EAST VALLEY CORRIDOR

SPECIFIC PLAN

FINAL
ENVIRONMENTAL IMPACT REPORT

County of San Bernardino
Office of Special Districts
County Service Area 110

OCTOBER 1988

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FINAL ENVIRONMENTAL IMPACT REPORT FOR

EAST VALLEY CORRIDOR SPECIFIC PLAN

Lead Agency:

County of San Bernardino
Land Management Department/Office of Planning
in cooperation with
County Service Area 110

Submitted by:

URS Consultants, Inc.
412 W. Hospitality Lane, Suite 208
San Bernardino, CA 92408

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1.0 EXECUTIVE SUMMARY

This document is the Final Environmental Impact Report (FEIR) for the East Valley Corridor Specific Plan. The County of San Bernardino, through County Service Area 110 (CSA-110), is the lead agency in the Plan's preparation and for the certification process of the Environmental Impact Report. The cities of Redlands and Loma Linda, and the County each have 4 members on the CSA-110 District Advisory Commission. The Property Owners Advisory Subcommittee and the Technical Advisory Committee provided input during the preparation of the Specific Plan.

The cities of Redlands and Loma Linda, acting as responsible agencies, and the County of San Bernardino, each held public hearings before their Environmental Review Committee concerning the content of the Draft Environmental Impact Report (EIR). Comments received from these committees and responses to these comments are included in Section 14.

In accordance with these comments and other comments received, revisions in the Draft EIR text were made. The deleted or revised text is slashed out and the new text is underlined and boldface.

As a result of these hearings and comments to the Draft EIR, the Specific Plan was revised to reduce growth and traffic impacts. These revisions and their impact on environmental issues are discussed in the Addendum included at the end of this document.

The East Valley Corridor Specific Plan's purpose is to plan for the large area of undeveloped land located along Interstate 10 in the Redlands-Loma Linda area so as to facilitate orderly and aesthetic industrial, commercial, and residential development. The objectives of the Plan are to provide a well-planned community in order to attract major businesses by ensuring high-quality development through design standards and guidelines.

The East Valley Corridor project area consists of approximately 4,350 acres adjacent to Interstate 10 (I-10) and State Route 30, generally between the cities of Redlands, Loma Linda, and San Bernardino. The existing land use of the area is almost 60 percent agricultural (mainly citrus groves) with a mixture of commercial/industrial uses generally located along I-10 and Redlands Boulevard. Residential uses are restricted to areas south of I-10, and total about 9 percent of the total land uses (see Table 8.6-1).

The East Valley Corridor Specific Plan Environmental Impact Report analyzes the potential environmental impacts of proposed development within the project area under the guidelines of the Specific Plan. The following issues were determined by the Initial Study to require analysis:

- Geology and Soils
- Air Quality
- Hydrology
- Biology

- Aesthetics - Noise and Visual
- Land Use
- Demographics
- Transportation
- Public Services
- Public Utilities
- Cultural Resources
- Energy
- Growth Inducement
- Cumulative Impacts

The environmental impact analyses were based on a comparison of the proposed development allowed by the Specific Plan and the most likely alternative as deemed in the Market Report by William C. Lawrence Company. Impacts were also determined by comparing the Specific Plan with existing conditions and the area's General Plans. Sections 5, 6, 7, and 8 present detailed information on growth inducement, cumulative impacts, alternatives, and the affected environment. A summary of the impacts and recommended mitigation measures is provided in Section 4. Most identified significant adverse impacts could be mitigated to a level of nonsignificance. The issues that cannot be mitigated to a level of nonsignificance are local and regional transportation, land use, and solid waste.

Several environmental concerns were determined to be insignificant at the project level, but are considered to be cumulatively significant on a regional level. These adverse cumulative impacts included air quality, land use, transportation, noise, energy, and solid waste.

2.0 PROJECT DESCRIPTION

This section is excerpted from information contained in the Forward and Division 2 of the East Valley Corridor Specific Plan.

2.1 PLAN BACKGROUND

The East Valley Corridor is the principal gateway to the communities of the East San Bernardino Valley, including San Bernardino, Redlands, Loma Linda, Colton, Grand Terrace, and Highland. The area is largely undeveloped, with over half of the planning area in agricultural production. In recent years, there has been increasing interest by property owners in developing the area. Based on its freeway and rail access, freedom from topographic and environmental constraints, large parcel sizes, and the economic growth within the San Bernardino-Riverside metropolitan area, property owners have considered it to be ideal for high quality commercial and industrial development. Such development has been constrained, however, by the lack of a backbone infrastructure of sufficient capacity to accommodate projected traffic, water, sewer, utility, and service needs. The cost of planning for the engineering, financing, and marketing needs of this type of development, as well as for land use and environmental concerns, was beyond the capability of individual owners or individual jurisdictions. As a result, several property owners initiated a cooperative study to be undertaken by San Bernardino County, the cities of Redlands and Loma Linda, and the property owners, to provide for such planning.

The concept of a cooperative planning and development study for the Interstate 10 (I-10) corridor area was originally considered by the cities of Loma Linda and Redlands, and the County of San Bernardino in 1980. At that time, the County Board of Supervisors budgeted money for the initial phase of the study, and a work program and Request for Proposal were prepared. However, subsequent budgetary cutbacks curtailed the study and a consultant was not selected.

A drawback of this early effort was the limitation of participation in the discussions to public entities. In October 1982, another meeting was held on the I-10 corridor concept which included about a dozen individuals owning or controlling substantial properties within the area. At that meeting, general interest and support was expressed for the concept of a joint, public-private, inter-jurisdictional effort involving planning, engineering, financing, and marketing for the area.

The concept was given a new impetus by the participation and support of key property owners whose interests would be affected by any outcome. However, since budgetary constraints have become even more stringent, it was clear at that meeting that any renewed effort would require financial support by the private sector. Those present expressed general willingness to provide reasonable financing, and requested that the County take the lead in coordinating the project with the two cities involved.

Further meetings were held throughout 1982 and 1983 to define the plan boundaries, the form of the final product of the study, and possible funding mechanisms. In December 1983, a mail survey of all property owners in the Corridor area was undertaken by the County to assess their interest in participating in the study. Based on the degree of support shown by property owners, various alternatives to implement a property owner financed study were investigated. These included voluntary contributions, a one-time service charge collected through a combination of improvement zone and assessment districts, and formation of a County Service Area (CSA). The establishment of a CSA was considered the most feasible alternative.

Hearings to consider formation of a CSA were held before the Local Agency Formation Committee, the County Board of Supervisors, and the City Councils of Loma Linda and Redlands in early 1984. On May 7, 1984, the Board of Supervisors adopted the resolution approving formation of CSA-110. In addition to the action taken to establish the CSA, the County and the two Cities entered into an agreement clarifying the role of each party. Of primary concern to the Cities was their approval of facilities to be constructed within their spheres of influence or city limits. The agreement stipulated that CSA-110 would neither construct, operate, nor maintain any capital improvement within the spheres of influence or boundaries of the Cities, except pursuant to prior written approval by the City Councils. CSA-110 could, however, levy a one-time service charge to finance the East Valley Corridor Study. The CSA also provides a mechanism for assessing property owners and developers in the area for infrastructure improvements. CSA-110 is the first such Special District in the State to overlay multiple jurisdictions.

In order to finance formation of CSA-110 and preparation of the Specific Plan, the Board of Supervisors established a one-time service charge to the property owners within the planning area. The service charge was to fund planning and preliminary facilities design necessary for services to be furnished within CSA-110. At the same time, the Board of Supervisors approved funding a portion of the study with Community Development Block Grant funds. The 12-member CSA-110 District Advisory Commission was also appointed at this hearing, with 4 members from each of the three jurisdictions, including 3 public agency members and 1 private property owner. A 15-member Property Owners Advisory Subcommittee was also established to provide input to CSA-110 staff during the plan preparation. For technical assistance, a Technical Advisory Committee was appointed of representatives from affected agencies, including the water districts, Caltrans, Norton Air Force Base, and engineering staff from the County and Cities.

The County, through CSA-110, took the role of lead agency in preparation of the Plan. County planning staff functioned as the project managers, while the County Office of Special Districts administered contracts with the consultants chosen to undertake the various components of the project.

In April 1985, five companies were selected to prepare a Land Use Plan Update, an Environmental Impact Report (EIR), a Preliminary Facilities Master Plan and Engineering Study, a Financing Program Study, and an

Economic Development Study for the project area. The companies selected included URS Corporation to do the Environmental Impact Report; William C. Lawrence Company to do the Economic Development (Marketing) portion; Metcalf & Eddy for the Engineering Study; and Sutro and Company, Incorporated, to prepare the Financing Program. The Land Use Plan Update portion of the study area was eventually undertaken by planning staff from the County, Loma Linda, and Redlands.

In April of 1986, the scope of the project was changed somewhat when it was determined that the Plan should be adopted by all three jurisdictions as a Specific Plan. This implementation procedure, in which the Plan is adopted as ordinance by the three entities, differed from the original concept of the Plan as a policy guideline for development. With this decision, development of the Specific Plan design and performance standards became a key component of the Land Use portion of the Plan.

Citizen participation was considered to be critical throughout development of the Specific Plan. Participation by property owners was obtained through direct consultations, meetings of the Property Owners Advisory Subcommittee, public input at advertised CSA-110 District Advisory Commission meetings, and in public hearings held throughout the adoption process. Additional public hearings were held before the Local Agency Formation Commission, the Airport Land Use Commission, the County Environmental Review Committee, Planning Commission and Board of Supervisors, Redlands Planning Commission and City Council, and Loma Linda Planning Commission and City Council. These meetings, which were advertised in local newspapers as well as through written notification to property owners, afforded repeated opportunities for residents and property owners to provide input into development of the Specific Plan.

2.2 PURPOSE OF THE SPECIFIC PLAN

The purpose of the East Valley Corridor Specific Plan is to plan for the large area of undeveloped land located along I-10 in the Redlands-Loma Linda area so as to facilitate future industrial, commercial and residential development in an orderly and aesthetic manner. The objectives of the Plan are to provide a well-planned community which will attract major businesses to the area in order to provide a job base for the East Valley and strengthen the local economy, while ensuring high-quality and environmentally responsive development through design guidelines and standards.

Division 2, Plan Foundation, of the East Valley Corridor Specific Plan, provides the basis for the land-use districts in the Specific Plan. The Plan's axiom states that "the intent of the EVCSP is to promote and facilitate aesthetically pleasing job and revenue-producing development that responds to physical, environmental, and economic opportunities and constraints".

The goals, policies, and objectives are listed in Division 2, Chapter 2 of the Specific Plan. The seven goals of the Specific Plan are listed below.

1. Develop the East Valley Corridor Specific Plan so as to promote and facilitate high-quality commercial, industrial and residential development within the Corridor area.

2. Simplify and streamline the development review process while maintaining consistency with adopted General Plans for the Corridor area.

3. Develop a Specific Plan that is responsive to physical and environmental constraints and opportunities.

4. The Specific Plan should provide for extension of public services in a logical and functional manner to minimize impacts on service purveyors while maximizing areas that can accommodate development in a timely manner.

5. Design a comprehensive, functional and efficient circulation system of sufficient capacity to accommodate projected traffic demands at all phases of development, which is consistent with regional master transportation plans.

6. Adopt energy-efficient transportation strategies to implement State and County goals for reduced energy consumption and improved air quality.

7. Promote high-quality development in the East Valley Corridor by protecting and enhancing existing amenities in the area, creating an identifiable community character, and adopting development standards and guidelines to ensure aesthetically pleasing design and maximum land use compatibility.

The policies, which are more explicit statements of intentions, and objectives, which are very specific measures, are detailed provisions related to the above goals. Please refer to the East Valley Corridor Specific Plan for a complete listing of the planning guidelines.

2.3 PLAN DESCRIPTION

2.3.1 Planning Area

The East Valley Corridor Specific Plan includes approximately 4,350 acres located in the southeastern portion of the San Bernardino Valley, adjacent to I-10 and State Route 30 and generally between the cities of Redlands, Loma Linda, and San Bernardino. The plan area includes portions of both Redlands and Loma Linda, as well as unincorporated area under the jurisdiction of San Bernardino County. The entire planning area is within the spheres of influence of Redlands and Loma Linda.

The Plan includes an irregularly shaped area bounded in general by the Santa Ana River Wash on the north; by Texas Street on the east, north of I-10; by Kansas Street on the east, south of I-10; by Barton Road on the south between Kansas and California Streets; by California Street on the west, south of Park Avenue; and by Mountain View Avenue on the west, north of I-10. The site also extends along a quarter mile strip on either side of Redlands Boulevard from California Street to San Timoteo Wash (see Figure 2-1).

Land use data indicate that over half (59%) of the project area is currently under agricultural production, with about 37 percent of the planning area planted in citrus. Other agricultural uses include field crops in the north, with some poultry, dairies and horse raising in the southern portion. Almost the entire area north of I-10 is in agricultural use, except for about 200 acres between Lugonia Avenue and I-10 on which recent commercial and office development has occurred.

The southern portion, which has better access to a system of collector streets and major arterials, is generally more developed than the north. Along with scattered single-family residences associated with the agricultural use in this area, there are several newer residential developments located along Redlands Boulevard, including single-family tracts, multiple-family projects, and mobile home parks.

Commercial uses are heavily developed along Redlands Boulevard, particularly around the Alabama and Tennessee/I-10 interchanges in Redlands and in the panhandle of the project area west of Mountain View Avenue in Loma Linda. Light industrial uses, including mini-storage and light manufacturing, are intermixed with commercial in these areas, with some industrial extending south from I-10 along Alabama Street.

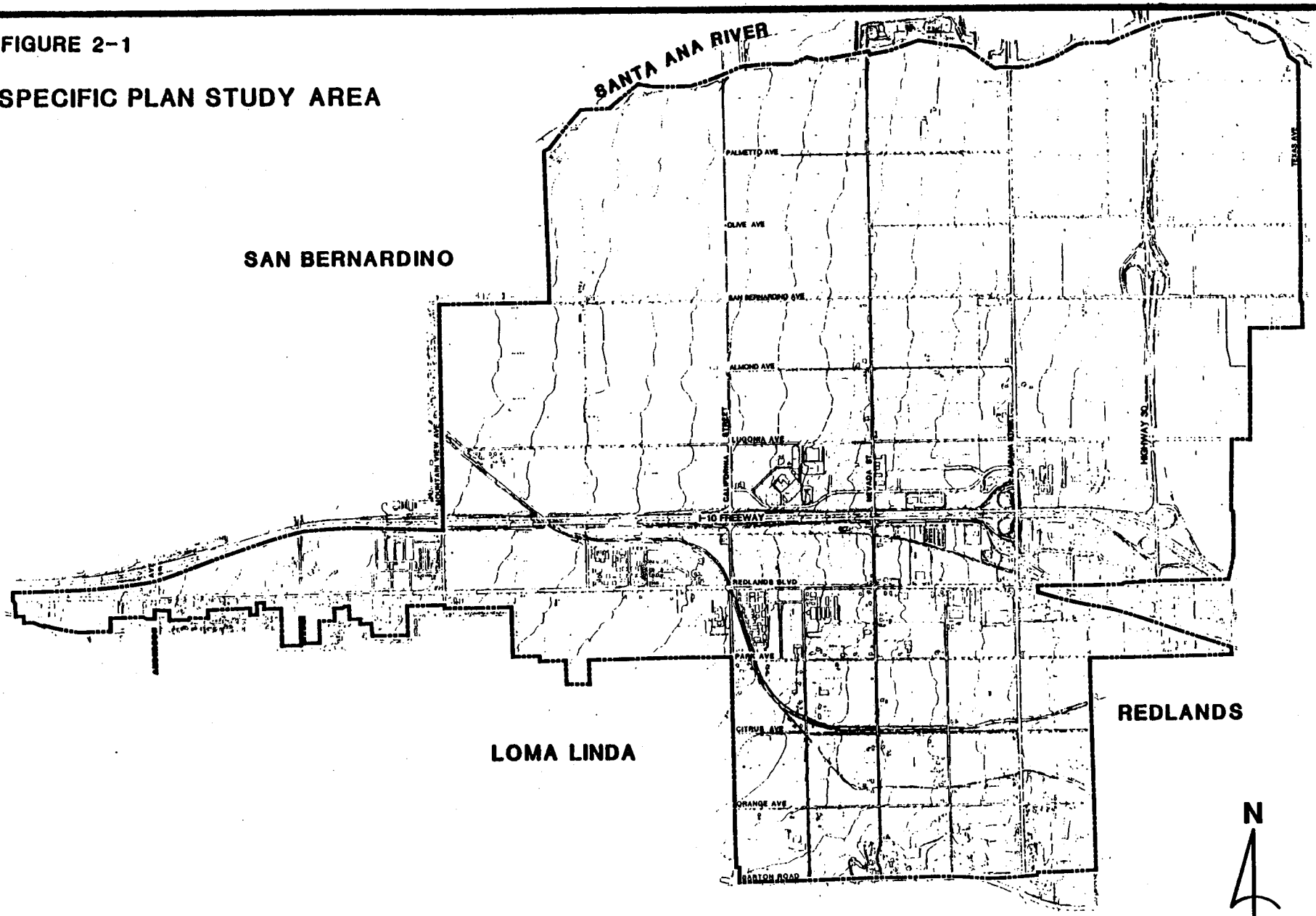
Public uses occupy only about one percent of the total project area, and include a school, a regional post office facility, Redlands' City yard, the County Museum, and the Asistencia Mission. Public facilities adjacent to the planning area which will affect the Specific Plan include the City of Redlands' sewage treatment plant and landfill, abutting the project area to the north between Nevada and Alabama streets; the Edison power plant northwest of the planning area; and Norton Air Force Base, located north of the study area across the Santa Ana River Wash.

2.3.2 Specific Plan Summary

The East Valley Corridor Specific Plan has been prepared pursuant to the provisions of Sections 65450 through 65453 of the California Government Code. The Plan will be adopted by local governments to provide a guide for the growth and development of the East Valley Corridor. Portions of the Plan are ordinances of the County of San Bernardino, the City of Redlands, and the City of Loma Linda. It is intended that the Specific Plan, through its maps and text, shall incorporate nearly all the regulations and development standards affecting the use of land within the Plan area, and reflect the

FIGURE 2-1

SPECIFIC PLAN STUDY AREA



EAST VALLEY CORRIDOR

CSA 110, COUNTY OF SAN BERNARDINO

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interests and concerns of the community through these standards and regulations. Among the subjects addressed by the Specific Plan are the locations of various land uses; development standards for buildings and facilities; regulation of land use in areas affected by safety hazards; location and capacity of circulation/transportation systems and facilities; standards for building and population density; location and capacity of water supply, sewerage and stormwater drainage facilities; proposed phasing of infrastructure improvements; and design guidelines and requirements for the planning area as a whole as well as for specific development sites.

The Specific Plan's Land Use District Map shows the classification and boundaries of proposed land use districts within the project area. The land use districts were established to carry out the provisions of the Specific Plan. These designated land uses are the major component of the Specific Plan and will provide the basis for the environmental analysis in this EIR.

Table 2-1 lists the land use districts and their acreages and percent of the total project area as established by the Specific Plan. Figure 2-2 shows the Specific Plan's land use designations.

Another important element of the Specific Plan is the infrastructure phasing plan. This part of the Specific Plan discusses the proposed phasing of infrastructure improvements needed to support development within the project area. Chapter 6 details the development phases and lists estimated costs of required improvements.

The appendices to the Specific Plan include a series of maps and the following documents under separate cover: the Environmental Impact Report; the Circulation Report; the Engineering Report; the Market Feasibility Study and Absorption Potential Report; and the Financing Report.

2.4 INTENDED USE OF THE SPECIFIC PLAN EIR

The adoption of a Specific Plan constitutes a project under the California Environmental Quality Act (CEQA). Although the East Valley Corridor Specific Plan itself will not result in environmental impacts, impacts will be produced from the land use and developments proposed under its planning direction. The East Valley Corridor Specific Plan has therefore been assessed for potential environmental impacts by this EIR, prepared in accordance with CEQA requirements and environmental procedures of the County of San Bernardino and the cities of Loma Linda and Redlands. The County of San Bernardino, Land Management Department, Office of Planning, is the lead agency and the County Board of Supervisors will certify the EIR, with the cities of Loma Linda and Redlands acting as responsible agencies.

A program EIR is prepared on a series of actions that are characterized as one large project. The East Valley Corridor Specific Plan EIR, with its plans for development, meets this definition. The Specific Plan is an issuance of plans to govern the conduct of a continuing program and is a regulatory authority for individual

Table 2-1

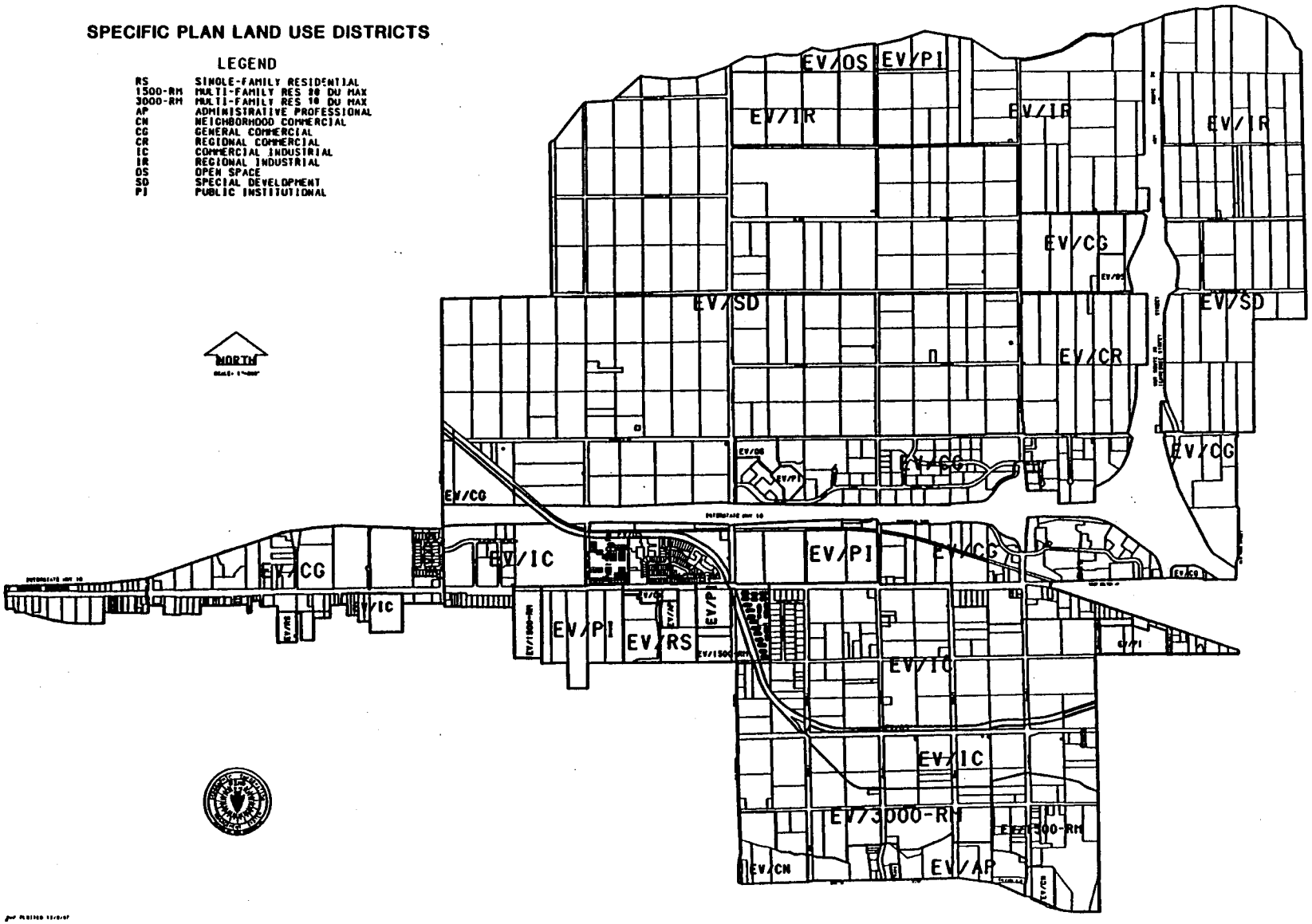
SPECIFIC PLAN'S LAND USE DESIGNATIONS

	Land Use District	*Acres*	*Percent of Total*
RS	Single-Family Residential	63	1.5
3000-RM	Multi-Family Residential (10 dwelling units per acre)	151	3.5
1500-RM	Multi-Family Residential (20 dwelling units per acre)	149	3.5
AP	Administrative Professional	62	1.5
CN	Neighborhood Commercial	39	1.0
CG	General Commercial	637	14.5
CR	Regional Commercial	132	3.0
IC	Commercial Industrial	456	10.5
IR	Regional Industrial	529	12.2
OS	Open Space	57	1.4
SD	Special Development	1,438	33.0
PI	Public Institutional	132	3.0
	Subtotal:	3,845	
	Roads/Infrastructure	505	11.6
	TOTAL Project Area:	4,350	

Source: East Valley Corridor Specific Plan

FIGURE 2-2

SPECIFIC PLAN LAND USE DISTRICTS



activities having generally similar environmental effects and mitigation measures.

Utilization of the East Valley Corridor Specific Plan Program EIR enables the County (CSA-110) to characterize the overall plan as the project being approved. This provides an opportunity to prepare more complete analyses of impacts and alternatives, ensures a detailed cumulative analysis and allows consideration of broad policy alternatives and mitigation measures prior to development.

Use of the East Valley Corridor Specific Plan Program EIR as the base environmental document for subsequent development projects will simplify and avoid duplication in preparing additional environmental documents by providing the following:

1. The basis in an Initial Study for determining whether a later activity may have any significant effects;

2. A reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole; and

3. Information to focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before.

In order to determine whether additional environmental documents will be required for future specific developments within the East Valley Corridor, this program EIR must be examined. The County and cities would then determine which of the following actions are required by CEQA.

1. If a later activity would have effects that were not analyzed in this program EIR, a new Initial Study would need to be prepared leading to either a supplemental focused EIR or a Negative Declaration.

2. If no new effects would occur or no new mitigation measures would be required, the County or cities can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

3. The County/cities shall incorporate feasible mitigation measures and alternatives developed in this program EIR into subsequent actions in the program.

4. Where the subsequent activities involve site-specific operations, the County/cities should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

In general, the East Valley Corridor Specific Plan EIR was prepared to analyze and provide mitigation measures to potential adverse environmental impacts created by proposed development. Documents for subsequent development should reference this program EIR and most projects should require only a Negative Declaration or a supplemental focused EIR for environmental approval. All projects will be required to adhere to proposed mitigation measures in this EIR and will require site-specific information on geology, hydrology, circulation, cultural resources, infrastructure requirements, and socioeconomic effects.

3.0 ENVIRONMENTAL SETTING

3.1 PROJECT AREA

The East Valley Corridor is located in southwestern San Bernardino County in southern California. The project area is part of the South Coast Basin and is located approximately 50 miles east of downtown Los Angeles, 45 miles northeast of Anaheim-Santa Ana, and 10 miles northeast of Riverside (see Figure 3-1).

The project area is situated in the eastern half of the San Bernardino Valley, hence the name East Valley Corridor. The San Bernardino Valley is part of the upper Santa Ana River Basin, and the river forms the northern border of the Specific Plan area. The San Bernardino Mountains rise up to 10,000 feet to the north and east of the project area, the Box Springs Hills lie to the south, and the open western half of the San Bernardino Valley is to the west.

The East Valley Corridor encompasses 4,350 acres and politically lies within the city limits of Redlands and Loma Linda and includes unincorporated lands of the County of San Bernardino. The entire planning area is within the spheres of influence of Redlands and Loma Linda (see Figure 3-2).

The major transportation corridor in the region is Interstate 10 (I-10), which traverses west to east directly through the project area. Other major roads in the project are State Highway 30, Alabama Street, San Bernardino Avenue, California Street, and Redlands Boulevard.

This region of the San Bernardino Valley has historically been a rural, agricultural area mainly supported by the citrus industry. The existing land uses are still principally agricultural with 59 percent of the 4,350 acres utilized for agriculture; 37 percent (over 1,600 acres) is planted with orange groves. Areas along I-10 and Redlands Boulevard are rapidly changing to office and retail uses. The project area, surrounded by the growing cities of Redlands, Loma Linda, and San Bernardino, is in a prime location for industrial, commercial, and residential development.

3.2 REGIONAL SETTING

The East Valley Corridor is located in San Bernardino County, one of the fastest growing areas in the nation. The County has abundant inexpensive land available for business and residential development, making it an attractive area for people living in Los Angeles and Orange counties to relocate to.

The population in the immediate vicinity of the East Valley Corridor Specific Plan area grew at an average annual rate of 2.1 percent during the 1970s, increasing to 2.5 percent in the 1980s. The County of San Bernardino has experienced an overall annual growth rate of 3.8 percent since 1980. The Southern California Association of Governments (SCAG) Draft City Projections (1987), showed an average

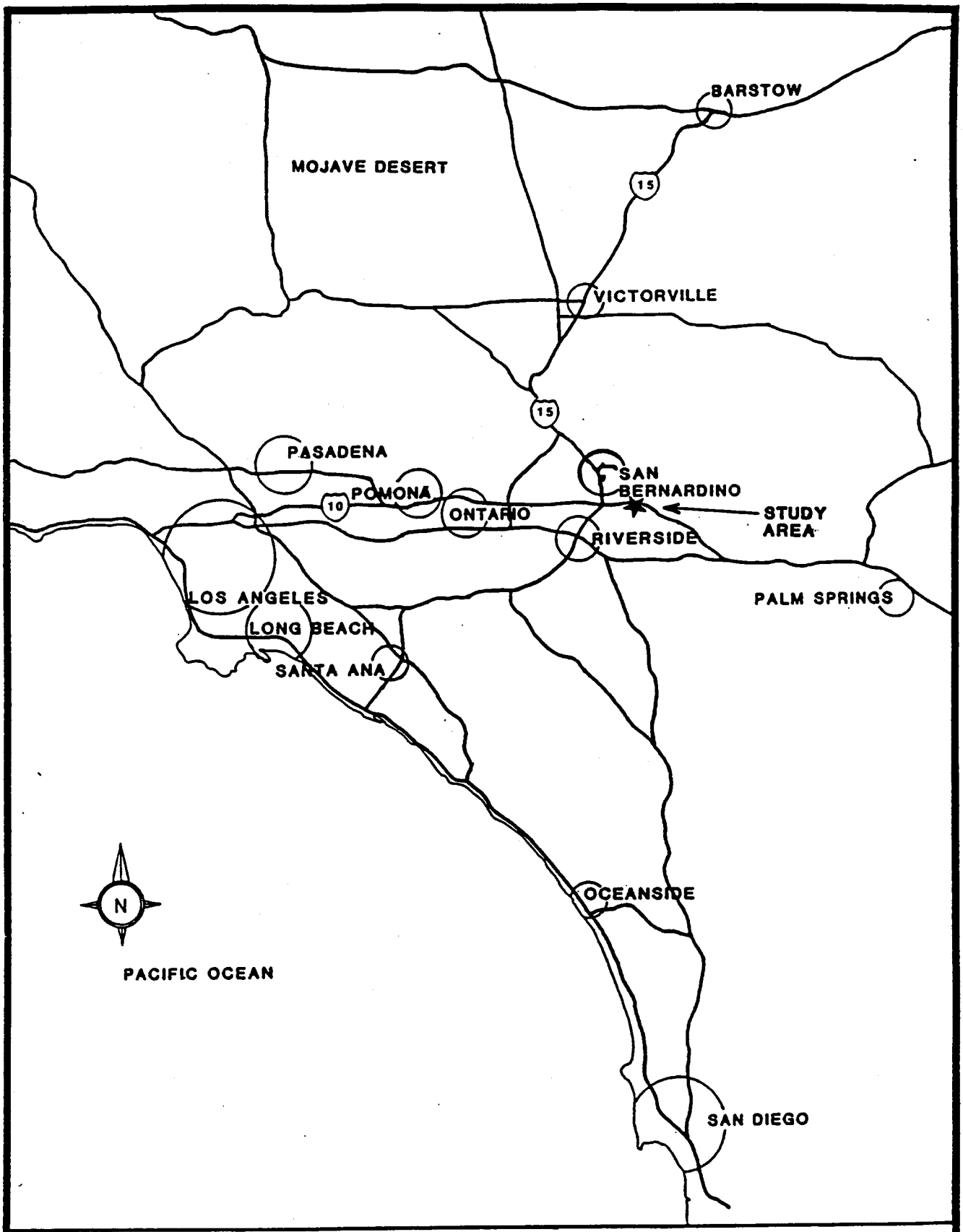


FIGURE 3-1

REGIONAL LOCATION

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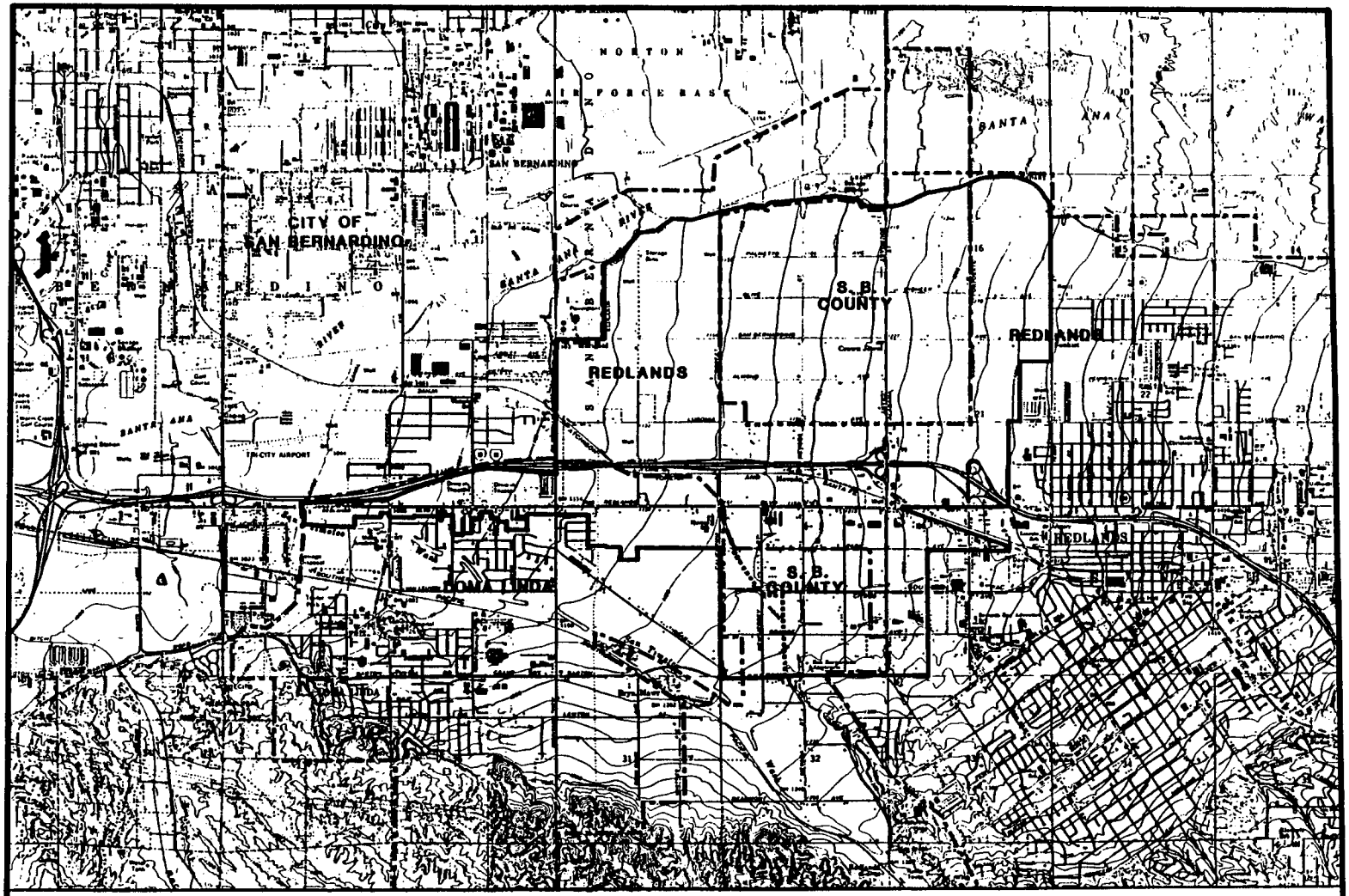

FIGURE 3-2

VICINITY MAP

PROJECT BOUNDARY

CITY AND COUNTY BOUNDARIES

LOMA LINDA SPHERE OF INFLUENCE

0 1/4 1/2 1 MILE

SCALE

N

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annual growth rate of 2.8 percent for Loma Linda, 1.8 percent for Redlands, 3.0 percent for San Bernardino, and 3.7 percent for the County of San Bernardino. These predicted growth rates may be slightly lower than the rapid growth that is actually occurring.

The high growth rate forecast for population as well as the labor force is one of the area's strengths in terms of the industrial, retail, and office development proposed by the East Valley Corridor Specific Plan. Other factors contributing to the favorable development potential are low land and lease values; excellent highway, rail, and air access to local, regional, and national markets; and proximity to local redevelopment areas and local amenities.

The major constraint to the development of the East Valley Corridor is the costly infrastructure improvements required to provide adequate roads, water supply, sewage collection, and stormwater drainage.

Regionally, the project area will be under the planning direction of the East Valley Corridor Specific Plan proposed for adoption by the County of San Bernardino, and the cities of Loma Linda and Redlands. The East Valley Corridor is also under the regional planning jurisdictions of numerous State and County agencies which are listed below with their area of regulatory responsibility.

1. California Department of Transportation (Caltrans) - State roadways
2. California Regional Water Quality Control Board (RWQCB)- Surface water and groundwater quality
3. City of Loma Linda - Local water supply, sewerage, site-specific drainage plans, and road improvement plans
4. City of Redlands - Local water supply, sewerage, wastewater treatment, site-specific drainage plans, and street improvement plans
5. City of San Bernardino - Wastewater treatment facility
6. San Bernardino County Flood Control District (SBCFCD)- Major county flood control facilities
7. San Bernardino County Surveyor - Site-specific drainage plans and road improvement plans
8. San Bernardino Valley Municipal Water District (SBVMWD)- Regional water supply (State Water Project)
9. Santa Ana Watershed Project Authority (SAWPA) - Water quality management in Santa Ana River Watershed
10. South Coast Air Quality Management District (SCAQMD) - Air quality
11. State Department of Health Services - Water quality of potable water and treated wastewater
12. U.S. Army Corps of Engineers (COE) - Major flood control facilities including the Santa Ana River, San Timoteo Creek, and Mission Zanja

4.0 SUMMARY OF ENVIRONMENTAL IMPACT REPORT

4.1 SIGNIFICANT IMPACTS THAT CAN BE MITIGATED

Significant environmental impacts associated with the proposed project have been determined as a result of environmental analysis conducted for each natural and human resource. The existing conditions, project impacts, and mitigation measures for each resource area are addressed in Section 8.

Table 4-1 summarizes all of the identified significant impacts for which mitigation measures are recommended to reduce the impacts to a level of nonsignificance. Impacts that are anticipated as a result of future development projects in the proposed project area are also listed. Although it was not feasible to determine the significance of such development without site-specific proposals, the potential for significant impacts has been identified and mitigations have been recommended.

4.2 SIGNIFICANT IMPACTS THAT CANNOT BE MITIGATED

Significant impacts which mitigation measures could not reduce to a level of nonsignificance are regional and local transportation, land use, and solid waste.

The proposed project will incrementally increase traffic on the regional highways (I-10 and SR-30), whose average daily traffic will be in excess of proposed capacity by 2005 according to Caltrans. The proposed circulation network will provide less than LOS "C" at specific intersections within the project area.

The elimination of existing agriculture on prime farmland and its unique rural environment is also considered an unmitigable impact on land use. One other impact that ~~will~~ may be significant in the near future is the problem of solid waste disposal within the San Bernardino Valley. At present, no definite plans to solve the County's future disposal problem have been approved.

The proposed Specific Plan will also produce a number of significant cumulative impacts. Cumulative impacts are effects that are not significant (or have been mitigated to a level of non-significance) on the local or project level, but when added to other regional projects' impacts, may be considered cumulatively significant. The impacts determined to be cumulatively significant and unmitigable are related to air quality, transportation, land use, noise, energy, and solid waste. These cumulative impacts are discussed in Section 6.

4.3 SUMMARY OF MITIGATION MEASURES

Mitigation measures that have been recommended to reduce the level of impacts associated with the proposed project are shown in Table 4-2. The mitigation measures are listed by issue and are referenced to the page in Section 8 where they are described in detail. Included in the

table are those mitigations for reducing each significant impact to a level of nonsignificance. Mitigation measures that have been suggested to reduce the level of impact from future development projects are also found in Section 8 in detail.

Table 4-1

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS

Issue	*Significant Impacts*	*Mitigable to a Level of Nonsignificance*
Geology and Soils	Water and wind erosion during construction	Yes
	Possible surface ruptures on faults in western part of project	Yes
	Potential liquefaction hazard over western third of project area	Yes
Air Quality	Proposed development would increase energy consumption, vehicular traffic, and construction activities resulting in increased air pollution	Yes
	Incremental air emissions related to project development may cumulatively impact regional air quality	No
Hydrology	Increased stormwater flows likely to produce local flooding without major improvements	Yes
	Southwest portion of project area within 100-year floodplain of San Timoteo Creek	Yes
	Most areas of project south of I-10 within floodplain of Mission Zanja	Yes
Noise	Increased noise levels along I-10	Yes
	Increased noise levels along proposed major and secondary highways	Yes

Table 4-1, Continued, Page 2 of 4

Issue	*Significant Impacts*	*Mitigable to a Level of Nonsignificance*
Noise (continued)		
	Noise impacts from Norton AFB	Yes
	Cumulative noise impacts on overall environment	No
Visual Resources	Visual impacts throughout area as urban development replaces agricultural setting	Yes
Land Use	Eliminates existing prime agricultural area producing local, regional, and cumulative impacts on agriculture	No
	Proposed industrial development may pose hazards to human health with potential of emissions of toxic fumes and toxic spills	Yes
Transportation	Projected increase in vehicle mileage would decrease service levels of existing roads	Yes
	Three intersections of the proposed circulation network have less than LOS "C"	No
	Proposed development would incrementally and cumulatively increase regional traffic	No
Fire Protection	Fire protection for proposed development within Loma Linda would be inadequate without additional stations, equipment, and personnel	Yes
Law Enforcement	Law enforcement would be inadequate without additional officers/equipment	Yes

Table 4-1, Continued, Page 3 of 4

Issue	*Significant Impacts*	*Mitigable to a Level of Nonsignificance*
Schools	Additional students associated with proposed residential development would adversely impact local schools which are currently near or above capacity	Yes
Parks and Recreation	Inadequate open and park space is provided in the Specific Plan to meet population growth	Yes
Water Supply	Existing water supplies and distribution systems in the undeveloped portion of the project within the jurisdiction of Redlands are not adequate to meet needs of new development	Yes
Wastewater	Existing wastewater treatment capacity and collection system within the undeveloped portion of the project in Redlands are not adequate to meet proposed development	Yes
	Loma Linda's proposed wastewater needs would require additional capacity allowance and possibly expansion of the San Bernardino Wastewater Treatment Facility	Yes
Solid Waste	Solid waste disposal site used by Loma Linda may reach capacity by 1995	No
	Incremental increase in solid waste may cumulatively impact local and regional landfill capacities	No
Cultural Resources	Potential destruction or disturbance of unlisted prehistoric or historic archaeological properties by construction activities	Yes

Table 4-1, Continued, Page 4 of 4

Issue	*Significant Impacts*	*Mitigable to a Level of Nonsignificance*
Cultural Resources (continued)	Possible demolition or alteration of historical buildings and properties	Yes
	Visual impacts of development may alter surrounding character of historical buildings or properties	Yes
Energy	Project development will consume nonrenewable energy resources which may produce a cumulative impact on regional energy resources	No

Table 4-2

PROPOSED MITIGATION MEASURES

Issue	*Mitigation Measures*	*Page Number*
Geology and Soils	Preparation of a geotechnical investigation for site-specific development to address soil characteristics, water table fluctuation, and liquefaction potential as deemed necessary by the development review process	45
	Implementation of an erosion control plan and specific construction-related mitigations appropriate to each site as required by the review agencies	
Air Quality	To reduce construction-related emissions, the following mitigation measures are recommended: (1) control dust by regular water spraying; (2) maintain equipment engines in proper tune; (3) discontinue construction during second stage smog episodes	52
	Implement land use measures in Specific Plan to reduce number and length of trips	
	Maximize employment opportunities to balance houses-to-jobs ratio and reduce commuting	
	Provide alternative travel modes (bus routes and turn-outs, and bicycle and pedestrian circulation system)	
	Adopt energy-efficient transportation strategies to implement State and County goals (car pools, ridesharing, and staggered work hours)	
	Implement all State-required energy conservation measures on new buildings and residences	
	Promote establishment of non-polluting industries	

Table 4-2, Continued, Page 2 of 5

Issue	*Mitigation Measures*	*Page Number*
Hydrology	Construction of stormwater pipelines as recommended in Specific Plan	60
	Channel improvements to increase capacity of Mission Zanja and Morey Arroyo	
	Specific-site reviews for on and offsite drainage plans as required by the review agencies	
Noise	Implementation of Safety-Noise Overlay District to those areas with CNEL of 65 dB or greater	75
	Requirement of acoustical reports and mitigation measures in areas within Noise Overlay District	
	Approval of acceptable land uses within high noise level areas along highways and under Norton AFB flight paths	
	Requirements of interior noise levels in residences not to exceed 45 dB CNEL	
	Implementation of site-specific mitigation measures when appropriate including setbacks, berming, block walls, landscaping, and sound-proofing	
Visual Resources	Implementation of Specific Plan's design standards to ensure positive views of the project area including screening with fences, walls, or landscaping of all loading areas, equipment, outside storage, and rooftop equipment	87
	Adherence to all landscaping guidelines for roadways and development sites including usage of large palms	
	Adherence to all architectural standards as proposed by the Specific Plan	

Table 4-2, Continued, Page 3 of 5

Issue	*Mitigation Measures*	*Page Number*
Land Use	Viable agricultural lands are to be preserved as long as feasible while the area transitions to more intensive uses	98
	Buffer areas of light commercial and setbacks are recommended between industrial and residential areas	
Transportation	Implementation of phased circulation plan within Specific Plan area to accommodate increase in traffic on both a local and regional level	109
	Implementation of transportation system management improvements as required in order to provide LOS "C" at most roads and intersections	
	Proposed land uses would promote local employment and reduce commuter and regional travel	
	Specific site review for each development assessing projected traffic volume, parking, driveways, streets improvements, and right-of-way dedication	
Fire Protection	Increase funding in Loma Linda for fire protection personnel and equipment as necessary to provide adequate protection to new development	118
	Annual review by Redlands and Loma Linda to determine immediate and future protection needs of development within project area	
	Construction of fire station at San Bernardino Avenue and Nevada Street when needed to provide fire protection to new development	

Table 4-2, Continued, Page 4 of 5

Issue	*Mitigation Measures*	*Page Number*
Law Enforcement	Annual review and adequate funding for additional law enforcement personnel and equipment as necessary to provide adequate protection to new development	119
Schools	Potential new school sites within or near the project area should be coordinated with the Redlands School District	123
	For temporary alleviation of over-crowding, portable classrooms, reassessment of school boundaries, and year-round schools are possible	
	Funds from new development within the East Valley Corridor should help alleviate funding shortages	
Parks and Recreation	Provide an additional 10 to 15 acres for a future neighborhood park south of I-10 to serve the proposed multi-family areas	124
	Promote development of a neighborhood park on San Bernardino Avenue and Tennessee Street site, or the development of a park south of the existing wastewater treatment facility between California and Alabama streets	
	Cooperate with recreational agencies regarding development of trail systems along Mission Zanja and Santa Ana River and future expansion of County Museum	
Water Supply	To increase water supply, it is recommended to rehabilitate Well 31-A, construct additional wells, or recondition existing agricultural wells	134

Table 4-2, Continued, Page 5 of 5

Issue	*Mitigation Measures*	*Page Number*
Water Supply (Continued)	Coordinate projected water demands within the project area with Redlands' and Loma Linda's existing and planned water supply	134
	Implement phased construction of water facilities recommended in Specific Plan and use of reclaimed water	
	Promote water conservation measures	
	Promote low water consuming landscaping and irrigation systems	
Wastewater	Implement phased construction of wastewater collection system as recommended in the Specific Plan	146
	Coordinate projected wastewater flows within the project area with capacity and planned expansion of the Redlands and San Bernardino Wastewater Treatment Plants	
Solid Waste	Promote recycling to reduce solid waste	151
	Coordinate with County plans to provide expansion of San Timoteo Landfill or to open a new landfill to serve the San Bernardino Valley	
Cultural Resources	Implementation of the Preservation-Historical/Archaeological Overlay District as listed in the Specific Plan to assist in the identification and preservation of significant cultural resources	160
	Site-specific reconnaissance of new development by a qualified professional archaeologist when deemed necessary by the reviewing agencies	

5.0 GROWTH INDUCEMENT

The East Valley Corridor Specific Plan has been prepared to plan for future industrial, commercial, and residential development to occur in an orderly and aesthetic manner. The Specific Plan consolidates the planning efforts of the three responsible jurisdictions to ensure uniform, high-quality development, through design guidelines and standards, within the unique project area. The Plan's implementation will inhibit uncontrolled and unregulated urban sprawl into one of the last areas of citrus groves on the valley floor.

The Specific Plan, with its intent to promote and facilitate aesthetically pleasing employment- and revenue-producing development, is growth-inducing compared to the existing conditions. However, the Specific Plan's promotion of employment-producing development is intended to conform with the SCAG-82 directive to balance jobs and housing within the housing-rich East Valley region.

Based on proposed residential acreages, the Specific Plan is estimated to increase the population of the project area by 20,080 by the year 2028. This relates to an annual average growth rate of 2.5 percent. SCAG-82 Modified predicted a 2.2 percent growth rate for the East Valley RSA between 1984 and 2000, dropping to 1.4 percent from 2000 to 2010. SCAG-87 Draft Baseline Projection forecasts a 3.3 percent growth rate through 2010.

A comparison of the expected increase in population between the Specific Plan and the market-driven alternative is shown on Table 5-1. The Specific Plan projects a buildout population of 3,256 fewer people than the alternative. The market-driven alternative's expected population increase is estimated to be 16 percent greater than under the Specific Plan. A major difference between the two plans is that the Specific Plan will not reach buildout until 2028, with an average annual growth rate of 2.5 percent, while the General Plan expects buildout by 2012 with an average growth rate of 4.2 percent. Therefore, the Specific Plan, while inducing growth in a generally agricultural and undeveloped area, will promote a slower growth rate that is in line with SCAG projections and will result in a slightly less population total than the market-driven alternative.

The Specific Plan predicts a total of 7,725 additional dwelling units by the year 2028 with a annual average growth rate of 2.5 percent. SCAG-82 Modified estimated a housing growth rate for the East Valley RSA at 2.7 percent through 2000, lowering to 1.7 percent for the period 2000 to 2010. The draft SCAG-87 report forecasts a 3.83 percent housing growth rate through 2010. The Specific Plan, therefore, appears to be generally consistent with SCAG, being 9 percent higher than SCAG-82 but 35 percent lower than SCAG-87.

The market-driven alternative projects developing 8,975 dwelling units by 2012 for an average growth of 4.2 percent. This growth rate is 82 percent greater than SCAG-82 Modified and about 10 percent higher than SCAG-87. Again, in comparison, the Specific Plan allows 1,250 fewer dwelling units and a growth rate that is 60 percent of the alternative.

Table 5-1

PROJECTED POPULATION AND DWELLING UNITS

	Increase Based on Specific Plan (proposed)	*Increase Based on Market-Driven Alternative (existing)*	*Specific Plan Compared to Alternative*
POPULATION			
1987-2000	8,355	17,862	- 9,507
2000-2010	4,190	4,562	- 372
2010-2028	7,535	912	+ 6,623
TOTAL:	20,080	23,336	- 3,256
DWELLING UNITS			
1987-2000	3,215	6,870	- 3,655
2000-2010	1,612	1,755	- 143
2010-2028	2,898	350	+ 2,548
TOTAL:	7,725	8,975	- 1,250

An additional growth-inducing element of the Specific Plan is the estimated creation of over 90,000 jobs by the year 2028 (Market Feasibility Study, William C. Lawrence Co.). According to SCAG studies and conceptually, this job growth should aid the current housing-population to employment imbalance by inducing the regional population to take local jobs rather than commuting. However, the possibility exists that the new jobs may simply entice more outside residents to move into the local area for the newly created jobs at a faster rate than expected.

Growth is expected and planned for this area in the existing General Plan. Adoption of the Specific Plan will reduce the long-term area growth and provide an environmentally superior alternative to the present growth projections. This will result in a long-term reduction on demand for services and population density.

6.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY AND CUMULATIVE IMPACTS

The intent of the East Valley Corridor Specific Plan is to promote and facilitate aesthetically pleasing job and revenue-producing development that responds to physical, environmental, and economical opportunities and constraints. The concept and guidelines of the Specific Plan are for the purpose of limiting haphazard and unsightly urban sprawl that is built with only short-term and very localized designs. By promoting phased development with strict land use, infrastructure, architectural, and landscaping policies, the Specific Plan will inherently protect and enhance the long-term productivity of the project area.

As is the case with any plan that provides policy for the development of largely agricultural land, impacts to the environment are unavoidable. While most environmental impacts are local and mitigated to a level of non-significance, some of these same effects may incrementally increase regional impacts. These incremental impacts may be cumulatively significant when added to existing conditions or to other proposed development. The development proposed within the East Valley Corridor will produce significant cumulative impacts on air quality, land use, transportation, schools, noise, energy, and solid waste.

The project's designated land uses and local mitigation measures are consistent with the County's and cities General Plan's policies and the Air Quality Management Plan. However, the unavoidable increase in air pollutants produced by expected development will incrementally add to the regional amount of air pollutants within the South Coast Air Basin (SCAB). Since SCAB is a nonattainment area, the additional air pollution produced within the project area is considered cumulatively significant.

The project's cumulative impacts on land use pertain to the loss of prime agricultural land and the potential usage, production, and storage of hazardous materials.

The Specific Plan is an industrial/commercial development plan, in an area with abundant, affordable housing and with an imbalance of too many homes and not enough jobs. The East Valley Corridor will be the only area of this magnitude to be set aside specifically for high employment industrial parks and commercial centers within the County's East Valley planning region and within the cities of Redlands and Loma Linda.

The City of San Bernardino has three large commercial/industrial areas located within 2 miles west of the project area. These redevelopment projects, Southeast Industrial Park, Tri-City, and South Valle, consist of 1,440 acres of which approximately 80 percent is already developed or in the planning process. Land uses within these areas are composed of office complexes, restaurants, warehouse stores, light industry, and other commercial uses. A complete market feasibility and absorption potential analysis is presented in the Marketing Report by William C. Lawrence Company. Their conclusions were utilized in

developing the Specific Plan's land use designations and proposed phasing of development to meet expected absorption. From this report, it is concluded that the project is economically feasible and would create no adverse cumulative impacts to industrial/commercial development in the region.

The Specific Plan would also allow approximately 7,725 new dwelling units at maximum buildout. However, only 363 acres or 9.5 percent are designated exclusively for residential uses. Within the Special Development districts, 20 percent or 250 acres with a maximum of 5,000 new dwelling units would be allowed. The maximum number of new dwelling units in the Special Development District is not anticipated to build out due to more favored residential locations already in existence and planned to be developed in such areas as East Highlands, Mentone, and Yucaipa. Also, Proposition N further restricts new housing starts within Redlands. Therefore, the potential residential units allowed under the Specific Plan is not expected to impact regional housing development.

Increases in traffic related to development in the East Valley Corridor will impact the regional transportation network. Caltrans has forecast that both I-10 and State Route 30 will operate at level of service "E" by 2005 and level of service "D" by 2002 respectively, despite 2 additional lanes for each highway. The traffic associated with the Specific Plan development will incrementally add to this congestion and is therefore considered a significant cumulative impact.

~~The schools that would serve students within the project area are either at or over their designated operating capacities. The increased demand of new students within the project area may be offset in the immediate future with specific mitigation measures, but will add to the rapidly increasing enrollments throughout the district.~~

Urban development of the predominantly agricultural area will increase ambient noise levels. Mitigation measures will protect workers and residents from high locally produced noise levels. This increase in noise will produce cumulatively, an unavoidable significant impact.

Additional energy consumption is inherent with project development. The depletion of nonrenewable natural resources is insignificant on the project level, but when added to other projects and existing urbanization, is determined to also be a cumulatively significant impact.

The issue of solid waste disposal within the San Bernardino Valley is presently unresolved. Any increase in solid waste production must be described as being an adverse cumulative impact on the dwindling landfill capacity within the County.

The cumulative impacts associated with the Specific Plan, while significant, are less of an impact on the environment than the market-driven alternative (described in Section 7), which is deemed to occur without the Plan.

7.0 ALTERNATIVES

The California Environmental Quality Act (CEQA) requires a discussion of feasible project alternatives that will meet the project's objectives. In addition, one of the alternatives evaluated must address the "no project" alternative. The following alternatives are evaluated in this section:

- Proposed Specific Plan (high growth)
- Proposed Specific Plan (low growth)
- No Project (high growth)
- No Project (low growth)
- Plan with residential emphasis
- Preservation of existing agriculture north of Pioneer Street.

The first four alternatives were described in the "Market Feasibility and Absorption Potential Study" by William C. Lawrence Company. Tables 7-1 and 7-2 list the projected land uses and population increases related to these alternatives.

It should also be mentioned that the draft Specific Plan is the result of evaluating many different development scenarios by the CSA-110 District Advisory Committee, the Property Owners Advisory Committee, and the Technical Advisory Committee over a period of 3 years.

7.1 PROPOSED SPECIFIC PLAN (High Growth)

This scenario is based on the proposed Specific Plan assuming high absorption potential market conditions. It is considered the most likely alternative by the economic consultant and therefore was evaluated throughout this EIR as the "project". The environmental impacts associated with the Specific Plan are summarized in Section 4 and discussed in detail in Section 8.

7.2 PROPOSED SPECIFIC PLAN (Low Growth)

This alternative assumes that development occurs under the Specific Plan with low absorption market conditions. Due to the low development rate assumed, buildout of this alternative does not occur until 2060. Therefore, population, housing, and employment growth rates are very slow and would ultimately be slightly less than the project. This would be a positive impact with regard to population but a significant adverse impact on employment.

This alternative would affect the environment on a slight to moderate level due to its slow growth rate and adherence to policies and standards established in the Specific Plan. Of the development alternatives, this scenario produces the least impacts to the environment.

Table 7-1

EAST VALLEY CORRIDOR PROJECT
ALTERNATIVE BUILDOUT SCENARIOS

Year of Buildout	No Project Market Based Phasing				Specific Plan Based Phasing			
	2029 Low Growth		2012 High Growth		2060 Low Growth		Proposed Project 2028 High Growth	
Distribution of Land Use Type	Acres	% Total	Acres	% Total	Acres	% Total	Acres	% Total
Industrial/R&D	743	19.3%	732	19.0%	1,204	31.3%	1,264	32.9%
Office	346	9.0%	415	10.8%	582	15.1%	743	19.4%
Retail	1,735	45.1%	1,635	42.5%	1,282	33.3%	1,036	26.9%
Residential	855	22.2%	897	23.3%	611	15.9%	613	15.9%
Public/Institutional	86	2.2%	86	2.3%	86	2.2%	132	3.4%
Open Space	80	2.1%	80	2.1%	80	2.1%	57	1.5%
TOTAL PROJECT:	3,845	100.0%	3,845	100.0%	3,845	100.0%	3,845	100.0%

Notes: Revised with updated Specific Plan Land Use Districts, December 1987.
Totals do not include roads and infrastructure.

Source: William C. Lawrence Company

Table 7-2

POTENTIAL EAST VALLEY CORRIDOR
RESIDENT POPULATION AT PROJECT BUILDOUT

Residential Land Use	No Project Low Growth/Market			No Project High Growth/Market			Low Growth/ Specific Plan			Proposed Project High Growth/ Specific Plan		
	Acres	Units	Pop.*	Acres	Units	Pop.*	Acres	Units	Pop.*	Acres	Units	Pop.*
Redlands												
Multi-Family 10	226	2,260	5,876	256	2,560	6,656	60	600	1,560	60	600	1,560
Multi-Family 20	110	2,200	5,720	125	2,500	6,500	321	6,420	16,692	342	6,840	17,784
Subtotal:	336	4,460	11,596	381	5,060	13,156	381	7,020	18,252	402	7,440	19,344
Loma Linda												
Single-Family**	250	1,500	3,900	249	1,494	3,844	63	378	983	63	378	983
Multi-Family 10	140	1,400	3,640	140	1,400	3,640	89	890	2,314	89	890	2,314
Multi-Family 20	129	2,580	6,708	128	2,560	6,656	59	1,180	3,068	59	1,180	3,068
Subtotal:	519	5,480	14,248	517	5,454	14,180	212	2,448	6,365	212	2,448	6,365
TOTAL:	855	9,940	25,844	897	10,514	27,336	593	9,468	24,617	613	9,888	25,710

Notes: * Assumes 2.6 persons per unit, per SCAG 87 Baseline projections.
** Six units per acre, per draft East Valley Corridor Specific Plan.

Multi-Family 10 - 10 units per acres, Multi-Family 20 - 20 units per acre.

7.3 NO PROJECT (High Growth)

Under this alternative, development of the project area is assumed to occur under high absorption potential market conditions. Additionally, ultimate development of land uses is guided by expected market conditions, that is, there is no limitation on total acres of any land use category, other than what the market will support.

In this scenario, buildout is expected by 2012. This results in a high population growth rate, a higher total population increase, and a strain on needed infrastructure to service this growth. Land use categories will be markedly different with retail comprising 43 percent (15% higher than the Specific Plan), office and industrial/R&D 30 percent compared to the Specific Plan's 52 percent, and a 7 percent increase in residential.

The faster growth and the unrestrained development due to a lack of the Specific Plan's uniform policies and standards are expected to result in additional impacts on the environment. Without a Specific Plan to plan, monitor, and regulate the cumulative and long-range development, the following environmental issues will be adversely impacted to a more significant level: air quality, noise, land use, population, transportation, schools, water supply, wastewater, and solid waste.

7.4 NO PROJECT (Low Growth)

This alternative also assumes market based growth but with slow market absorption conditions. This scenario has no restrictions on the type of land uses, other than what the market will support. Buildout is expected in 2029 with the majority of development in retail and residential uses (see Table 7-1).

The lack of long-range planning and uniform building and design standards will produce additional adverse impacts on air quality, visual resources, land use, schools, water supply, wastewater, and solid waste. The population and number of houses are about the same as the proposed project.

7.5 RESIDENTIAL EMPHASIS

This scenario would result in development of half the project's acres for residential uses, with the remainder divided equally between retail and industrial/office. Using an average ratio of the four alternatives above for dwelling units per acres (13.7 dwelling units/acre), this alternative could produce 28,235 new residences and a population of over 73,000. This influx of residences would produce large growth rates that would overwhelm the forecasted growth in Redlands and Loma Linda. The principal adverse impact would be the continuation and enhancement of the housing to job imbalance. While the other alternatives create a large number of new jobs, this scenario would promote more houses than jobs and would not comply with SCAG growth projections or the County's General Plan policies.

This alternative would also promote additional commuting to jobs, adversely impacting air quality and traffic circulation; land use policies would not be consistent; and significant impacts to schools, water, wastewater, and solid waste would be likely.

7.6 PRESERVATION OF EXISTING AGRICULTURE

This alternative would preserve agricultural activity for at least a 10-year period in the area north of Pioneer Street in Phase III. Thereafter, the agricultural reserve designation would be periodically reviewed by the appropriate governing body as to future development.

This scenario would provide additional open space and would decrease the overall natural environmental impacts associated with complete area development. However, if this acreage is exempt from being assessed infrastructure fees, many of the proposed and required infrastructure improvements may not be appropriately funded. This lowered funding may render the Plan's infrastructure improvements economically unfeasible.

This alternative is more consistent with the Redlands Park and Open Space Plan which is attempting to provide an open space element or green belt at the City's entry points; in this case at Alabama Street and SR 30. This alternative land use designation does not conform to the County's General Plan in areas still under County jurisdiction.

Overall, this alternative would decrease the impacts on the natural environment as a result of less development and more open space. Its principal drawback would be the uncertain future status of the area with regard to development, infrastructure plans and financing, and the economic feasibility of continued agricultural by the property owners. It should be noted that due to proposed phasing of development within the 40-year buildout of the Specific Plan, much of this area will probably retain its agriculture character for possibly 10 years or more.

7.7 ALTERNATIVES SUMMARY

A comparison of the environmental impacts associated with the project and alternatives is provided in Table 7-3. Each of the six alternatives is evaluated and rated for the various environmental criteria. These evaluations are rated from "best" to "severe", with concern levels from "none" to "significant", and with environmental impacts from "none" to "high, non-mitigable". The lower the total, the less of an environmental impact is expected.

As can be seen in the evaluation totals, the lowest environmental impacts are related to the Specific Plan (low growth). This scenario's effects are much lower than the other scenarios due to its long period to buildout (over 70 years) which would reduce impacts to most of the environmental criteria.

Table 7-3

MATRIX OF ENVIRONMENTAL CRITERIA FOR ALTERNATIVE PROJECTS

Environmental Criteria	ALTERNATIVES					
	Specific Plan		No Project		Residential Emphasis	Agricultural Reserve
	High Growth	Low Growth	High Growth	Low Growth		
Geology and Soils	3	3	3	3	3	3
Air Quality	4	3	4 - 5	4	4 - 5	3
Hydrology	3	3	4	3	3	3
Biology	2	2	2	2	2	2
Noise	4	3	5	4	4	4
Visual Resources	4	4	4	5	5	3
Land Use	3	2	4	4	4	3
Population	3	1	4	3	5	3
Housing	2	2	2	2	1	2
Employment	1	5	2	3	5	2
Transportation	5	3	5	5	5	4
Fire Protection	3	2	3	3	3	2
Law Enforcement	3	2	3	3	3	2
Schools	4	3	5	4 - 5	5	4
Parks and Recreation	3	2	4	3	4	2
Energy Resources & Service	3	2	3	3	3	3
Water Supply	4	3	4 - 5	4 - 5	4	4
Wastewater	4	3	4 - 5	4 - 5	4 - 5	4
Solid Waste	4 - 5	3	4 - 5	4 - 5	4 - 5	4
Cultural Resources	3	3	3	3	3	3
TOTALS	65 - 66	54	73 - 77	69 - 73	74 - 77	60

Rating	Concern	Environmental Impact
1 - Best	None	None
2 - Good	Slight	Low
3 - Average	Moderate	Moderate
4 - Poor	Significant	High, Mitigable
5 - Severe	Significant	High, Non-mitigable

The Agricultural Reserve alternative has the next lowest environmental impact. This alternative designates the area north of Pioneer Street as an agricultural reserve for at least a 10-year period, with periodic reviews thereafter. This proposal would be consistent with the Redlands Open Space plan and would lower natural environmental impacts. The uncertain future status of this area may financially hinder development of proposed infrastructure improvements due to a lowering of assessment fees.

The proposed project is the third best environmental alternative as it combines reasonable development with the Specific Plan's policies and standards to mitigate environmental concerns to acceptable levels.

The No Project, market-driven growth (low and high) alternatives would impact the environment at levels greater than the Specific Plan. The No Project (high growth) could potentially produce numerous high, non-mitigable impacts as a result of its rapid development and lack of area planning. Without the Specific Plan's policies and standards, noise, visual resources, transportation, schools, and the infrastructure could be severely impacted.

The No Project, market-driven alternative (low growth) would also be subject to adverse impacts due to a lack of planning. It would be to a lesser degree than the high-growth alternative, because of the assumed slower growth rate. (The combined ratings on the matrix, such as 4-5, exemplify the uncertainty of the level of planning that could occur in the related alternative and thereby reduce the level of impact.)

The worst alternative in the matrix analysis is the residential emphasis. This alternative does not comply with regional and local land use policies and produces a large population increase and a low number of jobs. It also results in poor to severe ratings on impacts to noise, air quality, transportation, and infrastructure.

8.0 AFFECTED ENVIRONMENT, IMPACTS, AND MITIGATION

8.1 GEOLOGY AND SOILS

8.1.1 Existing Conditions

The project area is located on the floor of the eastern San Bernardino Valley, between two intersecting geomorphic provinces. The foot of the San Bernardino Mountains in the Transverse Ranges is less than 4 miles to the north, while the uplifted Santa Ana Mountains of the Peninsular Ranges Province are 20 miles to the south. The area's physiography is dominated principally by the San Andreas fault zone 3 miles to the north and by the San Jacinto fault 2 miles to the south. The San Bernardino Valley was formed as a result of alluvial deposition of sediments shed from the San Bernardino Mountains, mainly by the Santa Ana River.

The major portion of the study area is prime agricultural land. The slope is typically very gentle, with no prominent geomorphic features. Immediately adjacent to the north side of the study area is the Santa Ana River and Wash. Most of the area is underlain by Holocene-age sediments, aged 10,000 years to the present. These sediments consist of sands and gravels deposited by the Santa Ana River and by other streams originating in the San Bernardino Mountains.

8.1.1.1 Soils

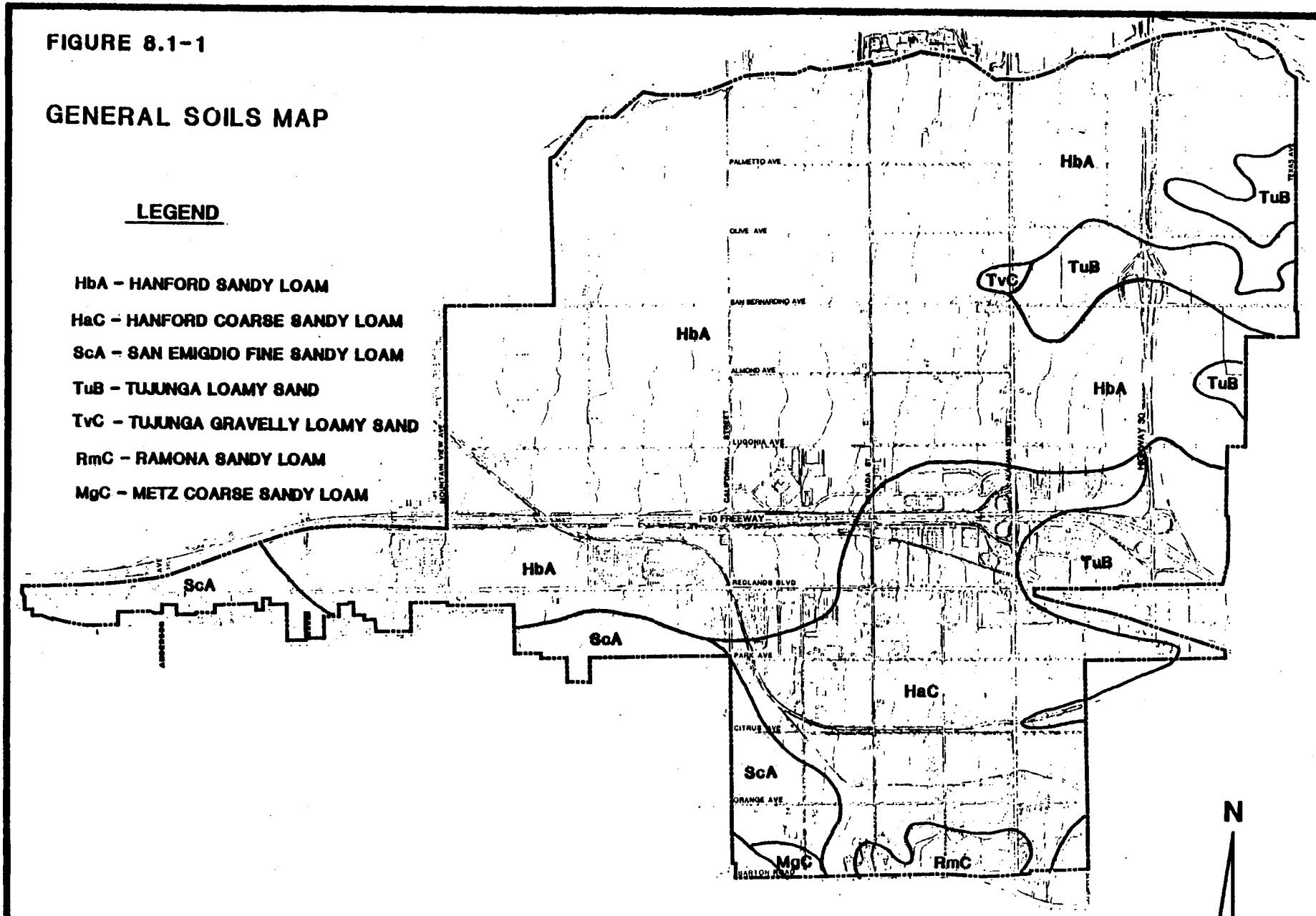
Soils of the East Valley Corridor generally occur on nearly level to moderate slopes and are well-drained and more than 5 feet deep. There is an approximate 200-foot elevation gain from the western boundary to the eastern boundary of the project area. Specific soils information presented in this EIR has been derived from the Soil Survey of San Bernardino County, Southwestern Part (USDA 1980). A general soils map derived from this publication is shown in Figure 8.1-1.

Most of the study area is comprised of Hanford sandy loam (HbA) with 0 to 2 percent slopes. This soil has been formed in recent granitic alluvium on valley floors and alluvial fans, and is within the best capability class for irrigated agriculture in southwestern San Bernardino County. This soil phase does not have significant limitations for building or septic tank absorption. Permeability is 2 to 6 inches per hour and available water capacity is .12 to .13 inches per inch of soil. Runoff is slow and the potential for erosion is slight if soil surfaces are left unprotected.

Hanford coarse sandy loam (HgC), 0 to 2 percent slopes, occupies most of the southeastern portion of the study area. Characteristics of this soil are similar to the Hanford sandy loam described above. Runoff is slow to medium and the potential for erosion is slight to moderate where the soil is left unprotected. This soil has been utilized for building of homesites since it is not in the top capability class for irrigated agriculture like the Hanford sandy loam.

FIGURE 8.1-1

GENERAL SOILS MAP



SOURCE: SOIL CONSERVATION SERVICE

EAST VALLEY CORRIDOR

CSA 110, COUNTY OF SAN BERNARDINO

URS CORPORATION

Four other soil series can be found in the southern and eastern portions of the study area. The largest of these is the Tujunga loamy sand (TuB), 0 to 5 percent slopes. This soil is nearly level to gently sloping and occurs on broad, long alluvial fans formed in granitic alluvium. It is somewhat excessively drained, with rapid permeability and with slow to very slow runoff. The potential for water erosion is slight for this soil if left unprotected, but wind erosion may be moderate to high on bare soil. A very small area of Tujunga gravelly loamy sand (TvC), 0 to 9 percent slopes, occurs within this series. It can be distinguished by its gravelly surface layer, which reduces the potential for erosion. Neither soil phase has significant limitations for construction or septic tank use.

San Emigdio fine sandy loam (ScA), 0 to 2 percent slopes, occurs in a small region encompassing approximately 160 acres along the southern border of the study area. This soil has formed on alluvium fans in somewhat mixed alluvium derived mainly from sedimentary materials. It is well-drained with moderately rapid permeability. Runoff is slow for this soil, and the hazard of erosion is slight. It is within the best class of irrigated agricultural land in southwestern San Bernardino County. There are no significant soil limitations for construction or septic tank use.

Fewer than 160 acres of the southern border of the project area are comprised of Ramona sandy loam (RmC), 2 to 9 percent slopes. This well-drained, gently sloping soil has been formed on alluvial fans and terraces in granitic alluvium. Runoff is moderate, and the potential for erosion is moderate if the soil is not protected. It is rated as having a severe limitation for septic tank absorption due to a moderately slow permeability rate.

8.1.1.2 Geohazards

Severe fault ruptures could occur throughout the project area along known and unknown zones of geologic weakness as a result of local and regional seismic shaking events. The study area in western San Bernardino County is adjacent to two major and active earthquake faults: the San Jacinto and San Andreas (Jennings 1983). Both of these faults have experienced movement within the past 200 years and both have the potential to generate significant earthquakes in the near and long-term. Five earthquakes greater than magnitude 6.0 on the Richter Scale have occurred within 50 miles of the study area during the past 75 years.

The San Andreas fault is located about 3 miles north of the study area, and trends generally northwest to southeast. The San Andreas is believed to be capable of producing a maximum earthquake magnitude of 8.5 on the Richter Scale. An earthquake of this size would destroy a large number of buildings located close to the epicenter, as well as cause many deaths due to falling structures and fires. The San Jacinto fault, which is nearly parallel (or subparallel) to the San Andreas, is located 2 miles south of the study area. It is estimated to be capable of producing a maximum earthquake magnitude of 7.5 on the Richter Scale. Buildings located near the epicenter would shift

on their foundations and possibly collapse from an earthquake of this magnitude.

Two known faults trend through the study area. The Loma Linda fault, which is subparallel to the San Jacinto, cuts across the western tip of the East Valley Corridor. An unnamed fault, also subparallel to the San Jacinto, traverses the corridor approximately 3/4 mile east of the Loma Linda fault (see Figure 8.1-2). Further to the southeast, outside of the project area, are the northeast-southwest-trending Redlands, Crafton, and Chicken Hill faults. All five of the above-mentioned faults are capable of experiencing ground ruptures as a result of movement on either the San Jacinto or San Andreas faults.

Groundshaking of the study area will result primarily from movement of the San Jacinto and San Andreas faults. A magnitude 7.5 earthquake on the San Jacinto fault could produce maximum horizontal accelerations through the East Valley Corridor of 0.55 gs to 0.8 gs, where one gs equals the pull of gravity at the earth's surface (Fife, et al. 1976). The San Andreas fault could produce horizontal accelerations of 0.55 gs to 0.75 gs through the study area. The East Valley Corridor would, therefore, be subjected to severe groundshaking forces from either fault.

Shallow groundwater underlies much of the San Bernardino Valley area and poses a significant liquefaction hazard. The western third of the study area lies within a zone of artesian groundwater. This groundwater is typically found between 30 and 50 feet below the surface, shallow enough to pose a liquefaction hazard. Liquefaction is the almost complete loss of rigidity of water-saturated sandy or silty soils during an earthquake. On flat surfaces, liquefaction can cause settlement or displacement of the ground surface, and on sloping surfaces it can cause ground failure and landslides. In addition to requiring sandy or silty soils, the water table must lie within 50 feet of the surface and the seismic loading must be greater than 20 percent of gravity for liquefaction to occur.

8.1.2 Project Impacts

8.1.2.1 Soils

Impacts during construction associated with development in the East Valley Corridor include soil compaction, soil displacement, and denuding of protective vegetation which can expose soils to potential erosion. Development during winter months may increase water erosion while construction during dry seasons may increase wind erosion. Soils described as overlain with gravelly material are less susceptible to erosion.

The primary impacts following construction include wind erosion on unprotected deposited soils or soils left denuded, and water erosion if construction design provides inadequate drainage.

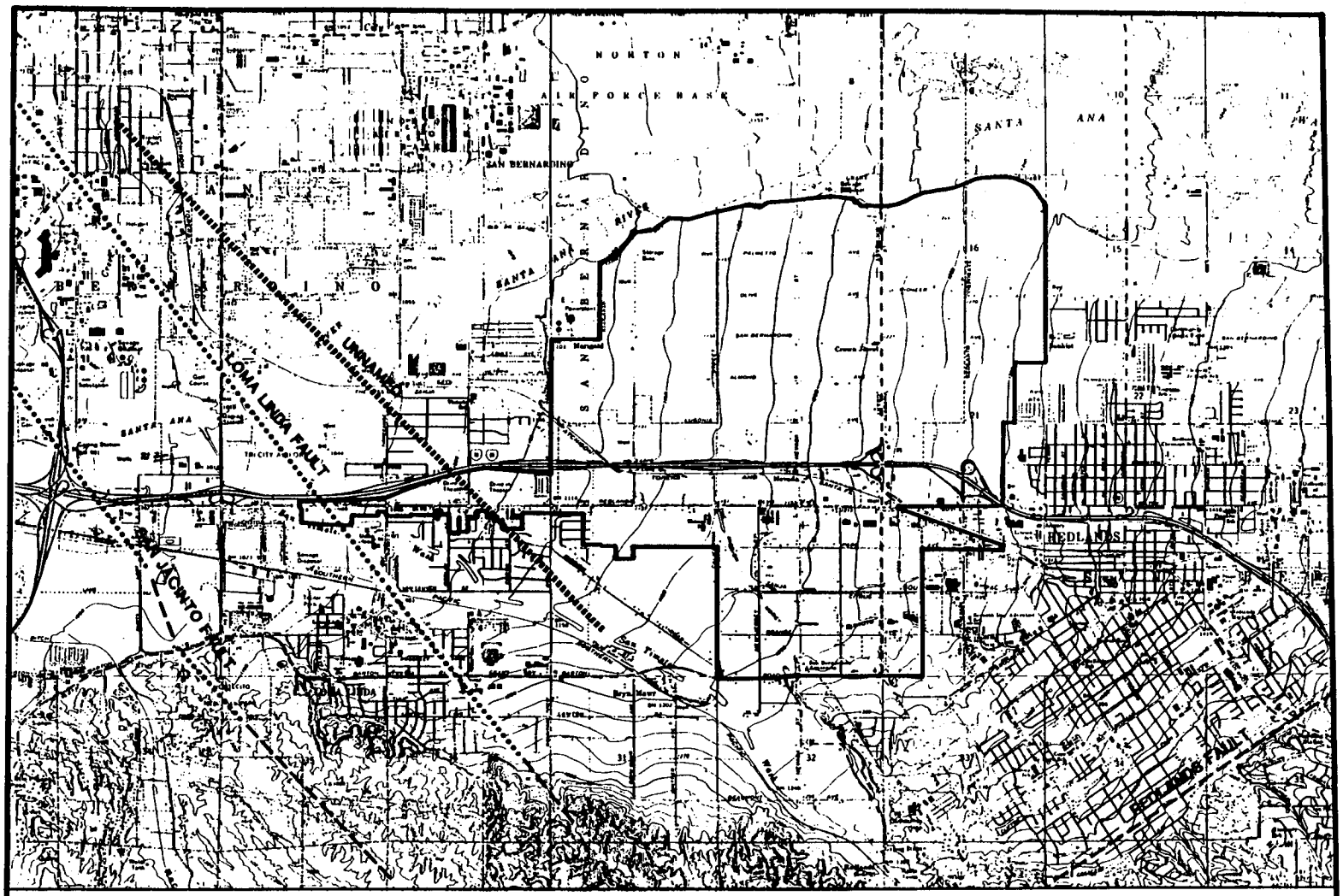


FIGURE 8.1-2

GENERALIZED FAULT MAP

0 1/4 1/2 1 MILE

SCALE

— — WELL LOCATED

•••••• CONCEALED OR POORLY LOCATED

•••••••• APPROXIMATE LOCATION INFERRED FROM SEISMIC ACTIVITY

N

URS CORPORATION

SOURCE: U.S. GEOLOGICAL SURVEY 1974

8.1.2.2 Geohazards

Surface fault ruptures could occur along the two known faults which transect the western part of the study area. Both the San Jacinto fault and the San Andreas fault lie within a couple of miles of the area; thus, sympathetic fault movement could occur along any zone of geologic weakness in the area. Recent alluvial deposits may also be masking additional, unmapped faults.

Severe groundshaking of surface structures in the study area is inevitable due to the area's proximity to the San Jacinto and San Andreas faults.

The liquefaction hazard in the study area is high, especially in the western third of the area. Settlement or displacement of surface structures could occur as a result of severe groundshaking events. The potential for liquefaction could be increased further if the local groundwater aquifer is at high water-table levels.

8.1.3 Mitigation Measures

8.1.3.1 Soils

Mitigations will be designed to accommodate soil characteristics for specific sites. Development of a comprehensive erosion control plan that encompasses soil series within the study area is recommended for each development project as deemed necessary by the reviewing agencies.

Mitigations will be implemented to reduce wind and water erosion by considering the following design factors:

- existing contours
- land use
- vegetation
- soil
- drainage
- slope stability
- slope length
- slope angle
- space limitations
- erosion potential of land disturbance
- erosion sediment control measure implementability.

Section EV4.0280(a), "Construction Phase Requirements" of the Specific Plan, provides measures to be included in the erosion control plan.

Other considerations should include timing of construction to minimize water erosion and use of water trucks to minimize fugitive dust emissions, especially during road building and site grading. Construction design should accommodate drainage to prevent water erosion.

Following construction, disturbed soils should be landscaped to protect soils from wind and water erosion.

8.1.3.2 Geohazards

A geotechnical investigation should be conducted and mitigation measures should be established (when recommended by the County geologist) for each development proposed for the East Valley Corridor to demonstrate that the site is suitable. The site investigation should include information on soil type, a history of water-table fluctuation throughout the site, and the potential for saturation within the upper 50 feet of alluvial material. The mitigation measures should include the recompaction of native soils, subexcavation, thick-compacted fill mats, and reinforced foundations. Specific recommendations will be based on the results of each site-specific geotechnical investigation.

8.2 AIR QUALITY

8.2.1 Existing Conditions

The East Valley Corridor is located in southwestern San Bernardino County in the eastern portion of the San Bernardino Valley. This area is a part of the South Coast Air Basin and air quality is managed by the South Coast Air Quality Management District (SCAQMD).

The climate for this inland valley location is considered Mediterranean with warm, dry summers and mild, occasionally wet winters. The project area lies approximately 50 miles inland of the Pacific Ocean, thus temperatures are warmer during the day and cooler at night than the coastal plains. Summer temperatures average in the 90s with winter minima near 40 degrees Fahrenheit. Extreme temperatures range from the low 100s to the low 20s. The annual average maximum and minimum temperatures are 78 degrees and 49 degrees with an annual mean reading of 64 degrees. Precipitation occurs mainly between November and April and averages about 13 inches annually.

The San Bernardino Valley is a broad relatively flat basin surrounded by low hills to the south and the lofty San Bernardino Mountains to the north and east. The valley is also located about 50 miles east of Los Angeles Basin, a major air pollutant source area. These air pollutants are transported inland into the San Bernardino Valley by the normal afternoon onshore or westerly winds. Along with the westerly air flow, the prevalence of a marine/subsidence inversion and strong solar radiation combine to produce high ozone levels and lowered visibility on many days between May and September.

The Environmental Protection Agency (EPA) has established Federal ambient air quality standards on criteria pollutants which are to be met by all air basins. At present, the South Coast Air Basin does not meet or is in nonattainment for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), and total suspended particulates (TSP). The California Air Resources Board (CARB) has also adopted State ambient air quality standards which are slightly more stringent than the Federal standards.

The SCAQMD and the Southern Association of Governments (SCAG) prepared an Air Quality Management Plan (1982) for the basin. This plan provides the existing and projected air quality for the basin and has set goals and strategies to reduce air pollution in order to attain Federal air quality standards. The County of San Bernardino has adopted some of these strategies for incorporation into existing and future development. These strategies have been incorporated and adopted in the East Valley Corridor Specific Plan and are included in the Mitigation section.

The SCAQMD maintains two air pollutant monitoring stations near the project area. They are located at 500 Dearborn Street in Redlands (2-1/2 miles east of the project) and at 24302 East 4th Street in San Bernardino (2-1/2 miles northwest of the project). Both of these stations initiated operations during 1986, having replaced two other nearby stations. The closed stations were located at the University

of Redlands and on East 3rd Street in San Bernardino. Data from these two stations were used for 1984, 1985, and part of 1986 in the table below. Any of these stations are deemed to be representative of air quality within the East Valley Corridor. Table 8.2-1 below lists ozone levels measured at Redlands and San Bernardino from 1984 to 1986 as recorded in the annual "California Air Quality Data" published by the California Air Quality Resources Board. The table is divided into the number of days and hours in which ozone concentrations were greater than or equal to: 0.10 parts per million (ppm) which is the California ambient air quality standard and is considered unhealthful air; 0.12 ppm, the Federal ambient air quality standard; 0.20 ppm, Stage I episode considered very unhealthful air; and 0.35 ppm, Stage II episode considered very unhealthful to hazardous air quality.

Table 8.2-1

ANNUAL OZONE LEVELS AT REDLANDS AND SAN BERNARDINO

	Number of Days/Number of Hours			
	State Std. ≥ 0.10 ppm	*Federal Std. ≥ 0.12 ppm*	*Stage I ≥ 0.20 ppm*	*Stage II ≥ 0.35 ppm*
Redlands				
1986	144/832	93/409	22/59	0/0
1985	158/1006	113/527	32/64	0/0
1984	160/954	116/504	26/72	0/0
San Bernardino				
1986	149/880	108/489	41/102	0/0
1985	155/883	111/495	30/64	0/0
1984	173/957	125/530	36/88	0/0

Note: 1986 data is a combination of two sites for both stations due to changes in the station's location during the year.

As listed in Table 8.2-1, the State ozone standard was exceeded on an average of 156 days per year and the Federal standard on 111 days per year. Stage I episodes occurred on an average of 31 days annually while no Stage II episodes were recorded.

Data recorded at the San Bernardino station during 1984 and 1986 (1985 data were incomplete) indicate that there were no measured violations of nitrogen oxides, sulphur dioxide, carbon monoxide, and lead.

Total suspended particulates (TSP) are a mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, dust, organics, and biological materials. A 24-hour particulate sample is collected once every 6 days at the San Bernardino monitoring station. These samples are analyzed for TSP, particulate matter less than 10 microns (PM10), and sulfates, as well as numerous additional non-criteria pollutants.

These measurements show that TSP concentrations exceeded Federal 24-hour standards one time and the annual geometric mean standard. PM10 measurements were initiated in 1986. State standards for 24-hour PM10 concentrations were exceeded on 26 of the 35 days of observation.

The project site generally experiences unhealthful air with respect to ozone on up to 40 percent of the days during the year, almost exclusively from May through September. Of the total, very unhealthful air quality occurs on 25 to 35 days per year. Statistical analyses prepared by the SCAQMD for the period 1981 to 1985 indicate an 18 percent decrease in basin wide air pollution. However, the basin failed to meet the federal air quality standards by the end of 1987 as mandated by the Clean Air Act. Air quality generally can be considered good to moderate in the area from October to April when meteorological conditions are usually not favorable for high ozone production.

8.2.2 Project Impacts

Project-related air quality impacts will be produced by construction activities, increased traffic (mobile sources), and increased electric and gas consumption (stationary sources).

The construction of the anticipated developments planned in the East Valley Corridor Specific Plan is expected to occur over a 40 year time span. Development of approximately 135 acres per year is forecast through 1995, 110 acres annually from 1996 to 2005, and 51 acres per year from 2006 to buildout in 2028. Site preparation and construction activities are characterized by grading operations and material transfer using heavy-duty diesel equipment. Exhaust emissions and dust produced by construction activities may produce short-term localized violations of hourly air quality standards for TSP and PM10 immediately downwind of a particular project site during major construction periods. This effect on air quality is considered a moderate impact but is short-term in nature.

An inventory for construction-related emissions is not feasible due to the non-site specific nature of the Specific Plan and the uncertain time span for development and length of construction.

The Specific Plan has proposed land uses for ultimate buildout in the East Valley Corridor as listed in Table 2-1.

These land uses were further defined and the project area divided into transportation zones in the "Circulation Plan Analysis" by Ludwig Engineering. The trip generation rates specified for each land use and each transportation zone were used as input for the California Air Resources Board model "Urbemis #2". This model calculates motor vehicle emissions resulting from various types of land uses. The estimated vehicle emissions resulting from each type of land use and the total project vehicle emissions at buildout are shown in Table 8.2-2 below.

Table 8.2-2

ESTIMATED VEHICLE EMISSIONS
(Tons/Day)

Unit Type	*TOG*	*CO*	*NOX*
Single-Family Housing	0.0	0.3	0.0
Multi-Family 10-20 DU/acre	0.3	2.8	0.6
Regional Commercial	0.1	1.3	0.3
Commercial - General	1.2	10.4	2.4
Commercial - Industrial	0.3	2.4	0.5
Planned Development	1.1	10.3	2.2
Regional Industrial	0.0	0.4	0.1
TOTAL Emissions:	3.0	27.9	6.1

Notes: TOG - total organic gases
CO - carbon monoxide
NOX - nitrogen oxides

The proposed development within the project area will consume electric energy and emissions from off-site power generating plants contributing to the total regional pollutant burden. Natural gas will also be consumed for space heating, water heating, and industrial process heat.

The estimated electric power plant and natural gas emissions are presented in Table 8.2-3. The emission factors were taken from the "Air Quality Handbook for EIRs" by the SCAQMD (April 1987). The daily energy consumptions were calculated based on proposed land uses listed in the Specific Plan as shown in Table 9.1-1 in the Energy section.

The estimated total vehicle and stationary emissions attributed to the proposed project are listed in Table 8.2-4. It must be noted that emissions related to specific industrial developments allowed by the Specific Plan were unable to be quantified at the time. All industrial developments whose emissions are greater than established regulatory limits, will be required to adhere to all rules and regulations of the SCAQMD.

Table 8.2-3

ESTIMATED STATIONARY EMISSIONS

Estimated Electric Power Plant Emissions

Pollutant	*Emission Factors (lbs/1000 kWh)*	*Daily Electric Consumption (kWh)*	*Emissions (tons/day)*
Carbon monoxide	0.2	1.83×10^6	0.18
Nitrogen oxides	1.15	1.83×10^6	1.05
Sulfur oxides	0.12	1.83×10^6	0.11
Particulates	0.04	1.83×10^6	0.04
Reactive organic gases	0.01	1.83×10^6	0.01

Estimated Natural Gas Emissions

Pollutant	*Emission Factors ($lbs/10^6$ cu feet)*	*Daily Gas Consumption (cu feet)*	*Emissions (tons/day)*
Carbon monoxide	20	6.43×10^6	0.06
Nitrogen oxides			
Residential	80	6.43×10^6	0.26
Commercial	120	6.43×10^6	0.39
Sulfur oxides	Negligible	6.43×10^6	---
Particulates	0.15	6.43×10^6	< 0.1
Reactive Organic Gases	5.3	6.43×10^6	0.02

Source: Air Quality Handbook for EIRs, SCAQMD, April 1987.

Table 8.2-4

ESTIMATED PROJECT EMISSIONS
(Tons/Day)

Pollutant	*Source*		
	Vehicle	*Stationary*	*Total*
Carbon monoxide	27.9	0.2	28.1
Nitrogen oxides	6.1	1.7	7.8
Sulphur oxides	(EST) 0.8	0.1	0.9
Particulates	(EST) 1.2	0.1	1.3
Reactive organic gases	3.0	< 0.1	3.0

The East Valley Corridor Specific Plan is expected to promote planned residential, commercial, and industrial growth with buildout projected by 2028. This anticipated growth would increase emissions related to traffic and energy consumption over the existing conditions. In comparison, the no project alternative within the context of the area's General Plans with accelerated growth and buildout by 2012, would create a 16 percent higher population increase at a much faster growth rate and possibly more traffic due to a continued job-housing imbalance.

The project's impact on air quality is considered cumulatively significant because the plan is growth-inducing and the region is in nonattainment for ozone and particulates. However, the projected growth and the associated air quality impacts are consistent with the County's General Plan provisions and the AQMP. With adherence to the Specific Plan and the AQMP, and with proper mitigation to alleviate short- and long-term air quality effects, impacts related to the planned development would be mitigated to a level of nonsignificance. In fact, the goal of the Specific Plan, which is to create a balance between jobs and housing, and reduce commuting, should produce a positive impact on air quality impacts when compared to the no project alternative and projected growth in the region.

8.2.3 Mitigation Measures

During the construction of sites within the project area, the following mitigation measures to reduce dust and equipment emissions should be implemented:

1. Control dust by regular watering, paving construction roads, or other dust preventive measures as defined in the SCAQMD Rule 403;

2. Maintain equipment engines in proper tune;

3. Seed and water landscape areas until grass cover grown;

4. Phase and schedule construction activities to avoid high ozone days; and

5. Discontinue construction during second stage smog episodes.

The East Valley Corridor Specific Plan includes numerous mitigation measures in its goals, policies, and objectives to conform and be consistent with the Air Quality Management Plan. The principal provisions of the Specific Plan to improve air quality are to promote and facilitate employment-producing development within the housing rich, job poor San Bernardino County to reduce commuter traffic. The Plan's policies include the following:

1. Maximize generation of employment opportunities in a region which has a significant imbalance of housing versus employment opportunity;

2. Facilitate location in the project area of a wide range of commercial uses to serve the region, local industry, and residential neighborhoods;

3. Support a limited amount of residential land use within the planning area;

4. Develop the land use map in conformance with, and implement the policies of the General Plans of San Bernardino County, and the cities of Redlands and Loma Linda, and with other regional plans;

5. Adopt energy-efficient transportation strategies to implement State and County goals for reduced energy consumption and improved air quality;

6. Designate land uses so as to reduce the number and length of vehicle trips in the East Valley Corridor; and

7. Provide opportunities for alternative travel modes to supplement the private automobile.

Under the Specific Plan's objectives are numerous specific mitigation measures related to air quality improvement. These include:

1. Conformity with the SCAG-82 directive to facilitate industrial growth to balance jobs and housing;

2. Adoption of performance standards to protect and improve air quality and to be consistent with the AQMP;

3. Providing local jobs, services, and shopping to reduce commuter trips;

4. Establishing residential densities in proximity to employment and commercial centers;

5. Requiring bus turn-outs, shelters, and park and ride lots;

6. Cooperation with regional transportation efforts to implement convenient bus service, ridesharing and staggered work hours;

7. Development of a pedestrian and bicycle circulation system;

8. Promotion of so-called "clean" industrial developments; and

9. Utilization of landscaping to reduce cooling costs.

As part of a project-wide Transportation Management System (TSM) and to meet new SCAQMD rules, it is also recommended that an areawide employer association be set up to administer promotion, progress, and coordination of TSM services for future developments. Some specific measures should include:

1. Preferential parking and access for car and van pools;

2. Employer or building specific plans for implementing car and van pooling as a condition for tenancy;

3. Inclusion of commercial, shopping, and restaurant areas on ground floors of office buildings or in a locally convenient area;

4. Interconnected pedestrian access for lunch-time and after-work shopping and business;

5. Inclusion of bicycle lockers/storage for employees; and

6. Evaluation of child care facilities either at large employment centers or for locally dense employment areas.

Energy conservation measures and standards should be implemented to all new development. Energy-saving practices pertain to building design, insulation, efficient heating and cooling units, landscaping, easy access to public transportation and utilization of solar energy.

The project estimates that 50 to 60 percent of the absorption of industrial, commercial, and retail space will be due to local expansion needs, with the rest from the region and the nation. The continued trend of eastward urbanization in the South Coast Air Basin indicates that many of the new developments and the influx of new residents may come from within the Basin itself. Thus, the increase in energy consumption and traffic in the project area could be offset by reductions in emissions in other parts of the region.

8.3 HYDROLOGY

Much of the following information on existing conditions and proposed facilities was provided by the draft East Valley Corridor Specific Plan (December 1987) and the draft Engineers Report by Metcalf & Eddy (January 1988).

8.3.1 Existing Conditions

8.3.1.1 Drainage Patterns

The East Valley Corridor lies within the overflow flood plain of Mission Zanja and San Timoteo Creek. Both are tributaries of the Santa Ana River, which forms the northern boundary of the Corridor. The Santa Ana River is a major, partially improved water course with 360 square miles of mountainous watershed tributary to the study area.

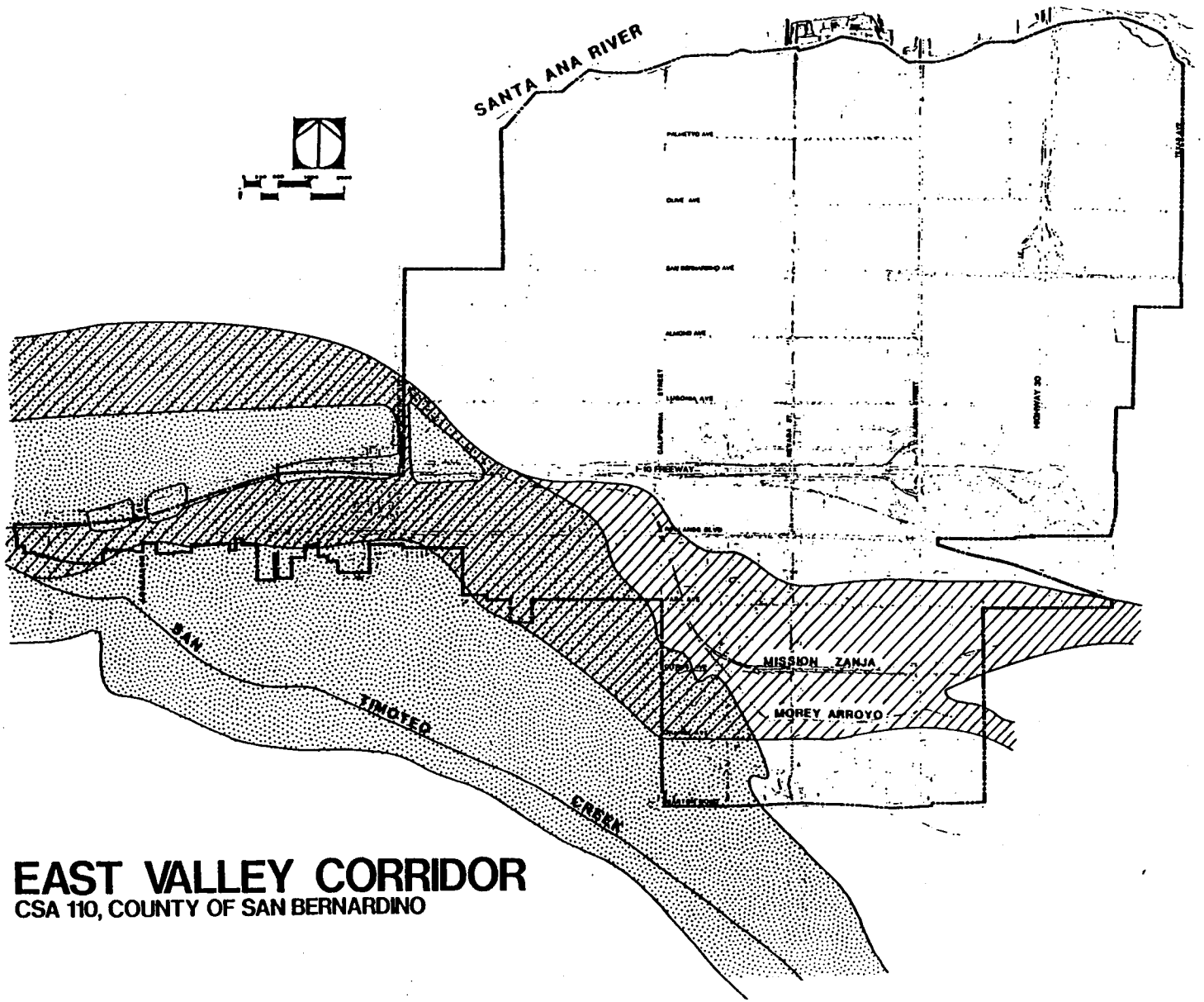
San Timoteo Creek is a partially improved channel with 126 square miles of hilly watershed lying in the counties of San Bernardino and Riverside. The creek flows generally in a northwest direction and discharges into the Santa Ana River north of I-10 and west of Waterman Avenue. In 1973 the Army Corps of Engineers (COE) estimated peak discharge of 45,000 cubic feet per second (cfs) for the standard project flood and 23,000 cfs for a 100-year flood. The southwest portion of the study area is affected by flooding in San Timoteo Creek.

The Mission Zanja originates at Mill Creek, east of Redlands and flows westerly through the City of Redlands into the Santa Ana River near Loma Linda. The Mission Zanja is an open channel except when it runs parallel and under Redlands Boulevard from 9th Street to Eureka Street, in downtown Redlands, as an underground box culvert. This tributary has a drainage basin which encompasses about 25 square miles. The Morey Arroyo, a local tributary of the Mission Zanja, is an unimproved channel draining the southern portion of the study area in Redlands.

In a 1981 Mission Zanja project report by the U.S. Army COE, peak drainage of the Mission Zanja downstream from the Morey Arroyo was estimated to be 12,400 cfs for the standard project flood and 5,700 cfs for the 100-year flood.

Under current conditions, neither the Morey Arroyo nor the Mission Zanja have sufficient carrying capacity to handle 100-year flood events. Major portions of the study area south of I-10 are within the overflow flood plain of both these channels and have experienced severe flooding in the past (see Figure 8.3-1).

Portions of Loma Linda and Bryn Mawr lying in the southwest corner of the study area ~~could~~ would be flooded by overflow from either stream, but the chance for both streams to peak and overflow at the same time are remote. Areas north of I-10 are not a part of any major flood plain.



EAST VALLEY CORRIDOR
CSA 110, COUNTY OF SAN BERNARDINO

LEGEND

SAN TIMOTEO FLOOD PLAIN
STANDARD PROJECT FLOOD
PEAK FLOW

MISSION ZANJA FLOOD PLAI
STANDARD PROJECT FLOOI

FIGURE 8.3-1

AREAS SUBJECT TO FLOODIN

The only existing storm drainage plan for the East Valley Corridor is the Comprehensive Storm Drain Plan No. 4 (CSDP) prepared in 1975. Since both the land use plan and design criteria have changed since 1975, the Engineers Report by Metcalf & Eddy (January 1988, Draft) has replaced this earlier work for the East Valley Corridor Study area.

8.3.1.2 Existing Flood Control Facilities

All major existing flood control facilities and their tributary drainage areas, within the East Valley Corridor are shown on Figure 8.3-2. Shaded areas on the map are those for which drainage facilities essentially consistent with the CSDP, have been constructed. The unshaded areas on the map indicate areas for which appropriate flood control facilities will have to be constructed before any major development can occur. A brief discussion on existing systems follows.

Highway 30 (Tennessee Freeway) Storm Drain. This storm drain is an open channel running along the east side of Highway 30, within the Caltrans right-of-way. The channel was constructed with the roadway in 1984, and is mostly concrete lined starting at the I-10 Interchange and flowing north to discharge into the Santa Ana River. The channel bottom width varies from 6 to 8 feet, the side slope varies from 1.5:1 to vertical, and the height varies from 3.8 to 6.8 feet.

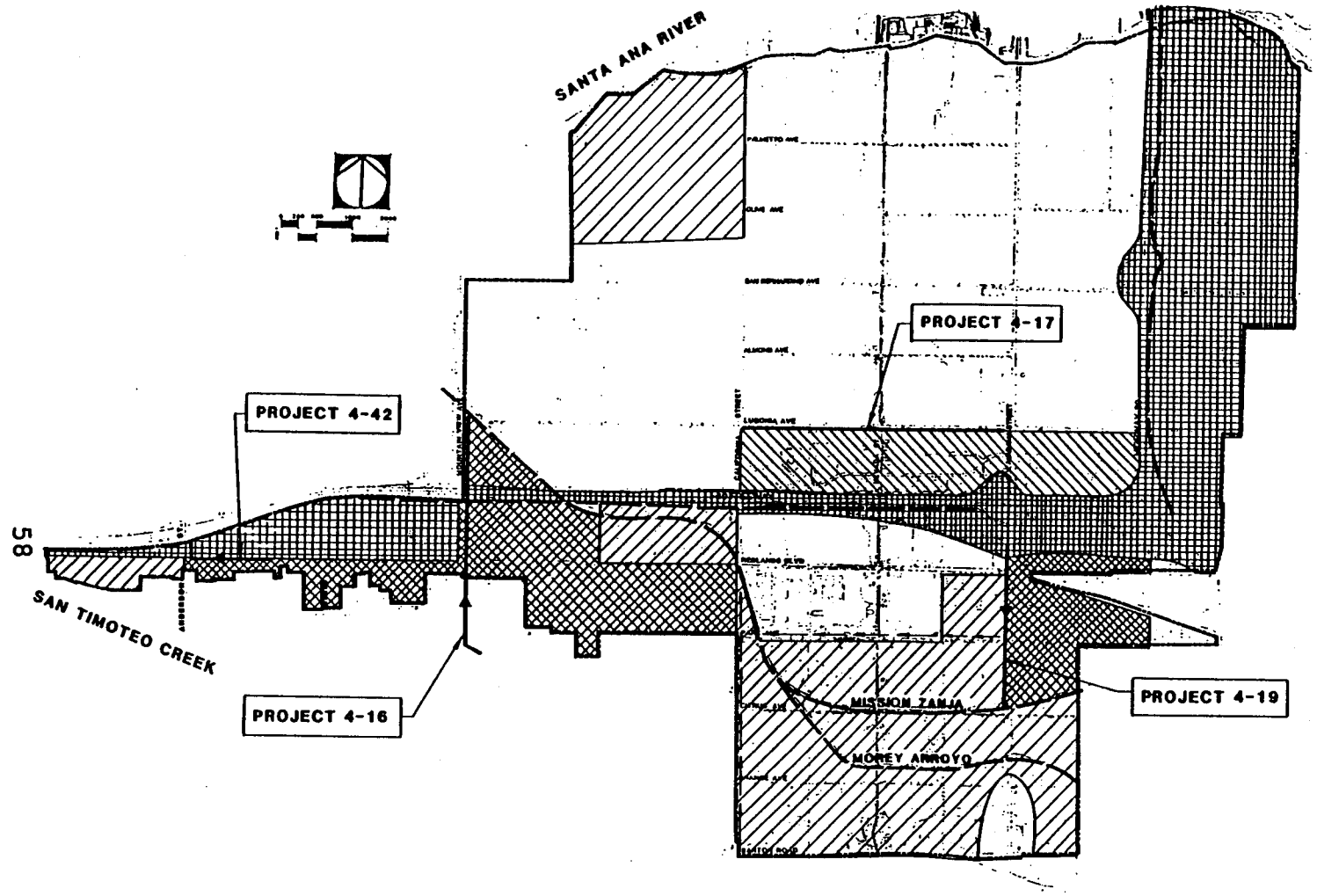
I-10 Storm Drain. The I-10 storm drain is a concrete lined open channel storm drain which runs along the south side of I-10 within the Caltrans right-of-way. Starting at Alabama Street, it flows west into the Mission Zanja at the bridge and overhead crossing. Starting again west of the crossing, it flows west to discharge into the San Timoteo Creek.

Project 4-16. This project, constructed in 1985, consists of 33-, 57-, 60-, and 69-inch reinforced concrete pipe (RCP) along and within Mountain View Avenue right-of-way in the City of Loma Linda. It starts at Mission Road intersection and flows north to discharge into the Mission Zanja, north of I-10.

Project 4-17. A storm drain consisting of 48- and 54-inch RCP has been constructed along Lugonia Avenue, between Alabama Street and California Street. This recently completed line is a portion of Project 4-17 and eventually would be extended west along Lugonia Avenue to discharge into the Mission Zanja, as the area develops. It will be a dry line until the downstream portion is completed.

Project 4-19. A storm drain consisting of 48- and 51-inch RCP runs along and within Alabama Street right-of-way in the City of Redlands. Starting north of Redlands Boulevard, it flows south to discharge into Mission Zanja Creek.

Project 4-42. A 42-inch RCP storm drain, this pipeline starts at the intersection of Redlands Boulevard and Ohio Street in Loma Linda. It flows westward along Redlands Boulevard to Anderson Street and turns



EAST VALLEY CORRIDOR
CSA 110, COUNTY OF SAN BERNARDINO

FIGURE 8.3-2

EXISTING STORM DRAIN FACILITIES

north along Anderson to discharge into a Caltrans drainage channel along the I-10 freeway.

8.3.2 Project Impacts

8.3.2.1 Projected Stormwater Flows

The drainage system of the project area, particularly the area north of the I-10 freeway, was based on low density and agricultural land uses. With the higher density development called for in the Specific Plan, the stormwater flows are expected to increase significantly.

Stormwater flows generated from rainfall within the project area were determined according to the method and procedures outlined in the County of San Bernardino Hydrology Manual, August 1986. Since the tributary areas for all stormwater conduits laid out in the study area are less than one square mile (640 acres), the Rational Method as outlined in Section D of the Manual is the method used to compute peak discharge rates. The County Manual contains basic hydrological data for all areas of San Bernardino County and a procedure for estimating peak stormwater flow based on the well-known Rational Method.

Stormwater flow projections for the Mission Zanja and Morey Arroyo channels can be found in studies which take into account the entire basin areas of the channels. The design storm for projecting flow rates has been taken as the 100-year storm in conformance with the design standards set for the reaches beyond the East Valley Corridor boundaries.

Peak stormwater flow for the Morey Arroyo channel corresponding to 100-year flood protection was estimated to be 3,022 cfs according to a study by Metcalf & Eddy (June 1987). The estimate was calculated following a new alignment of the channel from Alabama Street to a new confluence with the Mission Zanja near Iowa Street.

Peak flow rates for the Mission Zanja within the East Valley Corridor were provided by the San Bernardino County Department of Transportation and Flood Control based on ongoing flood routing analyses of the channel. Figures assumed for the present study are based on the construction of a detention basin at Wabash Street to hold back peak flows and on the recommended realignment of the Morey Arroyo previously described. With these basic assumptions, the peak design flow rates for the Mission Zanja above the confluence of Morey Arroyo is taken at 6,390 cfs, and below the confluence of Morey Arroyo at 7,200 cfs.

8.3.2.2 Impact Areas

The project area as a whole will be significantly impacted by the increased stormwater flows due to complete development planned by the Specific Plan. The area north of I-10, which is currently served by a drainage system based on low density land uses, is expected to have a significant increase of stormwater flows. Although the area is not a

part of any major flood plain, the increased stormwater flow is likely to create local flooding during major storms without major improvements.

A significant portion of the southwestern part of the study area, including most of the City of Loma Linda portion, is contained in the 100-year flood plains of San Timoteo Creek and the Mission Zanja flood channel. Since these two drainage courses are regional channels, hydrologic conditions and land uses upstream of the project area will have cumulative impacts on this part of the study area in terms of potential flooding. The San Timoteo Creek drainage is currently being studied by the Army Corps of Engineers for necessary improvements.

8.3.3 Mitigation Measures

Mitigation measures are contained in the backbone stormwater facilities which consist of stormwater pipelines and improvements to the Mission Zanja and Morey Arroyo channels. Stormwater pipelines convey local runoff to either the Santa Ana River, Mission Zanja, or Morey Arroyo. These channels in turn transport stormwater flows beyond the East Valley Corridor boundaries. The recommended facilities integrate with existing facilities described in Section 8.3.1 to form a comprehensive drainage plan for the East Valley Corridor. Figure 8.3-3 shows design flow rates and the recommended sizes and layout of these facilities.

Flow rates and sizes will be seen to be of greater magnitude than those projected in the CSDP No. 4. These larger flow rates and larger pipe sizes are due to the newer design criteria of the 1986 edition of the County Hydrology Manual and the more complete development of the area called for by the East Valley Corridor Specific Plan. Tributary areas for the recommended storm water facilities are also shown in Figure 8.3-3. These tributary areas are the same as those developed in the earlier Comprehensive Storm Drain Plan.

The Specific Plan also will establish a Safety Overlay District for areas subject to flooding (100-year floodplains). This Safety Overlay District sets regulations and development standards to appropriately safeguard public health and safety. Division 5 of the Specific Plan describes the Overlay District in detail.

8.3.3.1 Stormwater Pipelines

Stormwater flows generated north of Lugonia Avenue are collected in local pipelines and conveyed in north/south collectors northward to the Santa Ana River.

Runoff on either side of Lugonia Avenue will be collected in one long storm drain installed along Lugonia that will convey flow westward and discharge it in the Mission Zanja just east of Mountain View Avenue. The reach between Alabama and California streets is existing; new pipelines between California and Mountain View will complete this storm drain.

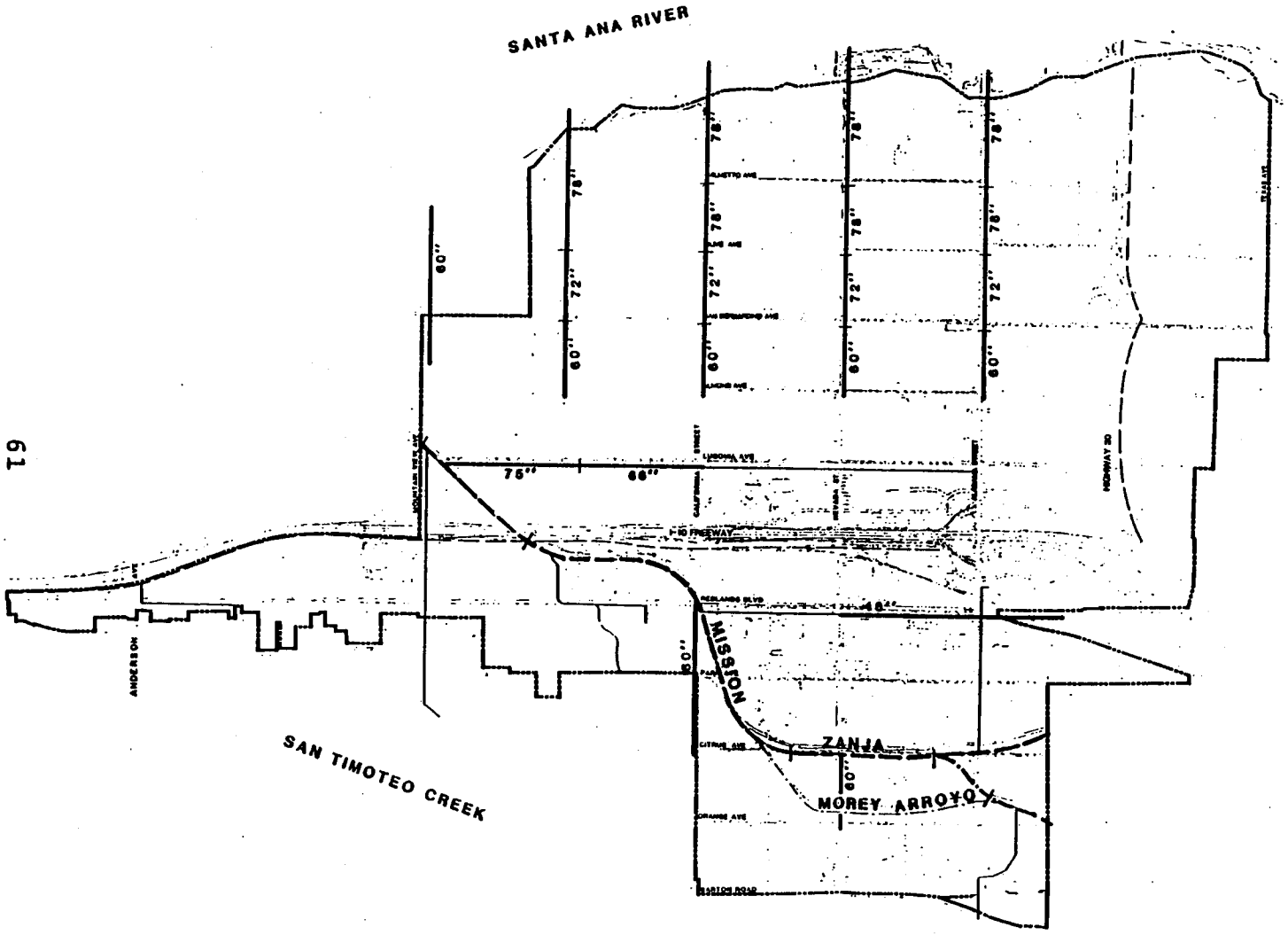


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FIGURE 8.3-3

RECOMMENDED STORM DRAIN

Metcalf & Eddy

A major collector is recommended along Redlands Boulevard, south of I-10. Beginning just west of Alabama Street, this pipeline will run westward along Redlands Boulevard and discharge into the Mission Zanja near California Street.

A summary of the recommended stormwater pipelines is shown in Table 8.3-1.

8.3.3.2 Improvements to Morey Arroyo

The existing Morey Arroyo is inadequate to carry the predicted 100-year storm flows and must be improved in order to carry these flows. The improvements include:

- Improvements to the existing channel from west of Tennessee Street and continuing westward along the existing channel to Alabama Street
- Addition of a reinforced concrete box at Orange Street
- Construction of a reinforced concrete double box culvert at Kansas Street
- Realignment of the channel west of Alabama Street, to flow northwesterly and discharge into Mission Zanja in the vicinity of Iowa Street
- Construction of a double box culvert under Citrus Avenue
- Construction of a new confluence with Mission Zanja and any required erosion protection at the confluence.

Improvements in the existing channel and the new channel section will include a rectangular reinforced concrete cross section with bottom controls if necessary. Channel capacity will be provided for the full 100-year design flow of 3,022 cfs.

8.3.3.3 Improvements to Mission Zanja

The existing capacity of the Mission Zanja channel is also inadequate to contain the projected 100-year stormwater runoff. Recommended improvements include:

- Construct a reinforced concrete rectangular and trapezoidal channel along the existing channel alignment
- Construct a reinforced concrete channel under I-10
- Provide additional width to the existing bridges at the Bryn Mawr and Park Avenue crossings

Table 8.3-1

SUMMARY OF RECOMMENDED STORM DRAIN FACILITIES
(Lengths in Feet)

Location (streets)	Pipelines (Diameters)						Channel Improvements	
	48"	60"	66"	72"	75"	81"	Morey Arroyo	Mission Zanja
Alabama		1,300		1,300	1,300	2,200		
Nevada	1,600	1,300		1,300	1,300	2,600		
California	2,600	4,000		1,300	1,300	2,300		
Bryn Mawr	1,000	1,300	1,300	2,600				
Mountain View	3,000							
Lugonia		2,500			2,600			
Redlands	1,300							
Various							2,000	10,350
TOTALS:	9,500	10,400	1,300	6,500	6,500	7,100	2,000	10,350

- Construct additional box culvert capacity at the existing box culvert crossings at New Jersey, Nevada, and Iowa streets.

Crossing structures at Mountain View Avenue, Alabama Street, and Kansas Street are adequate to carry the 100-year projected runoffs.

8.4 BIOLOGY

8.4.1 Existing Conditions

Historic land use within the East Valley Corridor has precluded native plant and animal communities for many years. The river channels as well as the fertile benches and valley lands were converted to agricultural, industrial, and commercial facilities long ago, and the existing wildlife consists of species that have adapted to the presence of man. Virtually no native vegetation is present, except as remnant plants and those that have re-established in vacant fields. The established groves and horticultural plantings, however, have become important habitat areas for the surviving wildlife, and new linear bands of native riparian plant community are found along the Santa Ana River, especially behind the Southern California Edison plant at the northern end of Mountain View Avenue. Additional riparian vegetation may be found along the Morey Arroyo between Nevada and Kansas streets. No rare or endangered species of plants would be expected to exist in the project area because virtually no native vegetation is present.

A distinctive citrus grove assemblage of wildlife persists, composed largely of predatory mammals and a few noteworthy birds. Characteristic of extensive groves are such nocturnal animals as coyote, striped skunk, raccoon, and opossum. More commonly seen are ground squirrels, jackrabbits, and cottontails. Characteristic birds are crows, which have a huge population in the study area, starlings, and ring-necked pheasant. Smaller ground-dwelling animals are generally depleted within established agricultural areas because of repeated cultivation and herbicide treatment. Hence most reptiles, including many species of snakes and lizards are absent, as are a number of rodent species and ground-nesting songbirds. However, the edges of the fields and groves often support the more hardy ground-nesting species, such as roadrunner, meadowlark, and gophers. No rare or endangered species of animals are known to exist in the project area as the wildlife community consists of all common, urban-adapted species.

Though the Santa Ana River is outside the northern border of the project area, it is of prime importance to much of the resident wildlife, and it may contain populations of the Santa Ana River woolly-star, an endangered plant species. The riverbed provides valuable open space that enlarges the available habitat for the existing wildlife community, which can travel back and forth from agricultural lands. Essentials of space and food are provided, especially for the predatory species.

The rows of fan palms which line the major citrus groves provide substantial nesting habitat for resident birds. Though many "nuisance" birds use the palms, such as crows and starlings, there is also a considerable number of American kestrels, barn owls, flickers, and songbirds. The most valuable trees are those along Palmetto and San Bernardino avenues, within the existing citrus groves.

The combination of groves next to alfalfa fields now provide good foraging habitat for birds of prey. Red-tailed hawks are fairly

common, as are American kestrels, shrikes, and barn owls. On occasion, one can see a black-shouldered kite, and in the winter, other species are possible. A surprisingly large number of raptorial birds forage within the study area, considering the amount of urbanization. No species list has been provided because virtually no native vegetation is present, and the wildlife community present consists of all common, urban-adapted species.

8.4.2 Project Impacts

The East Valley Corridor Specific Plan proposes to develop the project area with urban uses and totally eliminate agricultural uses at build-out. The development of the agricultural areas will destroy habitat for wildlife that has adapted to the citrus groves and open fields. As the citrus groves are removed, associated wildlife will either be destroyed or will be displaced. Since the agricultural areas are continually impacted at present and are not considered sensitive biological habitat, the urbanization is not considered a significant adverse impact on biological resources. No native plant or animal communities will be eliminated by development within the project area.

The urbanization will also impact the nesting habitats located in the rows of fan palms. The degree of impact is dependent on each bird species' sensitivity to urban noise and to the number of palms which may be removed. No threatened or endangered species are expected to be impacted however.

8.4.3 Mitigation Measures

Though no specific mitigation is required to offset any significant biological impacts, the following measures are recommended to preserve the fan palms and to provide habitat for urban-adapted wildlife, especially adjacent to the Santa Ana River wash.

The rows of fan palms should be retained as street borders and possibly for lining bike lanes. The East Valley Corridor Specific Plan states in Section EV2.0225(a)(2)(c) that an objective is to "preserve existing Mexican fan palm rows and extend palm row plantings along selected major arterials both north and south of Interstate 10".

The least intensive land uses should be planned along the Santa Ana River so that a larger block of habitat is created for the resident wildlife. Open space, parks, agriculture, ranches, or a golf course would be suitable for this purpose.

The landscaping element for new development and for major streets should be implemented. This will provide additional habitat for urban-adapted bird species and provide space for diverse ornamental plant species. The retention and replacement of palms as street trees in areas bordering the Santa Ana River will retain the nesting habitat for the birds of prey. This will allow for conservation of as many of the predatory birds as possible. Phasing of the development plan in the agricultural areas will also allow a gradual change in the urban-

adapted fauna. This phasing will allow for the gradual displacement of wildlife and accommodation to a new lower, carrying capacity.

Development of the parcels containing the blue line stream channels, as shown on USGS maps, will require a permit for alteration of the stream channel from the California Department of Fish and Game under section 1601-3 of the Fish and Game Code, as well as a permit from the Corps of Engineers under section 404 of the Clean Water Act, if dredging is conducted or fill materials are placed in these wetland habitats. The Morey and Mission Zanja channels are so indicated, as is the San Timoteo Canyon wash.

8.5 AESTHETICS

8.5.1 Noise

Noise is generally defined as sound that is unwanted or interferes with a person's hearing. Noise impacts can range from actual loss of hearing in extreme cases to adverse physiological effects in the community environment. Common significant impacts produced by excessive noise in the community are interference with speech communication, disruption of sleep and sleep patterns, reduced ability to do complex tasks, and physiological effects (such as nervous tension and high blood pressure). Some common environmental sounds and their associated decibel ranges are shown in Figure 8.5-1.

Noise levels are assessed and measured using the A-weighing scale with units of sound known as a decibel (dB). Two assessment scales frequently used are the Noise Equivalent Level (LEQ) and the Community Noise Equivalent Level (CNEL). LEQ is the "energy" average noise level and is a level of continuous noise. CNEL is defined as the cumulative noise exposure level over a 24-hour period with an increased weighing factor applied to the evening and night time period.

The Environmental Protection Agency (EPA) has concluded that a daily average LEQ of less than or equal to 70 dB would protect the public from hearing damage. However, other less intense noise impacts can occur at lower noise levels as illustrated by the following list.

Noise Impact	*Noise Level (dB)*
Hearing Loss	75-85
Physiological	65-75
Speech Interference	50-60
Sleep Interruption	35-45

8.5.1.1 Existing Conditions

There are two major sources of noise within the East Valley Corridor: vehicular noise generated primarily by I-10 and Highway 30 and aircraft noise generated by Norton Air Force Base.

Interstate 10 is a 6-lane freeway that runs east to west for approximately 4 miles through the center of the project area. General noise contours were estimated for this transportation corridor and for Highway 30 utilizing Caltrans estimation of noise exposure from highway traffic for County general plans. The estimations were adjusted for the elevated design of the freeways and used 1986 average daily traffic (ADT) counts.

The estimated existing noise contours are shown on Figure 8.5-2. The 70 dB contour is approximately 300 feet from the centerline of the outside lane and the 65 dB extends to 600 feet. The noise levels decrease slightly to the east of Alabama Street as ADT are slightly lower.

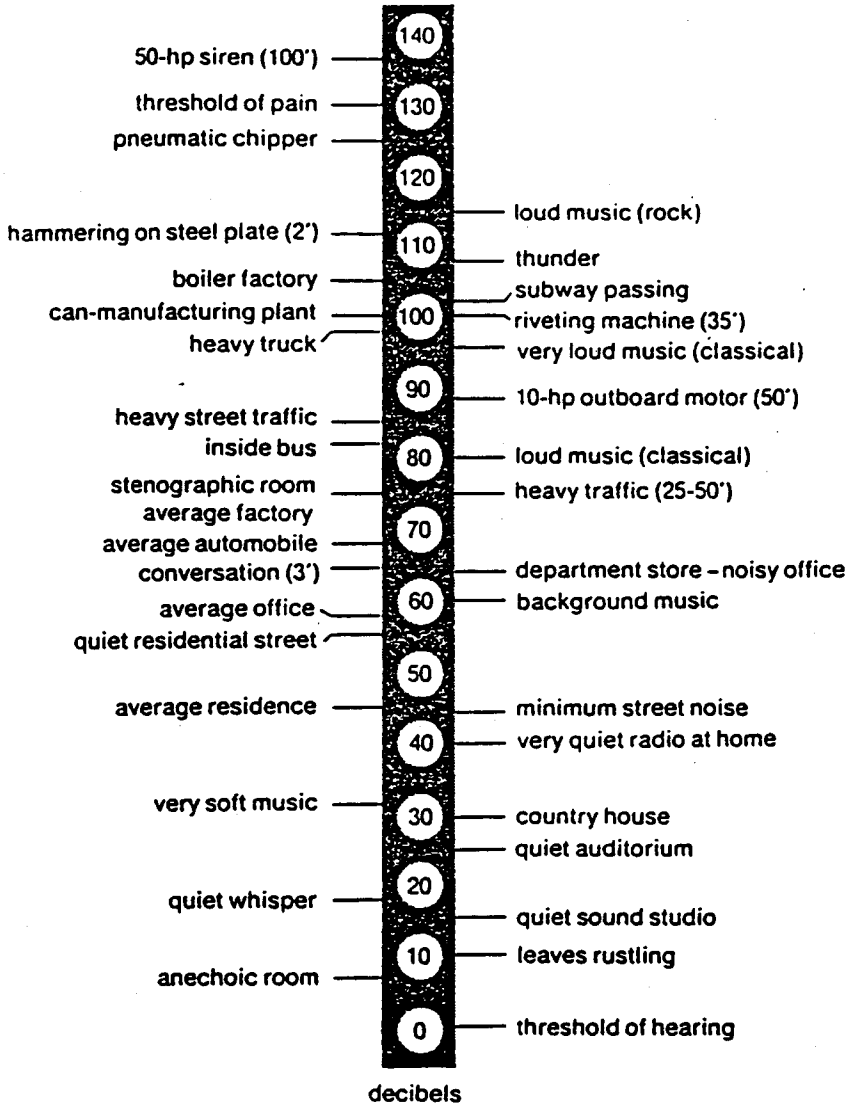

FIGURE 8.5-1

COMMON ENVIRONMENTAL SOUNDS

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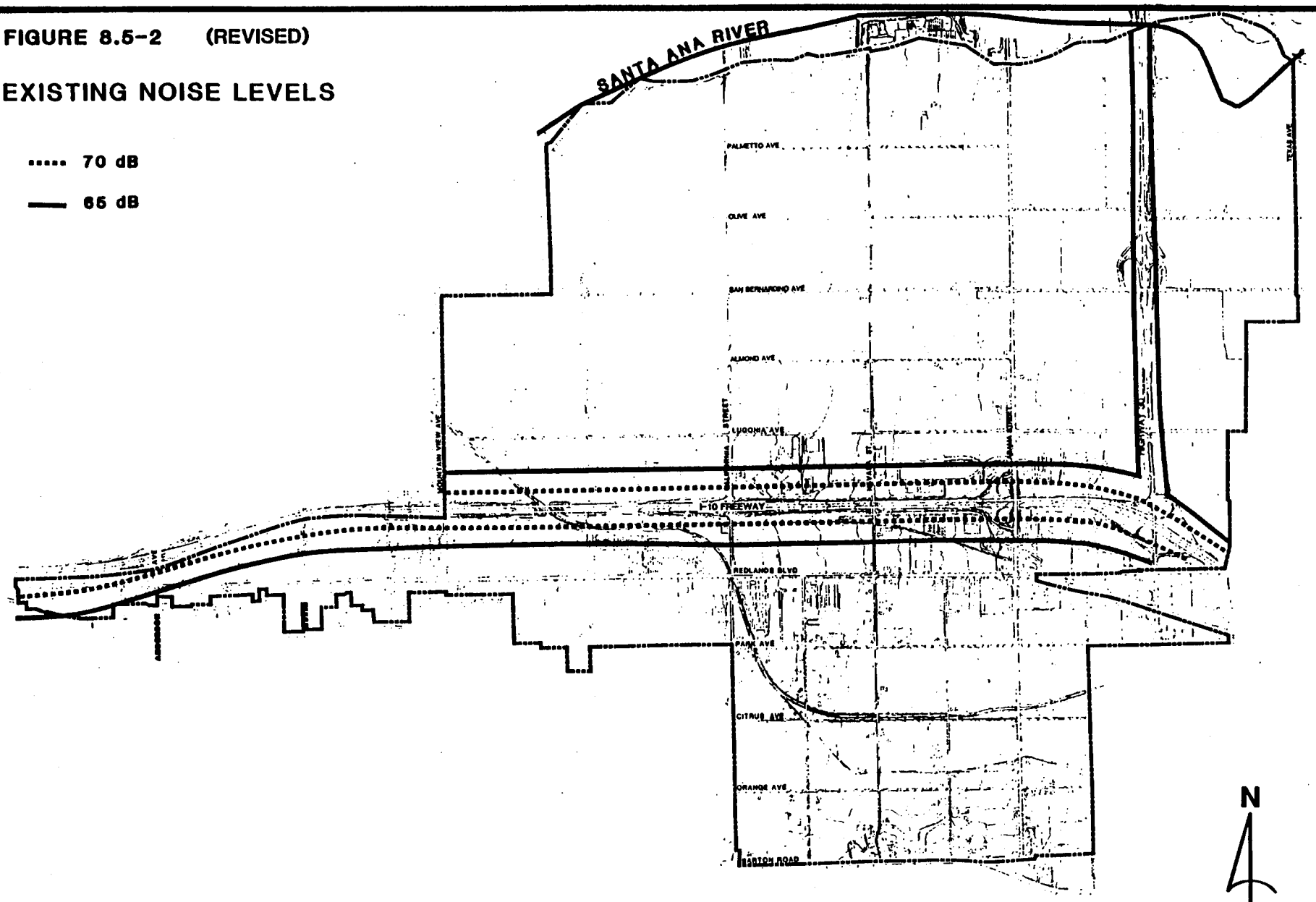
FIGURE 8.5-2 (REVISED)

EXISTING NOISE LEVELS

..... 70 dB

——— 65 dB



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Noise contours along Highway 30 for the 65 dB contour extend out to about 200 feet on each side of the freeway.

The flight pattern from Norton AFB and the subsequent noise produced by overflying aircraft were provided by the Air Installation Compatible Use Zone (AICUZ) Study for Norton AFB, ~~December 1976~~ February 1988. The 65 dB noise contour from overflying aircraft and general runway noise, affects ~~the entire length of the northern border~~ an area just north of the East Valley Corridor along the Santa Ana River and a narrow zone in the northeast area (see Figure 8.5-2). The study states that residential uses within the 65 CNEL contour are "strongly discouraged unless a demonstrated community need for residential development would not be met if the development were prohibited." Commercial uses are strongly recommended by the study in these noise level zones.

~~Another narrow band extending from the northeast to southwest corners of the project is designated as the Closed Landing Area (see Figure 8.5-2). This area represents a zone of significant noise levels resulting from aircraft training flight patterns. Although the frequency of these flights are low, noise levels are above significant levels at times. Base officials strongly recommend that only non-residential uses be placed within the Closed Landing Pattern.~~

8.5.1.2 Project Impacts

Short term increases in ambient noise levels would occur during the construction phase of individual projects. Construction of the project is expected to span 30 to 40 years; however, the area impacted by individual projects will be localized. As development progresses, impacts of construction noise upon adjacent residential and other urban use would become more common. However, it should be noted that the County's Development Code excludes temporary construction activities between 7:00 a.m. and 7:00 p.m. from compliance with established noise standards.

During the construction of an individual project, construction of different types of structures will produce different sound levels. Individual noise events on construction sites could typically reach as high as 95 dB depending on equipment used. These noise levels would impact construction workers to a more significant degree than adjacent residents or existing retail businesses due to the proximity to the noise source. Residents living near a construction site would perceive higher ambient noise levels during construction than before or after construction.

Each land use will also have its own particular character noise emissions. Industrial uses will tend to have higher noise levels due to major mechanical equipment, manufacturing, fabrication and heavy truck traffic than other land uses. Commercial uses will generate higher traffic levels and other associated noise impacts but these are less significant than the same noises generated by industrial developments. Residential uses would generally have the lowest ambient noise generation of the three major land uses due to less traffic

generated and slower vehicle speeds, as well as an environment that diffuses noise sources throughout a larger area and includes more sound absorbing surfaces such as vegetation.

The home environment is the most sensitive noise receptor for land use planning. Noise exposure at commercial and industrial sites tends to be shorter in duration and thus has less significant effects on people than the long term exposure to noise that may occur in and around the home. Noise generated from exterior sources which may affect a residence or educational institutions is required to be attenuated to 45 CNEL. Exterior noise levels in excess of 65 dB are not permissible in residential areas without mitigation.

Project impacts from increased noise levels pertain mainly to increased traffic on I-10, Highway 30, and the major and secondary highways proposed for the East Valley Corridor. Table 8.5-1 lists the estimated highway noise levels at project buildout. Figure 8.5-3 depicts the projected highway noise levels at project buildout.

Interstate 10 is forecast by Caltrans to carry 172,000 vehicles per day by 2005 with 2 additional lanes planned. Predicted noise contours for 75 dB are about 175 feet, 70 dB to 425 feet, and 65 dB to 775 feet. This amounts to an increase of 41 percent in the area of 70 dB and 29 percent for 65 dB areas.

Highway 30 is planned to expand to 4 lanes that will handle approximately 56,000 vehicles by 2005 according to Caltrans. The 65 dB level of noise will remain about 200 feet due mainly to the reduction of speeds expected with increased congestion.

The proposed circulation within the East Valley Corridor and the forecast traffic flows for each route, are provided in the Circulation Report. Redlands Boulevard, Alabama Street, California Street, and San Bernardino Avenue are planned to expand to 6-lane highways. Lugonia Avenue, Mountain View Avenue, and Nevada Street are scheduled as 4-lane secondary highways. Using Caltrans general estimation for noise levels, Table 8.5-1 lists the approximate distance from the outside lane to expected noise contours.

These increases in noise levels along the principal highways are a significant impact when compared to the existing low noise levels associated with the generally agricultural land uses. When compared to the alternative of market-driven growth within the East Valley Corridor, which envisions unplanned buildout by 2012, the projected noise levels under the Specific Plan should be slightly less due to community and roadway landscaping standards and a slower, more planned growth (buildout by 2028).

The aircraft noise associated with Norton AFB is expected to remain essentially unchanged during the growth period. However, the noise which now impacts principally citrus groves, would impact urban development. The Specific Plan states that no residential developments will be allowed within the 65 dB contour as provided in the Base

Table 8.5-1

ESTIMATED HIGHWAY NOISE LEVELS AT BUILDOUT

Highway	*Existing Distances (feet)*			*Projected Distances (feet)*		
	70 dB	*65 dB*	*60 dB*	*70 dB*	*65 dB*	*60 dB*
Interstate 10	300	600	900 to 1,050	425	775	1,275
Highway 30	---	100 to 200	---	---	200	450
Redlands Blvd.	---	100	---	75	175	420
Alabama Street	---	<100	---	100	200	450
San Bernardino Avenue	---	<100	---	60	150	330
California St.	---	---	---	60	150	330
Lugonia Avenue	---	---	---	40	120	280
Mt. View Avenue	---	<100	---	50	125	300
Nevada Street	---	---	---	---	100	---

Note: I-10 and Highway 30 projected distances are for 2005. Remainder of roads are for 2028. I-10 and Highway 30 distances adjusted due to their elevated design. Distances are from center of outside lane.

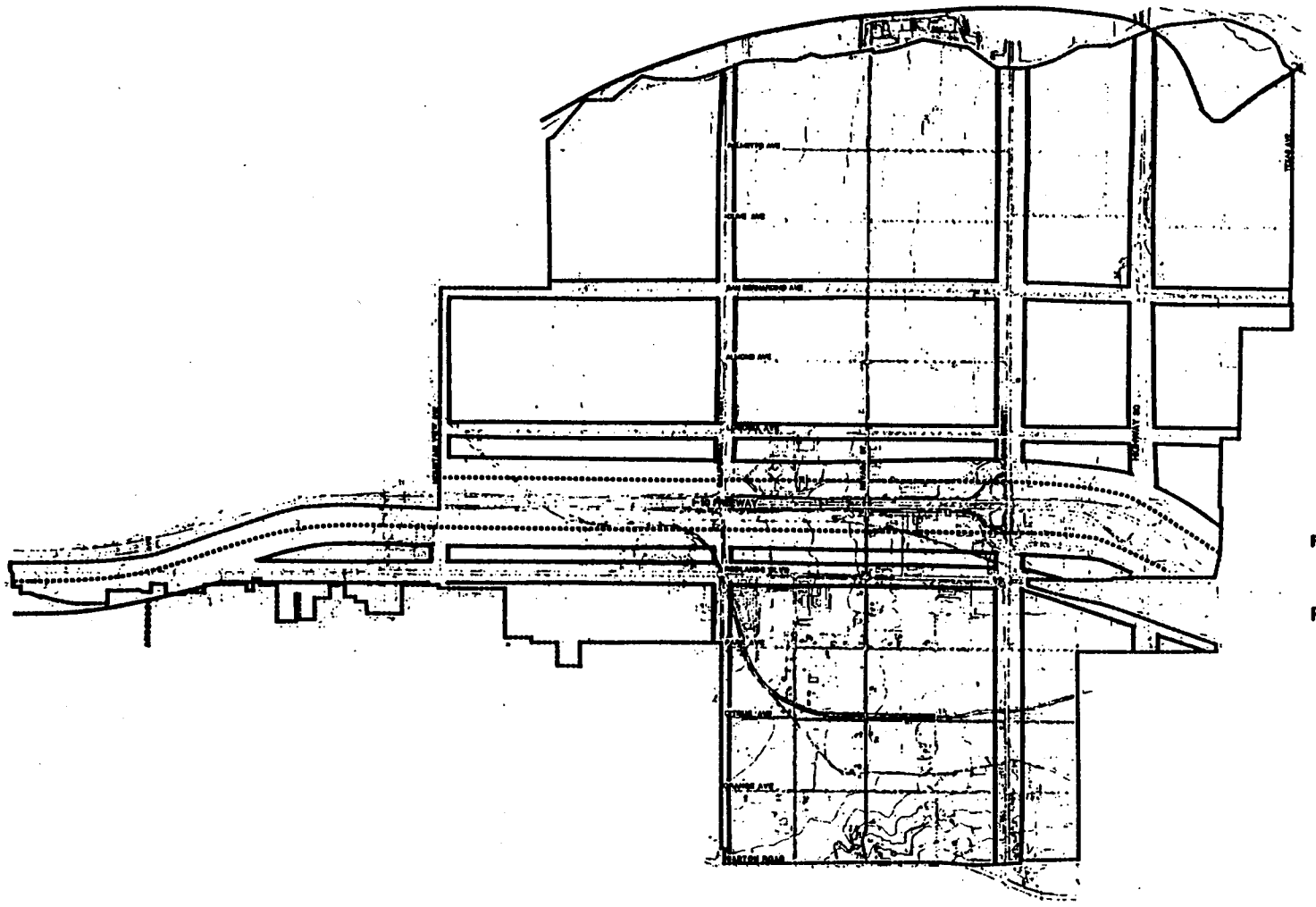

FIGURE 8.5-3 (REVISED)

PROJECTED NOISE LEVELS

— 65 dB

···· 70 dB

N

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0 1/2 1 2 MILES

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study. ~~Some residential may occur south of Citrus Avenue within the narrow Closed Landing Area.~~ Noise levels created by Norton AFB are considered a low impact on the planned commercial and industrial development within the 65 CNEL.

8.5.1.3 Mitigation Measures

Adequate mitigation of construction-related noise can be accomplished through the following measures implemented through the County Development Code.

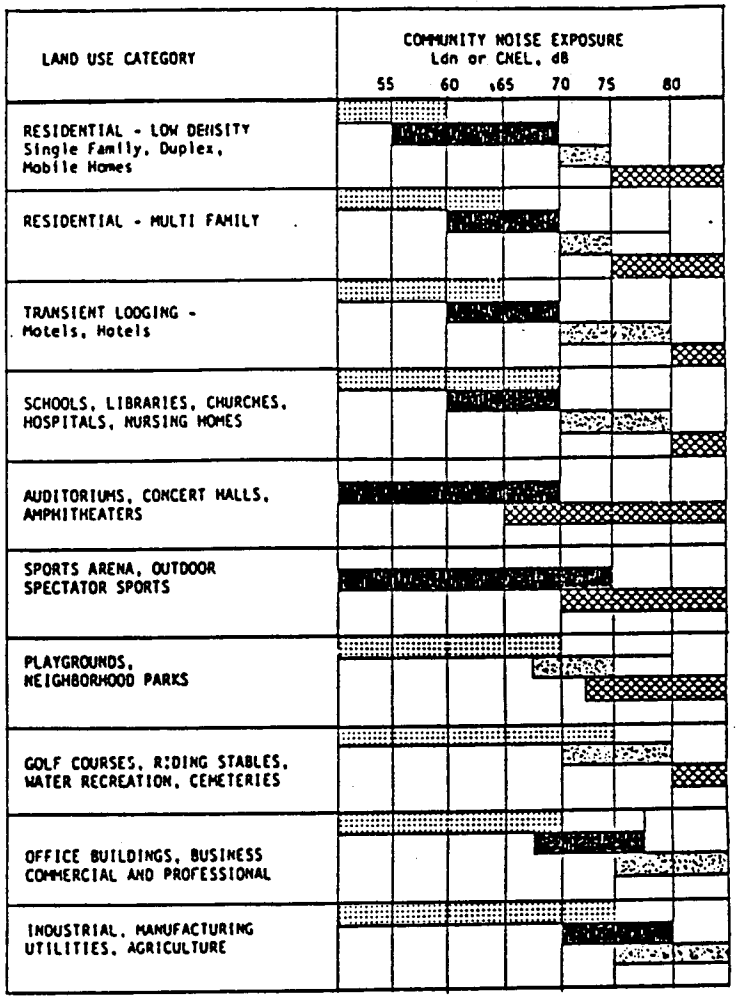
- Restrict hours of operation of noise equipment to between 7:00 a.m. and 7:00 p.m., Monday through Saturday adjacent to occupied residential areas.
- Stationary machines should be placed to direct noise away from sensitive receptors.
- Construction vehicles should be equipped with adequate mufflers.

The East Valley Corridor Specific Plan has incorporated the County's compatibility and development standards and land use requirements with regards to long-term noise levels. These standards are generally based on state guidelines for land use compatibility for community noise environments as provided by the California Department of Health. These guidelines are shown in Figure 8.5-4. In the Community Design, Division 2, Chapter 2, Section EV4.0225(b), The Specific Plan states that "Every use of land or building shall operate in conformity with the following performance standards:...

(2) Noise: Every use shall be so operated that the maximum volume of sound or noise generated does not exceed 65 decibels at any point on the lot line of the lot on which the use is located. ..."

This same section also states that an acoustical analysis shall be required for new single or multiple family residential development proposed adjacent to freeways, highways, arterials, rail lines, and under flight paths. The analysis shall indicate the existing and proposed CNEL's on the site, and the method(s) by which the noise is to be controlled or reduced to no more than 65 dB within the exterior living space, and 45 dB within the interior living space of the project.

The East Valley Corridor Specific Plan has also established a Safety-Noise Overlay District (Division 5, Chapter 3). This District was created to provide greater public safety by establishing land use review procedures and requirements for land uses in areas with identified high noise levels. The following requirements and standards are reprinted directly from the Specific Plan.



LEGEND:

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

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FIGURE 8.5-4

CALIFORNIA NOISE/LAND USE COMPATIBILITY GUIDELINES

SOURCE: CALIFORNIA DEPT. OF HEALTH, 1976

Section EV5.0405 *Locational Requirements*.

(a) The Safety-Noise Overlay should be applied to those areas where the Community Noise Equivalency Level (CNEL) is 65 decibels, 65 dB or greater.

(b) Community noise acoustical reports may be required during developmental processes to determine actual noise levels and contours.

(c) Certain land uses may not be compatible at 65 CNEL dB or greater.

(d) In the East Valley Corridor Specific Plan, this Overlay is established over areas subject to aircraft noise related to Norton AFB, and to traffic noise generated on I-10.

Section EV5.0410 *Development Standards*. When land use is proposed within a Safety-Noise Overlay, the following standards shall apply with respect to residential uses.

(a) Noise levels shall be identified. An acoustical report shall be performed to identify noise impact and land uses.

(b) Interior noise levels in all one-family and multifamily residences and educational institution shall not exceed 45 dB CNEL emanating from sources outside of the residential building.

(c) Exterior noise levels in all one-family residential land use areas and multifamily residential land use areas should not exceed 65 dB CNEL. Exterior noise levels shall not exceed 70 dB CNEL for any residential use areas.

(d) Ability to mitigate exterior noises to the levels of 65 dB CNEL and 70 dB CNEL shall be considered by the reviewing authority when determining the actual CNEL level with which the land uses must comply.

(e) In areas where noise exceeds the noise standard, measures shall be taken to mitigate noise levels. An acoustical report identifying these mitigation measures shall be required and reviewed by the reviewing agency prior to issuance of any required permits or approval of land use applications.

(f) All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to meet the following criteria;

Typical Uses	*12-Hour Equivalent Sound Level (Interior) dB CNEL*
Educational Institutions, Libraries, Churches, etc.	45 dB
General Office, Reception, etc.	50 dB
Retail Stores, Restaurants, etc.	55 dB
Other Areas for Manufacturing Assembly, Test, Warehousing, etc.	65 dB

In addition, the average of the maximum levels of the loudest of intrusive sounds occurring during the 24-hour period shall not exceed 65 dB interior.

The overlay zone as described in Section EV5.0405(d) above should also include the zones with noise levels greater than 65 dB along the principal highways as listed in Table 8.5-1.

Basic methods to minimize noise levels on sensitive receptors include standard noise source control techniques, architectural design, land use or site planning, and usage of sound barriers.

Typical mitigation measures for site specific building developments include setbacks, landscaping, berming, block walls, and additional sound-proofing of the building.

With implementation of the Safety-Noise Overlay District, noise impacts are expected to be mitigated to a level of nonsignificance.

8.5.2 Visual Aesthetics

8.5.2.1 Existing Conditions

The East Valley Corridor is currently experiencing a transition from citrus-orientated agriculture to urban development. This transition is particularly noticeable south of I-10 and just north of I-10 between California Street and Highway 30. Areas south of Park Street and north of Lugonia Avenue are mainly agricultural with citrus groves the dominating feature.

A view analysis was prepared by Florian Martinez Associates from observations along the I-10 Freeway and Highway 30. These roadways offer view opportunities as a gateway to the project area along with elevated sections that are approximately 20 feet above grade that allow views of the entire site. The analysis examined four types of views: (1) good views - primary, these consist of major landmarks such as buildings, landscaping and views of the San Bernardino Mountains; (2) good views - secondary, are not views of major landmarks but oriented to pleasant backdrop views; (3) deficient views - primary,

these are unsatisfactory views of either major landmarks or of a depressed area adjacent to a good view - primary; (4) deficient views - secondary, are not of major elements but of small, visually unattractive areas that sporadically occur throughout the study area.

The resulting view corridor analysis is shown in Figure 8.5-5. In general, views north of I-10 are considered good-primary due to the extensive agricultural fields, citrus groves, Mexican fan palms, and the San Bernardino Mountains in the background. These views are exemplified by photographs labeled Figures 8.5-6 through 8.5-9 which were taken at locations shown on Figure 8.5-5.

Figure 8.5-6 shows the open fields that are prevalent throughout the northwest part of the project area. Typical orange groves that dominate the north-central sections of the project area are shown in Figure 8.5-7. The rows of tall Mexican palm trees are highly visible outlining the citrus groves. A closer view of the palm trees along Palmetto Avenue looking east from California Street is found in Figure 8.5-8. An example of the transition from citrus groves to urban development is shown in Figure 8.5-9. This view is taken from I-10 just west of Alabama Street and shows the emerging commercial/office development and cleared fields between I-10 and Lugonia Street with the extensive orange groves, palm trees, and mountains in the background.

Views south from I-10 are generally good-secondary to deficient-secondary. The only exception is the background view of the Box Springs Mountains. These southerly viewpoints observe the mixed retail along Redlands Boulevard which includes numerous old or rundown buildings west of California Street. New offices and the postal center have replaced the groves between California and Nevada streets. General commercial uses make up the views east of Alabama Street. Typical views along Redlands Boulevard are shown in Figure 8.5-10.

The area south of Park Avenue is experiencing a transition from agriculture to urban but extensive groves still exist providing good views. Figure 8.5-11 is a view north of Barton Road near Nevada Street that shows the existing agriculture but with the encroaching commercial building in distance to right.

8.5.2.2 Project Impacts

The proposed Specific Plan calls for elimination of all agriculture from the project area. The existing citrus groves provide the good foreground visual resources in the area by enhancing the mountain backgrounds and creating open space and a lush green view.

The urbanization of the project area will change the visual foreground character from agricultural to urban. This change from a quality agricultural view to a quality urban view is generally considered a significant impact.

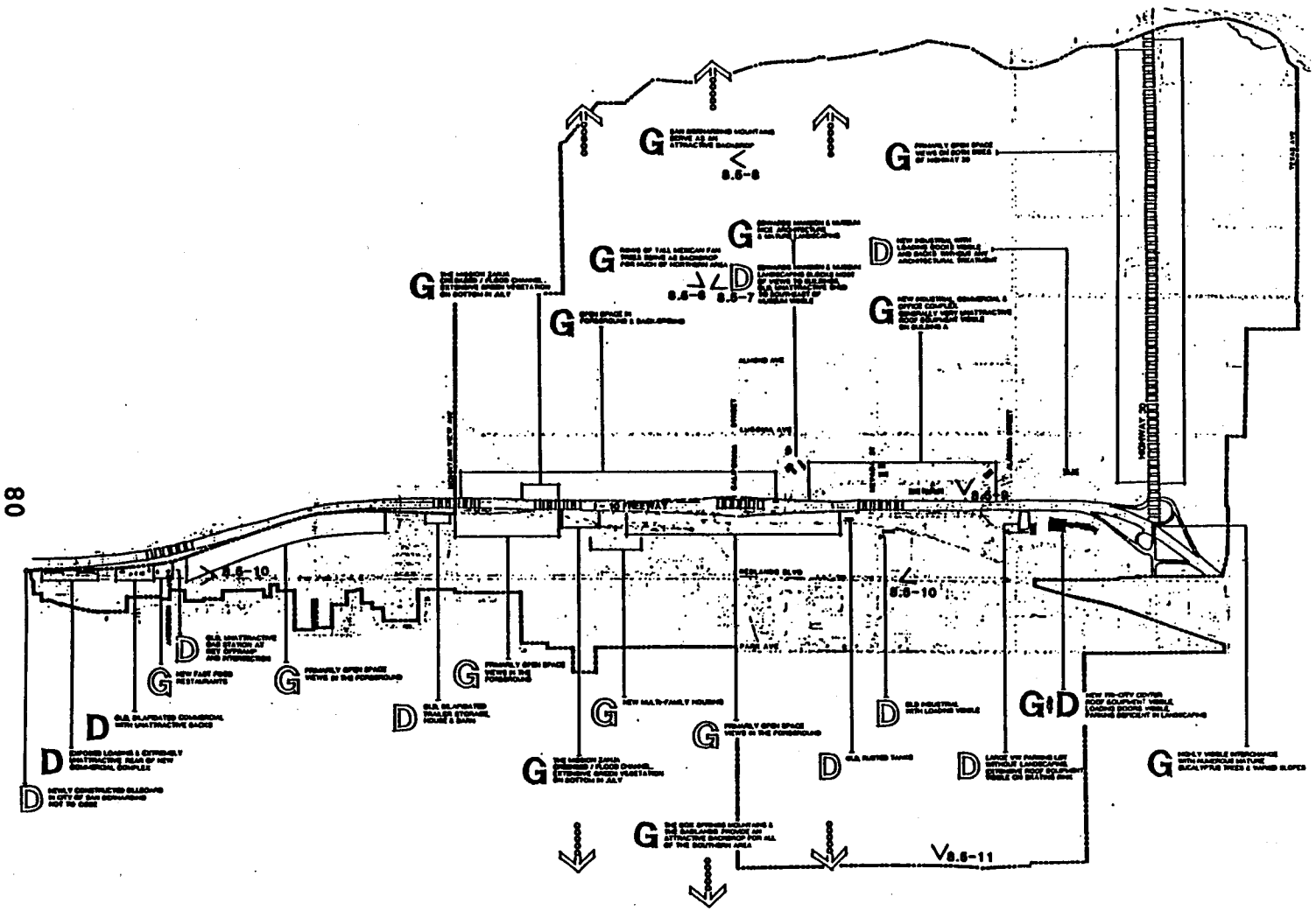


FIGURE 8.5-6

VIEW CORRIDOR ANALYSIS

FROM I-10 FREEWAY AND 30 HIGHWAY

LEGEND

- G — GOOD VIEWS - PRIMARY
- G — GOOD VIEWS - SECONDARY
- D — DEFICIENT VIEWS - PRIMARY
- D — DEFICIENT VIEWS - SECONDARY
- ELEVATED PORTIONS OF THE I-10 FREEWAY AND HIGHWAY 30 APPROXIMATELY 20' ± ABOVE GRADE — THESE AREAS OFFER THE BEST OPPORTUNITIES FOR VIEWS
- < VIEWPOINTS OF PHOTOGRAPHS

GENERAL NOTES

LANDSCAPING IN THE I-10 CORRIDOR FREEWAY AND 30 HIGHWAY CORRIDOR RIGHT-OF-WAY IS GENERALLY DEFICIENT

EAST VALLEY CORRIDOR

CSA 110, COUNTY OF SAN BERNARDINO

FIGURE 8.5-6

VIEW NORTHWEST FROM INTERSECTION OF SAN BERNARDINO AVENUE AND CALIFORNIA STREET

URS CORPORATION

FIGURE 8.5-7

VIEW NORTHEAST AND EAST NEAR SAN BERNARDINO AVENUE AND CALIFORNIA STREET

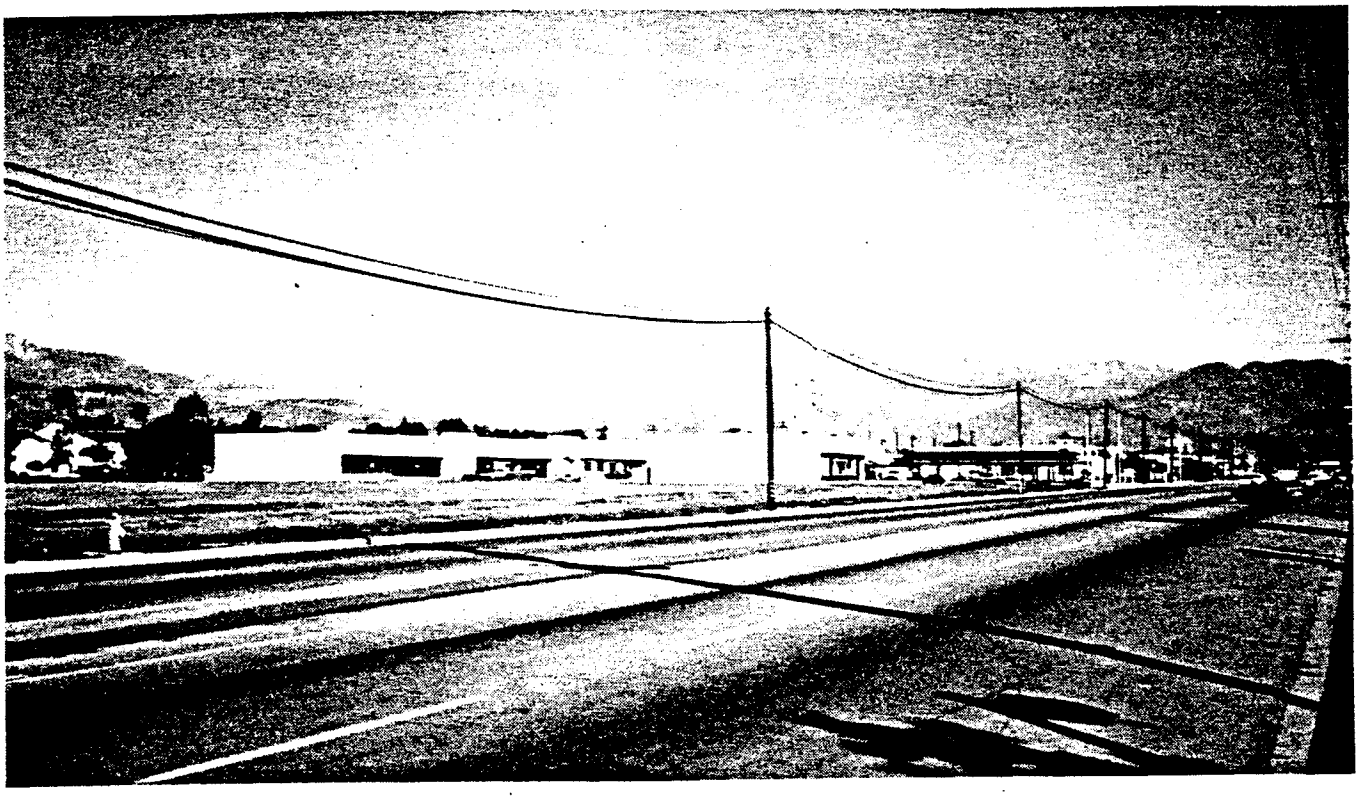
FIGURE 8.5-8

VIEW EAST ALONG PALMETTO AVENUE

URS CORPORATION

FIGURE 8.5-9

VIEW NORTH FROM I-10, WEST OF ALABAMA STREET



VIEW EAST ALONG REDLANDS BLVD. NEAR IOWA STREET

FIGURE 8.5-10

VIEW WEST ALONG REDLANDS BLVD.
NEAR ANDERSON AVENUE

URS CORPORATION

FIGURE 8.5-11

VIEW NORTH FROM BARTON ROAD NEAR NEVADA STREET

URS CORPORATION

However, the Specific Plan, with its standards and policies to develop aesthetically pleasing development, should produce less visual impacts than the General Plan or market-driven alternate.

8.5.2.3 Mitigation Measures

The Specific Plan has a stated goal to promote high quality development by protecting and enhancing existing amenities, creating an identifiable community character, and adopting development standards and guidelines to ensure aesthetically pleasing design and land use compatibility. Policies to provide visual goals include establishing design themes, creating pleasing views from freeways and arterials, and encouraging effective use of landscaping.

Specific mitigation measures as listed in Section EV2.0225 include the following:

1. Design streetscapes and intersections consistent with regard to setbacks, landscaping, sidewalks, and medians;

2. Preserve existing Mexican fan palms along selected roadways;

3. Require screening for negative views on buildings;

4. Adopt minimum landscaping requirements;

5. Preserve open space along specified scenic corridors;

6. Ensure preservation of scenic vistas and unique historic or architectural features; and

7. Lights shall be placed to avoid excessive light glare or spillage.

With implementation of the Specific Plan's land use, architectural, and landscaping standards, a pleasing urban view should be established. The mountain background will be maintained and should be enhanced by extensive landscaping and well-designed development. The Specific Plan will eliminate unsightly and haphazard development. With the Specific Plan's design standards acting as mitigation measures, the significant visual impacts can be reduced to a level of non-significance.

8.6 LAND USE AND PLANNING

8.6.1 Existing Conditions

8.6.1.1 Land Use

The East Valley Corridor includes a full range of existing land uses and vacant properties. A major portion of the study area (59%) is agricultural with citrus groves covering approximately 1,611 acres or 37 percent of the project (see Figure 8.6-1). The entire area bounded on the north by the Santa Ana River, on the west by California Street, on the south by Lugonia Avenue, and on the east by Texas Street is in San Bernardino County or Redlands agricultural preserves. Citrus groves to the south of I-10 are being subjected to rapid urban development, particularly along Redlands Boulevard. Field crops are generally confined to the northwest portion of the study area, north of I-10 and west of California Street, and total about 947 acres.

Commercial property is the primary land use along Redlands Boulevard (especially the western and eastern ends) and extends along West Colton Avenue. Office complexes and industrial parks are currently being developed in a strip of land between I-10 and Lugonia Avenue from California Street to the Route 30 Freeway. Scattered industrial uses are also present south of I-10.

Only isolated farm houses are located in the agricultural zones north of I-10 with a slightly higher density of homes south of I-10. Single- and multiple-family residences are being developed in the area near California Street and Redlands Boulevard. Housing tracts lie adjacent to the project area on the south, the west, and the east.

Other significant developments are adjacent to the northern boundary of the project. These include the City of Redlands Wastewater Treatment Plant and Sanitary Landfill along the south bank of the Santa Ana River between Nevada and Alabama streets, and Norton Air Force Base, whose runway is situated just north of the river. An oil and natural gas-fueled Southern California Edison powerplant is located at the northeast corner of San Bernardino and Mountain View avenues.

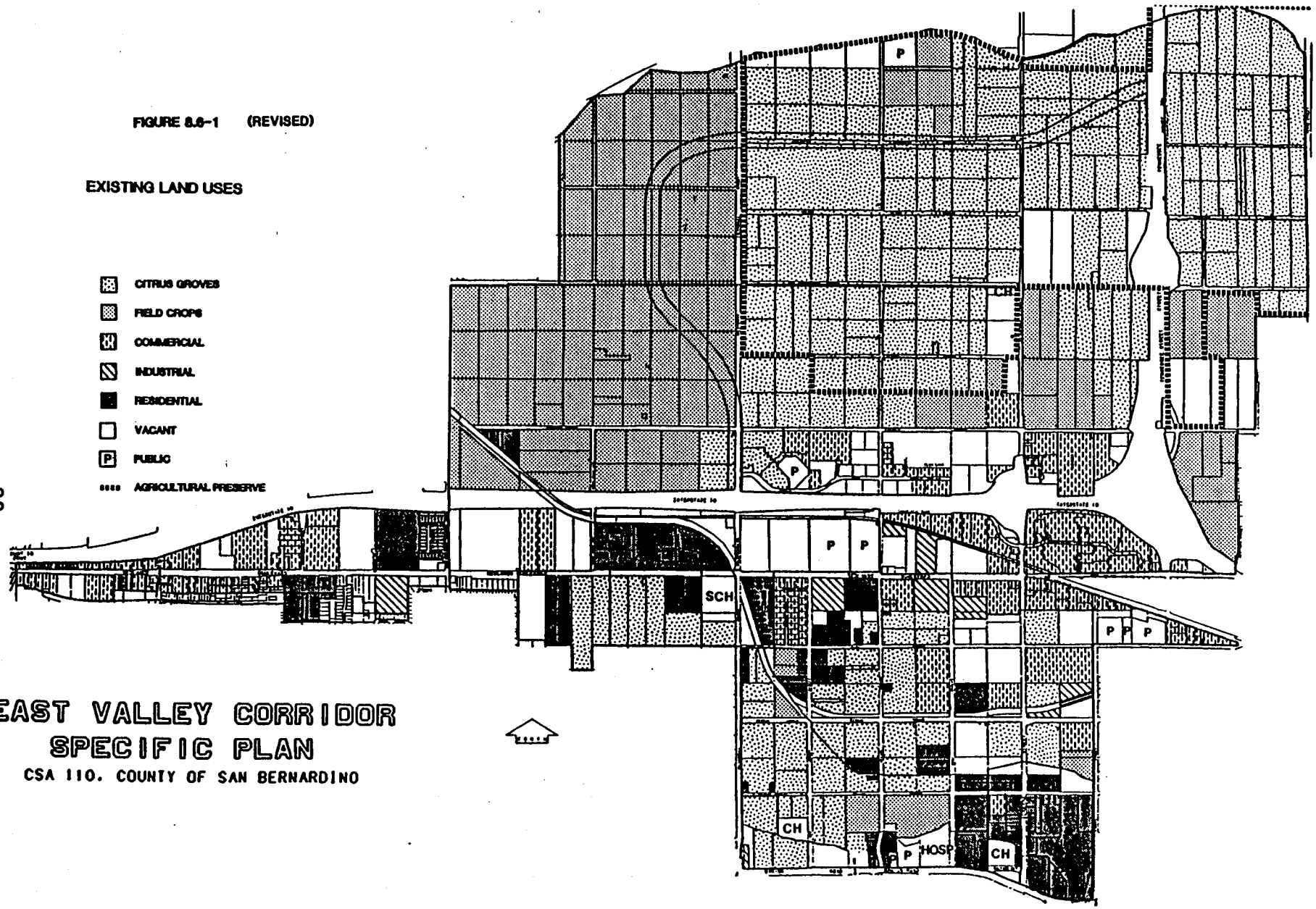
Existing land use types were identified using aerial photographs and site review and verification. General land use categories used to define the area include:

- Residential - Single-family and Multi-family
- Commercial
- Industrial
- Agriculture - Citrus and Field Crops
- Public
- Vacant
- Roads and Infrastructure.

Table 8.6-1 lists the existing land uses within the East Valley Corridor as updated by the County of San Bernardino in October 1987.

FIGURE 8.6-1 (REVISED)

EXISTING LAND USES



EAST VALLEY CORRIDOR
SPECIFIC PLAN
CSA 110. COUNTY OF SAN BERNARDINO

Figure 8.6-1 depicts the general existing land uses. Each of these categories is described below.

Table 8.6-1

EAST VALLEY CORRIDOR SPECIFIC PLAN
EXISTING LAND USE ANALYSIS

Land Use	*Acreage*	*Percent of Total*
Residential - Single and Multi-Family	388	9
Commercial - General, Retail, and Office	351	8
Industrial	74	2
Citrus Groves (est.)	1,611	37
Field Crops (est.)	947	22
Public	86	2
Vacant	390	9
Land Uses (Subtotal)	3,847	89
Roads and Infrastructure	503	11
TOTAL:	4,350	100

Single-Family Residential. Single, unattached residences are designed to accommodate individual family units and are usually located on separate lots. Clustered residential units in conventional subdivisions are located between Redlands Boulevard and I-10, west of California Street. There are also subdivisions bordering the study area in most directions except north, along the Santa Ana River.

Individual residential units are scattered throughout the study area. Many are associated with farm or citrus activities particularly north of I-10. South of I-10, lots are generally smaller in overall size. The number of residences is greater and more clustering occurs. Many are still associated with agricultural uses although most appear to be inactive or transitional. Several small farm or farming like properties with single residences are located in the south and southeast portion of the study area. Those not in citrus are equestrian related with stalls and pasture surrounding the residence.

Multi-Family Residential. This category identifies multi-family attached or detached units on single lots. Examples are condominiums, apartments, mobile homes and trailer parks. Within the study area most are located to the south of I-10 on Redlands Boulevard. They include five mobile or trailer parks and two large townhouse apartment/condominium complexes. A new condominium complex is also located in the extreme southeast corner of the project area. The combined single-family and multi-family residential uses amount to 388 acres or 10 percent of the total land use.

Commercial. Commercial properties include all business, service-type activities or vacant commercial buildings or identified commercial under construction. It does not include manufacturing. Existing commercial is clustered in three primary portions of the study area, north of I-10 between California and Tennessee streets (Route 30 Freeway), from I-10 south to the south side of Redlands Boulevard between Nevada and Kansas streets, and scattered on both sides of Redlands Boulevard from Mountain View Avenue west to Anderson Street.

Types of uses are extremely varied and dependent on location. The Redlands Boulevard/Tennessee Avenue hub includes a large number of restaurants, fast food drive-ins, car sales, a motel, shopping center and miscellaneous services. The north side of I-10 is retail commercial and freeway services. Commercial activities vary widely in the western-most portion of the study area, encompassing both sides of Redlands Boulevard. Examples include a nursery, car dealership, drive-in theater, service stations, liquor stores, market, thrift store, auto parts sales and antiques stores. Commercial properties account for 351 acres or 9 percent of the total land use.

Industrial. This land use category plays a minor role in the study area. It is used here to indicate manufacturing or light industrial uses. Various types of manufacturing and assembly are the predominant uses, i.e., prefabricated modular homes and electric cars. Tank yards are also included. This type of land use is found along Redlands Boulevard and a few outlying locations. Industrial and manufacturing land uses account for 2 percent of the total land use (74 acres).

Agriculture. Agriculture includes all citrus groves and cultivated field crops throughout the study area. The vast majority of the study area north of I-10 is currently used for some form of agriculture or citrus. Field crops are primarily grown in the northwest section of the study area. Alfalfa is the predominant crop but other row crops are grown seasonally. Scattered types of agriculture in the southern study area besides citrus include dairies, poultry and hay. Non-citrus agriculture amounts to an estimated 947 acres or 22 percent of the study area.

Agricultural citrus is the primary existing land use within the study area. It is also subject to the most recent land conversion. Citrus orchards are the predominant land use north of I-10 and account for the majority of land use south of I-10. In some areas the quality of the orchards are noticeably poor and thinning. Citrus groves amount to an estimated 1,611 acres and account for 21 percent of the total acres of citrus production within the County of San Bernardino,

according to the County's 1986 Annual Crop and Livestock Report. The 947 acres of field crops (mainly alfalfa) accounts for about 4 percent of the County's total alfalfa acreage.

The principal citrus grown in the project area and their approximate acreages and estimated yields as reported by the annual crop report are as follows: valencia oranges - 575 acres, 540 cartons per acre; navel oranges - 730 acres, 480 cartons per acre; and grapefruit - 225 acres, 890 cartons per acre. Using average values per carton for 1986, the estimated annual value of citrus production within the project area is approximately $5 million. Assuming all the field crops were alfalfa, the annual estimated value of production would be approximately $600,000.

Much of the area north of I-10, as depicted on Figure 8.6-1, is included in the County of San Bernardino or City of Redlands agricultural preserves. Agricultural preserves were established by local jurisdictions under the 1965 Williamson Act to save farmland and control urban sprawl. Under the act, landowners can enter into contracts restricting their land to agriculture use for 10 years. In return, the landowners are taxed on agricultural-use value, rather than the value of land for potential real estate development. The property owner can withdraw from the contract over a 9-year period, during which the tax rate rises gradually to market value.

Within the agricultural preserves in the project area, approximately 190 acres are still under contract. Of this total, approximately 130 acres have not renewed their contracts which are due to expire by 1993 at the latest. Parcels totalling about 60 acres are still under agriculture contracts which will require a 9 year withdrawal period or a one-year buy out which includes a substantial penalty.

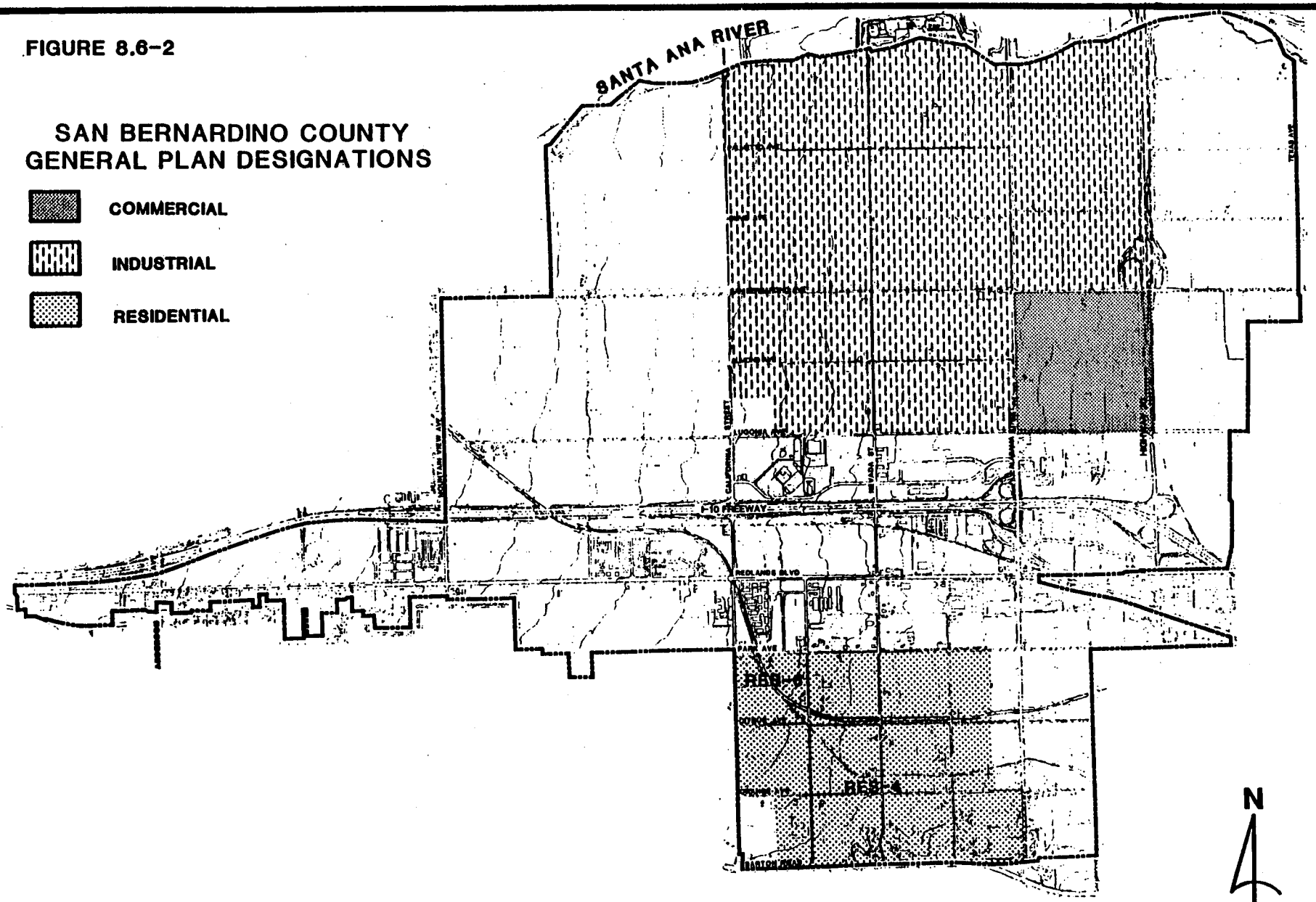
Public. Very few public land uses are identified within the study area. They include the San Bernardino County Museum located on Orange Tree Avenue, the Asistencia Mission on Barton Road east of Nevada Street (see Section 8.11), the Redlands City Maintenance Yards located on Park Avenue, and the post office, school property, and Mission school on Redlands Boulevard. They total 85.9 acres or 2 percent of the study area.

Vacant Space. Property was designated open space or vacant when there was no apparent agricultural activity and when the parcel was obviously vacant. This includes individual parcels and portions of single parcels presently unoccupied. Vacant land occupies 390 acres or 9 percent of the total land use.

8.6.1.2 General Plan Designations

County of San Bernardino. The existing San Bernardino County General Plan has designated County lands north of I-10, which are currently planted in citrus tree and field crops, for industrial uses with some commercial uses in the southeastern most portion. The south-central portion of the study area, between Park Avenue and Barton Road, has been designated for medium density residential (RES-4 and RES-6) (see Figure 8.6-2).

FIGURE 8.6-2



EAST VALLEY CORRIDOR

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City of Loma Linda. Figure 8.6-3 illustrates the General Plan Designations for the City of Loma Linda for its city limits and sphere of influence within the project area. Their General Plan has designated the areas west of Curtis Street, along Redlands Boulevard as commercial. A high density residential designation (9-13 dwelling units per acre) has been given to the area northwest of the Redlands Boulevard-California Street intersection while a large area of medium density residential (5-9 dwelling units per acre) lies to the southwest. Another area of medium density residential lies northwest of the Redlands Boulevard-Mountain Avenue intersection and an area designated for general industrial uses lies to the northeast and southwest.

City of Redlands. Redlands General Plan has designated the area north of Lugonia Avenue and west of California Street as light industrial; this area is currently used for agricultural purposes. The lands lying between Lugonia Avenue and Interstate 10 and along Redlands Boulevard -- east of California Street -- have been designated for urban services. There is some light industry designated for the areas south of Redlands Boulevard and extending southeast toward Orange Avenue. A small area of land has been designated for medium density residential (10-15 dwelling units per acre) in the southeastern corner of the project area. The Redlands General Plan designations are shown in Figure 8.6-4.

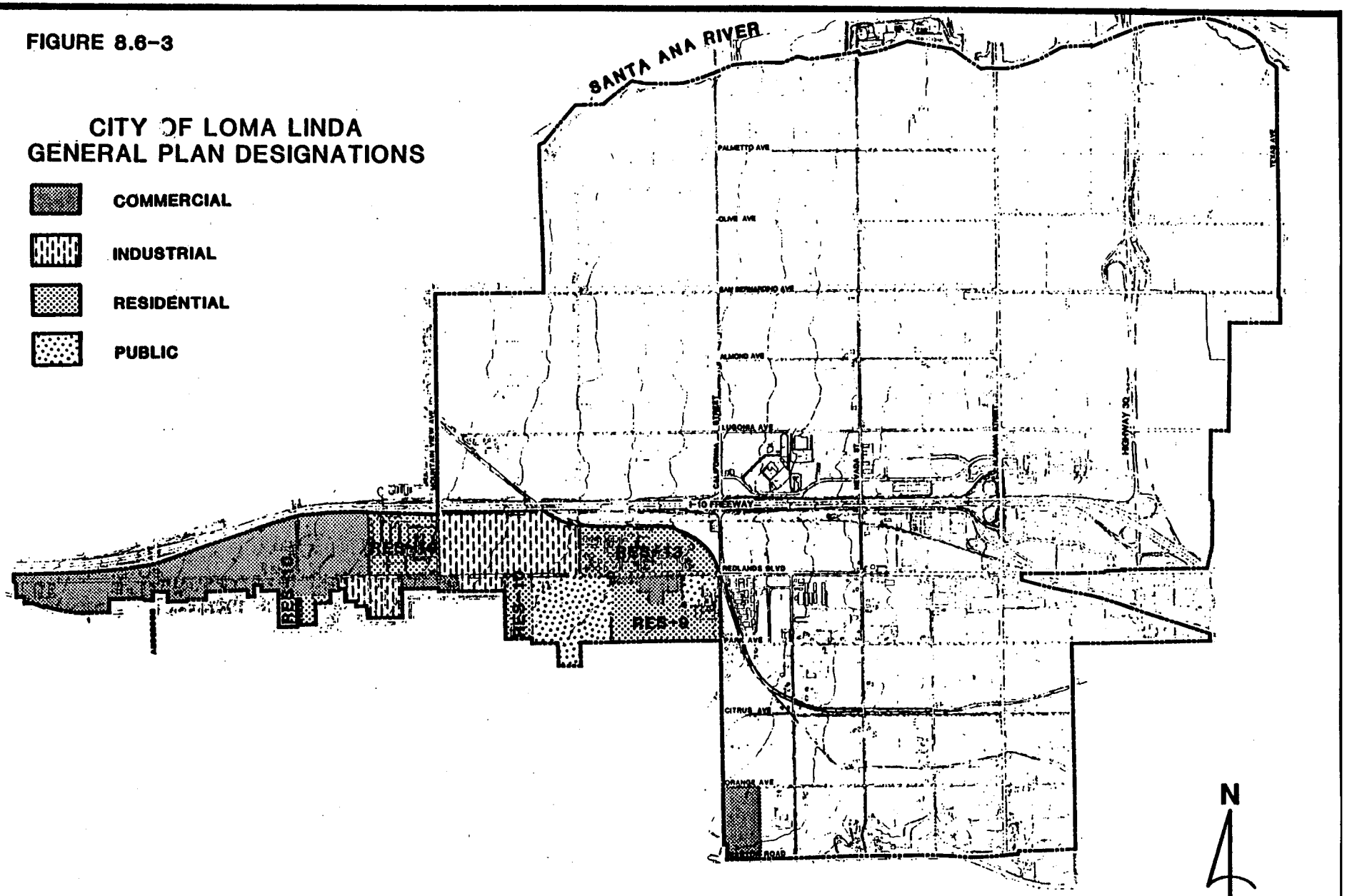
8.6.2 Project Impacts

The Specific Plan proposes to promote retail, office, industrial, and residential development throughout the project area. The most likely scenario of the Specific Plan anticipates buildout by 2028 with a maximum or worst case population of 25,700 (an estimated increase of 20,080 over the existing population).

The proposed land use designations as presented in the Specific Plan are shown in Figure 2-2 and are listed in Tables 2-1 and 8.6-2. Figure 2-2 lists large areas north of I-10 as Planned Development. The land uses associated with these areas were broken out in the tables. Also shown on Table 8.6-2 are the estimated land use acreages listed under the existing County and cities General Plans and for the market-driven high growth alternative from the Lawrence Market Report, deemed to occur without the Specific Plan.

The most significant impact of the Specific Plan as well as the General Plan and the market alternative, is the near total elimination of prime agricultural lands at project build-out. Over 2,500 acres of agricultural land, including the 1,611 acres of citrus groves, could be eliminated as development occurs. The Redlands General Plan, if extended into the County lands north of I-10 within its sphere of influence, designates almost 1,500 acres to urban or agricultural reserve which is considered open space.

FIGURE 8.6-3



EAST VALLEY CORRIDOR

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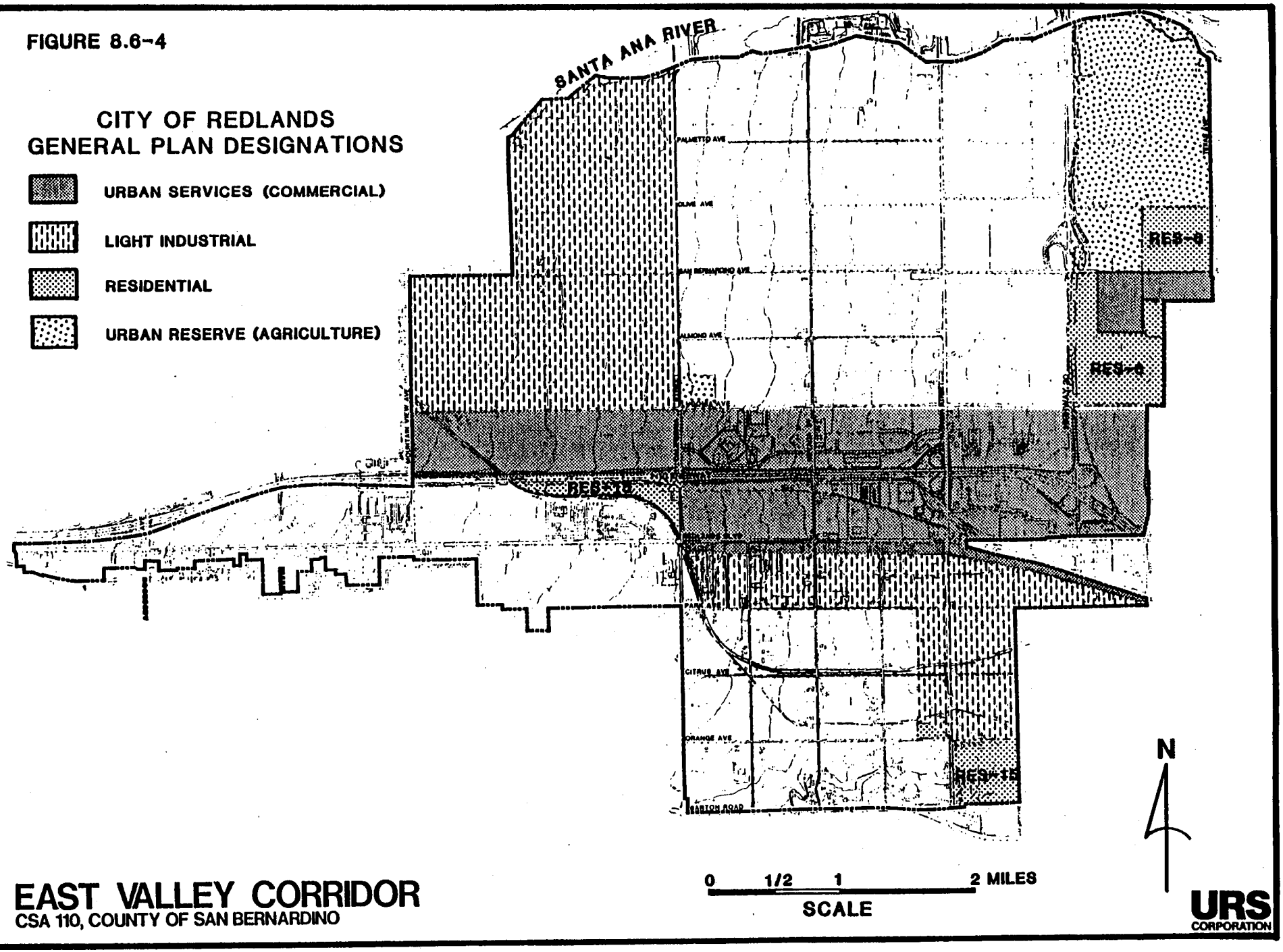
FIGURE 8.6-4



EAST VALLEY CORRIDOR
CSA 110, COUNTY OF SAN BERNARDINO

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Table 8.6-2

PROJECTED LAND USES

Land Use	*Specific Plan (acres)*	*General Plans (est. acres)*	*Market Driven Alternative (acres)*
Industrial/R&D	1,264	2,045	732
Office	743	0	415
Retail	1,036	1,130	1,635
Residential	613	635	897
Public	132	60	86
Open Space	57	0	80
Agricultural	0	250	0

Approximately 40 acres of agricultural land would be developed annually assuming uniform development during the 40-year buildout period. Of course, this development rate will depend on the rate and size of specific projects.

At buildout, the elimination of 1,611 acres of citrus groves will reduce by 21 percent the acreage currently in citrus production within the County. During 1986 alone, 435 acres or 5.5 percent of citrus acreage were eliminated in the County, continuing a steady decline as urban development spreads throughout the San Bernardino Valley. The transition of the 947 acres of field crops represents a potential decrease in alfalfa production of 4 percent Countywide.

The planned development and gradual elimination of agriculture will probably impact agriculture around the planning area by increasing urban pressures on farmland and increasing property values. This pressure on agricultural lands to convert to urban development is present throughout the San Bernardino Valley, particularly in the East Valley region. Residential projects in Redlands, San Bernardino, Loma Linda, and East Highlands are all replacing prime agricultural lands.

The proposed development of industrial uses within the project area may increase the risk of upset. Industrial and some commercial facilities may store, process, or manufacture chemicals or products that may pose hazards to human health. These hazards include emission of toxic fumes during processing or manufacturing; emission of toxic fumes caused by accidental spills, fires, or explosions; and runoff of toxic liquids onto adjacent properties or into drainage channels or pipes.

The principal difference between the Specific Plan and the County and cities General Plans are the reduction of industrial acreage and the increase in office area. The slight reduction in residential area is in response to the imbalance that now exists in the region as houses

outnumber employment opportunities and the SCAG-82 directive on this same issue. The intent of increasing designations for offices and the promotion of industrial parks and research and development facilities in place of general industrial uses is to create more jobs than the existing General Plans or the most likely alternative.

The Specific Plan will also promote and ensure uniform land use, infrastructure, architectural, landscaping, circulation, and environmental policies, standards, and designs. The Specific Plan's goals and policies on land use and implementation of these goals and policies should have a positive impact to land use when compared to the existing General Plans or the market-driven alternative developments.

8.6.3 Mitigation Measures

In order to restrict the premature elimination of agriculture activities within the project area, the Specific Plan in Section EV2.0205 states that the existing viable agricultural activities in the East Valley Corridor should be preserved as long as feasible while the area transitions to more intensive uses. This measure will decrease the adverse impact on agriculture production and value by reducing the rapid, widespread elimination of valuable agricultural lands.

This same section also lists the goals, policies, and objectives of the Specific Plan regarding land use and planning; refer to Section EV2.0205 for a complete listing of these measures.

Buffer areas of light commercial are recommended to be located between industrial and residential land uses in order to reduce the risk of toxic fumes or spills from impacting residential areas. Buffers may also be in the form of adequate setbacks, landscaped areas, and site-specific development approval as listed in the Specific Plan's Compatibility Standards in Section EV4.0225. The storage or manufacture of any potential toxic substances should be restricted adjacent to residential areas, and the siting of any development with this potential should be thoroughly reviewed by the appropriate agencies. The buffer areas should also be wider downstream or downwind of industries with potential hazardous emissions or spillage.

Division 3, Community Land Use, and Division 4, Community Design, in the Specific Plan, provide the land use regulations and development standards for the project area. These regulations are intended to promote, protect, and secure the public health, safety and general welfare, to provide the social and economic advantages resulting from an orderly, planned use of land and resources, and to encourage, guide, and provide a definite plan for the future growth and development of the East Valley Corridor. Refer to these divisions in the Specific Plan for a complete listing of all land use regulations and standards.

8.7 DEMOGRAPHICS

8.7.1 Existing Conditions

The demographic information provided in this section is prepared from data supplied by the following consultant and agencies:

1. William C. Lawrence Company - East Valley Corridor Market Feasibility, Absorption Potential and Phasing Study

2. Southern California Association of Governments (SCAG) - 1982 Modified Growth Forecast and 1987 Draft City Projections

3. California Department of Finance 1987 Population Estimate

4. County of San Bernardino.

8.7.1.1 Population

According to the 1980 census, the project area had a population of 978. The County of San Bernardino updated this figure in 1985 to 1,114. With the recent development of several single- and multi-family projects in the project area, the population is estimated to be approximately 5,620. Of the total, it is estimated that approximately 2,600 people reside in Redlands and 3,020 in Loma Linda.

The development of the project area will be influenced by demographic characteristics within the project environs, defined as the cities of Redlands and Loma Linda and the surrounding unincorporated lands. Population within the project environs grew from 52,400 in 1970 to about 70,100 in 1984. The average annual growth rate during this period was 2.1 percent. Since 1980, the annual growth rate increased to 2.5 percent, comparable to the East Valley region (2.4%) but well below the County rate of 3.8 percent.

From 1980 to 1987, the City of Redlands population has grown from 43,619 to 54,156, an annual average growth of 3.45 percent. Loma Linda has grown from 10,694 to 12,588 in this time span for an annual growth of 2.53 percent.

Regionally, from 1980 to 1987, the County of San Bernardino has had the second highest yearly growth in the region (4.34%), slightly lower than Riverside County (4.8%). The County has grown from 682,000 in 1970 to 895,016 in 1980, to an estimated 1.167 million in 1987 (California Department of Finance).

Table 8.7-1 summarizes the past and existing population and growth rates in the region.

Table 8.7-1

EXISTING POPULATION

	1980	*Annual Growth Rate (%)*	*1984*	*Annual Growth Rate (%)*	*1987*
East Valley Corridor	978	3.5	1,114*	---	(est)5,020
Redlands	43,619	3.0	48,933	3.6	54,156
Loma Linda	10,694	1.2	11,214	4.1	12,588
East Valley (RSA 29)	346,000	2.4	379,000	---	----
San Bernardino County	874,000	3.8	1,014,460	5.0	1,167,200

Note: * 1985

Sources: SCAG-82, SCAG-87 Draft, California Department of Finance.

8.7.1.2 Housing

The project area had 728 dwelling units according to the 1980 census. In 1985, the County estimated that number to slightly increase to 741 dwelling units. A housing survey conducted in 1985 for the East Valley Corridor by Florian Martinez Associates indicated only 599 dwelling units, 265 single family and 334 multi-family. Almost all of the existing housing (95%) were located south of I-10 with only 32 farm houses located north of I-10. Over 65 percent of the residences were built within the last 10 years and 80 percent of those were multi-family. Since 1985, new residential development have added approximately 100 single-family and over 1,000 multi-family units to the project area for an estimated total of 2,100 existing dwelling units.

The County of San Bernardino recorded an increase of 106,500 dwelling units between 1980 and 1987, an annual growth rate of 4.1 percent. Redlands posted 4,539 new residences during the same period for a yearly growth of 3.78 percent. Loma Linda had 1,190 new dwelling units reported in the 7 year period for an annual average growth of 3.7 percent.

The persons per household in 1987 for Redlands were 2.6, for Loma Linda 2.41, and for the County 2.83.

The building of new houses in Redlands and its sphere of influence is expected to slow due to restrictions imposed by a growth-limiting ordinance known as Proposition N, passed in November 1987. This ordinance limits to 400 the number of dwelling units that the City can approve in a year, and limits to 150 units outside the City but connected to City water and sewer lines.

8.7.1.3 Employment

Employment opportunities within the project area currently are associated with agriculture, retail (mainly along Redlands Boulevard) and office/professional in the expanding office buildings between Lugonia Avenue and I-10. The number of jobs actually within the East Valley Corridor are unquantified but are estimated to be much more than the number of dwelling units.

The East San Bernardino Valley Regional Statistical Area (RSA) reported 123,700 jobs in 1980 with an increase to 135,535 by 1984 (2.4% annual increase). This rate is lower than the 3.55 percent growth recorded Countywide. The largest employment sectors in the County were government, retail trade, and services.

The 1987 SCAG City Draft Projections listed the 1984 employment within Redlands at 13,514 and in Loma Linda at 9,480.

Population to employment ratios are important statistics with regards to growth in San Bernardino County. This ratio is still unbalanced in the County due to the abundance of affordable housing and with larger employment centers still in Orange and Los Angeles counties. The East Valley RSA showed a ratio of 0.36 in 1980 and 1984, where 0.50 shows a balanced population to employment. This ratio indicates that there are more people than jobs in the area and that people commute outside of the area for employment. The City of Redlands has a ratio of 0.28, which exemplifies its mainly residential character. Loma Linda, on the other hand, has a ratio of 0.85, due to the large employment of the university medical center and its related services and the Veteran's Administration hospital.

8.7.2 Project Impacts

8.7.2.1 Population

The East Valley Corridor Specific Plan based on high growth is the most likely alternative to occur. This scenario forecasts a buildout of the area by 2028 with a total population increase of 20,080. This population is based on the expected number of dwelling units proposed by the Specific Plan. Of the total population increase, Redlands would absorb 16,745 and Loma Linda 3,335.

On a regional level, the project's expected increase would amount to about 10.7 percent of the total growth forecast by SCAG-82 Modified by 2000 and 9.1 percent of the forecast by 2010 in the East Valley (RSA 29). SCAG-87 Draft revised figures show that the East Valley Corridor

growth would amount to 5.6 percent of the total East Valley growth through 2010.

The City of Redlands is expected to grow at a 1.79 percent annual rate (SCAG-87 Draft) to a 2010 population of 71,695. The City of Redlands anticipates a population of about 79,000 by 2010 based on the permitted housing starts allowed by Proposition N. According to projections by the Lawrence Marketing Report, expected maximum growth through 2010 within the Redlands portion of the East Valley Corridor would total about 9,210 and would account for 52 percent of the city's forecast growth by SCAG-87. Loma Linda is forecast by SCAG-87 Draft to increase by 6,558 by 2010 at a yearly growth of 2.27 percent. Buildout of the proposed residential tracts within the Loma Linda section of the East Valley Corridor is anticipated by 1995 (Lawrence, 1987) with an estimated population growth of 3,335. This increase would be 167 percent of the SCAG-87 forecasted growth of the City by 1995 and about 51 percent of the City's growth through 2010. See Table 8.7-2 for the project and SCAG population forecasts.

Table 8.7-2

PROJECTED POPULATIONS

Area	*1987*	*SCAG-82 2000*	*SCAG-82 2010*	*SCAG-87 2010*
East Valley Corridor	(est)5,620	13,975*	18,165*	18,165*
Redlands Sec.	(est)2,600	7,620*	11,810*	11,810*
Loma Linda Sec.	(est)3,020	6,365*	6,365*	6,365*
Redlands	54,156	---	---	71,695
Loma Linda	12,588	---	---	19,146
East Valley (RSA 29)	379,000 (1984)	510,000	579,000	705,700
San Bernardino County	1,167,175	1,536,600	1,816,00	2,205,040

Sources: * East Valley Corridor figures taken from "East Valley Corridor Market Feasibility, Absorption Potential and Phasing Study," William C. Lawrence Company, July 1987.

The projected population increase does not appear to use up a disproportionate share of the SCAG forecasted growths for the East Valley RSA 29. The project's accounting for over 52 percent of Redlands and 51 percent of Loma Linda's forecasted growths through 2010 are

considered significant increases that seem to account for a disproportionate share of the growth within these cities. However, this growth is expected to occur in the area with or without implementation of the Specific Plan.

The no-project or market-driven growth scenario predicts a much faster buildout (by 2012) and a population increase of 23,336. The population increase would be distributed differently with about 11,406 in Redlands and 11,930 in Loma Linda. This scenario would take up 13 percent of the SCAG-82 forecast and 8 percent of SCAG-87 Draft forecast through 2010 for the East Valley RSA 29. This alternative would account for 65 percent of the SCAG-87 projected growth for Redlands and would create an even greater impact to Loma Linda due to its almost doubling of the SCAG-87 projected growth of the City through 2010.

Overall, the projected growth under the Specific Plan would produce less of an impact on population than the no-project market-driven alternative due to its 16 percent lower population increase and its slower growth rate (buildout in Specific Plan expected in 2028, no-project buildout in 2012).

8.7.2.2 Housing

Under maximum buildout of residential uses permitted, in the Specific Plan, a total of 7,726 new dwelling units would be allowed. The type, location, and number of these planned dwelling units are as follows:

Redlands

Multi-family (10 dwelling units per acre)	600
Multi-family (20 dwelling units per acre)	5,840
Total dwelling units:	6,440

Loma Linda

Single family (6 homes per acre)	156
Multi-family (10 dwelling units per acre)	890
Multi-family (20 dwelling units per acre)	240
Total dwelling units:	1,286

Within the City of Redlands, the expected residential development with the Specific Plan is about 161 new dwelling units per year until buildout in 2028. This number of dwelling units annually amounts to 29 percent of the total new houses allowed within the city limits and sphere of influence by Proposition N. SCAG-87 Draft forecasts the City to increase its housing by 9,866 by 2010. The projected number of new units by the Specific Plan scenario of 3,700 through 2010 is 37 percent of the SCAG projection.

The Loma Linda section of the East Valley Corridor is expected to reach buildout of its 1,286 new dwelling units by 1995, approximately 183 units per year. The SCAG-87 Draft reported an estimated increase of 3,890 residences between 1984 and 2010. The dwelling units

proposed for the East Valley Corridor would represent 33 percent of this total and 78 percent of the number of units forecast through 1995.

Regionally, the East Valley is forecast by SCAG-87 to build 145,500 new units by 2010. The East Valley Corridor Specific Plan's proposed new housing would amount to about 5 percent of this total.

8.7.2.3 Employment

The East Valley Corridor Specific Plan proposes guidelines for the development and land use of the project area. One of its main policies is to "maximize generation of employment opportunities in a region which has a significant imbalance of housing versus employment opportunities.

"The "Economic and Demographic Analysis" prepared by Hoffman Associates, estimated new job opportunities for both a low and high capture rate of new businesses through the year 2000. Based on capture rates, historic and projected absorption of office and retail space within the East Valley, and an average number of employees per acre per land use type, the projected employment is determined for the East Valley Corridor. (The numbers of employees per acre of land use type utilized in the study are 25 for industrial/research and development, 60 for office, and 22 for retail). Anticipated development is expected to create 20,550 jobs in the low growth scenario and 35,743 jobs in the high growth scenario through the year 2000. Carrying the calculations to ultimate buildout for the most likely scenario, the East Valley Corridor could potentially create over 90,000 new jobs by 2028.

SCAG-82 Modified forecast 117,000 new jobs and SCAG-87 Draft estimated 96,000 new jobs within the East Valley RSA by 2010. The proposed project is estimated to create 63,000 jobs by 2010, 54 percent of SCAG-82 forecast and 66 percent of SCAG-87.

The potential increase in jobs created by the East Valley Corridor should play a significant role in alleviating the current population/housing to employment ratio imbalance in the East Valley RSA.

8.7.3 Mitigation Measures

8.7.3.1 Population

The projected population growth within the project area accounts for 52 percent of the SCAG-87 predicted growth through 2010 for Redlands and 51 percent for Loma Linda. In order to reduce this impact, it is recommended that residential growth within the East Valley Corridor be slowed to accommodate required infrastructure construction (in accordance with Specific Plan requirements) and to be more consistent with SCAG forecasts. Within the Redlands portion of the East Valley Corridor, Proposition N should slow projected residential growth, as

the limited housing starts allowed are expected to occur in the favored residential areas of Crafton Hills and Mentone.

It also appears that the forecast for buildout of dwelling units in Loma Linda by 1995 is too fast. The construction of infrastructure (roads, sewers, and water supply) as well as location in the 100-year floodplain should slow housing development and subsequently growth in the Loma Linda section of the East Valley Corridor to a level more consistent with SCAG-87 forecasts.

8.7.3.2 Housing

Within Redlands, the new housing starts allowed by Proposition N should produce a slower housing growth rate than anticipated by the marketing study and by SCAG. This slower growth rate for housing would be dependent on other residential development within the City due to the restricted number of new homes allowed per year. Thus, the implementation of Proposition N would act as a mitigation measure to reduce the number of new dwelling units proposed in the project area.

The absorption study projected that all 1,286 dwelling units forecast for Loma Linda would be developed by 1995. The Specific Plan requires that residential units should be supported by adequate infrastructure construction and city services.

8.7.3.3 Employment

No mitigation measures are recommended.

8.8 TRANSPORTATION

8.8.1 Existing Conditions

8.8.1.1 Regional Highway System

The proposed East Valley Corridor project is located in southwestern San Bernardino County, situated generally between the cities of Loma Linda, Redlands, and San Bernardino. As depicted in Figure 3.1-2, regional highway travel is serviced by Interstate 10.

The I-10 Corridor provides the major east-west transportation route directly servicing the study area. Most travel is between Los Angeles, San Bernardino, and east to Palm Springs. When completely built, State Route 30 (SR-30) will connect the existing SR-30 at Highland Avenue to the I-210 freeway in La Verne to the west. SR-30 will be a high speed, grade separated facility designed to serve intra-regional and local trips for those communities developing along the foothills of the San Gabriel and San Bernardino mountains. SR-30 is presently incomplete, with a segment missing north of the study area between Fifth Street and Highland Avenue in San Bernardino. Furthermore, SR-30 now terminates at SR-259, just north of I-215. An extension of the existing terminus is planned to bring SR-30 into an interchange with I-215 and beyond to merge into Highland Avenue on the west side of the City of San Bernardino. That extension plus the construction of the missing segment, the upgrading of the SR-30/I-10 interchange into a grade separated, four way interchange, and the addition of two lanes to the existing portion of SR-30 are all programmed into the current 5-year state improvement program.

8.8.1.2 Rail

Two major rail lines traverse the study area each trending east/west. The northernmost rail line which is operated by the Atchison, Topeka, and Santa Fe (A.T.& S.F.) Railroad has the most potential to slow traffic, crossing Mountain View Avenue, California Avenue, Nevada Street, and Alabama Street between Redlands Boulevard and I-10. The southernmost rail line is grade separated where it crosses Barton Road, a branch then turns north to parallel California Street to Citrus Avenue where it turns east and continues out of the study area. Most of this spur is now abandoned and removed.

8.8.1.3 Public Transit

Public transportation in the East Valley Corridor is provided by Omnitrans. Reflecting both limited development of the land and arterial highway system, public transportation in the study area is minimal. Omnitrans currently provides three routes through the study area which connect the cities of Redlands, Loma Linda, and San Bernardino. With the exception of a short route serving the County Museum and Norton AFB, all the routes are south of I-10. Two routes cross the corridor on Tippecanoe/Anderson, then travel east/west on

Barton Road. The third route enters from Loma Linda on University Avenue and meanders through the southern portion of the study area.

8.8.1.4 Air Travel

Ontario International Airport is located approximately 20 miles west of the East Valley Corridor study area. South of and adjacent to I-10, this airport facility is most frequently used by commuters both to and from the San Bernardino area. Ontario Airport is rapidly growing in importance as an alternative to air travel into Los Angeles International Airport and Orange County (John Wayne) Airport.

Although not directly related to the proposed East Valley Corridor project, it should be noted that Norton AFB is located just north of the Santa Ana River, in the southeast portion of the City of San Bernardino. The Base is presently considering the feasibility of a joint use agreement for commercial aircraft to utilize Norton AFB. The Redlands Municipal Airport is located 3 miles east of the project area.

8.8.1.5 Arterials

The circulation system within the proposed East Valley Corridor project is bisected and dominated by I-10. As such, within the study area, access to the regional highway system is first obtained through access to I-10.

In general, the study area has good access to the regional highway system. Four arterials (Alabama Street, California Street, Mountain View Avenue, and Tippecanoe Avenue) have an interchange with I-10. Another arterial, San Bernardino Avenue, has an interchange with SR-30.

Arterial access to the study area from the south, east, and west is adequately provided via the four closely spaced interchanges along I-10. However, arterial access to the study area from the north and northwest is severely limited by the physical presence of the Santa Ana River and Norton AFB. Consequently, the connection of the local streets system in this portion of the study area to those in the surrounding communities is limited. The cost and difficulty of roadway construction across the Santa Ana River Wash is a major concern. The only arterial access into this portion of the study area from the north is provided by Alabama Street, which crosses the wash adjacent to SR-30. The Alabama Street crossing is a low water crossing with a culvert and is subject to inundation and washing out.

Adding to the isolation of the study area from the communities to the north is Norton AFB, which lies north of the wash. Tippecanoe Avenue, at the west end of the study area, crosses the wash but does not directly connect the study area to the north; it ends at the main entrance to the base, where it intersects with Mill Street.

Access to and from the west is similarly constrained. San Bernardino Avenue is identified on San Bernardino County's circulation element as continuous from Redlands to downtown San Bernardino. While San Bernardino Avenue is continuous from Redlands through the study area, the street ends at Tippecanoe Street, east of the Santa Ana Wash and just west of the planning area.

The portion of the study area located south of I-10 is better served by arterial access. Adjacent to the freeway, Redlands Boulevard provides east/west circulation through the study area. This facility is continuous from Redlands through Loma Linda to San Bernardino.

Farther south, Barton Road, a high speed, divided major arterial, forms the southern boundary of the project area. This facility provides excellent access into the study area from both the east and the west and connects to the I-215/SR-91 freeway to the west. That connection requires the traversing of a low ridge off Blue Mountain which results in a reduced cross-section due to the steeper terrain west of its intersection with Washington Street. Because it avoids Blue Mountain and provides a more direct connection, access to I-215/SR-91 from Barton Road can be expected via Washington Street.

Except for the commercial corridor adjacent to I-10 and generally bounded by Redlands Avenue to the south and Lugonia Avenue to the north, the local street system has not yet been developed to County standards. Curb, gutters, and sidewalks are absent and pavement widths are less than standard. Currently, traffic in the study area is generally light although some congestion is occurring at intersections in the commercial corridor during peak hours. The majority of the traffic uses Alabama Street, Redlands Boulevard, and Lugonia Street. This pattern reflects commercial development and some freeway bypass activity. Existing average daily traffic volumes as well as intersection turning movements with the proposed East Valley Corridor study area are shown in the Ludwig Engineering Report, Appendix A, Tables 9 and 10.

8.8.2 Project Impacts

The traffic generated by the proposed land uses was estimated in the Circulation Plan Analysis by Ludwig Engineering. The project area was divided into 43 transportation zones and gross land use acreages and gross square footage for buildings were determined. The buildout trips for each zone were developed from the I.T.E. Trip Generation Manual (1983) and were reduced to account for duplicate trips and intrazonal trips. Additional details and assumptions are described in the Circulation Plan Analysis.

Regionally, Caltrans has forecast that I-10 will operate at level of service (LOS) "E" by 2005 and State Route 30 at LOS "D" by 2002. The traffic associated with the proposed project will increase regional traffic and may incrementally decrease the LOS on I-10 and State Route 30 at a faster rate. These increases on regional traffic are considered significant cumulative impacts that are not fully mitigated.

The projected daily traffic, peak hours, and directional traffic volumes are shown in Appendix A of the Circulation Plan Analysis. As expected, the projected traffic volumes would not be adequately handled by the existing below County standards arterials within the project area.

The impact on traffic from the projected development would be considered significant. Therefore, a circulation system was designed to accommodate projected traffic volumes. Though this proposed transportation network can be considered a mitigation measure, it was analyzed for service levels using the projected traffic volumes. As with most traffic networks, the results of this analysis showed that unacceptable congestion occurred at the intersections. The estimated service levels for the proposed network showed that a major constraint in the network is Alabama Avenue. The LOS at Alabama's intersections with Redlands Boulevard, I-10, Lugonia Avenue, and San Bernardino Avenue are rated "F", which is unacceptable and relates to unstable flow, long stoppages, long queues of traffic, and low to zero traffic volumes and speeds. The analysis also shows LOS "E" at the intersections of Mountain View and Redlands avenues and at California Street and Barton Road (LOS "E" conditions are volumes at or near capacity with unstable flow and temporary stoppages). Eleven additional intersections were determined to have LOS "D", which is often used as a design standard in urban areas. Refer to the Circulation Analysis Report for the specific level of services at major intersections.

The Specific Plan's objective for roadways and intersections is to provide capacities to maintain a minimum level of service "C". LOS "C" is considered the recommended ideal design standard. The projected traffic generated by the proposed land uses would produce levels of service below the Specific Plan's objective and is therefore considered a significant environmental impact that is not fully mitigated by the proposed circulation network nor by additional mitigation measures discussed below.

8.8.3 Mitigation Measures

The East Valley Corridor Specific Plan has stated goals, policies, and objectives regarding transportation needs within the project area. The principal goal is to design a comprehensive, functional, and efficient circulation system of sufficient capacity to accommodate projected traffic demands at all phases of development, which is consistent with regional master transportation plans. Many of the policies and objectives as listed in Section EV2.0220 on Transportation in the Specific Plan are discussed in the sections below.

Measures to mitigate traffic impacts of the proposed East Valley Corridor project and ultimate General Plan buildout were developed with consideration given to any implementation constraints within the study area. For example, where major roadway widening would not be feasible, transportation system management measures may be provided. The mitigations are addressed below, in general order from most intensive to least intensive. These measures will be implemented as

growth demands and the most feasible will be selected following review of conditions as they change.

8.8.3.1 Freeway Widening

The provision of one additional travel land in each direction of I-10 from SR-30 to the I-215 interchange would increase capacity by approximately 30,000 vehicles per day. Even with the additional lanes, a LOS "E" operation, with average daily speeds of 42 miles per hour, has been forecast by the California Department of Transportation for the year 2005 (Caltrans "I-10 Route Concept Report," November 1984). In view of the obvious need for widening, Caltrans has included funds for the addition of the two travel lanes in the 5-year State Transportation Improvement Program.

The extension of SR-30 would similarly relieve east/west arterial congestion, with a 4-land facility providing a 65,000 ADT capacity. According to Caltran's forecast, SR-30 will carry an average daily traffic volume of 56,000 vehicles and operate at LOS "D", with average speeds of 40 miles per hour by the year 2005 (Caltrans "SR-30 Route Concept Report," June 1985).

Therefore, even with the construction of additional lanes on both I-10 and SR-30, the LOS will still be below ideal design standards and is considered an unmitigable impact.

8.8.3.2 I-10 Interchanges

The construction of a grade separated, fully directional interchange with SR-30 has been proposed and is currently programmed into the State Transportation Improvement Plan (STIP). Further, it is recommended that potential modifications at the California Street and Mountain View Avenue interchanges be evaluated. Freeway on-ramp metering could also be installed to help alleviate freeway congestion.

8.8.3.3 Major Highway Improvements

This mitigation involves a series of major capital investments in widening the existing arterial highway system. The effectiveness of the respective widening projects was analyzed and the results given in the Ludwig report.

The recommended circulation network generally consists of median division and lane additions for arterials. The planned highway classification for the study area including lane configurations is explained in the Specific Plan. Figure 8.8-1 shows the proposed circulation network and Table 8.8-1 lists the roadway classifications and lane configurations.

The intersections initially estimated to operate at levels of service "E" and "F" were the subject of additional analysis based upon the critical lane volume method of intersection capacity analysis.

EAST VALLEY CORRIDOR SPECIFIC PLAN

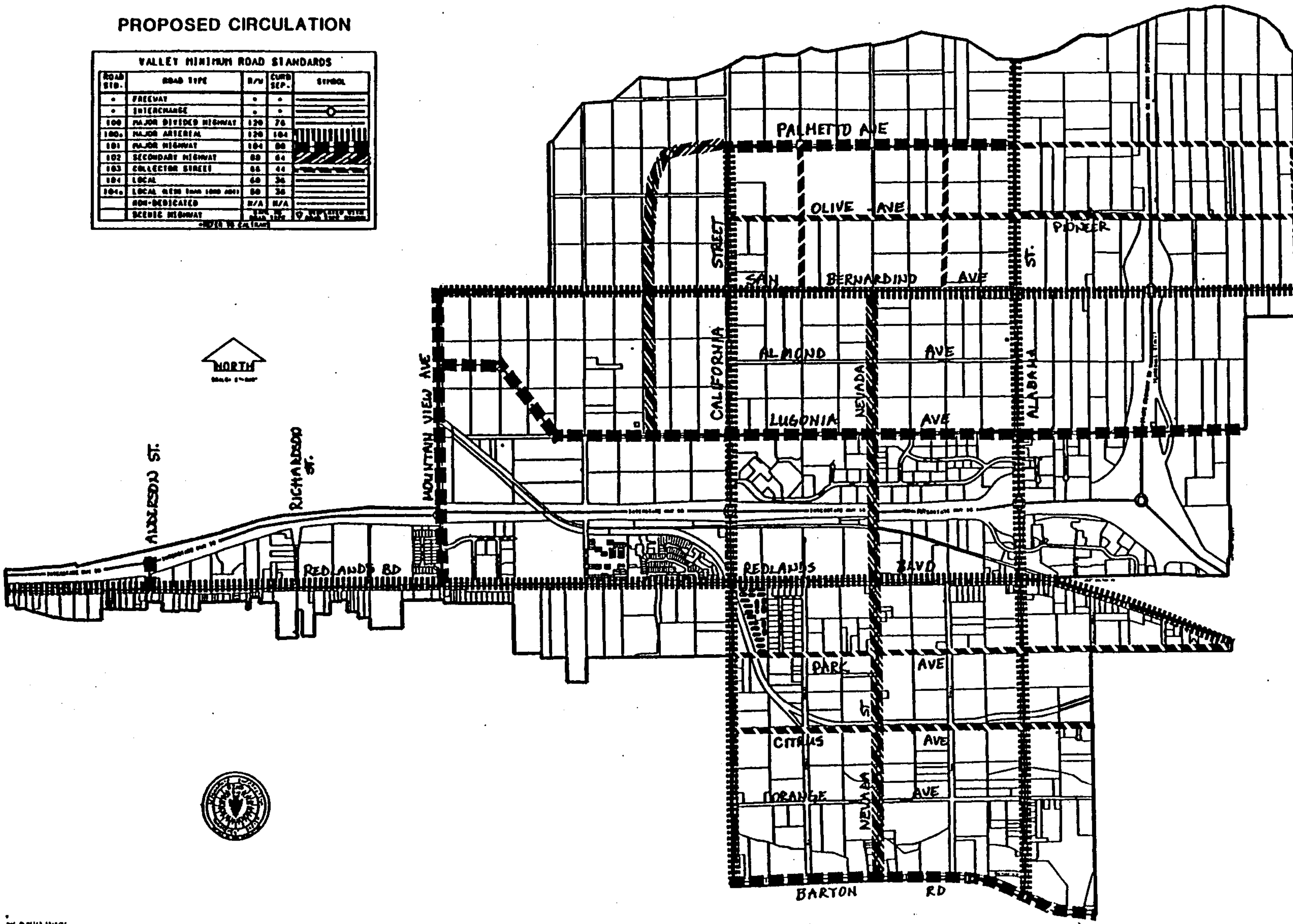
FIGURE 8.8-1

PROPOSED CIRCULATION

VALLEY MINIMUM ROAD STANDARDS

ROAD STD.	ROAD TYPE	R/W	CURB SEP.	SYMBOL
*	FREEWAY	*	*	
*	INTERCHANGE	*	*	
100	MAJOR DIVIDED HIGHWAY	120	76	
100a	MAJOR ARTERIAL	120	104	
101	MAJOR HIGHWAY	104	80	
102	SECONDARY HIGHWAY	88	64	
103	COLLECTOR STREET	66	44	
104	LOCAL	60	36	
104a	LOCAL (LESS THAN 1000 ADT)	50	36	
	NON-DEDICATED	N/A	N/A	
	SCENIC HIGHWAY	SAME AS ROAD TYPE		[illegible]

*REFER TO CALTRANS



Additionally, as the traffic volumes increase, the intersections become pressurized and the number of vehicles able to use the intersection is increased. The sum of the maximum lane volumes can increase to as much as 1600 vehicles per hour.

Table 8.8-1

FACILITY IMPROVEMENTS*

Facility	*Proposed Lanes*
California Street	6, Major ~~Highway~~ Arterial
San Bernardino	6, Major ~~Highway~~ Arterial
Redlands Boulevard	6, Major ~~Highway~~ Arterial
Alabama Avenue	6, Major ~~Highway~~ Arterial
Lugonia Avenue	4, ~~Secondary~~ Major Highway
Nevada Street	4, Secondary Highway
Mountain View Avenue	4, ~~Secondary~~ Major Highway
Barton Road	4, ~~Secondary~~ Major Highway
Texas Street	4, Secondary Highway
Park Avenue	2, Collector Street
Citrus Avenue	2, Collector Street
~~Tippecanoe~~ Anderson Avenue	4, Secondary Highway

Note: * See Figure 8.8-1

The act of interconnecting traffic signals also adds to the efficiency of traffic operation. The minimum expected level of service change is one level and the optimum amount would be about 1.5 LOS or a change in the V/C ratio of about 0.16. It is recommended that a fully coordinated traffic signal system running in a crossing arterial mode would provide no lower than a level of service "D" for Alabama Avenue intersections at Redlands Boulevard and Lugonia Avenue under build-out traffic conditions.

Two additional intersections were reevaluated with this higher maximum lane volume. The level of service improved to LOS "C" at the intersection of California Street and Barton Road; but the intersection of Mountain View Avenue and Redlands Boulevard (LOS "D") still does not meet the County's standard LOS "C". The eleven intersections initially evaluated at LOS "D" can be expected to improve their LOS to "C" with implementation of interconnecting traffic signals. The three LOS "D" intersections discussed above are unable to attain the Specific Plan's standard of LOS "C" even with additional mitigation measures. These below standard LOS are considered significant unmitigable impacts.

When medians are constructed on any arterial street, spacing between median openings is recommended to be at least every 400 feet, with left turn storage lengths designed to provide safe and efficient left

turn movements to existing and projected future development in the immediate vicinity.

8.8.3.4 Highway Transportation System Management

This alternative is comprised of a series of relatively low-cost roadway and operational improvements to make more efficient use of the existing highway system. Recommended components of this alternative include traffic signal hardware improvements and signal coordination where possible, site plan reviews to limit driveway access to arterials, strategic and phased removal of on-street parking, and bus stop additions and/or relocations.

It is recommended that new signal locations be limited to a minimum 1000-foot distance spacing (with a 1/4 mile spacing preferred) to enhance signal interconnection and coordination potential. Federal Highway Administration research indicates that signal interconnection and coordination may be expected to improve vehicle speed and travel time by up to 16 percent. Traffic signal location and signal phasing needs are recommended to be monitored by the respective agencies via detailed traffic study requirements of proposed developments. New signals should be limited to warranted locations.

Site plan reviews of proposed developments are recommended to maximize the efficiency of existing arterials via the control of driveway locations and design, limitation of the number of driveways, and the provision of "internal" connections between adjacent residential and commercial development. Reference is made to the Specific Plan for recommended site access control guidelines.

On-street parking strategic and phased removal would improve vehicular flow by increasing roadway capacity -- at a minimum by eliminating lateral obstructions and at maximum by allowing the striping of an additional travel lane along critical arterial segments. In recognition that localized parking conditions often make impractical the elimination of on-street parking, it is recommended that off-street parking be made a part of economic development programs. Off-street replacement parking is recommended as a condition of approval for new development adjacent to major arterials. The Specific Plan permits no on-street parking on roadways of 4 lanes or more. Initially, it is recommended that on-street parking be prohibited for approximately 100 to 200 feet on the approach side of major intersections. As a second phase, midblock, on-street parking may be prohibited during the a.m. peak period, when businesses generally have not yet opened and therefore are not impacted.

Bus service is recommended and bus stops should be placed at locations with the least impact to traffic. Near side locations (i.e., on the approach) are preferred where more traffic joins the street than turns off and at locations where buses will make a right turn. Far side locations are recommended where there are heavy turning movements off the street, and where buses make left turns. In addition, bus turnouts are recommended to be constructed at bus stops where a high number of transfers occur. Further, it is important to provide

adequate sidewalk connections to and amenities at bus stop locations. Bus stop amenities may include benches, shelters, and ridership/route information displays.

Additional road standards and standards for special landscaped streets are included in Sections EV4.0110 and EV4.0115 in the Specific Plan.

8.8.3.5 Trails System

Section EV4.0135 of the Specific Plan describes the proposed trails system within the project area. The trail network plans to provide regional and local hiking and pedestrian trails, commuter bicycle paths, and recreational pedestrian and bicycle paths. The commuter bicycle paths, in particular, are designed to provide an energy-efficient alternative to the automobile. Please refer to the above-mentioned sections in the Specific Plan for detailed guidelines.

8.9 PUBLIC SERVICES

The East Valley Corridor lies within three Spheres of Influence delineated by the San Bernardino County Local Agency Formation Commission to provide long-term planning boundaries for cities. The city limits and spheres of influence for the cities of Loma Linda and Redlands, and unincorporated lands of the County of San Bernardino overlie the project. Some of the existing public services provided in the area correspond to the local government boundaries while other services are provided on a regional basis.

The planned development of CSA-110 will impact the following public services: fire protection, law enforcement, schools, recreation facilities, hospitals, and libraries. Figure 8.9-1 shows the locations of all the existing public facilities.

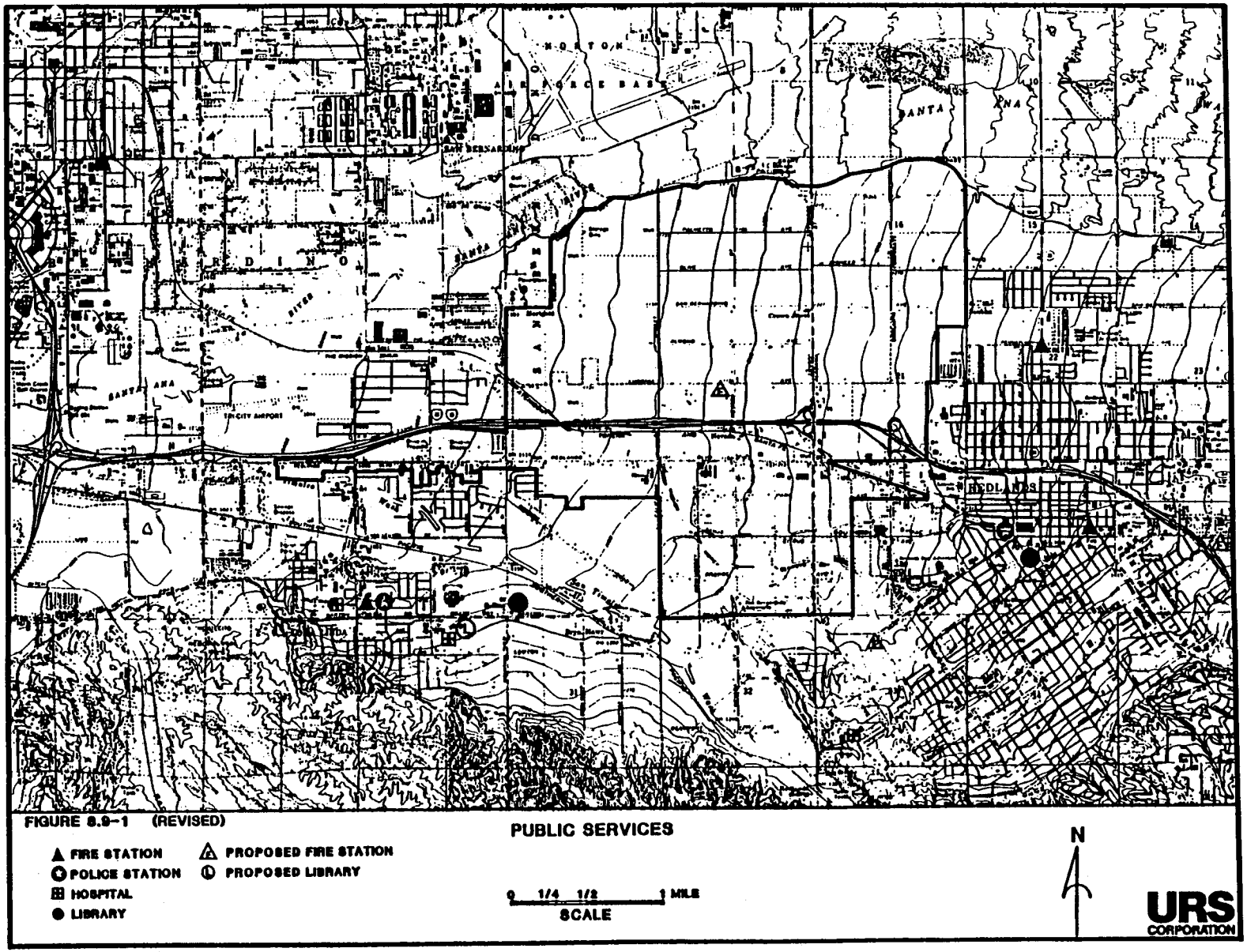
8.9.1 Fire Protection

8.9.1.1 Existing Conditions

The study area lies within the boundaries of the County of San Bernardino and the cities of Loma Linda and Redlands. Fire protection agencies of these entities have primary areas of responsibility which correspond to city and county boundaries as shown in Figure 3.1-2. The three agencies are the Loma Linda Fire Department, the Redlands Fire Department, and the County Fire Warden Department.

The Loma Linda Fire Department is located near the corner of Barton Road and Loma Linda Drive. This station is approximately one mile south and west of the project boundary. The department is staffed 24 hours per day and consists of three engines; one truck, one water tender, and one rescue squad. A specific plan is being developed for an additional station in the hills south of Loma Linda near the Riverside County line. The station will be designed to serve a broad area within a 3- to 5-minute response time. The Loma Linda Fire Department has an automatic mutual response agreement with the City of Redlands.

The Redlands Fire Department's Central Station is located at 525 East Citrus Avenue, about one and one-half miles east of the project boundary. This station consists of a Type 1 engine, an aerial ladder truck, and a paramedic unit, and is staffed 24 hours a day. A second station is located at 10 W. Pennsylvania Avenue and consists of a medical engine with a crew of four. Property for three additional stations has been purchased and are located as follows: (1) Barton Road near Lakeside Avenue, (2) I-10 and Cypress, and (3) within 1/2-mile of the intersection of Lugonia Avenue and Nevada Street in the East Valley Corridor. The department's general plans propose opening two new stations and eventually closing the Central Station. Sites 1 and 2 will be submitted for Council approval at the same time and if approved, they will phase out the existing station. Site 1 will be chosen if both locations are not approved. It will be approximately 2 years before the station is operating. There are currently no plans for the submittal of Site 3 (Nevada and Lugonia)


NORTON
AIR FORCE BASE
SAN BERNARDINO
SANTA ANA
RIVER
SANTA ANA
TRI-CITY AIRPORT
MIDDLE FORK
FIGURE 8.9-1 (REVISED)
PUBLIC SERVICES
FIRE STATION
POLICE STATION
HOSPITAL
LIBRARY
PROPOSED FIRE STATION
PROPOSED LIBRARY
0 1/4 1/2 1 MILE
SCALE
N
URS
CORPORATION

and it will be another 4 to 6 years before a station is built at this location. The goal of present and future stations is to cover 75 percent of the City within a 3-minute response time, 90 percent in 4 minute or less, and the remaining 10 percent will vary.

The County of San Bernardino Fire Warden Department maintains responsibility over county lands within the project area. These county lands are gradually decreasing as annexations to the cities of Redlands and Loma Linda occur. Three stations currently service parts of the study area depending on the call's location. The Loma Linda station with one engine, is located at 24914 Barton Road east of Anderson Street. This is about 2 miles west of the study area. The Mentone station consists of two engines and is situated 4 miles east of the project at 1300 Crafton Avenue. The Highland station is comprised of two engines, one paid truck and a paid paramedic squad, and is located at 26974 East Baseline Avenue approximately 2 miles north of CSA-110. There are currently no plans for expansion of these stations.

Fire protection presently appears to be more than adequate with response times generally less than five minutes. The three agencies responsible for different sections of the project have primary response zones and also serve as backup units to the other departments. Each agency requires its respective water supply system to be able to supply minimum fire flows on a maximum summer day. Minimum fire flow requirements, including storage, have been adopted from the Guide for Determination of Required Fire Flow, Insurance Services Office, New York, 1974.

8.9.1.2 Project Impacts

The proposed development of the East Valley Corridor will have a moderate impact on the Loma Linda Fire Department. Additional equipment and a substantial increase in employees will be needed. The station proposed to be built in the hills south of the City, should lower the impact.

Impacts of the Redlands Fire Department will be negligible because of the current plans for expansion. With three additional proposed stations, they do not anticipate any problems handling the future growth of the area. The proposed station planned near Lugonia and Nevada for operation within 4 to 6 years would provide adequate fire protection for development in the East Valley Corridor.

The County Fire Department will not be impacted by the projected growth within the East Valley Corridor due to the increased annexation of county lands and the County's reduced responsibility in the East Valley Corridor. Fire flow requirements will be met by all three fire jurisdictions.

8.9.1.3 Mitigation Measures

Mitigation measures for new development occurring as part of the East Valley Corridor Specific Plan would include adherence to all building and safety ordinances as mandated by the State and the Cities. Specific fire regulations include a needed fire flow of 4,500 gallons per minute for 4 hours, hydrant distribution every 300 feet in commercial and multi-residential areas, and fire sprinklers in buildings over 5,000 square feet.

Annual reviews and increased funding when required by the cities of Redlands and Loma Linda are recommended to provide adequate planning and protection as new development occurs. The City of Redlands recommended service level is 1.25 personnel per 1,000 population.

The planned construction of a new station at Nevada and Lugonia should be implemented as the fire protection needs of the East Valley Corridor increase.

8.9.2 Law Enforcement

8.9.2.1 Existing Conditions

Police protection within the study area is provided by the Redlands Police Department and the San Bernardino County Sheriff's Department. The Sheriff's Department presently patrols the county areas and provides service to the city of Loma Linda. The Redlands Police Department provides law enforcement services within the Redlands city limits.

The Sheriff's Department central station at 655 E. 3rd Street in San Bernardino is staffed with 30 deputies and maintains 9 vehicles. One of the vehicles is assigned to patrol the County areas within and near the project area on a 24-hour basis. The Loma Linda Station maintains one 24-hour patrol car, two 16-hour traffic cars, one 8-hour felony vehicle, and one car which patrols for people driving under the influence of alcohol. Nine deputies are employed out of the Loma Linda station (Lieutenant David Bellomy, Bureau of Administration).

The Redlands Police Department patrols and is on call to city areas within CSA-110. The department currently has 63 sworn and 23 non-sworn officers and is operating at full capacity. The Chief of Police is currently seeking approval for a new building and an increase in staff-members.

The California Highway Patrol also patrols the I-10 and Route 30.

8.9.2.2 Project Impacts

An increase in population and commercial and industrial development as a result of implementation of the East Valley Corridor Specific Plan would increase crime, particularly in the areas of burglary and

robbery. There would also be an overall increase in the number of police responses and in traffic control.

The proposed project will have a negligible impact on the San Bernardino County Sheriff's Department because of the continued annexation of County lands. Services provided by the City of Loma Linda will adequately handle the future growth within the study area.

The impact on the Redlands Police Department may be significant since a majority of the study area lies within Redlands City limits. A continuing increase in departmental staff, office space, and equipment will be required to provide adequate law enforcement for the proposed developments within the project area. At the Redlands Police Department standard of 1.2 police officer's per 1,000 people, the buildout of the project area would require an additional 17 officers over the next 40 years. Growth of the area without the Specific Plan would require 20 officers by the year 2012 which would be a greater and faster impact than the proposed project.

8.9.2.3 Mitigation Measures

It is recommended that the departments continue to use the population generation standard of 1.2 police officers per 1000 population increase. Additional equipment and building space should be provided as needed for protection of the proposed developments.

Further mitigation measures would involve residential and commercial security measures including adequate lighting; police-approved locks and alarms; use of trained security personnel at large construction sites and at large residential, commercial, and industrial complexes; and good communication with the Police Department.

8.9.3 Schools

8.9.3.1 Existing Conditions

The East Valley Corridor is within the Redlands Unified School District. Three elementary, one junior high and one senior high school currently service the students living within the project area. Current and forecast enrollment figures and school capacities were provided by the District.

Mission/Heisner Elementary School is located at California Street and Redlands Boulevard (see Figure 8.9-2 for school locations). This school is the oldest facility in the District and is in need of constant repair. The District has recommended that this school should be reconstructed as soon as possible. The current enrollment of 701 students exceeds the 1987-88 projection of 633 by over 10 percent. Enrollment exceeded the recommended site capacity of this facility during the 1987-88 school year by 29 percent. Portable classrooms are in use but the site cannot adequately support the current enrollment.

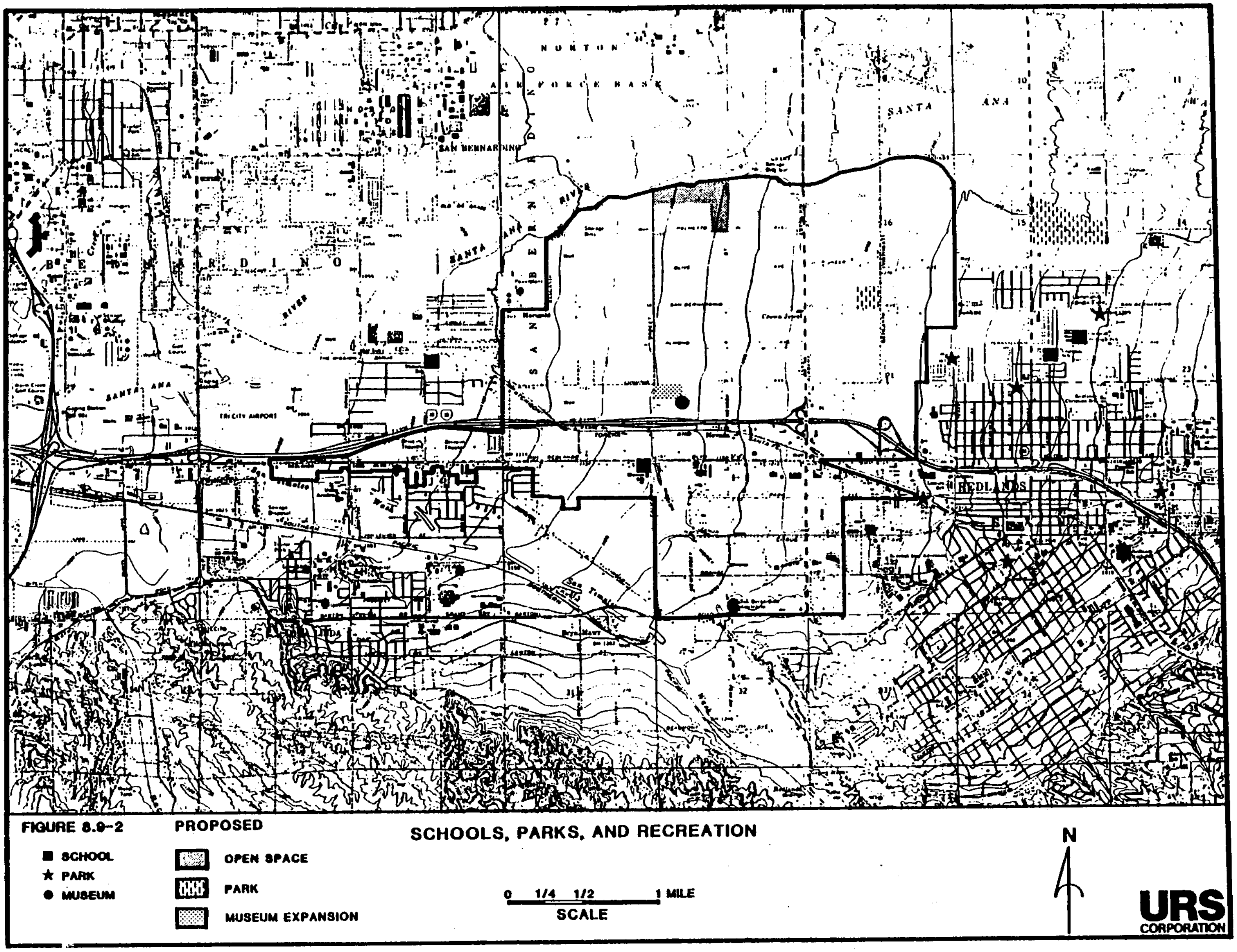


FIGURE 8.9-2 SCHOOLS, PARKS, AND RECREATION

Victoria Elementary School is located at 9963 Richardson Street about 1/2 mile north of I-10 and west of Mountain View Boulevard. The current enrollment of 595 students is 5 percent over the total classroom capacity but within the recommended site capacity. With the implementation of portable classrooms, the school should be able to support the enrollment projected for 1990.

Lugonia Elementary School, at 202 East Pennsylvania Avenue, is located on the north side of Redlands approximately 1-1/2 miles east of the study area. The school is operating at full capacity with a current enrollment of 810 students. The total classroom capacity is exceeded by 3 percent and the recommended site capacity is exceeded by 1 percent. This facility will not adequately support the students forecast beyond the 1987-88 school year. The 1990 enrollment forecast will exceed the recommended site capacity by 37 percent.

The project is served by Clement Junior High School which is located across the street from Lugonia School. The fall 1987 enrollment is currently 720 students and is within the total classroom capacity as well as the recommended site capacity. This facility will not adequately support the students forecast beyond the 1988-89 school year.

Redlands Senior High School, at 840 East Citrus Avenue in central Redlands, is operating at capacity level. The current enrollment stands at 2,828; 47 of these students are involved in the "Rise" program and are not at the school on a full-time basis. The recommended site capacity has been exceeded by 69 percent but the school is still within the total classroom capacity of 3,060 by an 8 percent margin. The 1990 forecast enrollment will exceed the total classroom capacity by 43 percent.

The Redlands Unified School District is in the process of applying to the State for Phase I approval for the advance site purchase and plans for a second high school. The District has two possible sites that could be developed for a second high school. The first site is 60 acres located along Redlands Boulevard west of California Street in Loma Linda and the project area. While this site was purchased as a future high school site, there are some deficiencies with it. This site lies along the San Timoteo flood plain and is just outside the two mile radius of Norton Air Force Base. Also, the potential for future commercial development along Redlands Boulevard might render the site location inappropriate for a high school.

The second site that could be developed for the second future high school is the District's ten acre site just south of San Bernardino Avenue on Judson Street. Since this is only a ten acre site and a high school requires a 40 acre site, an additional 30 acres could be acquired adjacent to that site. This site is better suited for a high school than the first site because it is geographically located in the northern portion of the population center of the District. This location would better serve a greater sector of the population than the Loma Linda site (Source: Redlands Unified School District, Master Plan).

8.9.3.2 Project Impacts

The expected population increases projected for the East Valley Corridor will have a major impact on the school system. However, market driven growth in the East Valley Corridor without the Specific Plan would produce more students and would increase the number of students at a much faster rate (buildout projected by 2012). All of the schools listed are either at or over their designed operating capacity. A decline in the maximum quality of the educational programs should be expected unless the enrollment is reduced or compensated for.

The Redlands-Loma Linda-San Bernardino community area is now experiencing explosive development of new housing. This is due to a variety of factors including lower interest rates, employment availability, housing costs, and other factors. Considering the number of projects now in progress this portends truly phenomenal growth within the next 3 years. New enrollment growth will occur primarily in the elementary school categories reflecting the "baby boom" now in progress.

Based on detailed actual generation rates from new housing, the District's forecast projects 8,785 new housing units within the next 3 years, generating over 4,478 new K-12 students in that same period. The new students projected for the next 3 years from new development alone will require the equivalent of 3.09 elementary schools, 1.16 junior high schools, and 0.73 of a high school.

Another way of considering this situation is, if all school buildings now owned by the District were expanded to the maximum size for each school site (based upon State Standards), the District would still need to build 1.03 new elementary schools, 1.38 new junior high schools, and 1.35 new high schools within the next 5 years if the enrollment as forecast actually occurs (Source: Redlands Unified School District, Master Plan).

Some of the new residential development presently occurring in the East Valley Corridor has been taken into account by the Redlands School District forecasts. The majority of this new housing is in Loma Linda, within the Mission Elementary School boundaries. The East Valley Corridor Specific Plan forecasts a buildout population increase of 20,080 by the year 2028. Utilizing 1986 student generation rates provided by the Redlands School District, and the housing types proposed in the Specific Plan, a total of 1,492 elementary students, 784 junior high students, and 1,103 high school students will move into the East Valley Corridor by 2028 (assuming that half of the multi-family units would be adult-oriented).

By overlaying school boundaries onto the proposed residential sites within the East Valley Corridor, it is estimated that 507 elementary students would impact Mission School, 985 students at Victoria School, the total 784 students at Clement Junior High, and all the high school students at Redlands Senior High School. The Lugonia Elementary School boundaries include much of the northeast section of the East

Valley Corridor, but this area is proposed for commercial and industrial use only.

8.9.3.3 Mitigation Measures

Due to the number of students forecast to be generated by residential development within the East Valley Corridor and the present near or over capacity conditions at Mission and Victoria elementary schools, it is recommended that one or two elementary and one junior high school sites be provided within or near the East Valley Corridor. New school sites and facilities required by residential development within the East Valley Corridor should be coordinated with the Redlands Unified School District.

Reassessment of school enrollment boundaries will help to alleviate overcrowding at particular schools. Portable classrooms help to temporarily relieve overcrowding until permanent facilities are made available. While the construction of new schools will relieve overcrowding in the future, the District can take immediate action to solve overcrowding at school sites by converting to year-round schools.

Many schools throughout Redlands Unified School District are eligible for modernization through the State Building Program. In order to qualify for funds, buildings must be at least 30 years old. Lugonia, Mission, and Victoria elementary schools, as well as Redlands High School are eligible for reconstruction funds.

The use of General Obligation Bonds is another means of funding that can be used in several ways. Additional revenues generated by the proposed development within the East Valley Corridor will assist in alleviating the financial constraints of the School District.

8.9.4 Parks and Recreation

8.9.4.1 Existing Conditions

There are currently no recreational facilities located within the project area. The City of Redlands park system includes five parks to the east of the site boundary within 1-1/2 miles and one undeveloped park site within the study area. The undeveloped site, located west of Tennessee on the north side of San Bernardino Avenue, is comprised of 14 acres and was to be a community park. However, the land value of this site has become too high and the Parks Department is attempting to trade the site for land north of Palmetto Avenue, between California and Alabama streets.

The City of Redlands has 34 acres of developed pocket and neighborhood parks and 25 acres of playground space adjacent to 8 elementary schools. There is a total of 113 acres of developed community and citywide parks which includes 30 acres at 4 junior high schools and the senior high school. The undeveloped park lands include Church Street lands, airport lands, Palmetto Citrus lands, and the rubbish

disposal site; all of which comprise 160 acres (see Figure 8.9-2). The developed and undeveloped parklands total 332 acres, adequate for a population of 66,400. However, currently the 172 acres of developed parks does not meet the minimum 5 acres per 1,000 population standard and several of the larger undeveloped sites will not be available for over 10 years. On a regional scale, the City and County of San Bernardino maintain numerous park facilities and the San Bernardino National Forest also provides outdoor recreation.

The San Bernardino County Museum is located on Orange Tree Lane near the junction of California Street and within the study area.

8.9.4.2 Project Impacts

The projected population increase in the study area will have a moderate impact on the Redlands parks system. An additional 84 acres of parkland would be needed to accommodate a population increase of 16,745 in Redlands by the year 2028. This figure is based on the minimum 5 acres per 1,000 population standard. The Specific Plan shows 56.5 acres of open space that could be potential parks within the project area which would serve about 11,000 residents. The Parks Department is proposing development of a large park north of Palmetto Avenue in the area designated open space. Expansion of this open space area is being discussed. To the northeast of the project area is additional potential parkland associated with a citrus preserve, golf course and the Church Street landfill. This potential parkland may be developed into a recreation area prior to buildout in 2028.

8.9.4.3 Mitigation Measures

It is recommended that the Specific Plan propose setting aside 10 to 15 acres within the south half of the East Valley Corridor for a future neighborhood park as the need increases with population. The 5 to 6 acres per 1,000 population standard should be used to meet the recreation needs of the increasing population.

Future development of a regional park and citrus preserve south of the landfill site and an additional neighborhood park south of I-10 are recommended. It is also likely that some of the residential developments within the Planned Development areas of the East Valley Corridor would provide some private recreational facilities which would alleviate some of the public recreational requirements.

The Specific Plan should also work with the Redlands Parks Department regarding potential trail development along the Mission Zanja and Santa Ana River, acquisition of groves in the proposed citrus park north of Palmetto Avenue, potential parks associated with new schools, and further development of the County Museum complex.

8.9.5 Hospitals and Emergency Services

8.9.5.1 Existing Conditions

There are three hospitals located within 1-1/2 miles of the project site (see Figure 8.9-1). Redlands Community Hospital at 350 Terracina Boulevard is licensed to accommodate 195 beds and has 24-hour emergency service. An average of 55 to 60 percent of the bed space is occupied on a given day. Plans for expansion are primarily in long-term care and selected other hospital services. The ratio used to determine the number of staff members and beds needed for a population increase is approximately 4 beds per 1,000 population and 5 full-time employees per bed.

The Community Hospital of Loma Linda is located at 25333 Barton Road. This facility consists of 105 beds, of which 60 to 70 percent are usually filled, and 24-hour emergency service is provided.

Loma Linda University Medical Center is located at the intersection of Barton Road and Anderson Street. There are beds for 546 patients which on average are about 80 percent occupied. Currently there are no plans for expansion of the number of beds. The hospital provides 24-hour emergency service (personal communication, Jayne McGill).

The Veterans Administration Hospital is located on Barton Road in Loma Linda, approximately 1 mile west of the project area.

Ambulance service is provided by Howard's Ambulance Company Inc. at 837 Orange Street in Redlands, which owns and operates five ambulances. The company's proximity to the study area and access via major roads should provide adequate service to the project.

8.9.5.2 Project Impacts

The current capacities of Redlands and Loma Linda Community Hospitals and Loma Linda University Medical Center are expected to provide adequate health services to all existing and projected residents in the study area. The hospitals are prepared to expand to meet the future needs of the community.

8.9.5.3 Mitigation Measures

No mitigation measures are recommended.

8.9.6 Libraries

8.9.6.1 Existing Conditions

The County maintains libraries in Loma Linda and Mentone, both within 1 to 4 miles of the project area. Redlands also has a city library in the civic center, located 1 mile from the project. Figure 8.9-1 shows the locations of the libraries.

The County library in Loma Linda will be relocated to the City's civic center and Barton Road. The new facility due to be completed in July 1988 will be 6,000 square feet which is 2,400 square feet larger than the existing facility. This expansion is expected to adequately serve the projected population. The County does not have plans for expansion of the Mentone Library facility.

The A.K. Smiley Public Library in Redlands is located approximately 1 mile southeast of the project boundary. The facility is currently operating at full capacity. Funding for a 2-wing expansion has been approved and construction is expected to begin in 1988. The wings will have two levels (a ground level and a full basement). This is the first expansion of the library since the 1930's and it is expected to accommodate future population increases.

8.9.6.2 Project Impacts

The public libraries will not be significantly impacted by the project. Expansions which are currently taking place are expected to accommodate the population at buildout. The library systems are prepared to expand if necessary.

8.9.6.3 Mitigation Measures

No mitigation measures are required as no significant impacts are anticipated.

8.10 PUBLIC UTILITIES

8.10.1 Electricity

8.10.1.1 Existing Conditions

Electrical service and supply is provided throughout the proposed East Valley Corridor study area by Southern California Edison Company (SCE). SCE has a diverse network of power-generating sources and grid distribution system that serves all of southern California. The electric loads of the project are within the parameters of the overall projected load growth which SCE is planning to meet in this area.

8.10.1.2 Project Impacts

Unless the demand for electrical generating capacity exceeds SCE's estimates and provided that there are no unexpected outages to major sources of electrical supply, SCE expects to meet electrical requirements for the next several years. SCE does not perceive demand and consumption increases as significant impacts to their service.

8.10.1.3 Mitigation Measures

Although no specific mitigations are suggested, new buildings are currently required to meet design standards for optimum energy efficiency in accordance with residential and nonresidential Energy Conservation Standards. These include energy-saving designs for roofs, walls, and floors and specifications for lighting, heating, air conditioning, and hot water supply.

Specific energy-saving measures include adequate insulation in walls and ceilings, use of dampers and thermostats to avoid unnecessary heating or cooling, orientation of sunlight to make favorable use of light and heating, landscaping, proper lighting of parking lots, discouragement of electrical space heating, and promotion of solar energy use.

8.10.2 Natural Gas

8.10.2.1 Existing Conditions

The Southern California Gas Company currently has facilities and provides services to the study area. Gas service for future development in the project would be provided from the nearest existing gas mains in accordance with the Company's policies and extension rules on files with the California Public Utilities Commission. The availability of natural gas service is based upon present conditions of gas supply and regulatory policies (correspondence, SCGC).

8.10.2.2 Impacts

The increased natural gas use within the study area is considered to be of negligible impact on gas supply and service capabilities.

8.10.2.3 Mitigation Measures

The increase in natural gas use associated with the East Valley Corridor Specific Plan would not significantly impact gas service or sources. No mitigation measures are recommended.

With the additional consumption of a nonrenewable energy resource, conservation measures should be implemented. SCGC has energy conservation programs that provide information on various energy saving techniques such as efficient gas heating units, stoves, and hot water heaters. Other standard conservation measures include landscape shading, use of solar energy, and thermostatically controlled heating and cooling.

8.10.3 Water Supply and Distribution

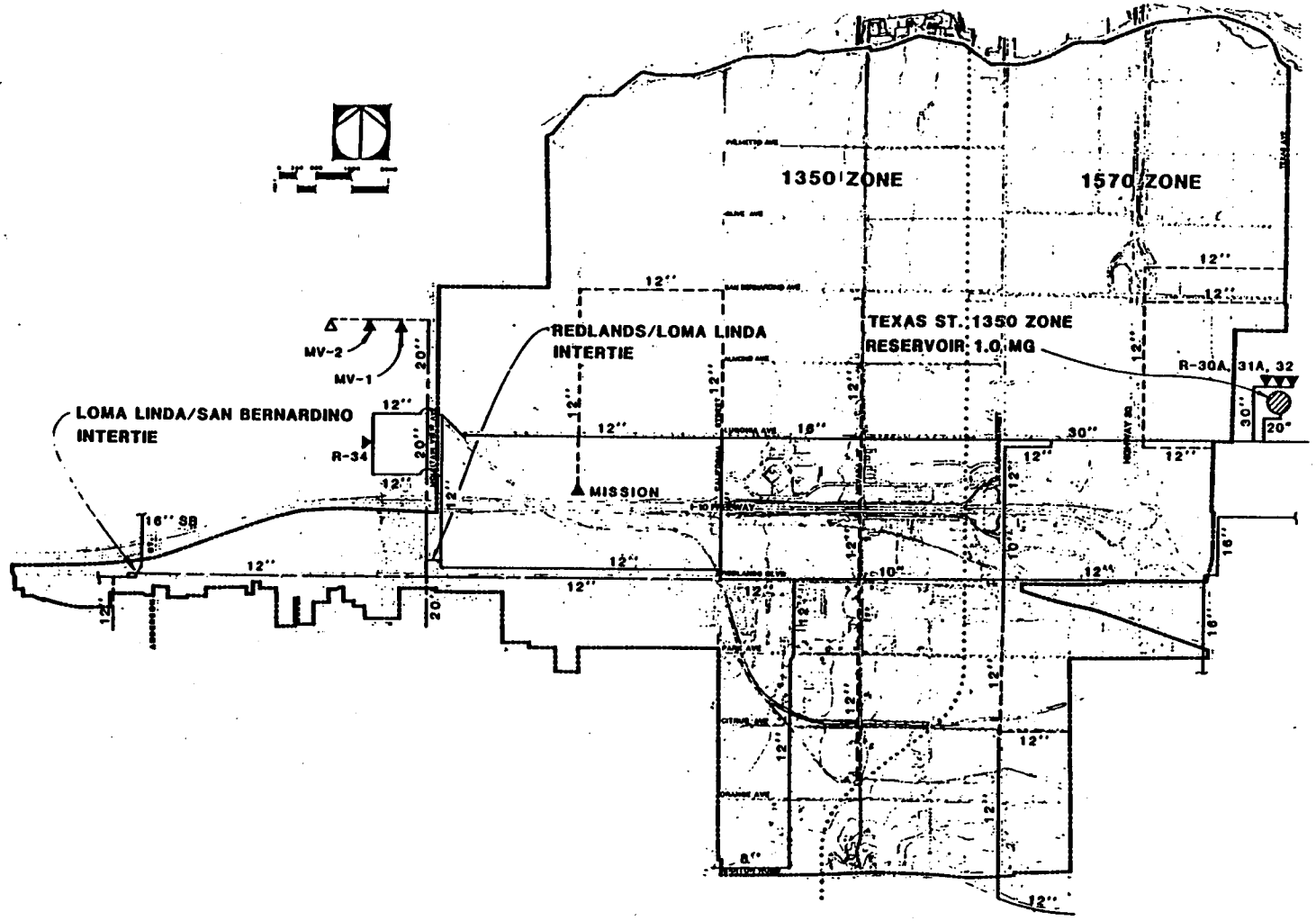
The existing water supply and distribution, projected water demands, and proposed water supply sources and distribution system are based on information in the draft East Valley Corridor Specific Plan (December 1987) and the Draft Engineers Report prepared by Metcalf & Eddy, Inc. (January 1988).

8.10.3.1 Existing Conditions

Water Supply. The project area is currently served by the City of Loma Linda and the City of Redlands (see Figure 8.10-1). The area of the project north of Lugonia Avenue has no major water supply facilities due to its limited development. Both cities plan on serving the entire area within their city limits or spheres of influence as development occurs. The area is still approximately 70 percent agriculture with numerous private and small mutual water company's non-potable water wells (over 50 in East Valley Corridor) and distribution systems. Additional agricultural water is obtained from the upper Santa Ana River and Big Bear Lake releases.

The project area is also under the jurisdiction of the San Bernardino Valley Municipal Water District (SBVMWD) formed in 1954 as a State Project Water contractor and a regional water supply planning agency. Under the Santa Ana River - Mill Creek Cooperative Water Project Agreement, water from the Santa Ana River, Mill Creek or State Water Project will be transported to the City of Redlands water treatment plants which in turn can supply the study area.

The primary water supply regulatory agency for domestic water supply facilities is the State Department of Health Services (SDOHS). This agency has enforcement power to ensure that all potable water supplies meet State and Federal drinking water quality standards.



LEGEND

- 12" REDLANDS EXISTING WATERMAIN W/SIZE *
- 12" LOMA LINDA EXISTING WATERMAIN W/SIZE *
- 12" PROPOSED WATERMAIN *
- ▲ EXISTING WELL
- △ PROPOSED WELL
- ····· PRESSURE ZONE BOUNDARY

* NOTE: ONLY MAJOR WATERMAINS GENERALLY 12" AND LARGER SHOWN.

EAST VALLEY CORRIDOR

CSA 110, COUNTY OF SAN BERNARDINO

FIGURE 8.10-1

EXISTING AND CURRENTLY PROPOSED WATER SUPPLY AND DISTRIBUTION FACILITIES

City of Redlands. The City of Redlands will eventually serve about 86 percent of the project area. The City currently has two water supply sources. Approximately half of the City's demand is supplied from the Tate Water Treatment Plant which treats water from Mill Creek, and 26 groundwater wells located throughout the City supply the other half. Groundwater contaminants, including nitrates, volatile organic compounds (TCE, ~~DBCP,~~ etc.), and fluoride, have reduced the total production capacity from ~~52~~ 65 million gallons per day (mgd) to ~~16~~ 27.5 mgd. ~~in 1985. This has resulted in a shortage of 10 mgd on a maximum summer day.~~

To meet the current and future demands, the City of Redlands ~~is~~ has constructed the new 12 mgd Horace P. Hinkley Plant which is designed to treat Santa Ana River water as well as State Project water delivered through the SBVMWD facilities. The plant is located in Mentone about 3 miles east of the project area.

The Tate Water Treatment plant has been treating water from Mill Creek since 1967. The plant is located in Mentone about 7 miles east of the project area, at an elevation of about 2,300 feet. The plant has a nominal treatment capacity of 20 mgd, but the finished water transmission pipeline has a capacity of only 12 mgd which limits plant production. Plant production is also limited by the flows in Mill Creek. Summer flows generally average about 11 or 12 mgd, but can be as low as 4 to 8 mgd in a dry season. When the SBVMWD Exchange facilities are completed, ~~both Santa Ana River water and~~ State Project water can be diverted to the plant for treatment.

There are several key wells located in or near the project area operated by the City of Redlands (See Figure 8.10-1). These include:

- Well No. 34 - excellent water quality with a capacity of 1,500 gallons per minute (gpm).
- Well No. 31A - must be blended due to TCE and DBCP, ~~and nitrate~~ contamination; the largest producing well in Redlands system, with a capacity of 4,200 gpm; rarely used currently.
- Well Nos. 30A and 32 - nitrate contamination; not used currently.
- The Mission well - formerly an agricultural well with a capacity of 1,800 gpm; has been in service since 1986.
- The Orange Street well - ~~Owned by the Bear Valley Mutual Water Company,~~ recently purchased by the City of Redlands; tested and now in operation with a capacity of over 2,000 gpm (off map).

City of Loma Linda. The City of Loma Linda relies totally on groundwater for its water supply. The City in the past has operated several wells between Anderson Street and Mountain View Avenue and south of Redlands Boulevard, which have experienced nitrate contamination. Currently, the City operates three major good quality wells on

Cooley Street off Mountain View Avenue just to the west of the project area and a fourth well in San Timoteo Canyon. The combined capacity of these wells is about 10.5 mgd.

In addition to the wells, the City can receive up to 2.0 mgd of water through an intertie with the City of San Bernardino system at Anderson Street and Redlands Boulevard as emergency supply.

The San Bernardino City Water system also relies completely on groundwater and has a much larger capacity. Recently, several of the San Bernardino City wells had TCE or PCE above the action levels and were shut down. San Bernardino City is currently evaluating this reduction in supply capacity and could elect not to provide water outside their current service area until more capacity is developed. In any event, the current Loma Linda total usable well capacity of 7.5 mgd is adequate to meet its own peak-day demand of 5.7 mgd. Loma Linda does not have a current Master Plan for water supply. The existing and planned well capacity plus the San Bernardino City intertie appear to provide more than adequate capacity to meet near-term growth in demand.

The groundwater resources available for the East Valley Corridor are abundant in terms of quantity, but water quality problems have limited indiscriminate use. The groundwater level in the project area are impacted by the overall level in the Bunker Hill Basin. About one-third of the project area overlies the Basin's pressure zone. This zone represents an area that has historically and currently experienced high groundwater which may increase liquefaction potential, affect existing structural foundations, and increase new construction costs. Based on limited existing data, the groundwater levels in the project area are at a minimum of 30 feet below the surface in the northwest section with an average groundwater depth of over 50 feet from the ground surface.

The East Valley Corridor currently requires less than 6 percent of Redlands maximum day and peak hour demands. On an average day basis, the East Valley Corridor utilizes approximately 5.8 percent of the City's total consumption. The project area's actual 1984 consumption (Redland's service area only) totalled 0.92 mgd on an average day, 1.97 mgd on a minimum day, and 3.17 mgd during a peak hour.

Distribution Systems.

City of Redlands. The City's existing water facilities in the project area belong to the 1350 and 1570 pressure zones. These facilities are also shown in Figure 8.10-1. The major primary distribution main for the 1350 pressure zone runs east-west along Lugonia Avenue from Well No. 34 to the Texas Street water complex. Two north-south interties convey water from this main under the I-10 freeway to the southern portion of the 1350 zone. A second east-west main extends along Redlands Boulevard from the east end of the project area to Mountain View Avenue. The reach between California Street and Mountain View Avenue, however, no longer serves local demand since this service area has been transferred to Loma Linda.

Backbone pipelines for the 1570 pressure zone currently are minimal in the project area, but the 1570 zone water does enter the East Valley Corridor at two locations via 12-inch pipelines, namely on Nevada Street and Colton Avenue. These pipelines and others will be extended to form a backbone system for the 1570 pressure zone within the East Valley Corridor.

The 12-inch diameter mains are adequate to carry maximum day demands with fire flows of 3,000 gpm. They also form a strong network which can be systematically expanded to serve development in the project area.

Local storage for the 1350 zone consists of the 1.0 million gallon (mg) Texas Street reservoir. Using City criteria, this storage is just adequate for existing conditions; so a new reservoir will be required in this zone in the future. Storage in the 1570 zone totals 23.7 mg located in three major reservoirs. This is the largest amount of storage in any zone in the City of Redlands. Again, the storage in the 1570 zone is more than adequate to serve existing and the projected year 2000 requirements. Water from the upper zones can be transferred to the lower zones through pressure reducing stations located within the distribution system. There are two pressure reducing stations which can transmit water from the 1570 to the 1350 zone with a normal capacity of 12 mgd and a peak (intermittent) capacity of 26 mgd.

City of Loma Linda. Distribution facilities which serve the portion of the project area in Loma Linda are shown on Figure 8.10-1. The major facilities include a 12-inch distribution main, located in Redlands Boulevard, which serves Pressure Zone 1, the lowest zone of the City and the project area. The City's two wells pump water into a 20-inch diameter transmission main located in Mountain View Avenue. The City has two intertie facilities; one active connection with the City of San Bernardino system on Anderson Street and Redlands Boulevard, and another emergency connection with the Redlands system on Mountain View. These intertie facilities significantly increase the system's reliability.

The low zone in the City is currently served by ~~4.2~~ 6.9 mg of reservoir storage facilities located in the upper zones, with another 2.0 mg planned in the near future. Pressure reducing valves transfer water between zones.

Loma Linda has recently extended its City limits below the Mission Zanja to halfway between New Jersey and Nevada Streets, and facilities in this area will eventually be transferred to its jurisdiction.

8.10.3.2 Project Impacts

The basic water distribution system in the project area is currently adequate to serve the existing agricultural development within the East Valley Corridor.

Development allowed and planned for by the East Valley Corridor Specific Plan, however, will impact water demand, distribution lines, pressure reducing stations, and storage facilities.

Water Demand. The water demands required for the ultimate buildout of the East Valley Corridor are projected in the Engineers Report using proposed land use acreage, fire flow requirements, and historical water use factors for the three pressure zones.

Peaking factors for maximum day demand and peak hourly demand are 2.0 and 3.2, respectively. These figures conform to factors used by nearby cities and the City of Redlands. These peaking factors occur during the summer when increased water consumption is prevalent. Table 8.10-1 presents the ultimate water demand by pressure zone.

Table 8.10-1

ULTIMATE WATER DEMAND BY PRESSURE ZONE (gpm)

Land Use Type	*Loma Linda Zone 1*	*Redlands 1570' Zone*	*Redlands 1350' Zone*	*Total EVC*
General Commercial	348	552	502	1,402
Commer. Industrial	138	273	402	813
Regional Commercial	0	198	0	198
Local Commercial	32	7	0	39
Regional Industrial	0	630	24	875
Admin. Professional	18	117	0	135
Public Institutional	122	2	82	206
MFR, 20 du/acre max.	162	264	63	489
MFR, 10 du/acre max.	195	128	27	350
SFR, 6 du/acre max.	153	0	0	153
Planned Development	0	50	2,241	2,741
Open Space	0	0	0	0
TOTAL Average Demand:	1,168	2,671	3,562	7,401
Maximum Day Demand	2,336	5,342	7,124	14,802
Peak Hour Demand	3,738	8,547	11,398	23,683

Source: Draft Engineers Report, Metcalf & Eddy, Inc., January 1987

The buildout water for the East Valley Corridor, based on the average demand estimates plus 11 percent for unaccounted for water, is 8,215 gpm or 11.83 mgd for the year 2028. Redlands share amounts to an increase of approximately 55 percent of the 1984 Redlands water supply demand. The sources of water must be able to supply the water at rates as high as the maximum day demand (plus 11 percent). This

maximum day supply requirement for the East Valley Corridor is approximately 16,400 gpm or 23.62 mgd.

The project's water supply demand will require additional sources of water for the City of Redlands. Currently, the City relies on groundwater and the Mill Creek water, but groundwater contamination and the variable flow of Mill Creek make these two sources questionable in the long-term. Therefore, the City has constructed the Hinckley Treatment Plant and the SBVMVD is building the Tate Pump Station, which will make it possible to receive, treat, and distribute Santa Ana River and State Project water. In any case, the project's demand on the City of Redlands water supply in combination with ~~the City's current deficient water supply and~~ projected growth, is considered a moderate to high impact.

The City of Loma Linda will be required to provide the City's portion of the East Valley Corridor with an estimated 2,590 gpm or 3.73 mgd. This amounts to an increase of 65 percent of the current maximum day demand of 5.7 mgd. The City's existing oversupply, the intertie with the City of San Bernardino, and the plan to utilize another well to produce 3 mgd appear to provide the City with adequate water to service its portion of the East Valley Corridor at ultimate buildout. The impact on Loma Linda's water supply is considered low.

Distribution Systems. Water distribution and storage facilities are currently inadequate for the projected growth in the East Valley Corridor. The recommended facilities to distribute water at a minimum of 40 psi include an expanded transmission grid, increased water storage, and a pressure reducing station. Most of these facilities will be within the Redlands service area. The City of Redlands would need to provide over 100,000 feet of pipelines, 16.3 mg of storage, and a pressure reducing station (East Valley Corridor Specific Plan, August 1987). These recommended new facilities constitute a moderate to high impact on the City of Redlands water service.

The City of Loma Linda would need to build 6,600 feet of pipelines and 1.7 mg of storage. These facilities are considered a low impact.

A more detailed discussion on recommended new water facilities is included in the mitigation section.

8.10.3.3 Mitigation Measures

Water Supply. In order to provide the required water supply for its service area as well as for the East Valley Corridor, the City of Redlands has constructed the Hinckley Water Treatment Plant to treat Santa Ana River and State Project water. The SBVMWD is also building the Tate Pump Station to lift Santa Ana River water to the Tate Treatment Plant for city-wide distribution.

Mill Creek and Santa Ana River water are the least costly waters available to Redlands. These sources, however, are limited by stream flow and legal agreements, making it necessary for groundwater and the State Project water to provide peaking demands. ~~and eventually basic~~

~~supply.~~ It is proposed that Mill Creek and Santa Ana River waters be used to provide base supply to the East Valley Corridor with Well No. 34 and Mission Well utilized for peak demands.

Additional alternative supplies include rehabilitating the contaminated 4,200-gpm Well No. 31-A (which may be more costly than State Project water) and constructing additional wells or reconditioning existing agricultural wells within the East Valley Corridor.

The City of Loma Linda depends entirely on groundwater and an intertie with the City of San Bernardino for its water supply. The City is presently digging one well and rehabilitating another well to augment its already adequate water supply.

The California Regional Water Quality Control Board, Santa Ana Region, is concerned about the uncertainty of future imported water from the State Water project and the Colorado River. Therefore, they recommend that in the future if adequate water to supply project developments is unavailable, then the scope of the Specific Plan should be reduced.

Distribution Systems. The recommended major water facilities for the East Valley Corridor were sized to meet the needs at ultimate development. Various layouts were evaluated for selection of the most cost effective system. The system was developed based on computer simulation and is consistent with the Redlands and Loma Linda design standards. The water system can be constructed in phases with the existing facilities supplying initial development.

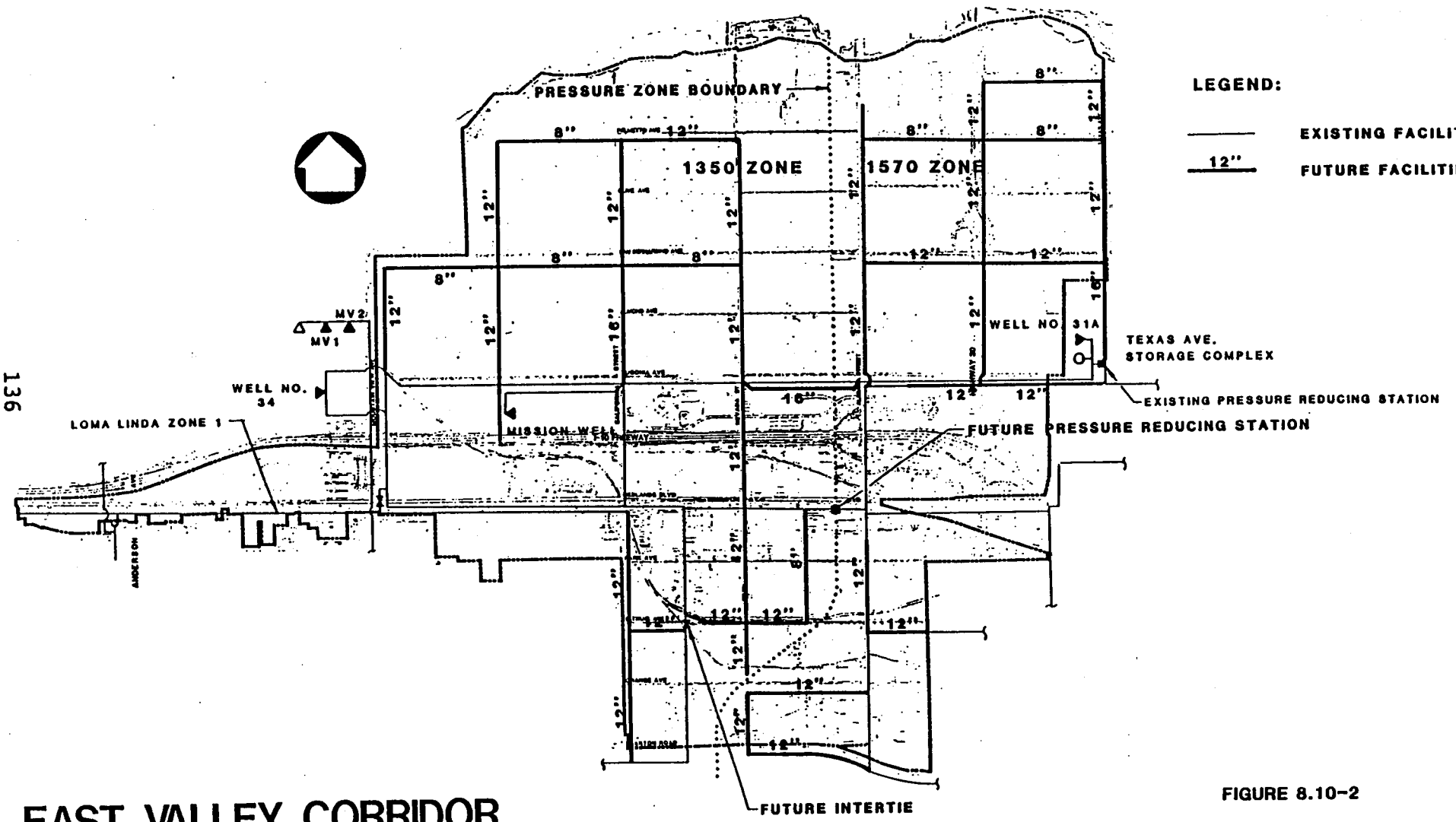
The proposed new water facilities are shown in Figure 8.10-2 and listed in Table 8.10-2. The transmission grid will distribute water to the entire project at a minimum pressure of 40 psi on a maximum day for peak hours. Total storage requirements for the proposed development amounts to 22.92 mg of which 18.0 mg of new storage will need to be built. All storage facilities must be located outside the project area since the East Valley Corridor lies below the nominal elevation of the three pressure zones servicing the area.

For a complete analysis and description of the recommended water supply and distribution systems, refer to the Engineers Report prepared by Metcalf and Eddy, Inc. on file with the County of San Bernardino, CSA 110.

The following conservation measures are recommended for all land uses within the East Valley Corridor by the California Department of Water Resources and should be implemented where applicable. In addition to these measures, public awareness programs and water conservation information should be made available.

Required by Law:

1. Low-flush toilets
2. Low-flow showers and faucets
3. Insulation of hot water lines in water recirculating systems.



EAST VALLEY CORRIDOR
CSA 110, COUNTY OF SAN BERNARDINO

FIGURE 8.10-2

RECOMMENDED WATER FACILITIES

Metcalf & Eddy

Table 8.10-2

RECOMMENDED MAJOR NEW WATER FACILITIES

Location	*Pipeline (length in feet) Diameter* 8"	12"	16"	*Storage (mg)*	*PR Stations (gpm)*
Zone 1570				7.7	
Victor	2,400				
Palmetto	5,280				
S. Bernardino	5,200	5,280			
Lugonia		4,400			
Citrus		1,320			
Barton		2,680			
Alabama		8,260			
Tennessee		6,600			
Texas		3,900	2,100		
Orange		2,640			
Nevada		1,320			
Subtotal:	7,920	36,460	2,100	7.7	
Zone 1350				8.6	1,800
Palmetto	2,640	2,640			
S. Bernardino	7,920				
Citrus		2,680			
Iowa	2,600				
Lugonia			2,640		
Nevada		11,680			
California		2,640	2,640		
Bryn Mawr		6,280			
Mt. View		2,300			
Subtotal:	13,260	28,220	5,280	8.6	1,800
L.L. Zone 1				1.7	
California		5,280			
Citrus		1,320			
Subtotal:		6,600		1.7	
EVC TOTAL:	21,120	71,280	7,920	18.0	1,800

Source: Draft Engineers Report, Metcalf & Eddy, January 1988

Recommendations to be implemented where applicable:

Interior:

1. Supply line pressure: recommend water pressure greater than 50 pounds per square inch (psi) be reduced to 50 psi or less by means of a pressure-reducing valve.

2. Flush valve operated water closets: recommend 3 gallons per flush.

3. Drinking fountains: recommend self-closing valves be equipped with each unit.

4. Pipe insulation: recommend all hot water lines in dwelling units be insulated to provide hot water faster with less water waste and to keep hot pipes from heating cold water pipes.

5. Hotel rooms: recommend posting conservation reminders in rooms and rest rooms. Recommend thermostatically-controlled mixing valve for bath/shower.

6. Laundry facilities: recommend use of water-conserving models for washers.

7. Restaurants: recommend use of water-conserving models for dishwashers or retrofitting spray emitters. Recommend serving drinking water upon request only.

Exterior:

1. Landscape with low water-consuming plants wherever feasible.

2. Minimize use of lawn by limiting it to lawn-dependent uses, such as playing fields.

3. Use mulch extensively in all landscaped areas. Mulch applied on top of soil will improve the water-holding capacity of the soil by reducing evaporation and soil compaction.

4. Preserve and protect existing trees and shrubs. Established plants are often adapted to low water conditions and their use saves water needed to establish replacement vegetation.

5. Install efficient irrigation systems with timers which minimize runoff and evaporation and maximize the water which will reach the plant roots. Drip irrigation soil moisture sensors and automatic irrigation systems are a few methods of increasing irrigation efficiency.

6. Grading of slopes should minimize surface water runoff.

7. Investigate the feasibility of utilizing reclaimed waste water for irrigation.

8. Encourage cluster development which can reduce the amount of land being converted to urban use. This will reduce the amount of impervious pavement created and thereby aid in ground water recharge.

9. Preserve existing natural drainage areas and encourage the incorporation of natural drainage systems in new development. This would aid in ground water recharge.

10. Flood plains and aquifer recharge areas which are the best sites for ground water recharge should be preserved as open space.

8.10.4 Wastewater Collection, Treatment, and Disposal

The existing facilities and the recommended sewage facilities required for project buildout were described in the Draft East Valley Corridor Specific Plan, December 1987 and in the Draft Engineers Report by Metcalf & Eddy, January 1988.

8.10.4.1 Existing Conditions

Wastewater collection systems are operated by both the City of Redlands Municipal Utilities Department and the City of Loma Linda Community Services Department. Due to the limited development in the area only about 10 to 15 percent of the project area is actually sewered to these collection systems (See Figure 8.10-3). Both cities have existing master plans to extend sewer service within existing city limits and/or spheres of influence.

Sewage treatment agencies serving the study area currently include the City of Redlands and the City of San Bernardino. The City of Redlands owns a sewage treatment plant which is located along the north boundary of the project area and is operated by the City Municipal Utilities Department. The City of San Bernardino provides collection and treatment of all flows collected within the City of Loma Linda and minor flows from the City of Redlands' sewered areas west of Nevada Street. The San Bernardino wastewater treatment facility (WWTF) is located approximately two miles west of the project area. A Joint Powers Agreement between San Bernardino and Loma Linda, signed in 1965, provides the terms and conditions under which San Bernardino accepts flow from Loma Linda. No agreement exists between San Bernardino and Redlands.

While the above agencies are the basic providers of existing sewage collection and treatment services, two other agencies, the Santa Ana Watershed Planning Authority (SAWPA), and the San Bernardino Valley Municipal Water District (SBVMWD), have on-going planning responsibilities which could potentially affect the project area. Formed in 1972, SAWPA is a regional agency composed of five member municipal

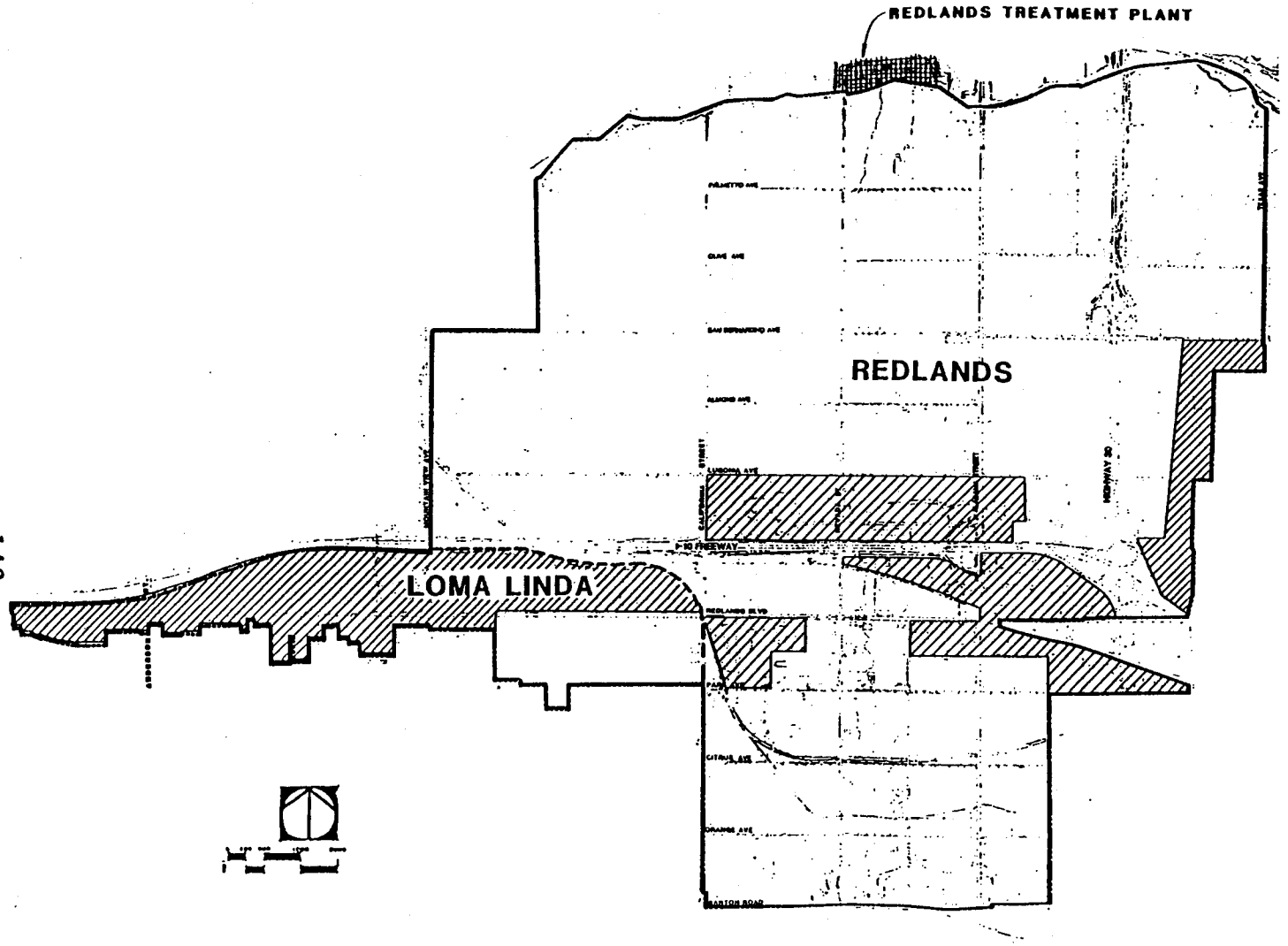


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FIGURE 8.10-3

SEWER SERVICE BOUNDARIES AND EXISTING SEWERED AREAS

water districts overlying the Santa Ana River watershed. SAWPA's primary objective to implement projects which help meet water quality objectives for the watershed. A major project is the Santa Ana Regional Interceptor (SARI) which provides a means of intercepting and transporting high-salt water and non-reclaimable wastewater from the upper basins to the Pacific Ocean. The SARI line currently extends from the treatment and ocean disposal facilities of Orange County Sanitation Districts to Corona and Chino. The final reaches are proposed to extend as far as the San Bernardino treatment plant. A second major project of both SAWPA and SBVMWD, is the plan for a regional tertiary treatment plant to treat secondary effluent from both the San Bernardino and Colton wastewater facilities.

The primary agency with regulatory authority over sewage treatment and discharge and other water quality issues is the California Regional Water Quality Control Board, Santa Ana Region. In addition to issuing and enforcing discharge permits for the sewage treatment plants, the Regional Board has planning and regulatory authority for any activities directly affecting surface or groundwater quality. These include water quality impacts from unsewered areas, industrial and toxic waste handling, and construction activities. Regional Board actions are consistent with and subject to Federal water pollution control laws and regulations as administered by the U.S. EPA, and California laws and regulations as developed by the State Water Resources Control Board and the State Department of Health Services.

Presently, all the wastewater from the project area flows by gravity to the two treatment facilities previously mentioned. Based on existing wastewater flow patterns, the project area is divided into two sections. Wastewater collected from the area east of Nevada Street flows via the Nevada Street trunk line to the City of Redlands wastewater treatment and disposal facility (Redlands east). Wastewater discharged from the area west of Nevada Street flows via the main Loma Linda outfall line at the western end of the study area, and the Mountain View and Lugonia trunk lines to be treated at the City of San Bernardino wastewater facility (Redlands west and Loma Linda).

City of Redlands Wastewater Treatment and Disposal Facility. The City of Redlands wastewater facility is located at the north end of Nevada Street, north of the project area along the Santa Ana River bank (see Figure 8.10-3). The facility presently serves the majority of the City of Redlands and has a potential future service area that includes the unincorporated community of Mentone on the northeast and San Timoteo Canyon on the south.

The current average wastewater flow to the plant is in the range of 5.4 million gallons per day (mgd). On a system-wide basis, the average wastewater flows to the plant are projected to increase to 9.0 mgd in the year 2005, with the ultimate potential as high as 24 mgd at full annexation and buildout. These projections assume that a proposed pumping station will be built near the intersection of Mountain View and San Bernardino avenue. All flows from the area west of Nevada Street within the Redlands city limits and/or sphere of influence will be pumped to the Nevada Street trunk line to be treated

at the Redlands Wastewater Treatment Facility. These mostly undeveloped and unsewered areas are presently served by the San Bernardino WWTF, but the City of San Bernardino has indicated that they will not continue to treat wastewater from this area in the future since no agreement exists to accept the flow.

The Redlands WWTF was built in 1962 to handle a dry-weather flow of 2.4 mgd. In 1972, the facility was expanded to its current average flow rating of 6 mgd, and was equipped with advanced wastewater treatment for the total flow. The plant appears to be maintained in excellent operating condition. Effluent quality meets all secondary and ammonia discharge requirements for direct discharge to the Santa Ana River. Effluents can be either chlorinated, filtered, and discharged to the Santa Ana River, or pumped to percolation ponds where the water infiltrates to the Bunker Hill II groundwater basin. Percolation ponds have been the normal method of disposal. There are currently no facilities for the beneficial use of the reclaimed water.

In September, 1983, the City completed a capacity analysis and detailed study for expanding the plant to 8.0 mgd. Design work for this expansion is currently under contract.

City of San Bernardino Wastewater Treatment Facility. The City of San Bernardino WWTF is approximately 1/2 mile southeast of the intersection of Orange Show Road and South "E" Street in the City of San Bernardino. The facility provides treatment of combined domestic and industrial wastewater collected from the City of San Bernardino, City of Loma Linda, East Valley Water District, Highland, a small portion of the City of Redlands included in the East Valley Corridor, and the domestic wastewater from Norton Air Force Base.

The present influent flow to the San Bernardino facility averages approximately 21 mgd of which less than two percent is contributed by industrial discharges. The plant was designed to treat an average daily flow of 28.0 mgd. The flow reaches the plant by gravity sewers coming in from the east of Waterman Avenue. Due to a number of process and/or equipment constraints, the effective capacity of the plant has been downgraded to 24.5 mgd. The plant is undergoing a major upgrade/expansion project to restore the capacity to the full 28 mgd and is expected to be completed by mid-1988. In the interim, new connections to any of the collections systems served by the plant are limited basically to property owners/developers who purchased "capacity rights" in 1984. Within Loma Linda, rights for 2,122 equivalent dwelling units were purchased by property owners or developers although it is not known how many of those are held for property within the East Valley Corridor area. An additional 900 were purchased by the City. This gives a total interim capacity right of an additional 0.85 mgd in the plant.

Most of the existing sewer system in the City of Loma Linda collects and transports wastewater to the San Bernardino WWTF via the Loma Linda outfall line. This line was constructed in accordance with the previously referenced Joint Powers Agreement which provided Loma Linda with the right to convey wastewater to San Bernardino via the outfall line. One exception to the above flow pattern is a portion of the

study area, within Loma Linda's boundaries, east of Mountain View and south of I-10, which is served by the City of Redlands Mountain View trunk line conveying wastewater to the San Bernardino plant. Current estimated average and peak flows from Loma Linda are estimated to be 1.5-2 mgd and 3-3.5 mgd, respectively.

Should the proposed Redlands pumping station be built to pump flows from Mountain View line to Nevada Street trunk line, Loma Linda would have to divert its flow to the San Bernardino plant, either via the outfall line or a diversion structure on the Mountain View trunk; or develop an agreement with Redlands for treatment at the Redlands plant.

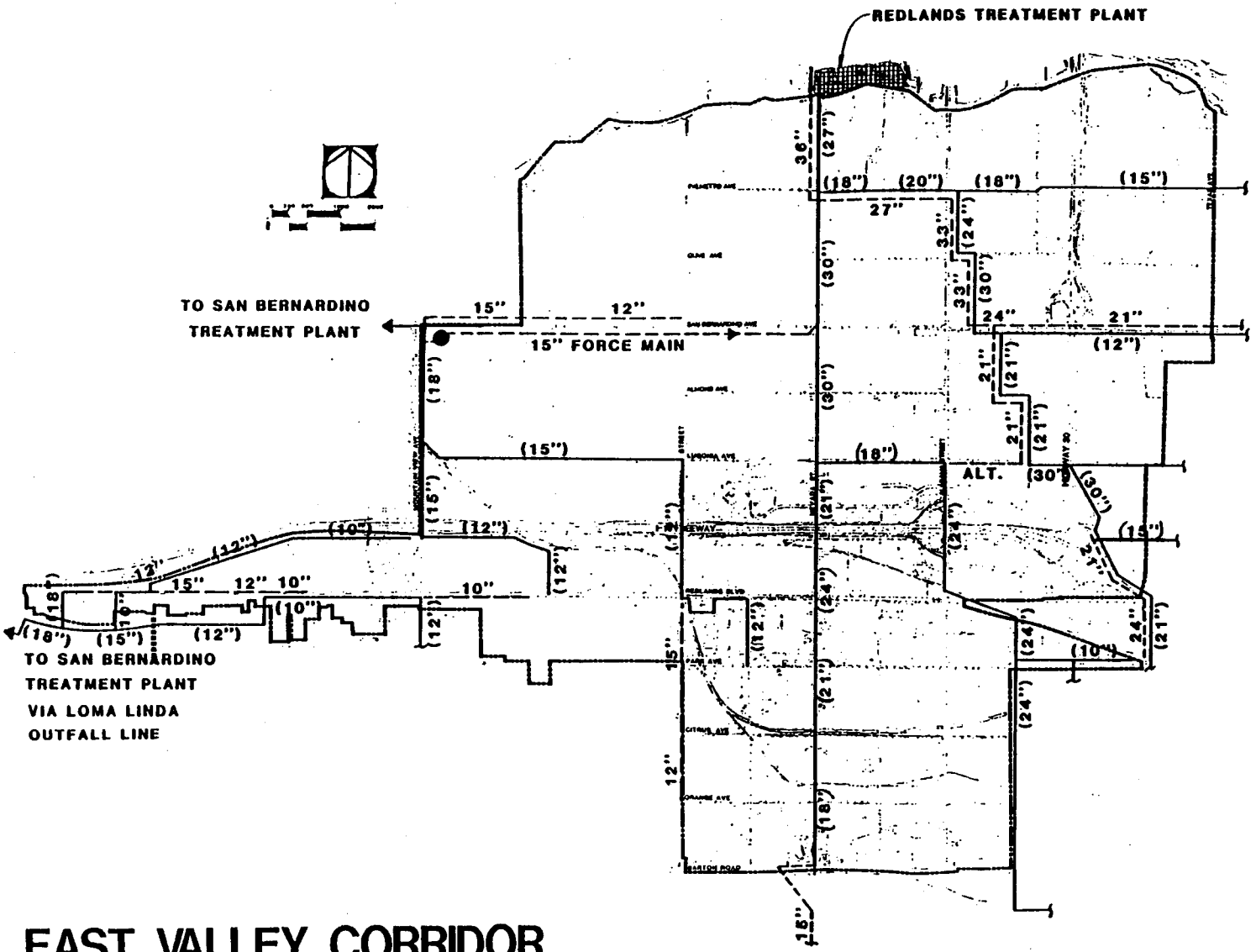
Santa Ana Regional Interceptor. The SARI line, if extended to the San Bernardino area, would provide a means of conveying water out of the study area for treatment at Orange County Sanitation District's facilities and discharge to the ocean. The fundamental purpose of this line is to transport high salt water and wastewater out of the Santa Ana River and groundwater basins. Certain industrial and brine flows would be discharged to the pipeline. A portion of the SARI's capacity could also be designated for general sewage discharged on an interim basis. A financing study for the uncompleted reaches of the SARI line is currently being completed.

Collection Facilities. Both Loma Linda and Redlands have existing sewers within the project area. Sewer service is provided to most of the Loma Linda portion of the project area, but to very limited sections of the Redlands portion (See Figure 8.10-4).

A sewer master plan, developed to provide a basic plan of overall wastewater collection systems for the City of Loma Linda, was completed in November, 1982. A wastewater collection system master plan was completed for the City of Redlands in 1985. This plan sets forth an ultimate projection and identifies collection system improvements that will be required in the next twenty year planning period.

Since the East Valley Corridor Land Use Plan developed by the County for the project area differs markedly from the land use plan presented in the Redlands Master Plan, it can be expected that sewerage improvement recommended in the East Valley Corridor Specific Plan may differ from those of the earlier plan.

The existing collection system and treatment facilities are adequate to serve the sewered areas of limited development in the East Valley Corridor. The existing Master Plans have taken into account some level of development within the Corridor and therefore a basic collection system has been established. The two wastewater treatment plants have a short-term capacity available to serve the area, although connections are limited to the San Bernardino plant until completion of its upgrade project. Therefore, only limited growth within the project area can be accommodated with existing facilities.



LEGEND

(12") EXISTING SEWER

12" PROPOSED SEWER PER EXISTING MASTER PLANS

FIGURE 8.10-4

EXISTING AND CURRENTLY PROPOSED TRUNK AND INTERCEPTORS SEWERS

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8.10.4.2 Project Impacts

The East Valley Corridor's projected sewage flows were determined based on proposed land use and on historic average unit flow factors in adjacent communities. Peak wet and dry weather flows were calculated for the purpose of sizing collection systems, pumping stations, and ultimate treatment facilities capacity for the project area.

The East Valley Corridor sewerage system is divided into three separate collection zones. Sewage collected in the Redlands East Zone (east of Nevada Street) can flow by gravity to the Redlands WWTF. Sewage collected in the Redlands West Zone (west of Nevada Street) is below the elevation of the treatment plant and must either be pumped up to the plant or directed to other sites for treatment and disposal. The Loma Linda Zone contains all sewage generated within the Loma Linda portion of the Corridor and its sphere of influence.

The Engineers Report compiled the land uses by sewage zones as well as the average sewage flow factors. These data were then used to estimate the ultimate sewage flows to be generated by the East Valley Corridor at buildout in the year 2028 (See Table 8.10-3). The total sewage flow of the East Valley Corridor, based on the Specific Plan, is estimated to be 8.79 mgd.

Table 8.10-3

ULTIMATE SEWAGE FLOWS
(million gallons per day)

Land Use Type	*Loma Linda*	*Redlands East*	*Redlands West*	*Total EVC*
General Commercial	.398	.952	.403	1.753
Commercial Industrial	.207	.594	.284	1.085
Regional Commercial	.000	.264	.000	0.264
Local Commercial	.033	.005	.000	0.038
Regional Industrial	.000	.996	.170	1.166
Admin. Professional	.019	.109	.025	0.153
Public Institutional	.101	.002	.070	0.173
MFR, 20 du/acre max.	.174	.246	.022	0.442
MFR, 10 du/acre max.	.148	.074	.045	0.267
SFR, 6 du/acre max.	.101	.000	.000	0.101
Planned Development	.000	1.280	2.069	3.349
Open Space	.000	.000	.000	0.000
TOTAL Average Flows:	1.181	4.522	3.008	8.791

Source: Draft Engineers Report, Metcalf & Eddy, Inc., January 1988

The projected ultimate average sewage for Loma Linda is 1.18 mgd, which is about 67 percent of the current flow for the City of Loma Linda. Sewage generated in the Redlands portion of the East Valley Corridor may total 7.6 mgd. This amount is over 175 percent of the current flow into the Redlands WWTF and ~~95~~ 84 percent of the facility's soon-to-be ~~8~~ 9-mgd capacity.

These projected sewage flows will require major expansion of the Redlands WWTF. An agreement between Loma Linda and the San Bernardino WWTF will also be required to treat the additional sewage generated in Loma Linda's section of the East Valley Corridor. This added flow into the San Bernardino WWTF, along with the continued fast growth of the area, would cumulatively require the facility to expand its capacity. The impacts of the proposed development on sewage treatment capacity is considered high, particularly for the Redlands WWTF.

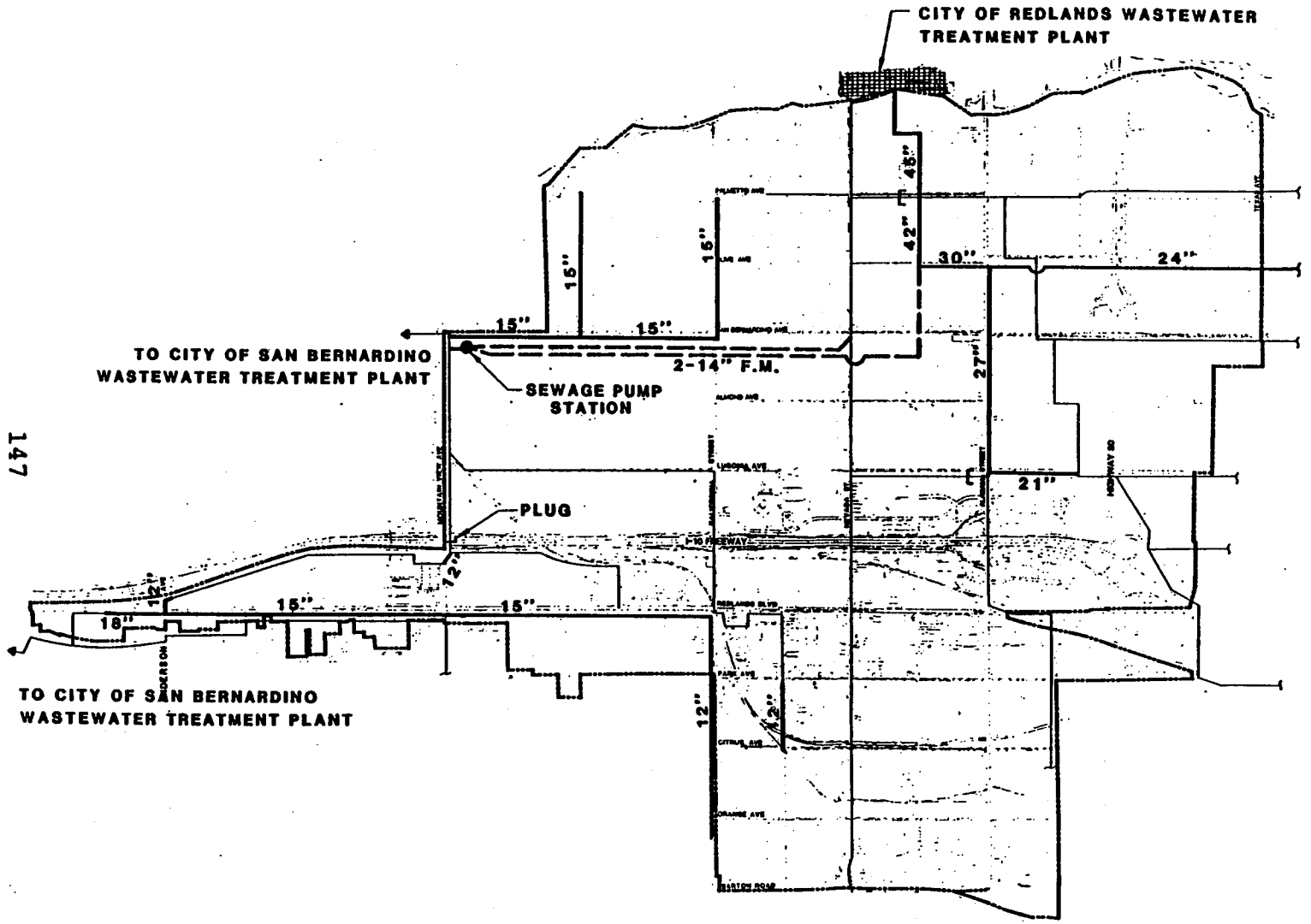
Since only 10 to 15 percent of the project area is currently sewered, a major sewer collection system of over 62,000 feet will need to be built. New and some parallel pipelines in existing rights-of-ways, as well as a 7.8 mgd pumping station, are recommended to meet the East Valley Corridor Specific Plan needs. This expanded collection system is considered a high impact on the existing systems and on the public utilities involved.

8.10.4.3 Mitigation Measures

The primary objective in planning sewage facilities for the East Valley Corridor is to develop sewage collection facilities and treatment plant capacity to serve ultimate development of the area in a cost effective manner. Existing facilities were used as the starting point to develop, over time, a complete collection and transport system.

The proposed collection system layout conveys all sewage flow to final collection points in each of the three sewage zones (Loma Linda, Redlands West, and Redlands East). It is based on existing trunk sewers and drainage paths, and on both existing and proposed road alignments. The design maximizes the number of units served by gravity to minimize collection system costs. All pipes in the collection system were sized for peak flow rates for their respective tributary area, which were computed by applying peaking factors to the average flow rates. Figure 8.10-5 shows the major facilities recommended for ultimate buildout within the East Valley Corridor.

The Redlands East Zone collection system can convey flows by gravity directly to the Redlands treatment plant. Pipelines transporting City of Redlands flows to the treatment plant pass through the East Zone and form an existing grid of major sewer trunk lines in the area. To these existing trunk lines is added the flow generated within the East Valley Corridor along and east of Nevada Street. Some existing lines, however, cannot carry both projected flows for the entire City and projected ultimate flows generated in the East Zone. New and, in some



LEGEND:

- NEW SEWER PIPES
- EXISTING SEWER PIPES
- PLUG

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FIGURE 8.10-5

RECOMMENDED SEWERAGE COLLECTION FACILITIES

cases, parallel pipelines are therefore recommended to provide adequate capacity for future flows.

The collection system in the Redlands West Zone conveys flows to a single collection point near the intersection of San Bernardino Avenue and Mountain View Street. It is recommended that a pumping station be located at a site near this intersection and that collected flows be pumped via a force main up to the Nevada Street trunk line in which it can flow by gravity to the Redlands treatment plant. The pumping station and force main are part of the recommended major facilities for the East Zone collection and transport system.

The ultimate pumping station capacity is sized for a peak wet weather flow at ultimate development of 7.8 mgd, to be installed in phases. The ultimate force main would consist of two parallel 14-inch pipelines, also to be installed in phases. Installation of the pumping system would eliminate the current practice of transferring West Zone sewage to the City of San Bernardino's collection system.

Loma Linda sewage flows originating in the East Valley Corridor are collected and conveyed by gravity along the Redlands Avenue trunk sewer to the San Bernardino Treatment Plant via the Loma Linda Outfall. Loma Linda sewage, which currently flows down Mountain Avenue and enters the City of San Bernardino collection system at San Bernardino Avenue, would be diverted by a connection between manholes at Mountain View and the I-10 Freeway and directed to the Loma Linda Outfall. This will eliminate the current practice of mixing flows of the two cities before treatment.

Table 8.10-4 presents a summary of recommended facilities as listed in the draft East Valley Corridor Specific Plan prepared by Metcalf and Eddy, Inc.

Additional capacity will be required of the Redlands and San Bernardino WWTF. Both of these facilities, though lacking the necessary capacity to accommodate the East Valley Corridor development with current facilities, are expected to expand their capabilities to meet the growth in the area. East Valley Corridor development will need to coordinate its sewage requirements with the two WWTFs to ensure that capacity or service is or will be available.

8.10.5 Solid Waste

8.10.5.1 Existing Conditions

Solid waste disposal is provided by the City of Redlands (within its sphere of influence) and by the Loma Linda Disposal Company, a private contractor, servicing Loma Linda and the surrounding county areas.

The City of Redlands owns and operates a 65 acre landfill on city property, located just north of the project boundary and south of the Santa Ana River between ~~Nevada~~ California and Alabama streets. This sanitary landfill is used exclusively by Redlands and at its present size has a life expectancy of ~~8-10~~ 6-8 years. The city has recently

Table 8.10-4

SUMMARY OF ULTIMATE SEWERAGE FACILITIES

Location	Gravity Sewer Pipeline (length in feet) Diameter 12"	15"	18"	21"	24"	30"	42"	Force Main (Feet) 14"	Pumping Station (mgd)
East Zone									
Olive					4,500	3,500			
S. Bernardino		2,000							
Lugonia				1,300					
Nevada							5,300		
Alabama						3,900			
Kansas					1,000				
Subtotal:		2,000		1,300	5,500	7,400	5,300		
West Zone									
Bryn Mawr		2,600							
California		2,600							
New Jersey		1,300							
S. Bernardino		5,200						16,000	7.79
Subtotal:		11,700						16,000	7.79
Loma Linda									
Redlands B.		10,400	1,000						
Anderson	100								
Mt. View	100								
California	4,000								
Subtotal:	4,200	10,400	1,000						
TOTAL:	4,200	24,100	1,000	1,300	5,500	7,400	5,300	16,000	7.79

Source: Draft East Valley Corridor Specific Plan, August 1987

purchased 100 acres of property located south of and adjacent to the existing landfill. ~~Expansion of the site increased its life expectancy to approximately 22 years.~~ Proposed expansion of the landfill on this site would increase its life expectancy to approximately 24 years.

The City Sanitation Department estimates that the average solid waste generation rate is 4-6 pounds/person/day for residential areas. According to the Government Refusal Collection Disposal Association (GRCDA), there is no national average used to determine the amount of solid waste produced by commercial/industrial areas. The County of San Bernardino Solid Waste Management Master Plan has established a generation rate for commercial/industrial solid waste. The generation rate is 10 pounds/person/week for commercial areas and 4 pounds/person/week for industrial areas. Quarterly weighings at the Redlands landfill show the incoming waste averaging 265 tons/day or 68,900 tons/year. With a compaction rate of 1500 pounds/cubic yard, this totals 92,000 cubic yards of solid waste annually.

The Loma Linda Disposal Company is located at 10412 Richardson Street in Loma Linda which is in the western panhandle of the study area, one-half mile east of Anderson Road. This privately owned firm has eight trucks and adds equipment as needed to meet growth. They utilize the County-owned San Timoteo Canyon landfill that has a life expectancy to the year 1995.

The San Timoteo site is 384 acres; not all of this land is considered usable. The State has permitted 100 acres for use but the Master Plan shows the site at 320 acres. Some of the land which is not usable for landfill purposes will serve as a visual border and will be landscaped.

The City of Loma Linda's average solid waste generation rate is 2.8 lbs/person/day which amounts to 17.6 tons/day or approximately 6,400 tons/year. The compaction rate at this landfill is 1200 lbs/cubic yard and therefore Loma Linda's annual solid waste disposal totals over 10,600 cubic yards. There are currently 10.5 million cubic yards remaining at the 100-acre site.

8.10.5.2 Impacts

The proposed project should produce a population increase of 16,745 in Redlands by 2028. Using a 5 lb/person/day generation rate, it is calculated that 41.9 tons/day or 15,280 tons/year of solid waste will be generated at residential buildout. The development of the East Valley Corridor is expected to create an additional 80,725 jobs (52,300 commercial and 28,425 industrial) in the Redlands area. Using the County's solid waste generation rate for commercial and industrial areas (Redland's Sanitation Department did not have one), it is estimated that commercial areas will produce 37.4 tons/day and industrial areas 8.1 tons/day of solid waste. At a compaction rate of 1,500 lbs/cubic yards, an additional 42,535 cu.yds/year would be required at the Redlands landfill by the year 2028. This additional amount of solid waste is approximately 46 percent of the current

annual solid waste disposal. Therefore, it appears that the project could reduce the 22 year life expectancy of the Redlands landfill by over six years. The Redlands Sanitation Department foresees no major problems in servicing future growth within the study area. Only the normal additions of trucks and personnel would be required and the increase in business would offset these costs.

The project forecasts a buildout population increase of 3,335 for Loma Linda. Utilizing an average generation rate of 2.8 lbs/person/day, an additional 4.7 tons of residential solid waste will be generated per day totaling 1,700 tons per year. Another 7,700 commercial workers and 1,575 industrial workers are expected in the Loma Linda portion of the project area. The commercial areas are calculated to produce approximately 5.5 tons/day of solid waste, while industrial areas will produce 0.5 tons/day. With a compaction rate of 1200 lbs/cubic yard, it is calculated that an additional volume of 6,510 cubic yards would be required annually at the San Timoteo landfill.

The San Timoteo Canyon landfill will be severely impacted by the closing of the Colton landfill in July 1988, the Fontana landfill at the end of 1988, and the Milliken landfill sometime in 1989. After all sites are closed, San Timoteo landfill will be the only landfill available in the valley, taking in an additional 5,000 tons/day of solid waste. Originally, this landfill was expected to serve the East Valley region through 2000, but with the above closures and no additional sites opening, the site will reach capacity by 1995.

The proposed project will incrementally increase solid waste disposal at the San Timoteo landfill adding to the decreasing life span of the site. After 1995, it is uncertain at this time where or how solid waste will be disposed of in the San Bernardino Valley.

8.10.5.3 Mitigation Measures

The expansion of the Redlands landfill should accommodate the projected growth to the year 2010. Site expansions and the addition of personnel and equipment are recommended as the need arises.

Solid waste disposal within the San Bernardino Valley may reach a crisis level by the mid-1990s without new facilities. Expansion of the San Timoteo Canyon site to its full potential to increase the life expectancy of the landfill is a possible mitigation measure.

Plans for a waste-to-energy plant to be built at the Milliken landfill in Ontario were recently denied by the County Board of Supervisors.

Additional mitigation measures include the opening of a new landfill site within the Valley area, expansion of the north Fontana landfill, reopening the Cajon or Yucaipa landfills, and intensive recycling to reduce the amount of waste.

It is anticipated that the County will plan and implement a solution to increasing its long-term disposal site capacity within the next two years.

8.10.6 Telephone Service

8.10.6.1 Existing Conditions

General Telephone Company currently provides service to the East Valley Corridor study area. A new development occurs, efforts will be made to place new lines underground.

8.10.6.2 Project Impacts

The increase in commercial, industrial, and residential developments would require additional lines, equipment, installations, and maintenance. New connector lines will be required in the open lands and costs may be borne by the developer. The fees associated with telephone use would offset any additional costs required to provide adequate service to new customers. No significant impacts on telephone service are expected due to the proposed East Valley Corridor Specific Plan.

8.10.6.3 Mitigation Measures

No mitigation measures are recommended.

8.11 CULTURAL RESOURCES

A records search and preliminary literature review were conducted in May 1985 and supplemented in October 1987 to obtain information regarding known paleontological, archaeological, and historical resource locations within the East Valley Corridor Specific Plan area and to gather data to assess the potential for the presence of additional, currently unrecorded resource locations. The records search and literature review included the following sources:

- The National Register of Historic Places to determine if any National Register eligible/listed properties exist within the East Valley Corridor Specific Plan area
- California Inventory of Historic Resources (Department of Parks and Recreation 1976) and Historical Landmarks of San Bernardino County (San Bernardino County Museum 1980), to determine if any properties are recorded that have significance at the state or county level
- The files at the Archaeological Research Unit, University of California, Riverside and the Archaeological Information Center, San Bernardino County Museum to determine the extent of previous cultural resource investigations and to determine if any previously recorded resources exist within the East Valley Corridor Specific Plan area.

Cultural resource survey reports for the East Valley Corridor Specific Plan area were reviewed and a limited number of published sources about local history also were consulted. In addition, staff of the San Bernardino County Museum, the A.K. Smiley Library in Redlands, and the Redlands Historical Society were interviewed to obtain information on possible locations of significant cultural resources within the East Valley Corridor Specific Plan. A list of individuals consulted is included in Section 11 of this EIR.

The following sections discuss the results of the records search, preliminary literature review, and interviews and provide a preliminary assessment of the potential for impacts to paleontological, archaeological, and historical resources as a result of implementation of the project.

8.11.1 Existing Conditions

8.11.1.1 Overview

The earliest evidence of human occupation in the San Bernardino Valley dates from about 4,500 years ago during a period that has been termed the Milling Stone Horizon. Archaeological evidence for this period is the presence of particular types and densities of artifacts such as manos and metates in large numbers, crude flaked tools, and cogstones and discoidals. Very few projectile points are found, suggesting that populations relied primarily on plant foods for subsistence. Over time, a gradual shift in subsistence took place so that by about 2,000

years ago a change in emphasis from seed-grinding to acorn processing is indicated by the presence of larger numbers of mortars and pestles. This Late Prehistoric period represents the presence of populations in the San Bernardino Valley that were ancestral to the Shoshonean-speaking groups encountered by early explorers and missionaries. During this period, local cultures developed complex social organization and divided into groups with defined tribal territories. All of these groups had similar settlement and subsistence patterns that represented a generalized hunting-gathering way of life and an economy that included local and regional trade. Artifact types characteristic of the Late Prehistoric period are brownware pottery and smaller-sized projectile points. Other artifacts include bone awls for basket-making, drill used for leatherwork, and various types of charmstones (San Bernardino County Museum Assoc. 1981).

It is not clear which groups occupied the San Bernardino Valley in early historic times. Many accounts place the Valley within Serrano territory, while others believe it to be the easternmost tract of land held by the Gabrielinos. According to Benedict (1924) the group that occupied the Redlands area was the wa'atcavitum Serrano who belonged to the wildcat moiety (Benedict 1924 in Hammond and Webb 1977). When Franciscan Father Dumetz came from Mission San Gabriel to the San Bernardino Valley in 1810 to establish a mission outpost, he found the area inhabited by Indians he referred to as Guachamas. This group has been identified in subsequent ethnographic studies as both Serrano and Gabrielino.

Both the Serrano and Gabrielino occupied villages year round that were located at or immediately adjacent to reliable water sources. Temporary camps and special use sites (e.g. seed processing stations) were located in areas which took maximum advantage of locally available resources. During various seasons, small family groups gathered plant seeds, tubers, and greens from areas surrounding the village. Although deer, bighorn sheep and other large animals were hunted, small animals supplied most of the meat in the diet. In the fall, many groups congregated in the mountain oak groves and pinyon woodlands for ceremonial activities (Hammond and Webb 1977; San Bernardino County Museum Assoc. 1981). Along the Santa Ana River, semi-permanent occupation would have been limited to high terraces or flank of hills or mountains, with smaller resource procurement and processing sites more common near the river (San Bernardino County Museum Assoc. 1981).

In 1810, when Franciscans from Mission San Gabriel came to San Bernardino Valley, evidence suggests that the local inhabitants were living in small villages that served as the core for a settlement system that included outlier procurement and processing sites, trails, hunting areas, quarries, and ceremonial areas. Spanish influence on Serrano lifeways was negligible until about 1819 when Guachama Mission Station was constructed (Bean and Smith 1978) just to the southwest of the East Valley Corridor Specific Plan area on the north side of what is not Mission Road. The site of the Guachama Indian village was on the south side of this road. Those native inhabitants of Guachama, as well as an additional village near present day Riverside, served the mission and outlying ranchos as laborers for stock raising and agriculture. Between the establishment of the Mission Station and

Mexican secularization in 1834, most of the western Serrano were removed to the missions and from that point on never were able to reestablish their native lifeways.

Lack of water for agriculture in the area, necessitated the building of an irrigation ditch, or zanja (Hinckley 1951). The digging of the Zanja was done by Serrano and Gabrielano Indians and was completed in 1820. It irrigated the first crops planted in San Bernardino Valley. The Zanja ran from Guachama through the East Valley Corridor Specific Plan area and on to Mill Creek Canyon, 12 miles to the east (San Bernardino County Museum Assoc. 1981). Because it was used for a domestic water supply as well as for irrigation, cottonwood trees were planted along it by Indians to keep the water cool (San Bernardino County Museum Assoc. 1981). Among the many zanjas built in California during the Spanish and Mexican periods, this was the only one built and maintained by Indians for their own use (Haenszel and Reynolds 1975; Department of Parks and Recreation 1982).

Early historic activity in the area was focused along the banks of the Zanja. In 1830, construction of a branch of the San Gabriel Mission was started adjacent to the Zanja within the East Valley Corridor Specific Plan area. Construction of this Asistencia, however, was left unfinished when Mexican secularization ended all mission activity in California. In 1842 the Lugo Brothers received their San Bernardino Ranch Land Grant and Jose del Carmen Lugo came to live in the Asistencia buildings (Hoover, Rensch and Rensch 1966). Rancho San Bernardino was worked by local Indians (Hammond and Webb 1977) and the Lugos hired a band of Mountain Cahuilla Indians to move onto the Rancho to protect the stock from raids by desert Paiutes (San Bernardino County Museum Assoc. 1981). The cities of San Bernardino, Redlands, and Colton now stand on the Rancho San Bernardino of the Lugos.

During the 1850s, Mormons came into the area and founded the city of San Bernardino. The area around the Asistencia became known as Old San Bernardino and several families began farming there. The Mormons purchased the Lugo Ranch in 1851 and Bishop Nathan Tenney occupied the Asistencia and used the Zanja as a water source for agricultural operations (Moore 1983). Subsequently the Cram Brothers occupied the Asistencia for two years where they manufactured furniture on a lathe driven by the water power generated from the Zanja (Hinckley 1951).

In 1857, the Asistencia was purchased by Dr. Ben Barton. He had a brick house built adjacent to it and planted vineyards and established a winery on approximately 1,000 acres of land. In 1866, after moving into his house on present day Nevada Street within the East Valley Corridor Specific Plan area, he used the Asistencia as a stable for his farm animals (Hinckley 1951). Eventually, it was neglected and fell to ruin. In 1924 the Asistencia was sold to San Bernardino County and was restored in 1936-37 and opened to the public (Moore 1983; Department of Parks and Recreation 1982).

Cottonwood trees planted along the Zanja gave Mission Road its historic name of Cottonwood Row. Most of the families that came to Old San Bernardino settled along 'Cottonwood Row' prior to 1861.

Among these settlers were the Van Leuven brothers, who arrived in 1852. In 1857 Anson Van Leuven planted the first orange trees on his ranch along present day Mission Road and Mountain View Avenue. This was the first cultivation of orange trees in the county and represented the beginning of the citrus industry in San Bernardino Valley (Hinckley 1951; Haenszel and Reynolds 1975).

During this time, citrus was one of a number of crops grown in the area. Agriculture included grapes, peaches, apricot orchards and a number of fruit-drying operations. The future Redlands townsite was purchased by Chicago Colony investors, E.G. Judson and Frank E. Brown in 1881. Backers of early Redlands were actively promoting citrus cultivation in the area. Planters were encouraged to border their groves with Mexican Fan Palm trees to make them more attractive to prospective citrus investors from the east. By the end of the 1880s people were uprooting their other fruit orchards in favor of oranges. The navel orange soon became Redlands main economic source (Moore 1983).

The completion of Big Bear Dam in 1884 provided additional water for irrigation in the San Bernardino Valley, and by the late 1880s the citrus industry was well established in the East Valley Corridor Specific Plan area. Several packing houses were in operation. The railway known as Redlands Motor Road ran between San Bernardino and Redlands. There was a station at the corner of Mountain View Avenue and Redlands Blvd. and a junction with the Southern Pacific line at California street (San Bernardino County Museum Assoc. 1981) within the East Valley Corridor Specific Plan area. In 1889, 41 carloads of oranges were shipped from Redlands; by 1900-01, 3,000 were sent, and ultimately, 5,000 per year. According to Moore (1983:35), "The wealth generated by citrus influenced institutional and cultural characteristics of the town."

Evidence of historic development within the East Valley Corridor Specific Plan exists in the form of the San Bernardino Asistencia and such residences as the Barton House and columns of original plantings of the Mexican Fan Palm. Agriculture continues to be the predominant land use within the East Valley Corridor Specific Plan area to the present, with citrus the major crop (East Valley Corridor Specific Plan 1987). Although the Zanja is still in use through much of its route, the original ditch has been abandoned from Redlands westward, including the East Valley Corridor Specific Plan area. The name Mission Zanja is now applied to a modern ditch which runs approximately 1/2 mile north of the original ditch (San Bernardino County Museum Assoc. 1981).

8.11.1.2 Known Resources

Less than three percent of the East Valley Corridor Specific Plan area has been systematically surveyed for cultural resources. One survey was conducted for construction of a portion of the Route 30 Freeway by the California Department of Transportation (Hammond and Webb 1977) and another was associated with annexation of 315 acres by Loma Linda (San Bernardino County Museum Association 1981). In addition, the

Army Corps of Engineers is currently conducting investigations in the northern portion of the East Valley Corridor Specific Plan area along the Santa Ana River (G. Lauter, personal communication 1987). A result of those surveys and additional inventories conducted by the San Bernardino County Museum and California Department of Parks and Recreation, resources have been documented within the East Valley Corridor Specific Plan area that relate to the historic period and represent Native American use of the area, the Spanish period, early settlement within Bryn Mawr and Redlands, and early citrus development in the San Bernardino Valley.

These resources include the Zanja, which is listed in the National Register of Historic Places, the San Bernardino Asistancia, which is a listed California Historical Landmark (San Bernardino County Museum 1980), and the Barton House and San Bernardino County Museum which are listed as San Bernardino Points of Historic Interest (Department of Parks and Recreation 1976; San Bernardino County Museum 1980). These are described below. There are no documented prehistoric archaeological sites or paleontological locations within the East Valley Corridor Specific Plan area.

The Zanja (California Historical Landmark #43, Historic Civil Engineering Landmark No. 21, a portion is listed on the National Register of Historic Places). Spanish missionaries introduced irrigation in San Bernardino Valley, thus opening the way for settlement. Franciscan fathers engineered, and Indians from the nearby Guachama Rancheria dug, this first ditch, or Zanja, in 1819-20 to bring Mill Creek water 12 miles to the valley's agricultural fields. It supported the San Bernardino Asistencia, the Rancho San Bernardino, the pioneer ranches and orchards, and served as Redlands' domestic water supply. The name Mission Zanja is now applied to a more recent ditch that runs to the north of the original ditch. Segments of the original alignment, however, are visible within the East Valley Corridor Specific Plan area, particularly at its point of intersection with California Street. Only the portion east of the East Valley Corridor Specific Plan area from Sylvan Blvd in Redlands east to Mill Creek Road is listed on the National Register.

San Bernardino Asistencia (California Historical Landmark #42, Site Number SBr-2307). This branch of San Gabriel Mission was constructed about 1830 on the San Bernardino Rancho. During the 1840s its buildings were used by Jose del Carmen Lugo as part of his rancho grant. After its sale to the Mormons, it was occupied by Bishop Tenney in the 1850s and by Dr. Benjamin Barton in the 1860s. Eventually the buildings fell to ruin, and in 1925 the property was sold to San Bernardino County Historical Society. It is currently part of the County Museum system and is open to the public.

The Barton House, 11245 Nevada Street (Point of Historical Interest). This well-known building was constructed in 1867 for Dr. Benjamin Barton. Dr. Barton purchased about 1000 acres of land from two Mormon elders who were at that time occupying the Asistencia. In 1866-67 he built this large brick house with mansard roof. Later a cupola was added. It was the family home and ranch headquarters for 20 years. It is currently a private residence (Moore 1983:3).

8.11.1.3 Potential Resources

A map was prepared recently by the San Bernardino County Museum, Archaeological Information Center for the Army Corps of Engineers' investigations along the Santa Ana River that encompassed the northern one-third of the East Valley Corridor Specific Plan area. A survey of pre-1900 maps of structures older than 100 years of age may exist. Eleven separate locations of potential historic archaeological and standing historic structures are mapped that require field verification. Areas to the south of these locations also will contain potential historic site locations, but this information has not been mapped to date (Ross 1987).

As a result of the literature review and interviews with local residents, a number of uninventoried historic structures and historic land use areas that may be historically significant in the development of regional prehistory have been identified within the East Valley Corridor Specific Plan area. These are described below.

The Yount House, 10941 Nevada Street. This residence was built by John Yount in about 1950. It is an example of the use of adobe for construction in the Redlands area.

The Mission School. This building was constructed about 1950 and represents one in a series of Missions Schools built in the area.

Calvary Chapel, 9700 Alabama Street. This building, designated as Crown Jewel on some maps, currently serves as a chapel and private school but was originally a Sunkist packaging house that was in operation by the 1920s and continued as such into the 1970s. It is one of the few surviving examples of early packing houses associated with the Redlands citrus industry.

Marigold Farm. This farm encompasses the northwestern portion of the East Valley Corridor Specific Plan area between the Santa Ana Wash and I-10 Freeway and has been in existence since the 1890s. It began as a dairy and a feedlot for cattle and is now planted in alfalfa. It represents a period of ranching and agricultural use within the area.

Edwards Mansion. This building was constructed by J.S. Edwards in about 1890 in an area to the southeast of San Bernardino and was later moved to its current location along Orange Tree Lane where it functions as a restaurant. Although it has lost its historic context, its architectural style is unique to the area.

Other less precise locations include:

- A possible early Southern California Edison substation situated in the northeast quadrant of the East Valley Corridor Specific Plan area
- The chapel at the corner of San Bernardino Avenue and Tennessee Street

- An old Sunkist packing house in the north end of the East Valley Corridor Specific Plan area
- Early orange grove plantings.

In summary, the types of cultural resources that are known or expected to occur within the East Valley Corridor Specific Plan area are:

- Surface and subsurface prehistoric and ethnohistoric archaeological sites, particularly along the original route of the Zanja and along the Santa Ana River. Historic accounts indicate that between the time it was built and the late 1850s when Americans began developing the area for citrus, Indians camped all along the Zanja, particularly that stretch in the vicinity of former Mission buildings Barton Hill and the Guachama area (San Bernardino County Museum Assoc. 1981).
- Standing older single family residences associated with the development of the citrus industry that are historically and/or architecturally significant.
- Commercial buildings associated with the citrus industry, such as packing houses, or other early developments in the area.
- Foundations of historic structures and associated historic debris.
- Historic debris that may have once been discarded along trails, wagon roads, and railroad alignments in areas currently planted in orange groves.
- Rock work associated with water conveyance systems for irrigation and drainage of early orange groves.

8.11.2 Project Impacts

Industrial, commercial, and residential development within the East Valley Corridor Specific Plan area, including improvements to the infrastructure, has the potential to impact significant cultural resources. Because the locations of all significant culture resources within the East Valley Corridor Specific Plan area are not known and because specific land uses have not been defined, the following list of potential project impacts is necessarily general. These include:

- Physical destruction or disturbance of prehistoric and historic archaeological properties by removing or disturbing all or a portion of the resource through such activities as excavation for foundations, clearing and grading, and road and drain improvements. These impacts could result in loss of integrity of the resource and loss of valuable scientific data.

- Demolition or removal of important historic buildings.

- Alterations or modifications to historic architectural properties that diminish the overall character of the property by changing, obscuring, or destroying character-defining spaces, materials, features, or finishes. For example, if a building is significant primarily for its architectural design and its exterior elements are altered while it is being modified for a new use, its value as an historic resource could be lessened.

- Visual impacts that alter relevant features or character of a property's surrounding environment or that alter its setting, feeling or association. For example, construction of a transmission line adjacent to a historic building could introduce a visual element that is out of character with the property and that alters its setting and surrounding environment.

8.11.3 Mitigation Measures

Future development within the East Valley Corridor Specific Plan area will take place in an orderly and aesthetic manner using design guidelines and standards. To this end, the East Valley Corridor Specific Plan was developed and adopted by local governments to provide a guide for growth and development of the East Valley Corridor that reflects the interests and concerns of the community (San Bernardino County 1987). As part of the East Valley Corridor Specific Plan, Overlay Districts were created that contain development requirements which serve to preserve desirable natural resources. The East Valley Corridor Specific Plan includes a Preservation-Historical/Archaeological Overlay District which is described below.

8.11.3.1 Preservation-Historical/Archaeological Overlay District

The Overlay District is intended to assist in the identification and preservation of significant archaeological resources. The East Valley Corridor Specific Plan states that preservation of such cultural resources provides a greater knowledge of community history, thus promoting community identity and conserving historic and scientific amenities for the benefit of future generations. The District encompasses those areas where archaeological and historic sites which warrant preservation have been specifically identified or are believed likely to be present. Specific identification of cultural resources is indicated by listing in one or more of the following inventories:

- National Register of Historic Places

- California Archaeological Inventory

- California Historic Resources Inventory

- California Historical Landmarks
- San Bernardino County Points of Historic Interest.

In the East Valley Corridor Specific Plan, this overlay is applied to an area approximately 600 feet on either side of the original course of the Mission Zanja irrigation channel. This area was the site of early historic settlement and is considered to be an area of high cultural resource sensitivity.

When a land use ~~is proposed~~ application or permit is submitted within the Preservation-Historical/Archaeological Overlay District, the following criteria shall be used to evaluate the project's compliance with the intent of the overlay.

- The presence (or absence) of archaeological and historical resources within a given project area must be determined through an appropriate investigation by qualified personnel.
- Data recovery or protection measures should be developed and implemented for identified cultural resources determined to be significant by a qualified archaeologist or historian. Such measures may include, but are not limited to:
  - Site recordation;
  - Mapping and surface collection of artifacts, with appropriate analysis and curation;
  - Excavation of subsurface deposits when present, along with appropriate analysis and artifact curation;
  - Preservation in an open space easement and/or dedication to an appropriate institution with provision for any necessary maintenance and protection.
- Archaeological and historical resources which are determined by qualified professionals to be extremely significant should be preserved as open space or dedicated to a public institution when possible.

8.11.3.2 Additional Mitigation Measures

Approximately 3 percent of the East Valley Corridor Specific Plan area has been systematically surveyed for the presence of cultural resources. Therefore, the locations, types, and significance of all cultural resources within the East Valley Corridor Specific Plan are not currently known. Because there also is potential for significant archaeological, historical and architectural resources outside the Overlay District that could be affected by activities associated with the East Valley Corridor Specific Plan, the following mitigation measures also will be undertaken:

(a) When a specific land use is proposed, a cultural resource review may be performed by the staff of the California Archaeological Inventory (San Bernardino County Museum). The purpose of this review will be to determine the likelihood for the presence of significant cultural resources and will consist of an archival review to determine the extent and adequacy of any previous cultural resource investigations in the area as well as any currently recorded cultural properties and the types and locations of potential additional resources.

(b) If the cultural resource review determines that the area contains or has the potential to contain important resources that could be affected by the undertaking, a field survey of the project site will be performed. The purpose of the intensive examination will be to locate any existing resources and provide professional assessments of each resource's significance. This may require test excavations or other specialized studies for the purpose of evaluating a resource's significance.

(c) In those cases where a property is determined to be significant and would be adversely affected by the project, measures will be followed as described in Section 8.11.3.1 above.

9.0 ENERGY CONSERVATION

The California Environmental Quality Act (CEQA) requires that an EIR address the potential energy impacts of proposed projects with an emphasis on reducing inefficient energy consumption.

9.1 EXISTING CONDITIONS

Southern California Edison (SCE) provides electrical power to the project area. SCE serves about 50,000 square miles of southern California from a wide variety of energy sources including oil and gas-fired generator plants, out of state coal-fired plants, nuclear, purchases, and alternate energy sources. SCE has a commitment to reduce nonrenewable energy sources and increase alternate energy resources such as hydroelectric, wind, cogeneration, solid waste, geothermal, and solar. Despite a 1.8 percent annual growth rate, SCE has eliminated the need for a large-scale power plant for the next decade.

Natural gas is supplied by Southern California Gas Company (SCGC). It is projected that SCGC will have adequate gas supplies to serve its customers through the year 2000.

The project area is over 78 percent undeveloped or in agricultural use with about 800 acres currently developed in residential, office, retail, and industrial uses. The amount of electric energy and natural gas consumed in the project area is estimated in Tables 9-1 and 9-2 based on existing land uses.

9.2 PROJECT IMPACTS

Equipment utilized during the approximate 40-year phased construction period will consume substantial diesel fuel and gasoline which should not impact local fuel supplies.

The estimated annual electric energy and natural gas consumptions at project buildout are listed in Tables 9-3 and 9-4. These estimates are calculated from the proposed land uses and maximum floor area ratios as provided in the Specific Plan and with consumption rates listed in the SCAQMD's "Air Quality Handbook for EIRs."

The estimated electricity usage at buildout is approximately 520 percent more than the existing conditions and the ultimate natural gas usage is about 610 percent over existing consumption. Without the Specific Plan, the East Valley Corridor is expected to buildout under market-driven conditions by 2012. Energy requirements for this alternative are 65.1×10^7 kWh and 22.1×10^8 cubic feet of gas per year. Electrical consumption is about 1 percent higher than the proposed Specific Plan, while natural gas usage is 8 percent lower. However, this total amount of energy would be required by 2012, 16 years prior to buildout under the Specific Plan.

Table 9-1

ESTIMATED CURRENT ELECTRIC
ENERGY CONSUMPTION

Land Use	*Number of Units*	*Consumption Rate (kWh/year/unit)*	*Electric Consumption (kWh/year)*
Residential	2,160	16,081	3.5×10^7
	Square Feet	*kWh/SF/year*	
Office	1.3×10^6	8.8	1.1×10^7
Retail	3.3×10^6	11.8	3.9×10^7
Industrial	2.6×10^6	6.1	1.6×10^7
Public	3.7×10^5	8.9	3.3×10^6
TOTAL:			10.4×10^7

Sources: East Valley Corridor Specific Plan Draft, 1987
Air Quality Handbook for EIRs, SCAQMD, 1987

Table 9-2

ESTIMATED CURRENT NATURAL GAS CONSUMPTION

Land Use	*Number of Units*	*Consumption Rate (cu ft/month)*	*Natural Gas Consumption (cu ft/year)*
Single-family	440	6,665	3.5×10^7
Multi-family	1,720	3,918	8.1×10^7
	Square Feet	*cu ft/month/SF*	
Office	1.3×10^6	2.0	3.1×10^7
Retail	3.3×10^6	2.9	11.4×10^7
Industrial	2.6×10^6	2.5	7.8×10^7
TOTAL:			33.9×10^7

Sources: East Valley Corridor Specific Plan Draft, 1987
Air Quality Handbook for EIRs, SCAQMD, 1987

Table 9-3

PROJECTED ELECTRIC ENERGY CONSUMPTION

Land Uses	*Gross Acreage*	*Number of Units*	*Consumption Rate (kWh/year/unit)*	*Electric Consumption (kWh/year)*
Residential	613	9,890	16,081	15.9×10^7
	Gross Acreage	*Maximum Square Feet*	*Consumption Rate (kWh/SF/year)*	*Electric Consumption (kWh/year)*
Office				
Planned Development	681	5.9×10^6	8.8	5.2×10^7
Office General	62	1.6×10^6	8.8	1.4×10^7
Retail				
Retail General	904	9.8×10^6	11.8	11.6×10^7
Regional Retail	132	2.3×10^6	11.8	2.7×10^7
Industrial/R&D	1,264	4.4×10^7	6.1	26.9×10^7
Public/Institutional	132	1.2×10^6	8.9	1.0×10^7
TOTAL:				64.7×10^7

Notes: Industrial/R&D consumption rate is an average of office and warehouse rates. Public/Institutional consumption rate is an average of elementary school and university rates.

Sources: Gross acreage and square footage ratios - East Valley Corridor Specific Plan Draft, August 1987

Consumption rates - Air Quality Handbook for Preparing EIRs, SCAQMD, April 1987

Table 9-4

PROJECTED NATURAL GAS CONSUMPTION

Land Use	*Number of Units*	*Consumption Rate (cu ft/month)*	*Natural Gas Consumption (cu ft/year)*
Residential (units)			
Single-family	378	6,665	0.3×10^8
Multi-family	9,512	3,918	4.5×10^8
	Square Feet	*cu ft/month/SF*	*cu ft/year*
Office	7.5×10^6	2.0	1.8×10^8
Retail	12.1×10^6	2.9	4.2×10^8
Industrial/R&D	44.0×10^6	2.5	13.2×10^8
TOTAL Gas Consumption (cubic feet/year)			24.0×10^8

Sources: East Valley Corridor Specific Plan Draft, 1987
Air Quality Handbook for EIRs, SCAQMD, 1987

The impact to electric and natural gas supplies while appearing significant when compared to existing usages, is actually insignificant when compared to the market-driven scenario. Both SCE and SCGC were contacted regarding providing service to new developments within the project area. The two utilities stated that electric and natural gas services and supplies are available in accordance with policies and rules on file with the California Public Utilities Commission. Also, both utilities plan for predicted growth in the area by securing adequate energy supplies in advance.

Based on the estimated annual vehicle miles driven, approximately 70 million gallons of gasoline will be consumed per year at buildout. This gradual increase in gasoline consumption over the next 40 years should be adequately supplied by oil companies and should not impact local supplies. The estimated fuel consumption may be lower due to fewer miles driven commuting to distant employment centers.

9.3 MITIGATION MEASURES

The goal of conserving energy is the wise and efficient use of energy resources. To achieve this goal, per capita energy consumption should be reduced, reliance on natural gas and oil should decrease, development of renewable energy resources should be encouraged, and vehicle miles traveled should be decreased.

Two of the main goals of the East Valley Corridor Specific Plan are to design a comprehensive, functional, and efficient circulation system of sufficient capacity to accommodate projected traffic demands and to adopt energy-efficient transportation strategies to implement State and County goals for reduced energy consumption and improved air quality. These strategies pertain to balanced land use, maximizing employment opportunities, and utilization of alternate travel modes. A complete listing of these mitigation measures are listed in more detail in Section 8.2.3 under Air Quality.

All new developments within the project area must be designed for optimum energy efficiency in accordance with residential and nonresidential energy conservation standards. These regulations include energy-saving designs for buildings and homes and specifications for lighting, heating, cooling, hot water supply, insulation, and landscaping. Specific measures include increased insulation, weather stripping, water heater blankets, thermostats, discouragement of electrical space heating, and promotion of solar energy use.

10.0 COORDINATION WITH OTHERS

10.1 COUNTY SERVICE AREA 110

The East Valley Corridor Specific Plan is a cooperative study undertaken by the County of San Bernardino, the City of Loma Linda, the City of Redlands, and the area's property owners. The concept for development of the East Valley Corridor was initiated in 1980 but was limited to public entities. In 1982 and 1983, key property owners within the project area joined the planning process and methods of funding the study were discussed. A County Service Area (CSA-110) was established in May 1984 to facilitate property assessments and to assure coordinated planning and development of the Specific Plan.

A 12-member CSA-110 District Advisory Commission was appointed with 4 members from each the County, Redlands, and Loma Linda, including 3 public agency members and 1 private property owner. A 15-member Property Owners Advisory Subcommittee was also established to provide input to CSA-110 staff during the planning process. Additional technical assistance was provided by representatives from affected agencies, including the water districts, Caltrans, Norton AFB, and engineering staff from the County and cities.

Citizen participation was considered to be critical throughout development of the Specific Plan. Participation by property owners was obtained through direct consultations, meetings of the Property Owners Advisory Subcommittee, public input at advertised CSA-110 District Advisory Commission meetings, and in public hearings held throughout the adoption process. Additional public hearings were held before the Local Agency Formation Commission, the Airport Land Use Commission, the County Environmental Review Committee, Planning Commission and Board of Supervisors; Redlands Planning Commission and City Council; and Loma Linda Planning Commission and City Council. These meetings, which were advertised in local newspapers as well as through written notification to property owners, afforded repeated opportunities for residents and property owners to provide input into development of the Specific Plan.

The Specific Plan authorizes formation of a Joint Powers Agency (JPA), representing the three jurisdictions involved, to implement the infrastructure, financing, and marketing components of the Plan. With representation by the two Cities and the County, the JPA will continue the interagency coordination which has been established to develop the Specific Plan.

10.2 NOTICE OF PREPARATION

NOTICE OF PREPARATION

September 11, 1987

TO:

FROM: County of San Bernardino
Land Management Department
385 N. Arrowhead Avenue
San Bernardino, CA 92415

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the East Valley Corridor Specific Plan

The Land Management Department of the County of San Bernardino will be the Lead Agency and will be preparing an environmental impact report for the East Valley Corridor Specific Plan.

The project involves a plan to facilitate industrial, commercial, and residential development in an orderly and aesthetic manner on approximately 4,300 acres of undeveloped and agricultural land along Interstate 10 in the Redlands-Loma Linda area. The project description, location, and Initial Study are contained in the enclosed materials.

This letter is a request for environmental information that you or your organization feel should be addressed in the Environmental Impact Report. Detailed information may be included in your response. Due to time limits, as defined by the California Environmental Quality Act, your response should be sent at the earliest possible date, but no later than 45 days after receipt of this notice.

Please send your response to Michael K. Lerch at the address shown above.

Sincerely,

Stephen T. Lilburn
Project Manager
URS Corporation
(Consultant to the County of San Bernardino)

10.3 NOTICE OF PREPARATION MAILING LIST

NOTICE OF PREPARATION
MAILING LIST

Theresa Bennett
63 CES/DEV
Norton AFB, CA 92409-5045

BEK Consultants
Attn: Mo Behzad
321 West State Street
Redlands, CA 92373

Vince Bautista, Planning Dept.
City of San Bernardino
300 North "D" Street
San Bernardino, CA 92418

John McKenna
McKenna & Associates
18021-J Skypark Circle, #165
Irvine, CA 92714

Jeff Shaw, Director
Community Development Dept.
P.O. Box ~~200~~ 3005
Redlands, CA 92373

Ron Mutter, City Engineer
P.O. Box ~~200~~ 3005
Redlands, CA 92373

City of Loma Linda
Art Kearney, Director
Planning Department
P.O. Box 965
Loma Linda, CA 92354

Richard Corneille
Utilities Director
P.O. Box 280
Redlands, CA 92373

Robert H. Odle
Odle and Associates
14211 Yorba Street, Ste. 201
Tustin, CA 92680

Noel Christensen
City Engineer
2627 S. Waterman
San Bernardino, CA 92408

Chuck Laird
Dept. of Trans./Flood Control
825 East 3rd Street
San Bernardino, CA 92415-0835

Andrew Schlange
Santa Ana Watershed
Project Authority
3600 Tyler Street, Ste. 207
Riverside, CA 92503

Wes McDaniel
SANBAG
444 N. Arrowhead Ave., Ste. 101
San Bernardino, CA 92401

San Bernardino Valley MWD
Attn: Louis Fletcher
1350 South "E" Street
P.O. Box 5906
San Bernardino, CA 92412

Metcalf & Eddy, Inc.
Attn: Mohammed Rowther
290 North "D" Street, Ste. 401
San Bernardino, CA 92401

Southern California Edison Co.
Attn: Vikki McMillan
287 Tennessee Street
Redlands, CA 92373

NOTICE OF PREPARATION
MAILING LIST (Continued)

South Coast Air Quality Mgmt.
District
9150 Flair Drive
El Monte, CA 91731

Fred Bell, Senior Planner
East Valley Planning Team
385 N. Arrowhead
San Bernardino, CA 92415-0180

Office of Special District
Attn: Tom Breitkreuz
157 W. Fifth Street
San Bernardino, CA 92415-0450

Cliff Williams
Environ. Health Services
385 N. Arrowhead
San Bernardino, CA 92415-0160

Office of Planning & Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814
(Submit 14 copies)

Mark Tyo, Planning Officer
Fire Protection Plng. Services
385 N. Arrowhead
San Bernardino, CA 92415-0186

U.S. Army Corps of Engineers
Flood Plain Management
P.O. Box 2711
Los Angeles, CA 90053

Bob Corcheco
Dept. of Trans./Flood Control
825 E. Third Street
San Bernardino, CA 92415-0835

John C. Bowman, Jr.
County Geologist
Dept. of Building & Safety
385 N. Arrowhead
San Bernardino, CA 92415-0181

Southern California
Associations of Governments
600 S. Commonwealth Avenue
Suite 100
Los Angeles, CA 90005

Southern California Gas Co.
Attn: Planning Department
Box 6226
San Bernardino, CA 92417

Local Agency Formation
Commission
175 West 5th - 2nd Floor
San Bernardino, CA 92415

Archaeological Info. Center
San Bernardino County Museum
2024 Orange Tree Lane
Redlands, CA 92374

San Bernardino Sheriff's Dept.
655 3rd Street
San Bernardino, CA 92415

Redlands Police Department
212 Brookside Avenue
Redlands, CA 92373

Redlands Fire Department
525 E. Citrus Avenue
Redlands, CA 92373

NOTICE OF PREPARATION
MAILING LIST (Continued)

Redlands Unified School
District
20 W. Lugonia Avenue
P.O. Box 1008
Redlands, CA 92373-0302

City of Loma Linda
Director of Community
Services
11128 Anderson Street
Loma Linda, CA 92354

City of Redlands
Planning Director
P.O. Box 280
Redlands, CA 92373

10.4 RESPONSES TO NOTICE OF PREPARATION

CITY OF LOMA LINDA

11128 Anderson St., Loma Linda, California 92354 • (714) 796-2531

From the Office of: City Engineer

September 18, 1987

Mr. Michael K. Lerch
San Bernardino County
Land Management Department
385 North Arrowhead Avenue
San Bernardino, California 92415

Reference: Comments on Notice of Preparation of Draft EIR
For East Valley Corridor Specific Plan

Dear Mr. Lerch:

I have reviewed the environmental check list for the East Valley Specific Plan and have the following comments:

1. Environmental Impacts - Water--Section i, Exposure of people or property to water related hazards such as flooding or tidal waves needs to have the substantiation addressed in much more depth. The map prepared by the Federal Emergency Management Agency (FEMA) identifies the westerly portion of Loma Linda within the Corridor Study as lying within the floodway. The restrictions on potential development within that floodway are severe and need to be addressed as well as potential methods for development within the floodway.

   In addition to the floodway impacts, the impact of the 100 year flood overflow from both Mission Creek and San Timoteo Creek need to be identified and development costs and alternatives need to be addressed in depth.

2. Item No. 17 - Human Health--Both a & b indicate that no health hazard or potential health hazard will exist. If Item 10a regarding "Risk of Upset" from hazardous substance is identified as "maybe", then 17a & b should be identified as "maybe's".

3. Item No. 22 - Mandatory Findings of Significance, Subsection a--should be "maybe" in my opinion. Reading a portion of it out of context "does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species,...", it would certainly appear that it does have the potential to degrade the quality for wildlife species within the 4,000 acre area.

I realize that the determination has been made that an EIR is to be prepared, however I feel that these items do need to be addressed in much more depth in the environmental impact report.

Thank you for the opportunity of reviewing the checklist and if you have any questions, please contact me at 824-2420.

Sincerely,

Noel L. Christensen
City Engineer

NLCab
020001.00
091802(57,10)

xc: Robert R. Mitchell
Arthur S. Kearney

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 63d AIR BASE GROUP (MAC)
NORTON AIR FORCE BASE, CA 92409

REPLY TO ATTN OF: 63 CES/DEEV (Ms Bennett, (714) 382-3909) 19 October 1987

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the East Valley Corridor Specific Plan

TO: County of San Bernardino
Land Management Department
ATTN: Michael K. Lerch
385 North Arrowhead Avenue
San Bernardino CA 92415

1. Thank you for the opportunity to review and respond to the above-referenced Notice of Preparation on the East Valley Corridor Specific Plan.

2. Portions of the northern area of the Specific Plan lie within the Norton Air Force Base Air Installation Compatible Use Zone (AICUZ) Study boundaries. This area extends east from Mountain View Avenue to Texas Avenue, north to the Santa Ana River and South to San Bernardino Ave.

3. Specifically, those areas of the East Valley Corridor Specific Plan within the Norton AFB AICUZ are located in Compatible Use Districts (CUDs) 11 and 12. CUD 11 consists of Accident Potential Zone II, which is the 65-70 Ldn. CUD 12 consists of the 70-75 Ldn.

4. Our input is divided into two categories; residential land use and commercial/industrial land uses.

a. Residential Land Uses: The land use is generally compatible with Noise Level Reduction (NLR); however, such NLR does not necessarily solve noise difficulties and additional evaluation is warranted. Because of accident hazard potential, the residential density in these CUDs should be limited to the maximum extent possible. It is recommended that residential density not exceed one dwelling unit per acre. Such use should be permitted only following a demonstration of need to utilize this area for residential purposes. Although it is recognized that local conditions may require residential uses in these CUDs, this use is strongly discouraged in CUDs 10 and 12 and discouraged in CUDs 11 and 13. The absence of viable alternative development options should be determined, and an evaluation indicating that a demonstrated community need for residential use would not be met if development were prohibited in these CUDs should be conducted prior to approvals. Where the community determines that residential uses must be allowed (NLR) of at least 30 (CUDs 10 and 12) and 25 (CUDs 11 and 13) should be incorporated into building codes and/or individual approvals. Additional consideration should be given to modify the NLR levels based on peak noise levels. Such criteria will not eliminate outdoor environment noise problems, and as a result, site planning and design should include measures to minimize this impact particularly where the noise is from ground level sources.

b. Commercial/Industrial Land uses: The land use is generally compatible; However, a NLR of 35, 30 or 25 must be incorporated into the design and construction of the structure.

7. We would appreciate the opportunity to review both the draft and final environmental impact report on the East Valley Corridor Specific Plan.

8. Please direct any questions to Ms Theresa Bennett, the Base Community Planner.

G.T. Manera

G.T. MANERI
Deputy Base Civil Engineer

City of Redlands

RECEIVED
OCT 19 1987
LAND MANAGEMENT DEPARTMENT

REDLANDS FIRE DEPARTMENT
525 E. CITRUS AVENUE
REDLANDS, CA 92373

October 14, 1987

Mr. Michael K. Lerch
County of San Bernardino
Land Management Department
385 N. Arrowhead Avenue
San Bernardino, CA 92415

Dear Mr. Lerch:

The Redlands Fire Department has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the East Valley Corridor Specific Plan and based on the information available and projected, we are providing the following information for your report:

I. Fire Station Locations

A. North of Redlands Blvd. Response:

1. First Due: (For City of Redlands area) Medical Engine 263, 10 W. Pennsylvania Avenue. Type 1 Engine, 1500 GPM, crew of 4.

   Response to Location: Response time to Lugonia Ave. and Nevada St. @ 2-1/4 miles and 3½ minutes (recommended 1½ miles and 3 minutes.)

2. Second Due: Engine 261, Truck 261, Medical Squad 261, 525 E. Citrus Avenue.

   Response time to Lugonia Avenue and Nevada Street @3 miles and 5¼ minutes.

3. Automatic Mutual Response: Engine 251, Loma Linda City, 11325 Loma Linda Dr. @3¼ miles and 5½ minutes.

B. South of Redlands Blvd. Response:

1. First Due: (For City of Redlands area) Engine 261, Truck 261, and Medical Squad 261, 525 E. Citrus Avenue. Type 1 Engine 1500 GPM, crew of 3; 100' aerial ladder, crew of 4; Medical Squad - Paramedic, crew of 2.

   Response to Location: Response time to Alabama St. and Citrus Ave. @2½ miles and 4½ minutes (recommended 1½ miles and 3 minutes).

2. Second Due: Automatic mutual response Engine 251, Loma Linda Dr., @3 miles and 5¼ minutes.

3. Third Due: Medical Engine 263, 10 W. Pennsylvania Ave., @3½ miles and 5½ minutes.

II. Alarm Response

A. Structure - Commercial or Apartment:

1. Three engines, one truck, one medical squad, one Chief Officer. Minimum manning - 16 firefighters and Chief Officer.

B. Medical Aid:

1. North of Redlands Blvd. - one medical engine and ambulance (private).

2. South of Redlands Blvd. - one medical squad, one engine and ambulance (private).

C. Brush:

1. Off season: one engine

2. Low hazard: one engine, one watertender and one Chief Officer

3. High hazard: two engines, two watertenders and one Chief Officer (second alarm would double first alarm)

III. Proposed New Fire Stations

A. Location: Barton Rd., 200 feet west of Lakeside Ave. This location will place a fire station at the southeast corner of the Specific Plan and will be equipped with one engine company, 1500 GPM.

1. Response to Lugonia Ave. and Nevada St. - 2¼ miles.

2. Response to Alabama St. and Citrus Ave. - 3/4 miles.

B. Location: Nevada St. and Lugonia Ave. This location is in the center of the Specific Plan Area and will provide for the recommended response level of 1½ miles and 3 minutes to a large portion of the Specific Plan.

1. Response to Lugonia Ave. and Nevada St. - 0 miles.

2. Response to Alabama St. and Citrus Ave. - 1½ miles.

IV. Service Level Factors

A. Needed fire flow of 4500 GPM with minimum residual water pressure of 20 psi. Flow duration shall be four (4) hours for the NFF of 4500 GPM.

B. Hydrant distribution shall be every 300 feet for all commercial property and multi-residential.

1. Individual properties may require greater NFF for individual buildings. This will be determined by the Fire Department.

C. Department service level (recommended) for Fire Department is 1.16 per 1000 population for suppression, and 1.25 per 1000 population for department.

1. The City of Redlands has an ordinance that provides for fire sprinklers in all buildings over 5000 sq.ft.

I hope this will be of some help in the formulation of your report.

Sincerely,

Raymond B. Mills
Fire Chief

jb

ATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

EPARTMENT OF CONSERVATION
/ISION OF ADMINISTRATION
/ISION OF MINES AND GEOLOGY
/ISION OF OIL AND GAS
/ISION OF RECYCLING

1416 Ninth Street
SACRAMENTO, CA 95814

OCT 26 1987

October 21, 1987

Mr. Michael K. Lerch
San Bernardino County Land Management
385 N. Arrowhead Avenue
San Bernardino, CA 92415

Subject: Notice of Preparation NOP of a Draft Environmental Impact Report (DEIR) for East Valley Corridor Specific Plan SCH #87091408

Dear Mr. Lerch:

The Department of Conservation has reviewed the County of San Bernardino's NOP for the project referenced above and has noted that the proposal may involve the conversion of valuable farmland and mineral deposits. The Department, therefore, offers comments on agricultural and mineral issues that should be analyzed in the DEIR.

The proposal would involve a plan to facilitate industrial, commercial and residential development on approximately 4,300 acres of undeveloped and agricultural land along Interstate 10 in the Redlands-Loma Linda area. Over half of the planning area is in agricultural production, located on mostly prime agricultural land.

Agricultural

The DEIR should provide information on the number of acres of agricultural land to be developed, the potential agricultural value of the site, the impacts of the conversion of that land and possible mitigation actions. We recommend the DEIR contain the following information to ensure the adequate assessment of the project's impacts in these areas.

o The agricultural character of the area covered by the project and of nearby or surrounding lands which may be affected by the conversion.

  - Identify agricultural preserves, the number of acres of land, type of land, (i.e. prime/non-prime) and location.
  - Types and relative yields of crops grown.
  - Agricultural potential, based on Important Farmland Series Map designations, as prepared by the Department

of Conservation (a cursory review showed nearly all land in the project area to be currently mapped as Prime Agricultural Land and Farmland of Statewide Importance).
- The impact upon current and future agricultural operations.

o The impacts of any required cancellations of Williamson Act contract(s) affecting the property, as well as any of the following data.

- The location of Williamson Act contracts on lands within and adjacent to the planning area.
- A discussion of the effects that cancellation of Williamson Act contracts would have on nearby properties also under contract.

o Farmland Conversion Impacts.

- The type and amount of farmland conversion that would result from implementation of the plan.
- The proportion of the County's total farmland that this conversion would represent.
- The percentage of the County's total acreage of those crops currently grown in the planning area.
- The cumulative and growth inducing impact of the plan on other farmland in and around the planning area.

o Mitigation measures and alternatives that would lessen the farmland conversion impact of the project. Some of the possibilities are:

- Direct growth to lower quality soils in order to protect prime agricultural land.
- Protect other, existing farmland through the use of Williamson Act contracts.
- Establish greenbelt and open space areas.
- Use setbacks, buffers, and right-to-farm ordinances to offset nuisance impacts of urban uses on neighboring agricultural operations, and vice-versa.

Also, farmland trusts, such as established by the Santa Barbara Farmland Trust and the Vista Farmland Trust, can effectively preserve agricultural land and should be considered in the analysis of mitigation alternatives.

Minerals

The Department's Division of Mines and Geology (DMG) has special expertise in evaluating geologic and seismic hazards, as well as mineral resource issues, and will review the relevant information and analysis when we receive your document from the State Clearinghouse.

DMG Note 46, enclosed, is used as a guide by DMG staff when reviewing Draft EIRs. It contains a checklist of potential environmental impacts related to geology, seismology and mineral resource conservation, which you should consider in preparing the EIR.

Under the Surface Mining and Reclamation Act of 1975, DMG has classified sand and gravel resources in the San Bernardino Production-Consumption Region. The results of this classification are presented in California Division of Mines and Geology Special Report 143, Part VII. Mitigations for any losses of mineral resources in the project area should be identified in the DEIR. Also, regional aggregate supplies should be addressed and mitigations proposed for any significant aggregate losses.

The Department appreciates the opportunity to comment on the NOP. We hope that the issues noted above are given adequate consideration in the DEIR. If I can be of further assistance, please feel free to call me at (916) 322-5873.

Sincerely,

Dennis J. O'Bryant

Dennis J. O'Bryant
Environmental Program Coordinator

DJO:dlw
0430H

Enclosure

cc: Stephen Oliva, Chief
Office of Land Conservation
Zoe McCrea, Division of Mines and Geology
Richard B. Saul, Division of Mines and Geology
State Clearinghouse

SCAG SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
600 South Commonwealth Avenue • Suite 1000 • Los Angeles • California • 90005 • 213/385-1000

October 12, 1987

Mr. Michael K. Lerch
County of San Bernardino
Land Management Department
385 N. Arrowhead Avenue
San Bernardino, California 92415

RE: East Valley Corridor Specific Plan
SCAG No. SB-50772-NPR

Dear Mr. Lerch:

Thank you for submitting the Notice of Preparation for an Environmental Impact Report (EIR) for the East Valley Corridor Specific Plan. Staff has reviewed the Notice and offers the following comments in accordance with our procedures for voluntarily submitted projects.

The DEIR should address SCAG plans and policies. For population, housing, and employment forecasts, the document entitled SCAG-82 Modified, adopted in February 1985, is the basis for review for consistency with regional plans and policies. The project should also be reviewed against the Baseline Projection which was approved, for planning purposes, June 1987. In order to evaluate the relationship of this project to the forecasts, the EIR should address the following issues:

- What is the growth permitted in the project as a percent of the growth forecast in SCAG-82 Modified for RSA 29 at the anticipated dates of project completion or phasing?

- What is the anticipated employment level associated with the project and how does it relate to the most recent SCAG growth forecasts for RSA 29?

- What is the availability of housing to accommodate the employees in the area, as provided for in the Regional Housing Allocation Model?

- What are the cumulative impacts of this project and other projects in RSA 29, as related to SCAG-82 Modified for the anticipated dates of completion or phasing?

- Are the provisions of the Regional Air Quality Management Plan, adopted in 1982, being implemented? What are the air quality impacts of the project?

- In evaluating both the transportation and air quality impacts, the DEIR should also provide a detailed description and documentation of the assumptions used in estimating total trips generated and their related vehicular emissions. This information is essential in estimating the project's impact on traffic in the area. To relieve significant air quality and traffic impacts, the DEIR should include transportation system and demand management programs to encourage the use of mass transit, ridesharing, trip-reduction strategies, etc., in order to reduce these impacts.

- What are the impacts of the project on water, waste treatment, power, and school facilities?

Thank you again for the opportunity to comment. SCAG would appreciate the opportunity to review the draft environmental impact report when it is available.

If you have any questions, please contact Tom Brady at (213) 739-6742 or me at (213) 739-6649.

Sincerely,

RICHARD SPICER
Principal Planner

RS:TB

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF TRANSPORTATION
DISTRICT 8, P.O. BOX 231
SAN BERNARDINO, CA 92402
TDD (714) 383-4609

October 2, 1987

Mr. Michael K. Lerch
San Bernardino County Land Management
385 N. Arrowhead Avenue
San Bernardino, CA 92415

Dear Mr. Lerch:

This is in response to the Notice of Preparation of a Draft Environmental Impact Report for East Valley Corridor Specific Plan.

We would appreciate the opportunity to review and comment on the proposed DEIR in order to evaluate possible impacts to the transportation system, particularly Interstate Route 10.

Consideration should be given to the cumulative effects that continued development in the area will have on the transportation system from a "worst case" viewpoint. Discussion on the impacts to the transportation system should include traffic growth, traffic safety, drainage, and those associated with the construction, maintenance, and operation of any anticipated highway improvements. Mitigation for traffic impacts should consider the use of carpooling, vanpooling, public transit, the reservation of areas for park and ride facilities, and accommodations for pedestrians and bicycles. Any industrial development should consider the use of flex-time work scheduling and rideshare coordinators. Costs related to any transportation improvements, potential for funding, and sources of funds should be discussed.

Should any work be required within State highway right of way, Caltrans would be a responsible agency and may require that certain mitigation measures be provided as a condition of permit issuance.

A detailed traffic study should be prepared for this project which would include existing and future average daily traffic (ADT) volumes, traffic generation (including peak hour), traffic distribution, intersection capacity utilization (ICU) analysis along with current and projected capacities of local roads, State highways and freeways that might be impacted.

It is recognized that there is considerable public concern about noise levels adjacent to heavily traveled highways. Land development, in order to be compatible with this concern, may require special noise attenuation measures. Development of this property should include any necessary noise attenuation.

Care is to be taken when developing this property to preserve and perpetuate the existing drainage pattern of the State highway. Particular consideration must be given to cumulative increased storm runoff to insure that a highway drainage problem is not created.

The Southern California Association of Governments in its Regional Transportation Plan, has identified a number of future transportation corridors. These corridors will be needed to help relieve congestion, especially during peak commute periods.

One of the identified corridors lies in the vicinity of this development (see attached map). We request that land be set aside and dedicated for possible use as a transportation facility.

As a measure to decrease demand and smooth traffic flow, Caltrans plans to install ramp metering devices on freeway entrance ramps in the Riverside/San Bernardino urbanized area. The developer should be required to install the initial materials such as conduit in order to mitigate traffic impacts. This will facilitate later installation of the meters. The impacted interchanges are Tippecanoe Avenue (Anderson Street), Mountain View Avenue, California Street and Alabama Street. Details should be coordinated with Caltrans.

If you have any questions, please contact Morgan Choate at (714) 383-4233.

Very truly yours,

G. G. Visbal

GUY G. VISBAL
Chief, Transportation Planning Branch

Att.

INTER-OFFICE MEMO
COUNTY OF SAN BERNARDINO

DATE September 16, 1987 PHONE 387-4245

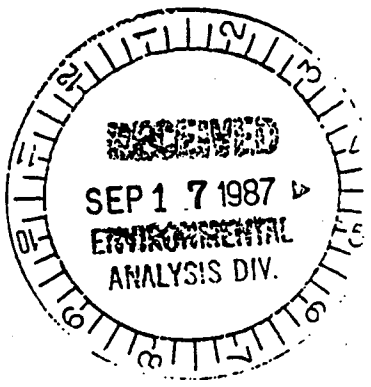
FROM John C. Bowman, Jr.
County Geologist
Office of Building and Safety

TO Michael K. Lerch
County of San Bernardino
Land Management Department

SUBJECT **REVIEW OF NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE EAST VALLEY CORRIDOR SPECIFIC PLAN**

I have reviewed subject notice dated September 11, 1987 and offer the following comments: Section II 1.g. Exposure of people or property to geologic hazards will be increased. The effects of development along the San Jacinto fault and the Loma Linda fault should be analyzed. Also the effects of development adjacent to the Santa Ana River in potential liquefaction areas should be addressed. The potential for seismic shaking in the area should be analyzed. Accelerations range between .5g to .6g from both the San Jacinto and San Andreas faults within the area and this should be addressed in depth.

JCB:lja



DEPARTMENT OF FISH AND GAME

245 W. Broadway, Suite 350
Long Beach, CA 90802-4467
(213) 590-5113

October 6, 1987

Michael K. Lerch
San Bernardino County Land Mgmt.
385 N. Arrowhead Avenue
San Bernardino, CA 92415

Dear Mr. Lerch:

We have reviewed the Notice of Preparation of a Draft EIR for the East Valley Corridor Specific Plan (SCH 87091408). To enable our staff to adequately review and comment on this project, we recommend the following information be included in the Draft EIR:

1. A complete assessment of flora and fauna within the project area should be provided. Particular emphasis should be placed upon identifying endangered, threatened, and locally unique species.

2. Documentation of direct, indirect, and cumulative impacts expected to adversely affect biological resources within and adjacent to the project site. Mitigation measures proposed to offset such impacts should be included.

3. Assessment of growth-inducement factors attributable to the project potentially affecting natural open space and biological resources. Also include the setting aside of natural open space in sufficient acreage to provide habitat for native wildlife and landscape programs including native trees and shrubs to provide habitat for wildlife.

Diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake will require notification to the Department of Fish and Game as called for in the Fish and Game Code. Notification should be made after the project is approved by the lead agency.

Thank you for the opportunity to review and comment on this Notice of Preparation. If you have any questions, please contact Jack L. Spruill of our Environmental Services staff at (213) 590-5137.

Sincerely,

Fred Worthley
Regional Manager
Region 5

cc: Office of Planning & Research

INTEROFFICE MEMO

DATE September 28, 1987

FROM **PAMELLA V. BENNETT, R.S.**
Land Use Coordinator

PHONE 4677

1853
County of San Bernardino

TO **MICHAEL K. LERCH**
Land Management Department

SUBJECT **DRAFT EIR FOR EAST VALLEY CORRIDOR SPECIFIC PLAN**

As noted in the Environmental Checklist dated September 11, 1987, environmental impacts have been identified as follows:

1. Air Quality
2. Water and Wastewater
3. Noise
4. Light and Glare
5. Risk of Upset

We agree that each of these areas should be addressed in more detail. Specifically, the risk of upset is a major concern. The proposed plan will designate industrial, commercial and residential areas. Our concern is the interface between these areas. Industrial and some types of commercial business either process, manufacture or store chemicals or products that may create the following problems:

1. Emit toxic fumes during manufacture.

2. Emit toxic fumes from burning chemicals or products (such as certain plastics) or cause explosion when accidently spilled/mixed during fire or earthquake.

3. Allow toxic fluids to flow onto adjoining property during accidental spill, during earthquake or from fire and/or fire suppression water and chemicals.

Therefore, the environmental impact report should specify that buffer zones of light commercial be located between the industrial/commercial zones and the residential zones. The activities in this buffer zone should be restricted so that no storage or manufacture of any potentially toxic chemcials or products be allowed. The buffer zone should be more extensive downwind and downstream from the industrial/commercial zone than is needed adjacent, upwind or upstream The standard prevailing wind from southwest and Santa Ana wind from the northwest should be used for wind direction.

This buffer zone would also serve to buffer the effects of noise, vibration, light and glare from the industrial/commercial zone on the residential zone.

If you have any questions, please call me at 387-4677.

PVB:jm

INTEROFFICE MEMO

DATE October 13, 1987 PHONE 2515

FROM ROBERT W. CORCHERO, Chief
Water Resources Division
EPWA - Transportation/Flood Control

TO MICHAEL K. LERCH
Land Management Department

File: 3-501/1.00

SUBJECT NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE EAST VALLEY CORRIDOR SPECIFIC PLAN

By the subject Notice of Preparation dated September 11, 1987, the District's comments were requested.

The northerly portions of the specific plan area lies adjacent to the Santa Ana River (S.A.R.). The S.A.R. is a regional outlet for highly debris laden storm flows generated in the mountains to the north and east. Severe erosion has occurred along the river banks.

Therefore, in our opinion, those portions of the specific plan area lying adjacent to the S.A.R. and within its overflow area are subject to infrequent flood hazards by reason of overflow, erosion and debris deposition in the event of a major storm.

The District's Mission and San Timoteo Creek Channels traverse the southerly portion of the specific plan area. Severe erosion of the channel banks and overflow has occurred along both channels. The Morey Arroyo, a natural drainage course also traverses the southerly portion of the site. These regional drainage facilities are not considered adequate to contain major storm flows. According to reports by the Corps of Engineers portions of the specific plan area are subject to overflow from these sources.

Therefore, in our opinion, those portions of the specific plan area lying within San Timoteo Channel, Mission Channel and Morey Arroyo, and their overflow areas are subject to infrequent flood hazards by reason of overflow, erosion and debris deposition in the event of a major storm, until such time as adequate channel and debris retention facilities are provided for these facilities.

Full development of the specific plan area will increase storm flows to and within the aforementioned drainage facilities, especially Mission Channel. The additional flows in these facilities will increase the erosion of the channel banks and may broaden the existing overflow limits, thus increasing the flood hazard risks within the specific plan area and to downstream properties.

The specific plan and environmental impact report should address:

1. flood proofing measures as development occurs,

2. mitigation measures to protect downstream properties from the increased flows generated by future development,

3. the need for additional drainage infrastructure, and

4. the financing and phasing of the needed drainage infrastructure.

Should you have any questions, please call.

RWC:mjs

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
6809 INDIANA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92506
PHONE: (714) 782-4130

October 23, 1987

Mr. Michael K. Lerch
San Bernardino County Land Management
385 N. Arrowhead Avenue
San Bernardino, CA 92415

NOP: EAST VALLEY CORRIDOR SPECIFIC PLAN, SCH 87091408

Dear Mr. Lerch:

We have reviewed the Notice of Preparation (NOP) for this project. In response to the statutory concerns of this office, the Draft EIR should address the following:

I. Water Quality

A. Potential impacts of the proposed project on surface and ground water quality:

- Construction activities (including grading) that could result in water quality impacts.
- Discussion of Best Management Practices to control soil erosion and sedimentation.
- Soil characteristics related to water quality (potential for erosion and subsequent siltation, increase or decrease in percolation).
- Impacts of waste generation, treatment and disposal.
- Impacts of toxic substances handling and/or disposal (if appropriate).
- Degree and seasonal variation of impact.

B. Mitigation of Adverse Impacts.

II. Water, Wastewater and Solid Waste Service

A. Water

- Availability of water for the proposed project.
- Existing infrastructure: location of water supply lines, tie-ins.
- Applications or permits required for water acquisition.
- Impact of calculated project demand on water supply.

B. Waste Disposal/Treatment

- Types and amounts of waste materials generated by project.
- Proposed waste treatment and disposal methods.
- Existing infrastructure:
  * treatment facilities: location, current capacity, treatment standards; master treatment facilities expansion plan (if appropriate)
  * treatment plant collector system: location of major trunk lines and tie-ins, current capacity
  * disposal facilities: location, capacity
  * location of discharge areas
- Applications or permits required to implement waste disposal.
- Impact of calculated project waste volume on capacity of existing and proposed treatment and disposal facilities.
- Need for pretreatment of industrial flows (if appropriate).

We look forward to review of the DEIR when it becomes available.

If you have any questions, please contact this office.

Sincerely,

Nancy A. Olson

Nancy A. Olson
Sanitary Engineering Technician

cc: Keith Lee, Office of Plannning and Research

NAO:ww

STATE OF CALIFORNIA—RESOURCES AGENCY

GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF WATER RESOURCES
P.O. Box 6598
LOS ANGELES
90055

OCT 9 1987

County of San Bernardino
Land Management Department
385 North Arrowhead Avenue
San Bernardino, CA 92415

Attention: Michael K. Lerch

Subject: Notice of Preparation of DEIR for East Valley Corridor Specific Plan, dated September 18, 1987, SCH# 87091408.

Your referenced document has been reviewed by our Department staff. Recommendations, as they relate to water conservation and flood damage prevention, are attached. 1

The Department recommends that you consider implementing a comprehensive program to use reclaimed water for irrigation purposes in order to free fresh water supplies for beneficial uses requiring high quality water supplies.

For further information, you may wish to contact John Pariewski at 213-620-3951.

Thank you for the opportunity to review and comment on this report.

Sincerely,

Charles R. White

Charles R. White, Chief
Planning Branch
Southern District

Attachments

cc: Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

DEPARTMENT OF WATER RESGURCES RECOMMENDATIONS FOR WATER CONSERVATION AND WATER RECLAMATION

To reduce water demand, implement the water conservation measures described here.

Required

The following State laws require water-efficient plumbing fixtures in structures:

- Health and Safety Code Section 17921.3 requires low-flush toilets and urinals in virtually all buildings as follows:

  "After January 1, 1983, all new buildings constructed in this state shall use water closets and associated flushometer valves, if any, which are water-conservation water closets as defined by American National Standards Institute Standard A112.19.2, and urinals and associated flushometer valves, if any, that use less than an average of 1-1/2 gallons per flush. Blowout water closets and associated flushometer valves are exempt from the requirements of this section."[1]

- Title 20, California Administrative Code Section 1604(f) (Appliance Efficiency Standards) establishes efficiency standards that give the maximum flow rate of all new showerheads, lavatory faucets, and sink faucets, as specified in the standard approved by the American National Standards Institute on November 16, 1979, and known as ANSI A112.18.1M-1979.

- Title 20, California Administrative Code Section 1606(b) (Appliance Efficiency Standards) prohibits the sale of fixtures that do not comply with regulations. No new appliance may be sold or offered for sale in California that is not certified by its manufacturer to be in compliance with the provisions of the regulations establishing applicable efficiency standards.

- Title 24 of the California Administrative Code Section 2-5307(b) (California Energy Conservation Standards for New Buildings) prohibits the installation of fixtures unless the manufacturer has certified to the CEC compliance with the flow rate standards.

- Title 24, California Administrative Code Sections 2-5352(i) and (j) address pipe insulation requirements, which can reduce water used before hot water reaches equipment or fixtures. These requirements apply to steam and steam-condensate return piping and recirculating hot water piping in attics, garages, crawl spaces, or unheated spaces other than between floors or in interior walls. Insulation of water-heating systems is also required.

- Health and Safety Code Section 4047 prohibits installation of residential water softening or conditioning appliances unless certain conditions are satisfied. Included is the requirement that, in most instances, the installation of the appliance must be accompanied by water conservation devices on fixtures using softened or conditioned water.

- Government Code Section 7800 specifies that lavatories in all public facilities constructed after January 1, 1985, be equipped with self-closing faucets that limit flow of hot water.

To be implemented where applicable

Interior:

1. Supply line pressure: Water pressure greater than 50 pounds per square inch (psi) be reduced to 50 psi or less by means of a pressure-reducing valve.

2. Drinking fountains: Drinking fountains be equipped with self-closing valves.

3. Hotel rooms: Conservation reminders be posted in rooms and restrooms.* Thermostatically controlled mixing valve be installed for bath/shower.

4. Laundry facilities: Water-conserving models of washers be used.

5. Restaurants: Water-conserving models of dishwashers be used or spray emitters that have been retrofitted for reduced flow. Drinking water be served upon request only.*

6. Ultra-low-flush toilets: 1-1/2-gallon per flush toilets be installed in all new construction.

Exterior:*

1. Landscape with low water-using plants wherever feasible.

2. Minimize use of lawn by limiting it to lawn-dependent uses, such as playing fields. When lawn is used, require warm season grasses.

3. Group plants of similar water use to reduce overirrigation of low-water-using plants.
4. Provide information to occupants regarding benefits of low-water-using landscaping and sources of additional assistance.

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*The Department of Water Resources or local water district may aid in developing these materials or providing other information.

5. Use mulch extensively in all landscaped areas. Mulch applied on top of soil will improve the water-holding capacity of the soil by reducing evaporation and soil compaction.

6. Preserve and protect existing trees and shrubs. Established plants are often adapted to low-water-using conditions and their use saves water needed to establish replacement vegetation.

7. Install efficient irrigation systems that minimize runoff and evaporation and maximize the water that will reach the plant roots. Drip irrigation, soil moisture sensors, and automatic irrigation systems are a few methods of increasing irrigation efficiency.

8. Use pervious paving material whenever feasible to reduce surface water runoff and to aid in ground water recharge.

9. Grade slopes so that runoff of surface water is minimized.

10. Investigate the feasibility of using reclaimed waste water, stored rainwater, or grey water for irrigation.

11. Encourage cluster development, which can reduce the amount of land being converted to urban use. This will reduce the amount of impervious paving created and thereby aid in ground water recharge.

12. Preserve existing natural drainage areas and encourage the incorporation of natural drainage systems in new developments. This aids ground water recharge.

13. To aid in ground water recharge, preserve flood plains and aquifer recharge areas as open space.

FLOOD DAMAGE PREVENTION

In flood-prone areas, flood damage prevention measures required to protect a proposed development should be based on the following guidelines:

1. It is the State's policy to conserve water; any potential loss to ground water should be mitigated.

2. All building structures should be protected against a 100-year flood.

3. In those areas not covered by a Flood Insurance Rate Map or Flood Boundary and Floodway Map, issued by the Federal Emergency Management Agency, the 100-year flood elevation and boundary should be shown in the Environmental Impact Report.

4. At least one route of ingress and egress to the development should be available during a 100-year flood.

5. The slope and foundation designs for all structures should be based on detailed soils and engineering studies, especially for hillside developments.

6. Revegetation of disturbed or newly constructed slopes should be done as soon as possible (utilizing native or low-water-using plant material).

7. The potential damage to the proposed development by mudflow should be assessed and mitigated as required.

8. Grading should be limited to dry months to minimize problems associated with sediment transport during construction.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

November 24, 1987

REPLY TO
ATTENTION OF
Office of the Chief
Environmental Resources Branch

Mr. Michael K. Lerch
County of San Bernardino
Land Management Department
385 North Arrowhead Avenue
San Bernardino, California 92415

Dear Mr. Lerch:

We have reviewed the Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the East Valley Corridor Specific Plan, for the Redlands-Loma Linda area dated September 11, 1987. The Notice requests information about our responsibilities involving the proposed project.

Our responsibilities include investigation, design, operation and maintenance of water resource projects, including preparation of environmental guidelines in the fields of flood control, navigation and shore protection.

We are responsible also for administration of laws and regulations against pollution of the waters of the United States. We believe the forthcoming document should address the above-listed responsibilities.

Work in waters of the United States might require a permit under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. We cannot determine from the submitted information the extent of the Corps' jurisdiction over this project. Please give our Regulatory Branch documentation that clearly describes the area and extent of any proposed work in watercourses and adjacent wetlands to help us make that determination.

If the proposed project involves any Federal assistance through funding or permits, compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16.U.S.C. 470f) and implementing regulations, 36 CFR 800, will be required.

Please feel free to contact this office for any data that can help you prepare the projected document. The contact person for this project is Jim Myrtetus, telephone (213) 894-5510.

We will appreciate an opportunity to review and comment on the proposed DEIR when it is issued.

Sincerely,

Robert S. Joe
Chief, Planning Division

11.0 CONTACTS AND REFERENCES

11.1 CONTACTS

Thomas Atchley, Historian
Redlands High School

Ann Bethel, Curator
San Bernardino County Museum

Larry Burgess, Archivist
A.K. Smiley Library, Redlands

Daniel Cosen
City of Redlands Planning Department

Gloria Lautere, Archaeologist
Army Corps of Engineers
Los Angeles District

Daniel McCarthy, Archeologist
Archaeological Research Unit
University of California, Riverside

Frank Moore
Moore Historical Foundation, Redlands

Jennifer Reynolds, Paleontologist/Historian
San Bernardino County Museum

Lois Reynolds
Redlands Historical Society

Robert Reynolds, Paleontologist
San Bernardino County Museum

Lester Ross
Archaeological Information Center
San Bernardino County Museum

Janis Clay
Redlands Public Library

Al DeCaprio
Assistant Librarian
San Bernardino Public Library

K.G. Soverns
Technical Supervisor
Southern California Gas Company

Rick Procay
Service Planner
Southern California Edison Company

Gerald Davis
City of Redlands Solid Waste Disposal

Sam Hubert
San Bernardino County
Solid Waste Management Administration

Chief Randy Darkens
Administrative Assistant
Redlands Fire Department

Chief Hill
Administrative Office
Loma Linda Fire Department

Frank Kawasaki
Fire Planning
San Bernardino Fire Planning

Corporal Grimes
Redlands Police Department

Lt. David Bellomy
Sheriff's Bureau of Administration
San Bernardino County Sheriff's Department

Gunter G. Fuchs
Vice President
Redlands Community Hospital

Joy Thorn
Administration Office
Loma Linda Community Hospital

Loma Linda University Medical Center

Jolene D'Amico
Administration Office
Redlands Unified School District

11.2 REFERENCES

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Beattie, George William and Helen Pruitt, 1939. Heritage of the Valley: San Bernardino's First Century. San Pasqual Press, Pasadena.

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12.0 LIST OF PREPARERS

This Draft EIR has been prepared by URS Corporation under contract to the County of San Bernardino. Individuals responsible for preparation of this report include:

Katherine Bridwell
J.D., Natural Resources Emphasis
M.S., Agriculture and Range Management
B.S., Conservation of Natural Resources
Experience: 11 years

Jack C.Y. Chen, P.E.
Ph.D., Civil Engineering
M.E., Environmental Science and Engineering
S.M., Environmental Science and Engineering
M.S., Sanitary Engineering
B.S., Agricultural Engineering
Experience: 12 years

Martin R. Derus
B.S., Meteorology
Experience: 12 years

Cheryl A. Flowers
M.B.A., Operations Management
B.A., Geography
Experience: 11 years

Carol M. Kielusiak
M.A., Anthropology
B.A., Anthropology/Art History
Experience: 13 years

Denise E. Lathrop
B.A., Geography
Experience: 5 years

Stephen T. Lilburn
M.S., Geography
B.A., Geography
Experience: 12 years

Frederick M. Nelligan
M.S., Structural Geology
B.A., Geology
Experience: 10 years

13.0 INITIAL STUDY

EAST VALLEY CORRIDOR SPECIFIC PLAN

Project Description

(a) Intent of the Plan

The East Valley Corridor is the principal gateway to the communities of the East San Bernardino Valley, including San Bernardino, Redlands, Loma Linda, Colton, Grand Terrace, and Highland. The area is largely undeveloped, with over half of the planning area in agricultural production. In recent years, there has been increasing interest by property owners in developing the area. Based on its freeway and rail access, freedom from topographic and environmental constraints, large parcel sizes, and the economic growth within the San Bernardino-Riverside metropolitan area, property owners have considered it to be ideal for high quality commercial and industrial development. Such development has been constrained, however, by the lack of a backbone infrastructure of sufficient capacity to accommodate projected traffic, water, sewer, utility, and service needs. The cost of planning for the engineering, financing, and marketing needs of this type of development, as well as for land use and environmental concerns, was beyond the capability of individual owners or individual jurisdictions. As a result, several property owners initiated a cooperative study to be undertaken by San Bernardino County, the City of Redlands, the City of Loma Linda, and the property owners, to provide for such planning.

The purpose of this effort was to plan for the large areas of undeveloped land located along Interstate 10 in the Redlands-Loma Linda area so as to facilitate future industrial, commercial, and residential development in an orderly and aesthetic manner. The objectives of the Plan are to provide a well-planned community which will attract major businesses to the area in order to provide a job base for the East Valley and strengthen the local economy, while ensuring high-quality development through design guidelines and standards.

(b) The Specific Plan Defined

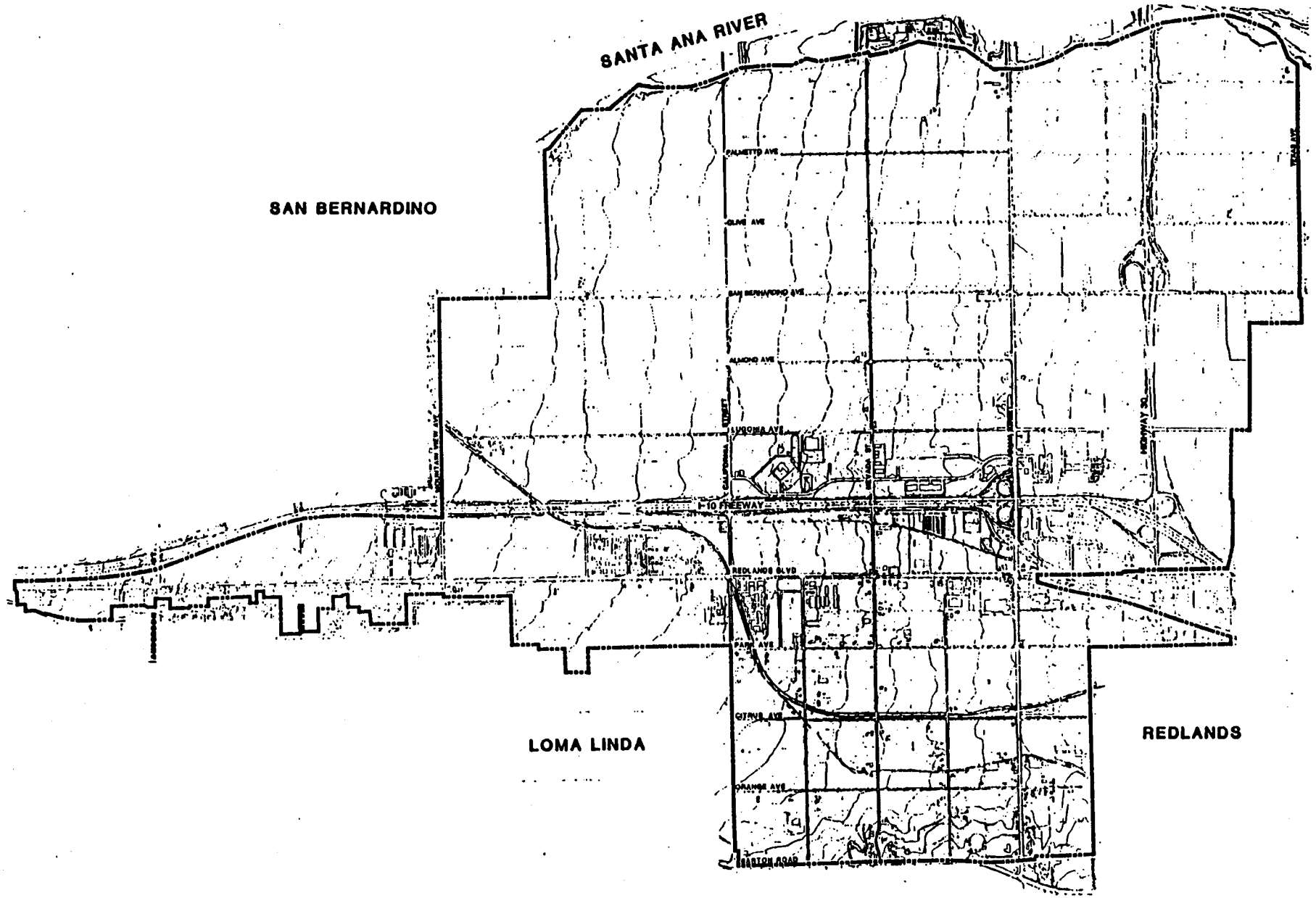
The East Valley Corridor Specific Plan has been prepared pursuant to the provisions of Sections 65450 through 65453 of the California Government Code. The Plan has been adopted by local governments to provide a guide for the growth and development of the East Valley Corridor. Portions of the Plan are ordinances of the County of San Bernardino, the City of Redlands, and the City of Loma Linda. It is intended that the Specific Plan, through its maps and text, shall incorporate nearly all the regulations and development standards affecting the use of land within the Plan area, and reflect the interest and concerns of the community through these standards and regulations. Among the subjects addressed by the Specific Plan are the locations of various land uses; development standards for buildings and facilities; regulation of land use in areas affected by safety hazards; location and capacity of circulation/transportation

systems and facilities; standards for building and population density; location and capacity of water supply, sewerage and stormwater drainage facilities; and design guidelines and requirements for the planning area as a whole as well as for specific development sites.

(c) Planning Area Location

The East Valley Corridor Specific Plan includes approximately 4,300 acres located in the southeastern portion of the San Bernardino Valley, adjacent to Interstate 10 and Route 30 and generally between the cities of Redlands, Loma Linda, and San Bernardino. The plan area includes portions of both Redlands and Loma Linda, as well as unincorporated area under the jurisdiction of San Bernardino County. The entire planning area is within the spheres of influence of Redlands and Loma Linda.

The Plan includes an irregular shaped area bounded in general by the Santa Ana River Wash on the north; by Texas Street on the east, north of Interstate 10; by Kansas Street on the east, south of Interstate 10; by Barton Road on the south between Kansas and California streets; by California Street on the west, south of Park Avenue; and by Mountain View Avenue on the west, north of Interstate 10. The site also extends along a quarter mile strip on either side of Redlands Boulevard from California Street to San Timoteo Wash (see attached map).



EAST VALLEY CORRIDOR

CSA 110, COUNTY OF SAN BERNARDINO

0 1

MILES

ENVIRONMENTAL CHECKLIST FORM

I. BACKGROUND

1. Name of Proponent: County of San Bernardino, County Service Area 110

2. Address and Phone Number of Proponent: 385 N. Arrowhead Avenue San Bernardino, CA 92415-0182

3. Date Checklist Submitted:

4. Agency Requiring Checklist: County of San Bernardino, Land Management Department

5. Name of Proposal: East Valley Corridor Specific Plan

II. ENVIRONMENTAL IMPACTS

	Yes	Maybe	No
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or changes in geologic substructures?	____	X	____
b. Disruptions, displacements, compaction or overcovering of the soil?	X	____	____
c. Change in topography or ground surface relief features?	____	____	X
d. The destruction, covering or modification of any unique geologic or physical features?	____	____	X
e. Any increase in wind or water erosion of soils, either on or off the site?	____	X	____
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	____	____	X

	Yes	Maybe	No
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	____	____	X

Substantiation:

a. Development within the Specific Plan area would require excavation of building foundations and water and sewer pipelines.

b. The Specific Plan would promote and facilitate industrial, commercial, and residential development within the 4,350-acre project area in which approximately 3,000 acres are currently utilized for agriculture and vacant land. The proposed development would disrupt, displace, compact, and overcover the soil on these 3,000 acres.

c. The project area is generally level and topography or ground surface relief features will not be impacted.

d. No unique geologic or physical features known to exist onsite.

e. Construction-related activities may produce a temporary increase in wind erosion of soils.

f. No changes in erosion, siltation, or deposition of any river or stream channels are expected due to the proposed plan.

g. No geologic hazard zones are known to exist in the project area.

	Yes	Maybe	No
2. **Air.** Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	____	X	____
b. The creation of objectionable odors?	____	____	X
c. Alteration of air movement, moisture, or temperature or any change in climate, either locally or regionally?	____	____	X

Substantiation:

a. The proposed development associated with the Specific Plan may result in substantial pollutant emissions and in deterioration of local ambient air quality due to an increase in traffic and energy consumption. No substantial stationary emission sources are expected within the project area.

b. No objectionable odors are expected due to the proposed development.

c. The project will not affect local climatic conditions.

	Yes	Maybe	No
3. Water. Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?	___	___	X
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	X	___	___
c. Alterations to the course of flow of flood waters?	___	X	___
d. Change in the amount of surface water in any water body?	___	___	X
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	___	X	___
f. Alteration of the direction or rate of flow of groundwaters?	___	___	X
g. Change in the quantity of groundwaters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	___	X	___
h. Substantial reduction in the amount of water otherwise available for public water supplies?	___	X	___
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	___	X	___

Substantiation:

a. The project will not impact the movement of any marine or fresh waters.

b. Urban development of the largely undeveloped project area will reduce absorption rates, change drainage patterns, and increase the rate and amount of surface runoff.

c. A reduction in onsite absorption and a subsequent increase in the amount of surface runoff may alter the flow of local drainage and the Santa Ana River.

d. No impacts to the amount of surface water in any water body is expected.

e. The buildout of the proposed development described in the Specific Plan would result in additional wastewater discharge into the Santa Ana River which may alter occasional surface flow in the river.

f. The project should not affect the rate or flow of groundwaters.

g. The water supply required by the proposed plan may change the quantity of groundwaters through withdrawals.

h. Public water supplies may be reduced or increased depending on the amount of water currently consumed by mainly agricultural uses compared to the amount used by the proposed development in the project area.

i. The southwestern section of the project area (south of I-10) lies in the 100-year floodplain of San Timeoeo Wash. In addition, portions of the project along Redlands Avenue west of Mountain View Avenue lie within the designated flood way of the wash. Projected development in these areas may expose people and property to flood hazards.

	Yes	Maybe	No
4. **Plant Life.** Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	X	____	____
b. Reduction of the numbers of any unique, rare or endangered species of plants?	____	____	X

	Yes	Maybe	No
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	___	X	___
d. Reduction in acreage of any agricultural crop?	X	___	___

Substantiation:

a. Proposed development will change the diversity or number of introduced species of plants, crops, and orange groves.

b. No unique, rare, or endangered species of plants are known to occur within the project area.

c. The project may introduce new plant species for landscaping and the urban development of the area would act as a barrier to the replenishment of existing species.

d. The proposed project will significantly reduce agricultural acreage by eliminating all existing citrus groves and field crops.

	Yes	Maybe	No
5. **Animal Life.** Will the proposal result in:			
a. Change in the diversity of species, or number of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	X	___	___
b. Reduction of the numbers of any unique, rare or endangered species of animals?	___	___	X
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	___	X	___
d. Deterioration to existing fish or wildlife habitat?	X	___	___

Substantiation:

a. The proposed plan will change the diversity and numbers of animal species. The existing citrus groves are habitat to a distinctive assemblage of wildlife which will be adversely impacted by the proposal.

b. No rare or endangered animal species are known to occur within the project area.

c. The project will not introduce new species of animals to the area nor act as a barrier to animal migration? Animal migration through existing ag areas would be restricted by Specific Plan development.

d. The change of the area from principally agricultural to industrial/commercial/residential development will reduce the wildlife habitat that exists in the groves.

	Yes	Maybe	No
6. **Noise.** Will the proposal result in:			
a. Increases in existing noise levels?	X		
b. Exposure of people to severe noise levels?		X	

Substantiation:

a. The resulting urban development will increase noise levels as compared to the existing noise levels.

b. The proximity of the flight path of Norton Air Force Base and the I-10 Freeway may expose people to high noise levels.

	Yes	Maybe	No
7. **Light and Glare.** Will the proposal produce new light or glare?	X		

Substantiation:

The urban development of the area will produce new light and glare, especially in comparison to the existing agricultural uses.

	Yes	Maybe	No
8. **Land Use.** Will the proposal result in a substantial alteration of the present or planned land use of an area?	X		

Substantiation:

The Specific Plan proposes a substantial change to the present and planned land use of the East Valley Corridor area. The proposed Specific Plan will promote urban development on primarily agricultural lands.

	Yes	Maybe	No
9. **Natural Resources.** Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	X		
b. Substantial depletion of any nonrenewable natural resource?		X	

Substantiation:

a. The project will increase the rate of usage of water, oil, natural gas, and electricity.

b. Nonrenewable natural resources may be depleted by the urban energy requirements.

	Yes	Maybe	No
10. **Risk of Upset.** Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?		X	
b. Possible interference with an emergency response plan or an emergency evacuation plan?			X

Substantiation:

a. There may be a risk of release of hazardous substances in the event of an accident or upset conditions from some industries permitted in the commercial and regional industrial zones.

b. Emergency response or evacuation plans will not be impacted.

	Yes	Maybe	No
11. **Population.** Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	X		

Substantiation:

The proposed plan will alter the location, distribution, and density of population within the project area but is considered growth accommodating due to the expected growth in the region.

	Yes	Maybe	No
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	____	X	____

Substantiation:

The proposed Specific Plan may affect existing housing or may create a demand for housing as the plan calls for mainly industrial/commercial (job-producing) developments. A percentage of residential units (as market demands) will be allowed by the Specific Plan to provide a balanced land use.

	Yes	Maybe	No
13. **Transportation/Circulation.** Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	X	____	____
b. Effects on existing parking facilities, or demand for new parking?	X	____	____
c. Substantial impact upon existing transportation systems?	X	____	____
d. Alterations to present patterns of circulation or movement of people and/or goods?	X	____	____
e. Alterations to waterborne, rail or air traffic?	____	X	____
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	____	X	____

Substantiation:

a. - d. The Specific Plan's recommendations will result in: (a) substantial additional vehicular movement; (b) a demand for new parking; (c) an impact upon existing transportation network; and (d) alterations to present patterns of circulation due to the influx of urban development. However, to the extent

that the Plan will be job-producing, it may favorably affect the current jobs/housing balance in the area and consequently reduce commuter traffic on regional transportation systems.

e. Rail and particularly air traffic may be impacted by the increase in business and residential development proposed by the Specific Plan.

f. Due to an expected increase in overall traffic, traffic hazards may increase proportionally.

	Yes	Maybe	No
14. **Public Services.** Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	X		
b. Police protection?	X		
c. Schools?	X		
d. Parks or other recreational facilities?		X	
e. Maintenance of public facilities, including roads?	X		
f. Other governmental services?		X	

Substantiation:

a. - f. The proposed project will affect and may result in a need for new government services regarding fire protection, police protection, schools, parks, maintenance of public facilities, and other public services such as libraries and medical facilities.

	Yes	Maybe	No
15. **Energy.** Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	X		
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?			X

Substantiation:

a. The proposed urban buildout of the area will consume substantial amounts of energy.

b. Electric and gas suppliers indicated that they will be able to supply the proposed project with required energy with existing power supply systems.

	Yes	Maybe	No
16. **Utilities.** Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	X		
b. Communications systems?	X		
c. Water?	X		
d. Sewer or septic tanks?	X		
e. Storm water drainage?	X		
f. Solid waste and disposal?		X	

Substantiation:

a. - e. The expected development will result the need for new distribution systems for power, natural gas, communications, and water, and new collection systems for sewage and stormwater drainage.

f. The disposal of solid waste may impact the lifespan of existing landfills.

	Yes	Maybe	No
17. **Human Health.** Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?			X
b. Exposure of people to potential health hazards?			X

Substantiation:

a. & b. The proposal will not result in any health hazards.

	Yes	Maybe	No
18. **Aesthetics.** Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	____	X	____

Substantiation:

The proposed development of the project area will change the visual aesthetics from generally agriculture to urban development. Goals of the Specific Plan include the design of aesthetically pleasing developments. The visual aesthetics of the area may be impacted.

	Yes	Maybe	No
19. **Recreation.** Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	____	X	____

Substantiation:

The subsequent increase in population within the project area may impact the quality and quantity of existing recreation opportunities.

	Yes	Maybe	No
20. **Cultural Resources.**			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?	____	X	____
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	____	X	____
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	____	____	X
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?	____	____	X

Substantiation:

a. & b. The development of the project area may result in alteration, destruction, adverse physical or aesthetic effects of prehistoric or historic archaeological sites and buildings. Historical sites are known to occur within the project area.

c. No unique ethnic cultural values are known to be associated with the project area.

d. No existing religious or sacred uses outside of formally recognized churches and/or schools are known to exist in the project area.

	Yes	Maybe	No
21. **Paleontological Resources.** Will the project result in any alteration or destruction to fossil remains?	____	____	X

Substantiation:

Most recent update of County paleontologic sensitivity map does not indicate any potential for paleo resources in project area.

	Yes	Maybe	No
22. **Mandatory Findings of Significance.**			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause of fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	____	____	X
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while a long-term impact will endure well into the future.)	____	____	X

	Yes	Maybe	No
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	____	X	____
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	____	____	X

III. DISCUSSION OF ENVIRONMENTAL EVALUATION

Each of the items checked "yes" or "maybe" indicate the project's potential for resulting in significant environmental impacts. Further in-depth analyses will be required to determine the significance and duration of project impacts to all environmental resources checked "yes" or "maybe".

IV. DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ____

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED. ____

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. X

9-11-87
Date

Michael K Lark
Signature

For Co. of San Bernardino

14.0 COMMENTS AND RESPONSES

The County of San Bernardino received nine letters or interdepartmental memorandums concerning the Draft EIR during the public comment period. Each letter or memorandum was assigned a number for reference. A complete listing of these comments are listed below in Table 14-1.

All issues or questions directly related to the impacts of the proposed project as analzyed in the Draft EIR were responded to. These letters and memorandums are included in this document along with the responses, and are identified by comment numbers for easy reference. Where appropriate, sections within the Draft EIR were revised.

Several informational letters are also included in this Section.

Table 14-1

COMMENTS TO THE DRAFT EIR

Comment Number	Source of Comment
1	City of Loma Linda
2	California Regional Water Quality Control Board - Santa Ana Region
3	Michael Lerch, County of San Bernardino
4	Paul Kielhold, County of San Bernardino
5	City of Redlands
6	California Department of Food and Agriculture
7	California Department of Transportation
8	California Department of Converservation
9	California Regional Water Quality Control Board - Santa Ana Region

COMMENT LETTER I

CITY OF LOMA LINDA

11128 Anderson St., Loma Linda, California 92354 • (714) 796-2531

From the Office of: City Engineer

Date: March 4, 1988

To: Paula McGrew, Director of Community Development

From: Noel L. Christensen, City Engineer

Subject: Comments on Various Documents, CSA 110

Following are my comments on the various documents provided for review for CSA 110 Corridor Development Study.

EAST VALLEY CORRIDOR FACILITIES SPECIFIC PLAN DRAFT REPORT JANUARY 1988

1. Page 1-11 - City Engineer's name is incorrectly spelled.

2. Figure 2-1 - Show the existing well and pipeline on Richardson Street.

3. Table 2-3 - Why are all channel improvement costs lumped into Area I?

4. Table 2-4 - I only find nine signals to be constructed in Area 1 which would be a total of $990,000. Also the right of way cost of $1.80 per square foot if far too low for any right of way along Redlands Boulevard. The cost should be in the range of $10.00 to $12.00 per square foot.

5. Figure 3-1 - Add the booster pump and two wells on Richardson Street and the pipeline entering Loma Linda Zone 1.

6. Page 3-6 - Bottom line, City operates two major good quality wells.

7. Page 3-7 - First paragraph, add the Richardson Street wells and booster pump. Third paragraph add the total well capacity to indicate the addition of the two Richardson Street wells. The Water Master Plan is currently being prepared for the City.

8. Page 3-10 - Second paragraph has the incorrect total for storage capacity.

9. Figure 3-2 - Show the existing 10" trunk line in Redlands Boulevard from Mountain View easterly.

10. Page 3-26 - First paragraph needs to speak to the floodway from San Timoteo Creek and needs to address the impacts.

11. Figure 3-3 - Show floodway impacted area from San Timoteo Creek overflow.

12. Figure 5-1 - Show the portion of 10" Master Plan Sewer that Loma Linda has in place on Redlands Boulevard. Address the impacts of possibly re-routing storage flows rather than requiring a 15" line on Redlands Boulevard.

13. Page 5-20 - PVC pipe is not allowed for sewers in Loma Linda.

14. Page 5-21 - Are these standards solely for the City of Redlands? It appears so based on the last two lines on this page.

15. Figure 6-1 - A portion of storm drain shown as existing in Redlands Boulevard and Bryn Mawr has not been constructed. Correct the exhibit.

16. Page 6-17 - Table 3 should have the specification changed to secondary highway.

17. Sidewalk ramp, 110A - The wheelchair ramp dimensions do not conform to the State Architect's requirements. The standards should be revised to conform.

18. County Standard Drawing 103 - The City uses 5' sidewalk in all locations.

19. County Standard 110 - Same Comment as 110A.

20. County Standard 110B - Same Comment as 110A.

21. Figure 8-7 - Show existing 10" line in Redlands Boulevard easterly of Mountain View.

22. Table 8-7 - Why are Projects S-4 and S-5 included in Phase I construction?

23. Figure 8-11 - Why is all of the portion of Loma Linda that lies along Redlands Boulevard included in Phase I for the Mission and Morrey Channel improvements?

24. The report is seriously deficient in addressing the problems Loma Linda's portion of CSA 110 is subjected to from the overflow of San Timoteo Creek. Nearly the entire area lies within either the 100 year flood plain overflow or within the floodway. If a property lies within the floodway, the development restrictions are extremely serious. Conversely, the preliminary insurance rate maps for Mission Zanja and Morrey Arroyo show an infinitesimal impact on the portion of Loma Linda in CSA 110. The floodway in fact impacts a band approximately 100' wide along the southerly and southwesterly side of the Mission Zanja. The drainage impacts need to be addressed in much more detail.

    A second item of serious deficiency is the lack of addressing the traffic circulation problem at the Anderson Street/Redlands Boulevard intersection. The preparer of the report apparently did not observe the intersection trying to function in morning hours or late afternoon hours. This intersection must be addressed in much more detail and alternate solutions provided to mitigate the existing problems that will only get worse in the future.

FINANCING METHODOLOGY REPORT - EAST VALLEY CORRIDOR PROJECT (SUTRO & COMPANY - NO DATE)

1. Page 4, Item No. 2 indicates the cost of the improvements should be equitably spread among the benefiting property owners. This concept is not followed in the report.

2. Page 5 - What is meant by "given that some form of mandatory payment will be required"?

3. Why does Page 11 give approximate cost figures per acre in the third paragraph when the fourth paragraph says this method will not be employed in the final financing plan? It appears that the approximate cost figures per acre have been developed on a simple averaging of costs per acre rather than consideration of any benefit being received by properties.

4. Page 13 - Why would existing owner-occupied residential be fully exempted from bearing costs of new infrastructure when they may benefit from the improvements?

5. Third paragraph - the 1915 Act is not an Improvement Act but solely a Bond Act.

6. Page 15 - the first paragraph seems totally unfeasible and should not even be included in the report.

7. Page I-1 - What are Bridge Assessment Bonds?

1. D6-2 - The bottom paragraph on the page briefly mentions Tippecanoe Avenue and indicating that good access is available to freeways. The road is not called Tippecanoe, its called Anderson Street and secondly there is absolutely no additional comment regarding the serious traffic circulation problem existing between Redlands Boulevard and the freeway. It's mandatory that this be addressed in depth with recommended solutions. 1-1

2. Page D6-4 - Bottom paragraph, where is Anderson Street?

3. Page D6-5 - Paragraph 8, this addresses Alabama Street. Where is Anderson Street?

4. Page D6-11 - First paragraph, the third well is not in San Timoteo Canyon but is located on California Street south of Barton Road. There is not a third well on Cooley Street but rather two wells that have been completed on Richardson Street. These paragraphs should be corrected to reflect the current existing condition.

5. Page D6-13 - Second paragraph, correct the quantities as the City currently has approximately 6.9 million gallon storage in lieu of the 4.2 indicated in the paragraph. Also in the first paragraph under "potential development", second sentence reads intense plan development will require significant additional potable water supply facilities. The words "in Redlands Sphere" should be added since there is no demonstrated need for significant additional flows in Loma Linda. 1-2

6. Page D6-22 - The U. S. Army Corps of Engineers does not maintain regional facilities.

7. Page D6-24 - Fourth paragraph, change "could be flooded" to "would be flooded". The overflow is going to be almost exclusively from San Timoteo Creek with only a minor amount of overflow from Mission Zanja. 1-3

8. Page D6-25 - Bottom paragraph, there is not a significant portion of the City contained in the flood plain of Mission Zanja flood channel. There is only about 50 - 100' wide band along the southwest side of Mission Creek that shows on the FEMA Flood Insurance Rate Maps.

9. Page D6-26 - First paragraph does not address San Timoteo Creek from this point on. Why are there no considerations of improvements to San Timoteo Creek which will provide protection for almost the entire portion of Loma Linda within the study area? Why is only the Mission Creek and Morrey Arroyo addressed? 1-4

10. In my opinion the total lack of addressing the flood impacts from San Timoteo Creek, including the floodway and flood plain areas, as well as the total disregard for the traffic problems at the Redlands/Anderson intersection and the serious impacts it will have on the development of the corridor along Redlands Boulevard renders this document seriously deficient for use by the City of Loma Linda.

020208.00
030403(60,3)

Copy to Rick Wellington

RESPONSE TO COMMENT NUMBER 1

Thank you for your comments to the East Valley Corridor Specific Plan Draft EIR. Your letter includes comments on several planning documents prepared for the East Valley Corridor project. Though none of your comments are directed to the Draft EIR, several comments on page 4 of your letter have been responded to in the FEIR.

1-1 The circulation and possible impacts at the intersection of Anderson Street and Redlands Boulevard were not analyzed in detail in the Circulation Plan Analysis by Ludwig Engineering. This was based on the existing average daily traffic (ADT) counts and on the expectation that future traffic generated by the development within the East Valley Corridor project area would not significantly impact this intersection. The 1987 ADT for Redlands Boulevard east of Anderson Street is 12,680, for Anderson Street between Redlands Boulevard and south ramps is 17,360, and for Anderson Street north of ramps is 20,280. It is estimated that 74 percent of the traffic during the peak hour is north and south bound. The existing level of service (LOS) is rated B.

1-2 The FEIR incorporates the revision of water storage from 4.2 to 6.9 million gallons on page 132.

1-3 The FEIR has included this change on page 55.

1-4 The San Timeteo Creek drainage is currently being studied by the Army Corps of Engineers (COE). Future recommended improvements by the COE report on the channel through the study area will be coordinated through CSA 110 and the San Bernardio County Flood Control District. It is beyond the scope and jurisdiction of the East Valley Corridor Specific Plan to recommend or implement channel improvements on San Timeteo Creek due to its regional impaction area.

INTEROFFICE MEMO

1853

County of San Bernardino

DATE March 22, 1988 PHONE x4112

FROM William B. Adams, Planner
Infrastructure Team

TO Valery Pilmer, Chairperson
Environmental Review Committee

SUBJECT East Valley Corridor Specific Plan Draft EIR, Water Quality Comments

Roger Turner of the Santa Ana Regional Water Quality Control Board (SARWQCB), who was originally scheduled to participate in the Environmental Review Committee hearing on the EVCSP will be unable to attend. However, Mr. Turner submitted his agency's comments regarding the EIR to me and should be made a part of the hearing record.

The SARWQCB has expressed concern about the EIR in the following areas:

1. Significant portions of the groundwater basin to be utilized by the Specific Plan have been contaminated. Importation of water appears to be the likely solution. However, there is no guaranteed source during the 42-year build-out period. Therefore, the EIR should include language that if adequate water to supply the project is unavailable, the scope (size) of the EVCSP will be reduced to accommodate existing water supply. 2-1

2. The proposed project will require an expansion of the existing San Bernardino/Redlands waste water facilities. The San Bernardino facility has been recently issued a cease and desist order due to contamination. The SARWCQB recommends that project development within the Specific Plan be linked with the cost of upgrading the existing facilities. Upgrade estimates are 80-100 million dollars. 2-2

3. The SARWQCB recommends that recycling of solid waste and separation of aluminum, glass and paper through the establishment of recycling centers be addressed as mitigation measures in the EIR in order to reduce the adverse impacts associated with solid waste. 2-3

If you have any questions or comments regarding the SARWQCB's comments on the EIR, please contact me.

WBA:km

RESPONSE TO COMMENT NUMBER 2

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

2-1 Additional recommendations have been included on page 135 of the FEIR.

2-2 Your comment is noted. Please refer to page 148 of the FEIR for additional discussion.

2-3 Developments within the Specific Plan area will implement any future recycling measures required by the County of San Bernardino and the City of Redlands.

INTEROFFICE MEMO

1853

County of San Bernardino

DATE March 22, 1988 PHONE 4146

FROM MICHAEL K. LERCH, Senior Planner
Environmental Analysis Team

TO VALERY PILMER, Chairperson
Environmental Review Committee

SUBJECT EAST VALLEY CORRIDOR DRAFT EIR, CULTURAL RESOURCES COMMENTS

I have reviewed the cultural resources section of the East Valley Corridor Environmental Impact Report and find that it adequately addresses potential impacts to historic and archaeological resources. As an additional mitigation measure, and in response to recommendations by the City of Redlands, I recommend that we conduct the additional map and aerial photo review necessary to expand the Archaeological/Historical Resources Overlay District to include all existing structures over fifty years of age, and apply the overlay district to permits as well as land-use applications. With that addition, I concur that potential impacts to cultural resources are mitigable to a level of non-significance. 3-1

RESPONSE TO COMMENT NUMBER 3

Thank you for your comment on the East Valley Corridor Specific Plan Draft EIR.

3-1 This recommended mitigation measure is incorporated into the FEIR on page 161.

COMMENT LETTER 4

INTEROFFICE MEMO

1853

County of San Bernardino

DATE March 23, 1988 PHONE 4146

FROM PAUL KIELHOLD, PK Env. Specialist
Environmental Analysis

TO MIKE LERCH, Senior Planner
Environmental Analysis

SUBJECT ERC FOR CSA 110 DEIR

I attended the ERC meeting per your request. This memo summarizes the findings of the ERC. The ERC recommended the DEIR as adequate pursuant to the following amendments.

1) Add Cumulative Impacts to the Impact Summary Table. They are discussed in the text. 4-1

2) Incorporate use of latest (Feb. 1988) Norton AFB AICUZ report. 4-2

3) Minor typing changes pages 107, 110 and 112. 4-3

4) Incorporate specific references to impacts to: 4-4

   a) Redlands Boulevard at Anderson.

   b) San Timoteo drainage improvements. 4-5

5) Bill Adams to provide URS with copies of:

   a) Comments from city of Loma Linda regarding facility siting.

   b) Comments from SARWQCB.

6) Incorporate comments of memo from Michael Lerch to Valery Pilmer (March 22, 1988) regarding cultural resources. 4-6

PK:blp

cc: Molly Bogh
Bill Adams

RESPONSE TO COMMENT NUMBER 4

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

4-1 Table 4-1 was revised to include cumulative impacts and reprinted in it entirety in Section 4.0 of the FEIR.

4-2 Information from the February 1988 Norton Air Force Base Installation Compatibility Use Zone (AICUZ) study was incorporated into Section 8.5.1 of the FEIR. These changes included text and figure updates on pages 70, 71, 74, and 75. Figures 8.5-2 and 8.5-3 are included in the FEIR showing revised noise contours and elimination of the Closed Landing Pattern.

4-3 Changes incoporated into the FEIR.

4-4 See Response 1-1.

4-5 See Response 1-3.

4-6 See Comment 3 and Response 3-1.

COMMENT LETTER 5

88 APR -4 AM 11:35

City of Redlands

April 1, 1988

Molly Bogh, Senior Planner
County of San Bernardino
Land Management Dept./Office of Planning
County Service Area 110
385 N. Arrowhead Ave.
San Bernardino, CA 92415

COMMENTS ON DRAFT EIR FOR CSA 110 SPECIFIC PLAN

The City of Redlands Municipal Utilities Department is pleased to submit the following comments on the subject EIR. We have given verbal comments to your staff at our City's Environmental Review Committee's meeting in March. The following comments are limited to the water and wastewater aspects of the plan:

1. The water supply picture in Redlands has changed dramatically since the summer of 1985. We have a new water treatment plant on line and we have drilled two new wells. We request the current conditions be updated to reflect our water situation today, rather than in 1985 when the Specific Plan was initiated. The Engineer's report has been updated and is a good source of the detailed information. We have attached marked up EIR pages 130, 132 and 134. 5-1

2. We believe the EIR should address how the recommended plan will resolve the recommendation on pages 135 and 136 for low water consuming landscaping with other landscaping goals of the plan. The EIR should cover the potential for utilizing reclaimed wastewater to meet some irrigation demands. 5-2

3. The property on the north east corner of Nevada Street (17 acres) and just south of the existing treatment plant site is currently being utilized for wastewater treatment operations not field crops (page 89). Also, on figures 8.10 - 3, 8.10 - 4 and 8.10 - 5, the wastewater disposal (percolation/evaporation) area should be shown on the 36 acres just east of the treatment plant site between Alabama and Tennessee streets. 5-3

4. The wastewater treatment plant is currently being expanded to 9.0 mgd not 8 mgd as indicated on the top of page 146. The sewer information should be updated from the Engineer's Report. 5-4

5. We object to the wording under water supply and wastewater on table 4-1, pages 22 and 23. It sounds like we can't meet any new development water demands or wastewater needs, which is false. Please re-word. 5-5

6. One impact on the City relating to infrastructure is the financial burden of the extensive facilities required. This should be addressed. 5-6

If you have any questions about our comments or need additional information, please contact the undersigned at 798-7551.

RICHARD W. CORNEILLE
Municipal Utilities Director

Attachment

xc: Jeff Shaw

RESPONSE TO COMMENT NUMBER 5

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

5-1 Updated data on the City's water system have been incorporated into Section 8.10.3 of the FEIR.

5-2 There are several potential opportunities for use of the reclaimed water in the study area to reduce the impact on future water demand from the expected growth. These might include:

- Freeway and other public right-of-way landscaping, including any equestrian, pedestrian pathways and bikeways, as proposed in the Landscape Plan of the study area.
- Major new landscaping in the area such as parks, golf courses, open space, or significantly irrigated areas within developments.
- Selected new industrial demands for process or cooling water.

Reclaimed water could be made available from the Redlands Wastewater Treatment Plant by constructing the necessary distribution facilities and any plant modifications as needed to provide adequate reclaimed water quality.

In order to implement the use of reclaimed water effectively, the City of Redlands may have to develop a reclaimed water use program in other areas of Redlands as well. It is suggested that reclaimed water cost to the user not exceed 80 percent of the equivalent potable water cost.

As described in the City of Redland's "Basic Plan," the City is cooperating and encouraging the owners of large producing agricultural parcels of land to utilize the City's reclaimed water for irrigational purposes. In the event this is accomplished, the owners would not need to use their wells resulting in potential higher water well levels in some City domestic wells. Within the East Valley Corridor the agricultural preserve could serve as the interim user of the reclaimed water.

5-3 These figures have been revised and included in the FEIR.

5-4 Revised in Section 8.10.4 of the FEIR.

5-5 Revised Table 4-1 is reprinted in Section 4.0 of the FEIR.

5-6 The financial impact of the proposed development on public infrastructure was not a required issue for analysis in the Draft EIR.

State of California

Memorandum

To : Mr. John Keene
State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, California 95814

Date : April 1, 1988

Place : Sacramento

From : Department of Food and Agriculture --1220 N Street, Room 104
Sacramento, CA 95814

Subject : SCH No. 87091408--East Valley Corridor Specific Plan

The California Department of Food and Agriculture (CDFA) has reviewed the Draft Environmental Impact Report (DEIR) for the above referenced project which will facilitate future industrial, commercial and residential developments. The CDFA has the following comments.

Within the 4,350 acre project site, approximately 1600 acres are under citrus production and 947 acres are under non-citrus production. The citrus production accounts for approximately 21 percent of the total citrus production in San Bernardino County.

The DEIR states that the conversion of prime agricultural land to urban use is a significant environmental effect that cannot be mitigated. The Final EIR (FEIR) should state that amount of prime land within the project site. Conversion of this land will contribute to the overall loss of agricultural land in San Bernardino County. 6-1

The San Bernardino County General Plan, City of Loma Linda General Plan, and City of Redlands General Plan designate the area for urban use. The CDFA encourages the use of mitigation measures which will allow agricultural production as long as possible. These measures are discussed in the Specific Plan and not the DEIR. Since the CDFA did not recieve the Specific Plan for review, we are unable to comment on the proposed mitigation measures. 6-2

The DEIR states that within the agricultural preserves in the project area, approximately 190 acres are still under contract. The unrenewed contracts on approximately 130 of these acres will expire by 1993. The FEIR should state the total number of acres in the preserves. The difference or relationship between the agricultural preserves and contracted lands should be made clear in the FEIR. 6-3

NAME

The CDFA recognizes the reality of California's growing population and the concomitant need for additional residential, commercial, and industrial development, but we are especially concerned about the rate at which farmland is being converted to urban uses. We prefer the Proposed Specific Plan (Low Growth) alternative which will minimize the environmental impacts. The purpose of these comments is to register the Department's concern. Ultimate decisions regarding the project are of local concern and rest with local agencies. 6-4

Martha Neuman

Martha Neuman
Research Assistant
(916) 322-5227

RESPONSE TO COMMENT NUMBER 6

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

6-1 The California Department of Conservation in their Important Farmlands maps depicts approximately 2,040 acres of the project area as prime farmland. Prime farmland is defined as land with the best combination of physical and chemical features for the production of agricultural products.

6-2 It is the policy of the Specific Plan that existing viable agricultural activities should be preserved as long as feasible during the transition to more intensive land uses. This policy will be implemented during the site review and approval process.

6-3 Approximately 1,360 acres within the project area are included in the County of San Bernardino and City of Redlands agricultural preserves. Of this total, 130 acres are under unrenewed Williamson Act contracts due to expire in 1993. Sixty acres are still under renewed contracts which require a 9-year withdrawal period or a 1-year buyout with penalty.

6-4 Your comment is noted.

State of California

Memorandum

To : State Clearinghouse
Office of Planning & Research
1400 10th Street
Sacramento, CA 95814

Attention John Keene

Date : April 1, 1988

File No.: 08-SBD-10-25.2/30.0
SCH# 87091408

From : DEPARTMENT OF TRANSPORTATION
District 8

Subject: Draft EIR for East Valley Corridor

Because of the complexity of the project impacts and the necessity for extensive evaluation in the short time remaining, we would like to discuss our concerns with the lead agency (County of San Bernardino) before the drafting of the final document is approved. The following is a summary of the missing elements from this document:

- Impacts of this development on Routes 10 and 30, and the impact on any design projects currently in progress. Specifically, how the above-mentioned project effects the redesign of the Alabama and Tennessee/Route 30 Interchanges.
- Traffic diagrams of each interchange affected by the project.
- Cumulative impacts of development in this area.
- Proposals for demand or capacity mitigations to the State highway system.

Concerning the Traffic Study, it should include the cumulative effects that continued development in the area will have on the transportation system from a "worst case" viewpoint. Discussion of the impacts to the transportation system should include traffic growth and factors associated with the construction, maintenance, and operation of any anticipated highway improvements. A weave analysis of the California, Alabama, and Tennessee street interchanges should be completed to determine if demand mitigation such as ramp metering is needed on these interchanges. In addition this traffic analysis should discuss the impacts of this development on Routes 10 and 30 in detail and documentation needs to be provided on how the trips were assigned and distributed.

Traffic demand mitigation such as carpooling, vanpooling, public transit, and the reservation of areas for park and ride facilities should be considered. Demand mitigation should include a 100 space Park and Ride facility at the California Street/I-10 interchange. Also recommended is the formation of a transit management association which could provide noontime shuttle services required to meet ridesharing for regulation 15, and coordination with Omnitrans for mass transportation services. Lastly, the County should discuss the possibility of developer participation in a parallel corridor study to alleviate congestion. Any industrial development should consider

the use of flex-time work scheduling. Capacity mitigation measures need to be considered such as bridge widening, ramp metering, signalization, and right of way preservation for future highway use.

Regarding transmission or pipeline work within State highway right of way, the following should be noted:

- Lines parallel to the highway should, where possible, be placed outside of the State highway right of way; longitudinal installations within freeway right of way are permitted only under special circumstances, primarily where no other feasible alternative exists.
- Transverse lines should cross the highway at right angles.
- Lines within highway rights of way may be required to be encased for ease of maintenance.
- Lines crossing freeway rights of way are normally required to be encased between right of way limits.

It is recognized that there is considerable public concern about noise levels in residential areas adjacent to heavily traveled highways. Land development, in order to be compatible with this concern, may require special noise attenuation measures. Development of this property should include any necessary noise attenuation.

Care is to be taken when developing this property to preserve and perpetuate the existing drainage pattern of the State highway. Particular consideration must be given to cumulative increased storm runoff to insure that a highway drainage problem is not created.

The County of San Bernardino is developing rapidly and is expected to do so in the future. Unsatisfactory levels of service are projected for the State highway system due to the traffic impacts caused by facilities, to offset County encouraged growth, is the responsibility of the County. We recommend that the County take the lead in developing appropriate fair-share funding mechanisms toward which developers can contribute in order to fund improvements to the State highway system.

If you have any questions, please contact Richard Malacoff at ATSS 670-4550.

GUY G. VISBAL
Chief, Transportation Planning Branch

RM:km
bcc: GSmith, Plan Coord Unit, DOTP

RESPONSE TO COMMENT NUMBER 7

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

Your comments concerning regional traffic impacts in the East Valley Corridor area have been reviewed and discussed at a meeting with County and Caltrans staff on June 13, 1988.

The East Valley Corridor Circulation Plan Analysis prepared by Ludwig Engineering, designed and analyzed a circulation network to handle traffic increases from potential development based on the Specific Plan's land use designations. The network and the expected traffic flows are included in Section 8.8 of the DEIR. It was determined that three intersections of the proposed network would have less than level of service (LOS) "C" which is below the Specific Plan's standard.

On a regional level, the traffic study relied on Caltrans' forecasts for LOS on Interstate 10 (I-10) and State Route 30. Caltrans expects I-10 to operate at LOS "E" by 2005 despite building an additional lane in each direction. SR-30 is expected to operate at LOS "D" by 2002 also with an additional lane in each direction. These traffic forecasts are based on anticipated growth and land use in the area. The land uses designated in the East Valley Corridor Specific Plan are very similar to previous General Plan designations.

The FEIR includes the Caltrans forecasts (see page 108) and concluded that the proposed project would incrementally increase regional traffic and produce a significant unmitigable impact (see pages 22 and 108).

More detailed analysis of cumulative impacts on regional transportation is beyond the scope of this project. With the preparation of the County's General Plan in progress, it is recommended that regional and cumulative transportation requirements, goals, and mitigations be reviewed and included in this Countywide document.

It is anticipated that the project could incrementally decrease regional traffic for the following reasons:

- Slower development rate (40 year buildout) compared to no-project scenario (24 year buildout)
- Employment-based project in compliance with SCAG directives to reduce long-distance commuting and vehicle miles driven and to provide jobs in a housing-rich area
- Development of a circulation network which will upgrade generally 2-lane roads to 4 major 6-lane arterials and 2 major 4-lane highways as well as improvements listed on page 112 of the FEIR. These improvements will provide alternate routes for local traffic and possibly reduce local traffic on regional highways.
- A decrease in population at buildout compared to the no project.

Mitigation measures to reduce traffic are included on pages 53-54 and 109-114 of the FEIR.

During the review process of each individual development, Caltrans will be able to recommend measures required to alleviate traffic impacts to the regional highway system.

Any construction of infrastructure in or near freeway rights-of-way will be coordinated with Caltrans.

State of California

THE RESOURCES AGENCY OF CALIFORNIA

Memorandum

To : Dr. Gordon F. Snow
Assistant Secretary for Resources

Mr. Michael K. Lerch
San Bernardino County Land
Management Department
385 North Arrowhead Avenue
San Bernardino, CA 92415

From : Department of Conservation—Office of the Director

Date : APR 4 1988

Subject: Draft Environmental Impact Report (DEIR) for East Valley Corridor Specific Plan, SCH# 87091408

The Department of Conservation has reviewed the County of San Bernardino's DEIR for the project referenced above. Because the proposal involves the loss of valuable farmland and mineral lands, the Department offers the following comments.

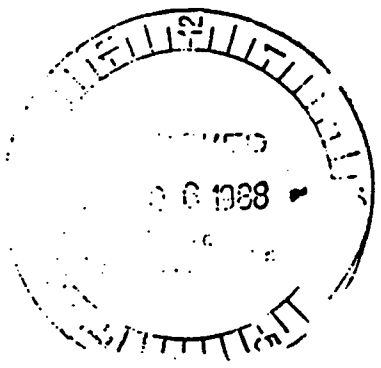
Farmland

The proposal would develop a Specific Plan for a 4,350 acre area, including approximately 2,600 acres of agricultural land (mainly citrus).

The agricultural issues appear to be adequately assessed in the DEIR. The Department recommends that the agricultural potential, based on the Department of Conservation's Important Farmland Series map designations also be used in describing the farmland quality of the lands in the planning area. We have enclosed the appropriate Important Farmland map sheets for the area in question. 8-1

Minerals

The Department's Division of Mines and Geology has reviewed the Draft Environmental Impact Report (DEIR) for the East Valley Corridor Specific Plan. The DEIR recognizes seismic hazards of the site but aggregate mineral resources of the area are not discussed. Under authority of the State Surface Mining and Reclamation Act of 1975 (SMARA) the Department of Conservation is authorized, among other responsibilities, to classify specified lands of the State according to the presence of significant mineral deposits. The primary objective of mineral land classification is to ensure that the mineral potential of land is recognized and considered before land-use decisions that could preclude mining are made. 8-2



The mineral-land classification activity provides local governments, local property owners, and the mining industry with scientific information regarding the nature, occurrence, and distribution of mineral deposits. This information is intended for use by local government in land-use planning and mineral conservation. The Department's Division of Mines and Geology has classified the land within the project as an area containing significant deposits of aggregate resources which are of significance on both a local and regional basis (Miller, 1982).1/ 8-2

We recommend that the final EIR contain a thorough discussion of the impact of this project upon the mineral resource production of the region and that appropriate mitigations be included.

The Department appreciates the opportunity to comment on the DEIR. If I can be of further assistance, please feel free to call me at (916) 322-5873.

Dennis J. O'Bryant
Environmental Program Coordinator

PG:DJO:dlw
0026q

cc: Stephen Oliva, Chief
Office of Land Conservation
Zoe McCrea, Division of Mines and Geology

Enclosure

Reference:

1/ Miller, R.V., 1983, Mineral Land Classification of the Greater Los Angeles area, Classification of Sand and Gravel Resource Areas San Bernardino Production-Consumption Region: California Department of Conservation, Special Report 143, Part VII, (pl. 7.8 Redlands quadrangle).

RESPONSE TO COMMENT NUMBER 8

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

8-1 See response 6-1.

8-2 The proposed project area does not contain any regionally significant construction aggregate resource area according to the State Mining and Geology Board maps dated January 1987. Areas north and northeast of the project are designated regionally significant resource areas. The proposed project will not impact utilization of these resource areas.

COMMENT LETTER 9

TATE OF CALIFORNIA
GEORGE DEUKMEJIAN, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
3809 INDIANA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92506
PHONE: (714) 782-4130

88 APR -6 AM 8:20

April 5, 1988

Mr. Michael K. Lerch
San Bernardino County Land Management Department
385 North Arrowhead Avenue
San Bernardino, CA 92415

DEIR: DRAFT ENVIRONMENTAL IMPACT REPORT EAST VALLEY CORRIDOR SPECIFIC PLAN, SCH #87091408

Dear Mr. Lerch:

We have reviewed the above document and have the following concerns:

I. WATER SUPPLY

We note that the project area is served by the City of Redlands, the City of San Bernardino, and San Bernardino Valley Municipal Water District (SBVMWD). Water demands at project buildout will require an increase in water supplies for both Redlands and Loma Linda.

The DEIR notes that the ground water sources available have been seriously reduced due to contaminants including nitrates, volatile organic compounds and fluoride. This condition will severely impact the abililty to meet the planned demand for water supply in the region. It is noted that the water supply sources are limited and that the project area will eventually require State Project water for basic water supply. The DEIR states that the proposed project would have a moderate to high impact on the City of Redlands' ability to supply water demands. 9-1

Given the magnitude of the East Valley Corridor Specific Plan we would argue that a more definitive water supply plan should be developed prior to approval of the plan. There are uncertainties with respect to future imported water supplies. In view of current activities by the State Water Resources Control Board to review the water rights decision which relates to State Project water and in view of forthcoming reduction in California's allotment of Colorado River water, it would be unwise to assume that imported water supples will be available in sufficient volume to support the project development in perpetuity.

II. SEWER

We concur with the DEIR (p. 48) that development will need to coordinate its sewage requirements with the two wastewater treatment facilities at Redlands and San Bernardino to ensure that capacity and/or service is/will be available. If service 9-2

cannot be provided early in the development review period, then perhaps the East Valley Corridor Specific Plan would provide appropriate language relative to development being deferred until such time that sewage service can be demonstrated. 9-2

We note that the State Department of Water Resources has recommended use of reclaimed wastewater for irrigation purposes. We support this recommendation, with the added comment that this reclaimed wastewater should be of a quality (treatment level) that it will not contribute to increased nitrates in the runoff to San Timoteo Creek.

Sincerely,

Anne Knight
Environmental Specialist III

cc: John Keene, State Clearinghouse
Enclosure: SCH form

RESPONSE TO COMMENT NUMBER 9

Thank you for your comments on the East Valley Corridor Specific Plan Draft EIR.

9-1 Your recommendation has been incorporated in Section 8.10.3 under page 135 in the FEIR.

9-2 Your comment has been noted.

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT

"Dedicated To Your Safety"

Floyd Tidwell
Sheriff

November 4, 1987

URS Corporation
412 W. Hospitality Lane, Suite 208
San Bernardino, California 92408

NOV 2 0 1987

Attn: Denise E. Lathrop
Assistant Environmental Analyst

Dear Ms Lathrop:

This letter is in response to the questions submitted in your request of October 14, 1987. The format will be question and answer:

1. The address of the station(s) responsible for the unincorporated lands in the study area.

   Response: Captain E. Reynosa, Station Commander
   Central Station
   655 E. 3rd Street, San Bernardino, CA 92415
   Telephone: (714) 387-3500

   Note: There are two contract cities managed from Central Station: Loma Linda and Grand Terrace. Central station and the city of Loma Linda are in the area you are surveying.

2. The number of personnel at each station.

	Loma Linda	**Central**
Response:	9 Deputies	30 Deputies

3. The number of patrol cars.

	Loma Linda	**Central**
Response:	5 Vehicles	9 Vehicles

4. The response time to the study area.

	Loma Linda	Central
Response:	5-10 Minutes	5-10 Minutes

5. Impacts the project will have on current facilities.

   Response: Unknown at this time.

6. Effects of population increase of 8-10,000 people (residents) in Loma Linda on patrol efforts?

   Response: Unknown at this time.

Should you require any additional information, please contact me at (714)387-3438.

Sincerely,

David A. Bellomy, Lieutenant
Sheriff's Bureau of Administration

DAB/mv

CITY OF LOMA LINDA

11325 Loma Linda Dr., Loma Linda, California 92354 ● (714) 796-0191

Department of Public Safety

SEPTEMBER 8, 1987

STEVE SHOVER, ARCHITECTURAL PLANNER
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
P O BOX 5852
SAN BERNARDINO CA 92412

RE: UPDATE FOR SPECIFIC PLAN AND TENTATIVE TRACT MAP
689 ACRE ANNEXATION

Dear Mr. Shover:

A copy of your correspondence dated July 31, 1987 and regarding updated information of previously submitted material was forwarded to this office on August 27, 1987 by Bill Meyrahn, San Bernardino County Sheriffs Department. Apparently, the material was sent inadvertently to the Sheriff's Office.

The following material reflects updated information and is based on the original questions provided by Michael Brandman and Associates, Inc. and the answers submitted by this Office on September 21, 1983. The information specifically relates to the impact upon the services provided by the Department of Public Safety/Fire Division.

1. WHAT IS THE MANPOWER AND EQUIPMENT LEVEL OF THE LOMA LINDA FIRE DEPARTMENT:

   A. Current staffing and manning levels: The Department of Public Safety/Fire Division operates as a fully integrated full-time/paid-call (volunteer) department.

      At the present time, one engine company with three men is on duty 24 hours per day, seven days a week, on a three-platoon shift schedule. During regular business hours Monday through Friday, an additional five Public Safety/Fire personnel are on duty. These personnel function as Firefighters and/or officers when emergency call are received.

within the City requires the response of a 75' ladder truck from Colton Fire Department or a 100' aerial ladder truck from Redlands Fire Department, and an engine from the City of San Bernardino, each with three men.

A brush or grass fire during fire season, and in the hazardous brush area, of which this proposed project is located, also requires the response of water tenders form the previously listed agencies.

2. WHAT IS THE LOCATION, RESPONSE TIME, MANPOWER AND EQUIPMENT AT THE FIRE STATION NEAREST TO THE PROJECT SITE?

   A. Nearest Fire Station Location: Loma Linda Headquarters Fire Station, 11325 Loma Linda Drive (Barton Road/Loma Linda Drive).

   B. Response Time: No accurate method for measuring response time is available since no comparable roads which reflect potential curves and grades presently exist into the area. The only associated response time is for Reche Canyon Road from Barton Road to the Riverside County line. This road is relatively flat and without excessive curves. The travel time in a staff vehicle at the speed limit (45 mph) is five (5) minutes. The travel time from the Headquarters Fire Station to the Riverside County Line (via Barton Road & Reche Canyon Road) is 10 1/2 minutes. Estimated Fire Division response time to the perimeter of the project and using the proposed roadways, is 7 to 9 minutes.

   C. Manpower and Equipment: The manpower and equipment identified in question #1 is assigned to the Headquarters Fire Station.

3. WHAT IS THE LOCATION AND RESPONSE TIME OF THE PARAMEDIC UNIT NEAREST TO THE PROJECT SITE?

   The Department of Public Safety/Fire Division does not currently provide advanced life support (ALS) paramedic-level service to the community. Fire Division staffing levels are not adequate to provide 24-hour, 365 day-per-year paramedic service. All personnel are trained and certified as Emergency Medical Technicians and the Fire Division does provide Basic Life Support (BLS) service.

recommend a maximum three mile or five minute response time respectively form fire stations in developed suburban areas. A review of the proposed site indicated a projected response time in excess of five minutes from the present fire station location at Loma Linda Drive and Barton Road. (Note: As noted previously, no accurate method for measuring response time is available since no comparable roads which reflect potential curves and grades presently exist into the area. The only associated response time is for Reche Canyon Road from Barton Road to the Riverside County line. This road is relatively flat and without excessive curves. The travel time in a staff vehicle at the speed limit (45 mph) is five (5) minutes.) Therefore the need would exist for the construction of a satellite fire station in the project area. (Copy of map of proposed area fire station is attached for your review. This map was developed in conjunction with the area fire chiefs.) This station is identified to serve areas beyond the proposed development bounded by Reche Canyon to the west and San Timoteo to the east.

The development of this area will also necessitate the purchasing of additional fire apparatus. The extension into the hazardous brush area will require the immediate purchase of a water tender to address the wildland/urban interface during the development phase and after the build-out period.

Upon construction of the fire station, a new pumper fire engine will be purchased as the primary response vehicle in the area. This unit will allow response to medical aids and structure fires and will meet the recommended five minute response time.

B. Manpower: A recognized method of computing required manpower levels is based upon population risk. Nationally recognized standards indicate an on-duty manning level of 0.5 firefighter per 1,000 population to provide the minimum expected level of performance. Using the three-platoon fire department shift schedule typical for the western portion of the country, this calculates out to required manpower force of 1.5 total firefighters per 1,000 population. A 20% increase must be added to make allowances for vacations, sick time, etc. Thus, a total of 1.8 firefighters per 1,000 population are needed for accepted manpower levels.

adjacent to steep slopes. No wood roofs will be allowed per the Loma Linda Municipal Code and adequate driveway widths and grades will be required for units in excess of 150' from public raodways. Dedicated public roadways will be limited to maximum 14% grade.

As stated in the answers to question 5, a satellite fire station, manpower, and apparatus would be required to mitigate the impacts of the proposed annexation and development.

To address the capital costs, the City has adopted a Temporary Fire Protection Development Impact Mitigation Assessment. This assessment is slated to be in effect until either a Fire Protection Master Plan is implemented, or December 31, 1989. The intent is for the assessment to apply to all new development and to satisfy all increased capital costs incurred by the City.

To address the operating and maintenance cost of new developments, the Department has begun initial discussion with surrounding fire agencies to develop a "Community Facilities Districts (S.B. 2001, Mello-Roos)" and require new annexations and developments to join the district. This mechanism would fund new on-going operational and maintenance costs, including personnel costs.

In the event the Mello-Roos district does not become a reality, appropriate conditions will need to be addressed that will mitigate these impacts of the proposed project.

If further clarifications or questions arise, please contact this Office.

Sincerely yours,

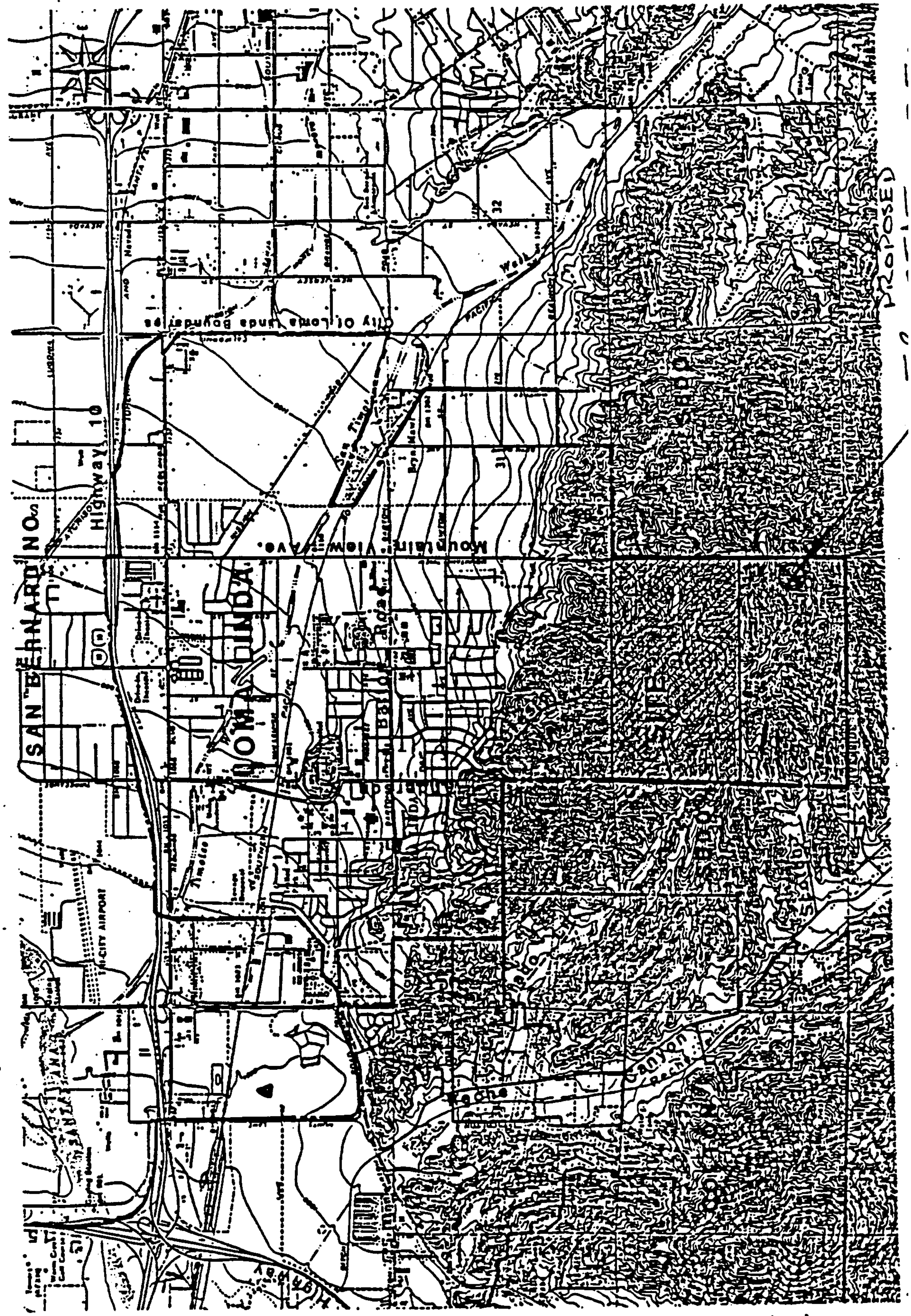
Peter R. Hills

PETER R. HILLS
DIRECTOR OF PUBLIC SAFETY/FIRE CHIEF

/bn

attachments

a12:shover.let



VICINITY MAP

SPECIFIC PLAN

REDLANDS COMMUNITY HOSPITAL

October 7, 1987

Denise Lathrop
Assistant Environmental Analyst
URS Corporation
412 W. Hospitality Lane, Suite 208
San Bernardino, CA 92408

Dear Denise:

The following is in response to your letter dated September 29, 1987:

* The maximum capacity of the hospital is 195 beds.
* The average occupancy rate is 55-60%.
* Plans for expansion are primarily in long term care and selected other hospital services.
* The ratio used to determine the number of staff members and beds needed for a population increase is approximately 4 beds per 1,000 population, 5 FTE's per bed.

I hope this information helps in your preparation of the EIR on the East Valley Corridor Specific Plan.

Sincerely,

Gunter G. Fuchs, D.H.Sc., M.P.H.
Vice President
Marketing/Strategic Planning

OCT 9 1987

350 Terracina Boulevard, PO Box 3391
Redlands, California 92373-0742
(714) 793-3101, Telefax (714) 793-2167

Southern California Edison Company

287 TENNESSEE STREET

REDLANDS, CALIFORNIA 92373

November 12, 1987

NOV 16 1987

URS Corporation
412 W. Hospitality Ln., Suite 208
San Bernardino, CA 92408

Subject: East Valley Corridor Specific Plan

Attention: Denise E. Lathrop

Dear Ms. Lathrop:

This is to advise that the subject property is located within the service territory of the Southern California Edison Company and that the electric loads of the project are within the parameters of the overall projected load growth which we are planning to meet in this area.

Unless the demand for electrical generating capacity exceeds our estimates, and provided that there are no unexpected outages to major sources of electrical supply, we expect to meet our electrical requirements for the next several years.

Our total system demand is expected to continue to increase annually; however, excluding any unforseen problems, our plans for new generation resources indicated that our ability to serve all customer loads during peak demand periods will be adequate during the next five years.

Very truly yours,

Rick Prokay

Rick Prokay
Service Planner

RP:dbb
Enclosure

SOUTHERN CALIFORNIA gas COMPANY

1981 LUGONIA AVENUE, REDLANDS, CALIFORNIA

MAILING ADDRESS: P. O. BOX 3003, REDLANDS, CALIFORNIA 92373-0306

10-5-87

URS CORPORATION
412 W. HOSPITALITY LN., STE 208
SAN BERNARDINO, CA 92408

ATTN: DENISE E. LATHROP

RE: EAST VALLEY CORRIDOR SPECIFIC PLAN SAN BDNO COUNTY

This letter is not to be interpreted as a contractual commitment to serve the proposed project; but only as an information service. Its intent is to notify you that the Southern California Gas Company has facilities in the area where the above-named project is proposed. Gas service to the project would be provided from the nearest existing gas mains without any significant impact on the environment. The service would be in accordance with the Company's policies and extension rules on file with the California Public Utilities Commission at the time contractual arrangements are made.

The availability of natural gas service, as set forth in this letter, is based upon present conditions of gas supply and regulatory policies. As a public utility, Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. We can also be affected by actions of federal regulatory agencies. Should these agencies take any action which affects gas supply or the condition under which service is available, gas service will be provided in accordance with revised conditions.

We have developed several programs which are available, upon request, to provide assistance in selecting the most effective applications of energy conservation techniques for a particular project. If you desire further information on any of our energy conservation programs, please contact our Area Market Services Manager, P. O. Box 3003, Redlands, CA 92373-0306, telephone (714) 798-7760.

Sincerely yours,

K. G. Soverns

K. G. Soverns
Technical Supervisor

Encl.

cc: A. J. Occhionero

OCT 6 1987

ADDENDUM TO THE EAST VALLEY CORRIDOR ENVIRONMENTAL IMPACT REPORT

1. INTRODUCTION

The East Valley Corridor Specific Plan is designed to provide a mechanism for the development of planned and controlled commercial and industrial growth within the East Valley Corridor of San Bernardino County. Commercial and industrial growth within the defined area will reduce the existing job/housing imbalance which has adversely affected the economic stability of the region as well as the area's environment.

Since the development of the Draft Environmental Impact Report (DEIR) for the East Valley Corridor Specific Plan, the Plan has been the subject of extensive public hearings. In those public hearings, the Specific Plan has been scrutinized for technical sufficiency as well as compatibility with the land use provisions of the City of Redlands, the City of Loma Linda, and San Bernardino County. Given the dynamic nature of the public hearing process, changes to the Specific Plan have been made which reflect publicly expressed concerns and changes which ensure the compatibility of the Plan with existing City Ordinances.

2. CHANGES IN THE PROJECT'S DESCRIPTION

The changes to the Specific Plan include: (1) the deletion of Multiple Family Residential (MFR) land uses from the Special Development District; (2) the reduction of MFR-20 density from 20 dwelling units per acre to 15 dwelling units per acre; (3) the addition of approximately 25 acres located south of Lugonia Avenue along Mountain View Avenue to the Special Development District; (4) the introduction of approximately 20 acres of Administrative/Professional uses along Alabama Street north of Barton Road; and (5) the change of 5 acres of MFR to Neighborhood Commercial along Barton Road.

Figure A-1 depicts the revised Land Use Districts with the changes shaded. Table A-1 lists these changes. These refinements to the Land Use Map occurred after the EIR was drafted. However, they do not represent a significant change or alteration of the project's goals. The main focus of the project remains the planned and controlled commercial and industrial growth within the East Valley Corridor.

FIGURE A-1

SPECIFIC PLAN LAND USE DISTRICTS

LEGEND

RS	SINGLE-FAMILY RESIDENTIAL
2500-RM	MULTI-FAMILY RES 25 DU MAX
3000-RM	MULTI-FAMILY RES 30 DU MAX
AP	ADMINISTRATIVE PROFESSIONAL
CN	NEIGHBORHOOD COMMERCIAL
CG	GENERAL COMMERCIAL
CR	REGIONAL COMMERCIAL
IC	COMMERCIAL INDUSTRIAL
IR	REGIONAL INDUSTRIAL
OS	OPEN SPACE
SD	SPECIAL DEVELOPMENT
PI	PUBLIC INSTITUTIONAL

▨ REVISED

REVISED SEPTEMBER 1988

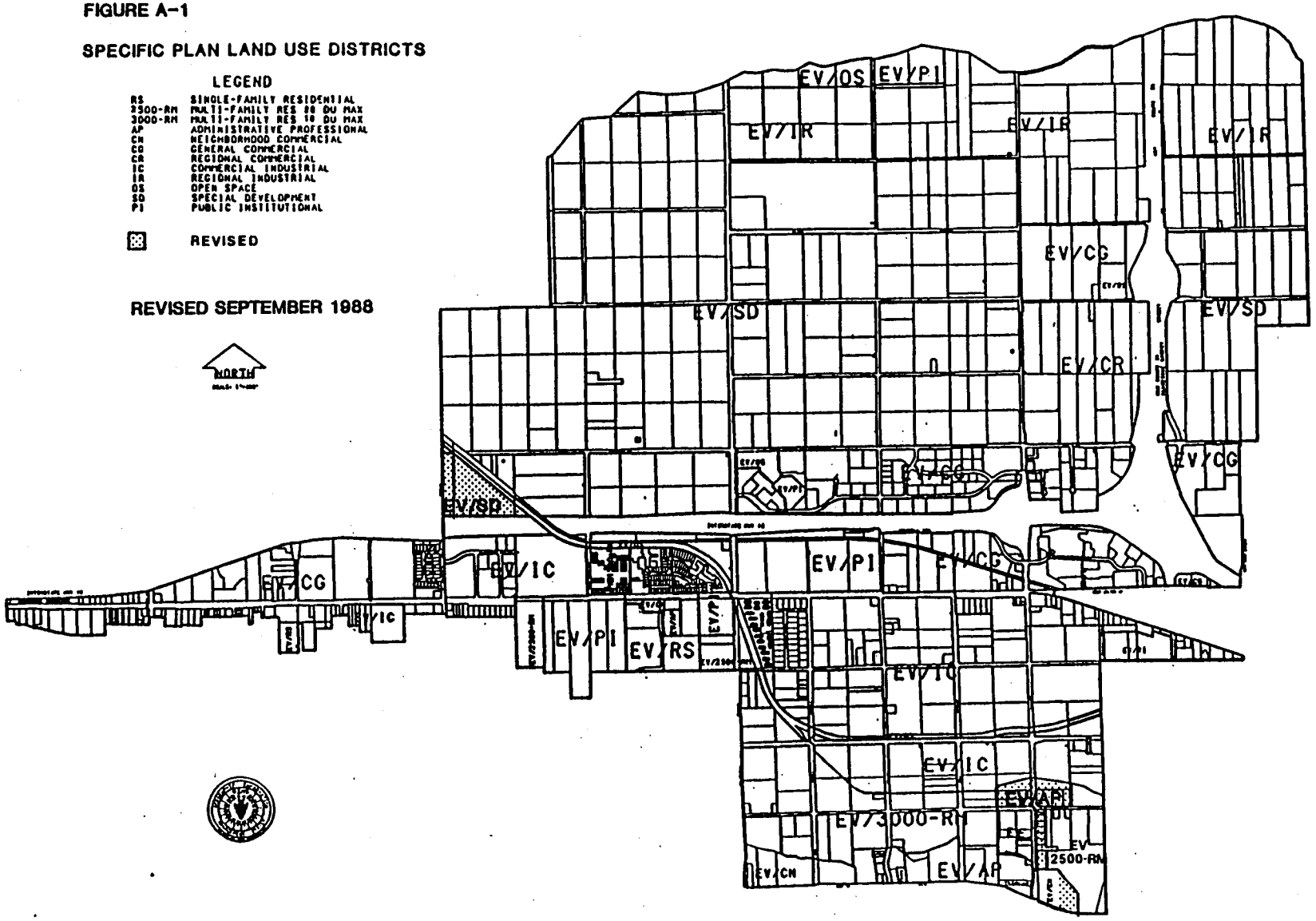


Table A-1

SPECIFIC PLAN'S LAND USE DESIGNATIONS

	Land Use District	Acres	Percent of Total
RS	Single-Family Residential	63	1.5
3000-RM	Multi-Family Residential	151	3.5
2500-RM	Multi-Family Residential (~~20~~ 15 dwelling units per acre)	~~149~~ 124	~~3.5~~ 2.9
AP	Administrative Professional	~~62~~ 82	~~1.5~~ 1.9
CN	Neighborhood Commercial	~~39~~ 44	1.0
CG	General Commercial	~~637~~ 612	~~14.5~~ 14.1
CR	Regional Commercial	132	3.0
IC	Commercial Industrial	456	10.5
IR	Regional Industrial	529	12.2
OS	Open Space	57	1.4
SD	Special Development	~~1,468~~ 1,493	~~33.0~~ 33.6
PI	Public Institutional	132	3.0
	Subtotal:	3,845	
	Roads/Infrastructure	505	11.6
	TOTAL Project Area:	4,350	

Note: Multi-family residential land uses previously allowed on up to 20 percent of the Special Development District has been eliminated.

Source: East Valley Corridor Specific Plan, September 1988

3. ADJUSTMENTS TO THE ENVIRONMENTAL ANALYSIS

In terms of environmental significance, the adjustments made to the Specific Plan, particularly the deletion of MFR land uses on up to 20 percent of the Special Development District, generally reduce the adverse environmental impacts associated with the project. However, the environmental impacts which were previously identified by the EIR as unmitigable and requiring a statement of overriding considerations still retain that status. These significant impacts include: land use, traffic, and solid waste. In addition, significant cumulative impacts were identified for the issues of air quality, land use, transportation, noise, energy, and solid waste. These revisions will not change the environmental analysis as discussed in the EIR for the issues of geology, hydrology, biology, aesthetics, and cultural resources.

For the following issues, the revisions to the Specific Plan have a beneficial rather than a detrimental impact on the environment.

Land Use

The deletion of MFR land uses within the Special Development District will conform to the industrial and commercial developments, goals, and plans proposed by the Specific Plan. This reduction of MFR will also comply with the Southern California Association of Governments (SCAG) and the County's plans to provide more employment opportunities in the region to balance the job-to-housing ratio.

Demographics and Growth Inducement

The elimination of multiple family residential land uses within the Special Development District and the MFR-20 density reduction will significantly restrict the number of new dwelling units and the resultant population growth. The EIR recommended that "residential growth within the East Valley Corridor be slowed to accommodate required infrastructure construction (in accordance with Specific Plan requirements) and to be more consistent with SCAG forecasts." The action taken to eliminate MFR uses within the Special Development District and MFR density reduction are supportive of this recommendation and significantly lessen Specific Plan generated population growth.

Table A-2 lists the population and number of dwelling units allowed at buildout by the previous and revised Specific Plan. This data is further divided by the spheres of influence of the cities of Redlands and Loma Linda. As shown, the revised Specific Plan will allow approximately 15,050 less people and

Table A-2

REVISED POPULATION AND HOUSING

	Population Increase		Dwelling Units	
	Previous S.P.	Revised S.P.	Previous S.P.	Revised S.P.
Redlands	16,740	1,976	6,440	760
Loma Linda	3,340	3,058	1,286	1,176
Total:	20,080	5,034	7,725	1,936

TOTAL POPULATION AND HOUSING

	Estimated Existing		New (At Buildout)		Total (At Buildout)	
	Pop.	D.U.	Pop.	D.U.	Pop.	D.U.
Redlands	2,860	1,100	1,976	760	4,836	1,860
Loma Linda	3,151	1,212	3,058	1,176	6,209	2,388
Total:	6,011	2,312	5,034	1,936	11,045	4,248

5,790 fewer dwelling units. The estimated total (existing and new) population and number of dwelling units at buildout are 11,045 and 4,248, respectively (see Table A-2).

Traffic and Air Quality

The deletion of residential land uses within the Special Development District and overall density reduction of MFR (132 vehicle trips per acre [vt/ac]) uses within the Plan area may lessen adverse traffic impacts within the Specific Plan area. According to recent traffic generation reports (San Diego Traffic Generators, June 1987), certain types of land uses may result in lower average traffic rates. These include industrial research and development (80 vt/ac), industrial park (90 vt/ac), industrial plant (120 vt/ac), manufacturing and warehouse (60 vt/ac), and storage (30 vt/ac). Commercial uses could however increase the total vehicle trips per acre. For example, general commercial uses average 400 vt/ac. The potential reduction in traffic generation would therefore be a direct result of the type of land use that replaces MFR. Despite the reduction of MFR, the regional impact to traffic remain unmitigable to a level of non-significance. If a decrease in traffic impacts does occur, associated impacts to air quality and fuel consumption may result.

Solid Waste

These changes will also reduce short-term adverse significant impacts associated with solid waste. Solid waste generation factors utilized in the EIR indicate that residential uses generate solid waste at a higher rate than commercial or industrial uses. However, without reasonable long-term planning and property acquisition designated to enhance existing facilities (as well as construct new facilities), the impacts associated with solid waste will remain unmitigable.

Public Services

The significant reduction in population and dwelling units associated with the revised Specific Plan will reduce the impacts on public services as evaluated in the EIR. In particular, the impacts on schools and parks will be significantly reduced. The potential need for school and park sites north of Interstate 10 would be eliminated. The need for an additional school or classroom and a park in the planned multifamily area south of Citrus Avenue still exists.

The remaining changes to the Specific Plan: (1) the inclusion of approximately 25 acres within the Special Development

District and (2) the introduction of administrative/professional land uses along the lower portion of Alabama Street north of Barton Road will not alter the existing environmental assessment as discussed in the EIR.

The analysis of these refinements illustrates their conformity with the project description and do not represent a "new project" as defined by the California Environmental Quality Act. It should also be noted that these adjustments generally improve rather than detract from the environmental condition of the plan area as discussed in the EIR. The refinements provide a reduction of the environmental impacts described in the EIR. However, significant adverse environmental impacts which are unmitigable will require a statement of overriding considerations.