby transit connections must also be provided for the trail to serve as an effective commuter corridor.

Recreation

The Pacific Electric Inland Empire Trail will attract a significant number of users who simply desire a linear corridor for exercise and recreation. This includes families with young children, club bicyclists, long distance bicyclists, equestrians, people walking their dogs, roller skaters/bladers, joggers, to name a few. All of these groups have unique characteristics, many of which conflict with one another. For example, experienced bicyclists may be traveling at speeds in excess of 20 mph. Roller skaters/bladers often consume the entire trail width as part of their skating motion. Families and pets often travel in the wrong direction, stand in the middle of the Trail, or otherwise obstruct through traffic.

Joggers typically prefer the unpaved shoulder to run on rather than asphalt. Equestrians pefer to avoid all wheeled users as they may spook their horses. Benches, drinking fountains, signing, trailhead parking, and waste receptacles are just a few of the items typically required for recreational and commuter trail users alike.

Because of this multiplicity of needs, the Pacific Electric Inland Empire Trail should be designed to separate different user groups as much as possible by providing unpaved shoulders on each side of the pathway for runners and walkers.

Destinations

The Pacific Electric Inland Empire Trail will directly or indirectly serve virtually all of the regional and local destinations along the corridor. It will link the towns of Claremont, Montclair, Upland, Rancho Cucamonga, Fontana, and Rialto, along with some unincorporated portions of San Bernardino County. Each of these communities has employment and recreation attractions, local schools, historic downtowns or areas, new developments, local and regional parks, interconnecting trails and bikeways, and other destinations. Approximately 25% of the County's population resides in areas potentially served by this trail.

The Pacific Electric Inland Empire Trail itself will likely become a major recreational destination for the area. It will attract residents from residential areas along the trail as well as recreational users from all over San Bernardino County and Southern California, particularly as the Citrus Rail Trail is completed from Claremont to San Dimas. It will also connect to local and regional trails and bikeways, and serve as an alternative to heavily-traveled Foothill Boulevard (more than 45,000 vehicles per day), which does not have bikeway facilities. The Pacific Electric Inland Empire Trail will also be in close proximity to the Montclair Transit Center and Metrolink Stations in Upland, Fontana and Rialto.

Projected Short and Long Term Trail Usage

The proposed Pacific Electric Inland Empire Trail will be designed for multiple-use recreation and commuting. The major uses that are anticipated include bicycling, equestrian use (in Rancho Cucamonga), walking, running, and roller skating/blading.

Public workshops were held in Rancho Cucamonga on June 8 and July 20, 2000. Attendance at both of these workshops ranged between 30 and 60 people. Attendees were invited to comment verbally or on written surveys. Survey forms were also distributed throughout the study area. A total of 515 Survey/Questionnaire

The survey results are an excellent resource to analyze user needs on the trail. While the survey is a useful tool, it is also important to note that the survey purpose was not to develop an exhaustive and statistically accurate sampling, but rather to gather useful background information to direct the Master Plan effort. Some key points brought ought by the survey include:

Survey results were heavily weighted towards Rancho Cucamonga residents (83% of surveys), which indicates both the method of survey distribution and possibly the level of interest in the various communities.

The average age of respondents was higher than average resident age for the six cities, probably again indicating the survey method (which was made available in locations more often frequented by adults rather than specifically targeted to school age children, for example).

Current usage of the undeveloped right-of-way is split about 50-50 between walking and bicycling, with equestrian use about 7%.

Projected average usage of the 515 people who returned the survey is about 70 times per year, or 6 times per month. Upon completion of the Pacific Electric Inland Empire Trail, this figure is projected to increase over 90% based on the survey results, or to 134 times per year or 11 times per month.

A high proportion of responses indicated that they would use the trail in evening (up to 40% of users), highlighting the importance of lighting at least at crossings.

A relatively small proportion of users indicated they would use the trail for transportation (4.1%), although this figure is likely to increase significantly once school children and adult commuters realize the transportation benefits of the corridor.

The average trip length of survey responses was 6.74 miles. This is helpful in locating rest areas and other support facilities.

Most surveys indicated an interest in providing all of the facilities listed in the survey, from a Class I paved bike trail to an equestrian trail. When asked which facilities they would use, a Class I bike path, signalized crossings, lighting, and emergency telephones scored the highest.

The top three greatest constraints cited in the surveys were the street crossings with high speed, heavy traffic volumes, and no signals.

Concerns about user conflicts actually scored very low, with only 18% indicating that it was a problem. Of this 18%, bicycles and horses constituted the greatest conflict but the results were relatively evenly spread among all users.

To avoid conflicts, most people indicated that separate lanes or paths were the best solution, although education and rules and regulations also scored high.

In comparison, the potential recreational uses (excluding equestrian uses) are put into perspective by a 1986 national survey for the *President's Commission on Americans Outdoors*, showing the percentage of adults participating in the following selected activities one or more times during a year:

Walking for pleasure	84%
Bicycling	46%
Running or jogging	42%
Day hiking	27%

Other activities will undoubtedly occur with new trends and activities. It is likely that the residents in surrounding areas enjoy a very similar spectrum of activities. Along with the types of uses, the demand or total numbers of all recreational users can be expected to increase. The amount of linear recreational activities such as jogging, walking, running, and roller-blading in the six cities has increased steadily with the growth in population. This trend is expected to continue.

The demand for trails is very strong throughout California. The *California Outdoor Recreation Plan* (1988) surveyed recreational activities in the state. Trail uses such as walking, hiking, and bicycling rank high in the activity participation study. Walking and bicycling also show the highest public support for funding.

In order to estimate the number of future recreational trail users, several assumptions must be made based on the survey results discussed previously and studies of similar trails about the potential users and the Pacific Electric Inland Empire Trail that include the following:

1. Peak season assumed to be 210 days long (off season assumed to be 155 days long).
2. Off season usage assumed to be 25% of peak season.
3. Overall weekday use is assumed to be 25% of weekend or holiday use.
4. A ratio of pedestrians to bicyclists is assumed to be 3:2.
5. A range of age use for the trail system is assumed.

User Needs Analysis (continued)

Age groups utilizing the trail are assumed to be:

Under 15 years	20%
16 - 25	15%
26 - 35	20%
36 - 45	22%
46 - 55	12%
56 and over	11%

Assumptions on the characteristics of typical trail users include the following:

1. 70% of the trail demand will be derived from the local community.
2. 90% of the trail users will arrive on foot, by bicycle, bus, or train.
3. 10% of the trail users will drive specifically to use the Pacific Electric Rail Trail.
4. Average round trip walking distance is assumed to be 1 mile.
5. Average round trip bicycling distance is assumed to be 5 miles.

According to the 1990 U.S. Census, the population in the six cities is about 390,000, or, assuming about a 10% increase in the Year 2000, about 430,000 persons. It should be noted that the planned developments along the trail will likely add several thousand residents in direct proximity to the trail.

Based on the survey results and studies of comparable trails in California, the Pacific Electric Inland Empire Trail can be projected to attract about 12,000 average daily users, including walkers, bicyclists, equestrians, and others. The projections of annual recreational use are 4.5 million users. It is important to note that many of the users may be on the trail for relatively short distances, and would not all be concentrated at any one location.

Average daily usage at any one location may be more in the order of 3,000 persons per day. This projection is based on 87% of the population base engaging in one of the recreational activities (walking, bicycling, jogging, riding, skating) an average of 60 times per year, and that the Pacific Electric Rail Trail will attract about 20% of those users based on geographic location in the six cities.

Commuters on the trail are estimated to total about 3,800 on an average day, composed primarily of school children. This is based on an estimated 19,000 existing commuters who walk or bicycle to work or school in the six cities, and 20% of those using the trail. This translates into an addition 1.3 million users per year.

Pacific Electric Inland Empire Trail Survey/ Questionnaire

Public participation in the planning process was facilitated through the distribution of a User Survey/Questionnaire. The User Survey/Questionnaire had a total of **515** responses, 67 of these received electronically via the Internet Web Site. The User Survey/Questionnaire provided a unique perspective on how some people currently use the Pacific Electric Railway right-of-way and how prospective users would utilize the Pacific Electric Inland Empire Trail. The following is a summary of the responses

1. **Where do you live?**
   - 82.9% Rancho Cucamonga
   - 7.8% Other (not identified)
   - 2.3% Claremont
   - 2.3% Fontana
   - 2.1% Upland
   - 1.0% Rialto
   - 0.8% Ontario
   - 0.4% Riverside
   - 0.2% Montclair
   - 0.2% Diamond Bar

2. **What is your age group?**
   - 55.0% 40-59
   - 31.5% 19-39
   - 9.7% 60+
   - 1.7% No response
   - 1.4% 13-18
   - 0.8% 5-12

3. **How do you typically use the Pacific Electric Railway right-of-way now?**
   - 41.5% Walk
   - 39.0% Ride Bicycle
   - 10.4% Other (most wrote in "not at all")
   - 6.5% Ride Horse
   - 2.5% Run/ Jog

4. **How often would you use the Pacific Electric Railway right-of-way?**
   - 27.4% Weekly
   - 22.5% 2-3 days/ week
   - 12.8% Not at all
   - 11.7% Monthly
   - 11.7% Rarely
   - 8.5% Daily
   - 5.4% No Response

5. **When do you typically use the Pacific Electric Railway right-of-way?**

WEEKDAYS:		WEEKEND:	
40.8%	Evening	53.0%	Morning
28.9%	Morning	34.2%	Evening
13.0%	Afternoon	22.1%	Afternoon
6.8%	Night	6.2%	Night

6. **What would be the primary reason for to you to use the Pacific Electric Railway right-of-way?**
   - 48.7% Exercise
   - 28.3% Recreation
   - 16.9% No Response
   - 2.3% Transportation to/from Work
   - 1.9% Other
   - 1.4% Transportation to/from Shopping
   - 0.4% Transportation to/from School

7. **What would be the average distance of your journey?**
   - 35.3% 2-4 miles
   - 28.7% 5-10 miles
   - 10.9% 10-20 miles
   - 10.1% 20+ miles
   - 9.3% Under 2-miles
   - 5.6% No Response

8. **Would you use the Pacific Electric Railway right-of-way more often if it was improved?**
   - 94.9% Yes
   - 5.6% No

9. **How much more often?**
   - 36.9% 2-3 days/week
   - 29.7% Monthly
   - 24.5% Daily
   - 7.6% No Response
   - 0.4% Weekly

10. **What improvements are most important to you? (rank 1-10 <10 being the most important>)**

Average Response:
- 6.7 Class I Paved Bicycle Trail
- 6.6 Signalized Crossings of Major Streets
- 6.2 Drinking Fountains
- 6.1 Lighting
- 5.9 Public Restrooms
- 5.5 MileageMarkers
- 5.4 Historical Markers
- 5.2 Telephones
- 5.1 Parking
- 4.9 Equestrian Trail

Percent of Total:
- 78.4% Class I Paved Bicycle Trail
- 77.5% Signalized Crossings of Major Streets
- 76.3% Lighting
- 76.3% Public Restrooms
- 75.7% Drinking Fountains
- 73.4% Mileage Markers
- 71.1% Historical Markers
- 70.9% Telephones
- 70.1% Parking
- 69.5% Equestrian Trail

11. **What current conditions or potential problems concern you the most: (multiple responses)**
   - 74.6% Crossing streets with high vehicular speed
   - 60.8% Crossing streets with high vehicular traffic
   - 46.6% No signals at street crossings
   - 46.6% Lack of lighting
   - 36.1% No patrol or supervision
   - 33.0% No public restrooms
   - 31.5% No drinking fountains
   - 28.2% Lack of marked cross-walks
   - 28.2% Lack of restroom facilities
   - 24.1% Lack of railings on bridges
   - 21.7% Lack of curb-cuts at crossings
   - 18.6% No telephones
   - 18.6% Lack of signage or markers

12. **Would you use the Pacific Electric Trail if the following improvements are made?:**
   - 72.0% Continuous Class 1 Bicycle Path
   - 52.2% Signalized Crossings at Major Streets
   - 47.4% Lighting
   - 41.0% Class II Bicycle Path (striped lanes)
   - 41.0% Bicycle Paths on intersecting streets
   - 34.6% Emergency Telephones
   - 29.9% Connections to Schools, Neighborhoods & Parks
   - 25.8% Separate Equestrian Trail was available
   - 24.7% Parking
   - 19.0% Connections to Transit Centers
   - 14.8% Employer Incentives to Ride to Work
   - 11.8% Bike Lockers
   - 9.1% Other
   - 8.9% Equestrian Staging Areas
   - 8.7% Signage & Mile markers
   - 3.7% Public Restrooms
   - 2.5% Drinking Fountains

13. **Have you experienced conflicts between various user groups?**
   - 81.9% No
   - 18.1% Yes

14. **If so, which groups?**
   - 9.9% Bicycles & Horses
   - 7.8% Bicycles & Walkers
   - 6.8% Bicycles & Skaters
   - 5.2% Bicycles & Joggers
   - 5.2% Horses & Skaters
   - 3.1% Horses & Joggers
   - 2.9% Walkers & Skaters
   - 2.9% Joggers & Skaters
   - 2.7% Horses & Walkers
   - 0.6% Walkers & Joggers

15. **What are the best ways to avoid potential conflicts?**
   - 59.6% Separate "Lanes"
   - 36.9% Rules & Regulations
   - 32.8% Education
   - 13.8% Separate Facilities
   - 4.3% Restricted Hours of Use

Design Guidelines
Trail Design

This section provides specific design and implementation guidelines and standards to ensure that the Pacific Electric Inland Empire Trail is constructed to a consistent set of the highest and best standards currently available in the United States. Planning, design, and implementation standards are derived from the following sources:

Caltrans: Highway Design Manual (Chapter 1000: Bikeway Planning and Design)

Americans with Disabilities Act (ADA)

FHWA/FRA: Rails-with-Trails Best Practices Report

AASHTO: A Policy on Geometric Design of Highways and Streets, and Manual of Uniform Traffic Control Devices

USDOT/FHWA: Conflicts on Multiple-Use Trails

ITE: Design and Safety of Pedestrian Facilities

RTC: Rails-with-Trails, Sharing Corridors for Transportation and Recreation

While there are a considerable number of multi-use trails in active railroad corridors around the United States, there are few design guidelines that have been developed specifically for this type of facility to-date. The sources listed above provide details on many aspects of a multi-use trail, but (a) may contain recommendations that conflict with each other, (b) are not, in most cases, officially recognized "requirements," and (c) do not cover all of conditions on trails. Except for the Caltrans guidelines, all design guidelines must be considered as simply design resources for the Pacific Electric Inland Empire Trail, to be supplemented by the reasonable judgements of professionals.

In addition to the published resources listed above, we have drawn from the experiences of multi-trails in active and abandoned rail corridors around California and the United States to establish accepted practices.

The following Class 1 Bike Path Standards represent the basic guidelines set forth by Caltrans. There are many conditions that are not explicitly covered in the Caltrans or AASHTO guidelines.

Class I Bike Path

Sample Signage

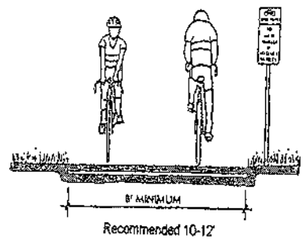


Figure One - Caltrans Class I Bike Path

Recommended Multi-Use Trail Section

A 15' wide trail right-of-way was established through the public workshop process and will include an 11' wide multi-purpose, hard surface trail with two 2' wide crushed gravel shoulders. This trail section will extend the entire length of the corridor. The hard surface trail shall be designed to facilitate a wide range of uses including bicycles, wheelchairs, hikers, joggers, roller bladers, strollers, and walkers. The gravel shoulders often becomes the preferred surface for joggers but also serve as a pavement change warning edges for cyclists. Most likely choices for the multi-purpose trail surfacing are concrete or asphalt.

Equestrian Trail

Within the six miles of trail in Rancho Cucamonga, an equestrian trail will be developed. Wherever possible, the equestrian trail will be separated from the multi-purpose trail and reserved exclusively for equestrian use. This will reduce conflicts between equestrians and faster moving bicyclists or other trail activities. A visible clear zone should be provided where the equestrian trail joins or intersects with the multi-purpose trail. Also, signage should be provided at trailheads with equestrian facilities that warn the equestrian that this is an urban trail with numerous road crossings. Caution should be used at all roadway crossings.

Surfacing for the equestrian trail shall consist of a 4" depth, ¾" minus compacted aggregate base, overlaid with a 4" depth of ¼" minus, crushed aggregate top dressing. It is important that the top dressing have a full gradation of fines to provide proper binding.

The equestrian trail surface shall be 15' wide, the same width as the multi-use trail. Minimum vertical clearance shall be 10'-0". All vegetation such as tree limbs, stumps, etc. should be cleared from this area.

In a limited number of locations, the multi-purpose trail and the equestrian trail will need to merge. This happens at bridge crossings and intersections. When this occurs and where width allows, as much buffer should be left between the trails as possible, even if the clear areas or shoulders overlap. At bridge locations where widths are typically narrower and pre-established by the existing bridge substructure, yield signage should be placed at both ends of the bridge approach.

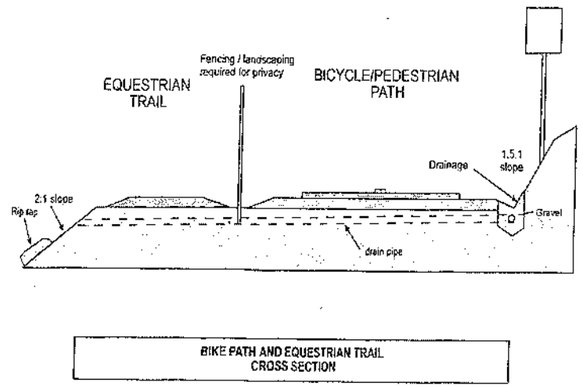


Figure Two - Typical Trail/Path Cross Section

The following sections establish the basic design parameters as developed by Caltrans. Mandatory standards are shown in bold face.

Trail Width

The recommended minimum width for paved multi-use trails in California is 8-feet, with 2-feet of lateral clearance and 8-feet of vertical clearance. If the trail is projected to have higher volumes of bicyclists and others, or if maintenance vehicles will be using the rail trail on a regular basis, a minimum width of 10-feet is recommended with the same lateral and vertical clearances. Typically, 3-feet wide unpaved shoulders with a compacted surface (often decomposed granite) are located on each side of the paved surface to accommodate joggers and others who prefer a softer surface.

Signing and Striping

A yellow centerline stripe may be desirable (but is not required) on sections of the trail that have heavy usage, curves with restricted sight lines, at approaches to intersections, and/or where nighttime riding is expected.

Design Speed

The minimum design speed for bike paths is 20 miles per hour, except on sections where there are long downgrades (steeper than 4%, and longer than 500-feet). **Speed bumps or other surface irregularities should never be used to slow bicycles.**

Horizontal Alignment

Recommended curve radii and super elevations are shown in Chapter 1000 of the Caltrans Highway Design Manual (HDM), along with recommended stopping distances. A 2% cross slope is recommended for drainage, and should generally not be exceeded.

Lateral Clearance on Horizontal Curves

The minimum clearance to line of sight obstructions on horizontal curves can be calculated by taking the lateral clearance information and the required stopping sight distance from Chapter 1000 of the HDM, and the proposed horizontal curve radius. The preliminary design of the trail has taken this criteria into account.

Structural Section

Bike path construction should be conducted in a similar manner as roadway construction, with sub-base thickness to be determined by soils condition and expansive soil types requiring special structural sections. Minimum asphalt thickness should be 3" of Type A or Type B as described by Caltrans Standard Specifications, with 3" maximum aggregate and medium grading. In areas on the trail where there is expected to be regular use by patrol or maintenance vehicles, or where material may need to be removed with a tractor blade, the preferred pathway material for the Pacific Electric Trail is a 4" reinforced concrete material with sub-base or 6" of reinforced concrete on compacted native material (if suitable). In other areas where these conditions do not exist, a 3" thick asphalt concrete may be suitable.

Trail Profile

Much of the corridor right-of-way has an elevated bench of old rail ballast running down the center. This bench is often elevated above the surrounding grade by 1'-2', providing the trail user with a "natural" and comfortable vantage point as one traverses along the route. Along large portions of the corridor, adjacent developments have built walls that front onto the trail giving the corridor a "backyard" feel. It is preferable that wherever possible, the trail be located on the existing rail ballast bench. This allows the trail users to see the surrounding terrain and not feel hemmed in the surrounding walls. However, the need to maintain a rail corridor may prevent use of much of the existing rail bench areas.

Drainage

Drainage is not expected to be a major issue on the Pacific Electric Inland Empire Trail. Soils appear to have good porosity and several engineered drainage structures exist along the route. Run-off from the trail should be considered. In some cases, there may need for a drainage swale, tied into existing culverts or other drainage structures.

Signing, Markings, and Traffic Control Devices

Uniform signs, markings, and traffic control devices shall be used per section 2376 of the Streets and Highways Code. An optional 4" yellow centerline stripe may be used to separate users on a Class I bike path.

Bike path signing and markings should follow the guidelines as developed by The California Department of Transportation (Caltrans), and the Manual on Uniform Traffic Control Devices. This includes advisory, warning, directional, and informational signs for both bicyclists, pedestrians, and motorists. The final striping, marking, and signing plan for the Pacific Electric Inland Empire Trail should be reviewed and approved by a licensed traffic engineer or civil engineer.

Posts at trail intersections and entrances may be necessary to keep unauthorized vehicles from entering. Posts should be designed to be visible to bicyclists and others, especially at night time, with reflective materials and appropriate striping. Posts should be designed to be easily moveable by emergency vehicles.

Application of Standards

Caltrans has developed specific design guidelines in the Highway Design Manual (HDM) for Class I bike paths. Off-road portions of the Pacific Electric Inland Empire Trail will be designed to Class I standards wherever possible. These standards are intended to be a guide to engineers in their exercise of sound judgment in the design of projects. Design standards should meet or exceed the Caltrans standards to the maximum extent feasible. Lower standards may be used "when such use best satisfies the concerns of a given situation." Mandatory design standards "are those considered most essential to achievement of overall design objectives. Many pertain to requirements of law or regulations such as those embodied in the FHWA's controlling criteria." Mandatory standards are identified in Chapter 1000 of the HDM with the word "shall".

Advisory standards are important but allow for greater flexibility and are identified by the word "should." Permissive standards are identified by the words "should" or "may", and can be applied at the discretion of the project engineer. Controlling Criteria, as defined by the FHWA, consists of 13 specific criteria to be used in the selection of design standards. They are: (1) design speed, (2) lane width, (3) shoulder width, (4) bridge width, (5) horizontal alignment, (6) vertical alignment, (7) grade, (8) stopping sight distance, (9) cross slope, (10) super elevation, (11) horizontal clearance, (12) vertical clearance, and (13) bridge structural capacity.

Designs which deviate from the mandatory Caltrans design standards **shall** be approved by the Chief, Office of Project Planning and Design, or delegated Project Development Coordinators.

Trail Access

Trail access can take on a variety of forms ranging from informal neighborhood access pathways to fully developed trailheads with a range of facilities that might include parking, restrooms (at select locations), drinking fountains, telephones and interpretive signage. As a general policy, access to the trail should be encouraged wherever feasible. While good access to the trail is a key ingredient to success, with the exception of maintenance and emergency service vehicles, cars should be prohibited on the trail.

Trailheads and Facilities

Trailheads provide public access and draw a wide diversity of users. Trailheads become the arrival points to the trail, often drawing people from a regional base rather than from the surrounding neighborhood. Not only are trailheads important for access, but as arrival points, they establish strong first impressions of the trail. The character of the trail and level of maintenance of the trail are all immediately evident to the trail user. Trailheads are a logical place to make major capital investments.

Ideally, trailheads should be located approximately two and one-half to three miles apart along the trail. For security purposes, trailheads should be highly visible from the public right-of-way and located close to compatible businesses. A convenience store offering snacks and drinks for example will not only provide a benefit for trail users, but will appreciate the added business generated by the trail. Additionally, the inclusion of maintenance storage and crew lockers at trailheads will provide an added measure of security by creating some staff presence.

A total of 8 Trailheads are envisioned along the trail:

1.) Monte Vista Ave. (Montclair) Adjacent to the Montclair Transit Center

2.) 5th Ave. at Washington Blvd. (Upland) East end of SANBAG non-op parcel "O" (currently leased and improved as a senior center overflow parking lot)

3.) Vineyard Avenue (Rancho Cucamonga) Immediately East of steel railroad bridge over Vineyard Avenue. Potential equestrian staging area.

4.) Milliken Ave. (Rancho Cucamonga) Within the Rancho Cucamonga Central Park site

5.) Etiwanda Ave. (Rancho Cucamonga) At the historic Etiwanda Station / SANBAG non-op parcel "Q"

6.) Hemlock Ave. (Fontana) Utilize SANBAG non-op parcel "R"

7.) Mango Ave. (Fontana) Historic Sunkist Packing House

8.) Willow Ave. (Rialto) Integrate into Margaret Todd Park

Of these proposed trailheads, the 3 located within Rancho Cucamonga should have equestrian facilities.

Trailheads should include automobile parking for 10-20 autos, restrooms with maintenance/storage areas, lighting, drinking fountains, at least two path connections to the trail, picnic tables, garbage cans (with encouragement to recycle at home), bicycle racks, telephone (with outgoing calls only), signage, and plantings for shade and aesthetics.

Trailheads that provide equestrian facilities should also include a staging area, horse watering trough, hitching posts, trailer parking, horse mounting ramps for physically challenged equestrians and horse waste composting bins. A separate equestrian trail should extend from the trailhead to the main trail to allow horses to "shake themselves out" before entering the main trail.

Site improvements at trailheads should be designed with people with disabilities in mind. In addition to disabled parking spots, elements such as drinking fountains, curb cuts, picnic tables, benches and signage must meet the requirements of the Americans with Disabilities Act.

The trailhead at Etiwanda station should become a "signature trailhead." With the acquisition of Etiwanda Station, one of the last remaining train stations on the Pacific Electric Line, and conversion of this unique site into a public rail museum, the trailhead at this location presents a tremendous opportunity to build on the historic theme already thriving in this section of Rancho Cucamonga.

In addition to trailheads, opportunities for several neighborhood access points exist. These serve as informal access, primarily serving the immediate neighborhood and providing a limited amount of on-street parking. These typically occur where residential streets end at the trail. In respect for neighborhood privacy, the locations of these will not be publicized. Minor improvements such as the addition of landscape plantings and minimal signage could occur at these sites.

Whenever possible, the Pacific Electric Inland Empire Trail should be linked to existing or proposed trail systems, open space areas and greenbelts. There is an extensive trail and formal greenbelt system currently in Rancho Cucamonga that provides access and connections to neighborhoods.

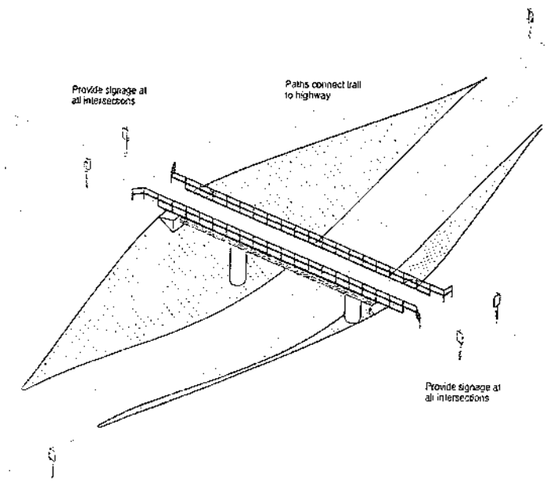


Figure Three Grade Separated Trail Crossing

Trail Crossings

The Pacific Electric Inland Empire Trail will have 66 roadway crossings over its 21-mile length. While this may seem high, it is actually very low considering that the average city block has 20 to 30 driveways and side streets, all of which represent potential conflict points to bicyclists and pedestrians. The Pacific Electric Inland Empire Trail will not only reduce these potential conflict points dramatically, but will eliminate one of the most common conflict types for bicyclists and pedestrians: vehicles turning into or out of driveways and side streets. As a significant number of bicycle and pedestrian-related accidents occur at these locations, the reduction in crossings and potential conflict locations represents the single greatest benefit of the Pacific Electric Inland Empire Trail.

This is not to imply that the proposed Pacific Electric Inland Empire Trail crossings will eliminate all bicycle and pedestrian-related conflicts. At-grade crossings represent one of the key obstacles to trail implementation. Motorists are often not expecting to see bicyclists, pedestrians, and especially equestrians at unprotected locations.

When considering the Trail and required crossings of roadways, it is important to remember two items: (1) trail users will be enjoying an auto-free experience and may enter into an intersection unexpectedly, and (2) motorists will not expect to see bicyclists shooting out from an unmarked intersection into the roadway. In some cases, a required roadway crossing may have such high traffic volumes, traffic speeds, limited visibility, or any combination of these factors, as to warrant a grade separation. Luckily, the Pacific Electric Inland Empire Trail already has several existing railroad bridges that can be retrofitted in the short term to avoid these types of crossings. The vast majority of crossings on this Trail alignment can be made at grade and properly designed to a reasonable degree of safety.

Crossing Design Standards and Guidelines

The primary sources for bikeway designs in California, the Caltrans *Highway Design Manual* and *Traffic Manual*, address trail crossings only obliquely. They do provide important standards for advisory and warning signs, crosswalks, bridge railings, and traffic signals. Caltrans standards are supplemented by two other sources: the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design and Highways and Streets* and *Guide for the Development of Bicycle Facilities*. Except where pre-empted by Caltrans, the *Manual of Uniform Traffic Control Devices* provides guidelines on signs, traffic signal warrants, and other items.

Finally, a publication entitled *Trail Intersection Design Guidelines* published by the University of North Carolina Highway Safety Research Center provides research and guidelines relevant to this subject. Note that of these sources, only Caltrans mandatory standards are binding in California. All of the other sources would qualify as guidelines. Finally, all of the sources defer to the reasoned judgment of a qualified engineering professional for the final selection of crossing treatments.

Crossing Types

Evaluation of trail crossings involves analysis of vehicle traffic patterns as well as trail users. This includes traffic speeds (85th percentile), street width, traffic volumes (average daily traffic, and peak hour), line of sight, and trail user profile (age distribution, destinations). The final selection of crossing type and design requires a detailed engineering study of sight lines, a traffic gap analysis, a speed survey, and other measures. Once the trail is constructed and operational, the Trail Manager should review the actual volumes of trail users and diversity of trail user abilities, and suggest changes where appropriate. This section presents a preliminary analysis at a conceptual level of detail.

The proposed systems approach in this report is based on established standards, published technical reports, and the experiences on existing facilities. Virtually all crossings on the Pacific Electric Inland Empire Trail fit into one of four basic categories, described below.

Table One
Basic Crossing Prototypes

Crossing Type	*Description*
1. Unprotected	Unprotected crossings include mid-block crossings of residential, collector, and sometimes arterial streets.
2. Routed to Existing Intersection	Trails which emerge near existing intersections may be routed to these locations.
3. Signalized/Controlled	Bikeway crossings that require signals or other control measures due to traffic volumes, speeds, and trail usage.
4. Grade Separated	Bridges or under crossings provide the maximum level of safety but also generally are the most expensive and have right of way, maintenance, and other public safety considerations. A variation on this theme is to separate the roadway under or over the trail, which would remain at grade.

Equestrian trail users should follow the same crossing procedures as pedestrians and bicyclists. In all but grade separated crossings, horse riders should dismount and lead their horses across the roadway.

These crossing types are discussed in greater detail in the following sections.

Type 1: Unprotected Crossings

Type 1 or unprotected crossings (unsignalized, but with other traffic control devices) are suitable for two lane streets with 85th percentile travel speeds over 50 miles per hour (mph) but average daily traffic volumes (ADTs) under 5,000, or travel speeds under 25 mph and ADTs up to 10,000. Unprotected crossings on four or more lane streets are acceptable on streets with up to 20,000 ADT and 85th percentile speeds under 35 mph, or under 10,000 ADT with speeds over 40 mph, always with a protected refuge area on the median.

Type 2: Routed to an Existing Intersection

Type 2 crossings within 250 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection for safety purposes. In order for this option to be effective barriers and signing would be needed to direct trail users to the signalized crossings. While this is a potential short-term solution, no specific applications have been identified on the Pacific Electric Inland Empire Trail. In some cases the intersections are directly adjacent to the crossings and are not a significant problem for trail users.

Type 3: Signalized Crossings / Controlled

New signalized crossings (Type 3) are identified for crossings more than 250 feet from an existing signalized intersection and where:

On Two Lane Roads

a. 85th percentile travel speeds are over 50 mph and ADTs over 5,000, or
b. ADTs are over 10,000 regardless of travelspeeds

On Four or More Lane Roads

a. 85th percentile speeds are over 40 mph and ADTs over 10,000, or
b. ADTs are over 20,000

Type 4: Grade Separation

Grade separation by various means is recommended for any crossing of a roadway where ADTs exceed 20,000, regardless of travel speeds. Grade separation may be in the form of a bridge or under crossing of the roadway, or by submerging the roadway under the trail so as to eliminate gradients on the trail. The main disadvantage of grade separation is the cost, which can be in the multi-million dollar range.

Also, any facility that has major gradient changes for trail users will be circumvented to some extent. Bridges and under crossings also have visual and safety concerns, and are not readily accessible for those people trying to access the trail from the road being crossed. Lowering a roadway under a trail offers many advantages to the trail user, but can be prohibitively expensive to construct.

Standard Crossing Features

Signing - Crossing features for all roadways include warning signs both for vehicles and trail users. The type, location, and other criteria are identified in the *Manual for Uniform Traffic Control Devices* (MUTCD) and the Caltrans *Highway Design Manual*. Consideration must be given for adequate warning distance based on vehicle speeds and line of sight, with visibility of any signing absolutely critical. 'Catching the attention' of motorists jaded to roadways signs may require additional alerting devices such as a flashing light , roadway striping, or changes in pavement texture. Signing for trail users must include a standard 'STOP' sign and pavement marking, sometimes combined with other features such as bollards or a kink in the trail alignment to slow bicyclists. Four way stops at mid-block trail crossings are not recommended.

Directional signing may be useful for trail users and motorists alike. For motorists, a sign reading 'Pacific Electric Inland Empire Trail Xing' along with a trail emblem or logo helps both warn and promote use of the trail itself. For trail users, directional signs and street names at crossings help direct people to their destinations. Warning signs (30" x 30" or 36" x 36") should be placed in advance of a mid-block crossing, either the W11-1 (for bicycles) or W11-2 (for pedestrians), with an auxiliary sign identifying the distance to the crossing based on 85th percentile roadway speeds. This is typically 750 feet in rural areas and 250 feet in urban areas. The W11-A warning sign may also be used immediately adjacent to the crossing.

Striping - A number of striping patterns have emerged over the years to delineate trail crossings. A median stripe on the trail approach will help to organize and warn trail users. The actual crosswalk striping is a matter of local and state preference, and may be accompanied by pavement treatments to help warn and slow motorists. The effectiveness of crosswalk striping is highly related to local customs and regulations. In communities where motorists do not typically defer to pedestrians in crosswalks, additional measures may be required. Research has shown that crosswalk designs that increase the width of the crosswalk and provide wide painted stripes are more visible to motorists.

Lighting

All trail crossings should have adequate street lighting to enhance visibility. Trail crossings should be illuminated at least as brightly as the crossed roadway for 25 feet from the intersection.

Grades

Sustained down grades in excess of 5% should be treated with special caution at crossings. The higher speeds and braking capabilities of bicyclists poses a real safety hazard, and should be mitigated through the use of wide curves or barriers which force bicyclists to dismount and walk to the crossing.

According to the latest Americans with Disabilities (ADA) standards, gradients on trails should conform to the following:

1. 8.33% maximum grade for up to 30% of the total trail length
2. 8.3% for a maximum of 200 feet
   10% for a maximum of 30 feet
3. 12.5% for a maximum of 10 feet
5. Rest intervals are required on gradients over 5% within 25 feet of the top and bottom of maximum gradient sections.

Refuges

Refuges are considered an important component to trail crossings, especially on roads with more than two travel lanes or 33 feet in width. Median refuges should be raised with access ramps so as to provide visual clues for approaching trail users that a crossing is eminent. Refuge areas should be a minimum of 8 feet wide, and provide a signal button at signalized crossings with four or more travel lanes.

Unprotected Crossings

An unprotected crossing consists of a crosswalk, signing, and often no other devices to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, trail traffic, use patterns, road type and width, and other safety issues such as nearby schools. The table below identifies the general thresholds below which unprotected crossings may be acceptable.

Table Two Unprotected Crossings Thresholds	
Install Crosswalks	All locations
Maximum Traffic Volumes:	10,000 (ADT)
Maximum 85th Percentile Speeds:	40-45 mph (under 10,000 ADT) 50 mph or higher (under 5,000 ADT)
Maximum Trail User Volumes:	700 per day
Maximum Street Width	60 feet (no median)
Minimum Line of Sight (40 feet wide crossing)	30mph zone: 630 feet 40 mph zone: 838 feet 50 mph zone: 1,050 feet

On residential and collector streets below 5,000 ADT, crosswalks and warning signs ('Bike Xing') should be provided for motorists, and STOP signs and slowing techniques (bollards/geometry) used on the trail approach. Care should be taken to keep vegetation and other obstacles out of the view line for motorists and trail users.

Collector streets up to 10,000 ADT require a higher level of treatment for crossings than residential streets. In addition to the features described for residential streets, signing locations may need to be moved further upstream and made more visible for motorists. A flashing yellow beacon costing between $15,000 and $30,000, may be used, preferably one that is activated by the trail user rather than continuous. The East Bay Regional Park District is successfully using a flashing beacon that is activated by motion detectors on the trail, triggering the beacon as trail users approach the intersection. This equipment, while slightly more expensive, may help to keep motorists alert.

Existing Intersections

Bike paths that either parallel a roadway or emerge closer than 250 feet from a protected intersection, should be routed to that crossing in most cases. The reason is that motorists are not expecting to see pedestrians and bicyclists crossing so close to an intersection, traffic congestion may extend this distance, and the crossing may unnecessarily impact traffic capacity on a corridor.

Where the Pacific Electric Inland Empire Trail does not emerge at the existing intersection, a barrier and directional signing will be required to keep bicyclists and others from crossing at the unmarked location. At the existing intersection crosswalk, all trail users will technically become pedestrians.

Signs warning motorists of the presence of bicycles may be needed, as well as right turn on red prohibitions 'when pedestrians and bicyclists present.' High speed curve geometry and free right turns should be replaced with tighter radii to help slow vehicles.

Table Three Crossings at Existing Intersections Thresholds	
Maximum Distance from Pacific Electric Inland Empire Trail to Intersection:	250 feet
Length of barrier to prevent informal crossing	50 -100 feet
Intersection Improvements	Warning Signs for Motorists Right turn on red prohibitions Elimination of high speed and free right turns Adequate crossing time Pedestrian activated signals

One of the key problems with using existing intersections is that bicyclists are required to transition from a separated two-way facility to pedestrian facilities such as sidewalks and crosswalks, normally reserved for pedestrians. Widening and striping the sidewalk (if possible) between the trail and intersection may help to alleviate some of these concerns.

Signalized Crossings

New signals are governed by warrants in the MUTCD. However, none of the 11 warrants in the MUTCD address trail crossings specifically. A new 'warrant' may be based on traffic volumes and speeds, plus a 'level of service' threshold based on pedestrian delay. Maximum pedestrian delay, which at an unprotected crossing is related to gaps in traffic among other factors, is somewhere between 15 and 25 seconds.

When a trail must cross a roadway that exceeds the maximum thresholds identified for unprotected crossings, generally 10,000 ADTs, some type of signalized control must be installed to protect the trail users. Signals require the input of local traffic engineers, who review potential impacts on traffic progression, capacity, and safety. On corridors with timed signals, a new trail crossing may need to be coordinated with adjacent signals to maximize efficiency. Trail signals are normally activated by push buttons, but also may be triggered by motion detectors as well.

The maximum delay for activation of the signal should be two minutes, the ideal around 30 seconds, with minimum crossing times determined by the width of the street and trail volumes. The signals may rest on flashing yellow or green for motorists when not activated, and should be supplemented by standard advance warning signs. Typical costs for a signalized crossing range from $75,000 to $150,000.

Grade Separated Crossings

Arterials, expressways, and freeways carrying over 20,000 ADT will probably require some type of grade separation, either an under crossing or over crossing. Most trails that are alongside a waterway will select an under crossing because there is already an existing channel under the roadway. Over crossing alternatives are typically less expensive than tunneling under a roadway, but require as much as 400 or 500 feet of approach structure on each end due to the maximum 5% gradient as specified by ADA. Over crossings also have a higher visual impact and meet with resistance from some trail users who may attempt to cross at-grade rather than climb the approach ramps.

Safety concerns are a major issue with both over crossings and under crossings. In both cases trail users may be temporarily 'out-of-sight' from public view, and have poor visibility themselves. Under crossings, like parking garages, have the reputation of being places where crimes occur. Most crime on trails, however, appears to have more in common with the general crime rate of the community and the overall usage of the trail than to any specific design feature. There are design and operation measures which can address trail user concerns. For example, an under crossing can be designed to be spacious, well lit, with emergency cell phones at each end, and completely visible for its entire length prior to entering.

Other potential problems with under crossings include conflicts with utilities, drainage, flood control, and maintenance requirements. Under crossings along waterways that dip into the flood channel must be designed to (a) support bull dozers and other heavy equipment needed to clear debris after winter storms, (b) be free of obstructions such as handrails that will impede water flow, and (c) minimize leaking of asphalt oils into environmentally sensitive habitats. Over crossings also often pose concerns about visual impact.

Table Four Grade Separated Crossings Thresholds	
Traffic volume thresholds:	Over 20,000 ADT
Recommended minimum trail width:	8 feet plus 2 feet wide clear zone (under crossings should provide tapered sides with wider clearances at top)
Recommended minimum overhead clearance:	10 feet (14 feet if equestrian use)
Estimated structure costs per linear feet:	$600 -$800
Maximum gradient per ADA:	5% to 12.5%
Ancillary features:	lighting, cell phones, landscaping

Table Five Number of Trail Crossings by Type	
Type 1: Mid-block Unprotected Xing	34
Type 2: Routed to Existing Protected Xing	1
Type 3: New Signalized Xing	13
Type 1 or 3: Requires Further Research	11
Type 2 or 3: Requires Further Research	1
Existing Signal	1
Existing Bridge or Under Crossing	5

Trail Crossing Descriptions

The Pacific Electric Inland Empire Trail will have a total of 66 crossings. Of the 66 crossings, the majority (53%) are new unprotected (or non-signalized) crossings on two-lane streets with lower traffic volumes. There are 13 new signalized crossings, with the possibility of an additional 11 signalized crossings depending on further research.

Only one crossing is classified as a Type 2 crossing; at Monte Vista in Montclair. Trail users would need to be diverted between 200 and 300 feet to the existing signalized intersection at Richton Street. Many of the highest traffic volume crossings have existing bridges or under crossings. It is assumed that, at least until future rail service is developed, these facilities can be used with some modifications.

Several of the Type 3 signalized crossings might also be grade separated in the future, especially streets such as Haven that are very wide, and have high traffic volumes and speeds. One of the key elements of grade separated crossings, aside from cost, is the problem with access for trail users approaching on the street being crossed. If this access is not designed correctly, trail users on these approaches will likely cross at grade even if it is prohibited

Pacific Electric Inland Empire Trail
Roadway Crossing Recommendation Matrix

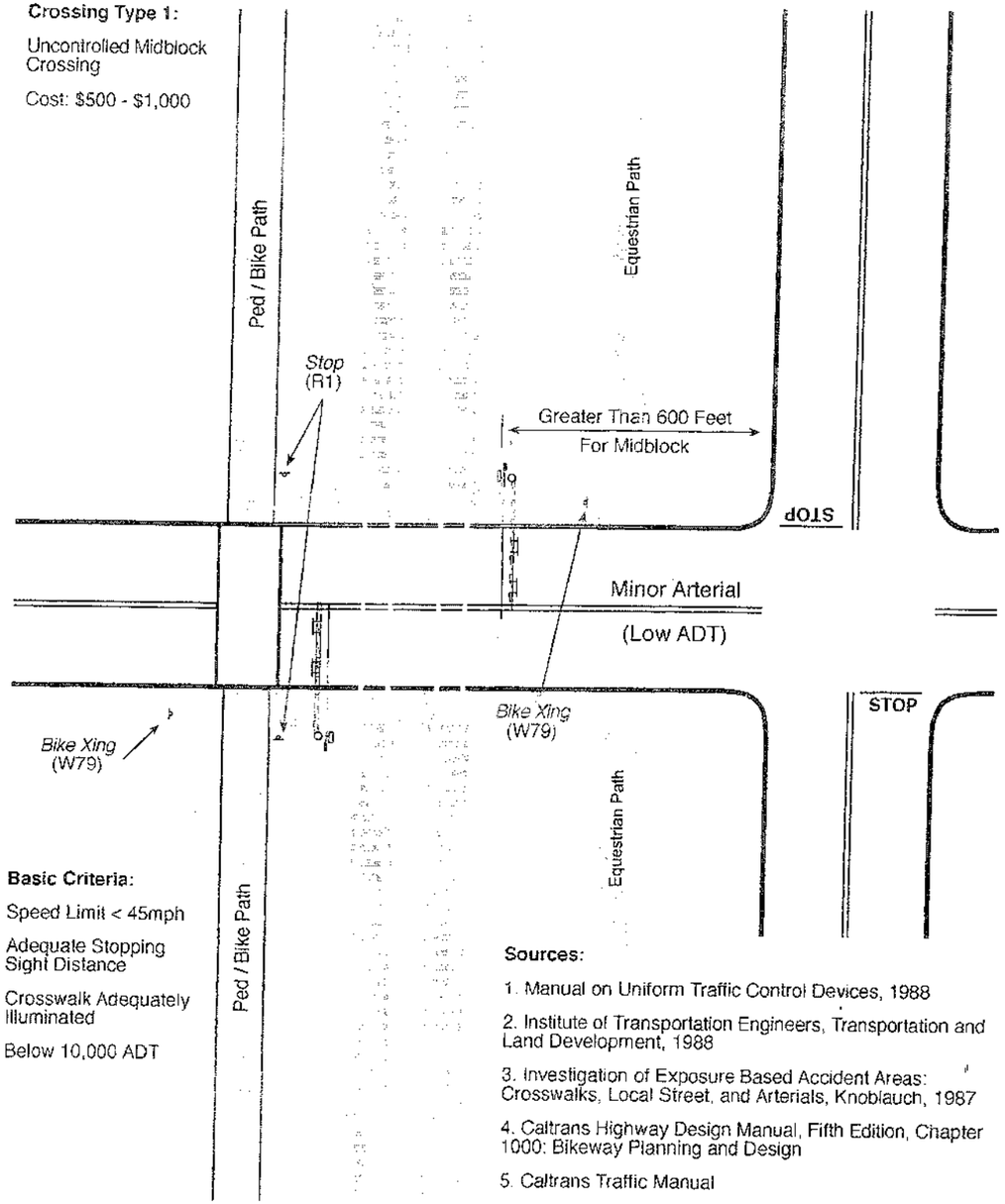
Roadway	# of Lanes	ROW Width	ADT	Comments	Preliminary Recommendation
CLAREMONT					
Claremont Blvd.	4		M	Existing Median	Existing signal
MONTCLAIR					
Monte Vista Ave	6		H	Existing median	Type 2 or 3
Central Ave	4	82'	H	Existing median	Type 3: Signalize with median
UPLAND					
Benson Ave	4	77'	H	Existing median	Type 3: Signalize with median
Mountain Ave	6	105'	H	Existing median	Type 3: Signalize with median
San Antonio Ave	4	88'	M		Type 1 or 3
Palm Ave	2	67'	L		Type 1 crossing
Laurel Ave	2	66'	L		Type 1 crossing
Euclid Ave	6	200'	H	Wide median with trees	Type 3: Signalize with median
1st Street	2	80'	L		Type 1 crossing
2nd Street	2	80'	L		Type 1 crossing
3rd Street	2	80'	L		Type 1 crossing
6th Street	2	66'	L		Type 1 crossing
Campus Ave		66'	L		Type 1 crossing
8th Ave	2	66'	L		Type 1 crossing
9th Ave	2	66'	L		Type 1 crossing
10th Ave	2	66'	L		Type 1 crossing
11th Ave	2	66'	L		Type 1 crossing
Arrow Highway	2	66'	M	Acute angle, realign trail to shorten crossing distance	Type 1 or 3
RANCHO CUCAMONGA					
Grove Ave	2	88'	14,000	Minor angle, realign trail to shorten distance	Type 1 or 3 with warning lights
Foothill Blvd			38,000	Major highway with existing over pass	Grade separated
Carnelian Ave			20,000	Major highway with existing overpass	Grade separated
Hellman Ave	2	60'	10,000	Acute angle, realign tail to shorten distance	Type 1 with warning lights
Base Line Road	4	120'	34,000	Acute angle with median, realign trail to shorten distance	Type 3: Signalize with median
Amethyst Street	2	66'	4,000	Acute angle, realign trail to shorten distance	Type 1 crossing
Archibald Ave	4	100'	19,000	Very wide street	Type 3: Signalize with new median
Ramona Ave	2	66'	2,500		Type I crossing
Hermosa Ave	2	77'	6,300		Type I crossing
Haven Ave	6	150'	25,700	Existing median plus drainage way	Type 3: Signalize with median
Milliken Ave	6	120'	19,300	Existing median	Type 3: Signalize with median
Kenyon Way	2	NA	3,000		Type I crossing
Rochester Ave	4	98'	9,000	Existing median	Type I crossing with median
Day Creek Blvd	6	NA	9,000	Newly developed with median, but no curb cuts	Type 1 or 3 crossing with median
Victoria Park Lane	4	NA	5,000	Existing grade separated overpass	Grade separated
Etiwanda Ave	2	80'	6,200		Type I crossing
East Ave	2	NA	4,100	Roadway being rebuilt	Type I crossing
I-15 Frontage Rd			NA	Interstate highway with existing underpass	Grade separated
FONTANA					
Base Line Road	2	93'	15,700	Acute angle, realign trail to shorten distance	Type 3 crossing
Cherry	4	120'	10,700	Acute angle with existing median, realign trail to shorten distance	Type 3 crossing
Hemlock				Unimproved road	Type 1
Beech		104'		Unimproved road, but planned to be primary highway	Type 3: Signalize with median in future
Sultana	2	68'	L		Type 1 crossing
Foothill Blvd		NA	H	Major highway with existing rail bridge	Grade separated
Almeria	2	68'	L		Type 1 crossing
Tokay	2	68'	L		Type 1 crossing
Citrus	4	104'	18,200	Planned to be primary highway	Type 1 crossing with warning lights, signalized with median in future
Oleander	2	68'	L		Type 1 crossing
Cypress	2	68'	1,500		Type 1 crossing
Juniper	4	92'	M	Planned to be secondary highway	Type 1 or 3, signalized with median in future
Sierra	4	132'	19,100	Planned to be major highway	Type 3 crossing
Mango	4	92'	8,800	Planned to be secondary highway	Type 1 crossing with warning lights, signalized with median in future
Palmetto	2	68'	6,600		Type 1 crossing
Tamarind	2	68'	L		Type 1 crossing
Alder	4	104'	7,400	Planned to be primary highway	Type 1 crossing with warning lights, signalized with median in future
Laurel	2	92'	L	Planned to be secondary highway	Type 1 crossing, reassess in future
Locust	2	68'	L		Type 1 crossing
Maple	2	68'	L		Type 1 crossing
RIALTO					
North Linden	2	NA	L		Type 1 crossing
South Cedar	4		H	existing median	Type 3: Signalized with median
North Cactus	2	NA	M		Type 1 or 3 crossing
North Lilac	2	NA	M		Type 1 or 3 crossing
North Willow	2	NA	M		Type 1 or 3 crossing
Palm Ave	2	NA	M		Type 1 or 3 crossing
Orange Ave	2	NA	M		Type 1 or 3crossing

Note: Average Daily Traffic (ADT) volumes based on counts when available, otherwise they are estimates based on observations.
L – Low M – Moderate H – High NA – No data available

Crossing Type 1:

Uncontrolled Midblock Crossing

Cost: $500 - $1,000



Basic Criteria:

Speed Limit < 45mph

Adequate Stopping Sight Distance

Crosswalk Adequately Illuminated

Below 10,000 ADT

Sources:

1. Manual on Uniform Traffic Control Devices, 1988

2. Institute of Transportation Engineers, Transportation and Land Development, 1988

3. Investigation of Exposure Based Accident Areas: Crosswalks, Local Street, and Arterials, Knoblauch, 1987

4. Caltrans Highway Design Manual, Fifth Edition, Chapter 1000: Bikeway Planning and Design

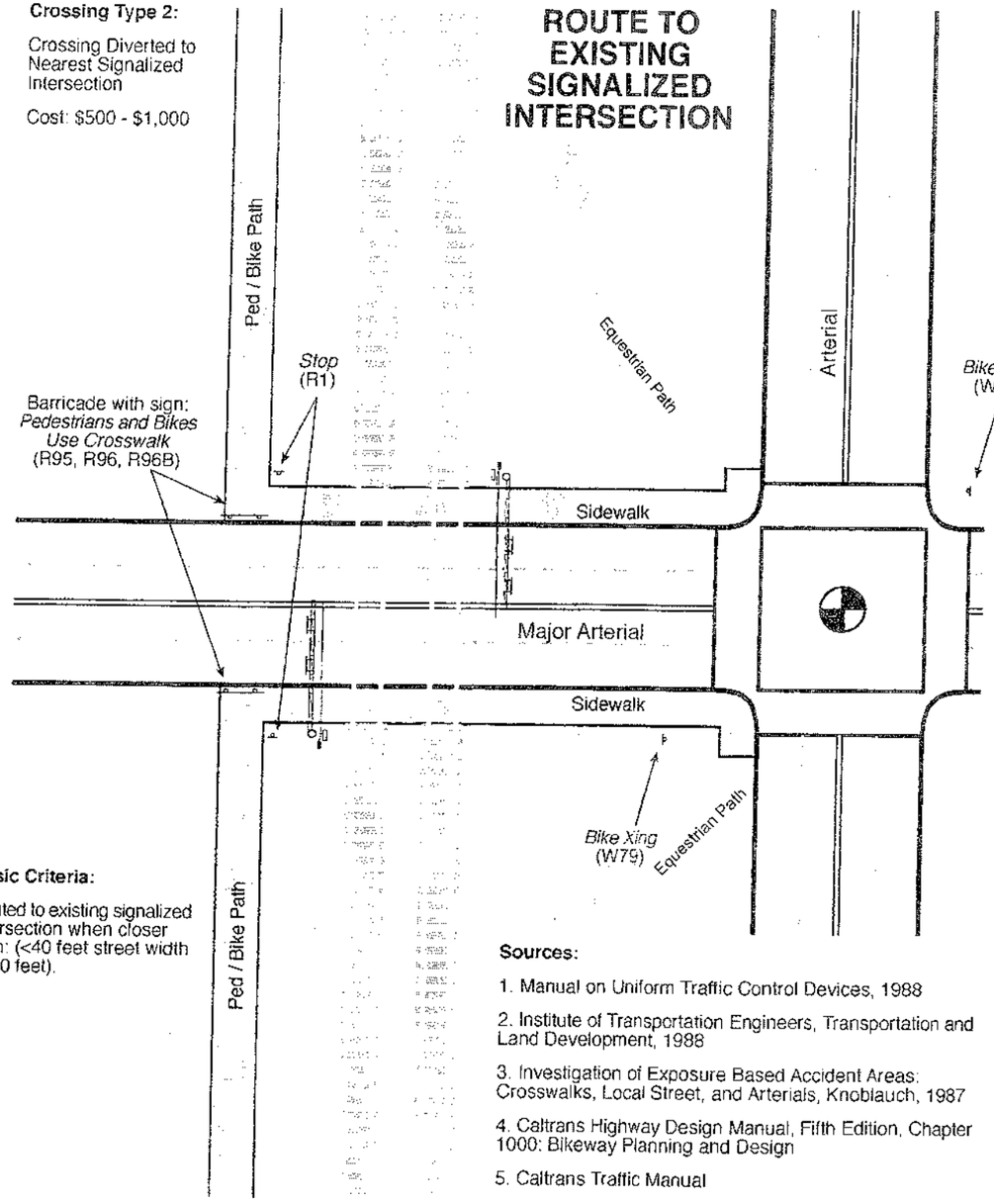
5. Caltrans Traffic Manual

CROSSING TYPE 1

Crossing Type 2:

Crossing Diverted to Nearest Signalized Intersection

Cost: $500 - $1,000



Basic Criteria:

Routed to existing signalized intersection when closer than: (<40 feet street width - 200 feet).

Sources:

1. Manual on Uniform Traffic Control Devices, 1988

2. Institute of Transportation Engineers, Transportation and Land Development, 1988

3. Investigation of Exposure Based Accident Areas: Crosswalks, Local Street, and Arterials, Knoblauch, 1987

4. Caltrans Highway Design Manual, Fifth Edition, Chapter 1000: Bikeway Planning and Design

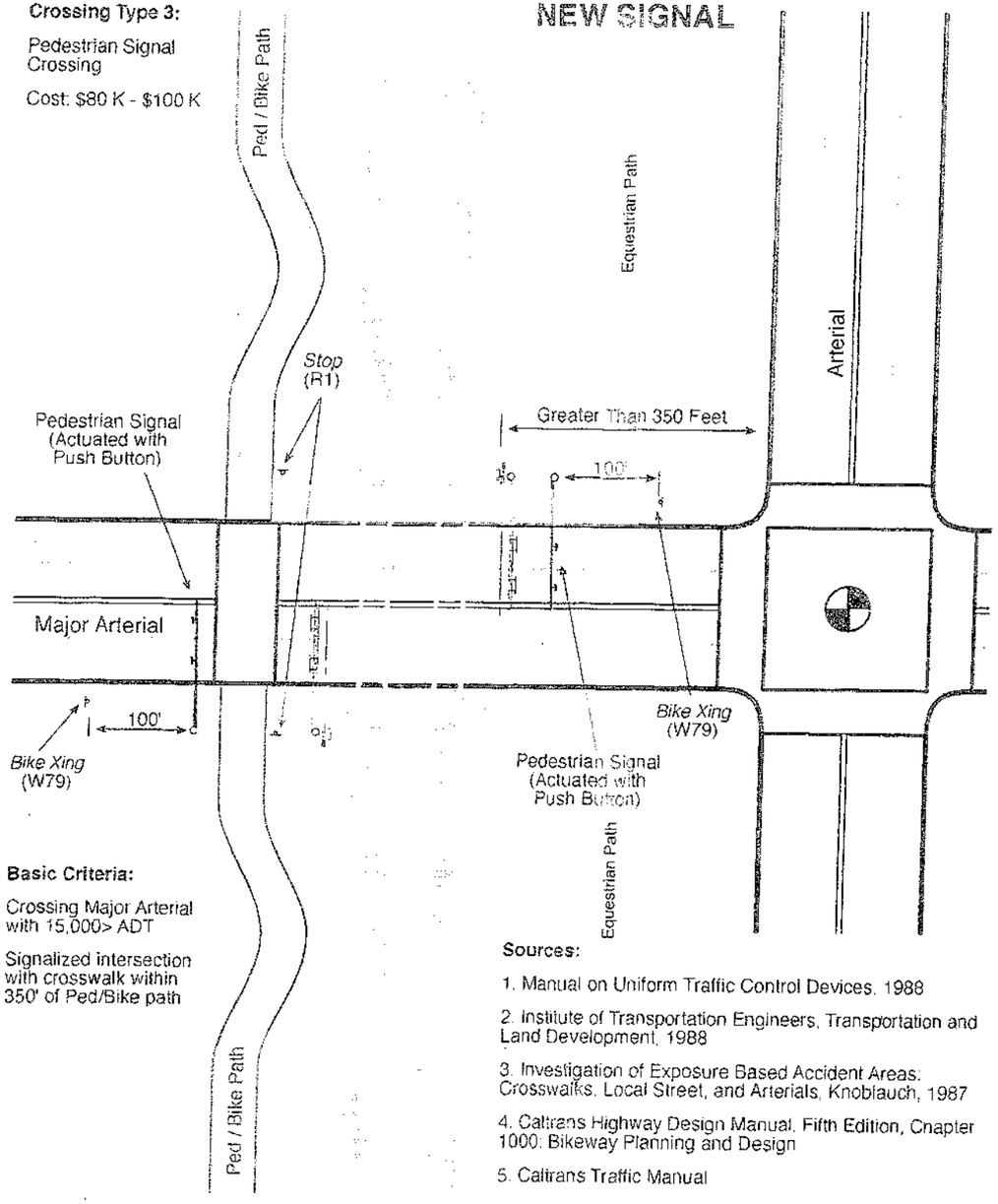
5. Caltrans Traffic Manual

CROSSING TYPE 2

Crossing Type 3:

Pedestrian Signal Crossing

Cost: $80 K - $100 K



Basic Criteria:

Crossing Major Arterial with 15,000> ADT

Signalized intersection with crosswalk within 350' of Ped/Bike path

Sources:

1. Manual on Uniform Traffic Control Devices, 1988

2. Institute of Transportation Engineers, Transportation and Land Development, 1988

3. Investigation of Exposure Based Accident Areas: Crosswalks, Local Street, and Arterials, Knoblauch, 1987

4. Caltrans Highway Design Manual, Fifth Edition, Chapter 1000: Bikeway Planning and Design

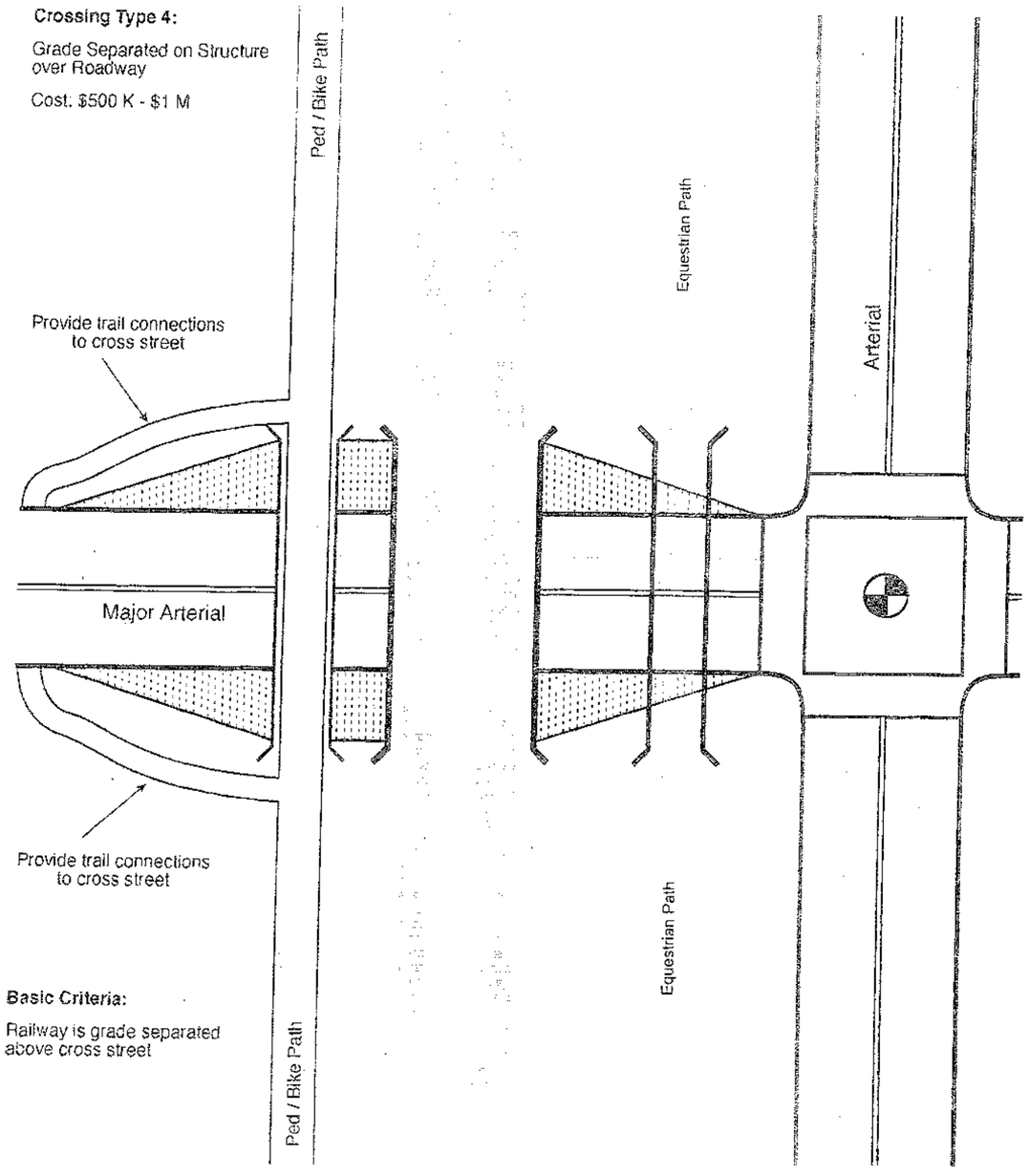
5. Caltrans Traffic Manual

CROSSING TYPE 3

Crossing Type 4:

Grade Separated on Structure over Roadway

Cost: $500 K - $1 M



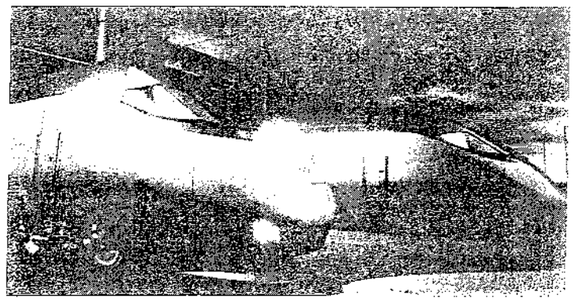
Basic Criteria:

Railway is grade separated above cross street

CROSSING TYPE 4

Future Transit Corridor

Transit systems move people efficiently through urbanized areas reducing dependency on automobiles. Transit can lead to reductions in air pollution and traffic congestion. Transit is not cheap, but the benefits are great. While transit systems vary in capital and maintenance costs, a common cost for all systems is the land or right-of-way costs. The high cost of transit systems requires that they serve large numbers of people to be viable. All too often, when this threshold is met, an area is by then experiencing air pollution and automobile traffic congestion problems. Compounding these problems, lack of existing right-of-way for transit can add substantially to the capital cost, putting transit out of reach for many communities.

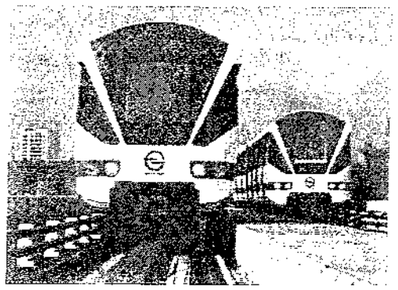


SANBAG and the Cities of Claremont, Montclair, Upland, Rancho Cucamonga, Fontana and Rialto are controlling part of their own destiny by planning today for transit tomorrow and reserving the needed right-of-way. SANBAG policy is to reserve adequate right-of-way for future transit use in the former Pacific Electric Railway Corridor. This was further defined as rail transit. SANBAG Baldwin Park Branch Continuity Policy and General Guidelines identifies a minimum acceptable rail operating right-of-way for two tracks and an access roadway as 42-46 feet.

On two existing light rail systems in California, Sacramento and San Diego, 35-feet is required to double-track and have enough room for safety evacuation and fencing. An additional 10-feet for a service road bring the total right-of-way width needed to 45-feet. For planning purposes in this study the 45-foot wide rail reserve corridor was used. It should be noted, however, that other transit modes may be appropriate for the Pacific Electric Corridor in the future. These other transit modes are discussed in detail in the following section.

Transit Modes

The keys to implementing any type of transit service within the former Pacific Electric Railway Corridor will be future ridership potential and the size of the service area. These factors can be estimated based on current and future land use and planned development/redevelopment criteria. It is recommended that SANBAG perform a study that includes a review of potential future ridership and the size of the service area before committing to any one transit type. The following is a summary of transit types currently available for the Pacific Electric Railway Corridor:



Heavy Rail Transit (HRT) is generally characterized by its high speed operations with single cars or multiple cars in exclusive rights of way where pedestrian, bicycles, and automobiles are excluded. It's often referred to as rapid transit or high-speed rail and commuter rail. Heavy rail does not refer to railroad or freight operations. Railroads and freight operations are simply referred to as railroad or freight rail. HRT systems can only operate in exclusive rights of way at ground level, on aerial structures, and/or in subways. Examples of HRT systems include:

Atlanta, MARTA	San Francisco, BART
Los Angeles, Red Line	Washington, Miami,
Metrorail Metro	

Heavy Rail and Commuter Rail Systems are regional systems that typically run between urban areas with no more than one or two stops in any one city. The capital cost of these fixed guideway systems typically varies from $10 million to $40 million per mile in year 2000 dollars, not including the cost of right-of-way. Right-of-way costs can double or triple these costs in developed areas

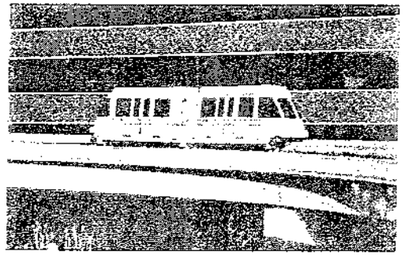
Light Rail Transit (LRT) is characterized by its ability to operate single cars or multiple cars at street level in downtown and urban environments where pedestrians, bicycles, and automobiles are normally present. LRT systems can operate in either non-exclusive or exclusive rights of way at street level, on aerial structures, in subways, and/or in open areas. Typical LRT guideway width is approximately 16 feet for single track and 35 feet for double track. Stations are generally 15 to 60 feet wide and 360 feet long. In many regions LRT systems operate within existing railroad rights of way. Examples of LRT systems include:

Dallas, DART	Los Angeles, Blue Line & Green Line
Denver, MAC	Sacramento, RT Metro RT
Ft. Worth, Tandy	San Diego, San Diego Trolley

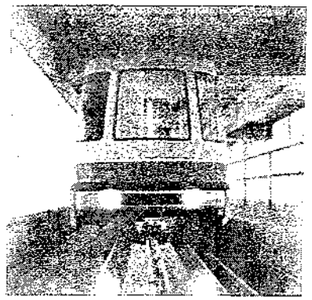
Automated People Mover (APM) APM is a technology in which automated driverless vehicles, or trains, operate on a dedicated guideway that is segregated from all other traffic. APM technologies provide greater service flexibility than light rail transit. APM technologies have been effectively integrated into buildings, parking structures, and other developments. APM technologies generally fall into the following subgroups:

Rubber Tired This type of APM system consists of self-propelled rubber tire vehicles using a one- or two-lane guideway system, generally made of concrete. The guideway structure is similar in shape, but generally smaller in size, than a typical roadway structure. The power source runs parallel to and is attached to the structure under the vehicle or on a third rail attached to the side.

Monorail A monorail type APM system consists of self-propelled vehicles that are supported and guided by a single guideway beam. The basic types include supported, in which vehicles straddle the guideway structure; and suspended, in which vehicles hang below the guideway structure. The power source runs parallel and is attached to the structure under the vehicle, in a supported guideway, and above the vehicle in a suspended guideway.



The guideway structure for an APM is somewhat smaller than the structure required for a typical roadway. Typical guideway widths for single lane rubber tired APM are approximately 10- to 12-feet (22- to 30-feet for a dual lanes) and columns are generally between three to six feet in diameter depending on spacing and structure loading. The guideway width at stations is typically 14- to 32-feet (37- to 56-feet for dual lanes) by approximately 42- to 130-feet in length (depending upon service levels desired, technology, ridership, and station design).



The guideway structure for a typical APM monorail technology is less massive than that required by rubber-tired technology. This is the result of vehicles riding astride a pair of concrete beams (which lead to a far slimmer, less bulky structure). Typical guideway widths are 10- to 14-feet (16- to 22-feet for dual lane), although specific technology dependent, and columns are generally between three to six feet in diameter depending on spacing and structure loading. The guideway width at stations is typically 25- to 33-feet (36- to 42-feet for dual lane) wide by approximately 65 to 130 feet in length (depending upon service levels desired, technology, ridership and station design).

Rapid Bus Transit (RB) Rapid Bus service is a transit alternative that emulates a fixed guideway rail system in terms of service quality, such as, reliability, speed, frequency, capacity and overall convenience. There are many types of vehicles that could be used for RB service, including electric (battery powered), overhead electric, natural gas, and diesel powered.

RB service could operate as a single lane one-way loop system in an exclusive lane provided in the greenbelt area with preferential treatments to bypass areas of street traffic congestion. Single lane width requirements would be in the range of eight to ten feet depending on the vehicle used. The system could operate as an extension of the current local bus service with transfers at each end of the City or at other key locations.

Transit stops for RB service can be user-friendly stations with shelters and benches and possible amenities such as drinking fountains, telephones, information displays, and security cameras. Transit stops would be on line (in the lane) with station boarding and alighting areas of 14 to 25-feet wide by 16 to 60-feet in length, depending upon service levels desired. Additional area may be required depending on amenities provided and whether a two-lane operating system is needed.

Implementation of a RB service doesn't require the major capital facilities and costs that may be associated with conventional fixed guideway rail systems. Additionally, right-of-way and RB facilities could be expanded to include future fixed guideway rail facilities.

Transit and Traffic

Typical bus and jitney services run on existing streets and highways controlled by normal traffic signs and signals. There are generally not conflicts with automobile and pedestrian traffic. Rapid Bus Transit can be planned to utilize existing traffic signs and signals as well. Rapid Bus Transit on exclusive right-of-way, Automated People Mover systems, Light Rail and Heavy Rail systems require active control and/or grade separated facilities to avoid conflicts with automobile and pedestrian traffic.

Active control utilizes programmed signalization, visual and audible warnings and/or traffic control gates. Active control can be done by preemptive traffic signalization, crossing signal warning lights, audible signals and traffic control gates. Active control varies by transit type.

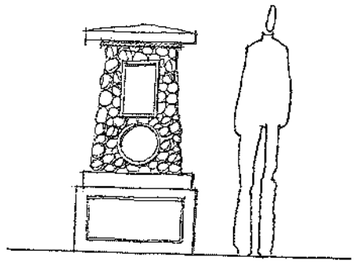
Grade separation of transit either over or under surface streets eliminates traffic conflicts and can greatly increase potential transit operating speeds. The cost of grade separations is only justified in high traffic volume locations. Foothill Boulevard (Historic Route 66) in Rancho Cucamonga is a prime example of an area where grade separation of transit would be warranted.

Following adequate study and planning to select the best ultimate transit type for this area there is still opportunity to develop a phased approach. Initial bus service on local streets can lead to Rapid Bus Transit on exclusive right-of-way and then eventually Light Rail or Commuter Rail service. Planning now for the transit type that uses the most right-of-way, in this case Light Rail, assures maximum planning flexibility in the future.

Trail Signs and Markers

Signs on the Pacific Electric Inland Empire Trail can be grouped into three categories; 1) Locational, 2) Identification, and 3) Display. The main purpose of signs and markers along the trail is to enhance orientation and navigation. Trail markers and signs are important communication tools to identify key links to other facilities, i.e. trails, schools, parks, transit, activity centers and other existing sites. Signs along the trail may also be used to call attention to historic and cultural sites or events of importance, as well as displays that impart local information.

The physical characteristics of the signs such as height, width and text size must be considered due to the wide variety of trail users and the speeds at which they travel. The Pacific Electric Inland Empire Trail will be used by many types of travelers so, it is important that the signs be legible from both the equestrian, or wheelchair point of view. Using in-ground or at-grade mile markers for example, would be appropriate for pedestrians, wheelchair disabled and perhaps joggers; however, an inline skater or cyclist would glimpse, or potentially miss seeing the marker altogether, due to their commuting speed. Both text size and placement on this type of sign are important.



Pilaster Monuments

A pilaster type monument (see above) will be used to announce the location of the Pacific Electric Inland Empire Trail. These will be used at street intersections and major trail linkages to direct potential users to the trail. The Logo for the pilaster will be standard through out the length of the Trail as the key identifying feature.

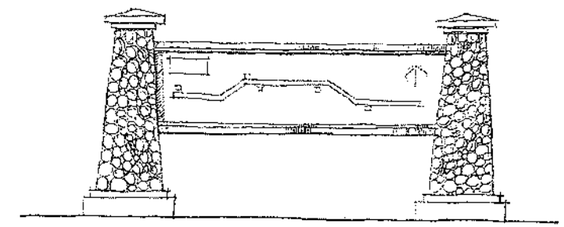
The Pilaster monuments must be visible from the automobile on the street as well as the users on the Trail itself. The full height of the pilaster should be a minimum of 6'-0" in height with the center of the logo at approximately 4'-0".

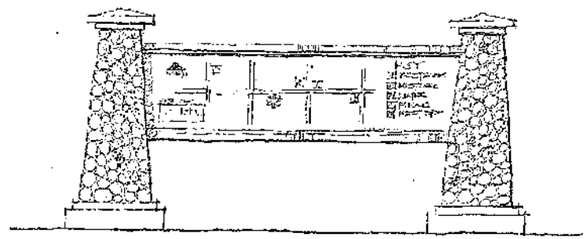
Location Maps

As the title implies, Location Maps will be placed at strategic points of ingress or at rest areas identifying the users current location with regards to the site and adjacent areas. The map will also identify the location of rest areas, water, first aid (hospitals), telephone, restrooms, and linkages to services/schools/parks/historic sites/ cultural sites/street crossings.

Intended to be viewed from a stationary position instead of in motion, the center of the map portion of the sign should be at approximately 4'-6" from the ground. The overall length of the sign will depend upon the scale at which the map is produced. Due to the great length of the Trail, the map size may be reduced by reproducing only the portion that applies to the specific segment.

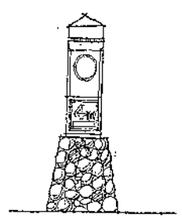
The entire length of the Trail may appear as a key map. (See following examples)





Mileage Markers

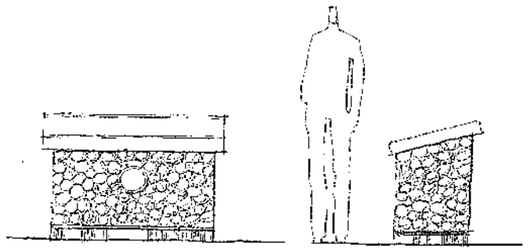
Mile markers identify and establish a reference point for user location, i.e., distance and city. Markers will be embellished with the Pacific Electric Inland Empire Trail logo and the mile marker. The logo for the city in which the marker occurs may also be included. As the name implies mile markers will occur each mile from the starting point in Claremont through the ending point in Rialto.



Mile markers should stand a minimum of 4'-0"and the text height indicating the mile at approximately 0'-8".

Display Monuments

Display monuments may be used for many different purposes such as highlighting historical / cultural events and sites, describing wildlife habitat, or a demonstration garden of native drought tolerant plants. These display monuments may be located at strategic points along the trail, which are within the vicinity of a historic, cultural, or other element that merits recognition. Locations such as rest areas and proposed museum sites may be included as prime locations. The number of monuments and their exact locations is to be specified by each city according to their requirements.



Examples of appropriate situations would be:

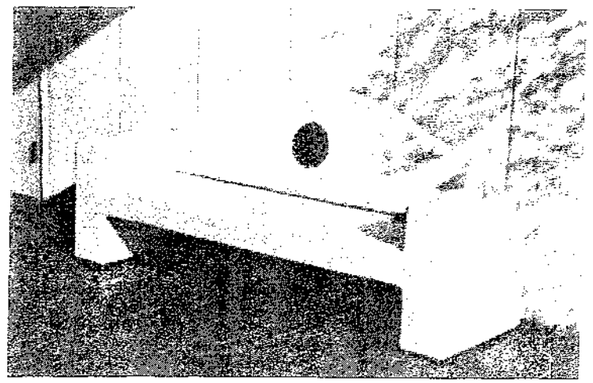
Sunkist Packing House Fontana
Proposed Demonstration Vineyards Rancho Cucamonga
Montclair Transit Center near Historic Railway Bridge
Etiwanda Station, Rancho Cucamonga

Display Monuments will include the Pacific Electric Inland Empire Trail logo and a Bronze plaque with information regarding a site, event, or demonstration. The physical dimensions will be approximately 3'-0" h x 4'-0" w x 2'-0" d.

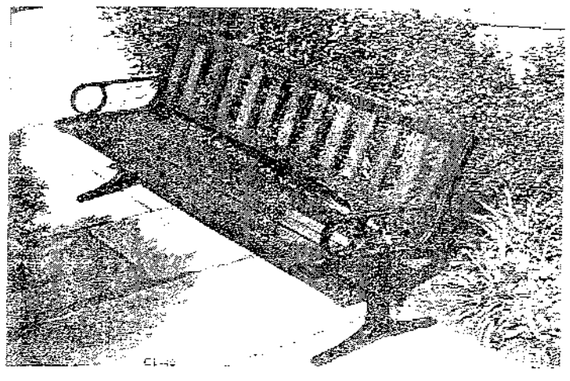
Site Furnishings

Site furnishings should be chosen with good durability, low maintenance, nice ambiance and good value for the cost while providing the necessary amenities for comfort and utility. They will typically occur in rest areas and strategic locations throughout the length of the trail. The style of the amenity will reflect the theme that is chosen for the specific portion of the Trail.

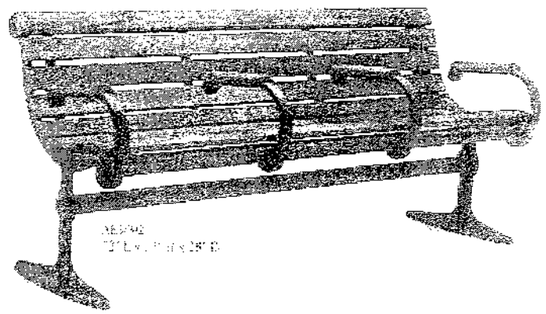
Specific Amenities; Benches – concrete, recycled plastic or hardwood (metal seats get too hot in San Bernardino area)



Agriculture Theme - Concrete bench
by Quick Crete



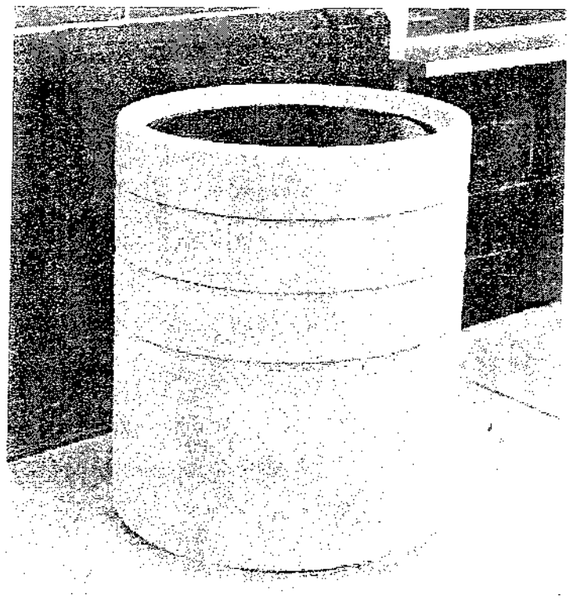
Craftsman Theme - Recycled Plastic
& Cast Iron bench by Victor Stanley



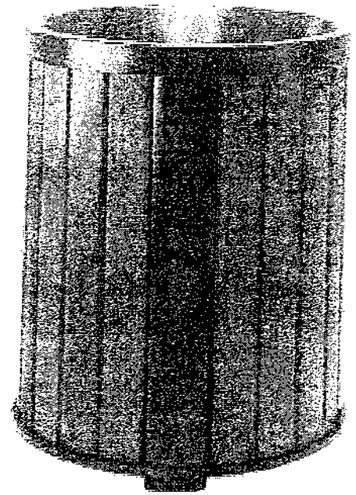
Railroad Theme Pau Lope hardwood
bench by Forms + Surfaces

Trash Receptacles

Trash Receptacles should compliment the Thematic benches and other furnishings, be easily emptied and cleaned. Choose receptacles that accept plastic bag liners.



Agriculture Theme Concrete
trash receptacle by Quick Crete



Railroad Theme Pau Lope hardwood
Trash receptacle by Forms + Surfaces

Restrooms

Architecture is to reflect the chosen Theme (See Thematic Consideration Sketches). Restrooms are to be located at rest areas on trail and/or at sites adjacent to Trail such as city parks. All restrooms must be ADA compliant and overhead shade structures may be attached as part of the restroom facility.

Overhead Shade Structure

Architecture is to reflect the chosen Theme (See Thematic Consideration Sketches) Shade structures may be either Partial shade (open trellis) or Full cover (gazebo / pavilion / shelter).

Drinking Fountains

Freestanding or wall mounted drinking fountains should be attached to shelter or restroom dependent upon area available and layout of rest stop. All drinking fountains must be ADA compliant.

Light Fixtures

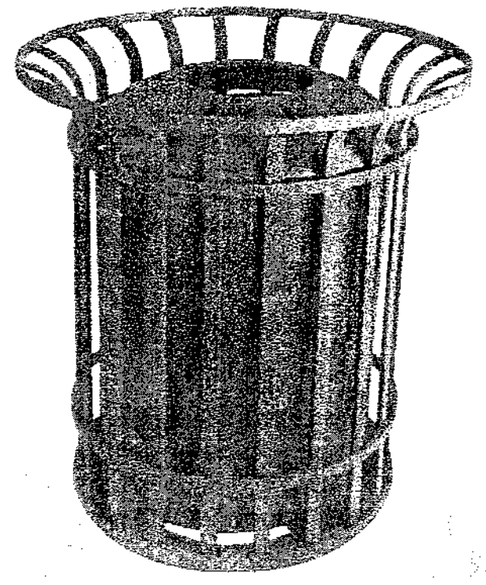
Lighting through out the entire Pacific Electric Inland Empire Trail may be the most beneficial for safety and security; however, if this is not possible for budget reasons, lighting at street crossings, rest stops, trail linkages at neighborhoods and at mileage markers should also be considered. Lighting is intended to illuminate the Trail, not the entire landscape area and surrounding neighborhood.

Equestrian Needs

Hitching Posts - galvanized steel or treated lumber is to reflect the chosen Theme, located at rest stops on Trail and/or at sites adjacent to Trail.

Water Troughs - pre-fabricated units such as the Nelson Drinker or custom water troughs built are to reflect the chosen Theme.

Shade-Canopy Trees located to provide filtered shade.



Craftsman Theme Cast Iron
Trash receptacle by Victor Stanley

Landscape Design

The purpose of landscape enhancements along this corridor is multi-dimensional. There are both functional and aesthetic considerations. Listed here are primary concerns, addressed through our design selections:

Visual and psychological cooling
Wind break
Reduce glare and dust
Provide a safe and secure view corridor
Address safety in plant material selection
Create nodes and focal points along the trail
Promote historical and cultural information
Conserve water and energy

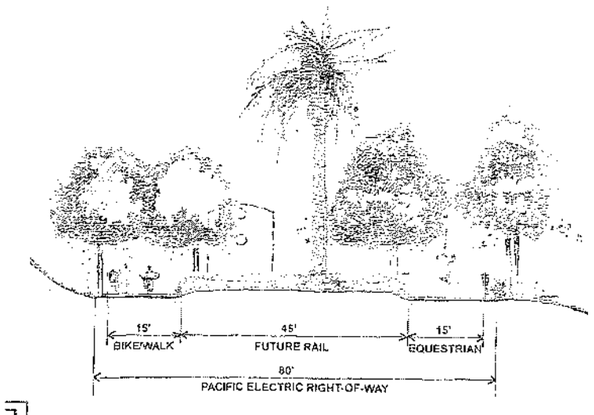
Soils Criteria

Soil testing and reclaimed water testing is to be performed prior to final plant selection. Amendments & modifications to soil should be identified early in the design process.

Irrigation

In order to conserve both water and energy resources:

- Irrigation designed for reclaimed water use as soil conditions allow and as reclaimed water is available.
- Low volume, water efficient irrigation system
- Solar irrigation controllers should be utilized throughout the trail.
- Automatic irrigation system to be adjusted seasonally and with watering hours between ten p.m. and six a.m.



Planting Criteria

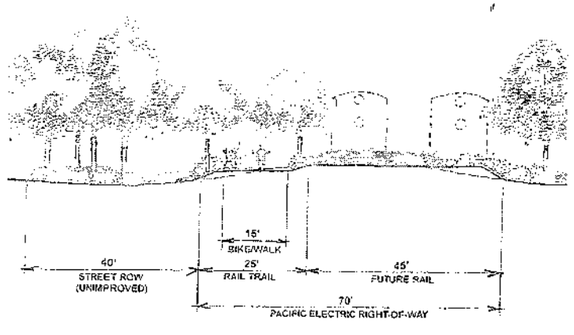
For an effort to employ this landscape criteria the following guidelines have been assembled:

- Indigenous low maintenance and drought tolerant plant material will be used whenever possible.
- Poisonous plant materials shall not be used.
- Tree canopies to be kept above 9'-0" high
- Accent trees will aid alerting trail users that there is a change in the trail that requires their attention. The smaller, colorful trees will be used primarily to call attention to rest stops, trail linkages and street crossings.
- Corridor trees along the reaches of the trail are primarily planted to provide relief from the sun, glare and wind.
- Shrub planting to be kept below 3'-0" high (except where graffiti control or screening is required)

Design Possibilities

The following possibilities have been identified as focal or landscape features:

- Vineyard demonstration in Rancho Cucamonga
- Orchard demonstration near the Sunkist packing house in Fontana and possible farmer's market and museum
- The Etiwanda Railway Station becoming a Railroad museum. Some plans are already in progress for making the area around the Etiwanda depot into a historic district.
- Nodes identifying restroom areas, trail links and intersections accented with specified trees.
- Trail corridor to be defined with canopy trees
- Relocation of mature trees for construction sites based on cost analysis and availability of healthy drought tolerant specimens.



Suggested Plant Paiette

Accent Trees

CERCIDIUM MICROPHYLLUM	FOOTHILLS PALO VERDE
CERCIS OCCIDENTALIS	WESTERN REDBUD
GEIJERA PARVIFLORA	AUSTRALIAN WILLOW

Corridor Trees

PLATANUS RACEMOSA	CALIFORNIA SYCAMORE
PHOENIX DACTYLIFERA	DATE PALM
CUPRESSUS SEMPERVIRENS 'STRICTA'	ITALIAN CYPRESS
QUERCUS AGRIFOLIA	COAST LIVE OAK
QUERCUS ILEX	HOLLY OAK
WASHINGTON FILIFERA	CALIFORNIA FAN PALM

Tall Shrubs/foundation (isolated Use Only)

CHILOPSIS LINEARIS 'BURGUNDY'	DESERT WILLOW
LARREA TRIDENTATA	CREOSOTE BUSH
ROSEMARINUS OFFICINALIS'TUSCAN BLUE'	ROSEMARY
SIMMONDSIA CHINENSIS	JOJOBA
SALVIA CHAMAEDRYOIDES	SAGE

Low Shrubs

ARTEMISIA CALFORNICA	CALIFORNIA SAGEBRUSH
ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT
MYOPORUM 'PACIFICUM'	PACIFIC MYOPORUM
PENISETUM SETACEUM 'RUBRUM'	PURPLE FOUNTAIN GRASS
SALVIA CLEVELANDII	CLEVELAND SAGE

Ground Covers

ARCHTOSTAPHYLOS 'UVA-URSI'	MANZANITA
BACCHARIS P. 'TWIN PEAKS'	COYOTE BRUSH
CONVOLULUS SPP.	BUSH MORNING GLORY
ENCELIA CALIFORNICA	CALIFORNIA ENCELIA
ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY
LUPINUS SPECIES	LUPINE
MAHONIA REPENS	OREGON GRAPE

Design Alternatives

The design team developed a series of alternatives that were reviewed with the Project Advisory Committee and presented at the second Public Workshop. There are alternative solutions for most of the "component parts" of the Pacific Electric Inland Empire Trail design, such as trail surface materials, signage, landscape and site furnishings. Each of these component alternatives was nominally evaluated for compatibility with the overall project Goals and Objectives that were established by the design team and the Project Advisory Committee. These Goals and Objectives, which are discussed in greater detail in another section, have been tempered by input received from the public through the workshop and questionnaire process. The design team and the Project Advisory Committee determined, however, that an approach consistent with development of a Master Plan would be to evaluate three overall "big picture" alternatives against these Goals and Objectives. The three alternatives are defined as:

Alternative One would be to plan trail improvements without a rail reserve corridor. SANBAG has the ability to utilize federal rail banking legislation to set aside the former Pacific Electric right-of-way for future rail and allow interim use as a trail. The design of trail improvements would then not be constrained by the requirement for rail reserve corridor. However, if and when the right-of-way is needed for rail transit, then the trail improvement would have to be removed where conflicts with the rail alignment exist. This alternative does pose some risk to the capital expenditures of the six cities and SANBAG.

Alternative Two would be to establish the probable limits of the 45' rail reserve corridor early and design trail improvements only in areas outside the rail reserve. Given the constraints of commuter and light rail alignments, large radius curves are necessary and much of the rail reserve would be in the approximate center of the right-of-way. In some areas of the right-of-way, extensive grading and retaining walls are required to fit both the trail and the rail reserve. With this alternative, there is the possibility that expensive trail improvements would sit adjacent to a vacant rail reserve for years.

Alternative Three would be to concentrate permanent trail improvements outside of the proposed rail reserve, as much as possible, and design interim and temporary uses within the rail reserve area. With this alternative, there is the ability to postpone expensive improvements, such as retaining walls, in some portions of the right-of-way. Interim uses of the rail reserve may include additional equestrian trails, vineyards and other elements that enhance the overall trail design.

Illustrative Cross Sections

The following pages (50-52) contain illustrative cross sections taken at various locations along the Pacific Electric Inland Empire Trial corridor. The approximate location is indicated on each cross section view.

These cross sections illustrate the ultimate condition of Alternative Two which requires the most right-of-way of the three alternatives. The cross sections are useful in understanding the various conditions along the Pacific Electric Inland Empire Trial corridor and the available right-of-way.

These cross sections also illustrate the ultimate trail design should the rail reserve be utilized to build a Light Rail or Commuter Rail Transit System in the future.

Goals and Objectives

The Goals and Objectives may be described as benefits, both quantitative and qualitative, that each "Big Picture" Alternative should provide to the community. These are the criteria that each alternative is measured by. They include:

1. Ability to maintain a 45' wide Future Rail Corridor;
2. Satisfy Funding Requirements, based on the criteria that the improvements provide either a commuter enhancement or a recreation enhancement;
3. Enhance Safety, by improving (or eliminating, in the case of grade separations) street crossings; increasing visibility by and between trail users and the motoring public; and by providing accessibility consistent with the Americans with Disabilities Act (ADA);
4. Enhance linkages to other facilities, such as schools, parks, transit facilities, activity centers, and other trails;
5. Celebrate the history of the Pacific Electric Railway;
6. Enhance orientation/navigation to and through the communities along the trail, by the use of signage, trail markers and bench marks;
7. Minimize maintenance requirements, and
8. Maximize the benefit to the community by providing a quality amenity.

The matrix shown below provides a comparative analysis, based on each of these Goals and Objectives, of the three alternatives. A check mark indicates that the Alternative meets a specific goal or objective:

ALTERNATIVES COMPARISON MATRIX

Alternative	Maintain 45' Wide Future Rail Corridor	Satisfy Funding Requirements	Enhance Safety	Enhance Linkages to Other Facilities	Celebrate Pacific Electric History	Enhance Orientation/ Navigation	Minimize Maintenance Requirements	Maximize Quality and Benefit to Communities
Alt 1		✓	✓	✓	✓	✓		✓
Alt 2	✓	✓	✓		✓		✓	
Alt 3	✓	✓	✓	✓	✓	✓	✓	✓

As can be seen from the matrix, Alternative 3 provides the greatest satisfaction of the Project Goals and Objectives.

Preferred Alternative

The three alternative's overall approaches were reviewed with the Project Advisory Committee and the comparison matrix results were confirmed. Alternative Three was selected as the Preferred Alternative because it offers the greatest flexibility in terms of project phasing and was the best fit with the Goal and Objectives established for the Pacific Electric Inland Empire Trail. The Project Advisory Committee, representing the six Cities with portions of the Pacific Electric right-of-way, expressed reservations about committing capital expenditure on improvements that may have to be demolished at a later date. This reservation caused the Project Advisory Committee to favor alternatives Two and Three. The higher initial cost of Alternative Two help refine this preference to Alternative Three.

Preferred Alternative Plans

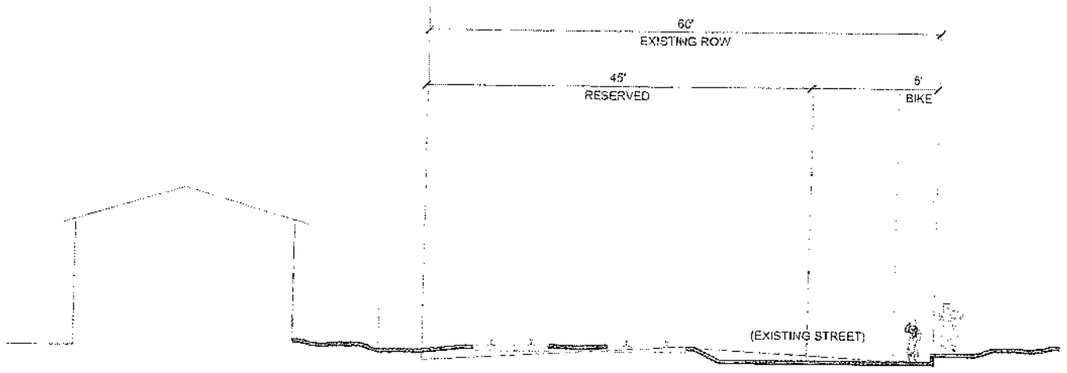
Following the Alternative Two Cross Cections and the Alternative Thematic Considerations Section are 25 plan view maps of the Preferred Design Alternative. These plans are over-layed on color aerial photographs. Each plan has a typical cross section and a summary crossing type recommendations. Please refer to the Design Guidelines Section for more detailed roadway crossing information.

Alternative Design Themes

With the overall approach for the Pacific Electric Inland Empire Trail established, there is still a need to define how the improvements should look. The section "Thematic Considerations" describes three potential design themes for Pacific Electric Inland Empire Trail. Final decisions regarding Design Theme choices will be made in the next phase of design. There is still the possibility that three different design themes could be utilized in various portions of the Pacific Electric Inland Empire Trail. However, it is highly recommended that one theme be selected for the entire trail.

CLAREMONT

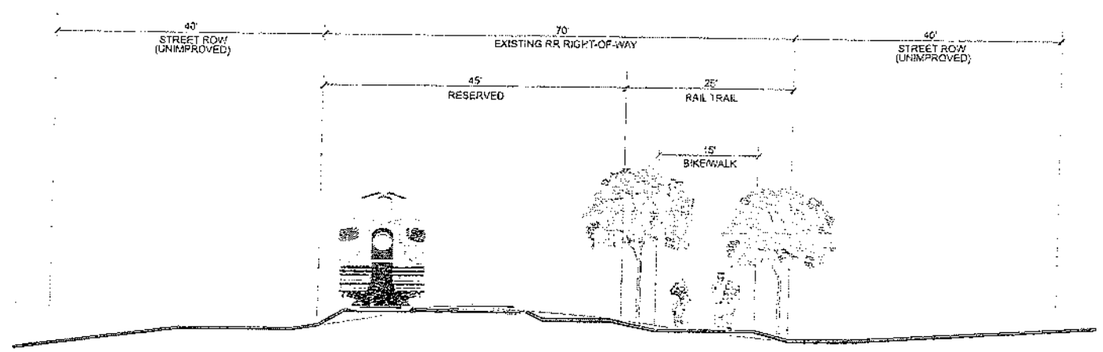
1ST STREET @ MILLS



SECTION A

MONTCLAIR

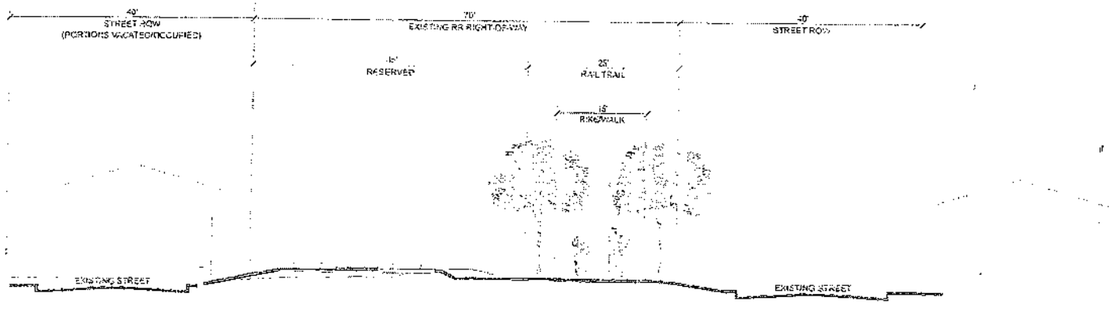
CLAREMONT BLVD TO MONTE VISTA AVE
(SAND & GRAVEL MINING OPERATION)



SECTION C

UPLAND

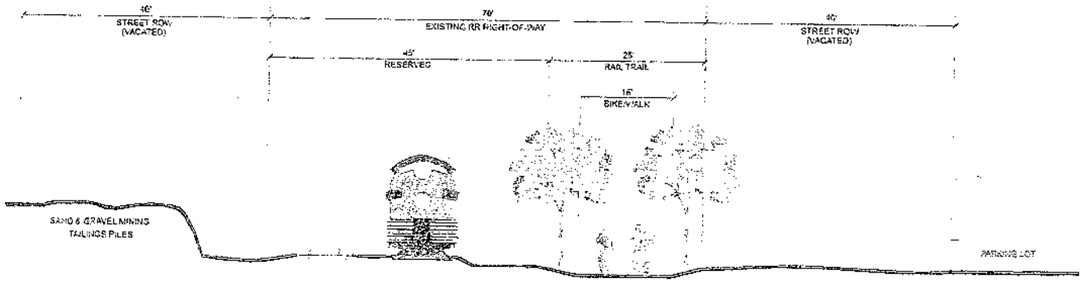
CENTRAL AVE TO BENSON STREET



SECTION B

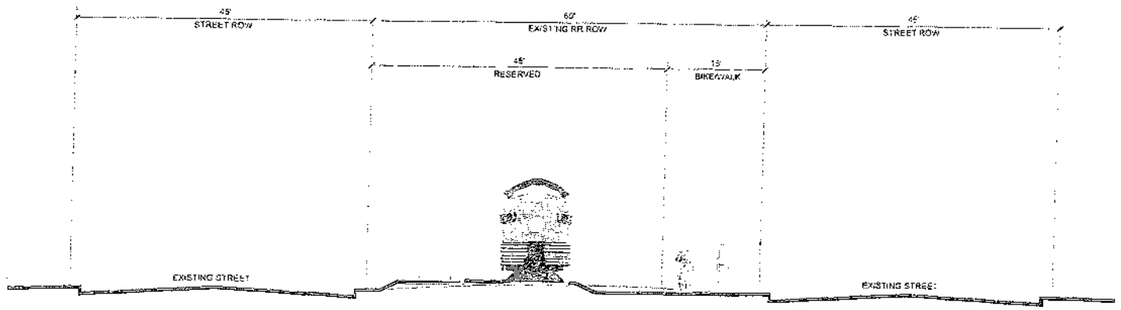
UPLAND

MONTE VISTA AVE TO CENTRAL AVE



SECTION D

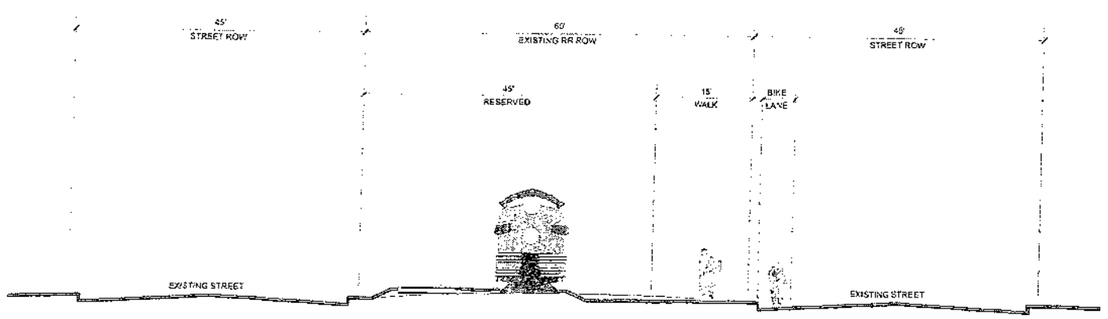
UPLAND
WASHINGTON BLVD
(HISTORIC NEIGHBORHOOD)



ALTERNATIVE 1

SECTION E

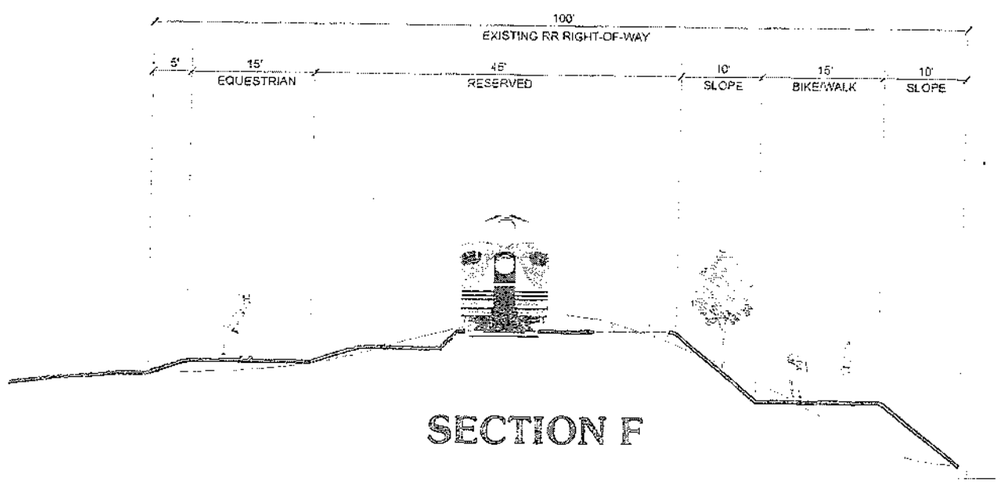
UPLAND
WASHINGTON BLVD
(HISTORIC NEIGHBORHOOD)



ALTERNATIVE 2

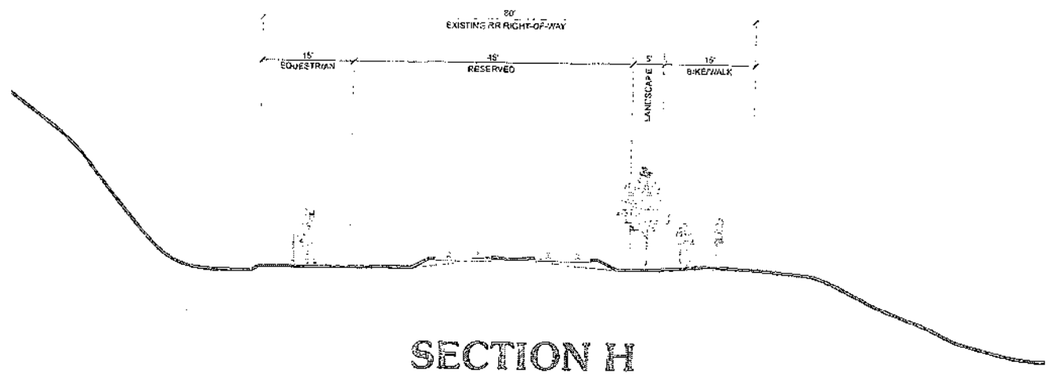
SECTION G

RANCHO CUCAMONGA
EAST OF VINEYARD



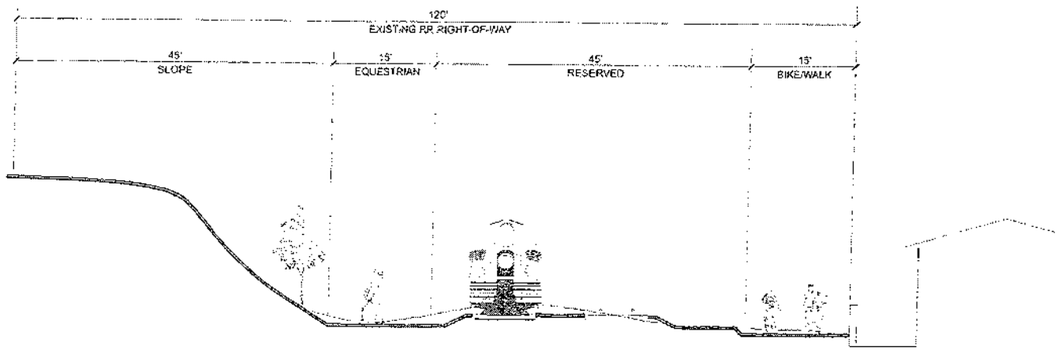
SECTION F

RANCHO CUCAMONGA
FOOTHILL BLVD TO VINEYARD



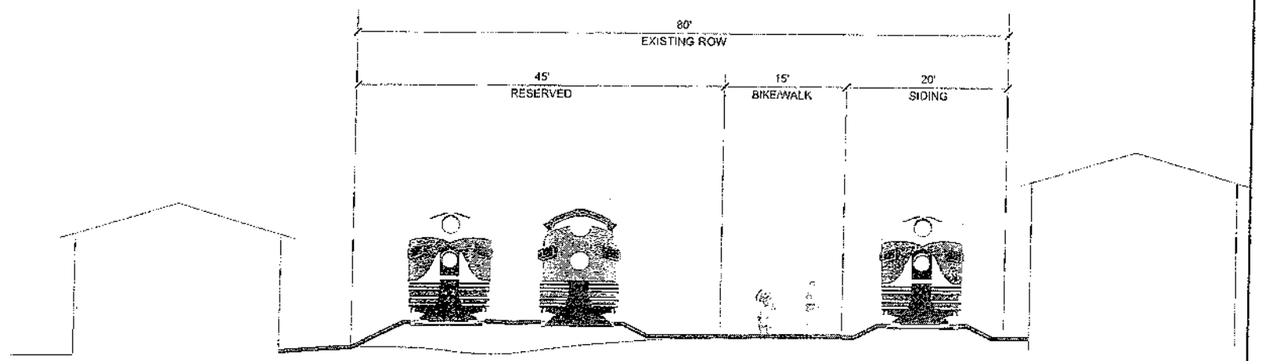
SECTION H

RANCHO CUCAMONGA
EAST OF VINEYARD
(HIGHPOINT)



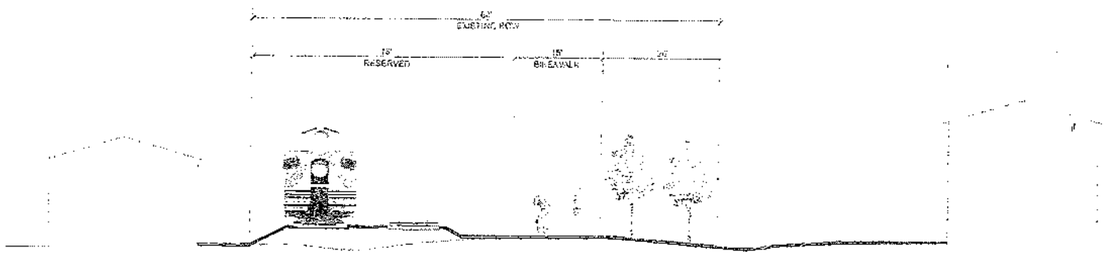
SECTION I

RIALTO
(TYPICAL)



SECTION K

FONTANA
(TYPICAL)



SECTION J

Thematic Considerations

The primary goal of creating a theme or themes is to create a sense of unity between the cities through which the Trail passes, while preserving their individual identities. Each city has individual goals such as fostering economic growth and education, decreasing crime rates, providing safe & attractive streets and expanding recreation areas, which are often cohesive with the neighboring communities. As well as by their goals, the cities along the Pacific Electric Inland Empire Trail are linked through historical reference too.

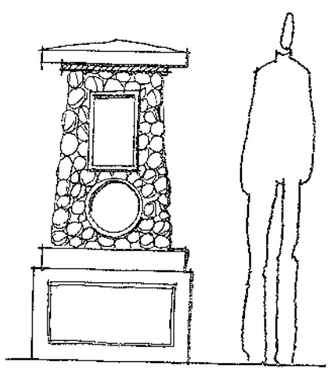
While the development of the San Bernardino Region began as an agrarian in nature, it greatly expanded as the railroad was built. The rail brought new residents from a variety of cultures and new industry and technology from bigger city centers as well as enabling the farmers to market produce and livestock in the larger cities such as Los Angeles.

Today, due to the cities close proximity to each other, the theme selection may be affected by their individual desires. A specific theme may be chosen to represent the Pacific Electric Inland Empire Trail itself or the theme may change to reflect the character of individual cities and specific historical links. Themes may also be expressed through alternating only a portion of the trail, for example:

Claremont through Upland - Craftsman
Rancho C. Through Etiwanda - Railroad
Etiwanda through Rialto - Agricultural

The following text will identify the three (3) potential themes have been selected:

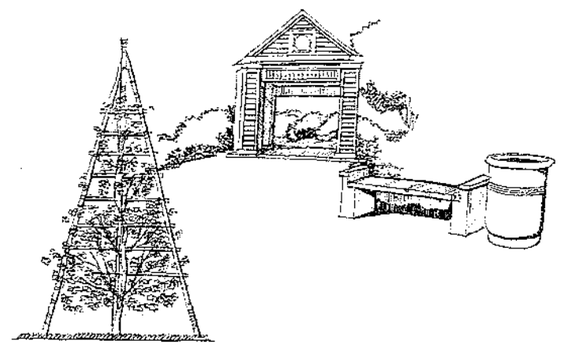
Agricultural Theme
Craftsman Theme
Railroad Theme



Agricultural Theme

An agricultural theme has been developed by selecting building materials reminiscent of rural farms, orchards and vineyards that were prevalent throughout western San Bernardino County.

Architectural elements - Restroom facilities and shade shelters may incorporate clap board siding and corrugated steel roofs. Durable concrete furnishings such as benches and trash receptacles are reminiscent of the concrete smudge pots that once lined the orchards to protect the crops from frost. Sculptures from farm machinery may also be utilized as accent features or embossed into retaining walls.

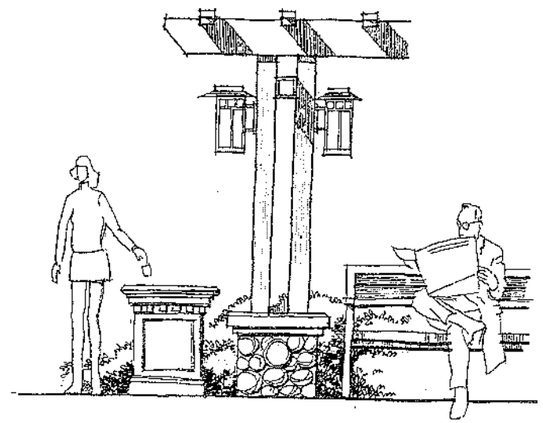


Agricultural Theme Design Elements

Landscape elements - Citrus or ornamental trees may be planted in a Bosque or orchard formation. Demonstration vineyards on trellis or arbor structures, provided by a local winery, may carry out the linear geometry found in the planting design of row crops. Other ornamental plantings uniformly spaced continue this furrow design.

Craftsman Theme

The Arts and Craft Style has long been an American tradition and is evident in the cities along the Pacific Electric Inland Empire Trail. The Craftsman Architecture creates a solid, no nonsense appeal and enduring charm. The general character is low, compact and horizontal scale, with darker colors in paint and stain contrasted with a lighter color of river rock.



Craftsman Theme Design Elements

Architectural elements - Shade shelters and restroom facilities adorned with heavy timbered beams placed on top of concrete and river rock columns, square geometric lighting fixtures with copper patina accents, wood benches with cast iron frames, made to emulate the furniture of the Craftsman era. Benches of the same character may be made of 100% recycled plastics retaining the same appeal as natural wood with less maintenance.

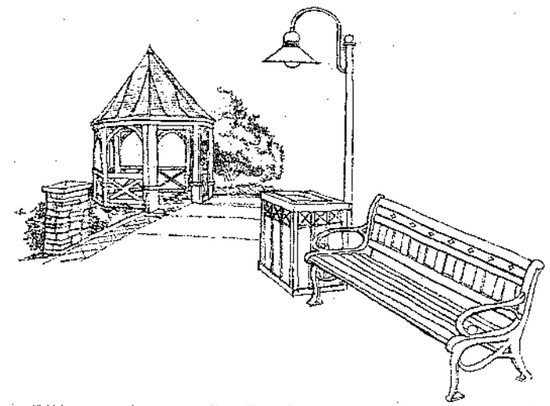
Landscape elements - The horizontal theme of the Craftsman styling is complimented by the geometric alignment of compact and dense growth of shrubbery with only corridor trees to break the low line. By contrast, river rock arranged as linear flows or as twisting dry riverbeds that lie amongst the orderly plantings will act to further accentuate their rectilinear and orderly qualities.

Railroad Theme

The history of the Pacific Electric Railway and the pathway created through these communities provided the opportunity for this recreational corridor development. The historic nature of the railroad has been included as a potential theme to remind us of this heritage.

Architectural elements - Rails and ties may be used as ground surfaces, planters and structures. The wood slats and timbers of the early rail cars and the ballast along the track may contribute to the development of this theme. Structures may be stucco with minimal ornamentation. A key focal point may be a restored rail car, rail station clock or pylon sign.

Landscape elements - The plantings in this historical theme are to accentuate the simple ornamentation of the period. Rest stop areas are to provide a clean, crisp manicured appearance as did the rail stations in their day. In contrast the plantings of the reaches between intersections and rest stops will have a softer more natural appeal. Both the crispness of the 'Stations' and the loose natural plantings of the 'Reaches' can be obtained while still keeping their low maintenance and drought tolerant requirements.



Railroad Theme Design Elements

PREFFERED DESIGN ALTERNATIVE

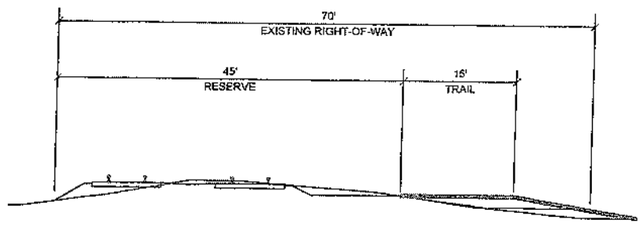
SEGMENT: 1

MILE 0.0 - 0.7

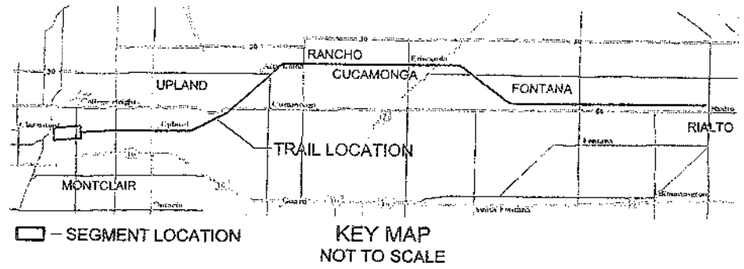
CITIES: CLAREMONT/MONTCLAIR/UPLAND

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
CLAREMONT BLVD.	4	-	EXIST SIGNAL
MONTE VISTA AVE	6	-	TYPE 2 OR 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

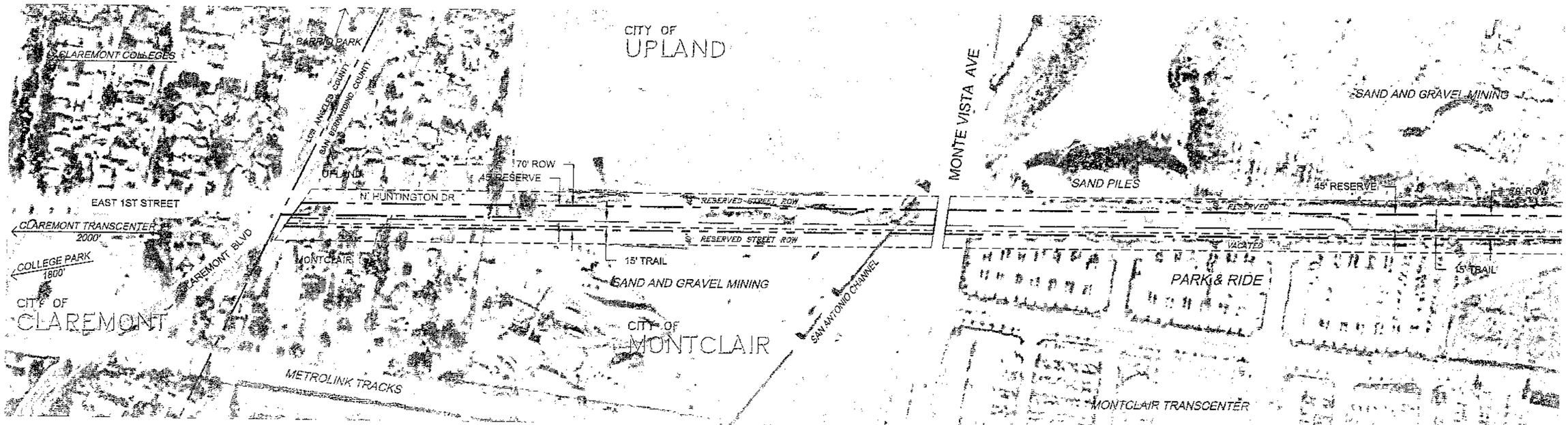


TYPICAL SECTION
CLAREMONT BLVD TO EUCLID AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

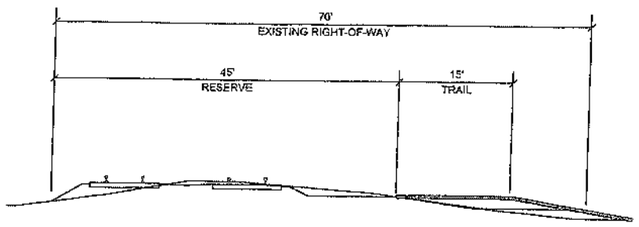
SEGMENT: 2

MILE 0.7 - 1.5

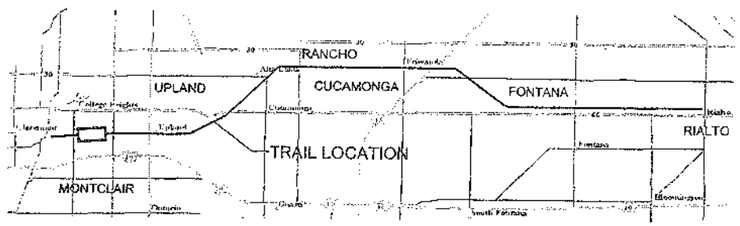
CITIES: MONTCLAIR/UPLAND

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
CENTRAL AVE	4	82'	TYPE 3
BENSON AVE	4	77'	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
CLAREMONT BLVD TO EUCLID AVE



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- ← PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

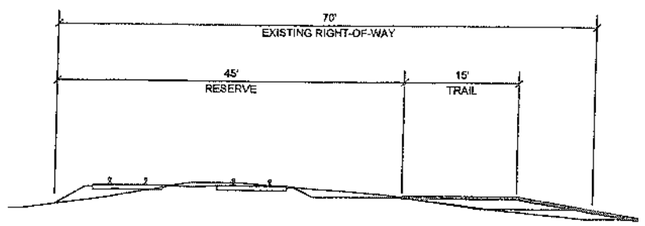
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

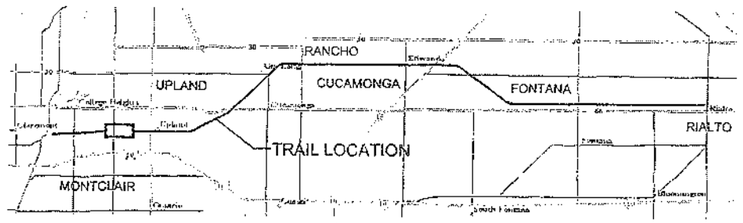
SEGMENT: 3
MILE 1.5 - 2.4
CITY: UPLAND

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
MOUNTAIN AVE	6	105'	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

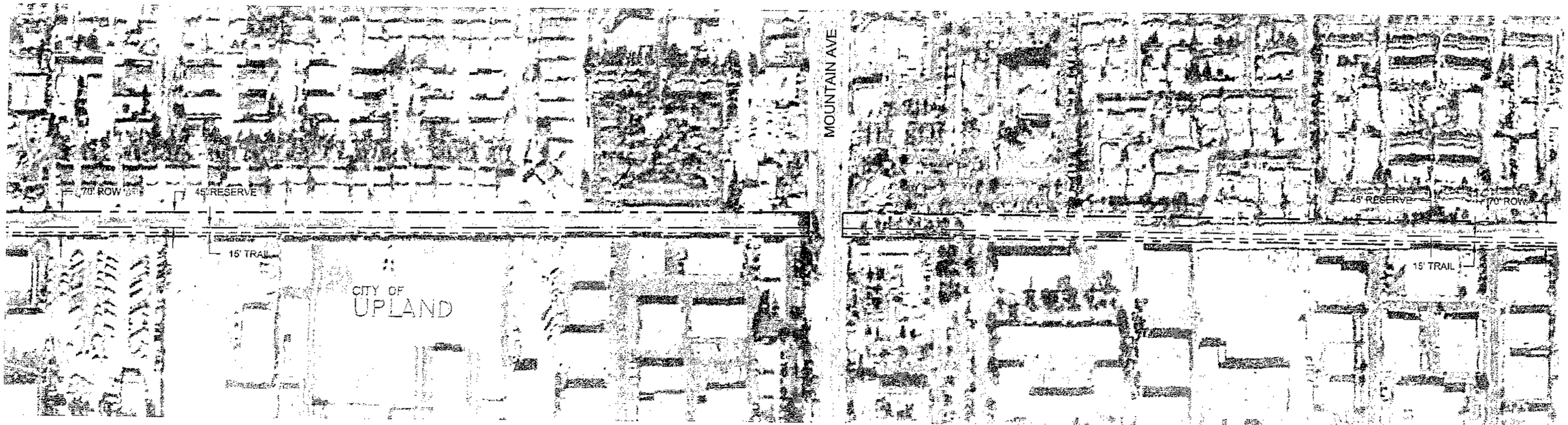


TYPICAL SECTION
CLAREMONT BLVD TO EUCLID AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

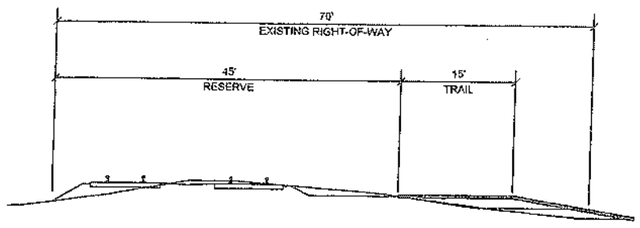
- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

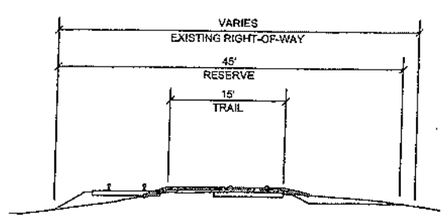
SEGMENT: 4
MILE 2.4 - 3.2
CITY: UPLAND

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
SAN ANTONIO AVE	4	88'	TYPE 1 OR 3
PALM AVE	2	67'	TYPE 1
LAUREL AVE	2	66'	TYPE 1
EUCLID AVE	6	200'	TYPE 3
1ST STREET	2	80'	TYPE 1
2ND STREET	2	80'	TYPE 1

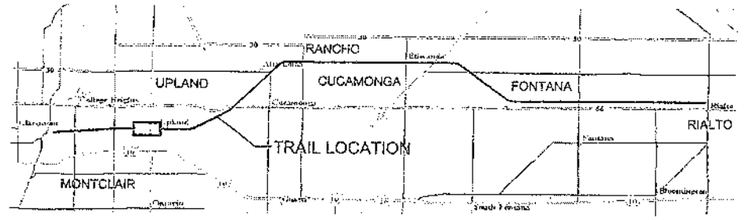
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
CLAREMONT BLVD TO EUCLID AVE

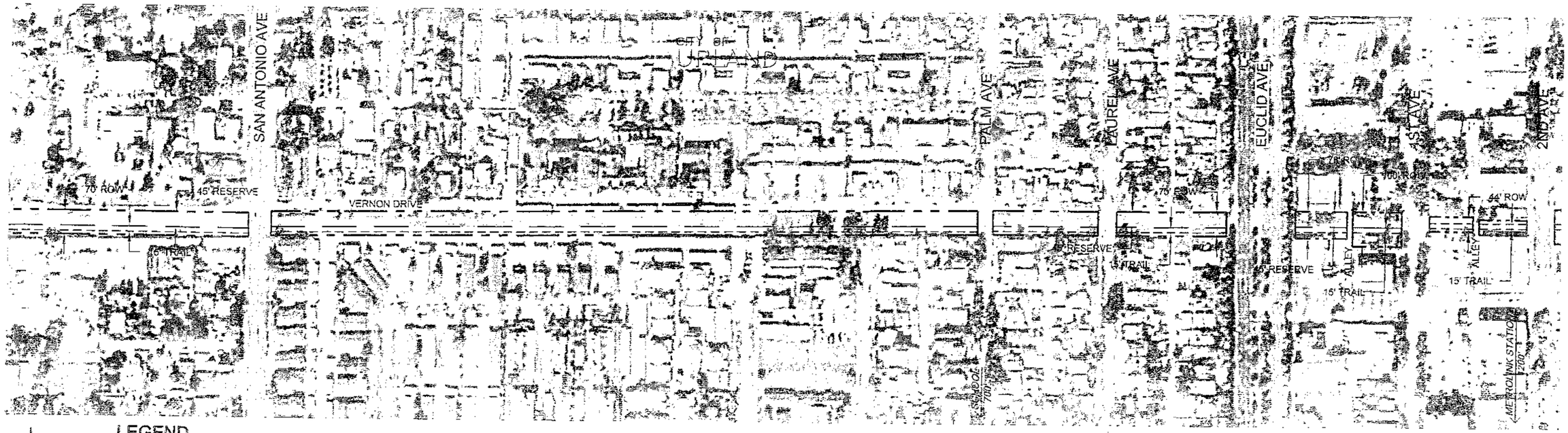


TYPICAL SECTION
1ST AVE TO 11TH AVE
(INTERIM IMPROVEMENTS ONLY)



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY

← PLACE NAME / DISTANCE — SITE LINK

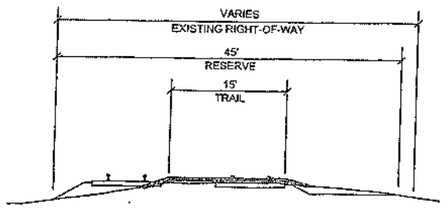
SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

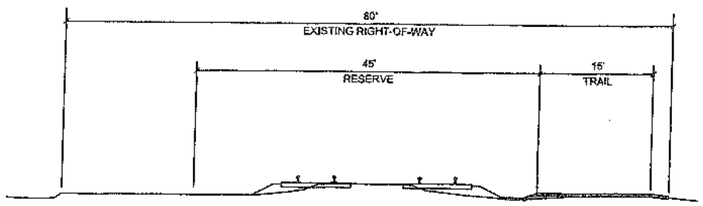
SEGMENT: 5
MILE 3.2 - 4.1
CITY: UPLAND

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
3RD STREET	2	80'	TYPE 1
6TH STREET	2	66'	TYPE 1
CAMPUS AVE	-	-	TYPE 1
8TH AVE	6	66'	TYPE 1
9TH AVE	2	66'	TYPE 1
10TH AVE	2	66'	TYPE 1
11TH AVE	2	66'	TYPE 1

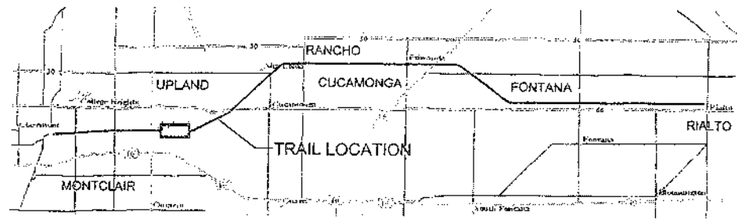
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
1ST AVE TO 11TH AVE
(INTERIM IMPROVEMENTS ONLY)

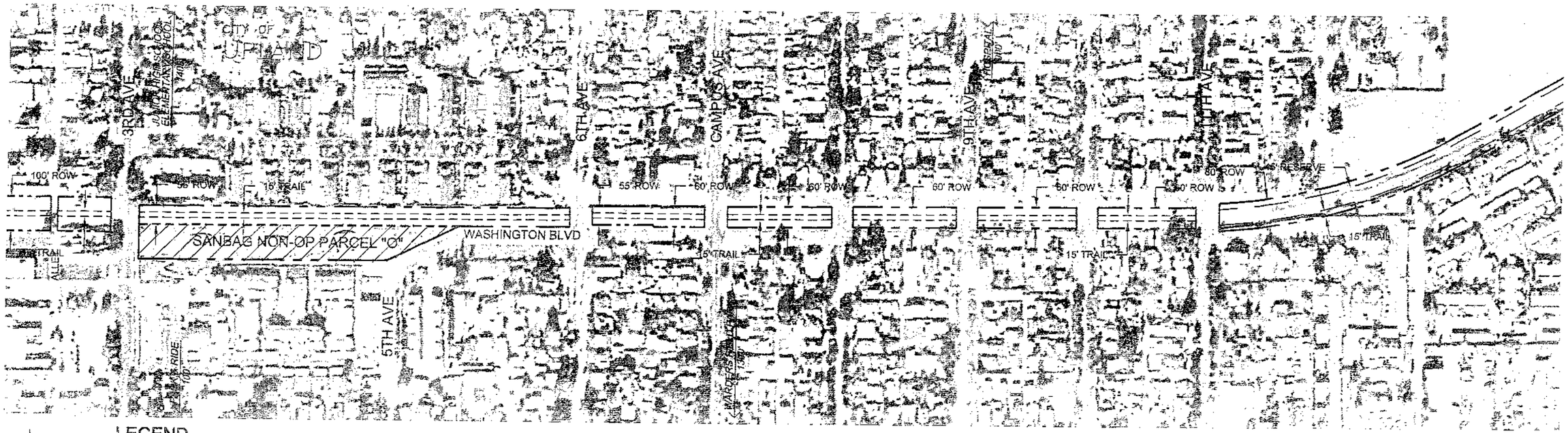


TYPICAL SECTION
11TH AVE TO GROVE STREET



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

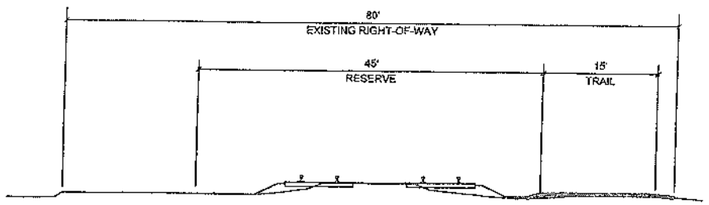
SEGMENT: 6

MILE 4.1- 4.9

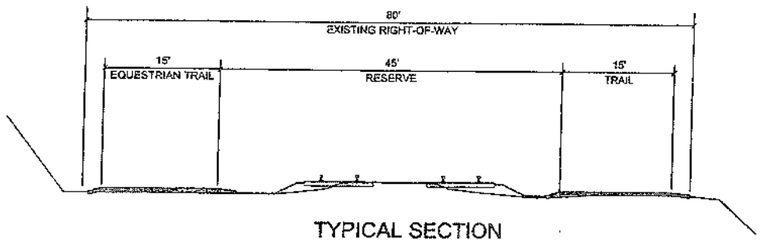
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
ARROW HIGHWAY	2	66'	TYPE 1 OR 3
GROVE STREET	2	88'	TYPE 1 OR 3

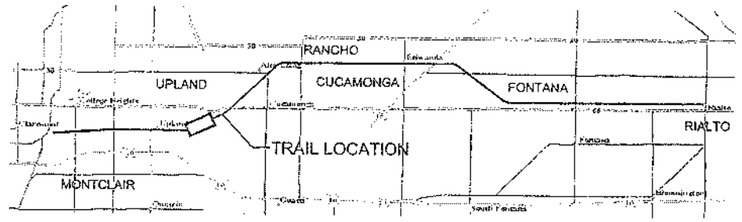
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
11TH AVE TO GROVE STREET

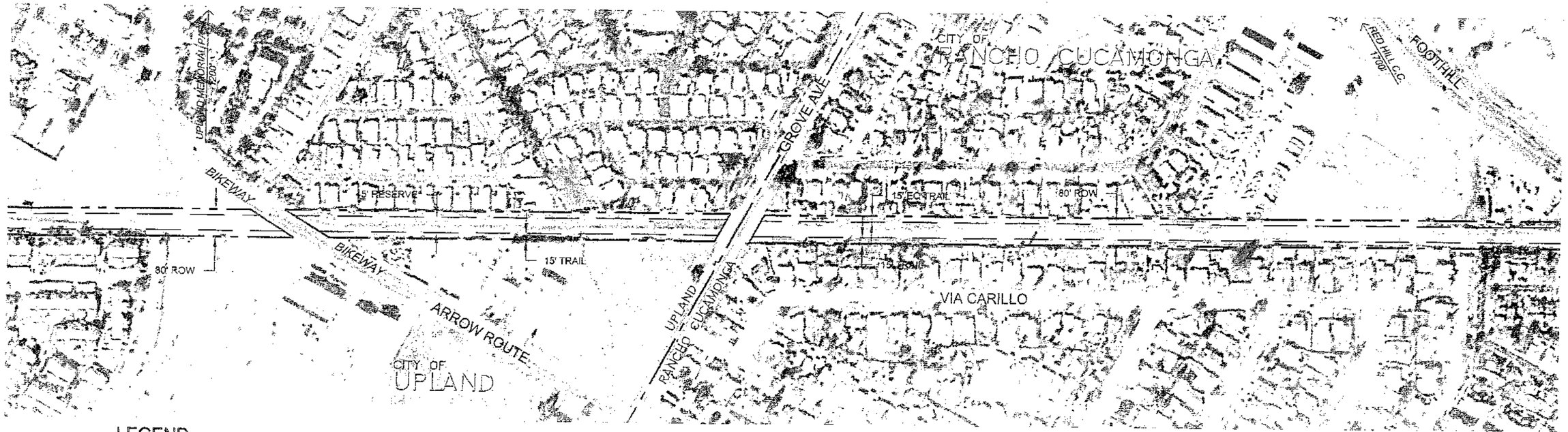


TYPICAL SECTION
GROVE AVE TO CUCAMONGA CREEK CHANNEL



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

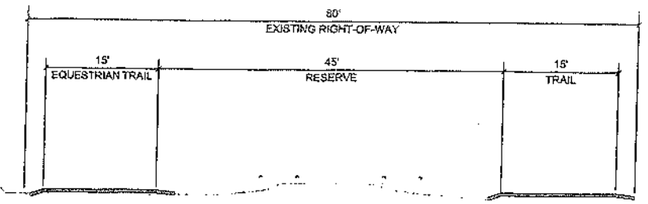
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

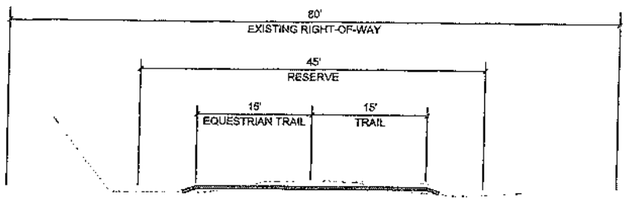
SEGMENT: 7
MILE 4.9 - 5.7
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
FOOTHILL BLVD	-	-	GRADE SEPARATED
CARNELIAN STREET	-	-	GRADE SEPARATED

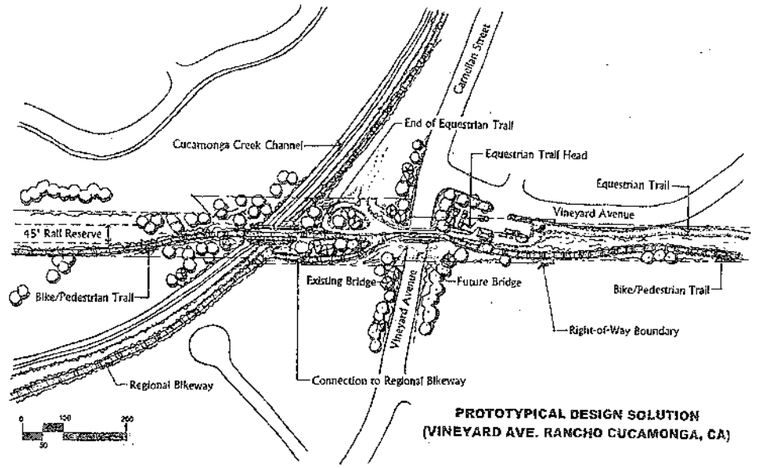
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



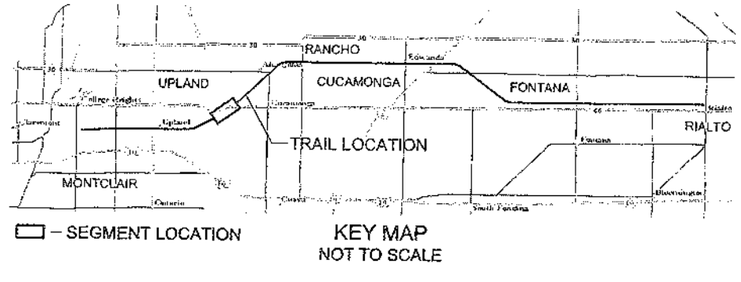
TYPICAL SECTION
GROVE AVE TO VINEYARD AVE



TYPICAL SECTION
VINEYARD AVE TO 300' SOUTH OF HELLMAN AVE



PROTOTYPICAL DESIGN SOLUTION
(VINEYARD AVE. RANCHO CUCAMONGA, CA)



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

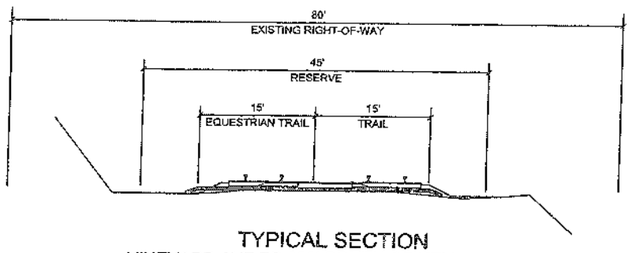
SEGMENT: 8

MILE 5.7 - 6.5

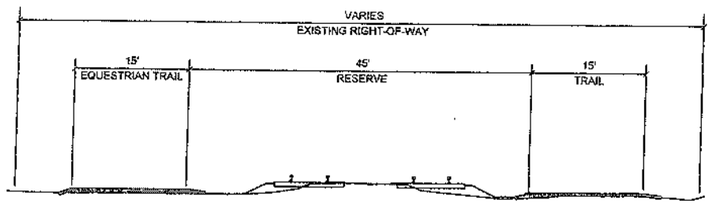
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
HELLMAN AVE	2	60'	TYPE 1

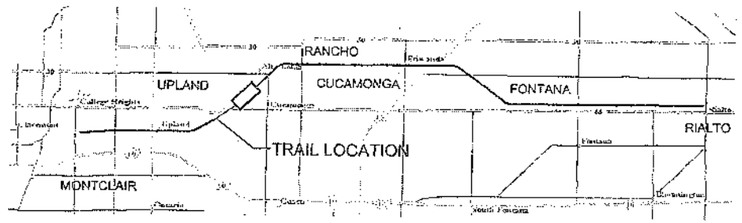
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
VINEYARD AVE TO 300' SOUTH OF HELLMAN AVE

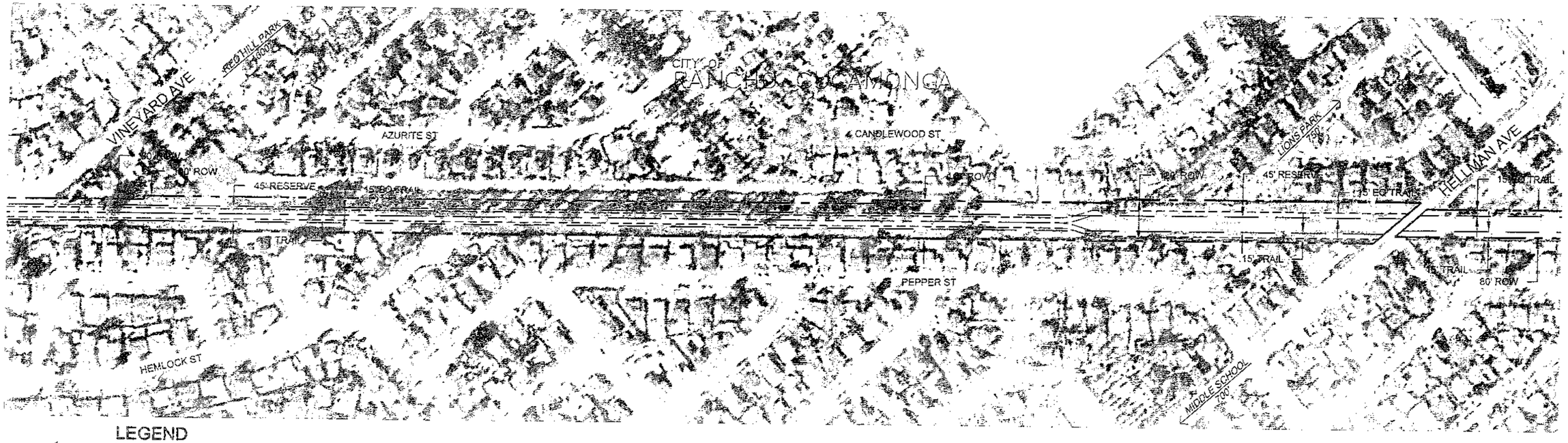


TYPICAL SECTION
HELLMAN AVE (EAST)



-- SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

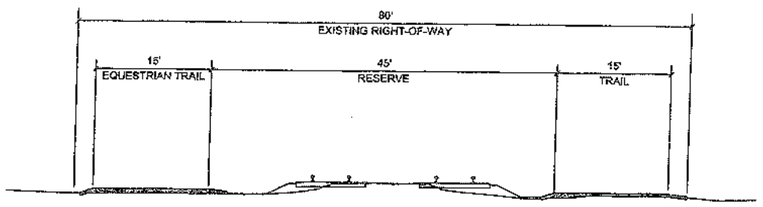
SEGMENT: 9

MILE 6.5 - 7.1

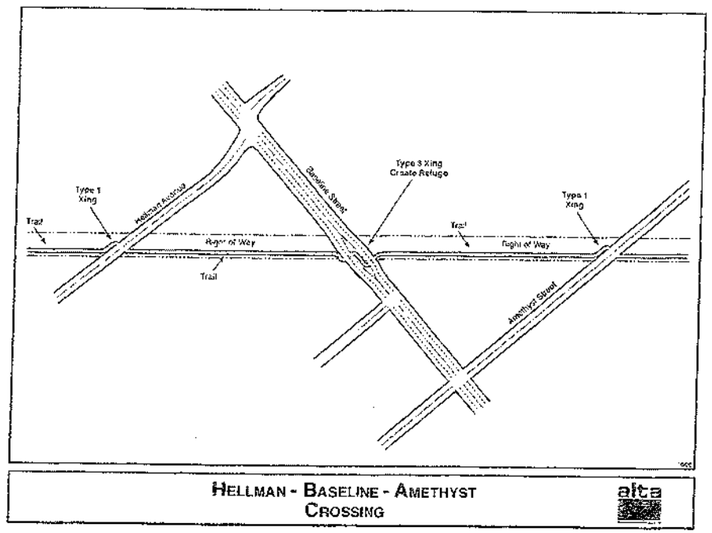
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
BASE LINE ROAD	4	102'	TYPE 3
AMETHYST STREET	2	66'	TYPE 1

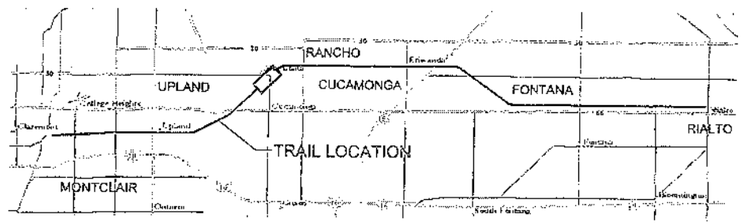
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
HELLMAN AVE TO ROCHESTER AVE

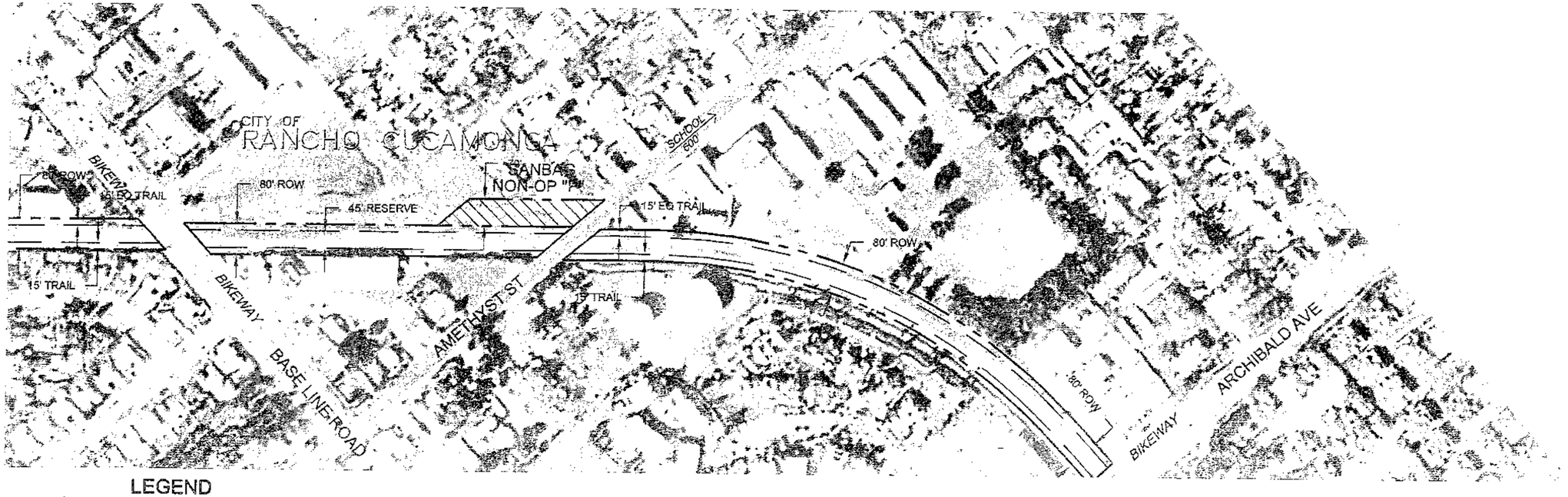


HELLMAN - BASELINE - AMETHYST
CROSSING



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

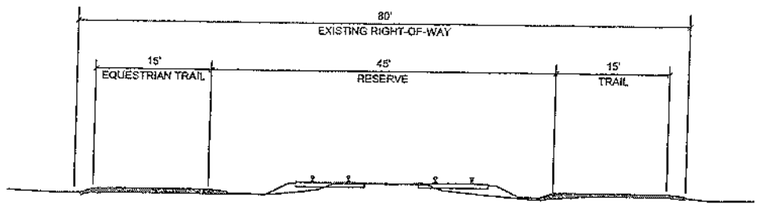
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

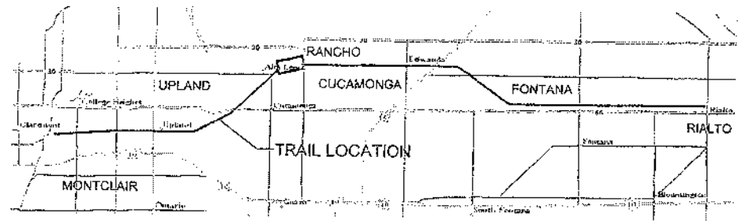
SEGMENT: 10
MILE 7.1 - 7.6
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
ARCHIBALD AVE	4	100'	TYPE 3
RAMONA AVE	2	66'	TYPE 1
HERMOSA AVE	2	77'	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

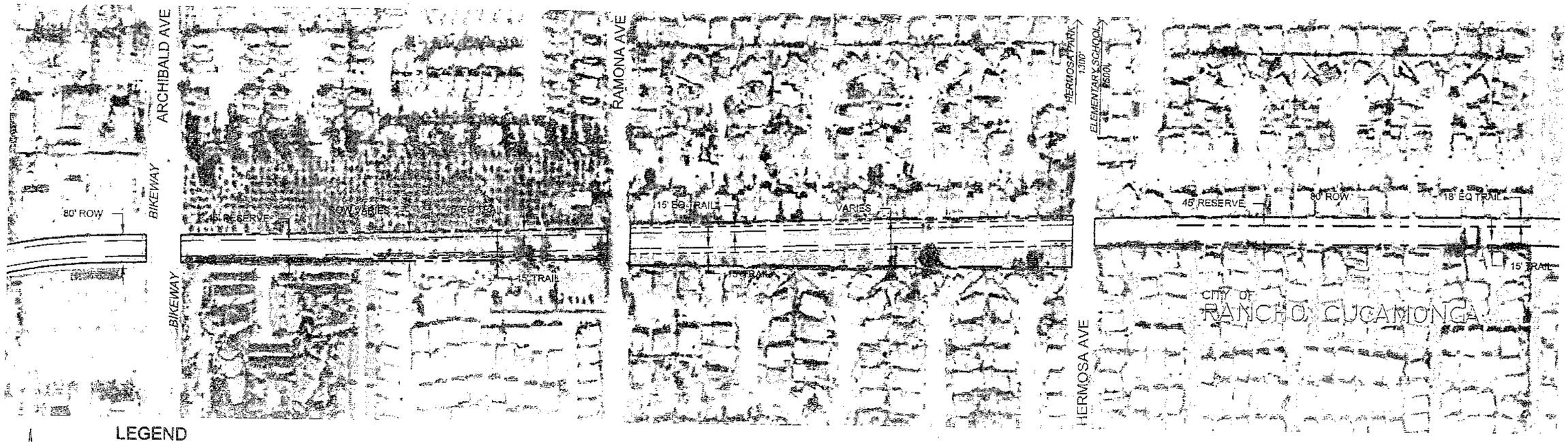


TYPICAL SECTION
ARCHIBALD AVE TO HERMOSA AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

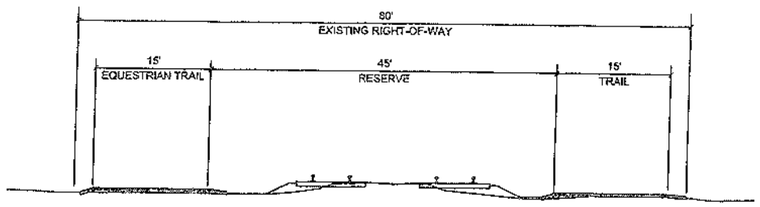
SEGMENT: 11

MILE 7.6 - 8.7

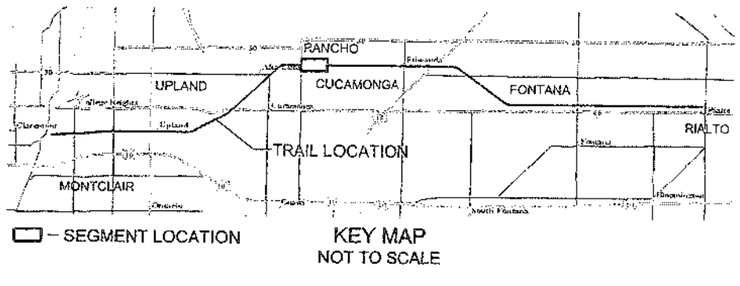
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
HAVEN AVE	6	150'	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
HAVEN AVE TO DEER CREEK



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

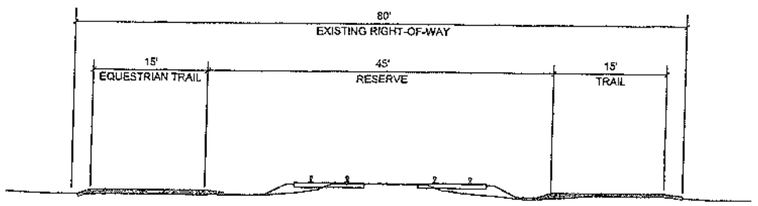
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

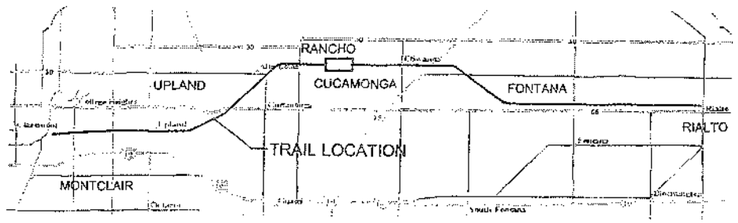
SEGMENT: 12
MILE 8.7 - 9.5
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
MILLIKEN AVE	6	120'	TYPE 3
KENYON WAY	2	-	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

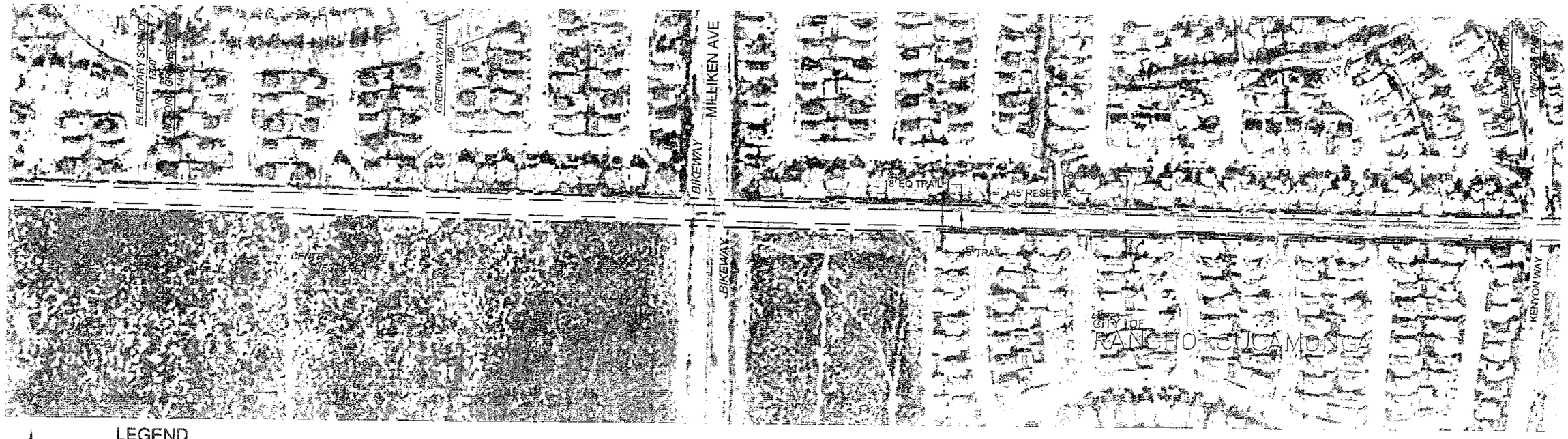


TYPICAL SECTION
DEER CREEK TO KENYAN WAY



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE ← SITE LINK
- SANBAG NON-OP PROPERTY

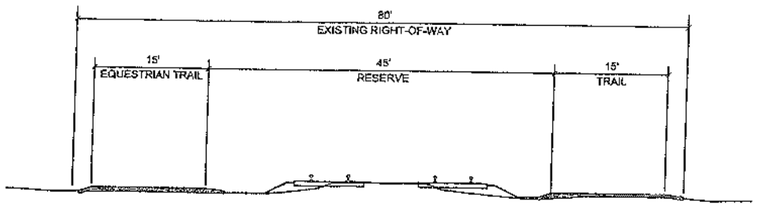
SCALE 1"=300'
IMAGE DATE: JANUARY 1989

PREFFERED DESIGN ALTERNATIVE

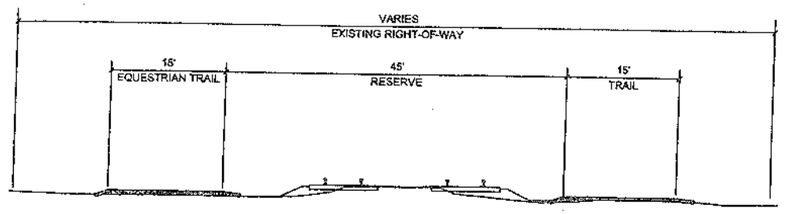
SEGMENT: 13
MILE 9.5 - 10.4
CITY: RANCHO CUCAMONGA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
ROCHESTER AVE	4	98'	TYPE 1
DAY CREEK BLVD	6	-	TYPE 1 OR 3

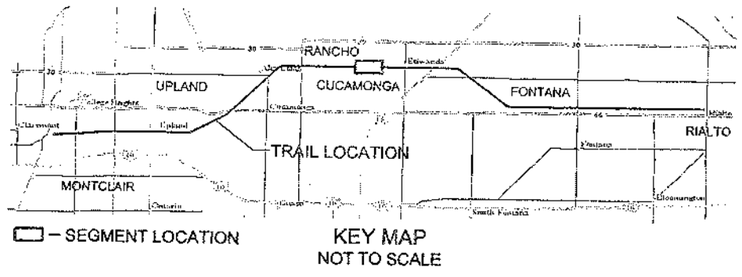
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
KENYAN WAY TO ROCHESTER AVE

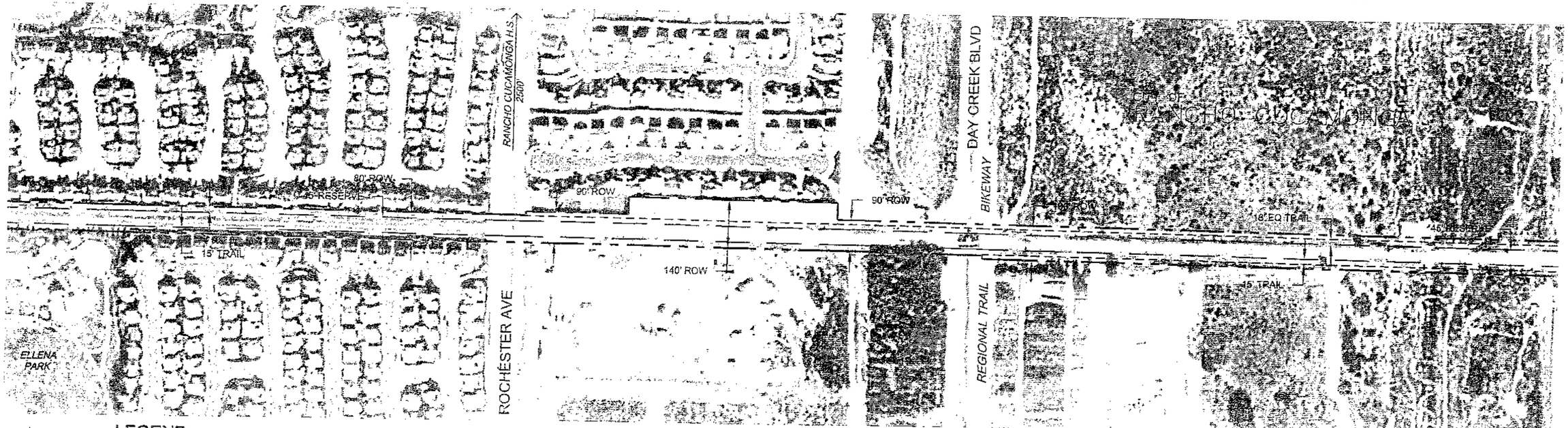


TYPICAL SECTION
ROCHESTER AVE TO ETIWANDA



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

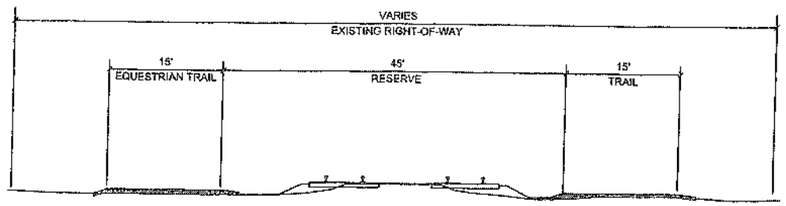
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

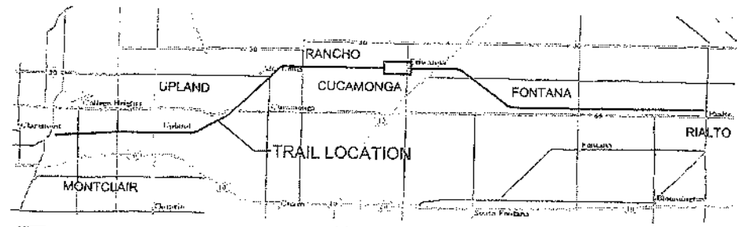
SEGMENT: 14
MILE 10.4 - 11.3
CITY: RANCHO CUCAMONGA (ETIWANDA)

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
VICTORIA PARK LANE	4	-	TYPE 1
ETIWANDA AVE	2	80'	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

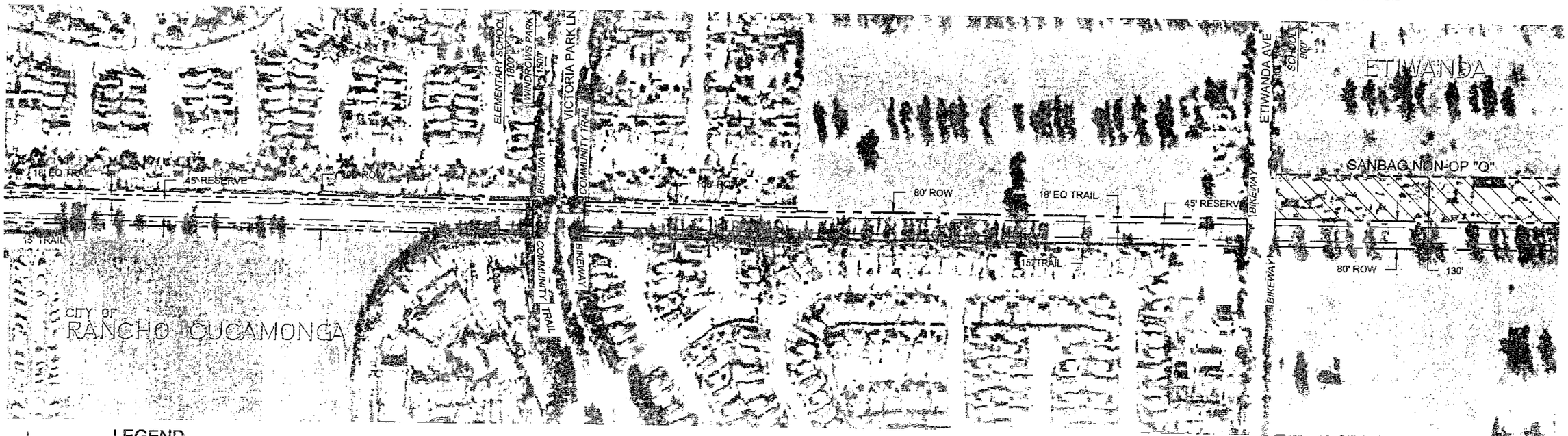


TYPICAL SECTION
ROCHESTER AVE TO ETIWANDA



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

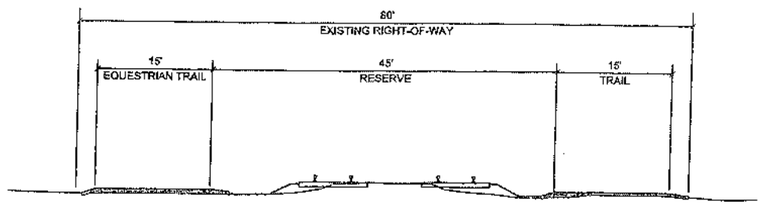
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

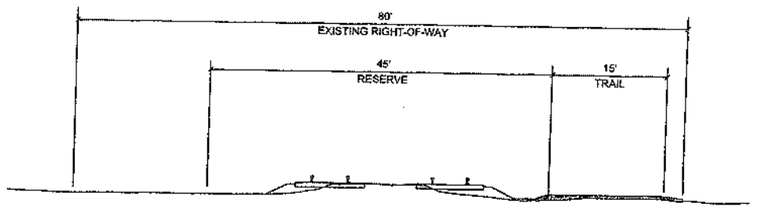
SEGMENT: 15
MILE 11.3 - 12.1
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
EAST AVE	2	-	TYPE 1

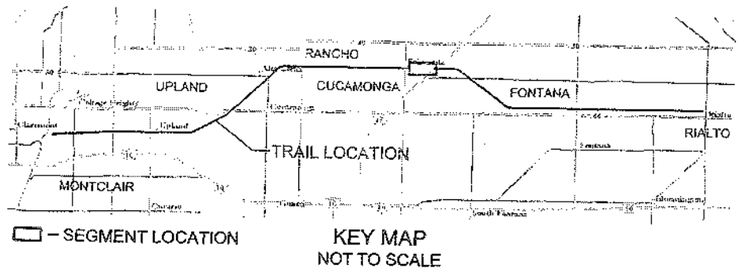
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
ETIWANDA AVE TO I-15

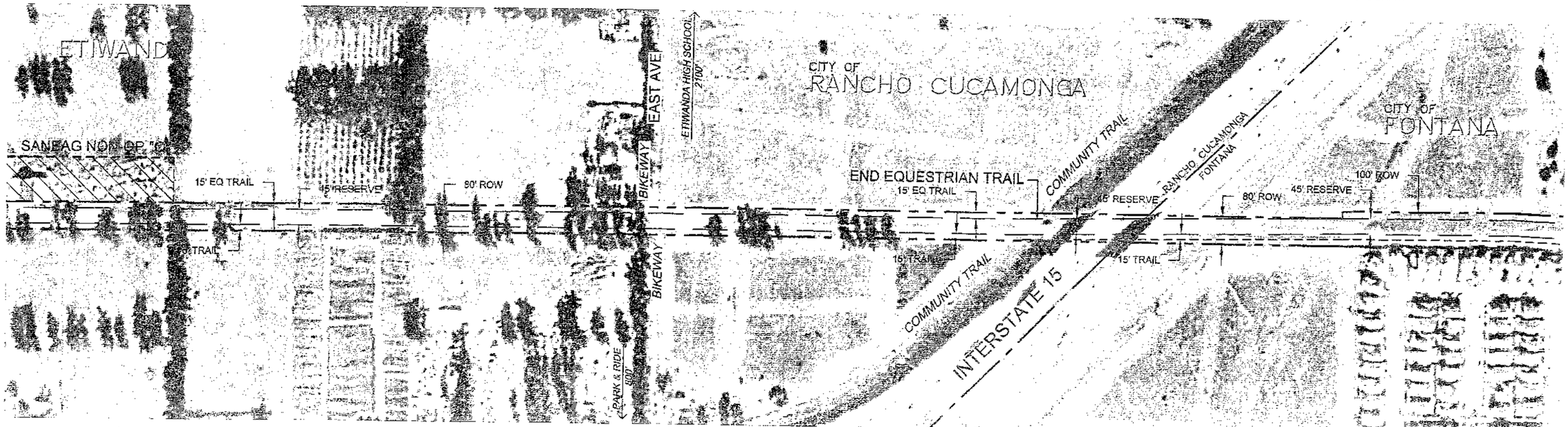


TYPICAL SECTION
I-15 TO RIVERSIDE AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

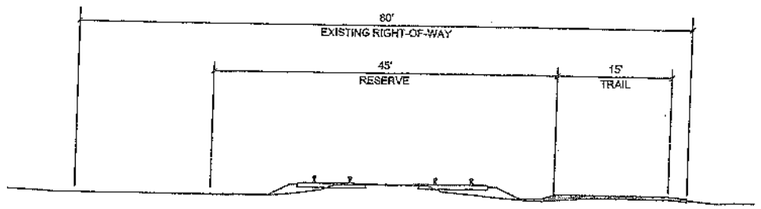
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

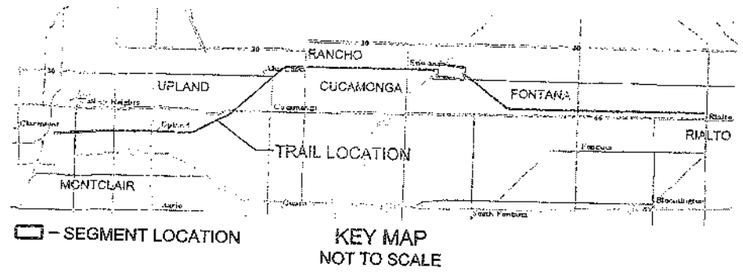
SEGMENT: 16
MILE 12.1 - 13.0
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
BASE LINE ROAD	2	93'	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

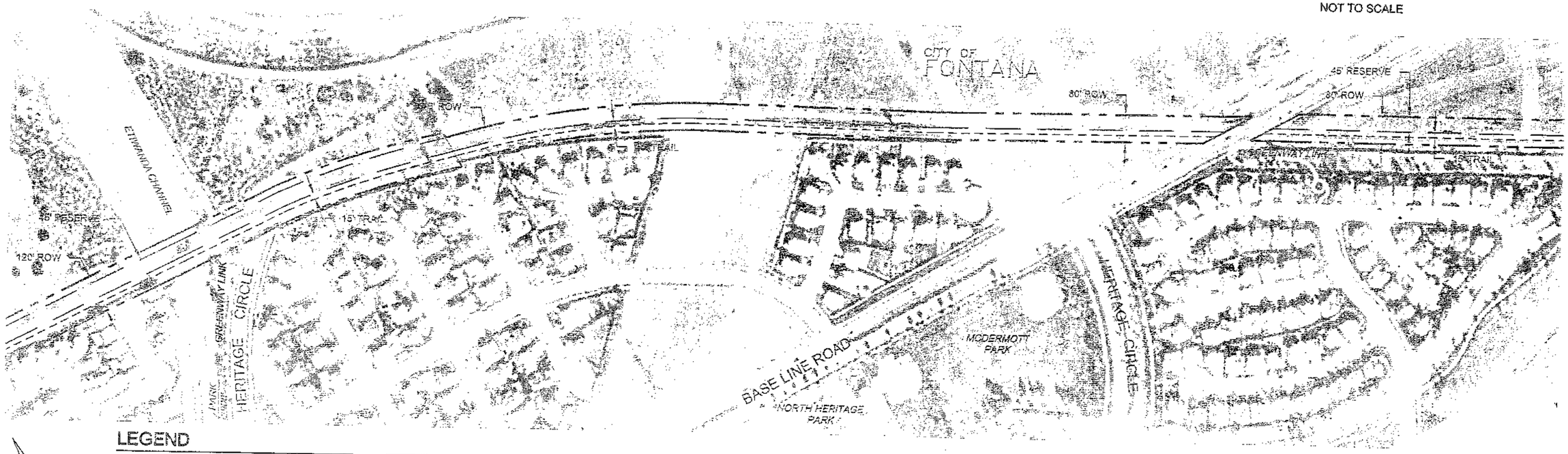


TYPICAL SECTION
I-15 TO RIVERSIDE AVE



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

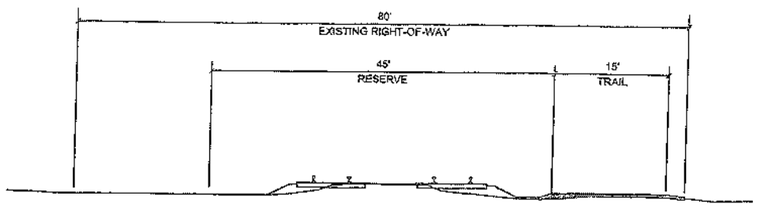
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

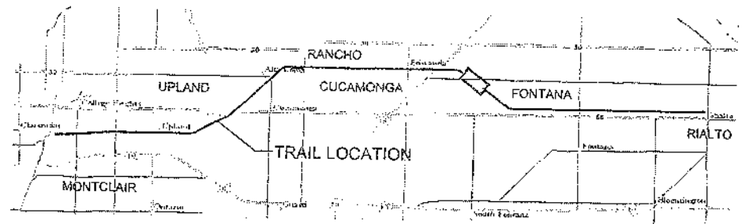
SEGMENT: 17
MILE 13.0 - 13.8
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
CHERRY AVE	4	120'	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

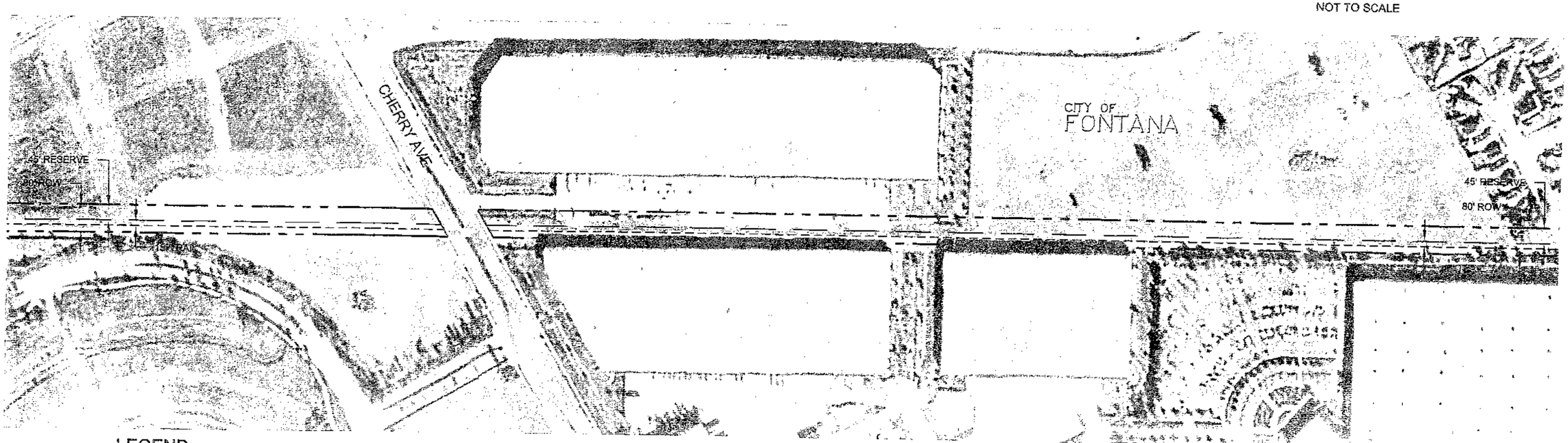


TYPICAL SECTION
I-15 TO RIVERSIDE AVE



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

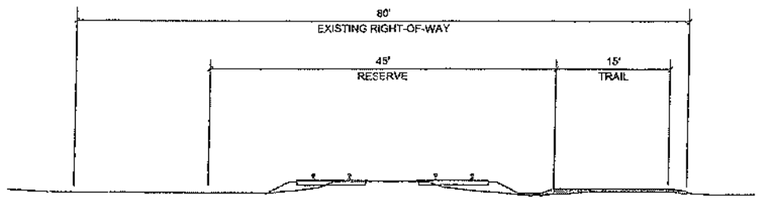
- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

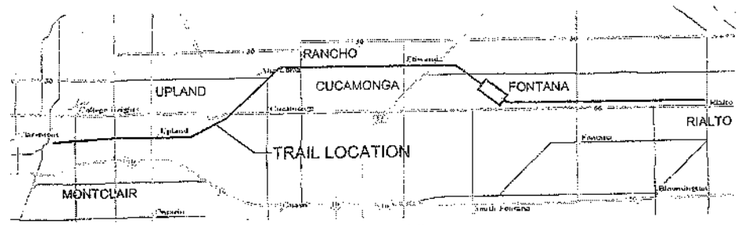
SEGMENT: 18
MILE 13.8 - 14.7
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
HEMLOCK AVE	-	-	TYPE 1
BEECH STREET	FUTURE	104'	TYPE 3
SULTANA AVE	2	68'	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

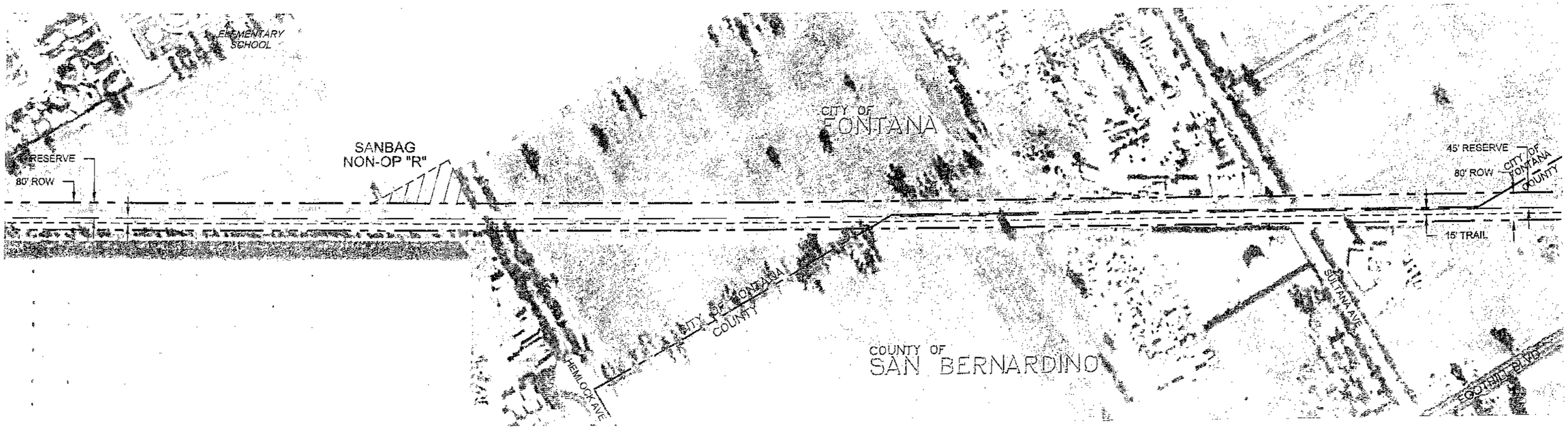


TYPICAL SECTION
HEMLOCK AVE TO FOOTHILL BLVD



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

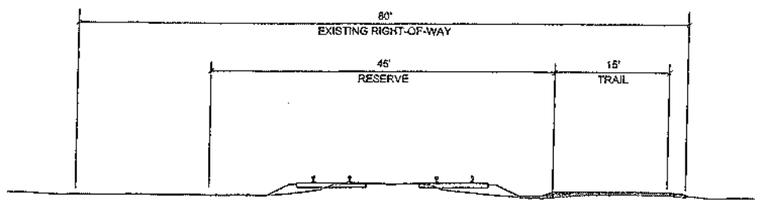
- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

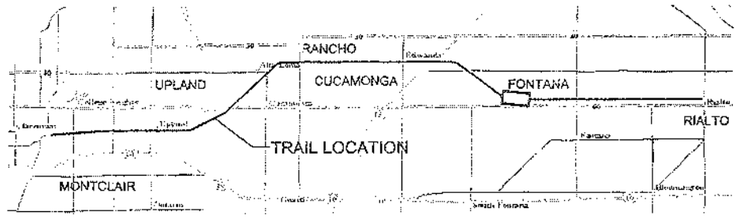
SEGMENT: 19
MILE 14.7 - 15.5
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
FOOTHILL BLVD	-	-	GRADE SEPARATED
ALMERIA AVE	2	68'	TYPE 1
TOKAY AVE	2	68'	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
FOOTHILL BLVD TO CITRUS AVE



▭ – SEGMENT LOCATION

KEY MAP
NOT TO SCALE

LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY

PLACE NAME / DISTANCE ← SITE LINK

SANBAG NON-OP PROPERTY

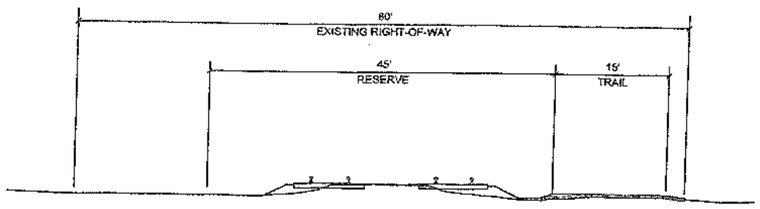
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

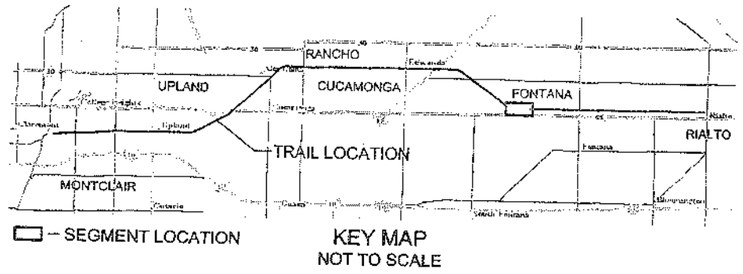
SEGMENT: 20
MILE 15.5 - 16.4
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
CITRUS AVE	4	104'	TYPE 1
OLEANDER AVE	2	68'	TYPE 1
CYPRESS AVE	2	68'	TYPE 1
JUNIPER AVE	4	92'	TYPE 1 OR 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

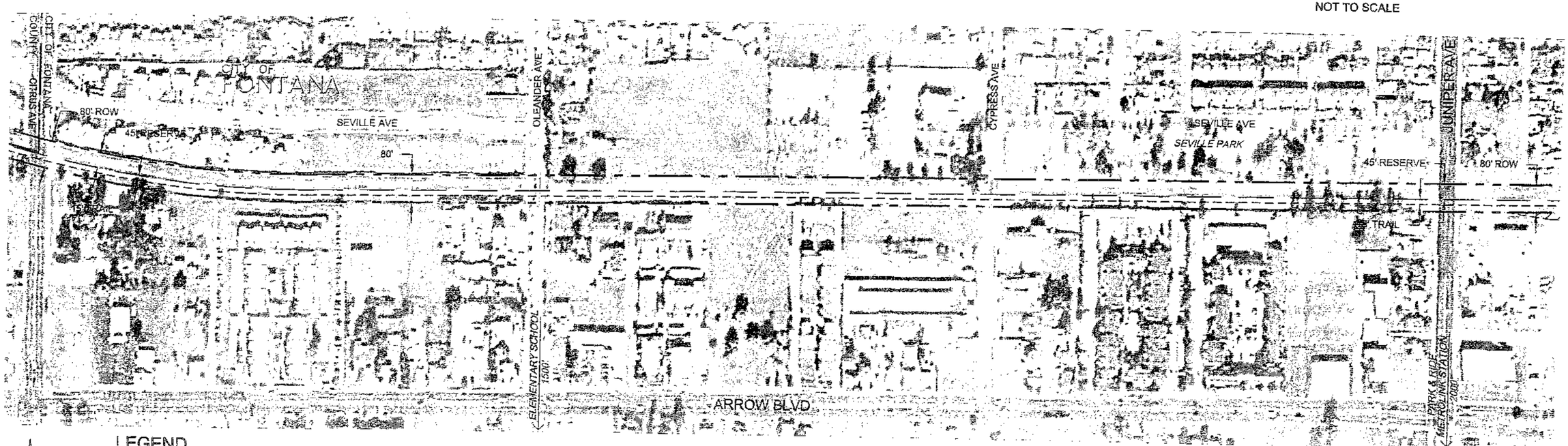


TYPICAL SECTION
CITRUS AVE TO JUNIPER AVE



-- SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

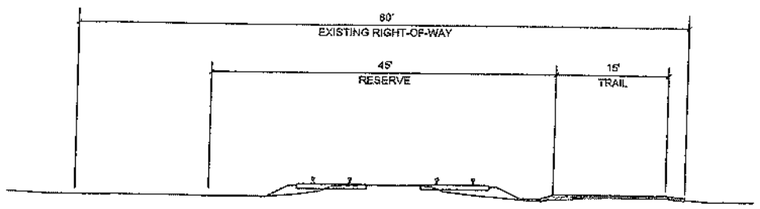
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

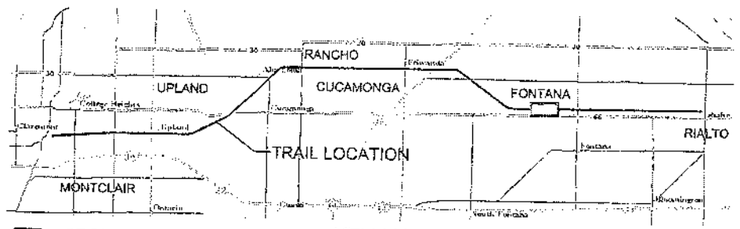
SEGMENT: 21
MILE 16.4 - 17.2
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
SIERRA AVE	4	132'	TYPE 3
MANGO AVE	4	92'	TYPE 1
PALMETTO AVE	2	68'	TYPE 1

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

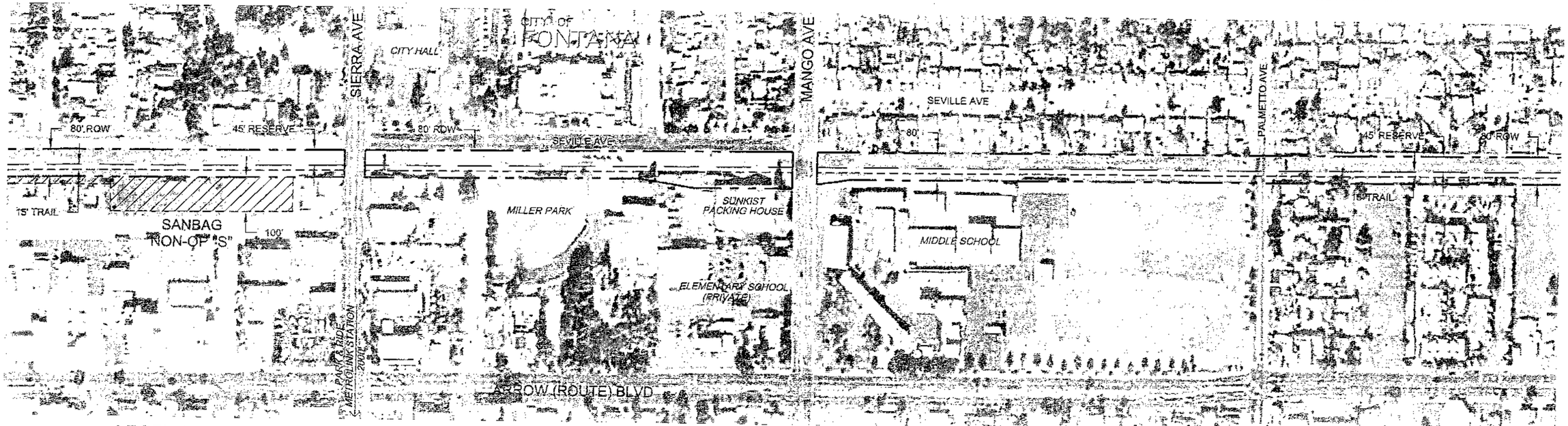


TYPICAL SECTION
JUNIPER AVE TO PALMETTO AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

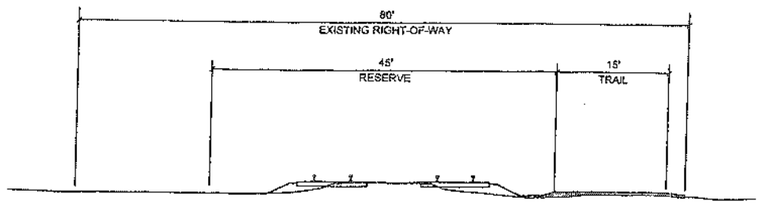
- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

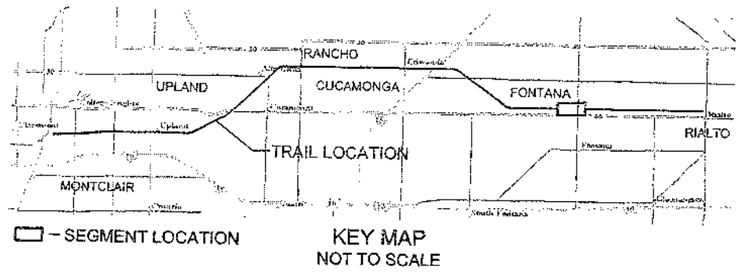
SEGMENT: 22
MILE 17.2 - 18.1
CITY: FONTANA

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
TAMARIND AVE	2	68'	TYPE 1
ALDER AVE	4	104'	TYPE 1
LAUREL AVE	2	92'	TYPE 1
LOCUST AVE	2	68'	TYPE 1

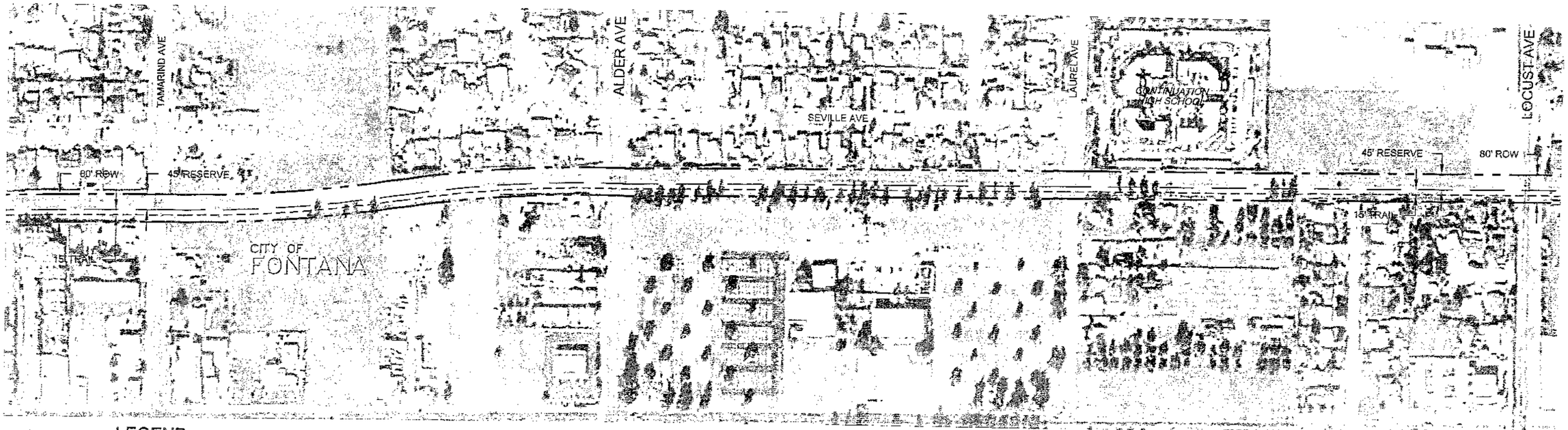
*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED



TYPICAL SECTION
PALMETTO AVE TO LOCUST AVE



KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

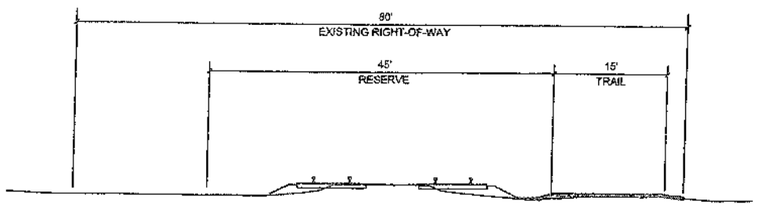
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

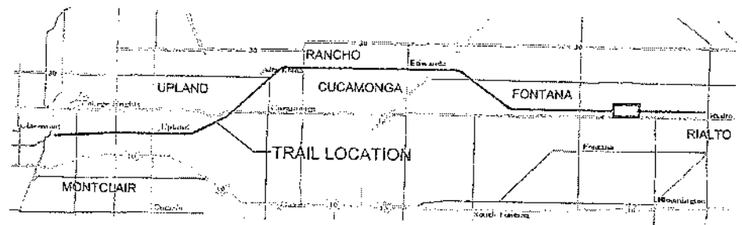
SEGMENT: 23
MILE 18.1 - 18.9
CITY: RIALTO

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
MAPLE AVE	2	68'	TYPE 1
LINDEN AVE	2	-	TYPE 1
CEDAR AVE	4	-	TYPE 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

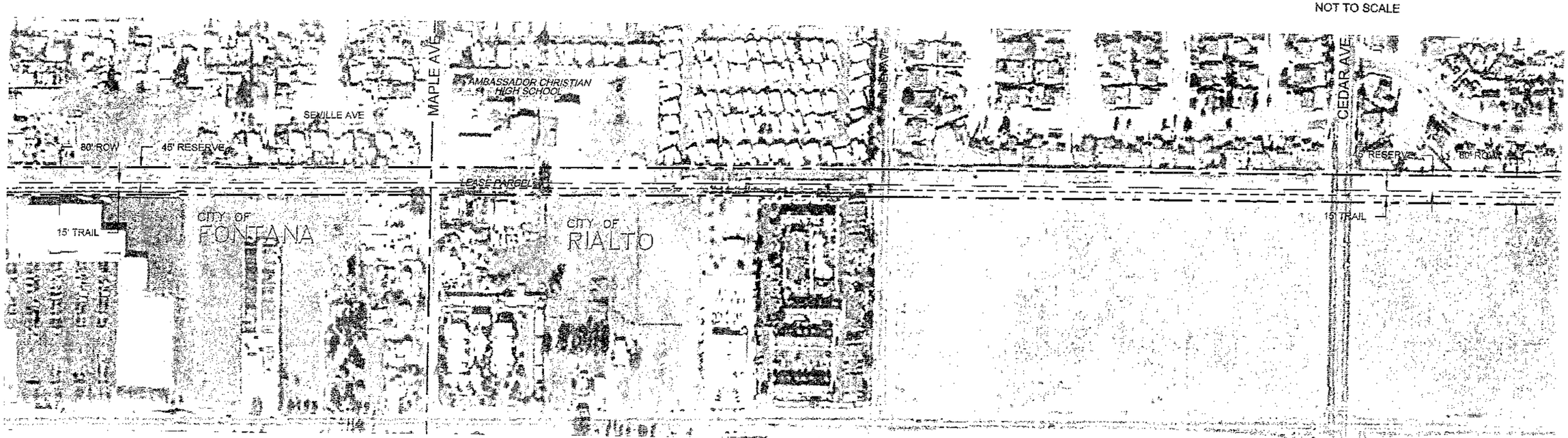


TYPICAL SECTION
LOCUST AVE TO CEDAR AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY

PLACE NAME / DISTANCE — SITE LINK

SANBAG NON-OP PROPERTY

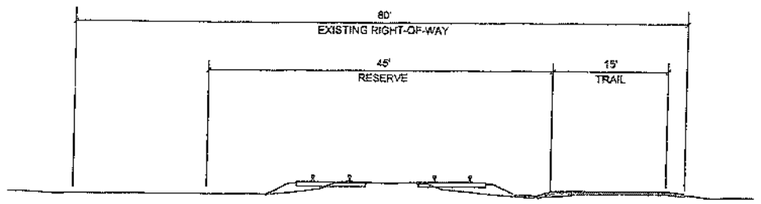
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

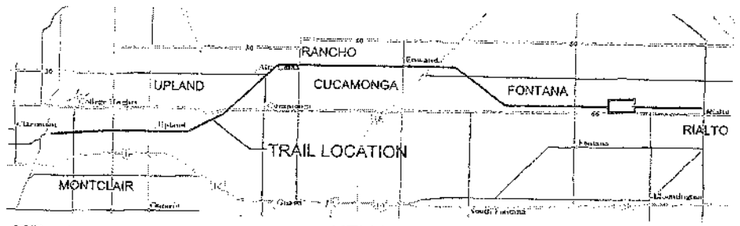
SEGMENT: 24
MILE 18.9 - 19.8
CITY: RIALTO

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
CACTUS AVE	2	100'	TYPE 1 OR 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

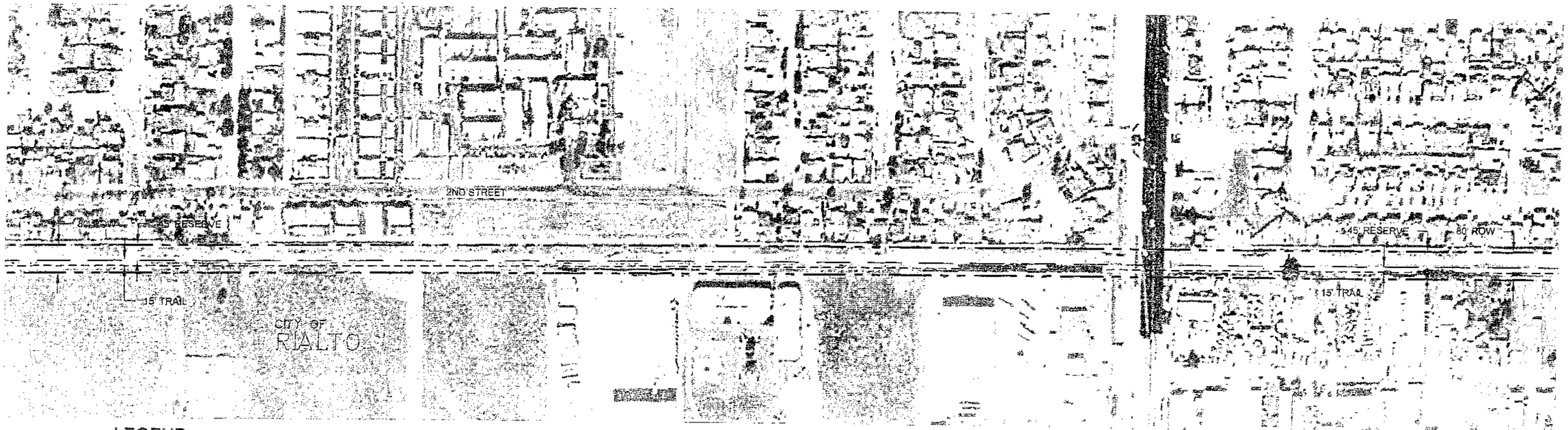


TYPICAL SECTION
CEDAR AVE TO CACTUS AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

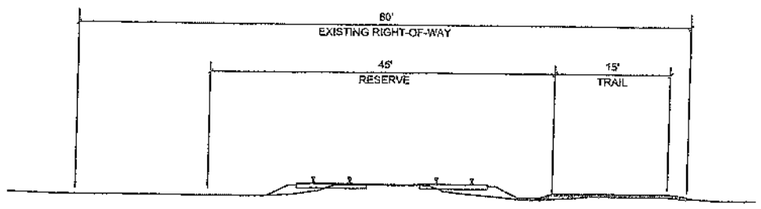
SCALE 1"=300'
IMAGE DATE: JANUARY 1999

PREFFERED DESIGN ALTERNATIVE

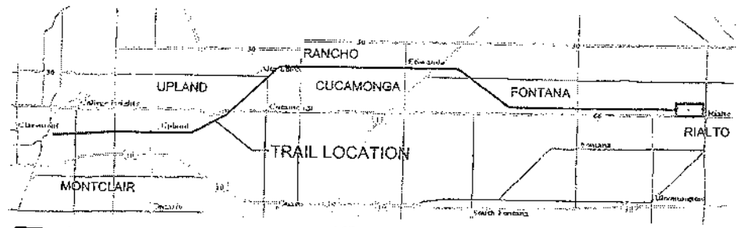
SEGMENT: 25
MILE 19.8 - 20.3
CITY: RIALTO/SAN BERNARDINO

ROADWAY CROSSING RECOMMENDATIONS			
ROADWAY	# OF LANES	WIDTH	CROSSING
LILAC AVE	2	-	TYPE 1 OR 3
WILLOW AVE	2	-	TYPE 1 OR 3
PALM AVE	2	-	TYPE 1 OR 3
ORANGE	2	-	TYPE 1 OR 3

*CROSSING TYPES
1. UNCONTROLLED
2. ROUTE TO EXIST SIGNALIZED INTERSECTION
3. NEW SIGNAL
4. GRADE SEPARATED

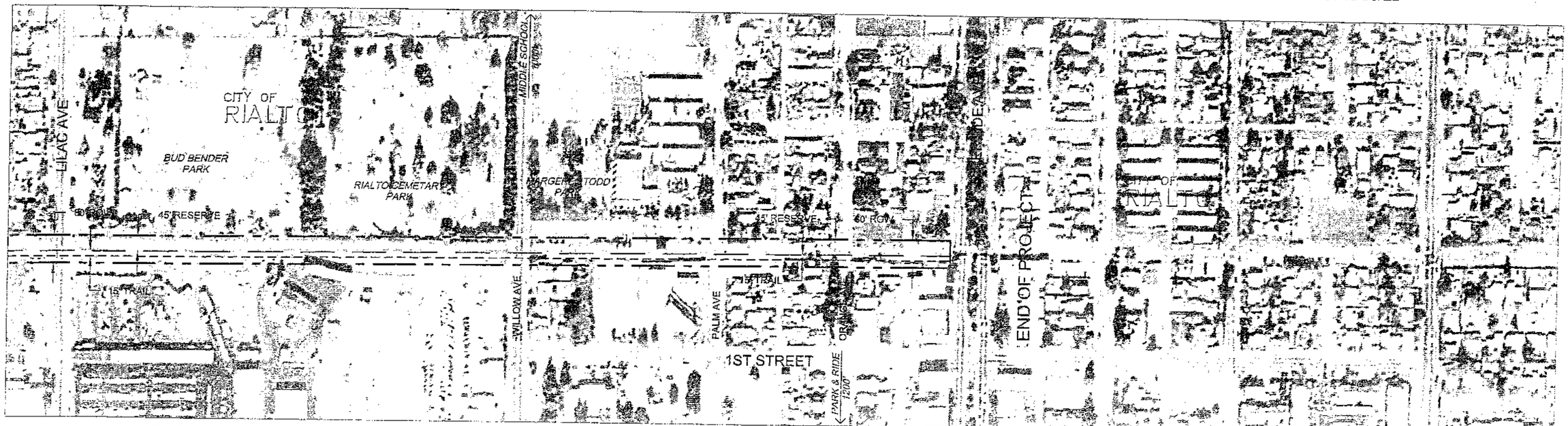


TYPICAL SECTION
CACTUS AVE TO RIVERSIDE AVE



– SEGMENT LOCATION

KEY MAP
NOT TO SCALE



LEGEND

- TRAIL LIMITS
- RESERVE LIMITS
- EXISTING RIGHT-OF-WAY
- CITY BOUNDARY
- PLACE NAME / DISTANCE — SITE LINK
- SANBAG NON-OP PROPERTY

SCALE 1"=300'
IMAGE DATE: JANUARY 1999

Cost Estimates

Pacific Electric Inland Empire Trail Cost Projection
Total Project Costs at Build-out (Alternative Two)

Quantity	Unit	Required Item	Unit Price	Total
98720	LF	Clearing & Grubbing	$ 1.00	$ 98,720
27420	CY	Earth/Excavation	$ 40.00	$ 1,096,800
1085919	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 1,628,879
98720	LF	Traffic Bike Lane Stripe	$ 0.75	$ 74,040
98720	LF	Bike Path Signing	$ 3.00	$ 296,160
31680	LF	Equestrian Trail	$ 3.00	$ 95,040
14808	LF	Drainage	$ 3.00	$ 44,424
3000	LF	Relocated Signs/Fencing	$ 2.00	$ 6,000
10000	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 400,000
600	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 240,000
1	EA	Type 1 Grade Crossing	$ 1,000.00	$ 1,000
27	EA	Type 2 Grade Crossing	$ 100,000.00	$ 2,700,000
29	EA	Type 3 Grade Crossing	$ 1,000.00	$ 29,000
1	EA	Type Grade Separation (Foothill Boulevard)	$ 2,000,000.00	$ 2,000,000
600	LF	Guardrail	$ 25.00	$ 15,000
20	Mile	Construction Traffic Control	$ 6,000.00	$ 120,000
212	EA	Lighting	$ 1,000.00	$ 212,000
	EA	Not used		$ -
98720	LF	Clean up	$ 0.15	$ 14,808
5280	EA	Fencing	$ 20.00	$ 105,600
212	EA	Pavement Markings	$ 50.00	$ 10,600
1025000	SF	Fine Grade/Soil Prep.	$ 0.25	$ 256,250
1025000	SF	Auto Irrigation System	$ 1.50	$ 1,537,500
1025000	SF	Landscape Planting	$ 1.00	$ 1,025,000
1025000	SF	Mulch	$ 0.50	$ 512,500
1025000	SF	90-day Landscape Maintenance	$ 0.04	$ 41,000
50	EA	Pedestal Monuments	$ 2,500.00	$ 125,000
13	EA	Location Maps	$ 5,000.00	$ 65,000
23	EA	Mileage Markers	$ 1,500.00	$ 34,500
43	EA	Display Markers	$ 3,000.00	$ 129,000
6	EA	Trailhead/Parking Area	$ 250,000	$ 1,500,000
5	EA	Porta-Potty Enclosure	$ 8,000.00	$ 40,000
10	EA	Rest Stops	$ 83,500.00	$ 835,000
		Sub Total		$ 14,453,821
		15% design Cost		$ 2,168,073
		20% Contingency		$ 2,890,764
		TOTAL COST REQUIRED ITEMS		**$ 21,680,731**

Quantity	Unit	Optional Item	Unit Price	Total
1	EA	Type 4 Grade Separation	$ 4,000,000.00	$ 4,000,000
2	EA	Restooms (Fontana and Montclair)	$ 100,000.00	$ 200,000
		Sub Total		$ 4,200,000
		15% design Cost		$ 630,000
		20% Contingency		$ 840,000
		TOTAL COST OPTIONAL ITEMS		**$ 5,670,000**
		GRAND TOTAL COST ALL ITEMS*		**$ 27,350,731**

Pacific Electric Inland Empire Trail Cost Projection - Selected Alternative
Incremental Project Costs (Alternative Three)

Quantity	Unit	Required Item	Unit Price	Total
98720	LF	Clearing & Grubbing	$ 1.00	$ 98,720
27420	CY	Earth/Excavation	$ 40.00	$ 1,096,800
1085919	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 1,628,879
98720	LF	Traffic Bike Lane Stripe	$ 0.75	$ 74,040
98720	LF	Bike Path Signing	$ 3.00	$ 296,160
31680	LF	Equestrian Trail	$ 3.00	$ 95,040
14808	LF	Drainage	$ 3.00	$ 44,424
3000	LF	Relocated Signs/Fencing	$ 2.00	$ 6,000
0	SF	3' Retaining Walls (Concrete)	$ 40.00	$ -
600	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 240,000
1	EA	Type 1 Grade Crossing	$ 1,000.00	$ 1,000
27	EA	Type 2 Grade Crossing	$ 100,000.00	$ 2,700,000
29	EA	Type 3 Grade Crossing	$ 1,000.00	$ 29,000
1	EA	Type 4 Grade Separation	$ 2,000,000.00	$ 2,000,000
600	LF	Guardrail	$ 25.00	$ 15,000
20	Mile	Construction Traffic Control	$ 6,000.00	$ 120,000
212	EA	Lighting	$ 1,000.00	$ 212,000
	EA	Not used		$ -
98720	LF	Clean up	$ 0.15	$ 14,808
5280	EA	Fencing	$ 20.00	$ 105,600
212	EA	Pavement Markings	$ 50.00	$ 10,600
1025000	SF	Fine Grade/Soil Prep.	$ 0.25	$ 256,250
1025000	SF	Auto Irrigation System	$ 1.50	$ 1,537,500
1025000	SF	Landscape Planting	$ 1.00	$ 1,025,000
1025000	SF	Mulch	$ 0.50	$ 512,500
1025000	SF	90-day Landscape Maintenance	$ 0.04	$ 41,000
50	EA	Pedestal Monuments	$ 2,500.00	$ 125,000
13	EA	Location Maps	$ 5,000.00	$ 65,000
23	EA	Mileage Markers	$ 1,500.00	$ 34,500
43	EA	Display Markers	$ 3,000.00	$ 129,000
6	EA	Trailhead/Parking Area	$ 250,000	$ 1,500,000
5	EA	Porta-Potty Enclosure	$ 8,000.00	$ 40,000
10	EA	Rest Stops	$ 83,500.00	$ 835,000
		Sub Total		$ 14,053,821
		15% design Cost		$ 2,108,073
		20% Contingency		$ 2,810,764
		TOTAL COST*		**$ 21,080,731**

* If constucted as One Project, Phasing will incresae cost.
Alternative Three represents savings of $6,270,000
by delaying construction of selected improvements

Cost Projection - Selected Alternative
City of Montclair portion

Quantity	Unit	Required Item	Unit Price	Total
1974	LF	Clearing & Grubbing	$ 1.00	$ 1,974
548	CY	Earth/Excavation	$ 40.00	$ 21,920
21718	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 32,577
1974	LF	Traffic Bike Lane Stripe	$ 0.75	$ 1,481
1974	LF	Bike Path Signing	$ 3.00	$ 5,922
0	LF	Equestrian Trail	$ 3.00	$ -
296	LF	Drainage	$ 3.00	$ 888
60	LF	Relocated Signs/Fencing	$ 2.00	$ 120
200	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 8,000
50	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 20,000
1	EA	Type 1 Grade Crossing	$ 1,000.00	$ 1,000
0	EA	Type 2 Grade Crossing	$ 100,000.00	$ -
0	EA	Type 3 Grade Crossing	$ 1,000.00	$ -
0	EA	Type 4 Grade Separation	$ 2,000,000.00	$ -
12	LF	Guardrail	$ 25.00	$ 300
0.4	Mile	Construction Traffic Control	$ 6,000.00	$ 2,400
4	EA	Lighting	$ 1,000.00	$ 4,000
0	EA	Not Used		$ -
1974	LF	Clean up	$ 0.15	$ 296
105	EA	Fencing	$ 20.00	$ 2,100
4	EA	Pavement Markings	$ 50.00	$ 200
2050	SF	Fine Grade/Soil Prep.	$ 0.25	$ 513
2050	SF	Auto Irrigation System	$ 1.50	$ 3,075
2050	SF	Landscape Planting	$ 1.00	$ 2,050
2050	SF	Mulch	$ 0.50	$ 1,025
2050	SF	90-day Landscape Maintenance	$ 0.04	$ 82
1	EA	Pedestal Monuments	$ 2,500.00	$ 2,500
1	EA	Location Maps	$ 5,000.00	$ 5,000
1	EA	Mileage Markers	$ 1,500.00	$ 1,500
1	EA	Display Markers	$ 3,000.00	$ 3,000
0	EA	Trailhead/Parking Area	$ 250,000	$ -
0	EA	Porta-Potty Enclosure	$ 8,000.00	$ -
0	EA	Rest Stops	$ 83,500.00	$ -
		Sub Total		$ 121,922
		15% design Cost		$ 18,288
		20% Contingency		$ 24,384
		TOTAL COST REQUIRED ITEMS		**$ 182,883**

Quantity	Unit	Optional Item	Unit Price	Total
		Not Used		$ -
				$ -
		Sub Total		$ -
		15% design Cost		$ -
		20% Contingency		$ -
		TOTAL COST OPTIONAL ITEMS		**$ -**
		GRAND TOTAL COST ALL ITEMS		**$ 182,883**

Cost Projection - Selected Alternative
City of Upland portion

Quantity	Unit	Required Item	Unit Price	Total
17967	LF	Clearing & Grubbing	$ 1.00	$ 17,967
4990	CY	Earth/Excavation	$ 40.00	$ 199,600
197637	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 296,456
17967	LF	Traffic Bike Lane Stripe	$ 0.75	$ 13,475
17967	LF	Bike Path Signing	$ 3.00	$ 53,901
0	LF	Equestrian Trail	$ 3.00	$ -
2695	LF	Drainage	$ 3.00	$ 8,085
546	LF	Relocated Signs/Fencing	$ 2.00	$ 1,092
1820	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 72,800
50	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 20,000
0	EA	Type 1 Grade Crossing	$ 1,000.00	$ -
7	EA	Type 2 Grade Crossing	$ 100,000.00	$ 700,000
8	EA	Type 3 Grade Crossing	$ 1,000.00	$ 8,000
0	EA	Type 4 Grade Separation	$ 2,000,000.00	$ -
600	LF	Guardrail	$ 25.00	$ 15,000
4	Mile	Construction Traffic Control	$ 6,000.00	$ 24,000
38	EA	Lighting	$ 1,000.00	$ 38,000
0	EA	Not Used		$ -
17967	LF	Clean up	$ 0.15	$ 2,695
960	EA	Fencing	$ 20.00	$ 19,200
38	EA	Pavement Markings	$ 50.00	$ 1,900
18655	SF	Fine Grade/Soil Prep.	$ 0.25	$ 4,664
18655	SF	Auto Irrigation System	$ 1.50	$ 27,983
18655	SF	Landscape Planting	$ 1.00	$ 18,655
18655	SF	Mulch	$ 0.50	$ 9,328
18655	SF	90-day Landscape Maintenance	$ 0.04	$ 746
9	EA	Pedestal Monuments	$ 2,500.00	$ 22,500
2	EA	Location Maps	$ 5,000.00	$ 10,000
4	EA	Mileage Markers	$ 1,500.00	$ 6,000
8	EA	Display Markers	$ 3,000.00	$ 24,000
1	EA	Trailhead/Parking Area	$ 250,000	$ 250,000
1	EA	Porta-Potty Enclosure	$ 8,000.00	$ 8,000
2	EA	Rest Stops	$ 83,500.00	$ 167,000
		Sub Total		$ 1,874,046
		15% design Cost		$ 281,107
		20% Contingency		$ 374,809
		TOTAL COST REQUIRED ITEMS		**$ 2,811,069**

Quantity	Unit	Optional Item	Unit Price	Total
		Not Used		$ -
				$ -
		Sub Total		$ -
		15% design Cost		$ -
		20% Contingency		$ -
		TOTAL COST OPTIONAL ITEMS		**$ -**
		GRAND TOTAL COST ALL ITEMS		**$ 2,811,069**

Cost Projection - Selected Alternative
City of Rancho Cucamonga portion

Quantity	Unit	Required Item	Unit Price	Total
35046	LF	Clearing & Grubbing	$ 1.00	$ 35,046
9734	CY	Earth/Excavation	$ 40.00	$ 389,360
385502	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 578,253
35046	LF	Traffic Bike Lane Stripe	$ 0.75	$ 26,285
35046	LF	Bike Path Signing	$ 3.00	$ 105,138
31680	LF	Equestrian Trail	$ 3.00	$ 95,040
5257	LF	Drainage	$ 3.00	$ 15,771
1065	LF	Relocated Signs/Fencing	$ 2.00	$ 2,130
3550	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 142,000
250	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 100,000
0	EA	Type 1 Grade Crossing	$ 1,000.00	$ -
7	EA	Type 2 Grade Crossing	$ 100,000.00	$ 700,000
8	EA	Type 3 Grade Crossing	$ 1,000.00	$ 8,000
1	EA	Type 4 Grade Separation	$ 2,000,000.00	$ 2,000,000
213	LF	Guardrail	$ 25.00	$ 5,325
7	Mile	Construction Traffic Control	$ 6,000.00	$ 42,000
75	EA	Lighting	$ 1,000.00	$ 75,000
0	EA	Not Used		$ -
35046	LF	Clean up	$ 0.15	$ 5,257
1874	EA	Fencing	$ 20.00	$ 37,480
75	EA	Pavement Markings	$ 50.00	$ 3,750
363875	SF	Fine Grade/Soil Prep.	$ 0.25	$ 90,969
363875	SF	Auto Irrigation System	$ 1.50	$ 545,813
363875	SF	Landscape Planting	$ 1.00	$ 363,875
363875	SF	Mulch	$ 0.50	$ 181,938
363875	SF	90-day Landscape Maintenance	$ 0.04	$ 14,555
18	EA	Pedestal Monuments	$ 2,500.00	$ 45,000
4	EA	Location Maps	$ 5,000.00	$ 20,000
8	EA	Mileage Markers	$ 1,500.00	$ 12,000
15	EA	Display Markers	$ 3,000.00	$ 45,000
2	EA	Trailhead/Parking Area	$ 250,000	$ 500,000
2	EA	Porta-Potty Enclosure	$ 8,000.00	$ 16,000
4	EA	Rest Stops	$ 83,500.00	$ 334,000
		Sub Total		$ 6,200,983
		15% design Cost		$ 930,147
		20% Contingency		$ 1,240,197
		TOTAL COST REQUIRED ITEMS		**$ 9,301,475**

Quantity	Unit	Optional Item	Unit Price	Total
1	EA	Type 4 Grade Separation	$ 4,000,000.00	$ 4,000,000
				$ -
		Sub Total		$ 4,000,000
		15% design Cost		$ 600,000
		20% Contingency		$ 800,000
		TOTAL COST OPTIONAL ITEMS		**$ 5,400,000**
		GRAND TOTAL COST ALL ITEMS		**$ 14,701,475**

Cost Projection - Selected Alternative
City of Fontana portion

Quantity	Unit	Required Item	Unit Price	Total
33071	LF	Clearing & Grubbing	$ 1.00	$ 33,071
9186	CY	Earth/Excavation	$ 40.00	$ 367,440
363783	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 545,675
33071	LF	Traffic Bike Lane Stripe	$ 0.75	$ 24,803
33071	LF	Bike Path Signing	$ 3.00	$ 99,213
0	LF	Equestrian Trail	$ 3.00	$ -
4961	LF	Drainage	$ 3.00	$ 14,883
100	LF	Relocated Signs/Fencing	$ 2.00	$ 200
3350	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 134,000
250	LF	Deck & Handrail existing bridge structures	$ 400.00	$ 100,000
0	EA	Type 1 Grade Crossing	$ 1,000.00	$ -
7	EA	Type 2 Grade Crossing	$ 100,000.00	$ 700,000
11	EA	Type 3 Grade Crossing	$ 1,000.00	$ 11,000
0	EA	Type 4 Grade Separation	$ 2,000,000.00	$ -
201	LF	Guardrail	$ 25.00	$ 5,025
7	Mile	Construction Traffic Control	$ 6,000.00	$ 42,000
71	EA	Lighting	$ 1,000.00	$ 71,000
0	EA	Not Used		$ -
33071	LF	Clean up	$ 0.15	$ 4,961
1769	EA	Fencing	$ 20.00	$ 35,380
71	EA	Pavement Markings	$ 50.00	$ 3,550
343375	SF	Fine Grade/Soil Prep.	$ 0.25	$ 85,844
343375	SF	Auto Irrigation System	$ 1.50	$ 515,063
343375	SF	Landscape Planting	$ 1.00	$ 343,375
343375	SF	Mulch	$ 0.50	$ 171,688
343375	SF	90-day Landscape Maintenance	$ 0.04	$ 13,735
17	EA	Pedestal Monuments	$ 2,500.00	$ 42,500
4	EA	Location Maps	$ 5,000.00	$ 20,000
8	EA	Mileage Markers	$ 1,500.00	$ 12,000
14	EA	Display Markers	$ 3,000.00	$ 42,000
2	EA	Trailhead/Parking Area	$ 250,000	$ 500,000
1	EA	Porta-Potty Enclosure	$ 8,000.00	$ 8,000
3	EA	Rest Stops	$ 83,500.00	$ 250,500
		Sub Total		$ 3,946,404
		15% design Cost		$ 591,961
		20% Contingency		$ 789,281
		TOTAL COST REQUIRED ITEMS		**$ 5,919,606**

Quantity	Unit	Optional Item	Unit Price	Total
1	EA	Restrooms	$ 100,000.00	$ 100,000
				$ -
		Sub Total		$ 100,000
		15% design Cost		$ 15,000
		20% Contingency		$ 20,000
		TOTAL COST OPTIONAL ITEMS		**$ 135,000**
		GRAND TOTAL COST ALL ITEMS		**$ 6,054,606**

Cost Projection - Selected Alternative
City of Rialto portion

Quantity	Unit	Required Item	Unit Price	Total
10662	LF	Clearing & Grubbing	$ 1.00	$ 10,662
2962	CY	Earth/Excavation	$ 40.00	$ 118,480
117279	SF	Asphalt Concrete Paving (0.2')	$ 1.50	$ 175,919
10662	LF	Traffic Bike Lane Stripe	$ 0.75	$ 7,997
10662	LF	Bike Path Signing	$ 3.00	$ 31,986
0	LF	Equestrian Trail	$ 3.00	$ -
1599	LF	Drainage	$ 3.00	$ 4,797
324	LF	Relocated Signs/Fencing	$ 2.00	$ 648
1080	SF	3' Retaining Walls (Concrete)	$ 40.00	$ 43,200
0	LF	Deck & Handrail existing bridge structures	$ 400.00	$ -
0	EA	Type 1 Grade Crossing	$ 1,000.00	$ -
6	EA	Type 2 Grade Crossing	$ 100,000.00	$ 600,000
2	EA	Type 3 Grade Crossing	$ 1,000.00	$ 2,000
0	EA	Type 4 Grade Separation	$ 2,000,000.00	$ -
65	LF	Guardrail	$ 25.00	$ 1,625
2	Mile	Construction Traffic Control	$ 6,000.00	$ 12,000
23	EA	Lighting	$ 1,000.00	$ 23,000
0	EA	Not Used		$ -
10662	LF	Clean up	$ 0.15	$ 1,599
570	EA	Fencing	$ 20.00	$ 11,400
23	EA	Pavement Markings	$ 50.00	$ 1,150
110700	SF	Fine Grade/Soil Prep.	$ 0.25	$ 27,675
110700	SF	Auto Irrigation System	$ 1.50	$ 166,050
110700	SF	Landscape Planting	$ 1.00	$ 110,700
110700	SF	Mulch	$ 0.50	$ 55,350
110700	SF	90-day Landscape Maintenance	$ 0.04	$ 4,428
5	EA	Pedestal Monuments	$ 2,500.00	$ 12,500
2	EA	Location Maps	$ 5,000.00	$ 10,000
2	EA	Mileage Markers	$ 1,500.00	$ 3,000
5	EA	Display Markers	$ 3,000.00	$ 15,000
1	EA	Trailhead/Parking Area	$ 250,000	$ 250,000
1	EA	Porta-Potty Enclosure	$ 8,000.00	$ 8,000
1	EA	Rest Stops	$ 83,500.00	$ 83,500
		Sub Total		$ 1,709,165
		15% design Cost		$ 256,375
		20% Contingency		$ 341,833
		TOTAL COST REQUIRED ITEMS		**$ 2,563,748**

Quantity	Unit	Optional Item	Unit Price	Total
		Not Used		$ -
				$ -
		Sub Total		$ -
		15% design Cost		$ -
		20% Contingency		$ -
		TOTAL COST OPTIONAL ITEMS		**$ -**
		GRAND TOTAL COST ALL ITEMS		**$ 2,563,748**

Cost Projections

These cost projections represent the approximate total costs for the construction items listed. A 15% design cost has been added to cover the cost to the cities of hiring design consultants to implement the recommendations of the Pacific Electric Inland Empire Trail Master Plan. An additional 20% contingency factor has been added to cover unforeseen changes and/or additions.

Cost projections are based on 2000 construction values and may vary. Boyle Engineering has no control over the cost of labor, materials, equipment or services furnished by others or over eventual Installation Contractor's methods of determining prices, or other competitive bidding or market conditions, practices or omissions on the site. Any opinion of probable cost provided by Boyle Engineering and it's consultants are made on the basis of experience and judgment. Estimates of probable construction costs may vary from actual construction.

The following section on Funding addresses the various ways this project may be funded.

Funding

Bikeway and multi-use trail projects such as the Pacific Electric Rail Trail, that serve an obvious need and utilize a publicly-owned right-of-way, stand a very good chance of achieving funding. While it is not possible to state an exact probability, it is safe to say that the project has a very strong chance of receiving substantial funding especially for the first few phases. As stated earlier, the available funding resources are expected to stay the same or increase over the next 5 years. With the support of SANBAG, local political leaders, and the feasibility of and need for the project well-documented, the project should rate very high on virtually all available funding programs.

Most of the available funding is transportation-related, although there are some recreational sources such as the Symms Act National Recreational Trail Program, administered through the State Parks and Recreation Department. Other sources, such as the Environmental Enhancement and Mitigation program, can be used for recreational projects. Transportation funding typically cannot be used for unpaved trail improvements, park improvements, or equestrian improvements. Those improvements may be funded through the sources listed above, or through local park bonds or recreational funding sources.

Transportation Development Act (TDA) Article III funding is the most common source of funding for local bikeway and pedestrian projects. Each city and county in California receives a share of this funding from the State based on the amount of gasoline tax from that jurisdiction. TDA funds are intended for the planning, development, and maintenance of bicycle and pedestrian projects. TDA funds are one of the few discretionary funding programs that can be used by local governments as matching moneys for other programs.

Cities and counties may also use general fund resources, but this is extremely uncommon in California. Local jurisdictions may have access to local bonds or other resources. There are no major sources of local funding for parks or greenways available in San Bernardino County, other than general fund, local bonds, or parks and recreation department budgets.

Many of the federal, state, and regional transportation programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. The key to receiving funds will be to tailor grant requests to meet specific requirements and criteria, leverage grants with matching funds, and demonstrate a serious intent by the City to implement and maintain the system. Serious intent by the city would include adoption of a Bicycle Master Plan and Corridor Plan, inclusion of bikeway improvements into the Capital Improvements Plan, adoption of recognized design and operating standards, and public support demonstrated through an active Advisory Group. The following list gives a brief description of available federal, state, regional, and local funding sources for the Pacific Electric Rail Trail. The chart on the following page identifies potential funding sources and application criteria for grants appropriate for bikeway implementation.

Federal

TEA-21

Federal funding through the TEA-21 (Transportation Equity Act for the 21st Century) program will provide the bulk of outside funding. TEA-21 currently contains three major programs, STP (Surface Transportation Program), TEA (Transportation Enhancement Activities), and CMAQ (Congestion Mitigation and Air Quality Improvement) along with other programs such as the National Recreational Trails Fund, Section 402(Safety) funds, Scenic Byways funds, and Federal Lands Highway funds. With the recent authorization of TEA-21, bicycle projects stand to gain from an estimated 40% increase in funding available for such projects.

TEA-21 funding is administered through the state (Caltrans or Resources Agency) and regional governments (MTA). Most, but not all, of the funding programs are transportation versus recreational oriented, with an emphasis on (a) reducing auto trips and (b) providing an inter-modal connection. Funding criteria often includes completion and adoption of a bicycle master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, CEQA compliance, and commitment of some local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent--but prefers to leverage other moneys at a lower rate.

State of California

AB 434

AB 434 funds are available for clean air transportation projects, including bicycle projects, in California. These funds are distributed on the regional level through the Air Pollution Control District.

Bicycle Transportation Account

The State Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. While the fund is currently small (1 million dollars available annually), it will be increased to five (5) million dollars per year starting in FY 2001 with a possible increase to twelve (12) million dollars per year by the state assembly and senate.

Safe Routes to School (AB 1475)

The Safe Routes to School program is a newly created state program using funds from the Hazard Elimination Safety program from TEA-21. This new program for 2000 is meant to improve school commute routes by eliminating barriers to bicycle and pedestrian travel through rehabilitation, new projects, and traffic calming. A local match of 11.5% is required for this competitive program, which will allocate $18 million annually. Planning grants are <u>not</u> available through this program.

Regional

Clean Air Funds

Clean Air Funds are generated by a surcharge on automobile registration. The Board may allocate some of these funds for external projects. The grants are generally in the $50,000 to $200,000 range and are highly competitive based on a cost-benefit formula developed by the District. Awards are made to those projects that most closely meet the intent of the legislation and the requirements in the RFP. Projects must be shown to have a direct and positive effect on the air quality from the transportation sector within San Bernardino County.

Local

Impact Fees

Another potential local source of funding is developer impact fees, which are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements that will encourage residents to bicycle rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Mello Roos

Bike paths, lanes, and pedestrian facilities can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a larger parks and recreation or public infrastructure program with broad community benefits and support.

Other

Local sales taxes, fees, and permits may be implemented, requiring a local election. Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corp (who offer low cost assistance) will be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations 'adopt' a bikeway and help construct and maintain the facility.

Other opportunities for implementation will appear over time that may be used to implement the system.

The chart beginning on the following page identifies potential funding sources and application criteria for grants appropriate for bikeway implementation.

Table 6: Funding Sources

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Funding Items	Comments
Federal Funding							
F1. TEA-21 Surface Transportation Program (STP)	Jan. 10 Annually	Regional Transportation Agency, Caltrans, FHWA	varies	11.5% non-federal match	federally certified jurisdictions	New trail or bikeway construction Property acquisition/easements Trail support facilities	STP funds may be exchanged for local funds for non-federally certified local agencies; no match required if project improves safety
F2. TEA-21 Congestion Mitigation and Air Quality Program	Dec. 1 Annually	Regional Transportation Agency, CTC	varies	11.5% non-federal match	federally certified jurisdictions	New trail or bikeway construction Educational/safety programs	Counties redesignated to attainment status for ozone may lose this source
F3. TEA-21 Transportation Enhancement Activities (TEA)	Pending	FHWA, Regional Transportation Agency	varies	11.5% non-federal match	federally certified jurisdictions	New trail or bikeway construction Property acquisition/easements Trail support facilities Landscaping/beautification	Contact the Regional Transportation Agency
F4. TEA-21 National Recreational Trails	Oct. 15 Annually	State Dept. of Parks & Recreation	varies	No match required	jurisdictions, special districts, non profits with management responsibilities over the land	New trail or bikeway construction Property acquisition/easements Educational/safety programs Purchase of maintenance equipment Trail support facilities	For recreational trails to benefit bicyclists, pedestrians, and other users; contact State Dept. of Parks & Rec. , Statewide Trails Coordinator, (916) 653-8803
State Funding							
S1. Vehicle Registration Surcharge Fee (AB 434)	varies	Air Quality Control District	varies	No match required	local agencies, transit operators, others	Varies by agency and year	competitive program for projects that benefit air quality
S2. Bicycle Transportation Account (BTA)	Mar.	Caltrans	$5 m	10%	Local agencies	New bikeway construction Maintenance of existing bikeways	Historically has favored on-street bikeways
S3. Environmental Enhancement and Mitigation (EEM) Program	Nov.	State Resources Agency	varies	not required but favored	local, state and federal government non-profit agencies	New trail or bikeway construction Property acquisition/easements Trail support facilities Landscaping/beautification	Projects that enhance or mitigate future transportation projects; contact EEM Project Manager (916) 653-5800
Local Funding							
L1. Transportation Development Act (TDA) Section 99234 (2% of total TDA)	Jan.	Regional Transportation Agency		no match required	cities, counties; currently allocated by population	New trail or bikeway construction Trail support facilities	Contact the Regional Transportation Agency
L2. State Gas Tax (local share)		Allocated by State Auditor Controller		no match required	local jurisdictions	New trail or bikeway construction Trail support facilities	
L3. Developer Fees or Exactions (developer fee for street improvements - DFSI)		Cities, or County		no match required	Local agencies	No specific restrictions, but typically for capital improvements only	Mitigation required during land use approval process

Phasing and Schedule

Phasing

The phasing for the Pacific Electric Trail will largely be dependent on four factors: (1) the cost of various sections of the trail, (2) the availability and amount of competition for funding, (3) the extent of cooperation between jurisdictions to jointly pursue funding, and (4) the amount of local funding each jurisdiction is able or willing to commit to the project for matching moneys.

Most larger trail projects in California have been receiving a maximum of about $3 million in funding, typically dominated by large TEA-21 grants and supplemented by local and regional grants. For example, the Coastal Rail Trail in San Diego County received about $3 million as an initial grant for feasibility, design, and limited construction. As of this writing, it appears that available Federal and State funding for bikeway projects will remain the same or actually increase over the next 5 to 10 years. For example, the Bicycle Transportation Act (BTA) funding in California, which as recent as 3 years ago was $360,000/year statewide, has now been increased to $7 million per year. TEA-21, which will be re-authorized in 2002, is also being considered for major increases for bicycle and pedestrian projects. Based on this, it is reasonable to assume that the Pacific Electric Rail Trail will compete effectively for between $3 and $5 million in funding grants per phase. Most grants require a 10-15% local match, or $300,000 to $500,000 in local funding, typically TDA Article III moneys.

There are two basic methods of phasing the Pacific Electric Inland Empire Trail. The first method is to build the trail in distinct phases, typically in functional segments. Depending on the interest and resources of the individual cities, this could result in a fragmented system with limited value to trail users. The second approach is to construct the entire trail in phases, from installing the basic elements (pathway, crossings) to various ancillary items such as landscaping. This second method lends itself to the Joint Powers Agreement approach, and results in one functional 21-mile trail being constructed at the same time.

From a functional standpoint, each phase of the trail should be a stand-alone project. From the needs analysis and physical review of the corridor, the trail in the City of Rancho Cucamonga would appear to attract the greatest number of users initially and help to build regional support for completion of the entire trail.

Suggested phasing of the trail, dependent on a variety of factors including local approvals, is as follows:

Option 1:

Phase 1: Rancho Cucamonga, Carnelian Haven

Phase 2: Rancho Cucamonga, Haven Etiwanda

Phase 3: Claremont-Monticlair-Upland, Citrus Regional Trail North Euclid

Phase 4: Rialto-Fontana, Terminus Sierra

Phase 5: Rancho Cucamonga-Upland, Carnelian - North Euclid

Phase 6: Fontana-Rancho Cucamonga, Sierra - Etiwanda

Option 2:

Phase 1:	Basic trail improvements (21 miles)
Phase 2:	Trail paving, new crossings (21 miles)
Phase 3:	Landscaping, other ancillary items (21 miles, or by jurisdiction)
Phase 4:	Grade separation (as needed, by jurisdiction)

It is important to note that the actual phasing is very dependent on each jurisdiction's ability to: (a) officially adopt the trail plan, (b) dedicate local resources including matching amounts, and (c) continue into the design and environmental approval process. Cities that achieve these three items stand a much higher chance of obtaining funding.

With Option 2, it is suggested that a Joint Powers Authority (JPA) be formed consisting of the member cities for the purpose of pursing funding, completing design and construction, and operating the trail. For the purposes of pursing funding, SANBAG should not serve as the lead agency for several reasons including: (a) potential conflict of interest since SANBAG also funds these types of projects, (b) SANBAG does not have any planning authority, and (c) SANBAG is in effect the Railroad in this situation and will be asked to allow trail uses within the rail right-of-way. It is more appropriate to have one of the cities act as the lead agency at least in the pursuit of funding. The following section "Management, Operations, and Maintenance" addresses the JPA issue in more detail.

Schedule

The schedule for development of the Pacific Electric Rail Trail is dependent on the issues detailed in the previous section. However, most trail projects follow a similar schedule once there is political support, completed environmental review, and local matching moneys available. Each phase of the project will require time for approvals, environmental approval, design, and construction. Beginning January 2001, typical time lines and a potential schedule for the Pacific Electric Rail Trail is as follows.

Item	Time
Feasibility and Preliminary Design	6 months
For Each Phase:	
Local Approvals	6 months
Environmental Review	6 months
Funding	8 months
Design/Engineering	6 months
Construction	9 months
Project Opening	March 2000

It is possible for some of these items to proceed more quickly. Specifically, if local approvals are expedited, funding and design work can be structured to allow for phased project development.

Management, Operations and Maintenance

The Pacific Electric Inland Empire Trail must be managed, operated, and maintained in a way so as to (a) protect the corridor property owner and neighbors, (b) minimize costs to the Trail Manager(s), and (c) maximize the enjoyment and safety of the public. This section contains an overview of the recommended management, operations, and maintenance of the Pacific Electric Inland Empire Trail.

Defining Trail Manager Responsibilities

The Pacific Electric Inland Empire Trail will traverse eight (8) distinct jurisdictions in two counties. Most trail users will be unaware that they are moving from one jurisdiction to another, unless notified by sign. The management of the Trail, which includes everything from obtaining funding, to construction, to operations (including enforcement) and maintenance will greatly impact both the user experience and the actual responsibilities of local agencies.

The property owner of the corridor is the San Bernardino Associated Governments (SANBAG). SANBAG is a regional transportation agency with numerous responsibilities, including managing Federal funding of local projects. SANBAG is not a regional recreational agency or public works agency, nor does it have any planning or operational authority except in limited areas.

Given this, it is recommended that the Pacific Electric Inland Empire Trail be managed jointly or solely by an entity with a background and capabilities in recreational facilities and trails. This could be a county or city agency(s), or a newly created joint powers authority. The advantages and disadvantages of each approach are discussed below.

Option 1: County Parks & Recreation

The San Bernardino County Parks & Recreation Department could be a viable operating entity. While the Pacific Electric Inland Empire Trail is truly a countywide project, many county parks and recreation agencies have severely limited funds and may not be able to take on a new project of this magnitude. Also, this would reduce local control over the development and operations of the trail and its amenities.

Option 2: Local Parks & Recreation

Each of the individual seven cities plus the unincorporated County portions of the project could be managed separately. The advantage of this approach is that it maximizes local control of costs, design, and operations of the trail and its amenities. The disadvantage is that the design and maintenance level of the trail may vary along the trail length. The trail may be implemented in phases with major gaps over time, reducing its overall usefulness. There may be cost penalties in developing and operating the trail as smaller distinct elements.

Option 3: Joint Powers Authority

A Joint Powers Authority (JPA) would be a new entity created through a Memorandum of Understanding (MOU) between individual jurisdictions for the express purpose of developing and operating the Pacific Electric Inland Empire Trail. The JPA could be composed of a Board of Directors with appointed members from each member jurisdiction. New staff could be hired by the JPA, or it could be operated on a contract basis by one of the members by their staff out of their offices.

This would accomplish numerous objectives. First, as a sub-regional effort with SANBAG it would increase the opportunities for funding. Second, it gives local communities and agencies more control on how the Pacific Electric Inland Empire Trail and access to it is developed and managed. Third, it would help to better manage overall liability exposure and costs. Fourth, it would maximize design, construction, and operating efficiencies. Fifth, it would ensure a consistent experience for the user regardless of which jurisdiction they were in. Finally, it would allow each agency to customize the design (and cost) of their segment to their budget.

The main disadvantage of a JPA is the varying levels of interest and financial commitment between jurisdictions towards the project. While one city may have the financial resources and commitment to begin immediately, another city may see it as more of a long-term project. There may be the potential to utilize Federal "Railbanking" Legislation on this project. Because SANBAG assumed what is called the Common Carrier responsibilities of the Southern Pacific Railroad when it acquired the Pacific Electric right-of-way, SANBAG essentially became the Railroad.

Railbanking

In the early 1980s, Congress became concerned about the dramatic decline in the nation's railroad infrastructure. With so many railroads abandoning corridors, it became apparent to Congress that something needed to be done to preserve the nation's rail system for future transportation uses. In 1983, Congress amended Section 8(d) of the National Trails System Act to create a program to preserve rail corridors for future transportation use. This program, called "Railbanking," is a method by which corridors that would otherwise be abandoned can be preserved for future rail use through interim conversion to a trail.

Under the railbanking statute, a railroad is allowed to remove all of its equipment, with the exception of bridges, tunnels, and culverts, from a corridor and to turn the corridor over to any qualified private organization or public agency that has agreed to maintain the corridor for future rail use. This property transfer precludes abandonment.

In 1990, the U.S. Supreme Court unanimously ruled, in the case of Preseault v. United States, that preserving a corridor for future rail use through railbanking is a legitimate exercise of governmental power. Although the corridor will no longer have tracks and ties, it is still being used for railroad purposes, legally speaking. This means that use of property does not trigger reversionary property interests.

Railbanking does have a few special requirements. The railroad having common carrier obligation may legally decide to re-establish rail service on a railbanked corridor. Should that occur, the trail managing agency would be entitled to compensation from the railroad that wants to re-establish rail service. In most cases, a trail group could expect to receive fair market value for the property as well as payment for all improvements. However, this issue may need to be specifically addressed in the initial contract with the abandoning railroad, since it may want to develop other payment terms.

Since the establishment of railbanking in 1983, trail activists and organizations have requested more than 200 railbanking orders from the Surface Transportation Board (STB) and its predecessor, the Interstate Commerce Commission.

The STB has developed different abandonment procedures, which a railroad must follow; depending on the nature of rail service on the particular line the railroad wants to abandon. If the line has not been used in two or more years, the railroad may follow a less stringent "exemption" procedure.

Legally, the process of abandoning a railroad corridor consists of two stages:

1. The STB must authorize abandonment of the rail corridor.
2. Physical abandonment of the corridor must occur.

The mere non-use of the corridor by the railroad is not sufficient for the corridor to be considered abandoned. California state laws require that the STB first make it's ruling and the railroad give formal notice of abandonment.

Any request for railbanking should include a "Statement of Willingness to Assume Financial Responsibility." By filing a "Statement of Willingness to Assume Financial Responsibility," the lead agency is indicating that it is capable of assuming financial responsibility for maintenance and liability while being used as a trail should the agency and the railroad reach mutually agreeable terms for the transfer of the corridor.

The request for railbanking requests the STB to find that this property is suitable for other public use, specifically trail use, and to place the following conditions on the abandonment:

1. An order prohibiting the carrier from disposing of the corridor, other than the tracks, ties and signal equipment, except of public use on reasonable terms. The time period sought is 180 days from the effective date of the abandonment authorization.

2. An order barring removal or destruction of potential trail-related structures such as bridges, trestles, culverts and tunnels. The justification for this condition is that these structures have considerable value for recreational trail purposes. The 180 day time period requested from the effective date of the abandonment authorization is the time allowed for the applying agency and the railroad to reach agreeement.

As soon as the railroad has received permission to abandon the line, and has consummated the abandonment, the STB no longer has jurisdiction over the line. At that point, railbanking is no longer an option.

In 1887, Congress created the Interstate Commerce Commission (ICC) to protect farmers, shippers, rural Americans and others from the monopolistic power of the railroads. Recently, Congress questioned the need for continued regulation of the rail industry now that Americans are no longer threatened by the monopolistic power of railroads. In 1995, Congress passed legislation to eliminate the Interstate Commerce Commission, and to transfer the ICC's oversight of the rail corridor abandonment process to a new entity, the Surface Transportation Board (STB) within the US Department of Transportation.

Although the ICC Termination Act of 1995 signaled the end of the Interstate Commerce Commission as an independent government agency, the Act has only lead to minor changes with respect to rail corridor abandonments.

The Surface Transportation Board still has a great deal of responsibility with respect to the railroad industry, including some rate-related regulation, rail merger regulation, new rail construction regulation, and continued rail abandonment regulation. There is a small staff, headed by three Commissioners (as opposed to five ICC Commissioners) to complete all of the work.

The most significant changes affecting the rail abandonment process are (1) the removal of statutory timelines for STB approval of rail abandonment applications, and (2) modification in the timing for invocation of the forced sale for continued rail use. The ICC Termination Act did not substantially alter the provisions of the National Trails System Act and the Revised Interstate Commerce Act that previously governed railbanking/interim trail use. In addition, the two legislative cornerstones of railbanking, Section 8(d) of the National Trails System Act, 16 U.S.C. §1247(d) and the "public use" condition, 49 U.S.C. §10905, were reenacted.

Once the railroad has received a railbanking request letter, it will notify the STB as to whether the railroad is interested in entering into railbanking negotiations. If the railroad agrees, the STB will issue either a "Certificate of Interim Trail Use" (CITU) or a "Notice of Interim Trail Use" (NITU), depending on the nature of the abandonment. Although NITUs are issued during the exempt abandonment process, while CITUs are issued during the regulated process, these documents are otherwise identical.

Source: Rails to Trails Conservancy.

Trail Manager Responsibilities

Regardless of which approach is taken, the Trail Manager responsibilities will remain the same. Briefly summarized here are the steps necessary for implementation of the Pacific Electric Inland Empire Trail Master Plan. Note that some of these items may be completed simultaneously.

1. Finalize and officially adopt this Master Plan.
2. Complete a survey of the Cities involved of existing public trail user safety programs.
3. Complete a survey of the Cities involved of past capital improvement program expenditures for trail improvements, in particular bicycle trails 1995-2000.
4. Complete a survey of the Cities involved of existing ordinances requiring bicycle parking and storage facilities to promote alternative transportation.
5. Form a Joint Powers Authority
6. Complete needed CEQA (and possibly NEPA) Review
7. Negotiate an easement or Railbanking agreement with SANBAG
8. Apply for needed funding; identify local matching funds
9. Select an engineering design team; complete bid package
10. Obtain needed permits from Caltrans and other agencies
11. Select a construction firm and construction manager
12. Finalize trail management arrangements
13. Open trail to the public

Liability

Liability is of paramount interest and concern to any Trail Manager. Studies conducted by groups such as the Rails-to-Trails Conservancy of multi-use trails throughout the United States have consistently shown that they have a neutral or beneficial impact on vandalism, property values, and crime. When properly designed, built, and operated, the Trail should have no greater liability to local agencies than a park or school.

Based on experiences of other jurisdictions as well as the case law in California, liability can become a problem on multi-use trails under several conditions. A competent risk management program for the Trail will help assure that the local government is doing all that it can to be responsible stewards of the public treasury.

1. **Use of Design Standards**. The designers, builders, and inspectors of a facility should adhere to widely accepted standards governing the design and construction of the trail. A standard of conduct includes adherence to published documents such as safety codes, standards, or guidelines that are sponsored or issued by government agencies or voluntary associations, even though such documents lack the force and effect of law. Provisions of state laws related to transportation facilities, if mandatory, may provide the basis for a finding of negligence per se. Applicable California standards include the Uniform Building Code, and Caltrans Design Manual for Class I and II Bikeways. Other available design standards include AASHTO's Guide for the Development of Bicycle Facilities; Florida DOT's Trail Intersection Design Guidelines, Island Press's Greenways: A Guide to Planning, Design, and Development, and the Rail-to-Trails Conservancy's Trails for the 21st Century: A Planning, Design, and Management Manual for Multi-Use Trails. Careful compliance with applicable laws, regulations, route selection criteria, and design standards should greatly reduce the risk of injury to bicyclists using the bikeway, and also provide strong evidence that the agency used reasonable care. A detailed corridor Master Plan is specifically designed to address existing standards.

2. **Traffic signals and warning devices.** Caltrans has adopted a Traffic Design Manual, which defines the circumstances under which traffic signals and warning devices are required. While California law limits the liability of public entities for failure to install regulatory traffic signals, signage and markings, non-regulatory warning signs must be installed where necessary to warn of a dangerous condition, such as an intersection. All signals and warning devices must be adequately maintained, so as not to invite reliance on a defective warning device.

3. **Use of Professionals**. Facilities that have been reviewed and approved by unregistered or unlicensed professionals may increase liability exposure.

4. **Adhere to Maintenance Standards**. Maintenance practices should be consistent along the entire Trail, and conform to recognized maintenance practices. The responsible maintenance agency should have a written procedure to follow to maintain all portions of the Trail, including pre-existing conditions such as drain grates.

5. **Monitor Conditions.** The responsible agency should have an internal mechanism to monitor and respond to actual operating conditions on the trail. This is typically done through the maintenance procedures, a record of field observations and public comments, and an annual accident analysis. Accidents should be reviewed to determine if physical conditions on the bikeway were a contributing cause.

6. **Keep Written Records**. Written records of all maintenance activities and procedures, responses to reports of safety hazards, and other regular activities must be recorded in order to be of use. Where a trail travels through numerous jurisdictions, it may make sense to have one contact persons/department responsible for the entire facility, rather than risk confusion by incidents being reported to the wrong jurisdiction. Mile-posts on the route may also help maintenance and enforcement personnel respond to problems.

7. **Correct Hazards**. Trail managers should correct all hazards known by public officials in a timely fashion.

8. **Warn of known hazards.** Trail users should be warned of any known hazards, and to use caution when crossing at intersections with roadways.

9. **Insurance**. Proper insurance coverage or budgeting for self-insurance to cover potential liability will do much to alleviate concerns. Signage should conform to accepted standards.

10. **Don't Call it Safe**. Do not make any verbal or written comments that the trail is as safe or safer than a non-designated route, or any blanket claims that the trail is safer than comparable routes.

11. **Don't Rush to Settle**. Fear that juries will award a plaintiff large sums for damages has made many attorneys eager to settle cases before they come to court. The net effect of prematurely settling a case in this instance was to arbitrarily limit the types of services that could be offered by the local government. In other cases, settling cases prematurely may simply encourage legal action by others.

Having a local agency or JPA take over management of the Pacific Electric Inland Empire Trail will help lessen liability exposure. As property owner, SANBAG will continue to have some liability on the Trail unless responsibility is transferred through Railbanking Legislation. To reduce liability, SANBAG or the JPA could require all trail facilities developed within its corridor to meet accepted design and management standards where applicable. Non-conforming improvements would need to be reviewed and approved prior to implementation. Local agencies that chose to add additional items, such as linear park or rest areas, would be liable for those facilities.

By identifying the Pacific Electric Inland Empire Trail as a recreational facility, the Trail Manager(s) would enjoy the benefits of indemnification provided through existing statutes such as the Recreational Use Statute and Public Resources Code 5075.4. The latter states: "No adjoining property owner is liable for any actions of any type resulting from or caused by trail users trespassing on adjoining property, and no adjoining property owner is liable for any actions of any type started on or taking place within the boundaries of the trail arising out of the activities of other parties." The Trail Manager and adjacent property owners would enjoy the protection of these indemnifications.

Security and Public Safety

While studies of trails in the United States have shown that trails typically have less security and safety issues than the surrounding community in general, it is the intent to provide adequate security and public safety on the Trail. Most multi-use trails in the United States do not have a dedicated police patrol of the facility. It is more common for local police to patrol sections of trails not visible from adjacent streets on an intermittent basis.

As a rule of thumb, a multi-use trail such as the Pacific Electric Inland Empire Trail will require 1 dedicated man-hour per day for every 5 miles of actively used trail, and .5 man-hours per day for every low 5 miles of activity trail. Assuming that the entire Trail is open to the public with relatively even distribution of usage, this translates into roughly 4 man-hours/day. This figure would also vary by time of week and year. Off-peak weekdays may require only 2 man-hours/day, while peak weekends may require as much as 6 or 8 man-hours/day.

The Trail Manager would be responsible for selecting the most appropriate means of patrolling their segment. It may be beneficial to patrol the Pacific Electric Inland Empire Trail using bicycle and/or motorcycle-mounted officers. Volunteers from local organizations, who could provide information to trail users and report problems to the authorities, may supplement trail patrols.

A summary of key safety and security recommendations is listed below:

- Adhere to the established design, operation, and maintenance standards presented in this document. Supplement these standards with the sound judgement of professional engineers and law enforcement officials.
- Local jurisdictions responsible for the operation and maintenance of the Trail should commit to a minimum of .5 dedicated man-hour per day of security for every 5 miles, in addition to existing patrols on adjacent streets.
- No Trespassing and other Trail restrictions, including speed limit and motor vehicle restrictions, should be clearly marked. No Trespassing signs should be posted every 200 feet, with maximum fines of up to $200 cited.
- Clearly post the hours of Trail operation. In developed areas, it is appropriate to limit hours of operation from 6am to 10pm. In rural areas, hours of operation may from dawn to dusk or 6am to 7pm, whichever is later. Penalties for violating these hours should be clearly identified. Random patrols should provide security on the Trail after it is closed.
- Make all segments of the Pacific Electric Inland Empire Trail accessible to within 500 feet of emergency vehicles
- Maintain adequate recording and response mechanisms for reported safety and maintenance problems. Thoroughly research the causes of each reported accident on the Pacific Electric Inland Empire Trail. Respond to accident investigations by appropriate design or operation improvements.
- Locate mile-posts every mile or one half mile; identify markers on maps.
- Illuminate all grade crossings using photosensitive triggers.
- Provide bicycle racks and lockers at key destinations that allow for both frame and wheels to be locked.
- Provide fire and police departments with map of system, along with access points and keys/combinations to gates/bollards.
- Enforce rules of the road and other standard recreational guidelines.
- Provide emergency cell phones in isolated areas approximately every 2,500ft, providing a direct linkage from the Trail to local law enforcement agencies.

Maintenance Needs

Maintenance of the Pacific Electric Inland Empire Trail will be performed by the JPA or local agency to their established standards. The following list represents a menu of maintenance items typically associated with trails and should be used as a resource by local agencies:

Maintenance of the Pacific Electric Inland Empire Trail will be performed by the JPA or local agency to their established standards. The following list represents a menu of maintenance items typically associated with trails and should be used as a resource by local agencies:

Item	Frequency
Sign replacement/repair	1-3 years
Pavement sealing/potholes	5-15 years
Clean drainage system	1 year
Pavement sweeping	Monthly - annually as needed
Trash disposal	as needed
Lighting replacement/repair	1 year
Graffiti removal	Weekly - monthly as needed
Maintain furniture	1 year
Fountain/restroom cleaning/repair	Weekly or as needed
Pruning	1-4 years
Weed control	Monthly - as needed
Maintain emergency telephones	1 year

Many of these maintenance items are dependent on the type and amount of landscaping and supporting infrastructure that is developed along the trail. It is recommended that a consistent maintenance procedure be developed for each jurisdiction along the Trail to ensure, at a minimum, that the facility is safe for trail users. Each jurisdiction should have a mechanism to identify, record, and respond to maintenance problems, and to keep written records of such actions.

Special maintenance equipment such as a sweeper may be purchased jointly by all local jurisdictions, thereby reducing costs. Typical maintenance vehicles for the trail will be light pick up trucks and occasionally heavy dump trucks and tractors. Care should be taken when operating heavier equipment on the Trail to warn trail users and to avoid breaking the edge of the trail surface.

Maintenance Costs

The total estimated annual maintenance for the Pacific Electric Inland Empire Trail is dependent on the type of trail surface selected by the operating entity. Assuming the trail will have an asphalt surface, the estimated cost is $8,500/miles/year for trail maintenance alone, or approximately $180,000 per year for the entire corridor. Bridges, crossings, fencing, landscaping, and other special items are not included in this figure. There are likely to be economies of scale when the Trail is 100% completed, based on the length of the facility and the likelihood of shared maintenance purchases between agencies.

Specific responsibilities should be assigned within each city to individuals responsible for monitoring the implementation of the Trail over time. This individual or Trail Coordinator would also be responsible that appropriate design and construction standards are used. The Trail Coordinator could also be the clearinghouse for all reported maintenance and safety problems, collecting information from and dispersing information to the appropriate departments. The Trail Coordinator would work with local public advocacy and advisory bodies in the design and operation of the trail. The Coordinator would also help identify and prepare funding applications to implement and maintain the trail over time.

Monitoring

Specific responsibilities should be assigned within each city to individuals responsible for monitoring the implementation of the Trail over time. This individual or Trail Coordinator would also be responsible that appropriate design and construction standards are used. The Trail Coordinator could also be the clearinghouse for all reported maintenance and safety problems, collecting information from and dispersing information to the appropriate departments. The Trail Coordinator would work with local public advocacy and advisory bodies in the design and operation of the trail. The Coordinator would also help identify and prepare funding applications to implement and maintain the trail over time.

Environmental CEQA/ NEPA Review

Mitigated Negative Declaration (CEQA)

The CEQA Guidelines, Section 15382 define "significant effect on the environment" as a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, water, flora, fauna, etc." The findings of significance are based on criteria outlined in the CEQA Guidelines, evaluation of technical data, and professional judgment and experience.

To determine the level of documentation required for state and local projects, a determination needs to be made as to the level of impacts, which may occur, with a proposed project. In the CEQA process, this determination is made through preparation of an Initial Study (IS). If it is determined that all impacts from a proposed project are less than significant or can be mitigated to below levels of significance, a negative declaration or mitigated negative declaration is then prepared as part of the initial study process. Often, a lead agency may determine to prepare an Environmental Impact Report depending on the severity of the impacts, or whether there is substantial controversy relative to environmental concerns. Certain actions, such as the construction of bicycle, pedestrian lanes, paths and facilities are often exempted from the CEQA process. In this case, a lead agency makes the determination that its proposed project will not result in any significant environmental impacts, and then prepares a Categorical Exemption. This determination can be supported by existing studies.

CEQA provides for the use of a Mitigated Negative Declaration (MND) when the potential environmental effects identified during the Initial Study Process are reduced through project modifications which eliminate significant environmental impacts or reduce them to a level of insignificance (Pub. Resources Code, § 21080, subd. (c); CEQA Guidelines, § 1500, subd. (h), 15070, subd. (b))

Under CEQA guidelines, the contents of a Negative Declaration shall include the following components:

A brief description of the proposed project, including any commonly used name for the project;

The location of the project and the name of the project proponent;

A finding that the project, as proposed, will not have a significant effect on the environment;

An attached copy of the Initial Study with reasons supporting the findings; and

For a MND, mitigation measures to be included in the project to avoid potentially significant effects, which must be fully enforceable through permit conditions, agreements, or other measures.

Following completion of a MND, the draft MND undergoes a thirty (30) day public review period. At the end of this 30 day period, the lead agency may elect to approve or disapprove the project.

Environmental Assessment/Finding of No Significant Impact (NEPA)

Similar to CEQA, NEPA, also excludes actions such as construction of bicycle lanes or paths from the environmental process. Environmental clearance for actions with minimal to no environmental impacts are also subject to the issuance of categorical exemptions. The federal equivalent to the CEQA Initial Study/Mitigated Negative Declaration is the Environmental Assessment/Finding of No Significance (EA/FONSI). When a lead agency identifies significant, unmitigable impacts for a federal project, it is then required to prepare an Environmental Impact Statement (EIS).

Prior to issuance of a categorical exemption, appropriate environmental studies are sometimes required to determine: (1) level of significance, (2) if significant impacts could occur on properties protected by Section 4(f) for public parks, or Section 106 of the National Historic Preservation Act for cultural resources, or (3) if substantial controversy exists based on environmental issues.

NEPA review is required for projects receiving federal funding. Since the most likely funding source for the Pacific Electric Trail is federal funding such as TEA 21, this funding source will make the project subject to NEPA requirements. The project review is conducted by the Federal Highway Administration (FHWA) and administered by the California Department of Transportation, (Caltrans). The requirements of 36CFR800 must be met prior to public circulation of the EA/FONSI. The EA provides the basis for a finding by Caltrans that either: 1) the project is categorically excluded from NEPA, 2) the project has no significant impacts or Finding of No Significant Impact (FONSI) as identified during the Preliminary Environmental Study (PES), or 3) the project has significant impacts and requires preparation of an Environmental Impact Statement (EIS).

For purposes of the Pacific Electric Trail project, the lead agency will be responsible for carrying forth the required environmental documentation process. It is the intent of the cities to implement development of the trail within their jurisdictions as separate and independent projects or as joint projects between two or more cities. As indicated by Caltrans, categorical exemptions may be issued to those jurisdictions with minimal environmental constraints.

Prior to issuance of a categorical exemption, the lead agency needs to demonstrate compliance with the State Historic Preservation Officer (SHPO) requirements and evidence of necessary resource permits, if required for the project.

Appendix

Park Amenities

(For Parks that fall within ¼ mile of the TRAIL)

Claremont:

- Barrio Park: Restroom/ (no drinking fountains or shade)

Montclair: Parks are ½ mile or more away

Upland: Parks are ½ mile or more away

Rancho Cucamonga:

- Red Hill Park: Restrooms/Drinking Fountains/Shade Structure
- Lions Park: None
- Future site Rancho Cucamonga Central Park: None
- Ellena Park: Restrooms/Drinking Fountains
- Vintage Park: Restrooms/Drinking Fountains

Fontana:

- Mc Dermott Park: Picnic / Restrooms / Snack Bar / No Shelter
- Seville Park: Picnic/Restroom/Shelter
- Miller Park: Picnic/Restroom/Shelter

Rialto:

- Bud Bender Park: Restroom, Drinking Fountain/Picnic Area w/ Shade Structure
- Margaret Todd Park: Open Space-Future Skateboard Park
  - Gymnasium
  - Senior Citizen Bicycle

Rest Stop Locations

Potential rest stop locations were selected to occur every 2-3 miles from Claremont to Rialto. Park sites that occur within ¼ mile or less from the Trail and contain amenities such as restrooms and water may also be selected for use as rest stops. The following lists possible sites and the existing conditions plan sheet on which they occur.

Sheet #	Site Description
1	Claremont – El Barrio Park – Site has restrooms, but no shade or drinking fountains.
1 & 2	Montclair - Sand & Gravel Mining at Monte Vista across from the Montclair Transit Center Park & Ride. R.OW. only 70' at this point - Rest stop would be located offsite or . could use Montclair Transitions
3	Upland - Approx. 1,000' west of Mountain Ave. – 70' R.O.W. & no parks in area. Minimal space. Rest stop would be located offsite.
5 & 6	Upland - 12th Ave. & Washington Blvd. 80' R.O.W. – Possible vacant land to north of trail. – Rest stop would be located offsite.
	or
6	Upland - Arrow Hwy. & Grove 80' R.O.W. – Possible vacant land to south of trail. Rest stop would be located offsite.
7	Rancho Cucamonga - Land just northwest of Foothill Blvd. (south of trail). Camino Predera Street to north of trail. Redhill Park just over ¼" away. R.O.W.- 90' –100" width. Rest stop would be located offsite or depending on layout may be located on site.
	or
7	Rancho Cucamonga - Vineyard – East of overpass (Vacant) Equestrian Staging Area 80'-100' R.O.W. Mile 5.6 Rest stop would be located offsite.
9	Rancho Cucamonga - Land just NW. of Base line R.OW. approx. 80' width or Rancho Cucamonga
9	SANBAG Non-Op "P" – possible rest area could revert to rail station in future. Limit to benches, trees for shade, trash receptacles & fountains/water & staging area.
10	Rancho Cucamonga - Land just west of Ramona on south side of trail or Rest stop could be developed on trail between Ramona & Hermosa. R.O.W., varies between 120'-150'.
12 & 11	Rancho Cucamonga - Future site of Rancho Cucamonga Central Park (Vacant). Deer Creek Channel & Milliken Ave. Possible rest stop w/ temporary staging / parking area until park is developed. Rest stop maybe included as part of the Central Parks overall plan.80' R.O.W. – Mile 9.1
12 & 13	Rancho Cucamonga - Ellena Park w/ in ¼ mile of trail off of Kenyon Way.
15	Etiwanda (Rancho C.) – Historic Etiwanda Station 80' R.O.W. / 130' parcel – Mile 1.1
18	Fontana - SANBAG Non-Op "O" – Rest stop could revert to rail station in future. Limit to benches, trees for shade, trash receptacles & fountains/water & staging area parking gravel or D.G. w/soil solidifier.
22	Fontana - Tamarind Ave./Alder Street 80' R.O.W. 100' R.O.W. @ Mango – 0.6 miles west. Non-Op'S' south 0.9 miles west. Rest stop could revert to rail station in 20 – 30 years if trains return. Limit to benches, trees for shade, trash receptacles & fountains/water & staging area parking – gravel or D.G. w/soil solidifier.
25	Rialto - Bud Bender Park – located directly adjacent to Trail includes most site amenities necessary to a rest stop with the exception of Equestrian needs.
	Rialto - Margaret Todd Park – located directly adjacent to the Trail and side by side with Bud Bender Park is currently occupied by a Gymnasium and a Senior Center Soon construction will begin for a skateboard park.

Pacific Electric Trail

Comment PURSUE GRADE SEPARATED CROSSINGS AT ALL MAJOR ARTERIALS.
AND

MAINTAIN UNIFORM DESIGN STANDARD(S) THROUGHOUT THE ENTIRE CORRIDOR

Name
Address
City, State ZIP
Phone:
E-mail:

☐ ***Do you want a written response?***

Pacific Electric Trail

Comment I would like to see the landscaping kept as Native as possible.
- What about signals that only change when the ped. button is pushed?
- Solar Lighting

Name Nancy DeCourcey
Address 8255 Hillside Rd
City, State ZIP Alta Loma CA 91701
Phone: (909) 945-2015
E-mail: MNdecourcey@msn.com

☐ ***Do you want a written response?***

Pacific Electric Trail

Comment Pls. send info. of where I can see trails in other communities.

T Landa

Name Pam Stewart
Address 6093 Eastwood Ave
City, State ZIP Alta Loma, CA 91737
Phone: 989 7397 (909)
E-mail:

☐ ***Do you want a written response?***

Pacific Electric Trail

Comment ① Landscape with trees - eg. Pepper Trees that are self-sustaining like those on Euclid in Upland. ② Continuous lighting along the trail for safety. ③ Baseline & Hellman in Rancho Cucamonga is VERY BUSY, high speed, also has an open flood control on west side, and no sidewalk, and is near a middle school — children cross at mid street now. Very dangerous. ④ Landscape with Trees near the homes to block noise and improve aesthetics

Name ANA ZAMBRANO
Address 7418 Hellman
City, State ZIP Rancho Cucamonga, CA 91730
Phone: 909-466-9065
E-mail: ANA2@FLASHCOM.NET

☐ ***Do you want a written response?***

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
ALTA CUESTA						0
BASE LINE - BUENA VISTA	12/11/95	2,115	1,667			3,782
						0
ALTA LOMA						0
BERYL	7/12/94			394	302	696
						0
AMETHYST						0
BASE LINE						0
MONTE VISTA	9/25/95	1,861	1,418	454	290	4,023
BASE LINE - 19TH	8/9/94					3,681
19TH						0
19TH - HIGHLAND	3/28/96	1,728	1,786			3,514
HIGHLAND	1/13/92	2,218	1,774	468	1,883	6,343
HIGHLAND - LEMON	3/28/96	1,555	1,646			3,201
LEMON						0
LEMON - BANYAN	4/4/96	1,002	1,106			2,108
BANYAN						0
BANYAN - WILSON	4/4/96	948	893			1,841
WILSON						0
WILSON - HILLSIDE	4/4/96	522	682			1,204
HILLSIDE						0
HILLSIDE - N.END	4/4/96	195	157			352
						0
ARCHIBALD						
4TH						0
4TH - 6TH	10/29/96	11,297	10,344			21,641
6TH						0
6TH - 9TH	10/29/96	12,057	10,759			22,816
9TH						0
9TH - ARROW	2/7/97	13,582	12,954			26,536
ARROW						0
ARROW - FOOTHILL	1/29/97	11,117	12,466			23,583
FOOTHILL						0
TRYON						0
FOOTHILL - CHURCH	3/27/96	9,596	11,394			20,990
CHURCH						0
CHURCH - BASE LINE	3/27/96	10,284	11,104			21,388
BASE LINE						0
BASE LINE - 19TH	3/22/96	9,117	9,859			18,976
19TH						0
19TH - HIGHLAND	3/22/96	5,695	5,907			11,602
HIGHLAND						0
HIGHLAND - LEMON	2/12/96	4,458	5,159			9,617
LEMON						0
LEMON - BANYAN	2/7/96	3,525	2,750			6,275

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
BANYAN	11/24/92	3,634	2,457	1,302	108	7,501
BANYAN - WILSON	3/22/94	2,384	2,710			5,094
ARCHIBALD						
WILSON						0
WILSON - HILLSIDE	2/12/96	1,290	927			2,217
HILLSIDE	9/6/94	1,420	1,038	928	949	4,335
HILLSIDE - N.END						0
						0
ARROW						0
GROVE						0
GROVE - BAKER	02/02/00			6,905	8,081	14,986
BAKER						0
BAKER - VINEYARD	10/23/96			7,562	7,109	14,671
VINEYARD						0
VINEYARD - HELLMAN	1/8/97			10,583	10,235	20,818
HELLMAN						0
HELLMAN - ARCHIBALD	2/27/97			7,709	7,893	15,602
ARCHIBALD						0
ARCHIBALD - HERMOSA	5/23/96			12,639	12,161	24,800
HERMOSA						0
HERMOSA - HAVEN	2/26/97			10,276	8,571	18,847
HAVEN						0
HAVEN - WHITE OAK	12/12/96			8,907	8,836	17,743
WHITE OAK						0
WHITE OAK - MILLIKEN	12/12/96			8,061	8,165	16,226
MILLIKEN	2/1/93	2,372		5,765	4,322	12,459
MILLIKEN - ROCHESTER	12/4/96			7,067	6,603	13,670
ROCHESTER	4/2/90	1,898	1,681	4,013	4,456	12,048
ROCHESTER - ETIWANDA	12/4/96			6,482	6,152	12,634
ETIWANDA						0
ETIWANDA - HICKORY	10/7/97			5,436	5,653	11,089
ASPEN						
FOOTHILL - ROYAL OAK	03/13/00	2,744	2,613			5,357
						0
BAKER						0
EIGHTH						0
EIGHTH - NINTH	5/7/96	2,433	2,715			5,148
NINTH						0
NINTH - ARROW	4/10/97	1,692	2,293			3,985
ARROW						0
ARROW - FOOTHILL	4/10/97	970	1,330			2,300
FOOTHILL						0
						0
BANYAN						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
W.END - SAPPHIRE	4/9/97			555	583	1,138
SAPPHIRE						0
SAPPHIRE - CARNELIAN	4/6/97			1,972	1,708	3,680
CARNELIAN						0
CARNELIAN - BERYL	3/24/97			2,126	1,952	4,078
BERYL						0
BERYL - HELLMAN	3/26/97			2,086	2,132	4,218
BANYAN						
HELLMAN						0
HELLMAN - AMETHYST	3/26/97			1,556	1,401	2,957
AMETHYST						0
AMETHYST - ARCHIBALD	03/26/97			1,123	1,096	2,219
ARCHIBALD	11/24/92	3,634	2,457	1,302	108	7,501
RAMONA - HERMOSA						0
HERMOSA	08/11/95	1,911	2,058	212	537	4,718
HERMOSA - HAVEN	06/25/96			479	630	1,109
HAVEN	03/09/92	8,303	10,410	282	1,751	20,746
HAVEN - MILLIKEN	04/21/98			3,091	3,731	6,822
MILLIKEN	03/24/99	2,985		3,795	1,958	8,738
FREDRICKSBURG	02/08/00		1,648	5,706	7,340	14,694
MILLIKEN - ROCHESTER	04/21/98			1,739	1,825	3,564
ROCHESTER						0
						0
BASE LINE						0
W.END - ALTA CUESTA						0
ALTA CUESTA						0
ALTA CUESTA - CARNELIAN	04/13/99			16,270	16,670	32,940
CARNELIAN						0
CARNELIAN - VINEYARD	05/01/97			13,710	16,662	30,372
VINEYARD						0
VINEYARD - BERYL	05/14/97			16,117	13,511	29,628
BERYL						0
BERYL - HELLMAN	04/13/99			17,794	17,963	35,757
HELLMAN						0
HELLMAN - AMETHYST	09/04/96			15,653	18,487	34,140
AMETHYST						0
AMETHYST - ARCHIBALD	04/13/99			16,811	17,426	34,237
ARCHIBALD						0
ARCHIBALD - RAMONA	04/13/99			15,963	16,813	32,776
RAMONA						0
RAMONA - HERMOSA	06/30/97			17,261	11,832	29,093
HERMOSA						0
HERMOSA - HAVEN	04/13/99			15,482	16,299	31,781
HAVEN						0
HAVEN - VALENCIA	04/14/99			15,951	16,339	32,290

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
VALENCIA						0
VALENCIA - SPRUCE	09/04/96			15,958	15,562	31,520
SPRUCE						0
SPRUCE - MILLIKEN	10/08/97			12,194	13,908	26,102
MILLIKEN						0
MILLIKEN - ROCHESTER	02/01/00			20,422	20,784	41,206
ROCHESTER						0
ROCHESTER - VICTORIA P.L.	09/04/96			12,022	11,750	23,772
VICTORIA P.L.						0
VICTORIA P.L. - ETIWANDA	09/10/96			12,536	11,867	24,403
BASE LINE						
ETIWANDA						0
ETIWANDA - EAST	02/07/96			10,650	10,099	20,749
EAST	11/19/91	1,105	1,572	7,115	13,147	22,939
BERYL						0
BASE LINE - 19TH	04/13/99	3,348	4,518			7,866
CIELITO	09/16/92	2,605	2,820	871	352	6,648
ALTA LOMA	08/03/94					2,693
19TH - LEMON						0
LEMON						0
LEMON - BANYAN	08/03/94					2,693
BANYAN						0
BANYAN - HILLSIDE	09/27/94					1,467
						0
BUFFALO						
4TH - 6TH	04/05/99	3,589	4,239			7,828
CALLE PREDERA						
RED HILL - RED HILL	05/04/98	214	127			341
						0
CAMDEN						0
ARCHIBALD - NEWTON	05/01/98			462	411	873
						0
CANISTEL						0
WILSON - HILLSIDE	04/05/99	361	327			688
WILSON - ANTIETAM	03/14/96	797	816			1,613
						0
CARNELIAN						0
VINEYARD						0
CALLE DEL PRADO	04/16/96	9,479	10,291	374	448	20,592
VINEYARD - BASE LINE	04/01/97	9,507	10,224			19,731
BASE LINE						0
BASE LINE - 19TH	10/29/90	12,009	11,310			23,319
19TH						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
HIGHLAND	09/05/97	9,232	7,795	910		17,937
19TH - LEMON	09/05/97	9,232	7,795			17,027
LEMON						0
LEMON - BANYAN						0
BANYAN						0
BANYAN - HILLSIDE	02/06/96	3,065	2,705			5,770
HILLSIDE						0
HILLSIDE - N.END						0
						0
CENTER						0
8TH - ARROW	08/13/99					1,351
FOOTHILL						0
FOOTHILL - CHURCH	08/17/99	2,922	1,453			4,375
CHURCH						0
PALO ALTO	10/09/95	64	410	528	529	1,531
PALO ALTO - BASE LINE	12/03/91	388	441			829
						0
CHARLES SMITH						0
4TH - 6TH	04/05/99	194	237			431
6TH	06/17/91	1,543	1,312	566	336	3,757
						0
CHARLESTON						0
GRAYSON	10/29/97		160	141	612	913
CHESTNUT						
ETIWANDA - CORNWALL	11/27/95			324	541	865
CHURCH						0
LION	5/2/94	391	183	198	517	1,289
LION - HELLMAN						0
HELLMAN	2/8/90	5,796	5,128	369	2,194	13,487
HELLMAN - ARCHIBALD	4/15/97			2,084	2,214	4,298
ARCHIBALD						0
ARCHIBALD - RAMONA	4/16/97			3,315	3,732	7,047
RAMONA						
RAMONA - HERMOSA	4/17/97			3,866	3,771	7,637
HERMOSA						0
HERMOSA - HAVEN	4/29/97			3,601	3,460	7,061
HAVEN						0
HAVEN - TERRA VISTA	4/17/97			4,009	4,073	8,082
TERRA VISTA	7/28/92	1,512	2,502	3,482	2,274	9,770
TERRA VISTA - W.ELM						0
W.ELM	10/23/95	533	612	2,061	1,733	4,939
W.ELM - SPRUCE	12/2/92			1,547	910	2,457
SPRUCE						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
SPRUCE - E.ELM	12/2/92			1,324	1,319	2,643
E.ELM	8/12/95	650	627	1,828	2,519	5,624
E.ELM - MILLIKEN						0
MILLIKEN						0
ROCHESTER	08/03/93	3,138	2,555		804	6,497
						0
CIVIC CENTER						0
HAVEN						0
HAVEN - UTICA	03/29/99			1,252	1,008	2,260
UTICA						0
UTICA - RED OAK						0
RED OAK	3/22/91	819	1,269	823	538	3,449
RED OAK - WHITE OAK	03/29/99			1,388	874	2,262
WHITE OAK						0
						0
COCA						0
VILLA - HERMOSA	3/2/94					237
						0
DAY CREEK						
BASE LINE - VICTORIA	12/08/99	4,037	4,940			8,977
VICTORIA - HIGHLAND	12/08/99	4,081	4,872			8,953
						0
DEVON						
MALACHITE	09/21/99	719	789	670	155	2,333
HELLMAN - ARCHIBALD	7/21/94					1,301
ARCHIBALD						
ARCHIBALD - RAMONA	11/20/96			375	392	767
						0
EAST						0
FOOTHILL						0
FOOTHILL - MILLER	3/29/94	926	591			1,517
MILLER						0
MILLER - BASE LINE	5/25/95	763	1,147			1,910
BASE LINE	11/19/91	1,105	1,572	7,115	13,147	22,939
BASE LINE - VICTORIA	10/29/97	2,034	2,073			4,107
VICTORIA						0
VICTORIA - HIGHLAND	11/6/97	1,652	1,583			3,235
HIGHLAND						0
HIGHLAND - SUMMIT	5/22/97	993	414			1,407
SUMMIT						0
SUMMIT - N.END	5/22/97	412	478			890
						0
EIGHTH						0
GROVE - BAKER	1/9/97			2,529	1,825	4,354
BAKER						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
BAKER - VINEYARD	2/7/97			3,329	2,374	5,703
VINEYARD						0
VINEYARD - HELLMAN	2/12/97			2,213	1,908	4,121
HELLMAN						0
HELLMAN - ARCHIBALD	2/13/97			2,018	1,388	3,406
ARCHIBALD	6/17/92			1,177	829	2,006
ARCHIBALD - HERMOSA	2/13/97			1,628	1,303	2,931
HERMOSA						0
HERMOSA - HAVEN	02/14/97			914	859	1,773
LM						0
CHURCH (WEST)	10/23/95	533	612	2,061	1,733	4,939
CHURCH - SPRUCE	03/29/99	806	855			1,661
SPRUCE	05/03/94	1,726	2,412	803	689	5,630
SPRUCE - CHURCH	03/29/99	783	1,040			1,823
CHURCH (EAST)	08/29/95	650	627	1,828	2,519	5,624
CHURCH - FOOTHILL						
FOOTHILL - WHITE OAK	03/29/99	1,400	989			2,389
TIWANDA						0
4TH	11/20/96	7,776	8,016			15,792
4TH - ARROW						0
ARROW	11/20/96	6,315	6,343			12,658
ARROW - FOOTHILL						0
FOOTHILL	3/29/95	3,256	2,945			6,201
FOOTHILL - BASE LINE						
TIWANDA						
BASE LINE	1/26/94	2,269	2,746			5,015
BASE LINE - VICTORIA	3/17/97	2,648	3,005			5,653
VICTORIA	1/8/92	1,979	2,200		1,253	5,432
VICTORIA - HIGHLAND	3/26/96	2,865	2,670			5,535
HIGHLAND						0
HIGHLAND - SUMMIT	3/17/97	2,340	2,712			5,052
SUMMIT	03/31/98	2,294	1,173		1,909	5,376
SUMMIT - 24TH	04/21/98	1,275	1,309			2,584
						0
IRMONT						
HIGHLAND						0
HIGHLAND - KENYON						0
KENYON	1/18/94	1,231	1,292	329	301	3,153
KENYON - V.P.L.	04/13/99	1,308	1,642			2,950
VICTORIA P.L.	3/14/96	1,148	1,990		1,133	4,271
VICTORIA P.L. - MILLIKEN	04/05/99			399	298	697
(MILLIKEN)	3/23/93			1,575	1,250	2,825

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
MILLIKEN	12/2/91	7,543	5,191	1,615	1,633	15,982
MILLIKEN - VICTORIA P.L.	04/05/99			422	336	758
VICTORIA P.L.	5/17/93	570		675	1,085	2,330
						0
FOOTHILL						0
C:\Program Files\Internet Explorer\IEXPLORE.EXE - http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/1997all/r06						
GROVE						0
GROVE - SAN BERNARDINO	8/19/91			17,183	17,224	34,407
SAN BERNARDINO						0
SAN BERNARDINO - BAKER						0
BAKER						
BAKER - VINEYARD	04/01/97			19,717	18,496	38,213
VINEYARD						
VINEYARD - HELLMAN	04/01/97			19,004	17,497	36,501
HELLMAN						
HELLMAN - ARCHIBALD	8/13/91			18,024	17,847	35,871
ARCHIBALD						0
ARCHIBALD - RAMONA	3/18/92			19,051	19,092	38,143
RAMONA						0
RAMONA - HERMOSA	3/18/92			17,301	18,306	35,607
HERMOSA						0
HERMOSA - HAVEN	3/18/92			16,429	17,943	34,372
HAVEN						0
HAVEN - ASPEN	3/28/95			15,227	13,623	28,850
ASPEN						0
ASPEN - SPRUCE	3/16/92			13,218	14,022	27,240
SPRUCE						0
SPRUCE - MILLIKEN	3/29/95			14,921	15,246	30,167
MILLIKEN						0
MILLIKEN - ROCHESTER	3/16/92			15,788	16,226	32,014
FOOTHILL						
ROCHESTER						0
ROCHESTER - I-15	4/7/92			18,224	17,861	36,085
MARKETPLACE						0
I-15 - ETIWANDA	4/1/92			16,196	16,373	32,569
ETIWANDA						0
ETIWANDA - EAST						0
EAST						0
						0
FOURTH						
HELLMAN - ARCHIBALD						0
ARCHIBALD - HAVEN	10/20/97			7,006	7,538	14,544
HAVEN - MILLIKEN	10/21/97			5,663	5,548	11,211
MILLIKEN - I-15	10/20/97			9,250	9,023	18,273
I-15 - ETIWANDA	11/24/98			5,673	5,046	10,719

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
FREDRICKSBERG						
BANYAN	02/08/00		1,648	5,706	7,340	14,694
BANYAN - SEVEN PINES	3/14/96	1,207	1,195			2,402
GARNET						0
BASE LINE - LA GRANDE	1/11/94	457	167			624
GROVE						0
8th - 9th						
9th						0
9th - ARROW	03/13/00	7,617	7,218			14,835
ARROW						0
ARROW - FOOTHILL	03/13/00	6,931	6,548			13,479
FOOTHILL						0
FOOTHILL - N.END						0
						0
HAMPSHIRE						
MALACHITE - ARCHIBALD	8/17/93			287	615	902
ARCHIBALD - RAMONA	11/20/96			436	271	707
						0
HAVEN						0
4TH						0
4TH - 6TH	08/06/98	20,574	18,583			39,157
6TH						0
6TH - 7TH	08/06/98	20,214	18,118			38,332
7TH						0
7TH - JERSEY	08/06/98	20,335	17,879			38,214
JERSEY						0
JERSEY - ARROW	08/06/98	19,298	16,346			35,644
ARROW						0
ARROW - CIVIC CENTER	08/12/98	16,866	14,622			31,488
CIVIC CENTER						0
CIVIC CENTER - FOOTHILL	08/06/98	17,773	14,936			32,709
HAVEN						
FOOTHILL						0
FOOTHILL - TOWN CENTER	08/13/98	15,227	12,858			28,085
TOWN CENTER						0
TOWN CENTER - CHURCH	08/06/98	14,289	13,641			27,930
CHURCH						0
CHURCH - BASE LINE	08/06/98	14,398	13,522			27,920
BASE LINE						0
BASE LINE - VICTORIA	08/12/98	12,965	12,765			25,730
VICTORIA						0
VICTORIA - 19TH	08/12/98	10,695	10,145			20,840

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
19TH						0
19TH - HIGHLAND	08/06/98	10,649	9,598			20,247
HIGHLAND						0
HIGHLAND - LEMON	08/05/98	9,535	10,573			20,108
LEMON						0
LEMON - BANYAN	08/05/98	7,566	7,781			15,347
BANYAN	03/09/92	8,303	10,410	282	1,751	20,746
BANYAN - AMBER	08/05/98	8,391	8,185			16,576
AMBER						
AMBER - WILSON	08/05/98	3,867	3,767			7,634
WILSON	03/12/90	4,237	2,137	1,727	3,033	11,134
WILSON - HILLSIDE	08/05/98	2,508	2,302			4,810
HILLSIDE						0
HILLSIDE - N.END	08/05/98	1,031	1,004			2,035
HELLMAN						0
6TH						0
6TH - 8TH	05/01/90					5,138
8TH						0
8TH - 9TH	05/21/96	3,407	3,324			6,731
9TH	03/16/94	2,311	3,723			6,034
9TH - ARROW	05/01/90					7,519
ARROW						0
ARROW - FOOTHILL	08/13/91	5,381	5,017			10,398
FOOTHILL						
FOOTHILL - SAN BERNARDINO	8/14/91	5,099	5,142			10,241
SAN BERNARDINO						0
TRYON	4/7/92	5,252	4,746		354	10,352
SAN BERNARDINO - CHURCH						0
CHURCH	2/8/90	5,796	5,128	369	2,194	13,487
CHURCH - BASE LINE						0
PEPPER(PALO ALTO)	05/11/99	4,778	4,226	454	764	10,222
BASE LINE						0
BASE LINE - 19TH	4/2/97	2,388	1,912			4,300
LA RONDA	09/29/99	2,296	1,522	666		4,484
19TH						0
19TH - LEMON	4/1/97	1,395	1,361			2,756
HELLMAN						
LEMON						0
LEMON - BANYAN	04/01/97	884	784			1,668
BANYAN						0
BANYAN - HILLSIDE	04/02/97	1,101	1,207			2,308
HILLSIDE						
						0
HERMOSA						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
4TH	08/08/96	1,182	1,880			3,062
4TH - 6TH						0
6TH						0
6TH - 8TH						0
8TH						0
8TH - ARROW	03/10/97	3,199	3,212			6,411
ARROW						0
ARROW - FOOTHILL	03/13/97	3,635	3,750			7,385
FOOTHILL						0
FOOTHILL - CHURCH	09/11/91	3,568	3,853			7,421
CHURCH						0
CHURCH - BASE LINE	09/11/91	3,453	3,702			7,155
BASE LINE						0
BASE LINE - 19TH	05/14/96	3,136	3,205			6,341
MONTE VISTA	05/14/96	3,136	3,205	442	222	7,005
19TH	12/03/90	3,354	3,279	7,685	5,990	20,308
19TH - HIGHLAND	10/19/93	3,308	2,807			6,115
HIGHLAND						0
HIGHLAND - LEMON	03/10/97	2,827	2,287			5,114
LEMON						
LEMON - BANYAN						0
BANYAN	08/11/95	1,911	2,058	212	537	4,718
BANYAN - WILSON						0
WILSON						0
WILSON - HILLSIDE						0
HILLSIDE	06/17/98	768	878	1,105	1,045	3,796
HILLSIDE - N.END						0
HIGHLAND						0
W.END - SAPPHIRE						0
SAPPHIRE	02/03/93	3,844	4,330	166	631	8,971
SAPPHIRE - JASPER	05/19/98			574	585	1,159
JASPER - CARNELIAN						0
CARNELIAN	09/05/97	9,232	7,795	910		17,937
JASPER	09/12/90		223	504	615	1,342
CARNELIAN - BERYL						0
BERYL						0
BERYL - HELLMAN						0
HELLMAN						0
HIGHLAND						
HELLMAN - AMETHYST						0
AMETHYST	01/16/92	2,218	1,774	468	1,883	6,343
AMETHYST - ARCHIBALD						0
ARCHIBALD						0
ARCHIBALD - HERMOSA	05/19/98			1,847	2,113	3,960

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
HERMOSA						0
HERMOSA - MAYBERRY	08/21/91			1,341	1,688	3,029
MAYBERRY						0
MAYBERRY - HAVEN	01/14/98			1,875	2,247	4,122
HAVEN						0
HAVEN - MILLIKEN	10/23/95			11,475	4,009	15,484
MILLIKEN						0
MILLIKEN - ROCHESTER	10/23/95			8,394	5,871	14,265
ROCHESTER						0
ROCHESTER - ETIWANDA						0
ETIWANDA						0
ETIWANDA - EAST						0
EAST						0
EAST - I-15						0
HILLSIDE						0
W.C.L. - TURQUIOSE	04/20/98			98	93	191
TURQUOISE - SAPPHIRE	04/20/98			668	658	1,326
SAPPHIRE						0
JASPER						0
SAPPHIRE - CARNELIAN	04/20/98			2,001	1,912	3,913
CARNELIAN						0
CARNELIAN - BERYL	04/20/98			1,772	1,807	3,579
BERYL						0
BERYL - HELLMAN	04/20/98			1,594	1,731	3,325
HELLMAN						0
HELLMAN - AMETHYST	04/21/99			1,068	1,083	2,151
AMETHYST						0
AMETHYST - ARCHIBALD	04/20/98			902	958	1,860
ARCHIBALD						0
ARCHIBALD - HERMOSA	04/20/98			1,058	1,083	2,141
HERMOSA	10/30/95	509	796	963	848	3,116
HERMOSA - HAVEN	04/20/98			913	982	1,895
HAVEN						0
HAVEN - E.END	04/20/98			347	318	665
						0
HILLVIEW LOOP						
VINTAGE - VINTAGE	04/05/99	175	169			344
JASPER						
18TH						0
18TH - 19TH						0
19TH						0
HIGHLAND	9/12/90		223	504	615	1,342
JASPER						

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
HIGHLAND - ORANGE						0
ORANGE	5/8/91	167	284	472	576	1,499
ORANGE - LEMON	11/03/98	217	216			433
LEMON						0
LEMON - BANYAN						0
BANYAN						0
						0
JENNET						
ORANGE - LEMON						0
LEMON	1/8/96	166	296	405	728	1,595
LEMON - BANYAN						0
SAPPHIRE - RIDGEWAY	10/5/93					740
SAPPHIRE - RIDGEWAY(XMAS)	12/21/93					1,907
						0
JERSEY						
HAVEN - MILLIKEN	04/05/99			1,849	1,880	3,729
MILLIKEN - ROCHESTER	04/05/99			1,294	930	2,224
KENYON						0
FAIRMONT	1/18/94	1,231	1,292	329	301	3,153
FAIRMONT - MILLIKEN						0
MILLIKEN						0
MILLIKEN - LARK	03/03/98					3,347
LARK	5/11/93	902	1,116		851	2,869
LARK - V.P.L.						0
V.P.L.						
V.P.L. - BELVINO	04/05/99			771	725	1,496
KLUSMAN						
DEVON	09/15/99	267	165	729	387	1,548
LA GRANDE						
BERYL - GARNET	1/11/94			389	74	463
CARNELIAN - JASPER	12/16/97			423	325	748
LA VINE						
OPAL - CARNELIAN	12/16/97			955	766	1,721
LARK						0
KENYON	5/11/93	902	1,116		851	2,869
KENYON - ROCHESTER	04/21/98			1,258	1,325	2,583
ROCHESTER	04/25/96	3,145	2,568	988		6,701
LEMON						0
SAPPHIRE	3/3/93	2,526	3,683	197	621	7,027

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
SAPPHIRE - JASPER	04/20/98			435	523	958
JASPER	1/8/96	166	296	405	728	1,595
JASPER - CARNELIAN	1/18/96			350	728	1,078
CARNELIAN						0
CARNELIAN - BERYL	04/20/98			1,831	1,770	3,601
BERYL						0
BERYL - HELLMAN	6/27/96			1,720	1,890	3,610
HELLMAN						0
HELLMAN - AMETHYST	04/20/98			1,884	2,063	3,947
LEMON						
AMETHYST						0
AMETHYST - ARCHIBALD	04/20/98			2,141	2,232	4,373
ARCHIBALD						0
ARCHIBALD - HERMOSA	04/20/98			4,050	3,825	7,875
HERMOSA						0
MAYBERRY	3/16/93	493	201	4,696	4,188	9,578
HERMOSA - HAVEN	04/20/98			4,113	3,800	7,913
HAVEN						0
HAVEN - TERRACINA	04/22/98			3,387	3,979	7,366
TERRACINA - HIGHLAND	8/20/97			1,315	1,836	3,151
LION						0
CHURCH	5/2/94	391	183	198	517	1,289
FOOTHILL						0
FOOTHILL - ESTACIA	4/10/90	627	493			1,120
ESTACIA	7/27/90	23	348			371
						0
MALACHITE						0
DEVON	09/21/99	719	789	670	155	2,333
						0
MANZANITA						0
RIVERWOOD	2/5/91	143	129	542	645	1,459
RIVERWOOD - HERMOSA	2/19/97			743	745	1,488
HERMOSA						0
HERMOSA - VILLA	3/2/94					339
						0
MARINE						0
BASE LINE	10/30/95	204	339			543
						0
MAYBERRY						0
LEMON	3/16/93	493	201	4,696	4,188	9,578
						0
MIGNONETTE						
W/O AMETHYST	08/11/98			116	97	213
W/O BERYL	08/11/98			467	481	948

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
W/O OPAL	08/11/98			147	80	227
MILLER						0
ETIWANDA - EAST	10/9/90			139	221	360
						0
MILLIKEN						0
4TH - 6TH	9/10/96	9,090	8,772			17,862
6TH						0
6TH - 7TH	9/10/96	8,502	7,790			16,292
7TH						0
7TH - JERSEY	10/15/96	8,395	8,077			16,472
MILLIKEN						
JERSEY						0
JERSEY - ARROW	10/23/96	7,492	6,710			14,202
ARROW	2/1/93	2,372		5,765	4,322	12,459
ARROW - FOOTHILL	10/11/96	7,516	6,320			13,836
FOOTHILL						0
FOOTHILL - TERRA VISTA	9/18/91	6,929	7,631			14,560
TERRA VISTA	5/4/93			1,599	1,153	2,752
TERRA VISTA - BASE LINE	1/10/96	8,464	8,738			17,202
BASE LINE						0
BASE LINE - FAIRMONT	10/23/96	9,553	9,726			19,279
FAIRMONT	12/10/90	7,543	5,191	1,581	1,621	15,936
FAIRMONT - VICTORIA P.L.	10/15/96	7,597	7,490			15,087
VICTORIA P.L.						0
VICTORIA P.L. - HIGHLAND	02/01/00	9,620	9,033			18,653
HIGHLAND	07/07/99	8,182	3,047		4,040	15,269
HIGHLAND - VINTAGE	9/18/96	5,608	5,057			10,665
VINTAGE	10/28/92	5,517	1,966	622	3,301	11,406
VINTAGE - BANYAN	9/18/96	2,890	2,110			5,000
BANYAN						0
						0
MONTE VISTA						
RAMONA - ARLINGTON	12/13/94					501
AMETHYST	9/25/95	1,861	1,418	454	290	4,023
HERMOSA	5/14/96	3,136	3,205	442	222	7,005
						0
MONTARA						0
SAN BERNARDINO						0
SAN BERNARDINO - BIRCH	1/5/94					679
BIRCH						0
						0
MORNING PLACE						0
BANYAN - VINTAGE	04/05/99	208	205			413
						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
MOUNTAIN VIEW						0
SPRUCE						0
SPRUCE - MILLIKEN	04/21/98			655	672	1,327
MILLIKEN						0
MILLIKEN - TERRA VISTA						0
TERRA VISTA	1/28/98	416	424	299	381	1,520
TERRA VISTA - BASE LINE	04/05/99	635	607			1,242
						0
9TH						
GROVE - BAKER	2/19/97			3,439	2,973	6,412
BAKER						0
BAKER - VINEYARD	2/19/97			2,943	2,592	5,535
VINEYARD	3/16/94			2,832		2,832
VINEYARD - HELLMAN	3/16/94					5,253
9TH						
HELLMAN						0
HELLMAN - ARCHIBALD	3/16/94					1,805
19TH ST. (ST RTE 30)						0
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SAPPHIRE						0
SAPPHIRE - JASPER						0
JASPER						0
JASPER - CARNELIAN						0
CARNELIAN						0
CARNELIAN - BERYL	2/15/95			11,868	11,956	23,824
BERYL						0
BERYL - HELLMAN						0
HELLMAN						0
HELLMAN - AMETHYST						0
AMETHYST						0
AMETHYST - ARCHIBALD						0
ARCHIBALD						0
RAMONA						0
RAMONA - HERMOSA	11/16/94			10,802	10,016	20,818
HERMOSA	12/6/90	3,354	3,279	7,685	5,990	20,308
ARCHIBALD - RAMONA						
HERMOSA - HAVEN						0
HAVEN						0
HAVEN - HIGHLAND	11/6/96			4,701	5,320	10,021
HIGHLAND						0
NETHERLANDS LOOP						
VINTAGE - VINTAGE	04/21/98			158	140	298

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
N.VICTORIA WIN.LOOP						
V.P.L. - ROCK ROSE	04/21/98	1,063	1,168			2,231
ROCK ROSE - LOCUST						
LOCUST - V.P.L.	04/21/98	899	873			1,772
						0
ORANGE						0
JASPER	5/8/91	167	284	472	576	1,499
						0
ORANGEWOOD						0
SAN BERNARDINO						0
SAN BERNARDINO - ESTACIA	5/18/90	627	662			1,289
ESTACIA						0
PALO ALTO						0
CENTER	10/9/95	64	410	528	529	1,531
HELLMAN	05/11/99	4,778	4,226	454	764	10,222
PEARL						
HILLSIDE	2/27/97	40	160			200
PECAN						
VICTORIA	11/22/95		340	1,537	1,345	3,222
PEPPER						
HELLMAN	05/11/99	4,778	4,226	454	764	10,222
PLUM						
VIC.WIN.LOOP - CORAL TREE	02/05/99	213	184			397
RAMONA						0
HAMPSHIRE - FOOTHILL	11/20/96	351	248			599
FOOTHILL						0
FOOTHILL - CHURCH	10/2/91	1,989	1,697			3,686
CHURCH						0
CHURCH - BASE LINE	10/2/91	1,311	1,304			2,615
BASE LINE						0
BASE LINE - VICTORIA	10/2/91	1,273	1,182			2,455
VICTORIA	1/24/90	809	667	677	591	2,744
VICTORIA - 19TH	10/3/91	796	764			1,560
19TH						0
RED HILL						0
FOOTHILL						0
FOOTHILL - CALLE CARABE	03/17/98	2,473	2,016			4,489

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
RED OAK						
SPRUCE - CIVIC CENTER						0
CIVIC CENTER	3/22/91	819	1,269	823	538	3,449
CIVIC CENTER - ARROW	03/29/99	1,693	2,282			3,975
ARROW						
ARROW - JERSEY	03/29/99	853	1,013			1,866
						0
RIVERWOOD						0
MANZANITA	2/5/91	143	129	542	645	1,459
ROCHESTER						0
6TH						0
6TH - ARROW	6/27/96	2,315	2,084			4,399
ARROW	4/2/90	1,898	1,681	4,013	4,456	12,048
ARROW - FOOTHILL	7/17/97	2,357	3,081			5,438
CHURCH	8/3/93	3,138	2,555		804	6,497
FOOTHILL - BASE LINE	5/19/97	6,021	5,711			11,732
BASE LINE						0
FOOTHILL						0
BASE LINE - HIGHLAND	1/23/98	4,596	4,448			9,044
HIGHLAND						0
HIGHLAND - BANYAN	10/10/96	2,774	2,663			5,437
SAN BERNARDINO						0
GROVE						0
GROVE - FOOTHILL						0
FOOTHILL						0
VINEYARD	04/01/97			172	2,823	2,995
VINEYARD - HELLMAN	8/14/97			2,580	2,435	5,015
HELLMAN						0
HELLMAN - ARCHIBALD	8/20/97			1,793	1,825	3,618
ARCHIBALD						0
						0
SAN SEVAINE						
WILSON - CRESCENTA	08/11/98	606	685			1,291
SAPPHIRE						0
19TH						0
19TH - HIGHLAND						0
HIGHLAND	12/10/99	4,716	5,552	97	598	10,963
HIGHLAND - LEMON	3/8/96	3,964	4,473			8,437
LEMON	12/10/99	4,716	5,552	285	731	11,284
LEMON - BANYAN	3/3/93	3,129	3,683			6,812
THOROUGHBRED	02/10/00	2,635	2,256	301	383	5,575

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
SEVEN PINES						
BANYAN						0
BANYAN - HILLSIDE	2/12/96	2,909	3,149			6,058
HILLSIDE						0
HILLSIDE - N.END	5/7/90					2,097
CEDAR MTN	12/14/93					1,402
SEVENTH						
ARCHIBALD - HELLMAN	7/24/97			886	1,019	1,905
SIERRA CREST						
VINTAGE	1/4/96		321	1,747	1,442	3,510
						0
SIXTH						0
VINEYARD - HELLMAN						
HELLMAN						0
HELLMAN - ARCHIBALD	2/5/98			6,389	3,142	9,531
ARCHIBALD						0
ARCHIBALD - HERMOSA						0
HERMOSA						0
HERMOSA - HAVEN	9/9/91			3,204	3,251	6,455
HAVEN						0
HAVEN - MILLIKEN	9/9/91			3,441	3,867	7,308
MILLIKEN						
MILLIKEN - ROCHESTER						0
ROCHESTER						
SIXTH						
CHARLES SMITH	06/17/91	1,543	1,312	566	336	3,757
SANTA ANITA - ETIWANDA	01/24/96			912	603	1,515
						0
S.VICTORIA WIN. LOOP						
V.P.L. - V.P.L.	04/21/98	367	467			834
SPRUCE						0
RED OAK						0
RED OAK - FOOTHILL						0
FOOTHILL						0
FOOTHILL - TOWN CENTER	03/17/98	2,198	2,695			4,893
TOWN CENTER						0
TOWN CENTER - ELM						0
ELM	07/22/92	1,726	2,412	699	600	5,437
ELM - TERRA VISTA	03/03/98	2,404	2,345			4,749
TERRA VISTA						0
TERRA VISTA - BASE LINE	09/21/93	4,389	6,547			10,936
BASE LINE						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
						0
SUMMIT						
BLUEGRASS - ETIWANDA	01/10/00			392	400	792
ETIWANDA						
ETIWANDA - EAST	06/04/97			1,240	1,433	2,673
TERRA VISTA						0
TOWN CENTER						0
TOWN CENTER - CHURCH						0
CHURCH	07/28/92	1,512	2,502	3,482	2,274	9,770
HAMPTON	11/07/94	2,920	2,615	403		5,938
CHURCH - SPRUCE	04/21/98			3,326	3,013	6,339
SPRUCE						0
SPRUCE - MILLIKEN	04/21/98			2,610	2,588	5,198
MILLIKEN	05/04/93			1,599	1,153	2,752
MILLIKEN - MOUNTAIN VIEW	04/21/98			376	416	792
MOUNTAIN VIEW	1/28/98	416	424	299	381	1,520
MTN. VIEW - E.END						0
						0
TERRACE VIEW LOOP						
VINTAGE - VINTAGE	04/21/98			144	170	314
THOROUGHBRED						0
CARNELIAN - JASPER	10/21/97			964	792	1,756
JASPER - SAPPHIRE	11/27/96			398	502	900
SAPPHIRE	02/10/00	2,635	2,256	301	383	5,575
SAPPHIRE - RIDGEWAY	10/5/93					614
SAPPHIRE - RIDGEWAY(XMAS)	12/21/93					1,707
TOWN CENTER						
HAVEN - TERRA VISTA	01/15/99			4,453	2,585	7,038
TERRA VISTA - W.ELM	03/29/99			1,233	1,040	2,273
W.ELM - SPRUCE	03/29/99			1,392	924	2,316
TRYON						
HELLMAN	4/7/92	5,252	4,746		354	10,352
						0
VICTORIA						0
ARCHIBALD						0
ARCHIBALD - HERMOSA	3/30/93			1,215	1,103	2,318
HERMOSA						0
HERMOSA - HAVEN	3/17/97			806	916	1,722
HAVEN						0
HAVEN - MENDOCINO	3/30/93			1,132	1,078	2,210

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
ETIWANDA	1/8/92	1,979	2,200		1,253	5,432
PECAN	11/22/95		340	1,537	1,345	3,222
ETIWANDA - EAST	04/16/98			1,049	1,081	2,130
EAST						0
EAST - I-15	10/16/91			1,970	1,858	3,828
						0
/ICTORIA P.L.						0
FAIRMONT	3/14/96	1,148	1,990		1,133	4,271
FAIRMONT - MILLIKEN						0
MILLIKEN	3/23/93			1,101	1,025	2,126
MILLIKEN - KENYON						0
FAIRMONT	5/17/93	570		675	1,085	2,330
KENYON						0
KENYON - ROCHESTER	1/27/98			1,338	1,403	2,741
ROCHESTER - DAY CREEK	03/13/00			796	639	1,435
N.VICTORIA WINDROWS						0
NV WINDROWS - SV WINDROWS	8/7/91			1,115	1,213	2,328
S.VICTORIA WINDROWS	10/24/94	2,314	1,340		1,136	4,790
S.V.WINDROWS - BASE LINE	7/29/91	1,913	1,945			4,973
BASE LINE						0
/ILLA						0
WILSON - MANZANITA	3/2/94					346
						0
VINEYARD						0
8TH						0
8TH - 9TH	5/14/96	15,120	11,759			26,879
9TH						0
9TH - ARROW	04/07/98	10,896	10,820			21,716
ARROW						0
ARROW - FOOTHILL	04/01/97	12,101	11,787			23,888
FOOTHILL						0
FOOTHILL - SAN BERNARDINO	04/01/97	12,265	13,081			25,346
VINEYARD						
SAN BERNARDINO	04/01/97			172	2,823	2,995
SAN BERNARDINO - CARNELIAN						0
CARNELIAN						0
CARNELIAN - CHURCH	04/15/98	2,183	1,712			3,895
CHURCH - BASE LINE	04/16/98	2,553	1,961			4,514
BASE LINE						0
						0
VINMAR						
HILLSIDE	2/7/97	33	91	619	655	1,398
VINTAGE						0

LOCATION	DATE	N/B	S/B	E/B	W/B	TOTAL
MORNING CT - MILLIKEN	4/25/95					1,433
MILLIKEN	10/28/92	5,517	1,966	622	3,301	11,406
SIERRA CREST	1/4/96		321	1,747	1,442	3,510
MILLIKEN - ROCHESTER	8/7/97			1,937	1,996	3,933
ROCHESTER						0
						0
VISTA GROVE						
HERMOSA - HAVEN	08/11/98			221	287	508
VIVERO						
CARNELIAN - SUNSTONE	6/12/96			346	311	657
WARDMAN BULLOCK						
WILSON - GLENDORA	04/05/99	400	316			716
WHITE OAK						
JERSEY - ARROW	03/29/99	763	780			1,543
ARROW - SPRUCE	03/29/99	2,491	1,853			4,344
WHITTRAM						
ETIWANDA - HICKORY	04/05/99			1,834	1,885	3,719
WILSON						
CARNELIAN	4/23/96	3,065	2,705		99	5,869
HELLMAN - AMETHYST	3/11/97			796	1,128	1,924
AMETHYST						0
AMETHYST - ARCHIBALD	3/11/97			1,288	1,511	2,799
ARCHIBALD						0
ARCHIBALD - HERMOSA	3/12/97			2,017	2,205	4,222
HERMOSA						0
HERMOSA - HAVEN	3/12/97			2,184	1,989	4,173
HAVEN	3/12/90	4,237	2,137	1,727	3,033	11,134
HAVEN - CANISTEL	3/13/97			2,276	2,384	4,660
WOODRUFF						0
HIGHLAND - KENYON	10/23/95	1,058	204			1,262
						0
ZAPATA						0
WILSON - MANZANITA	3/2/94					225