NOTICE OF DETERMINATION

FILED
Robert D. Zimmerman, Clerk
DEC 17 1987

TO: ☐ Office of Planning & Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

☒ County Clerk
County of San Diego
220 Broadway
San Diego, CA 92101

FROM: City of Chula Vista
Planning Department
276 Fourth Avenue
Chula Vista, CA 92010

DATE: 12/17/87

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

PROJECT TITLE: Rancho del Rey-Spa I CASE NO: EIR-87-1

State Clearinghouse Number: 87070102

Contact Person: Douglas D. Reid Telephone No. 691-5101

Project Location: North of E. "H" Street and to the West of Otay Lakes Road

Project Description: Approval of its Rancho del Rey, Spa I General Development Plan, Sectional Planning Area Plan, Public Facilities Plan and Financing Analysis, Planned Community District Regulations and Development Agreement. The project consists of 2,201 dwelling units, 84.5 acres of Employment Park & other community and open space uses on 808.6 acres.

This is to advise that the City of Chula Vista has approved the above described project and has made the following determinations regarding the project:

The project ☒ will, ☐ will not have a significant effect on the environment.

☒ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.

☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

The EIR or ND and the record of the project approval may be examined at the Planning Dept., Public Services Bldg., 276 Fourth Avenue, Chula Vista, CA.

Mitigation measures ☒ were ☐ were not, made a condition of the approval of this project.

A statement of overriding considerations ☒ was, ☐ was not adopted for this project.

Douglas D. Reid
Environmental Review Coordinator

Date received for filing.

EN 19 (Rev. 1/85)

SPA 1 - EIR

CITY OF
CHULA VISTA
PLANNING DEPARTMENT

December 17, 1987

Ken Baumgartner
McMillin Development Company
2727 Hoover Avenue
National City, CA 92050

DEC 21 1987

In accordance with Section 21152 of the California Environmental Quality Act of 1970, I am filing the attached Notice of Determination. The purpose of this notice is to provide a limitation on the time period under which legal proceedings may be undertaken to set aside the decisions of the City of Chula Vista concerning procedural compliance with the California Environmental Quality Act.

Any legal action challenging the determination whether: 1) this project may have a significant effect on the environment, or 2) alleging that an Environmental Impact Report does not comply with CEQA, must commence within 30 days after the posting of this Notice of Determination by the County Clerk.

A description of your project is contained in the text of the notice.

If you have any questions regarding this notice, do not hesitate to call this office at 691-5101.

Douglas D. Reid
Environmental Review Coordinator

DDR:je

Attachment

ADDENDUM TO EIR-87-1
Prepared in Accordance With
Section 15164 of the State of California CEQA Guidelines

EVALUATION OF THE ADEQUACY OF THE ENVIRONMENTAL IMPACT REPORT FOR THE REVISED RANCHO DEL REY SECTIONAL PLANNING AREA (SPA) I PLAN

City of Chula Vista Case Number: EIR-87-1
State Clearinghouse Number: 87070102

Prepared for:

City of Chula Vista
Department of Planning
276 Fourth Avenue
Chula Vista, CA 92010

Prepared by:

WESTEC Services, Inc.
5510 Morehouse Drive
San Diego, CA 92121
Project No. 37110001

October 1987

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SECTION 1
INTRODUCTION

The Rancho del Rey SPA I Plan is the first development phase of the 1673.5-acre El Rancho del Rey Specific Plan Amendment Area. The EIR for the Rancho del Rey SPA I Plan (EIR 87-1) is a supplement to the El Rancho del Rey Specific Plan Amendment Area EIR, which was certified in November 1985 (EIR-83-2). A Draft EIR for the Rancho del Rey SPA I Plan was prepared and circulated for public review in June 1987. In response to comments received during the public review period for the DEIR, the land use designations on two of the onsite parcels were changed: the proposed school site on the project was relocated to an area previously designated as residential and the residential units were relocated to the school site. The total number of proposed residential units and the area proposed to be graded for development would remain the same under the alternative plan; only the land use designations would change. The proposed project revisions are described in Section 2 of this addendum, along with a summary of the original project.

Under Section 15067 of the Administrative Guidelines to CEQA and Sections 5.8 and 5.9 of the City of Chula Vista Environmental Review Procedures, no additional EIR need be prepared for project changes unless these changes would result in new significant environmental impacts not considered in a previous EIR on the project. The purpose of this analysis is to present the basis for determining whether the previous EIR adequately addresses the impacts of the revised project.

This evaluation is an addendum to EIR-87-1. It has concluded that there is no need for any significant new information to be added to the text of EIR-87-1. Therefore, in accordance with Section 21092.1 of the Public Resources Code (California Environmental Quality Act), no further notification or public/agency review is required.

SECTION 2
PROJECT DESCRIPTION

The revised Rancho del Rey SPA I project site consists of 808.6 acres located in the eastern portion of the City of Chula Vista, east of Interstate 805. Onsite topography is generally rugged, consisting of gently to steeply sloping east-west trending ridges and valleys. The primary onsite drainageway is Rice Canyon, into which a series of ephemeral streams drain the southern three-quarters of the project site. Vegetation on the site consists primarily of various low scrub vegetation communities, with lesser amounts of native and non-native grassland, riparian woodland, and ephemeral vernal pool communities also present. The project site is essentially undeveloped with existing improvements limited to a number of unimproved dirt roads and two SDG&E transmission lines. The attached EIR includes detailed discussions and maps of the project location and existing onsite conditions.

The project site is bounded on the north and east by Otay Lakes Road; development along this roadway consists primarily of residential land uses with a few institutional and commercial land uses. To the south is additional residential and commercial development along East "H" Street. Residential development borders the site to the west.

2.1 SUMMARY OF ORIGINAL PROJECT CHARACTERISTICS

The Rancho del Rey development addressed in the circulated Draft EIR (87-1) was to involve the construction of 982 single-family units and 1219 multi-family units in a variety of density categories on 305.1 acres (see Figure 2-4 on page 2-14 of the EIR). Non-residential uses, including an employment park (84.5 acres), community facilities (5.6 acres), neighborhood and community parks (55.7 acres), a school site (12.6 acres), open space (272.6 acres) and a circulation system (72.5 acres), were proposed on the remaining 503.5 acres. The original proposal incorporated density transfers among residential density categories within the project site; the concept of such transfers was introduced in the El Rancho del Rey Specific Plan to allow for site specific adjustments in residential densities as plans were refined. The density transfers proposed in the original SPA I Plan did not result in an overall increase in the number of residential units nor did it result in any transfer of units into or out of the SPA I Plan area.

2.2 REVISED PROJECT

In response to public review of the draft Rancho del Rey SPA I Plan EIR and in conjunction with City of Chula Vista staff recommendations, the applicant has submitted a revised project design. The revised design responds to concerns expressed by the school district regarding the location of a proposed school in immediate proximity to existing SDG&E transmission lines.

The revised plan retains the majority of the elements of the original plan, including the circulation pattern and the conceptual grading plan; additionally, with the exception of two of the parcels, the land use designations and configurations across the site remain the same. The two parcels which are affected by the revision are the original school site and the new school site. Under the revised plan (Figure 1), the school would be located along the internal loop road and the residential units that are displaced by the school would be relocated to the original school site. As a result of this change, an additional 1.4 acres would be developed with residential land uses, with a corresponding reduction of 1.4 acres in the size of the school site. As stated above, the total number of residential units on the project site would remain the same; however, under the revised plan the number of single-family "cottage" units would be increased by 90, with a corresponding decrease in the number of duplex units.

SECTION 3
ISSUE ANALYSIS AND COMPARISON

The project site area is identical for the original and revised projects; therefore, the environmental setting and existing conditions are the same for the revised project as those described in the EIR. This section addresses each environmental issue analysed in the EIR and presents a summary of the impacts identified for the original project, followed by a discussion of the impacts of the revised project.

3.1 LAND USE

3.1.1 Original Project

The original land use plan for the Rancho del Rey SPA I project would be compatible with existing and planned land uses in the project vicinity and with all applicable land use policies. Changes in land use from the existing onsite condition to the proposed mixed use development would result in increased traffic flows, alteration of natural landforms and visual quality, additional public service and utility demands, increased noise levels and the loss of native habitats and sensitive plant and animal species. Each of these impacts is discussed in the applicable analysis sections of the EIR and summarized in the respective paragraphs which follow.

3.1.2 Revised Project

As discussed in Section 1, the revised Rancho del Rey SPA I land use plan retains the majority of the elements of the original plan. Under the revised plan (Figure 1), the school would be located along the internal loop road and the residential units that are displaced by the school would be relocated to the original school site. As a result of this change, an additional 1.4 acres would be developed with residential land uses, with a corresponding reduction of 1.4 acres in the size of the school site. While the total number of residential units on the project site would remain the same under the revised plan, the number of single-family "cottage" units would be increased by 90 with a corresponding decrease in the number of duplex units. Because the land use designations would remain compatible with surrounding land uses and with applicable land use policies, these changes in residential land use categories do not constitute a significant change from the original plan.

The exchange of the school for the residences in the revised land use plan will not significantly affect the provision of infrastructure (e.g., water and sewer service) to either of the sites as discussed in the following respective paragraphs. Because the majority of trips which would access the school are expected to be generated from within the SPA I Plan area, changes in traffic effects from those projected for the original plan are expected to be minimal (NOTE: See letter of October 14, 1987, from Willdan Associates; on file with the City of Chula Vista.).

City staff have raised concerns regarding the configuration of land uses in the revised plan. Specifically, these concerns are related to the interface between existing offsite residences and the proposed park site (adjacent to the school) and access from the school to the park. The details regarding the interface between the land uses in the revised plan are currently being resolved between the City and the applicant. Assuming that these details are resolved to the satisfaction of the City of Chula Vista, no significant impacts related to land use are expected to result. Additionally, it is assumed that no residential construction will take place within the established SDG&E easement and that appropriate measures will be taken to insure that necessary access to utility facilities will be negotiated with the appropriate agencies.

3.1.3 Finding

The EIR analysis is adequate; the revised project does not differ significantly from the original project in land use configuration or in its compatibility with applicable land use plans.

3.2 LANDFORM/AESTHETICS

3.2.1 Original Project

Implementation of the original project would substantially alter the landform and visual character of the site and would result in a number of highly visible changes to existing topographic features and the creation of large manufactured slopes. Development of the project site according to adopted and original plans would change the visual character from a rural area to an urbanized community. A total of approximately 9.5 million cubic yards of grading would occur and maximum cut and fill slopes of 100 and 130 feet respectively would result.

The SPA I Plan includes design guidelines and the associated design manual has been developed to implement these guidelines. Issues addressed by these documents include grading, landscaping, fencing, signing, lighting, parking and scenic highways. Implementation of the design guidelines would mitigate the impacts to landform and visual resources to below a level of significance.

3.2.2 Revised Project

The grading proposed for the revised project is virtually identical to that proposed by the original project. The limits of grading and the grading quantities are expected to remain the same; therefore, the impacts to landform and visual quality are not expected to change under the revised plan.

3.2.3 Finding

The EIR analysis is adequate.

3.3 BIOLOGICAL RESOURCES

3.3.1 Original Project

Measures incorporated into the original design of the Rancho del Rey SPA I project include the consolidation of open space in the main canyon systems, specific measures to prevent impacts to sensitive species, programs to restore damaged habitats, and the reduction of impacts to wetland habitats through consultation with wildlife agencies. While these measures would reduce biological impacts below the level which were identified in the El Rancho del Rey Specific Plan, significant, unmitigable biological impacts would result. However, if identified measures are fully and properly implemented, the overall mitigation plan is considered adequate with respect to the proposed development.

3.3.2 Revised Project

The revised design would result in the same configuration of developed areas and the same type and magnitude of impacts. Mitigation measures developed for the original project and

presented in the EIR would likewise be implemented with the revised project. Therefore, the biological impacts would be virtually identical under either the original or revised plans.

3.3.3 Finding

The EIR analysis is adequate.

3.4 GEOLOGY/SOILS

3.4.1 Original Project

The project site contains no major geologic constraints which would preclude development. Potential identified impacts include the expansion of surficial deposits, the compaction of alluvial soils, the effect of bentonite clay seams and poorly lithified zones on slope stability, the generation of oversized material from cemented or dense bedrock, and the presence of the potentially active La Nacion fault zone. With the implementation of mitigation measures identified in the geotechnical report, no significant geotechnical conditions are expected to impact the proposed project. San Diego Soils prepared an addendum to the previous geotechnical report to address the relocation of the school site in relation to the La Nacion fault zone. The report, which is entitled A Geotechnical Investigation: La Nacion Fault Zone, Proposed Elementary School Site, Rancho del Rey SPA I, Chula Vista, California (October 6, 1987), was reviewed and approved by the school district and the State. The City of Chula Vista has a copy of the report in the project files.

3.4.2 Revised Project

The grading proposed under the revised project is virtually identical to that which was proposed under the original project. Therefore, if all mitigation measures from the geotechnical report are implemented as part of the revised project, no significant impacts related to geology and soils are expected to result.

3.4.3 Finding

The EIR analysis is adequate.

3.5 HYDROLOGY/WATER QUALITY

3.5.1 Original Project

The grading and drainage alterations which would result from the original and the revised projects are similar; alterations in water quality and quantity would result from the substantial grading and the construction of impermeable surfaces across the project site. Because the grading plan for the revised project is similar to that of the original project, mitigation measures which were identified for the original project and presented in the EIR would adequately address the revised project's impacts.

3.5.2 Revised Project

Urbanization of the project site according to the revised plans would have hydrology/water quality effects similar to those addressed in the EIR. If all identified mitigation measures are implemented according to the guidelines discussed in the EIR (which address drainage facility design and operation, building pad drainage, soil and slope stability, runoff control and revegetation of disturbed areas), water quality impacts of the revised project would be reduced to below a level of significance.

3.5.3 Finding

The EIR analysis is adequate.

3.6 TRAFFIC CIRCULATION AND ACCESS

3.6.1 Original Project

Vehicular use associated with the proposed project is projected to result in 41,054 ADT for the SPA I area. Significant traffic circulation impacts would result within the project vicinity as a result, especially along East "H" Street and at the "H" Street/Interstate 805 interchange. The measures which are proposed to mitigate these impacts include construction of new roadways; improvements along existing roadways, at intersections and at interchanges; and limitations on the number of trips which may be generated from the employment park until guarantees regarding the construction of State Route 125 are established to the satisfaction of the Chula Vista City Engineer. Implementation of these

measures, as identified in Section 4-F-3 of the EIR and clarified in the responses to comments, is expected to mitigate these impacts to below a level of significance.

3.6.2 Revised Project

The revised project would affect onsite traffic flows due to the relocation of the school. Additionally, access to the school from offsite would be gained from East "H" Street rather than Otay Lakes Road. However, according to Willdan Associates (October 14, 1987, letter from Mr. Robert Sergeant to Ms. Pamela Hathaway), the total number of trips which would be generated by the revised project and the assumptions regarding loading of these trips onto the existing and proposed roadway network do not differ significantly from the assumptions used in the analysis of the original project impacts. Therefore, the mitigation measures which were proposed by the original project are expected to adequately address the impacts of the revised project, if implemented in a complete and timely manner.

3.6.3 Finding

The EIR analysis is adequate.

3.7 FISCAL ANALYSIS

3.7.1 Original Project

The Rancho del Rey project will generate a number of one-time and ongoing costs associated with planning, engineering services, building inspection, fire prevention, public works, parks and recreation, and public services. The City of Chula Vista has established a number of one-time revenues and ongoing development fees to offset these costs, including: permit fees related to construction, plumbing, electricity, sewer connections, environmental review, planning, zoning and engineering; and taxes, licenses and special fund revenues related to traffic safety, public services and fuel consumption. Additionally, the Facilities Financing Plan for the project has been revised to address concerns raised by the City and other affected agencies during their review of the initial financing plan. As a result of these measures, the City of Chula Vista will receive a net annual fiscal surplus from the project. Therefore, because no significant adverse fiscal impacts are anticipated to result from the project, no mitigation measures are necessary.

3.7.2 Revised Project

The site plan for SPA I was revised based on the school district's concerns regarding the location of the school in the original site plan. The revised project would include one more acre of residential land use and one less acre of land for the school site than that contained in the original plan. Because the revised plan does not vary significantly from the original plan in terms of land uses and, therefore, in terms of revenues generated or costs imposed on the City of Chula Vista, the implementation of the mitigation measures identified in the EIR for the original plan should adequately address any potential impacts from the revised plan.

3.7.3 Finding

The EIR analysis is adequate.

3.8 NOISE

3.8.1 Original Project

Potential noise impacts associated with the original Rancho del Rey project indicated that portions of the site, upon buildout, would be subject to noise levels which exceed City of Chula Vista noise standards. Mitigation measures which were identified in Section 4-I-3 of the EIR include the use of noise attenuation barriers (i.e., a combination of walls and berms) and building setbacks for attenuation of exterior noise levels and the use of appropriate insulating materials for attenuation of interior noise levels. Two areas which would not be mitigated by the sole incorporation of these measures (i.e., the multi-family areas adjacent to East "H" Street and the East "H" Street park) necessitate further study when detailed site plans for these two sites are available.

3.8.2 Revised Project

The revised project site plan interchanges the land use on two parcels. Because East "H" Street is projected to carry more traffic than Otay Lakes Road, the projected noise level on the revised school site is 60 to 65 dB CNEL rather than 55 to 60 dB CNEL. Because future noise levels on the revised school site are projected to be slightly higher than those on the original school site, the school may need to implement additional noise mitigation

measures to attenuate exterior and interior noise levels. As discussed in the EIR, these mitigation measures will need to be developed at the time that detailed site plans are available for the school site.

3.8.3 Finding

Mitigation measures for noise impacts to the revised project site are similar to those proposed for the original design. As discussed in the EIR, specific mitigation measures will need to be developed at the time that detailed site plans are available. The EIR analysis adequately addresses these measures and identifies the needs for further studies; because the revised site plan does not differ significantly from the original plan, the EIR analysis is adequate.

3.9 Parks, Recreation and Open Space

3.9.1 Original Project

The Rancho del Rey SPA I project proposes to incorporate a series of parks, community facilities, hiking and equestrian trails and open space; the total proposal for these facilities and land uses exceeds City of Chula Vista dedication standards. Additionally, the original site design preserves the majority of Rice Canyon. While the location and size of parks and open space is not an issue, mitigation measures are presented in Section 4-I-3 of the EIR to address the nature and schedule of the development of parks and recreational facilities and to insure that biological and hydrological concerns are incorporated into final site designs.

3.9.2 Revised Project

While the total number of residential units has not changed from the original project, the revised project incorporates a slightly different residential product mix. The following table delineates the differences in the residential mix and the affect which these differences has on parkland dedication requirements.

Type of Dwelling Unit (DU)	Number of DUs		Required Land Dedication (sq. ft./DU)	Acres Required	
	Original	Revised		Original	Revised
Single family	982	1,072	322	7.25	7.92
Condominium	975	975	272	6.01	6.09
Duplex	244	154	218	1.22	0.77
TOTAL	2,201	2,201		14.48	14.78

Based on the figures presented in this table, the amount of parkland required of the revised project (i.e, 14.78 acres) does not differ significantly from that required of the original project (i.e, 14.48 acres); additionally, the amount of parkland proposed in the original and the revised project designs exceeds the amount required in both cases. The final design and the facilities requirements for the revised project would be subject to the review of the City of Chula Vista Parks and Recreation Department and would be required to meet the Department's requirements.

3.9.3 Finding

Because the revised parkland requirement does not significantly differ from the requirements under the original project and because the final park designs and facilities requirements will be subject to approval of the City of Chula Vista Parks and Recreation Department as discussed in the EIR, the EIR is considered adequate.

3.10 Public Facilities and Services

3.10.1 Original Project

Water Availability. The projected water demand for the Rancho del Rey project at full buildout would be 1.54 million gallons per day (mgd); approximately 70 percent of this total would be utilized by the residential portion of the project and 19.5 percent by the employment park. The project proposal includes an internal water conveyance system capable of meeting the projected onsite water needs in addition to offsite infrastructure necessary to offset the project's impacts to the regional water distribution system.

Sewer Services. The proposed Rancho del Rey community is projected to produce an average annual sewage flow of approximately 0.75 million gallons per day. Potential

impacts to onsite biological and hydrological resources from construction of the onsite conveyance system have been identified; mitigation measures related to the location and construction of the maintenance/access road within canyon open space areas and related rehabilitation efforts have been developed to reduce these impacts to below a level of significance. Additionally, the proposed project design includes a wastewater conveyance system to transport project-generated waste into the City of San Diego Metropolitan Sewer System via the City of Chula Vista sewage infrastructure. No significant impacts related to the capacity of either City's system have been identified; however, the applicant may be required to contribute to the regionwide system based on the actual contribution of the SPA I project to the regional wastewater system.

Schools. Based on an average generation rate of 0.3 students per dwelling unit, the Rancho del Rey SPA I project would generate approximately 660 elementary and 660 secondary students. These students would attend schools within the Chula Vista Elementary School District and the Sweetwater Union High School District. According to the analysis presented in Section 4-J-3 of the EIR and the responses to comments received during the public review period and presented as part of the final EIR and record, no capacity problems are projected to result from implementation of the SPA I project assuming that: (1) SPAs are constructed according to current phasing plans; and (2) that contributions of the applicant to the school district through payment of fees, construction of facilities, and/or establishment of a Mello-Roos financing mechanism are implemented as discussed in the revised Facilities Financing Plan for the project.

Fire Protection. The proposed SPA I project would incrementally increase demand for fire protection services within the project vicinity. The project proposal to construct a fire station on the site, in conjunction with the Fire Department's plans to relocate existing fire station number 4 to the east of the project site, would reduce potential impacts to the Fire Department's ability to provide service to below a level of significance. A related impact to the provision of adequate fire protection to the project site is related to site design. Design-related mitigation measures necessary to counteract onsite fire potential include adequate backyard setbacks and flame resistant vegetation combined with low fuel firebreaks for all lots adjacent to open space areas (e.g., Rice Canyon). If these measures are incorporated to the satisfaction of the City Fire Department, potentially significant impacts to the provision of fire protection services would be mitigated to below a level of significance.

3.10.2 Revised Project

Because of the similarities regarding site design and the total number of units on the project site, the revised project would generate similar demands on facilities and services as would the original project. Variations regarding design of onsite infrastructure (e.g., the size of required pipes for water or wastewater purveyance, the size of roadways, etc.) are not expected to be significant. Therefore, if all mitigation measures identified in the EIR for the original project are implemented with the revised project, impacts to facilities and service providers would be mitigated to below a level of significance.

3.10.3 Finding

The facilities and services needs generated by the proposed project are similar to those projected for the original project; therefore, the EIR analysis for the issues of water availability, sewer service, schools, and fire protection is adequate.

SECTION 4
CERTIFICATION OF ACCURACY

This addendum to an environmental impact report was prepared by the City of Chula Vista and WESTEC Services, Inc., of San Diego, California. We hereby affirm that, to the best of our knowledge, the statements and information in this analysis are true and correct, and that all known information concerning the potentially significant environmental effects of the revised project have been included and fully evaluated.

David Claycomb
Senior Project Manager

Douglas D. Reid
Environmental Review Coordinator

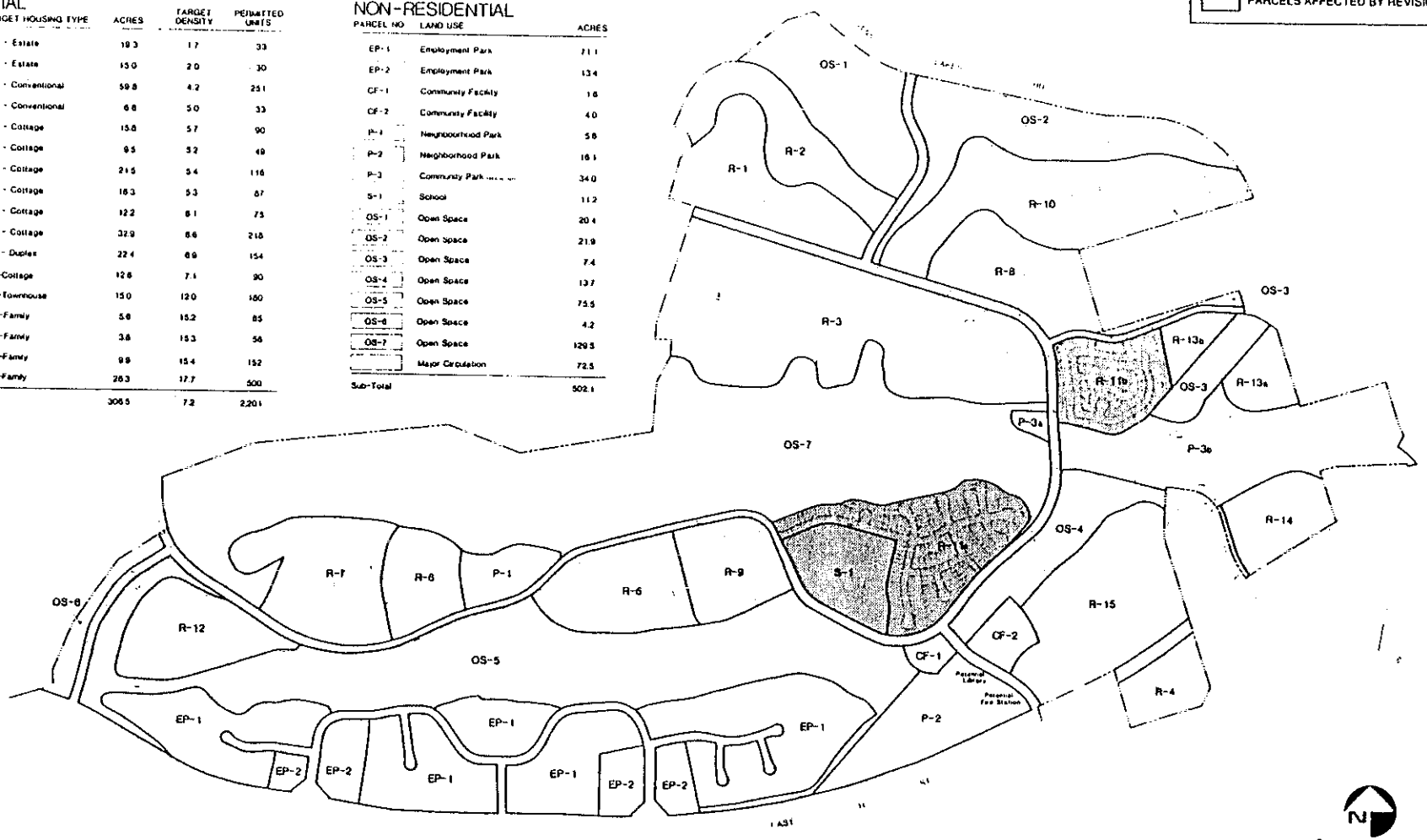
RESIDENTIAL

PARCEL NO	TARGET HOUSING TYPE	ACRES	TARGET DENSITY	PERMITTED UNITS
R-1	SFD - Estate	19.3	1.7	33
R-2	SFD - Estate	15.0	2.0	30
R-3	SFD - Conventional	59.8	4.2	251
R-4	SFD - Conventional	6.6	5.0	33
R-5	SFD - Cottage	15.8	5.7	90
R-6	SFD - Cottage	9.5	5.2	49
R-7	SFD - Cottage	21.5	5.4	116
R-8	SFD - Cottage	16.3	5.3	87
R-9	SFD - Cottage	12.2	6.1	75
R-10	SFD - Cottage	32.9	6.6	218
R-11a	SFA - Duplex	22.4	6.9	154
R-11b	SFD-Cottage	12.6	7.1	90
R-12	SFA-Townhouse	15.0	12.0	180
R-13a	Multi-Family	5.6	15.2	85
R-13b	Multi-Family	3.6	15.3	56
R-14	Multi-Family	9.9	15.4	152
R-15	Multi-Family	28.3	17.7	500
Sub-Total		306.5	7.2	2,201

NON-RESIDENTIAL

PARCEL NO	LAND USE	ACRES
EP-1	Employment Park	71.1
EP-2	Employment Park	13.4
CF-1	Community Facility	1.6
CF-2	Community Facility	4.0
P-1	Neighborhood Park	5.6
P-2	Neighborhood Park	16.1
P-3	Community Park	34.0
S-1	School	11.2
OS-1	Open Space	20.4
OS-2	Open Space	21.9
OS-3	Open Space	7.4
OS-4	Open Space	13.7
OS-5	Open Space	75.5
OS-6	Open Space	4.2
OS-7	Open Space	129.5
	Major Circulation	72.5
Sub-Total		502.1

PARCELS AFFECTED BY REVISION



SOURCE: Crain & Associates 8/26/87

Revised Site Utilization Plan for the Rancho del Rey SPA I Plan Area

FIGURE 1

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LIST OF APPENDICES

The following appendices to the EIR are on file with the City of Chula Vista Planning Department and are available for public review.

SECTION 1
INTRODUCTION AND SUMMARY

A. PURPOSE

This document is an Environmental Impact Report (EIR) prepared for the proposed Rancho del Rey SPA-I project. The proposed Rancho del Rey SPA-I project is the first development phase of the El Rancho del Rey Specific Plan Amendment Area. The project includes a detailed Sectional Planning Area (SPA) plan for the mixed use development of 808.6 acres located just northwest of the intersection of East "H" Street and Otay Lakes Road in eastern Chula Vista. This EIR is a supplement to the El Rancho del Rey Specific Plan Amendment EIR, which was certified in November, 1985 (EIR-83-2). The 1985 EIR identified a number of potential impacts and mitigation measures; a brief summary of these is provided in Section 2B of this document.

The California Environmental Quality Act (CEQA) of 1970 requires the preparation of EIRs or other environmental analyses for any project a Lead Agency, in this case the City of Chula Vista, intends to carry out or approve. The purpose of an EIR is to inform the public and decision makers about the nature of a project being considered and the extent and kinds of impacts the project and alternative projects would have on the environment if the project were to be carried out. Environmental Impact Reports must contain discussions of specific topics as outlined in guidelines for the implementation of CEQA prepared by the State Secretary for Resources. These guidelines are periodically updated to comply with changes in CEQA and court interpretations. This report follows the most recent guidelines and amendments to CEQA.

The City of Chula Vista is the Lead Agency for the proposed project under Article 4 of the CEQA Guidelines. Discretionary actions required by the City include: approval of the proposed Rancho del Rey SPA Plan, tentative maps, and revegetation plan; finalization of the proposed assessment district; and consideration of specific projects by the Design Review Committee. In addition, Federal and State agencies have discretionary review authority over project implementation, including:

- U.S. ARMY CORPS OF ENGINEERS

  Notice of Intent to Discharge Under Section 404 of the Clean Water Act. An individual or nationwide permit will be required for the proposed project due to potential impacts associated with wetlands habitat (see Section 4C of this report). Final determination of permit requirements under Section 404 will be made after the submittal of an appropriate application to the U.S. Army Corps of Engineers.

- CALIFORNIA DEPARTMENT OF FISH AND GAME

  Section 1603 Streambed Alteration Agreement. A Section 1603 Agreement will be required due to potential impacts to drainage courses and associated habitats. The final Agreement determination will be made by the Department of Fish and Game subsequent to formal application.

The following EIR contains sections required by CEQA, such as a summary, project description, environmental setting and project alternatives, as well as a detailed analysis of potential impacts and proposed mitigation measures. The impact analysis, Section IV, discusses the following items: land use, landform/aesthetics, biological resources, geology/soils, hydrology/water quality, traffic circulation and access, fiscal analysis, noise, parks/recreation/open space, and public facilities and services. The proposed mitigation measures are intended to reduce identified impacts to the lowest possible levels. A number of these impacts, however, are subject to change due to pending development schedules, etc. Therefore, the mitigation measures proposed herein may require modification or replacement with similar techniques to effectively reduce impacts.

Section V of the EIR includes the following analyses:

- Growth inducement.

- Effects found not to be significant.

- The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity.

- Significant irreversible environmental changes.

This Draft Environmental Impact Report will be available for review by the public and public agencies for a period of 45 days. Comments on the environmental analysis contained in this report are invited and may be submitted to the City of Chula Vista Department of Planning, 276 Fourth Avenue, Chula Vista, CA 92010. The Draft EIR will be available at the Department of Planning and at major City libraries. The Environmental Review Section of the Planning Department will consider all written comments on the Draft EIR before making recommendations to the Planning Commission regarding the extent and nature of the environmental impacts of the proposed project.

The City of Chula Vista Planning Commission will hear further public input and will consider the Final EIR when making recommendations on the project to the City Council. (Contact Planning at (619) 691-5101 for exact time and date of Planning Commission hearing.) The Council must certify the Final EIR as complete and as being prepared in compliance with CEQA prior to approving or disapproving the project. Public input is encouraged at all hearings. In the final review of the project plan, environmental considerations as well as economic and social factors will be weighed to determine the most appropriate form of development.

B. SUMMARY OF FINDINGS

Project Description

The Rancho del Rey project site is located approximately 3 miles east of downtown Chula Vista and 6 miles north of the United States/Mexico International border. The proposed project involves approval of the first Sectional Planning Area (SPA) Plan within the El Rancho del Rey Specific Plan area, as well as a number of other discretionary actions. The adopted El Rancho del

Rey Specific Plan originally included 10 SPAs, with 6 of the 10 subsequently combined into the Corcoran Ranch SPA. An Environmental Impact Report (EIR) was adopted for the Corcoran Ranch SPA in 1985, and serves as the Master EIR for the proposed project. A subsequent addendum to the 1985 Master EIR addressed the reduced environmental impacts of a revised site plan. The current EIR will assess the compliance of the proposed SPA-I Plan with the amended El Rancho del Rey Specific Plan and the compliance of the project tentative maps with the SPA-I Plan and the El Rancho del Rey Specific Plan. Additionally, this EIR will address potential impacts associated with the SPA-I Plan and tentative maps, and propose pertinent mitigation measures where necessary.

The proposed Rancho del Rey development involves the construction of 982 single-family units, and 1219 multi-family units in a variety of density categories on 305.1 acres. In addition, a number of non-residential uses, including an employment park site, community facilities, neighborhood and community parks, a school site, open space, and a circulation system are proposed on 503.5 acres, for a total project area of 808.6 acres. The proposed project varies from the adopted Specific Plan in the density for a number of residential categories. However, this density transfer would not result in an overall increase in residential units, or in any transfer of units in or out of the SPA-I area.

Environmental Setting

The Rancho del Rey SPA-I Plan area encompasses 808.6 undeveloped acres, consisting primarily of gently to steeply sloping east-west trending ridges and valleys. The topographic profile of the site is generally rugged, with onsite elevations ranging between approximately 200 and 490 feet above mean sea level (MSL).

The primary onsite drainageway is Rice Canyon, into which a series of ephemeral streams drain the southern three-quarters of the project area. The remainder of the site drains north into Otay Lakes Canyon. Increases in impervious surfaces associated with development upstream of the project site

have resulted in increased flow and associated erosion in onsite stream channels, particularly in the western portion of Rice Canyon.

Onsite vegetation consists primarily of various low scrub vegetation communities, with lesser amounts of native and non-native grassland, riparian woodland, and ephemeral vernal pool communities also present. Two sensitive species of plants and birds have been identified onsite. In addition, a number of habitats suitable for the occurrence of sensitive animal species lie within the project area.

The project site is essentially undeveloped, with existing improvements limited to a number of unimproved dirt roads and two SDG&E transmission lines. These include one metal and one wooden tower line, and are contained within 250-foot and 20-foot wide easements, respectively.

The area is bordered on the north and east by development along Otay Lakes Road. This development is primarily residential, although a small number of commercial and institutional structures are also present. Additional nearby residential development includes properties along East "H" Street between I-805 and Otay Lakes Road, and the residential area west of the project site along Ridgeback Road. Commercial development in the project vicinity consists of the Terra Nova Shopping Center at the intersection of East "H" Street at Hidden Vista Road (immediately southwest of the site), and the shopping area along Bonita Road northwest of the site.

Impact Analysis

Each topic in the impact analysis section of the EIR (Section 4) includes the following subsections: Existing Conditions: describes the environmental setting for each issue; Impacts: assesses the effects related to the project; Mitigation Measures: discusses measures which would avoid or reduce any adverse impacts identified; and Analysis of Significance: evaluates the significance of each impact after mitigation. A summary of the findings of Section 4 is presented below.

Land Use

The proposed project would alter the utilization of the site from essentially undeveloped open space to a mixed use development containing residential, industrial, and open space areas. This change would result in impacts such as increased traffic flows, the alteration of natural landforms, reduced visual quality, additional public service and utility demands, increased noise, and the loss of native habitats and sensitive plant and animal species. The proposed land uses for Rancho del Rey are, however, compatible with the existing and planned land uses in the project vicinity, and the project is consistent with all applicable land use policies. Therefore, no adverse land use impacts are anticipated from the implementation of the SPA-I Plan, and no mitigation measures would be required.

Landform/Aesthetics

Development of the Rancho del Rey project as proposed would substantially alter the landform and visual character of the site, resulting in a number of highly visible changes to existing topographic features and the creation of large manufactured slopes.

Implementation of the grading plan would entail cutting most of the ridges and filling in the lower elevations, including many of the finger canyons. Much of the existing open space in the north and central legs of Rice Canyon would be preserved, however, pursuant to recommendations contained in the 1985 Master EIR. A total of 9,500,000 cubic yards of grading would occur throughout the project site, with maximum cut and fill slopes of 100 and 130 feet, respectively. The proposed grading would result in a number of potential adverse visual impacts within and near the project site, including the alteration of on- and off-site views. Of particular importance with respect to visual alteration are potential impacts to designated Scenic Highway corridors along East "H" Street and Otay Lakes Road.

Mitigation for potential impacts to landform and visual resources are contained within the specific design guidelines of the SPA-I Plan. Additionally, a

design manual is currently being prepared which will supplement the SPA-I Plan design criteria. Project development will require the implementation of all the above guidelines, including those related to grading, landscaping, fencing, signing, lighting, parking and scenic highways. These guidelines are intended to provide flexible direction through the different levels of project development, rather than to serve as absolute design standards. The impacts from the proposed project associated with landform and visual alteration would be mitigated to a level of insignificance with implementation of the guidelines.

Biological Resources

Investigation of biological resources associated with the previously considered El Rancho del Rey Specific Plan identified significant, unmitigable impacts related to development of the proposed project. On the basis of these findings, the SPA-I Plan incorporated design modifications and additional mitigation measures in an attempt to reduce biological impacts. Specifically this included the consolidation of open space in the main canyon systems, specific measures to prevent impacts to sensitive species, programs to restore natural habitat to disturbed areas, and the reduction of impacts to wetlands habitat through consultation with the California Department of Fish and Game and the U.S. Army Corps of Engineers. These measures, while realizing a number of reductions to potential impacts, do not change the original assessment that significant, unmitigable biological impacts will result from the proposed project. However, identified mitigation measures are fully and properly implemented, the overall mitigation (Appendix C) plan is considered adequate with respect to the proposed development. Potential biological impacts would also be associated with changes in onsite hydrology/water quality and with proposed alterations in the onsite stream channels. Specifically, these would be related to loss of sensitive habitats and/or species related to the construction of drainage improvements in Rice Canyon.

Geology/Soils

Available data from the site specific geotechnical investigation indicates that there are no major geologic constraints on the project site that would preclude

development. Potential identified impacts include the expansion of surficial deposits, the compaction of alluvial soils, the effect of bentonitic clay seams and poorly lithified zones on slope stability, the generation of oversized material from cemented or dense bedrock, and the presence of the potentially active La Nacion Fault Zone. A number of mitigation measures were identified in the geotechnical investigation, including specific guidelines pertaining to grading, soil and slope stability, fill materials, faulting seismicity, and foundation design. With implementation of the mitigation measures, no significant geotechnical conditions would adversely affect the proposed project.

Hydrology/Water Quality

The proposed development would require substantial grading, infilling of drainages, and construction of impervious surfaces to accommodate the planned community. This would result in impacts to both the quality and quantity of runoff within and downstream from the site. Specifically, grading and drainage alteration would change the direction and velocity of runoff, and increase the potential for erosion by removing vegetation and creating artificial slopes. The construction of impervious surfaces would decrease infiltration and increase the runoff from the site. Increasing the runoff from the site (and the associated increase in erosion) would increase the potential for a reduction in water quality (both onsite and downstream) due to the associated rise in suspended and dissolved streamloads. In addition, water quality would be impacted by the proposed increase in urban development, which generally increases the potential for runoff contamination. Locally perched groundwater was identified onsite, and represent a significant potential flooding impact to proposed structures and facilities, especially during wet climatic periods when groundwater levels rise.

Mitigation measures regarding hydrology/water quality include guidelines related to drainage facilities, building pad drainage, soil and slope stability, runoff control, and revegetation of disturbed areas. The identified mitigation measures will reduce significant hydrology/water quality impacts from the proposed project.

Traffic Circulation and Access

Vehicular use associated with the proposed project is projected to result in 41,054 ADT for the SPA-I area. This would produce significant traffic circulation and access impacts within the project vicinity, particularly along East "H" Street and at the "H" Street/I-805 interchange. A number of mitigation measures have been developed which would reduce these impacts below levels of significance. This assumption is contingent, however, on the proposed development maintaining a maximum volume of 56,500 vehicles per day on East "H" Street east of Hidden Vista Drive prior to the construction of Route 125 (the transportation analysis notes that, if development in the vicinity of the project site does not occur at the rate assumed in the analysis, a greater number of ADT could be accommodated on local roadways).

The proposed mitigation measures consist primarily of constructing and/or improving a number of roads in the project vicinity to accommodate the projected traffic volumes. Assuming that the referenced maximum ADT are maintained on East "H" Street, no significant impacts related to traffic would be expected from the proposed project development with implementation of the mitigation measures.

Fiscal Analysis

The Rancho del Rey project will generate a number of one time and on-going costs associated with planning, engineering services, building inspection, fire prevention, public works, parks and recreation, and public services. By the time the project is completed (year 9), annual costs to the City of Chula Vista are expected to be $1,440,075. The City, however, has established a number of one-time revenues and on-going development fees to offset the associated costs. Specifically, these include permit fees related to building, plumbing, electrical, housing, sewer connection, environmental review, plan checks, zoning, and engineering, as well as taxes, licenses, and special fund revenues related to traffic safety, public services, and fuel consumption. The combined total for all revenues from the proposed project is expected to be $1,587,270 by project completion (year 9), resulting in a net annual fiscal surplus to the

City of $147,195. Because general fund (as opposed to special fund) costs would exceed general fund revenues by approximately $12,000 per year, the City's general fund would technically be subject to an annual deficit. Because of special fund revenues, however, the overall fiscal impact to the City from the proposed project would be a net surplus as described above. Because no significant adverse fiscal impacts are anticipated from the proposed project, no mitigation measures are necessary.

Noise

Potential noise impacts associated with the Rancho del Rey project were calculated using the Federal Highway Administration Stamina 2.0 noise prediction model. To determine the maximum noise levels that could be experienced onsite, community buildout traffic volumes provided by the technical transportation analysis were used for East "H" Street and Otay Lakes Road. Additionally, projected internal traffic volumes and proposed grade elevations were used to model future onsite noise levels. The results of the noise analysis indicate that upon buildout of the proposed project, portions of the site (particularly along East "H" Street and Otay Lakes Road) would be subject to noise levels exceeding the City of Chula Vista exterior noise standards. In addition, areas of the site exposed to noise levels of 65 dB(A) or greater would experience significant interior noise impacts. Mitigation measures have been developed which would reduce the majority of identified noise impacts below levels of significance. These include the use of appropriately sized and located walls, berms, and building setbacks for mitigating exterior noise levels, and the use of appropriate building design and insulating materials to adequately attenuate interior noise levels. Impacts which would not be adequately mitigated by the measures listed above include those associated with the multi-family areas adjacent to East "H" Street (parcels R-15 and R-14), and the East "H" Street park (parcel P2). These areas will require further analysis and mitigation once detailed development plans are made available.

Parks/Recreation and Open Space

The Rancho del Rey project proposes to incorporate a series of parks, community facilities, and hiking and equestrian trails totaling 105.2 acres, as well as 227.1 acres of open space. These proposed acreages exceed all appropriate dedication standards of the City of Chula Vista, and would preserve much of the existing open space in Rice and Otay Lakes Canyons. While the location and size of proposed parks and open space is not expected to be an issue, the nature and schedule of development of the parks and recreational facilities are conceptual and have not been finalized. Consequently, a number of mitigation measures have been established relating to the nature and schedule of parks and recreation development, as well as biological and hydrological concerns within the major onsite canyons. These measures will reduce or eliminate adverse impacts related to parks/recreation and open space from the proposed project.

Public Facilities and Services

Water

The projected water demand for the Rancho del Rey project at full buildout would be 1.54 million gallons per day (mgd), with nearly 90 percent utilized by the residential (70 percent) and employment park (19.5 percent) developments. The project proposal includes an internal water conveyance system capable of meeting the projected onsite water needs, as well as a number of offsite improvements designed to offset the project's impacts to the regional water distribution system. Specifically, the offsite facilities include a 30-inch water transmission main beneath East "H" Street, from the proposed Reservoir 22-3 to the intersection of Yuba and "H" Streets, and, from that point, a 24-inch line to the intersection of "H" Street and Buena Vista Way. To reduce onsite water demands, however, it is recommended that the water conservation policies currently endorsed by the State of California and the City of Chula Vista be implemented by the Rancho del Rey project. These include various water-saving techniques such as drought-resistant landscaping, drip irrigation systems, low-flow shower and faucet restrictors, and toilet dams.

Sewer

The proposed Rancho del Rey community is projected to produce an average sewage flow of 0.75 million gallons per day. The proposed project design includes a wastewater conveyance system to transport project-generated waste into the San Diego Metropolitan Sewer System via the City of Chula Vista sewage infrastructure. The Rancho del Rey project would not produce any significant adverse impacts to the City of Chula Vista sewage infrastructure. Implementation of the project may, however, require the developer to contribute either financially or through construction of appropriate facilities to provide adequate service to the project site, based on the actual project contribution to the regional system. Additionally, the project proposes the construction of a sewer line maintenance road in the main leg of Rice Canyon, which could result in significant impacts to biological and/or hydrological resources. Mitigation measures have been developed which would reduce these impacts below levels of significance, including maintenance road location, design, and construction specifications, as well as appropriate rehabilitation efforts. The above measures would reduce or avoid significant adverse impacts related to sewer service as a result of the proposed project development.

Schools

The Chula Vista Elementary School and Sweetwater Union High School Districts both assume an average generation rate of 0.3 students per dwelling unit. Based on the proposed 2201 residences for Rancho del Rey, therefore, 660 elementary and 660 secondary students would be generated from the proposed project. While these additional students would result in incremental impacts to existing school facilities, current regional development plans call for the construction of three elementary schools, one junior high school, and one high school in the vicinity of the project site. These facilities would reduce nearly all adverse project-related impacts related to schools below levels of significance. The exception to this is related to elementary school capacity, for which a shortage of classroom space is projected in two local schools if current growth rates continue. In addition to the three proposed

elementary schools in the project vicinity, a 12.6 acre parcel has been reserved within the Rancho del Rey site for future development of an elementary school (financing for the construction of school facilities has not been determined). While the construction of a new school is not a portion of the currently proposed Rancho del Rey development plan, the elementary school facility would be built once a sufficient number of students were generated. Assuming all of the above measures are implemented, no significant adverse impacts to schools would be expected from the proposed project development.

Fire

The proposed development would incrementally increase demand for fire protection services within the project vicinity. In addition, it would contribute to the cumulative impact of growth in eastern Chula Vista on fire facilities. Existing fire station No. 4 is scheduled for relocation to the east of the project site to meet fire protection demands associated with new development in that area. This move is proposed to occur within approximately 4 to 5 years, and would affect the ability to efficiently respond to fire suppression needs in the project area. The Rancho del Rey development plan, however, includes a proposal to construct a fire station onsite. If the fire station is constructed in a timely manner (i.e., relative to the relocation of fire station No. 4), this action would reduce impacts related to onsite fire suppression efforts below levels of significance.

A related impact of the Rancho del Rey project related to fire services is the site design of the project. The Fire Department has expressed concern over the number of homes which are proposed to be located adjacent to the open space chaparral areas of Rice Canyon. Because the chaparral is highly flammable, certain site-related, landscaping, and architectural design features would need to be incorporated into the final design of the lots to insure that a significant hazard was not created upon project implementation.

Mitigation measures necessary to counteract the onsite fire potential include adequate backyard setbacks and flame resistant vegetation combined with a

low fuel firebreak; these measures should be incorporated into the final design of the lots adjacent to open space areas, such as Rice Canyon, to the satisfaction of the City Fire Department. In addition, adequate water pressure must be provided to meet the City's fire flow requirements. No significant adverse impacts related to fire would be expected from the proposed project development upon implementation of the mitigation measures.

Alternatives

Alternatives analyzed in this document are limited to the No-Project alternative. Two additional alternatives, the Alternative Specific Plan Amendment and the No Development Alternative, were evaluated in the 1985 Master EIR (EIR-83-2). The reader is referred to that document for the discussion of these alternatives.

No-Project Alternative: The No-Project alternative would eliminate all impacts associated with the proposed project, including the beneficial fiscal effects. The proposed development would not occur, and the existing onsite conditions outlined in the EIR text would be retained. Because the project site is privately owned and is planned and zoned for residential development, however, the No-Project alternative would likely only temporarily retain the property in its present undeveloped state.

SECTION 2
PROJECT DESCRIPTION

A. GEOGRAPHIC LOCATION

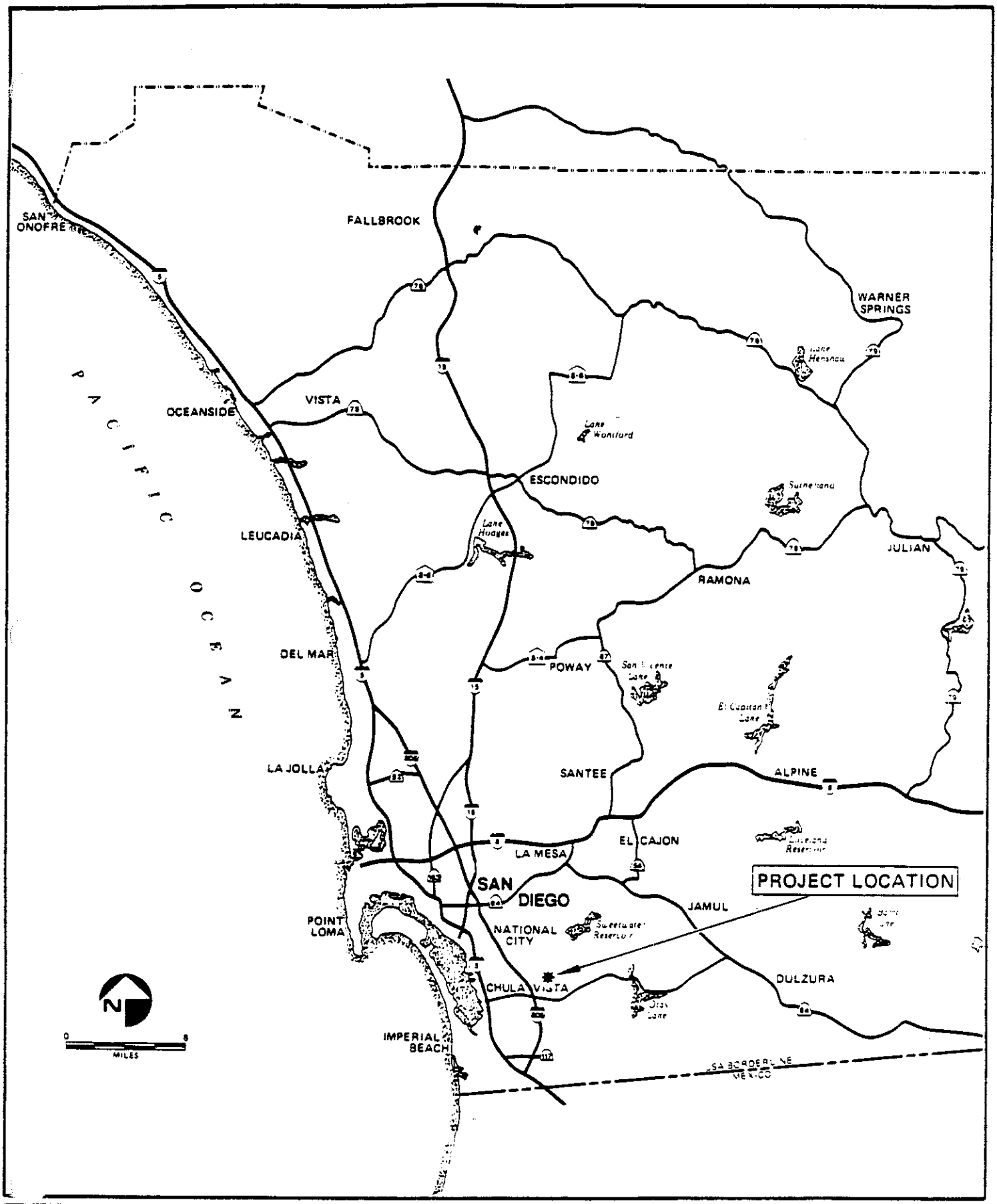
The Rancho del Rey Sectional Planning Area I (SPA-I) is located in the City of Chula Vista east of Interstate 805 (I-805), in southern San Diego County (Figure 2-1). SPA-I is the first of four sectional planning areas in the El Rancho del Rey Specific Plan Amendment Area to be implemented (Figure 2-2). SPA-I is located east of Interstate 805 and is generally bounded on the south by East "H" Street and on the north by Otay Lakes Road (Figure 2-3).

B. PLANNING HISTORY

Besides landform and land use considerations, the planning history of the project site influenced the development of the Rancho del Rey SPA-I Plan. Four levels of plans will precede the actual construction of residential, commercial, institutional and industrial facilities on the site: the Chula Vista General Plan, the El Rancho del Rey Specific Plan (including the Corcoran Ranch Specific Plan Amendment), the Rancho del Rey SPA plans and parcel-specific tentative maps. Each of these plans is discussed briefly here and in more detail in the Impact Analysis Section IV-A: Land Use.

The Chula Vista General Plan requires the adoption of Specific Plans to guide development for certain areas within the City of Chula Vista. The General Plan Land Use Element (City of Chula Vista 1983) designates land uses for lands within the City and within the City's Sphere of Influence.

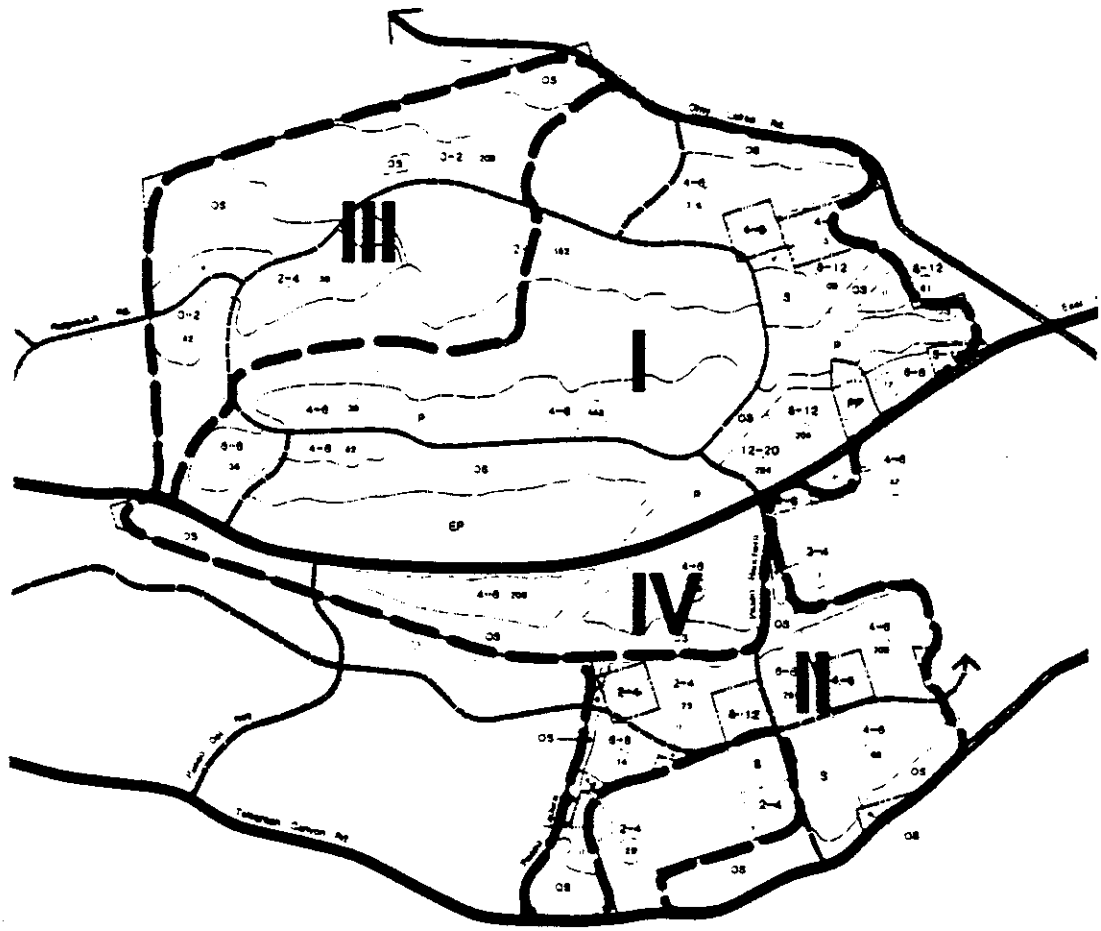
The El Rancho del Rey (ERDR) Specific Plan has been incorporated by reference into the Chula Vista General Plan and governs the development of a 2450-acre site in the City of Chula Vista east of I-805. The ERDR Specific Plan was adopted in 1978 and revised in 1985 (GPA-83-7). Additional discussion of the ERDR Specific Plan is contained in Section 4.A., Land Use, with a graphic depiction of the adopted Specific Plan Area located on page 4-2. The ERDR Specific Plan was adopted with 10 sectional planning



Project Location within San Diego County

FIGURE 2-1

SPA Boundaries



Boundaries of SPAs I-IV.

FIGURE 2-2

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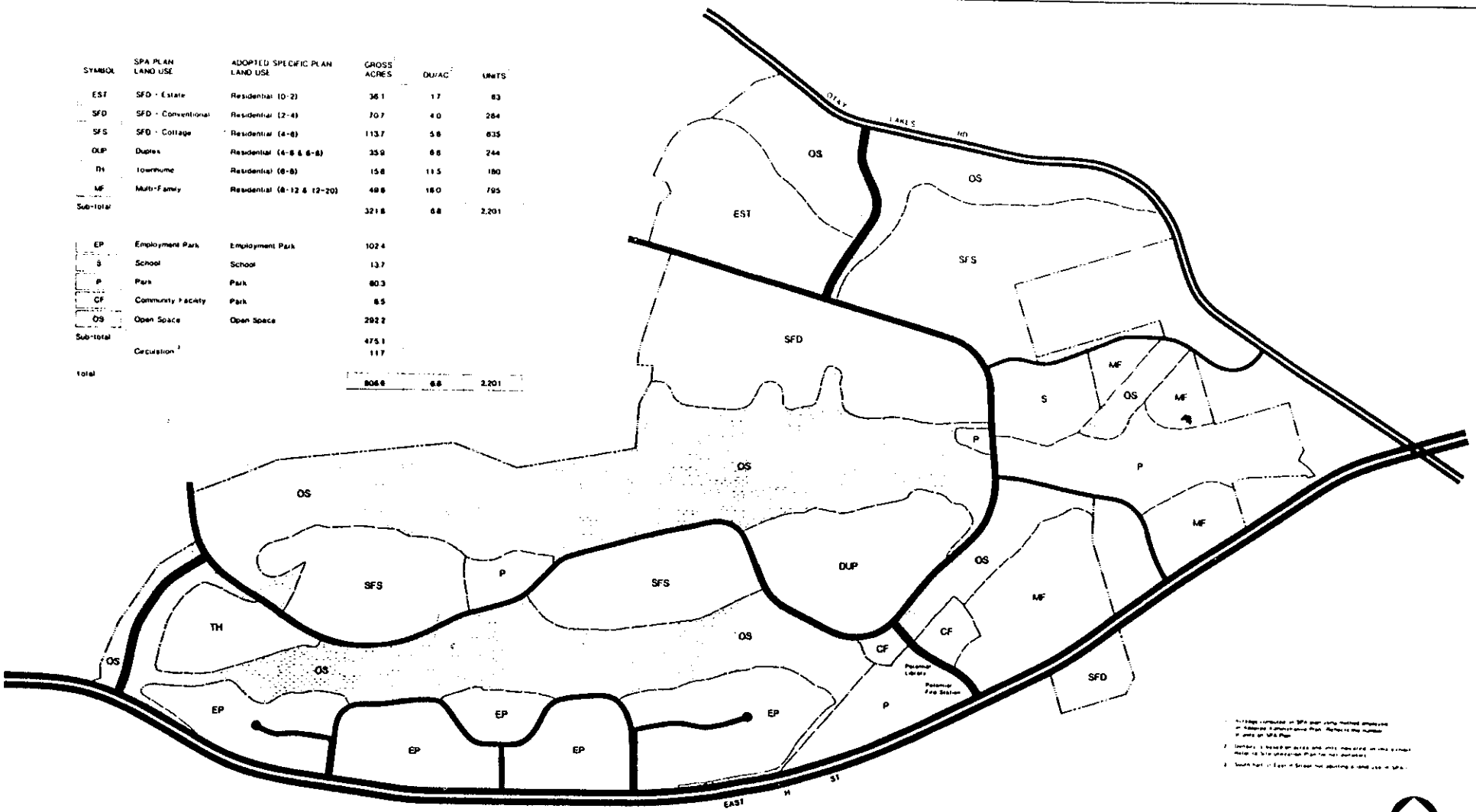
SYMBOL	SPA PLAN LAND USE	ADOPTED SPECIFIC PLAN LAND USE	GROSS ACRES	DU/AC	UNITS
EST	SFD - Estate	Residential (0-2)	36.1	1.7	63
SFD	SFD - Conventional	Residential (2-4)	70.7	4.0	284
SFS	SFD - Cottage	Residential (4-6)	113.7	5.6	635
DUP	Duplex	Residential (4-6 & 6-8)	35.9	6.6	244
TH	Townhome	Residential (6-8)	15.6	11.5	180
MF	Multi-Family	Residential (8-12 & 12-20)	48.6	18.0	795
Sub-total			321.8	6.8	2,201
EP	Employment Park	Employment Park	102.4		
S	School	School	13.7		
P	Park	Park	80.3		
CF	Community Facility	Park	6.5		
OS	Open Space	Open Space	292.2		
Sub-total			475.1		
	Circulation [3]		11.7		
Total			806.6	6.8	2,201



SOURCE: Conti and Associates, 1987

SPA-I General Development Plan

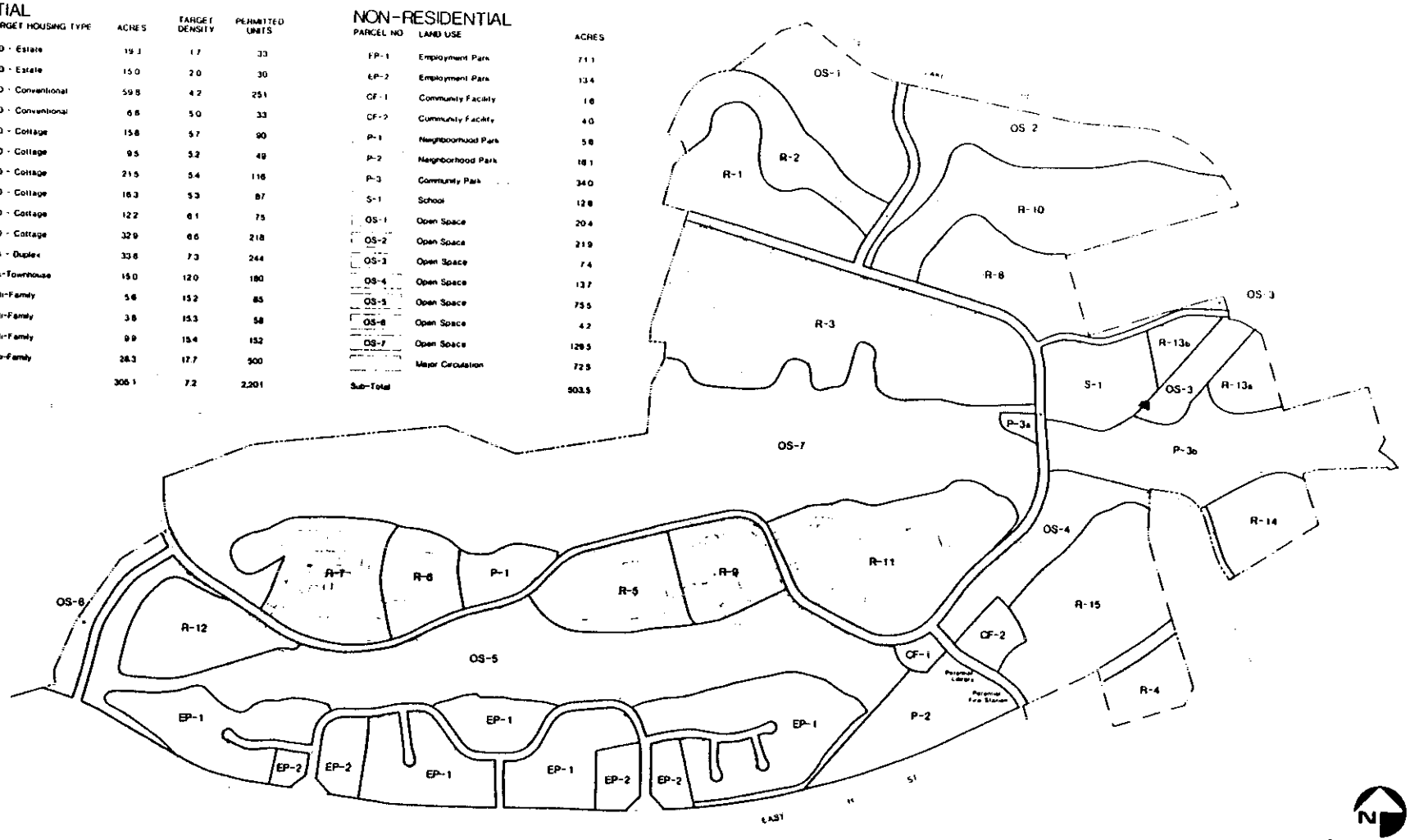
FIGURE 2-3

RESIDENTIAL

PARCEL NO	TARGET HOUSING TYPE	ACRES	TARGET DENSITY	PERMITTED UNITS
R-1	SFD - Estate	19.1	1.7	33
R-2	SFD - Estate	15.0	2.0	30
R-3	SFD - Conventional	59.8	4.2	251
R-4	SFD - Conventional	6.6	5.0	33
R-5	SFD - Cottage	15.8	5.7	90
R-6	SFD - Cottage	9.5	5.2	49
R-7	SFD - Cottage	21.5	5.4	116
R-8	SFD - Cottage	16.3	5.3	87
R-9	SFD - Cottage	12.2	6.1	75
R-10	SFD - Cottage	32.9	6.6	218
R-11	SFA - Duplex	33.6	7.3	244
R-12	SFA-Townhouse	15.0	12.0	180
R-13a	Multi-Family	5.6	15.2	85
R-13b	Multi-Family	3.8	15.3	58
R-14	Multi-Family	9.9	15.4	152
R-15	Multi-Family	28.3	17.7	500
Sub-Total		305.1	7.2	2,201

NON-RESIDENTIAL

PARCEL NO	LAND USE	ACRES
EP-1	Employment Park	71.1
EP-2	Employment Park	13.4
CF-1	Community Facility	1.6
CF-2	Community Facility	4.0
P-1	Neighborhood Park	5.6
P-2	Neighborhood Park	18.1
P-3	Community Park	34.0
S-1	School	12.8
OS-1	Open Space	20.4
OS-2	Open Space	21.9
OS-3	Open Space	7.4
OS-4	Open Space	13.7
OS-5	Open Space	75.5
OS-6	Open Space	4.2
OS-7	Open Space	129.5
	Major Circulation	72.5
Sub-Total		503.5



SOURCE: Cinti and Associates, 1987

SPA-I Site Utilization Plan

FIGURE 2-4

areas (SPAs); an amendment to the ERDR Specific Plan combined 6 out of the 10 SPAs into the Corcoran Ranch SPA, which covers a total of 1673.4 acres. An Environmental Impact Report was prepared for the Corcoran Ranch SPA and adopted by the Chula Vista City Council in March 1985. This 1985 EIR, which incorporated the analysis and conclusions of the 1976 EIR prepared for the original ERDR Specific Plan, comprises the Master EIR for the subject project, the SPA-I Plan. The 1985 Master EIR identified significant unmitigated impacts in two issue areas: biological resources and air quality. Additionally, the EIR analyzed the issues of land use, traffic circulation, fiscal analysis, cultural resources, paleontological resources, geology/soils, hydrology/water quality, landform/aesthetics, noise, schools, parks/recreation/open space, water service, sewer service, solid waste disposal, fire protection, police protection, energy consumption/conservation, and socioeconomics. No significant impacts were identified in the issue areas of land use, fiscal analysis, water service, sewer service, solid waste disposal, fire protection, police protection, energy consumption and conservation, and socioeconomics. Potential impacts to the issue areas of traffic circulation, cultural resources, paleontological resources, geology/soils, hydrology/water quality, landform/aesthetics, noise, schools, and parks/recreation/open space - would be mitigated to a level of insignificance by the implementation of mitigation measures proposed in the 1985 Master EIR. These proposed mitigation measures are summarized below:

Traffic Circulation

- Construction and/or improvement of appropriate roadways to facilitate projected needs associated with traffic volumes, movement, and access.

- Review specific projects individually to determine the required road construction/improvement.

- Participate in the overall monitoring of the adequacy of the circulation system in the eastern Chula Vista area to assure adequacy of service levels given cumulative impacts.

- Submission of a detailed traffic analysis prior to or concurrent with the first SPA submittal, relating particularly to potential impacts at the I-805 and East "H" Street/Telegraph Canyon Road interchanges.

Cultural Resources

- Completion of a testing program for all identified cultural sites, including the generation of subsequent mitigation measures if appropriate.

Paleontological Resources

- Conduct an onsite monitoring program during grading, directed by a qualified paleontologist and delineating additional mitigation measures if appropriate.

Geology/Soils

- Conduct preliminary and final geotechnical investigations utilizing a qualified consultant and generating additional mitigation measures if appropriate.

- Designate appropriate portions of the La Nacion fault zone as park and open space.

Hydrology/Water Quality

- Construct, modify, and maintain appropriate drainage improvement and control facilities to provide adequate onsite drainage and insure against significant downstream effects.

- Implement appropriate measures in Rice Canyon to control erosion and preclude off-road vehicle use.

Landform/Aesthetics

- Retain appropriate open space areas and provide sufficient landscaping to preserve a significant portion of the existing landscape character and reduce visual impacts.

- Comply with pertinent Scenic Highway Standards.

- Comply with appropriate standards and recommendations regarding grading, signing, lighting, fencing, architecture, and design concepts.

Noise

- Conduct a detailed acoustical analysis prior to submittal of each sectional development plan. These investigations should provide adequate mitigation measures to insure compliance with the City of Chula Vista's noise standards.

- Provide adequate noise buffers for appropriate residential areas.

- Review architectural plans to ensure maintenance of adequate interior noise levels.

Schools

- Provide adequate school sites within the Rancho del Rey community, and obtain a signed agreement with the appropriate school districts regarding the implementation and financing of those sites.

Parks, Recreation, and Open Space

- Provide adequate parkland and open space areas to meet City of Chula Vista requirements.

An addendum to the 1985 Master EIR addressed the reduced environmental impacts of a revised site plan. The most noteworthy revisions were reconfiguring and increasing the amount of natural open space on the site, reducing the number of proposed dwelling units, decreasing the employment park acreage, and altering the onsite circulation network. The Master EIR, the addendum and the public record are hereby incorporated by reference into this EIR.

The proposed SPA-I Plan serves as a bridge between the ERDR Specific Plan and the tentative maps submitted for the project site. This EIR will assess the compliance of the tentative maps with the SPA-I Plan and the ERDR Specific Plan, and the compliance of the SPA-I Plan with the amended ERDR Specific Plan, address the potential impacts of the SPA-I Plan and tentative maps, and propose mitigation measures. As such, this EIR is supplemental to the Master EIR and, upon its adoption, will become a part of the Master EIR.

C. PROJECT CHARACTERISTICS

The proposed project involves a SPA Plan and tentative maps for an 808.6-acre site, the first of four SPAs in the El Rancho del Rey Specific Plan Amendment area. The Rancho del Rey SPA-I Plan proposes the construction of 2201 residential units of mixed densities and types; one employment park parcel totalling 84.5 acres; 2 community facility parcels totalling 5.6 acres; 2 neighborhood parks totalling 21.7 acres; a 34.0-acre community park; a 12.6-acre school site; and 7 open space parcels totalling 272.6 acres (Table 2-1). The site utilization plan (Figure 2-4) illustrates the layout of the parcels. Estate and lower density single-family homes are located on the northern ridge of Rice Canyon, while the majority of small lot detached and duplex units are located on the ridge south of Rice Canyon. Higher density residential parcels are located in the eastern portion of the project site; two of these parcels, which contain the majority of the higher density units, are located adjacent to East "H" Street for good traffic access. The higher density parcels are also located near the majority of the proposed community facilities, including the elementary school site, the library, two of the parks, and the fire station site.

Table 2-1

RANCHO DEL REY SPA I
SITE UTILIZATION PLAN TABULATION

Parcel	Land Use	Acres	Density (du/acre)	Units
R-1	SFD - Estate	19.3	1.7	33
R-2	SFD - Estate	15.0	2.0	30
R-3	SFD - Conventional	59.8	4.2	251
R-4	SFD - Conventional	6.6	5.0	33
R-5	SFD - Cottage	15.8	5.7	90
R-6	SFD - Cottage	9.5	5.2	49
R-7	SFD - Cottage	21.5	5.4	116
R-8	SFD - Cottage	16.3	5.3	87
R-9	SFD - Cottage	12.2	6.1	75
R-10	SFD - Cottage	32.9	6.6	218
R-11	SFA - Duplex	33.6	7.3	244
R-12	SFA - Townhouse	15.0	12.0	180
R-13	Multi-Family	9.4	15.2	143
R-14	Multi-Family	9.9	15.4	152
R-15	Multi-Family	28.3	17.7	500
Residential Subtotal		305.1	7.2	2,201
EP-1	Employment Park	71.1		
EP-2	Employment Park	13.4		
CF-1	Community Facility	1.6		
CF-2	Community Facility	4.0		
P-1	Neighborhood Park	5.6		
P-2	Neighborhood Park	16.1		
P-3	Community Park	34.0		
S-1	School Site	12.6		
OS-1	Open Space	20.4		
OS-2	Open Space	21.9		
OS-3	Open Space	7.4		
OS-4	Open Space	13.7		
OS-5	Open Space	75.5		
OS-6	Open Space	4.2		
OS-7	Open Space	129.5		
Non-residential Subtotal		431.0		
Major Circulation		72.5		
TOTALS		808.6	2.7	2,201

SFD - single-family dwelling
SFA - single-family attached
du - dwelling unit

Source: Cinti and Associates, 1987.

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The employment park is proposed to be located adjacent to East "H" Street, for ease of access. The small EP-2 parcels on either side of the two outer entry roads would be permitted to include limited retail commercial and service commercial uses.

Open space is proposed for the main (northern) and central legs of Rice Canyon, the slope areas along Otay Lakes Road, and the tributaries of Rice Canyon in the easterly portion of the site. These open space areas would include equestrian and hiking trails.

The Density Transfer Map (Figure 2-5) illustrates the proposed density transfers; the concept of density transfers is addressed under the El Rancho del Rey Specific Plan. The map compares the number of units allowed under a comparable area of the ERDR Adminstrative Plan to the number of units proposed by the SPA-Plan. Density transfer data are summarized in Table 2-2: no transfers are proposed in the estate residential (0-2 du/ac) category; 22 units are proposed to be transferred into the 2-4 du/ac category; 120 units are proposed to be transferred between the 4-6 du/ac and the 6-8 du/ac categories; and 276 units are proposed to be transferred between the 8-12 du/ac and the 12-20 du/ac categories. All transfers would be within the SPA-I Plan area; no transfers to future SPAs are proposed.

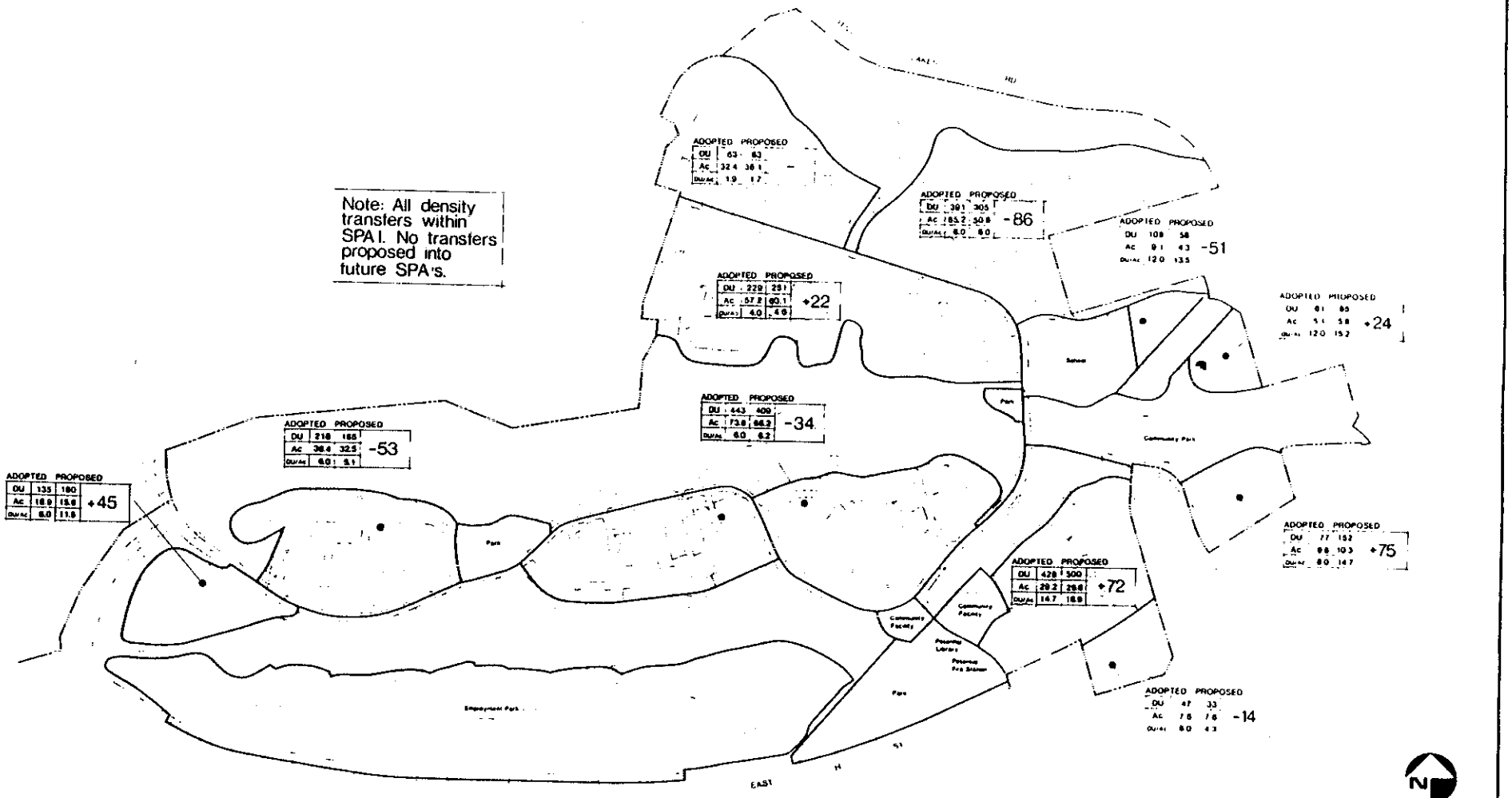
Access to Rancho del Rey would be gained via East "H" Street or Otay Lakes Road, which traverse the southern and northeastern portions of the project site, respectively. The project's internal street system is proposed to be centered around a loop road, with four main access points to this road from East "H" Street and Otay Lakes Road. Additionally, a collector road with three entrance points is proposed to provide access to the industrial area from East "H" Street. The westernmost connector street between East "H" Street and the loop road, or Road B (Figure 4-F-1), was realigned as part of the SPA-I Plan. This entailed moving the proposed location of Road B from the southeast to the northwest side of the adjacent knoll, with the road then terminating at the south wall of the Rice Canyon main (northern) leg. This realignment reflects both project design and traffic engineering concerns, including City requirements regarding the distance between signalized intersections.

Table 2-2

DENSITY TRANSFER DATA

Specific Plan Category	Units-Specific Plan	Units-SPA Plan	Units Transferred
0-2 du/ac*	63	63	0
2-4 du/ac	229	251	22
4-6 du/ac	1,099	912	(187)
6-8 du/ac	212	332	120
8-12 du/ac	374	143	(231)
12-20 du/ac	224	500	276
TOTALS	2,201	2,201	0

*du/ac = dwelling unit per acre



SOURCE: Cotti and Associates, 1987

Density Transfer Map

FIGURE 2-5

WESTEC Services, Inc.

The loop road in the center of the development would provide access to the residential areas. A parkway concept, which would include special landscaping treatments and trail provisions, is proposed for this road. One of the streets through the estate lot area is proposed to be private; access would be restricted to residents and their guests, although the streets would be constructed to public street standards.

The SPA-I Plan contains community design guidelines which address grading, landscaping, fencing, signing, lighting, parking, scenic highways, and other specific design considerations. These guidelines and the other proposed development characteristics of the project would be implemented through the development regulations which are also contained in the SPA-I Plan. Finally, the plan proposes a public facilities financing plan which analyzes Rancho del Rey facility needs, estimates the costs of providing these facilities, and proposes phased provision of these facilities through a range of alternative financing methods.

SECTION 3
ENVIRONMENTAL SETTING

The 808.6-acre Rancho del Rey SPA-I planning area is located in the City of Chula Vista, east of Interstate 805. As discussed in the project description, the site is the first of four SPA plans in the El Rancho del Rey amendment area to be developed (Figure 2-1); although the El Rancho del Rey amendment area is largely undeveloped at this time, other development within the City of Chula Vista surrounds the amendment area and the SPA-I Plan area.

The topography of the project site consists primarily of east-west trending ridges with side slopes consisting of a 15 to 30 percent gradient and intervening valleys. The primary topographic features within the SPA-I Plan are the main (northern) and central legs of Rice Canyon. This canyon is the primary drainageway on the project site and contains sensitive biological resources.

Vegetation on the project site consists primarily of native scrub plant communities. Sensitive plant species have been identified in the canyon areas of the project site; additionally, two sensitive bird species have been recorded on the site. Although no structures currently exist on the site, several dirt roads, an SDG&E power easement with its associated transmission towers, and an additional transmission line traverse the site.

The SPA-I Plan area is surrounded on the north and east by development along Otay Lakes Road, which consists primarily of residential areas. Bonita Vista Junior High and High Schools are located along the west and east sides of Otay Lakes Road, respectively, on the project site's eastern boundary. South of East "H" Street between Interstate 805 and Otay Lakes Road, development consists of single- and multi-family residential projects of varying densities. The area immediately west of the project site is a newly developed single-family residential area. Along the north side of East "H" Street, surrounded by the project site, are newly developed multi-family residential areas. The primary commercial areas in the vicinity of the project site are the Terra Nova Shopping Center at East "H" Street and Hidden Vista Road immediately southwest of the site and the shopping area along Bonita Road, to the northwest of the site.

Prior environmental analysis on the project site and in the vicinity is discussed in Section 2.2: Planning History. The analyses prepared for the El Rancho del Rey Specific Plan Amendment Area (which includes the Rancho del Rey SPA-I Plan area) identified significant impacts in the areas of biological resources and air quality. The SPA-I Plan EIR, together with the 1985 Master EIR, provide an assessment of the probable environmental impacts of the proposed project and mitigation measures to reduce or eliminate impacts.

SECTION 4
IMPACT ANALYSIS

A. LAND USE

A.1 Existing Conditions

Onsite and Surrounding Land Uses

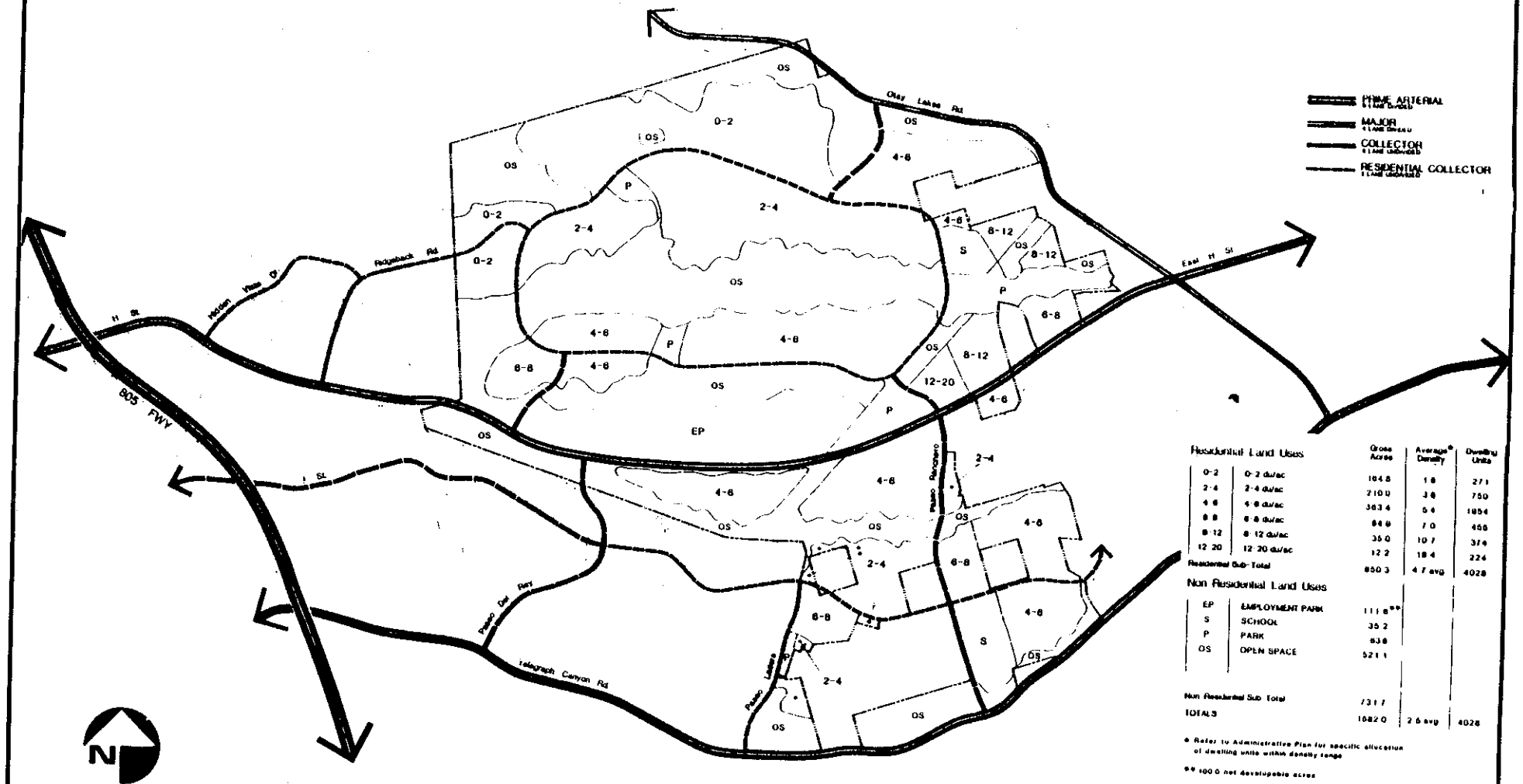
The project site is currently undeveloped, with the exception of several dirt roads, a transmission corridor with overhead lines, and an additional overhead line which traverse the site. The site is generally bounded on the south by East "H" Street and on the northeast by Otay Lakes Road. Interstate 805 lies approximately one-half mile west of the site.

Land to the west, north, and east of the site is currently developed, primarily for residential uses. On the west and east sides of Otay Lakes Road, respectively, Bonita Junior High and High Schools are located. Land immediately south of the site is undeveloped; this land is part of the SPA-IV planning area which is planned for future residential development.

Land Use Policies

El Rancho del Rey Specific Plan - The Chula Vista General Plan designates the Rancho del Rey project site as an area governed by the policies of the El Rancho del Rey Specific Plan. The objective of the Specific Plan is to implement the goals and policies of the General Plan as they relate to the Specific Plan area. The Specific Plan consists of a text, a Specific Plan Map, and an Administrative Plan Map. The text describes the Specific Plan components, including guidelines and processes for its implementation. The Specific Plan Map (Figure 4-A-1) indicates the land use designation and corresponding density classification for each parcel in the Plan area. The Administrative Plan assigns a specific number of units to each residential parcel based on the parcel's size and density classification. One of the provisions of the Administrative Plan is to allow for density transfers between residential parcels within each SPA area and between the SPA areas.

PROPOSED SPECIFIC PLAN
GERSTEN AMENDMENT AREA



Residential Land Uses		Gross Acres	Average* Density	Dwelling Units
0-2	0-2 du/ac	164.8	1.6	271
2-4	2-4 du/ac	210.0	3.6	750
4-6	4-6 du/ac	363.4	5.4	1954
6-8	6-8 du/ac	64.9	7.0	455
8-12	8-12 du/ac	35.0	10.7	374
12-20	12-20 du/ac	12.2	18.4	224
Residential Sub-Total		850.3	4.7 avg	4028

Non Residential Land Uses		
EP	EMPLOYMENT PARK	111.6**
S	SCHOOL	35.2
P	PARK	83.8
OS	OPEN SPACE	521.1
Non Residential Sub Total		731.7
TOTALS		1582.0

	2.6 avg	4028

* Refer to Administrative Plan for specific allocation of dwelling units within density range

** 100.0 net developable acres

Specific Plan Map

FIGURE 4-A-1

The Specific Plan includes generalized guidelines which will be refined by each of the four SPA plans within the Specific Plan area and further refined with each tentative map. In the process of refining the plans, each SPA plan is compared to the Specific Plan which preceded it to ensure that the components of the SPA plan (i.e., the general development plan, the site utilization plan, and the development regulations) are consistent with the general goals and guidelines presented in the Specific Plan. The approved land uses from the El Rancho del Rey Specific Plan (as amended March 1985) are compared with the proposed land uses of the Rancho del Rey SPA-I Plan in Table 4-A-1.

Zoning - The zoning of the Rancho del Rey SPA-I Plan area is PC — Planned Community. The purpose of the Planned Community zone is to promote long-range planning and orderly development of large parcels of land which may contain a variety of land uses but which are under unified ownership or control. With this purpose in mind, the Planned Community zone allows for development under a Specific Plan. In essence, then, the land uses designated in the approved Specific Plan (Figure 3-1) constitute the allowable land uses in the Rancho del Rey SPA-I Plan area.

Land to the southwest and west of the SPA-I Plan area is zoned PC; land adjacent to the northern boundary is zoned RE-P (Residential Estate, requiring a Precise Plan for development). All of these lands are developed with residential land uses of varying densities. Land to the east of Otay Lakes Road, northeast of the project site, is zoned R 1-15 and PC (Planned Community). Land to the southeast of the site is zoned R-1, single-family residential.

A.2 Impacts

The area within the El Rancho del Rey Specific Plan area addressed by the Rancho del Rey SPA-I Plan is illustrated in Figure 2-2. The residential and employment park land uses proposed by the SPA-I Plan are compatible with existing and planned residential land uses in the vicinity of the Plan area.

Table 4-A-1

RANCHO DEL REY SPA I
SPECIFIC PLAN VERSUS GENERAL DEVELOPMENT PLAN CONSISTENCY

Adopted Specific Plan			General Development Plan		
Density	Character Description	Units Permitted	Product	Units Proposed	Units Transferred
0-2	Single Family Estate Lots	63	Single Family Estate Lots	63	0
2-4	Single Family Detached	229	Single Family Conventional (5,000 sf lots)	284	+55
4-6	Small lot single family, zero lot line patio homes, duplexes, multiplexes, clustered development	1,099	Single Family Cottage (small lot) and Duplexes	879	-220
6-8	Townhomes, patio homes duplexes, multiplexes, condominiums, clustered	212	Townhouses	180	-32
8-12	Similar to 6-8 with group with group parking and stacked units	374	Multi-family (stacked units with group parking)	295	-79
12-20	Stacked condominiums garden apartments	224	Multi-family (stacked units with group parking	500	+276
TOTALS		2,201		2,201	0

Source: Cinti and Associates

Within the proposed SPA-I Plan area, land uses have been configured to minimize land use conflicts. Low density residential areas are located along the northern portion of the loop road with moderate density residences clustered along the southern portion of the road. The highest density residential areas are located along East "H" Street for easy access to this major roadway. Open space canyon areas are accessible from all residential areas while the community facility, school, and park sites are clustered at the east end of the loop road, near the multi-family residential areas. The employment park is located along East "H" Street, buffered from the residential areas by open space and park lands.

A comparison of designated residential land uses for the project site (from the Administrative Plan) and the land uses proposed in the SPA-I Plan is presented in Table 4-A-1. The adopted Administrative Plan permits 2201 residential units in six density categories; the SPA-I general development plan proposed 2201 residential units using the same categories. The differences between the Administrative Plan and the SPA Plan include: an increase in the number of residential units in the density categories of 2-4 and 12-20 units per acre (i.e., single-family detached and multi-family stacked residential types, respectively); and a decrease in the number of residential units in the density categories of 4-6, 6-8, and 8-12 units per acre (i.e., small lot single-family and duplex, townhouses, and multi-family stacked residential types, respectively). In summary, the SPA Plan proposes the same number of residential units that are allowed in the adopted Administrative Plan.

A comparison of the SPA-I general development plan and the approved Specific Plan Map indicates that the approved and proposed configurations and land uses of most of the parcels are very similar. The changes proposed by the SPA-I Plan include: the addition of a park on the southern portion of the loop road (between the two residential parcels); the addition of one community facility and school site in the eastern portion of the Plan area; a realignment of the southern portion of the loop road to follow the edge of the single-family residential area and to allow more views of the open space from the roadway; increases in density in the residential parcels R-3, R-13a, R12, R-14, and R-15; and decreases in density in residential parcels R-4 through R-11, and

R-13b (see Figure 2-4 and 2-5 for residential parcel numbers and proposed density changes).

A.3 Mitigation Measures

The proposed SPA-I Plan is compatible with existing and planned land uses in the vicinity, is internally compatible, and is consistent with land use policies and plans of the City of Chula Vista including the Specific Plan. Implementation of the SPA-I Plan would result in no land use impacts, and no mitigation measures would be required.

Mitigation measures to reduce potential impacts related to landform/aesthetics, biological resources, traffic circulation and access, noise, parks/recreation/open space, and public facilities and services are discussed in Sections 4.B, 4.C, 4.F, 4.H, 4.I, and 4.J, respectively.

A.4 Analysis of Significance

Because of the compatibility of the proposed SPA-I Plan and the existing and planned land uses in the vicinity of the Plan area, and because of the internal land use compatibility of the SPA-I Plan, no adverse land use impacts are expected to occur with the implementation of the SPA-I Plan.

A comparison of the proposed tentative map studies with the SPA-I Plan indicates that the studies conform with the Plan in terms of proposed grading and land use/lot configuration. Guidelines regarding design and land use compatibility will be evaluated by the Design Review Committee; therefore, no significant land use impacts are expected to result from project implementation.

Because of the compatibility between the approved El Rancho del Rey Administrative Plan and Specific Plan Map and the proposed Rancho del Rey SPA-I Plan and tentative map studies, no potentially significant adverse impacts to the land use policies of the City of Chula Vista are expected to occur as a result of implementation of the project as proposed.

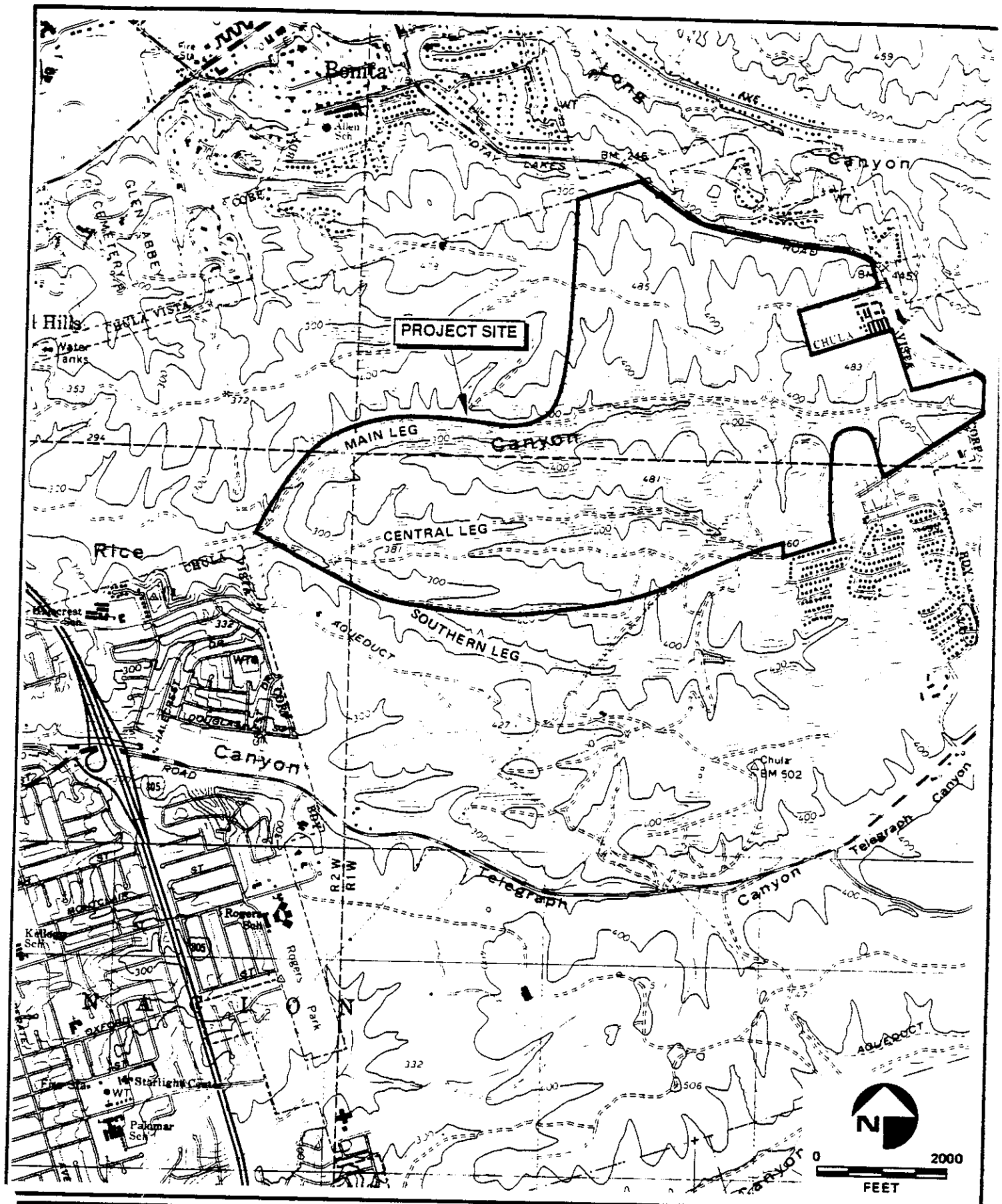
B. LANDFORM/AESTHETICS

B.1 Existing Conditions

Topography on the project site is highly diverse, comprised of a series of east-west trending, narrow canyons and intervening ridges. The southerly two-thirds of the site consists of the two canyons and accompanying ridges while the northerly third of the site consists of irregularly shaped mesa tops generally running in the east-west direction, often cut by smaller finger canyons on the north and south (Figure 4-B-1). The main (northern) leg of Rice Canyon is the largest canyon onsite and extends from the far western site boundary to the eastern boundary through the central portion of the site. Another smaller east-west trending canyon is the central leg of Rice Canyon, which traverses the southern portion of the site. Onsite ridges are gently to steeply sloping with a 15 to 30 percent gradient.

Elevations on the project site range from 200 feet above mean sea level (MSL) at the canyon floor in the far western portion of the site to 490 feet MSL on the mesa tops in the northeastern portion of the site. The primary onsite drainageway is the main leg of Rice Canyon where an ephemeral stream traverses the canyon floor. Increases in impervious surfaces associated with development upstream to the east of the project site have caused increased flow through the site and erosion of the stream bank, particularly in the western portion of the Rice Canyon drainageway. The northern portion of the site drains toward Otay Lakes Road.

The southwestern portion of the site, immediately north of the intersection of East "H" Street and Paseo del Rey, has been previously graded in conjunction with the widening of "H" Street and with residential construction on the south side of "H" Street. Besides this graded area, the only onsite development includes a series of dirt roads which traverse the ridgetops and valleys, and two San Diego Gas and Electric (SDG&E) power easements. One of the easements is approximately 250 feet in width and is aligned in a north-east/southwest direction; this easement contains a 138-kV transmission line and an access road. In the future, SDG&E plans to construct two additional



Existing Site Topography (Portions of Imperial Beach and National City 7.5' USGS Quadrangles)

FIGURE 4-B-1

tower lines within this easement which are similar to the existing line, and, possibly, two additional smaller lines. Another easement crosses the western-most portion of the project site and then splits, with one trace running south through the site and the other turning north off the site. A 69 kV transmission line is contained in the portion of this easement which runs east-west and turns north off the project site, while the south trending segment is currently undeveloped. All portions of this easement are approximately 20 feet wide. Finally, geological testing performed in conjunction with the proposed project has resulted in backhoe excavation marks on a few hillsides onsite.

The most sensitive viewers of the site are the residents whose homes face the site and motorists on East "H" Street, Paseo del Rey, and Buena Vista Way. Residences along the edges of the developments which face the Rancho del Rey project site have an unobstructed view of the site. Views of the site from major roadways in the project vicinity (East "H" Street and Otay Lakes Road) are limited due to the location of these roadways in valleys. Motorists travelling along Otay Lakes Road and East "H" Street primarily have lateral views of the project site, however, while motorists approaching the site from the west along East "H" Street and northbound motorists approaching East "H" Street along Paseo del Rey and Buena Vista Way have unobstructed views of the southern portion of the site.

Due to the highly irregular onsite topography, views from almost all areas of the project site, with the exception of ridgetops and outside slopes, are confined within the project area. Likewise, views from outside the project site are confined to slopes near the site boundaries and to certain ridgetops. Higher elevations along onsite ridges offer sweeping long-range views of the Pacific Ocean, Point Loma, downtown San Diego, mountain ranges to the east, and Mexico to the south. Short-range views of surrounding residential areas are available from high points on the site in all directions.

Both Otay Lakes Road and East "H" Street are designated as potential Scenic Highways in the Chula Vista Scenic Highway Element (1974). This designation mandates special consideration of the aesthetic quality of any development visible from these roadways. Scenic highway policies address design review,

beautification of scenic routes, landscaping and maintenance requirements. To implement the policies, the Scenic Highway Element recommends that developers create "pleasing streetscapes through landscaping techniques and varied building setbacks," or create "substantial open space areas adjacent to scenic routes" through the use of clustering or other innovative site design concepts.

Design policies pertinent to the visual quality of proposed development on the project site are those contained within the El Rancho del Rey Specific Plan (Cinti and Associates 1985). The plan recognizes that substantial grading will be necessary due to the site topography, but encourages that such grading remain sensitive to the natural environment, minimizing the exposure of manufactured slopes. The plan also considers the north leg of Rice Canyon as public open space to be preserved virtually in its entirety. The applicable design guidelines from the El Rancho del Rey Specific Plan include:

- Grading Standards: Grading within this Specific Plan shall be subject to Chapter 15.04 — Excavation, Grading and Fills — of the Municipal Code.

- Grading Design: It is the intent of this Specific Plan that graded areas will be contoured to blend with natural landform characteristics. Rounding both vertical and horizontal intersections of graded planes, obscuring slope drainage structures with a variety of plant material massing, incorporating the use of variable slope ratios for larger slope banks, use of landscape planting for erosion control and to obscure man-made banks, architectural solutions to topographic changes, and other similar techniques should be used. Artificially appearing slope banks with rigid angular characteristics shall not be permitted.

- Grading Policies: General policies with regard to development within the El Rancho del Rey Specific Plan area are as follows:

  a. Visually significant slope banks should be preserved in their natural state by clustering development.

b. The natural character of the hillsides should be retained where practical.

c. A variety of housing, padding techniques, grading techniques, lot sizes, site design, density, arrangement, and spacing of homes and developments should be encouraged.

d. Innovative architectural, landscaping, circulation, and site design should be encouraged.

e. Safety against unstable slopes or slopes subject to erosion and deterioration should be provided.

f. Grading may be accomplished beyond the boundaries of an approved SPA plan where necessary to implement the SPA plan uses or infrastructure facilities.

Additionally, the findings adopted along with the El Rancho del Rey Specific Plan acknowledge that development of the project site under the adopted Specific Plan will require substantial landform alteration, including cutting of the ridge areas and filling of the lower elevations, (including tributary canyons). Identified concerns in the findings are the preservation of the north leg of Rice Canyon as ungraded, undeveloped open space and the potential for impacts to designated scenic highways. The following findings relate to the implementation of SPA-I:

a. The proposed Specific Plan amendment retains the natural condition of the north leg of Rice Canyon by designating it for open space uses.

b. Open space is designated for the land adjacent to Otay Lakes Road which is recognized by the Scenic Highway Element of the Chula Vista General Plan.

c. East "H" Street, a designated scenic highway, has development proposed adjacent to it under both the adopted and proposed plans.

Development in these areas would be subject to Scenic Highway standards, which would minimize the potential for adverse effects.

d. The Sectional Planning Area review will include several plans and/or programs which will effect the aesthetic character of the development including: grading, signing, lighting, fencing, architecture, and design concepts.

e. The proposed Specific Plan contains special grading standards to ensure that all graded areas will blend with natural landform characteristics and will otherwise provide a pleasing visual appearance.

B.2 Impacts

Development of the Rancho del Rey project, as proposed, would significantly alter landform on the site. The conceptual grading plan establishes a main loop road as the primary onsite circulation feature, with two main entrances from East "H" Street, one entrance from Otay Lakes Road, and private drives feeding onto the loop (Figure 4-B-2). The employment park would be situated along East "H" Street at the southern property boundary to provide easy access. Residential development would occur primarily on the north and south ridges adjacent to Rice Canyon and along the mesa tops in the northeast portion of the property in order to take advantage of the onsite views from the higher elevations. Building pads in the employment park would be substantially larger than those in the residential areas. In addition, although some grading would be required along the upper slopes of Rice Canyon, the majority of the northern and central legs would be retained as natural open space. Finally, grading would be required within the canyons to install the proposed onsite sewer system, to stabilize streambanks, and to install wiers (i.e., drop structures) along the stream channels.

Implementation of the grading plan would entail cutting most of the ridge areas onsite, and filling in the lower elevations, including many of the finger canyons. A total of 9,500,000 cubic yards of cut and fill would be required. Proposed grading would include manufactured slopes and areas modified to

SOURCE: Cinti and Associates, 1987

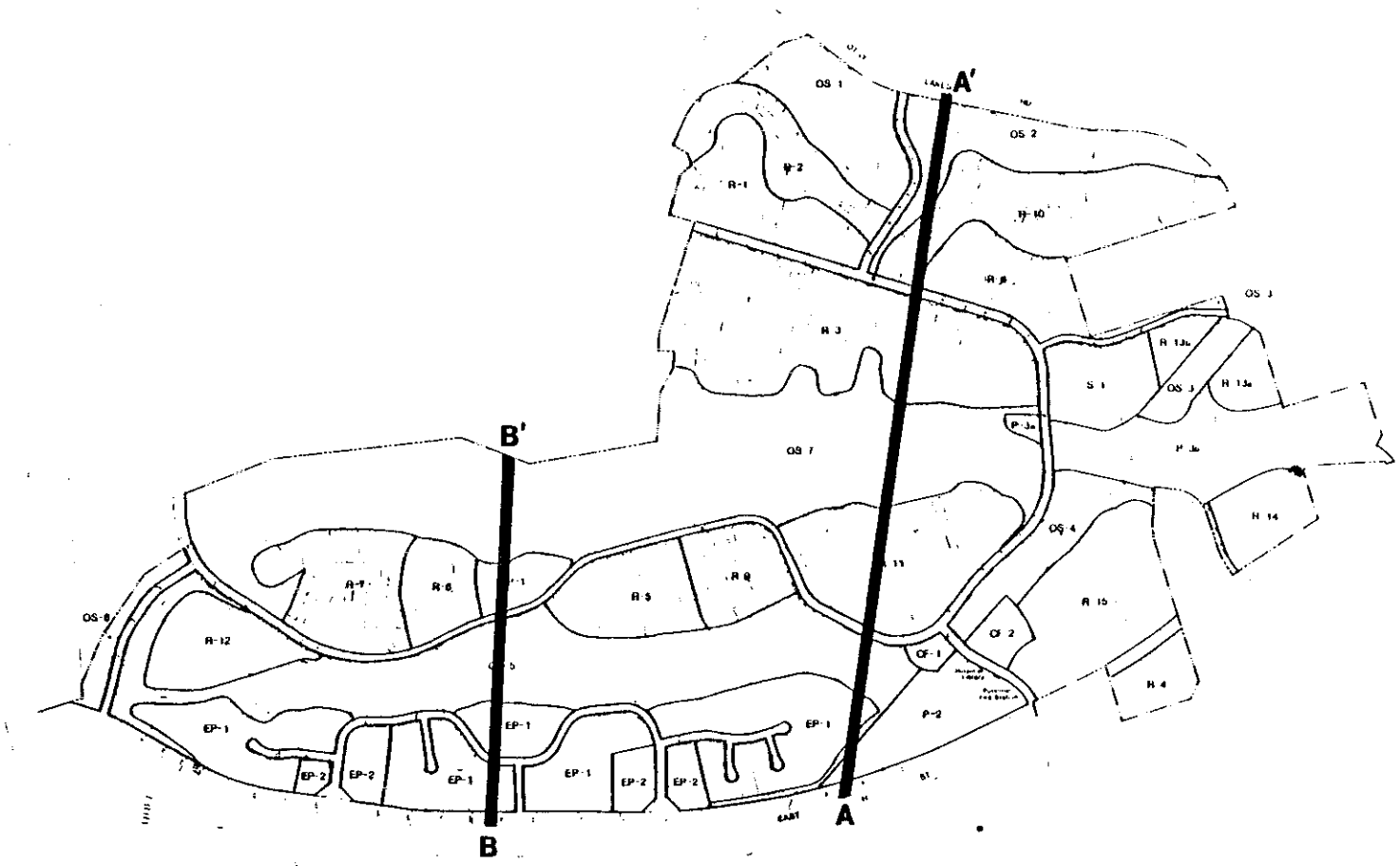
Proposed Conceptual Grading Plan

FIGURE 4-B-2

roughly level surfaces (by both cutting and filling) to accommodate building pads. The maximum cut slope height would be approximately 100 feet; this cut slope would be located along the east side of the B Road connection between East "H" Street and the loop road (Figure 4-F-1). Additional significant proposed cut slopes include slopes of approximately 70 feet in height on the west end of the employment park, 50 feet in height along portions of the north and south public park boundaries, and 40 feet in height in the extreme northeast corner of the SPA-I area (near the boundary of the Sweetwater Union High School District property). Cuts associated with the accommodation of building pads would range up to approximately 50 feet in depth, and are dispersed throughout much of the SPA-I area (Figures 2-4 and 4-B-2).

Significant fill slopes would range from 30 to 130 feet in height, including the following specific slopes: a slope of 130 feet in height along the north side of residential parcel R-2; a slope of 90 feet in height along the south boundary of residential parcels R-6, R-7, and R-12; a slope of 120 feet in height along the north side of residential parcel R-10; a slope of 110 feet in height along the south side of residential parcel R-3; a slope of 70 feet in height along the south side of residential parcels R-5, R-9, and R-11; a slope of 110 feet in height along the northern boundary of residential parcels R-5, R-9, and R-11; a slope of 70 feet in height along the northwest boundary of the employment park; and a slope of 40 feet in height on the east end of residential parcel R-11. Fills associated with the construction of building pads would range as high as approximately 100 feet, although fills of this magnitude are uncommon, with building pad fills of between 0 and 20 feet typical for much of the SPA area (see Figures 2-4 and 4-B-2).

Due to the extent of the proposed grading, the topographic profile of the site would be measurably altered by implementation of the Rancho del Rey SPA-I Plan and tentative maps. Figures 4-B-3 and 4-B-4 illustrate the degree of topographic modification associated with the proposed project. The majority of manufactured slopes (particularly fill slopes) would be located adjacent to open space areas, and would contrast visually with the existing and proposed open space. Many of the larger manufactured slopes would be visible to



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Location of Topographic Cross Sections

FIGURE 4-B-3

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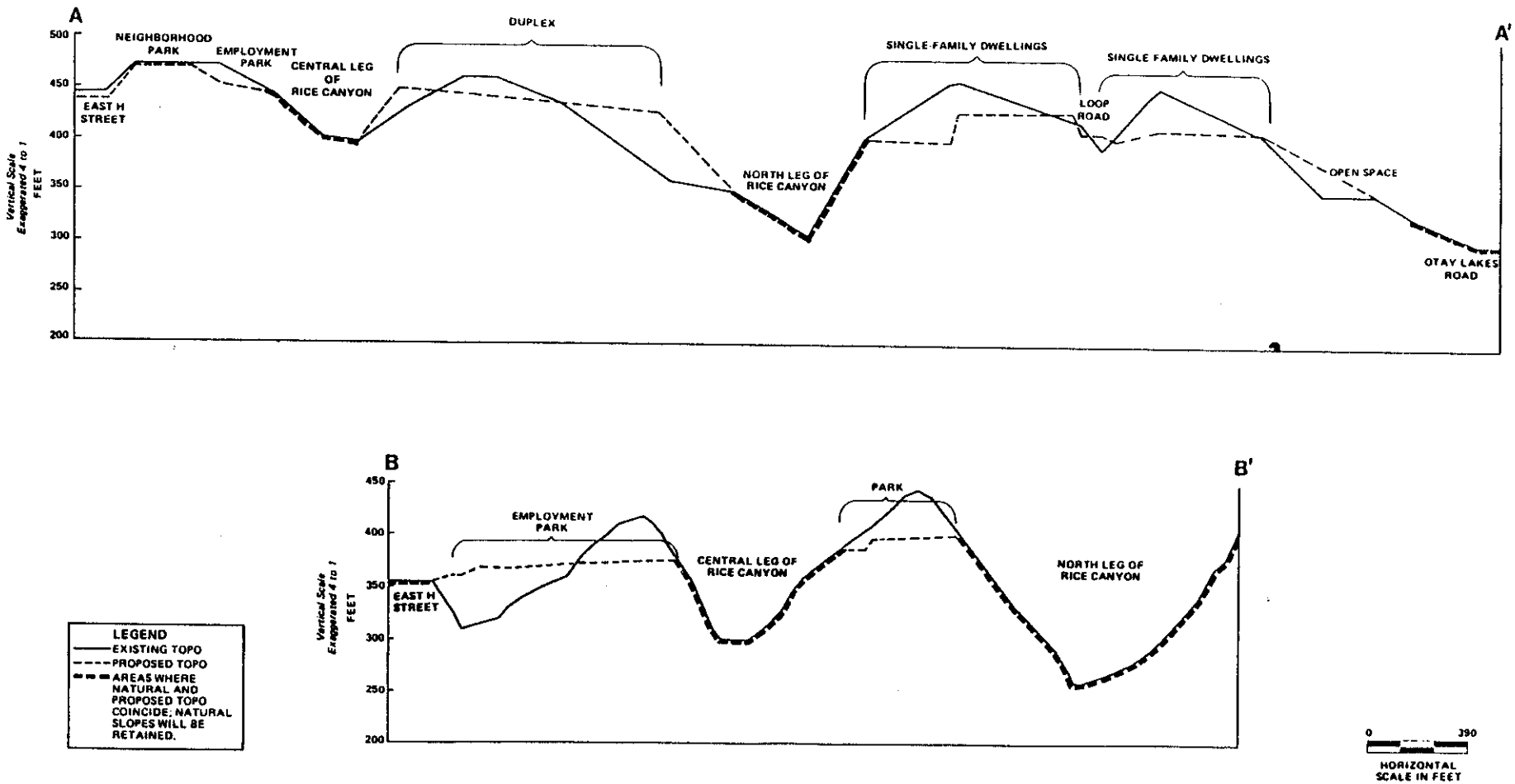


Cross-section of Project Site Topography (Existing and Proposed)

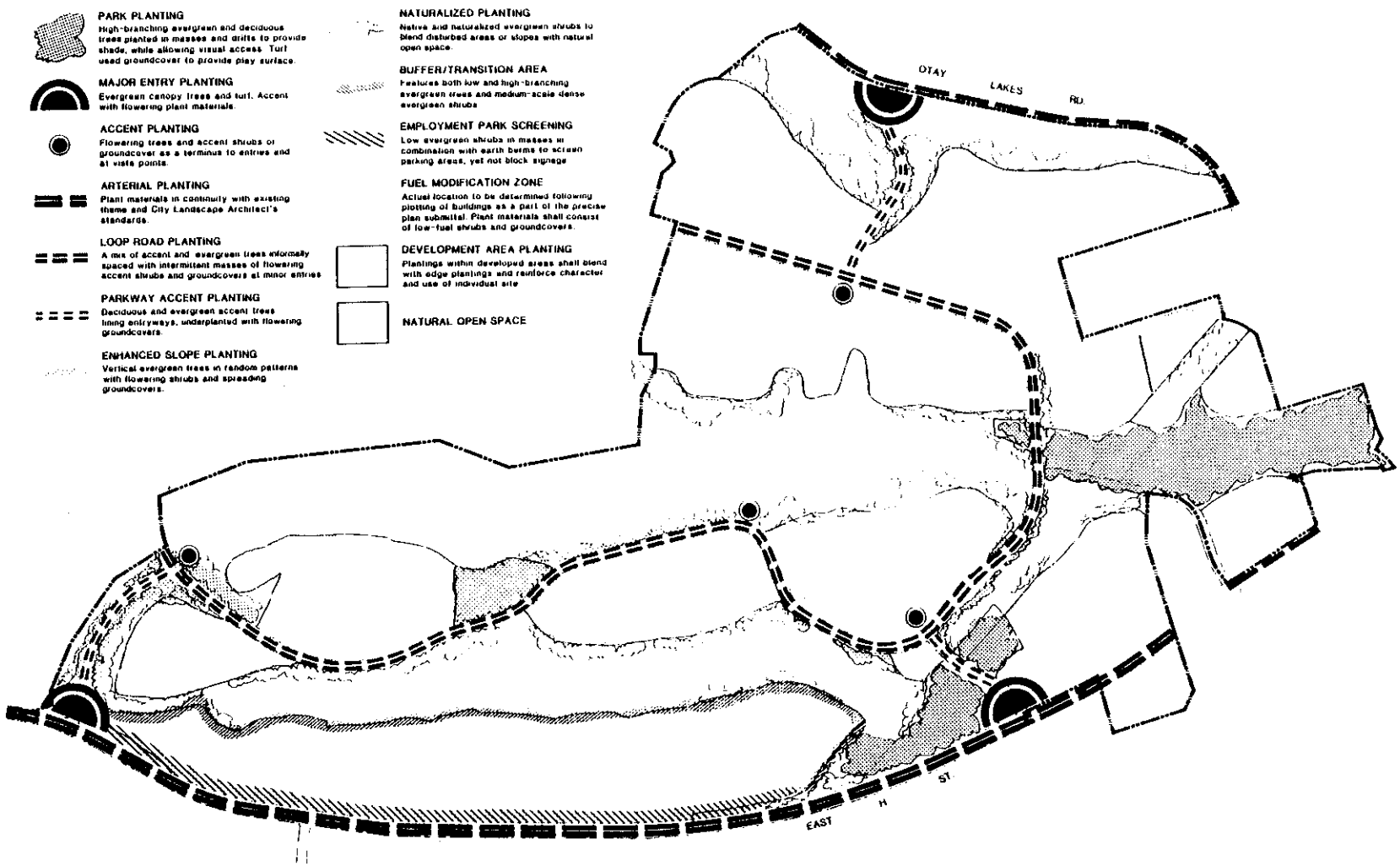
FIGURE 4-B-4

motorists, and from existing residences along Otay Lakes Road and East "H" Street. Additionally, a number of manufactured slopes would be visible from the adjacent high school, adjacent and nearby commercial development along Otay Lakes Road, and residential development located along Ridgeback Road (Figure 4-F-1). Residences situated adjacent to the SDG&E power easement in the western portion of the site would experience visual impacts due to existing SDG&E transmission lines (Figure 2-4). The additional towers and lines proposed by SDG&E would result in an increased adverse visual impact on those residences.

Comprehensive development standards and policies for grading, landscaping, and design have been incorporated into the SPA-I Plan to reduce the significantly adverse landform and visual impacts due to the grading associated with project implementation. These measures are summarized in the following paragraphs.

The proposed landscape plan would provide a buffer and transition zone between land uses, stabilize disturbed areas and slopes, and provide aesthetic accents to entryways and roadways (Figure 4-B-5). Figure 4-B-6 illustrates the use of screening and buffering within the employment park. Landscaping, berms, and pad elevation differences would aid in screening the parking areas of the park from motorists along East "H" Street. In addition, landscaping along the northern side of the employment park would buffer the industrial use from the open space to the north and provide a screen from the residential units sited on the ridge across the canyon. Similar landscaping techniques would be used along the Community Loop Road to buffer and screen the residences from motorists on the loop road (Figure 4-B-7).

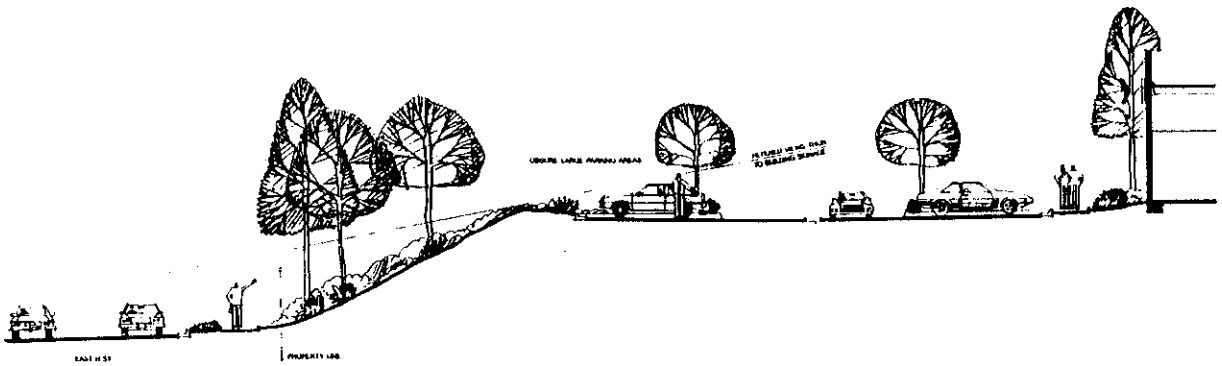
The proposed entryways, included in the proposed community signage program (Figure 4-B-8), include landscaping to provide a transition between major roadways and residential areas (Figure 4-B-9). The proposed fencing plan (Figure 4-B-10) features open fences along open space areas to take advantage of onsite views available, while solid walls throughout the project would buffer the residences from adjacent roadways (Figure 4-B-11).



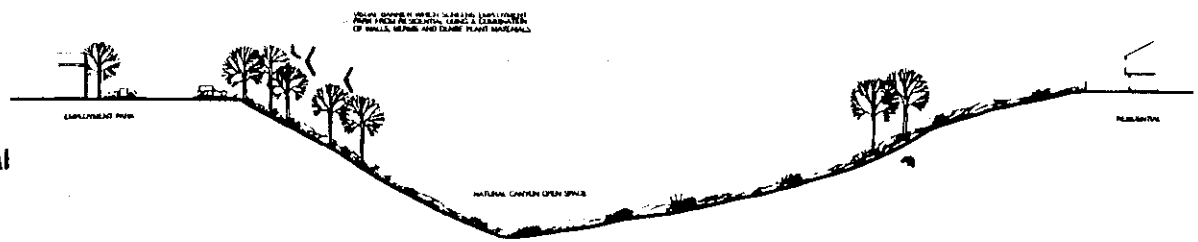
SOURCE: Cinti and Associates, 1987

Proposed Conceptual Landscape Plan

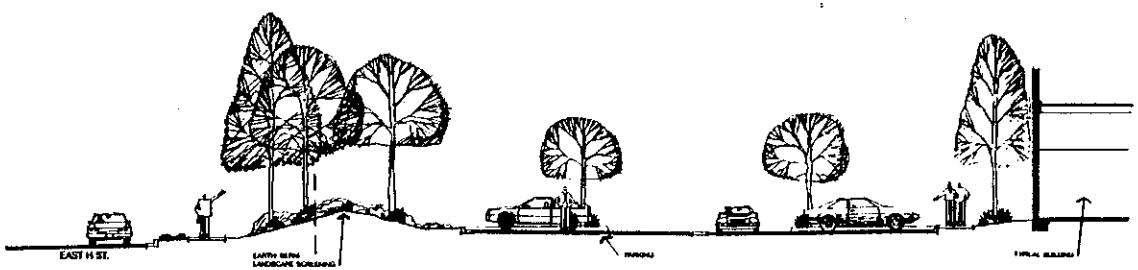
FIGURE
4-B-5



Typical Section at East H St.



Typical Relationship to Residential

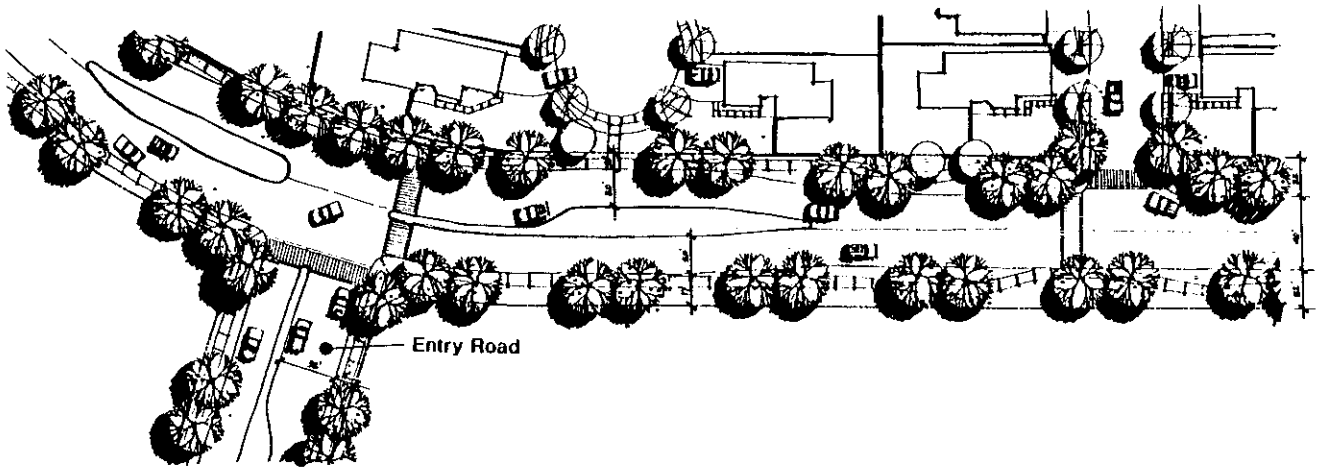


Section at Employment Park Entry

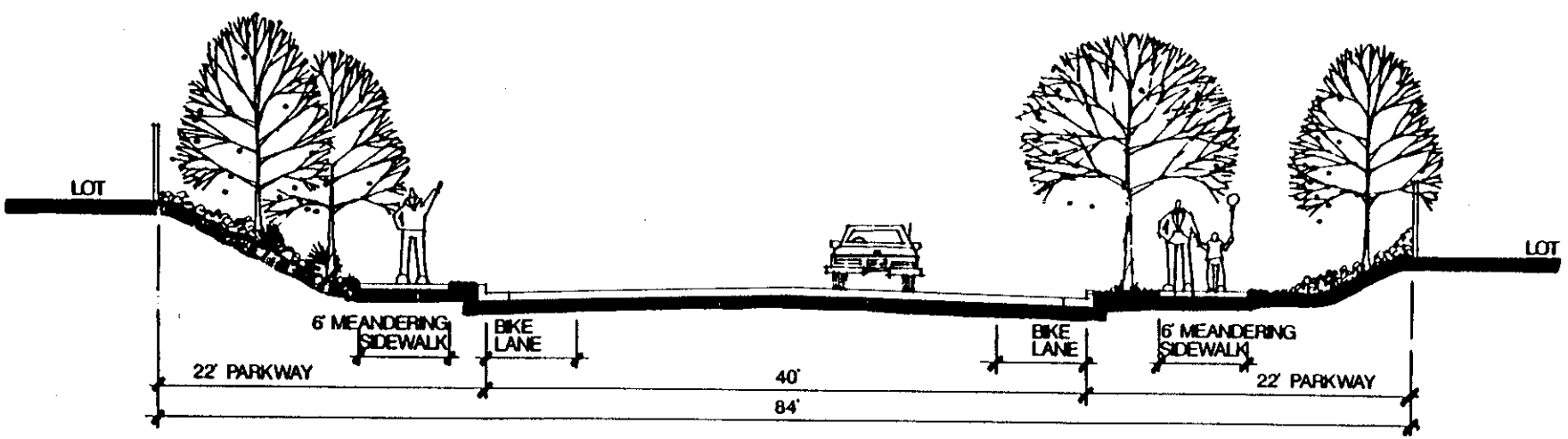
SOURCE: Cinti and Associates, 1986

Proposed Employment Park Sections

FIGURE 4-B-6



Community Loop Road



Community Loop Road Section

SOURCE: Cinti and Associates, 1987

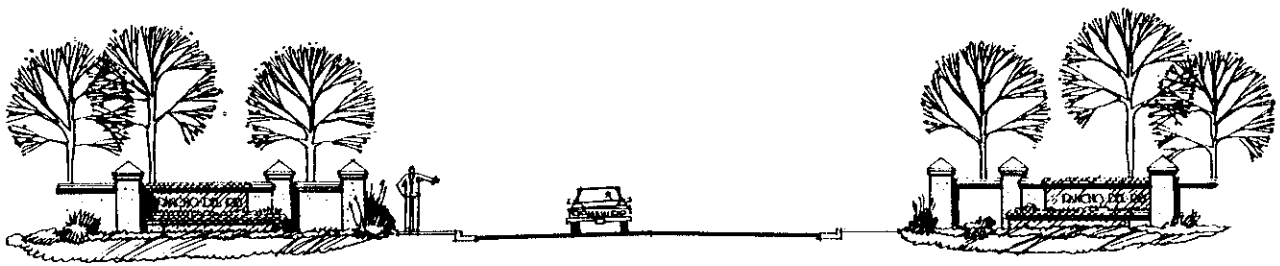
Proposed Roadway Concepts

FIGURE 4-B-7

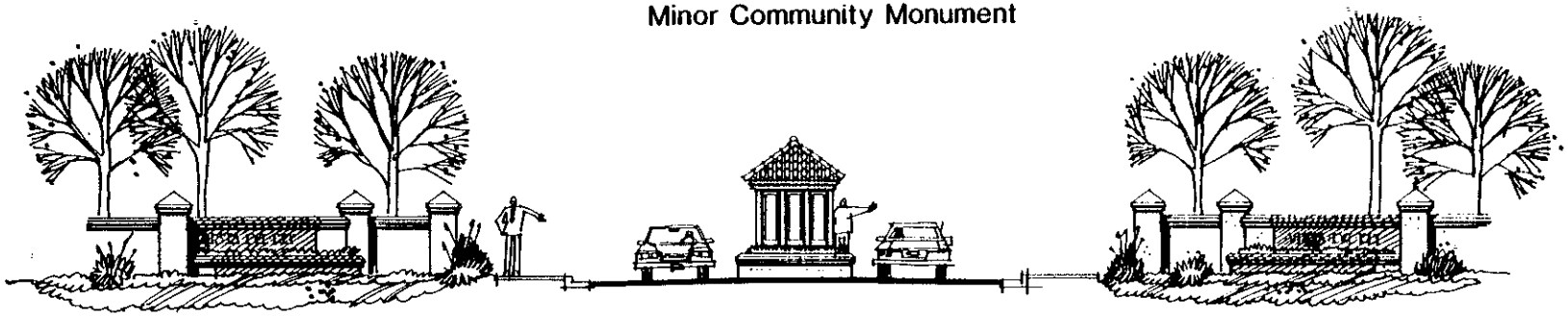
SOURCE: Cinti and Associates, 1987

Proposed Community Signage

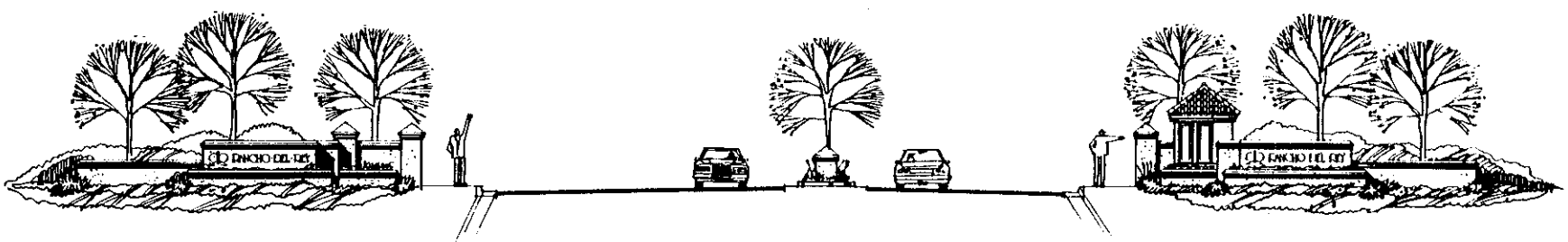
FIGURE 4-B-8



Minor Community Monument



Gate Guarded Entry Monument



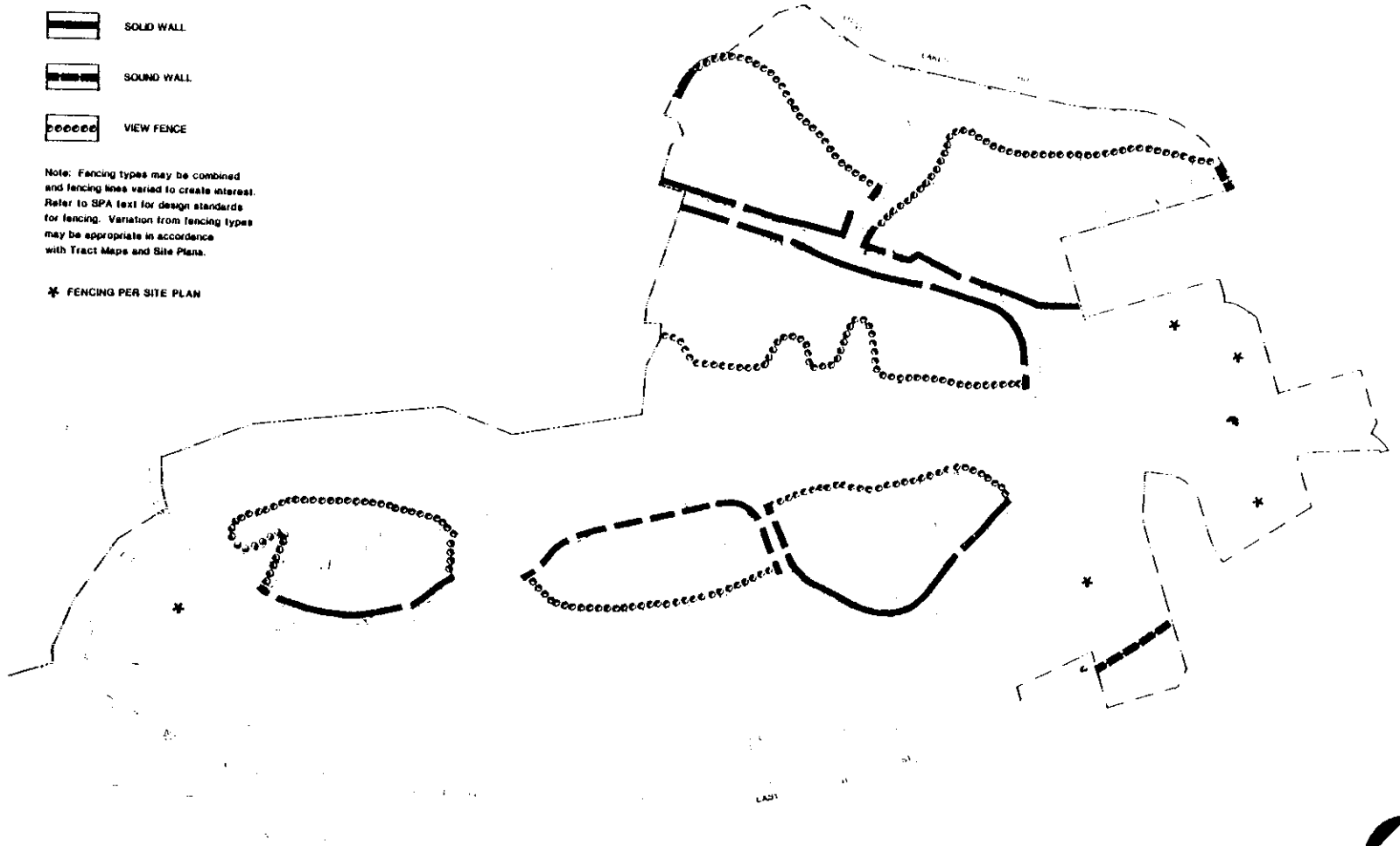
Major Community Monument

Note: Entry designs are intended to illustrate proposed concepts only and not to substitute for future detailed designs.

SOURCE: Cinti and Associates, 1986

Proposed Entry Monumentation

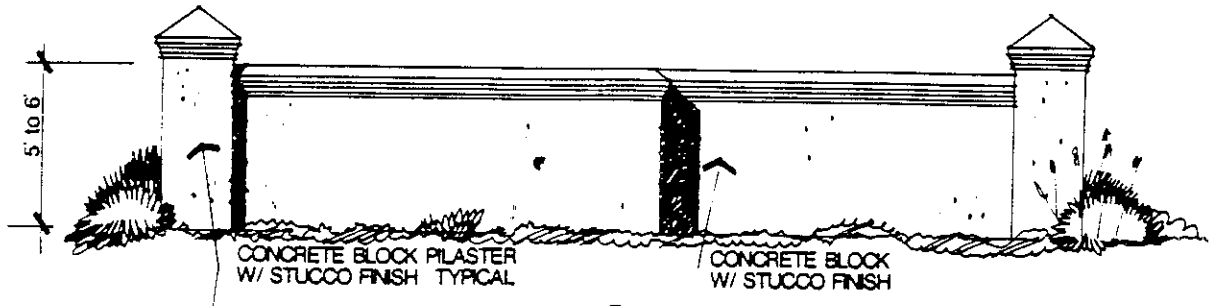
FIGURE 4-B-9



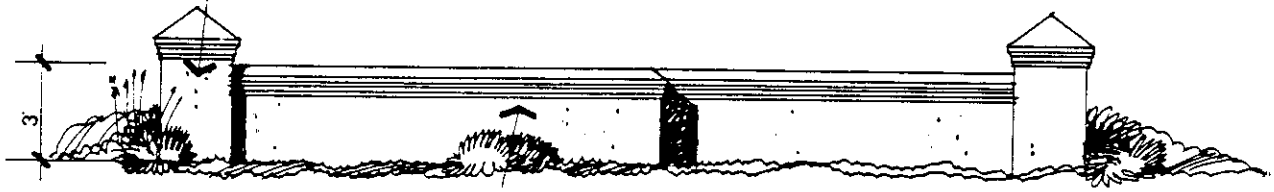
SOURCE: Cinti and Associates, 1987

Proposed Fencing Plan

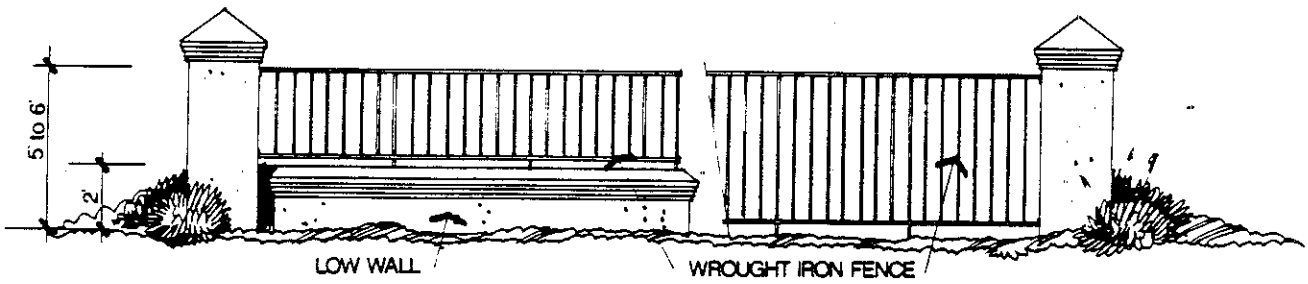
FIGURE 4-B-10



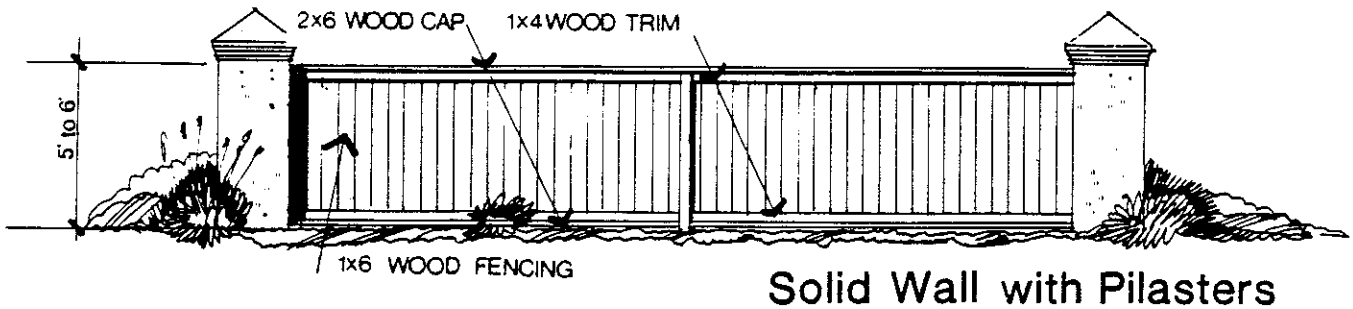
Sound Wall – Noise Mitigation



Low Wall



Open Theme View Wall



Solid Wall with Pilasters

SOURCE: Cinti and Associates, 1986

Proposed Fencing Configurations

FIGURE 4-B-11

As mentioned in Existing Conditions, Otay Lakes Road and East "H" Street are designated Scenic Highways. Therefore, landscaping and site plans for developments adjacent to scenic roadways must be reviewed to insure enhancement of the scenic quality of the highway. In the northern portion of the project site, along Otay Lakes Road, natural plantings adjacent to proposed open space are proposed by the SPA-I Plan to provide a buffer (with a minimum width of 300 feet) between the roadway and the residential areas along the mesa tops. Along East "H" Street, the employment park would feature a screen of low shrubs and earthen berms to obscure any view of the parking areas from this roadway (Figure 4-B-5).

In summary, substantial landform alteration would be required to implement the proposed development, resulting in numerous cut and fill slopes throughout the project site. The primary viewers affected by the landform and aesthetic changes on the project site would be the residents living adjacent to the site who would view the outer slopes of the development. Motorists travelling on Otay Lakes Road and East "H" Street would primarily be affected by the landscape changes within the scenic highway corridor. In addition, long-range views from the site would be altered as the height of existing ridges would be reduced by grading. Finally, views of onsite open space areas would be altered by the proposed grading which would bound most open space areas with large manufactured slopes.

The degree of landform and visual alteration proposed in the SPA-I Plan does not represent a significant deviation from what was outlined in the Specific Plan. In fact, proposed landform alteration in the SPA-I Plan is actually less intensive than that assumed in the analysis for the Specific Plan. The proposed landform alteration for the SPA-I Plan does, however, constitute a substantial modification to the existing topography and visual character of the site. As discussed, development of the proposed Rancho del Rey project would involve a number of highly visible changes, including the alteration of existing topographic features and the creation of large manufactured slopes.

B.3 Mitigation Measures

Implementation of the proposed project would result in significant landform impacts to the project site, and visual impacts for both the project site and vicinity. In order to mitigate adverse impacts under the current design as completely as possible, specific design guidelines have been included within the SPA-I Plan, as discussed in the preceding section. Additionally, a design manual is being prepared to provide supplemental design criteria to the existing guidelines. Project development will require the implementation of all design guidelines concurrent with the SPA-I Plan. The guidelines which are contained within the SPA-I Plan (Chapter VI: Community Design) address grading, landscaping, fencing, signing, lighting, parking and scenic highways, as summarized below. According to the SPA-I Plan, these guidelines are to be "consulted and refined through each level of project review," rather than to serve as "absolute standards" (SPA Plan, pg. VI-I).

- Grading: Besides being subject to Chapter 15.04 of the Municipal Code, graded areas are to be contoured to blend with natural landform characteristics. Horizontal and vertical rounding of manufactured slopes is to be complemented with the incorporation of variable slope ratios; landscaping is to be provided for erosion control, to obscure slope drainage structures, and to obscure manufactured slopes. Minor grading is allowed outside the boundaries of SPA-I. Maintenance of manufactured slopes in excess of 10 feet in height is to be provided by an Open Space Maintenance District.

- Landscaping: The landscape plan, as presented in Figure 4-B-5, addresses 13 landscaped areas, including park planting, major entry planting, accent planting, arterial planting, loop road planting, parkway accent planting, enhanced slope planting, naturalized planting, buffer/transition area, employment park screening, fuel modification zone, development area planting, and natural open space. Landscaping and irrigation standards should conform with the City of Chula Vista Landscaping Manual. Maintenance of landscaped areas is proposed to be the responsibility of private property owners (for their ownership),

the Homeowner Association (for in-tract common areas), and a public agency (either the city of a special district; for parks, parkways and natural open space areas).

- Fencing: The fencing plan is illustrated in Figures 4-B-10 and 4-B-11.

- Signing: Figure 4-B-8 illustrates the proposed permanent community signage; entry monumentation is depicted in Figure 4-B-9. Temporary signs, to be used to identify areas and direct traffic during construction and sales periods, will be subject to permit approval for specified time periods.

- Lighting: Lighting proposals are to be reviewed by the City of Chula Vista on a case-by-case basis.

- Parking: A number of considerations regarding the design of parking facilities and street furniture are described in the SPA Plan, including numbers and locations of parking spaces, and aesthetic considerations related to such street furniture as fire hydrants, post boxes, bus benches, utility company boxes, traffic control boxes and sprinkler control boxes.

- Scenic Highways: Specialized design studies are recommended for the Employment Park, the major development adjacent to East "H" Street. Additionally, the design of landscaped corridors, noise berms/walls, and residential structural design as viewed from East "H" is considered.

Besides these design measures, all residences adjacent to the SDG&E easement should be properly oriented and landscaped to avoid intrusion of the view by transmission lines and towers within, and proposed for, the easement.

To insure implementation of the design criteria and mitigation measures, review of the final grading, landscaping, and design plans should be a condition of approval for implementation of the Rancho del Rey SPA-I project.

B.4 Analysis of Significance

While the SPA-I Plan does not differ significantly from the adopted Specific Plan in terms of landform and visual character, the long-term impacts to existing landform and visual resources from proposed development would be adverse and significant. The Rancho del Rey site would be modified from an essentially undeveloped area of canyons and mesas, to a largely urbanized residential and industrial zone.

Development of the Rancho del Rey project would create both short-term and long-term visual impacts for surrounding areas. Short-term visual impacts are associated with landform alteration, due to construction operations and grading. These are considered adverse yet not significant, due to the limited duration and restricted visual access of some portions of the site to surrounding viewers. The long distance views to the site that currently exist would be altered as the ridge areas are cut and graded. In addition, the incorporation of artificial slopes into open space areas, and the removal of the elevation extremes would constitute a significant alteration of the visual resources in the project area.

Implementation of design guidelines contained within the El Rancho del Rey Specific Plan and the Rancho del Rey SPA-I plan (including guidelines contained in the pending design manual), will reduce the degree of significance of landform and aesthetic impacts. Impacts to existing site topography would occur with implementation of the current project design, which includes extensive alteration of current landform features. However, because the SPA-I Plan incorporates the policies recommended in the El Rancho del Rey Specific Plan and the findings for the Specific Plan EIR, and assuming that these policies are incorporated into the final design and implemented through the construction of the proposed SPA-I project, significant landform impacts would be mitigated to below a level of significance.

The "campus-like" setting proposed for the employment park within the SPA-I Plan would alter the East "H" Street scenic highway corridor from relatively natural open space to graded pads, industrial structures and manicured

plantings. The high density residential areas proposed along East "H" Street would also alter the views along the scenic corridor. However, because the land uses and the land use policies proposed in the SPA-I Plan for the East "H" Street scenic corridor are consistent with the policies presented in the Rancho del Rey Specific Plan and the associated EIR and Specific Plan findings, and assuming that the proposed policies and land uses are incorporated into the final design and implemented through the construction of the proposed SPA-I project, no significant impacts to the Scenic Highways policy would be expected to occur from implementation of the SPA-I project.

C. BIOLOGICAL RESOURCES

The project area or portions of it have been previously reviewed for biological resources by Evans and Beauchamp (1972), City of Chula Vista (1973), WESTEC Services (1976a), Pacific Southwest Biological Services (1981), Chambers Consultants and Planners (1983), City of Chula Vista (1985) and Michael Brandman Associates, Inc. (1985). Biological studies of adjacent lands which are pertinent to the following discussion and analysis include WESTEC Services (1976b) for Rancho Robinhood, Patterson and Brand (1978) for Bonita Long Canyon Equestrian Estates and Beauchamp and Montgomery (1979) for the Rice Canyon Sectional Planning Area.

The addendum to the Final EIR for the El Rancho del Rey Specific Plan Amendment (WESTEC Services 1985) determined that the EIR analysis of biological resources was adequate for the revised Specific Plan Amendment. Subsequent field investigation, however, generated significant new data regarding onsite biological resources. An analysis of this new data was conducted by RECON (1986) along with an evaluation of potential impacts to biological resources in the proposed open space areas of the project site. The complete technical report prepared by RECON is included in this document as Appendix C.

In addition to the RECON (1986) report, a Rice Canyon Design Study was prepared by Cinti and Associates (1986) to identify the sensitive biological resources which may be adversely impacted by improvements within the

canyon. Preliminary design and location of the improvements are identified within the study. The study is contained within Appendix H of this document.

A review of the biological impact analysis and mitigation plans to date for the SPA-I development was performed by WESTEC Services to ensure the SPA-I Plan is consistent with the adopted Specific Plan.

C.1 Existing Conditions

Vegetation - The majority of the property is covered by a mosaic of low scrub vegetative communities. These include southern coastal sage scrub and maritime desert scrub (WESTEC 1985). Southern coastal sage scrub is the low, open scrubby vegetation found along the cismontane slopes and coastal plains of San Diego County primarily on south-facing slopes. It is less dense, evergreen and thick-leaved than chaparral and is often called impoverished chaparral. Many of its component species are drought-deciduous. Thorne (1976) divides this community into three phases. That phase present onsite is maritime sage scrub. This phase is rich in species diversity and includes California sagebrush (Artemisia californica), white sage (Salvia apiana), California buckwheat (Eriogonum fasciculatum), black sage (Salvia mellifera), lemonadeberry (Rhus integrifolia), common encelia (Encelia californica), toyon (Heteromeles arbutifolia), and laurel sumac (Rhus laurina). This vegetative cover occupies primarily the ridgetops and north-facing slopes of the property. On some north-facing slopes and in some of the draws, the larger shrubs such as toyon and lemonadeberry form dense thickets.

Maritime desert scrub is scattered throughout the site occupying primarily the south-facing slopes. This vegetative cover is found predominantly in Baja California and extends into the United States only in southern San Diego County. The species composition reflects this southern affinity. It is made up of many of the species noted above along with goatnut (jojoba) (Simmondsia chinensis), snake cholla (Opuntia parryi var. serpentina), coastal fishhook cactus (Mammillaria dioica), bladderpod (Isomeris aborea), San Diego sunflower (Viguiera laciniata), velvet cactus (Bergerocactus emoryi), and water jacket (Lycium andersonii). Cactus species such as coast cholla (Opuntia

prolifera) and prickly pear (Opuntia littoralis, Opuntia oricola), are relatively common in this cover also.

Three additional vegetative communities are present on the project site. These are southern California grassland, riparian woodland, and vernal pool ephemeral (WESTEC 1985). Grasslands are scattered throughout the site, and occur on the mesa tops, lower canyon slopes, and particularly along the north-facing slopes of Rice Canyon. Some of these grassland habitats have been altered by past grazing activities and are dominated by nonnative grasses and forbs. Native grassland habitats do remain within the study area and are characterized by native bunch grass (Stipa lepida), gum plant (Grindelia robusta), blue-eyed grass (Sisyrinchium bellum), wild hyacinth (Dichelostemma pulchella), shooting stars (Dodecatheon clevelandii), checkers (Sidalcea malvaeflora ssp. malvaeflora), and snakeroot (Sanicula arguta).

Riparian woodland is not well developed onsite. That which does exist is possibly a reflection of upstream urban development and a number of particularly rainy seasons over the past number of years. The riparian habitat is composed predominantly of elderberry (Sambucus mexicana) and young willows (Salix sp.), and is located in the lower western reaches of the main (northern) leg of Rice Canyon. Most of the major drainages are filled with large native shrubs and the naturalized California pepper tree (Schinus molle) is common in the north leg of the Rice Canyon drainage.

The vernal pool ephemeral plant community occupies seasonal pools which are located on the mesas of southern California. These pools are slight depressions, often associated with mima mound topography, that fill with rainwater which does not drain off or percolate away due to mesa topography and soil conditions. The pools, dry during most of the year, exist as highly specialized plant habitat and support a unique succession of species distinct from that of the surrounding area (WESTEC 1985). A small amount of mima mound topography is located on the ridgetop within the power line easement at the east end of the project site. Species which are recorded for a vernal pool in the Rice Canyon Sectional Planning Area include dwarf woolly heads (Psilocarphus brevissimus), popcorn flower (Plagiobotrys acanthocarpus), toad rush

(Juncus bufonius), quillwort (Lilaea scilloides), water pygmy-weed (Crassula aquatica), and water starwort (Callitriche longipedunculata). Most of these species could be expected within the few pools on the subject property, but the onsite pools are only marginally developed compared to other pool complexes in the region and are, in many cases, disturbed by dumping and off-road vehicles.

Disturbed habitats are present on the property also but these are not extensive. These areas are adjacent to the many dirt roads which traverse the site and are adjacent to existing development. These areas are covered by mostly weedy introduced grasses and forbs or broom baccharis (Baccharis sarathroides).

Wildlife

The property is expected to support a representative contingent of wildlife commonly associated with low scrub habitats in southwestern San Diego County. The large natural character of the site and the presence of water from local urban areas, dense protective cover, and extensive adjacent open areas all contribute to the maintenance of a viable wildlife population on the property. A standard assortment of amphibians, reptiles, birds, and mammals are recorded for the area in the documents noted above. Species expected onsite on a regular basis include the following:

Amphibians: pacific treefrog, California toad, and pacific slender salamander.

Reptiles: great basin fence lizard, San Diego horned lizard, western skink, orange-throated whiptail, coastal whiptail, California side-blotched lizard, San Diego alligator lizard, California striped racer, San Diego gopher snake, San Diego ring-necked snake, California kingsnake, two-striped garter snake, red diamond rattlesnake, and southern pacific rattlesnake.

Birds: American kestrel, black-shouldered kite, red-tailed hawk, loggerhead shrike, California quail, mourning dove, greater roadrunner, Anna's hummingbird, black-chinned hummingbird, rufous hummingbird, western kingbird, ash-

throated flycatcher, scrub jay, common raven, bushtit, wrentit, house wren, bewick's wren, cactus wren, mockingbird, California thrasher, black-tailed gnatcatcher, western meadowlark, house finch, lesser goldfinch, brown towhee, rufous-sided towhee, white-crowned sparrow, sage sparrow, and house sparrow.

Mammals: desert cottontail, black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, pacific kangaroo rat, San Diego pocket mouse, dusky-footed woodrat, deer mouse, California vole, coyote, gray fox, striped skunk, western spotted skunk, long-tailed weasel, and bobcat.

High Interest Species/Habitats Plants

No plant species observed on the project site are listed as rare, endangered or threatened by the U.S. Fish and Wildlife Service (USFWS 1980). Two species listed as endangered by the State of California were recently identified: Otay tarweed (Hemizonia conjugens) and San Diego thornmint (Acanthomintha ilicifolia). Both are candidates for federal listing. The locations of the two species are shown in the Biological Analysis contained within Appendix C (RECON 1986, p. 3).

Otay tarweed occurs on the north-facing slopes adjacent to Otay Lakes Road. Other recently discovered populations of Otay tarweed occur along the north-facing slopes of Rice Canyon. The tarweed occurs in grassland habitat within the SPA-I area.

One population of San Diego thornmint has been recently identified on a north-facing slope in Rice Canyon near the east end of the property. The other thornmint population within the El Rancho Del Rey Specific Plan area is not within the SPA-I area. The onsite thornmint population occupies less than one-tenth of an acre.

In addition to the two species noted above, the U.S. Fish and Wildlife Service (USFWS 1980) has listed close to 70 additional species from San Diego County as under federal status review. The great majority of these species would not

be expected onsite due to range and habitat preference. For a detailed description of the plant species which are under status review as well as the CNPS-listed species relevant to the project site, refer to Appendix C.

A number of additional sensitive plant species have been recorded from the general area or are associated with the maritime desert scrub vegetation of extreme southwesterly San Diego County. These species include Cleveland or fragrant sage (Salvia clevelandii), San Diego bur-sage (Ambrosia chenopodiifolia), and cliff spurge (Euphorbia misera). None of these species are known from the subject property although Cleveland sage is found in the vicinity. San Diego bur-sage and cliff spurge are found further south (Otay Mesa) and closer to the coast, respectively.

Animals - No federal or state-listed animal species have been observed or are expected on the project site (USFWS 1979; CDFG 1980). A number of species recorded or anticipated to occur onsite, however, are considered declining, sensitive, or of local concern. These are discussed below by species group.

Birds - Sensitive bird species occurring within the site are the black-tailed gnatcatcher (Polioptila melanura californica) and cactus wren (Campylorhynchus brunneicapillus). The black-tailed gnatcatcher is a candidate species for federal listing and is listed by the California Natural Diversity Data Base as sensitive. Both species are considered by local authorities to be sensitive in San Diego County.

Reptiles - Several reptiles considered sensitive by local authorities may occur on the site. San Diego coast horned lizard (Phrynosoma coronatum blainvillei) may occur in the open habitats of the open space and is considered locally endangered. The orange-throated whiptail (Cnemidophorus hyperythrus beldingi) has been reported within the project site and may occur in the allotted open space. Both these reptiles are considered sensitive by the California Natural Diversity Data Base. The western aquatic garter snake (Thamnophis couchi hammondi), locally threatened, may occur in the drainage of Rice Canyon.

Mammals - One mammal species of interest is the bobcat (Felis rufus). The bobcat is of interest due to recent increased trapping pressures on the species because of escalation in value of the fur. The species was not observed onsite, but it has a moderate probability of occurrence. Urbanization is gradually eliminating this species from along the coastal plain but it may still remain in small numbers within or adjacent to the project area.

Habitats - Sensitive habitats within the study area include grasslands, riparian, coastal sage scrub (maritime and desert scrub) habitat, and vernal pools.

Grassland - Grasslands are a declining vegetative and wildlife habitat within the San Diego region. This is especially true for native grasslands. Native grasslands onsite support the aforementioned high interest plant species Acanthomintha ilicifolia, and may also represent suitable habitat for Muilla clevelandii, Fritillaria biflora, and the declining grasshopper sparrow. Grassland habitats would be expected to support healthy populations of prey species upon which larger predators that seek cover in adjacent habitats depend. Grassland habitats situated within a mosaic of coastal sage scrub habitats such as is the case onsite would be expected to increase the species diversity and carrying capacity of the adjoining habitats. Open grassland habitat attracts raptors to the area and can be important in maintaining local raptor populations.

Riparian - Natural floodplains and drainages are rapidly being developed or channelized. This habitat onsite contains the sensitive plant species Ericameria palmeri ssp. palmeri and is potential habitat for the declining plant species Artemisia palmeri and Ambrosia pumila. This habitat possesses more structural diversity than the surrounding low scrub with the development of arboreal shrubs and a limited riparian woodland. The structural diversity and the presence of water makes this an important usable wildlife habitat and an effective wildlife corridor.

Coastal Sage Scrub (Maritime Desert Scrub) - Low scrub habitat is still fairly common in San Diego County but is rapidly declining along the coastal plain. It has been suggested that on the order of 70 percent of this habitat within the

County has been lost or modified by man (Oberbauer 1979). The extent of maritime desert scrub is naturally limited to the southwestern corner of the County and remains only in the project area, and on limited areas of Rancho Otay, western Otay Mesa, and a couple of isolated points along the coast. With the advent of the Second Border Crossing and increasing growth in the local area, this habitat is substantially threatened. Declining species associated closely with and dependent on coastal low scrub habitat include the cactus wren and black-tailed gnatcatcher.

Vernal Pools - This specialized habitat is rapidly disappearing from the San Diego area. Less than 10 percent is estimated to remain in the region (WESTEC 1985). The pools in the study area were previously reviewed from a regional perspective by a technical subcommittee which presented their results to the City of San Diego for incorporation into its Vernal Pool Preservation Program (WESTEC 1985). The pools in the project area were considered of low preservation priority due to the small number of pools and lack of rare or endangered species associated with the pools.

Resource Conservation Area

The County of San Diego has identified Resource Conservation Areas (RCAs) throughout the County. These overlay zones are meant to draw attention of planners and decision makers to the presence of unique resources. The project site is covered by a number of areas delineated as RCAs in the Sweetwater Community Plan. These areas identify habitat for Ferocactus viridescens, Opuntia parryi var. serpentina, coastal sage scrub, and high-quality wildlife habitat.

C.2 Impacts

The El Rancho del Rey Specific Plan provides for extensive natural open space areas within Rice Canyon and its southern tributary canyons and in canyon slopes along the northern boundary. This impact analysis focuses on impacts within the planned open space associated with improvements required for implementing the SPA-I development plan (RECON 1986).

The sewer line and associated maintenance road have been designed to follow existing trails wherever possible, although it is likely that these facilities would deviate from existing disturbed areas in a number of locations. In such instances, the sewer line and maintenance road would impact indigenous vegetation growing within the canyon, including both riparian and coastal sage scrub habitats. At the west end of Rice Canyon, the proposed road passes through coastal sage scrub habitat where black-tailed gnatcatchers have been reported. Consequently, loss of coastal sage scrub habitat in this area would also pose impacts to gnatcatcher populations (Appendix C).

Sewer Laterals and Storm Drain Laterals

Construction of the laterals would significantly impact coastal sage scrub habitat of the black-tailed gnatcatcher, the orange-throated whiptail, and possibly the San Diego coast horned lizard.

Disturbance caused by the installation of sewer and storm drain laterals would eventually recover by the expansion of native vegetation from undisturbed adjacent areas; however, as discussed in the following Mitigation section, a native habitat recovery program should be implemented to reduce the impact to insignificance.

Road Widening on Otay Lakes Road

Widening Otay Lakes Road to four lanes along the northern boundary of the project site could adversely impact Otay tarweed (less than one-tenth acre), and would impact coastal sage scrub and mixed chaparral habitat in the adjacent drainage. If Otay Lakes Road is widened to six lanes, with the expansion entirely to the south onto the project site, impacts to the Otay tarweed may exceed one-tenth acre of habitat. However, according to the traffic and circulation analysis, the roadway would be a four-lane road with special treatment, which would require less habitat disturbance than a six-lane roadway, thus reducing the impact.

Fill for Recreation Area and Staging Area at Loop Road

Landfill associated with the construction of the community park at the east end of Rice Canyon and the equestrian staging area on the west side of the Loop Road would adversely impact a small amount of Otay tarweed habitat and would adversely affect Dudleya variegata as well as another sensitive plant species (Ericameria palmeri ssp. palmeri) respectively (WESTEC 1987). Habitat for sensitive reptiles, San Diego coast horned lizard and orange-throated whiptail, may be impacted. In addition, fill material for the park would cover minor areas of riparian vegetation in the canyon bottom, totaling less than one acre of permanent wetland loss.

Trail System

The proposed trails are designed to follow existing roads, trails, and disturbed areas wherever feasible, to reduce impacts associated with trail construction to the lowest possible levels. This is particularly true in the main (northern) leg of Rice Canyon, where the location of all trails will coincide with that of the proposed maintenance road, thereby precluding the necessity for any additional disturbance associated with the construction of trails. In other areas, however, trail locations may deviate from existing disturbance, resulting in impacts to native habitats. Use-related impacts may occur from people leaving the trails and possibly creating additional informal trails. These use-associated effects can become severe if adequate controls to prohibit off-road vehicle (ORV) use on the trail system are not implemented within the project.

Cut and Fill Slopes Around Open Space Areas

Fill slopes along the rims of the canyons would cause significant reductions of coastal sage scrub within the open space system. The SPA-I development area retains 272.6 acres of open space. It is estimated that approximately 80 acres (29 percent) of this total would be cut and fill slopes (Kniep 1987). This habitat loss is fairly substantial given the high sensitivity of the habitats. The vegetation is habitat for the black-tailed gnatcatcher, the orange-throated whiptail, and possibly the coast horned lizard. Sensitive plant species that

may be affected by the fill slopes are Otay tarweed in the open space along Otay Lakes Road and at the edges of manufactured slopes in Rice Canyon and its southern tributary, San Diego sunflower along the south-facing slopes of both canyons, pygmy spike-moss throughout the coastal sage scrub, San Diego golden star on the north- and south-facing slopes, variegated dudleya on the south-facing slopes, and snake cholla, which has its greatest distribution in the SPA-I area of the El Rancho del Rey Specific Plan area. Snake cholla would be significantly impacted by the proposed cut and fill slopes particularly associated with the realignment of the "H" Street loop connection (Road B).

Wildlife Corridors and Movement

No significant impacts to wildlife corridors and movement would be incurred by the implementation of the SPA-I development. Anticipated traffic volumes on the Loop Road are not expected to cause a significant impediment to wildlife movement between Rice Canyon and adjacent natural open space areas; consequently, adequate long-duration traffic gaps during late night and early morning hours would facilitate nocturnal wildlife movement. As currently proposed, the Loop Road would pose less of a barrier to wildlife crossing than would the changes required to build a large enough "wildlife crossing" beneath the roadway. However, the currently proposed alignment would reduce the total amount of natural open space in the canyon, and create a less desirable open space connection between the main (northern) and central legs of Rice Canyon. That is, the open space connection between these two canyon legs would be reduced from the current 300 feet to approximately 100 feet.

Endangered Species Impact

In addition to the previously mentioned impacts, less than one-tenth of an acre of Otay tarweed would be impacted by Road A connecting Otay Lakes Road to the Loop Road. In the case of the San Diego thornmint, a population was recently discovered within the Rice Canyon open space. While the San Diego thornmint would not be directly impacted by the implementation of the proposed project, increased recreational use of the canyon could result in adverse impacts to the population.

Realignment of Road B

The westernmost connector street between East "H" Street and the Loop Road, or Road B (Figure 4-F-1), was moved from the southeast to the northwest side of the adjacent knoll, and terminates at the south wall of the canyon. This realignment increases impacts to the open space of the SPA-I Plan by converting approximately 12 acres of natural vegetation to rehabilitated slopes. Existing vegetation on the area consists of coastal sage scrub, which is habitat for the California black-tailed gnatcatcher and the cactus wren.

The proposed cut and fill slopes associated with the realignment of the roadway would significantly impact one of only a couple of "frequent" distribution zones of snake cholla. In addition, it reduces the amount of natural open space in the canyon system while creating a less desirable open space connection between the north and middle legs of Rice Canyon as previously described.

Firebreaks/Fuelbreaks Along Open Space Areas

For fire safety compliance, firebreaks/fuelbreaks must be incorporated about the perimeter of the natural open space areas. The City of Chula Vista Fire Department recommends 100-foot zones of cleared brush and low-fuel vegetation be incorporated routinely into these fire safety measures, and in certain areas such 100-foot zones may be required. The proposed landscape plan (Figure 4-B-4) lists a fuel modification zone but does not locate it on the plan. Continuous firebreak/fuelbreak systems throughout the SPA-I area can account for substantial alterations of natural habitat. While these areas are not void of wildlife value, their habitat value is reduced. Brush clearing would undoubtedly adversely affect habitat suitability by the black-tailed gnatcatcher and cacti removal would potentially adversely affect cactus wrens.

C.3 Mitigation Measures

Mitigation measures specified by the El Rancho del Rey Specific Plan for the SPA-I area have been adopted with the original and supplemental EIRs, and

have been incorporated into the SPA-I Plan. Additional mitigation measures have been incorporated in the SPA-I Plan which were not anticipated by the earlier Specific Plan EIR. These measures, which were developed from the RECON analysis, are discussed below.

Drop Structures and Drainage Improvements

Construction specifications for drop structures and drainage improvements in Rice Canyon should be designed to minimize impacts to existing natural vegetation to the maximum extent possible.

- Disturbed areas of the drainage will be revegetated according to a revegetation plan reviewed and approved by the California Department of Fish and Game and the U.S. Army Corps of Engineers (as a portion of section 1603 and 404 permits, respectively). A preliminary revegetation plan has been prepared by Recon (1987), which will be submitted with the section 1603 and 404 permits for review by appropriate resource agency personnel.

- Construction of the improvements should be done concurrently with the sewer line, sewer laterals, and maintenance road to minimize impacts.

Sewer Line and Maintenance Road

- Manholes for the sewer should include bolted manhole covers to preclude vandalism and reduce resulting impacts associated with repair activities and possible sewage spills.

- Staging areas for construction should be located to minimize impacts to sensitive resources.

- The maintenance road should be unpaved, decomposed granite to decrease runoff and erosion along the road and allow some habitat value for wildlife, and should be included in the trail system as a hiking and horseback riding trail.

- The main sewer trunk and maintenance road should follow the existing road in the canyon bottom wherever possible to minimize disturbance of natural vegetation.

- The alignment of the maintenance road should be staked out prior to design finalization and checked by a qualified biologist to minimize impacts for the final alignment.

- Where the sewer is not within the maintenance road alignment, the backfilled trench should be revegetated with appropriate plant species native to the area.

- Access points to the maintenance road should be provided with effective vehicle control gates and warning signs citing penalties for illegal off-road vehicle (ORV) use.

- Construction of the sewer line, laterals, and maintenance road should be at the same time as the drop structures and drainage improvements.

Sewer Laterals and Storm Drain Laterals

- Laterals should be positioned to cause minimum impact to biological resources, especially rare plant populations.

- The laterals should be staked prior to design finalization and then checked by a qualified biologist for potential adjustments to minimize impacts to sensitive resources.

- Construction of all laterals should be concurrent with the sewer line and maintenance roads.

- Impacted areas should be revegetated with appropriate native plant species.

Road Widening on Otay Lakes Road

- The widening should be designed to minimize impacts to the Otay tarweed. To maximize the effectiveness of this measure, construction should occur between the months of August and December if possible. Otherwise, seeds from mature tarweed should be collected from areas to be impacted for use in reseeding during reclamation.

- Cuts and fills should be revegetated with native species to mitigate the loss of coastal sage scrub.

- The drainage channel should be revegetated with native riparian tree species in anticipation of enhanced water availability associated with surrounding development.

Fill for Recreational Area

- Slope adjoining the open space should be revegetated with native species.

- Plantings in the recreational area should include native species such as western sycamore (Platanus racemosa), Fremont cottonwood (Populus fremontii), and willows (Salix spp.) to lend continuity to riparian habitat in the open space of Rice Canyon.

Trail System

- To minimize impacts, the trail through Rice Canyon should follow the sewer maintenance, while the trail through the southern canyon should follow the existing dirt road.

- All other trails, such as connecting trails, should be aligned away from sensitive resources and should be located within existing disturbed areas wherever possible.

- All trails should be designed to minimize erosion.

- Trails should not be paved, but should be decomposed granite or dirt.

- Alignment of trails should be checked by a qualified biologist after they are staked. The biologist may make recommendations to minimize adverse impacts to biological resources.

- ORV access should be restricted as previously mentioned.

Cut and Fill Slopes Around Open Space Area

- Manufactured slopes associated with natural open space within the project should be revegetated with native plants, using low-fuel species where required in accordance with fire safety planning.

- Fills for the Loop Road at both ends of Rice Canyon should be revegetated with native species.

- Native riparian tree species should be used at the bottom of slopes where adequate water is available.

Wildlife Corridors and Movement

- Fencing or other measures to control ORV access at the western Loop Road crossing should be designed to avoid restricting wildlife movement across the road.

Endangered Species

- In order to minimize impacts to Otay tarweed, trails should be aligned away from locations of tarweed and measures should be provided to discourage ORV entry to the canyon as described above.

- In order to protect populations on the north-facing slopes of Rice Canyon, trails should be established on the opposite side of the streambed. Where impacts to tarweed patches would result from sewer or storm drain laterals, or encroachment by the edge of manufactured slopes, the topsoil should be removed and stockpiled, then replaced over the impact area following construction. To maximize the effectiveness of this measure, construction in this situation should occur in the late summer or fall months of August-December. If this is not possible, mature tarweed can be collected from the impact area during this period, for use in replanting the soils to be replaced on or near the impact area.

  The population of thornmint in Rice Canyon would not be directly impacted by implementation of the proposed project.

- Fencing should be provided as necessary in consultation with the project biologist to preclude potential trampling impacts.

- Trails should be designed to not impact the population.

- Drainage improvements in the vicinity of the population should be designed to minimize changes to the local hydrology of its habitat.

Change of Alignment of Road B

- The cut slope associated with Road B (Figure 4-F-1) should be revegetated using only native coastal sage scrub species. Establishment of coastal sage scrub vegetation on the slope will offer replacement habitat for the California black-tailed gnatcatcher.

- Cactus populations within the areas to be impacted should be evaluated for transplantation to selected areas within the project open space for purposes of preserving snake cholla and barrel cactus populations and establishing new areas of cactus wren habitat. Transplanting should be done under the supervision of a qualified biologist or horticulturalist.

The transplantation effort should be incorporated in the project-wide revegetation plan that includes the channel bottom, the sewer and storm drain laterals, and the cut and fill slopes.

In addition, the most recent evaluation of proposed biological impacts and mitigation, conducted by WESTEC Services in 1987 (see Appendix C), recommends that Road B be moved east out of Rice Canyon to preserve additional native habitat and snake cholla (Opuntia parrys var. serpentina) populations.

Firebreaks/Fuelbreaks Along Open Space Areas

- Necessary fuel reduction or modification zones may be utilized for cactus preserves or refuges. Cactus thickets could be created, especially on the hotter south-facing slopes. Cacti forming these thickets could be transplanted from impacted areas and possibly augmented by additional contract grown stock.

C.4 Analysis of Significance

Potential impacts to biological resources associated with the El Rancho del Rey Specific Plan were deemed significant and unmitigable (WESTEC 1985). The additional mitigation contained in the SPA-I plan does not alter that original assessment, with significant, unmitigable biological impacts anticipated from the proposed development. These are attributable to the proposed loss or alteration of onsite significant habitat and species. However, a substantial reduction of impacts to biological resources would be achieved by the proposed consolidation of open space in the main canyon systems, together with specific measures to prevent impacts to sensitive species and programs to restore natural habitat to disturbed areas. Additionally, significant impacts to the streambed and wetlands will have to be reduced to insignificance by mitigation reviewed and approved by the California Department of Fish and Game and the Army Corps of Engineers. Therefore, assuming that all identified mitigation measures are fully and properly implemented, the overall

mitigation plan is considered adequate with respect to the proposed development (Appendix C). An additional mitigation measure was identified in the 1987 WESTEC review of the proposed biological mitigation plan, whereby the Road B connecting street would be moved east to preserve additional open space and native habitat. This recommendation would further decrease biological impacts from the proposed project, although it would not reduce such impacts to a level of insignificance.

D. GEOLOGY/SOILS

A detailed preliminary geotechnical investigation of the Rancho del Rey Sectional Planning Area (SPA) I site was conducted by San Diego Soils Engineering, Inc. in 1986. This geotechnical evaluation, which presents findings, conclusions and recommendations regarding site planning and development, is summarized below and is on file with the Environmental Review Section of the City of Chula Vista Planning Department. An independent evaluation of data pertaining to onsite faulting (specifically the La Nacion fault traces) was also conducted by Leighton and Associates (1987) and is incorporated into this document.

A number of additional geotechnical reports and environmental summaries have been generated for areas including all or part of the project site. Of these, two geotechnical reports (Woodward-Clyde & Associates 1969 and Woodward-Gizienski & Associates 1971) and two Environmental Impact Reports (WESTEC Services 1976 and 1985) have been referenced directly in this report. Two additional geotechnical investigations (Woodward-Gizienski & Associates 1972 and Woodward-Clyde & Associates 1978), were utilized for informational purposes.

D.1 Existing Conditions

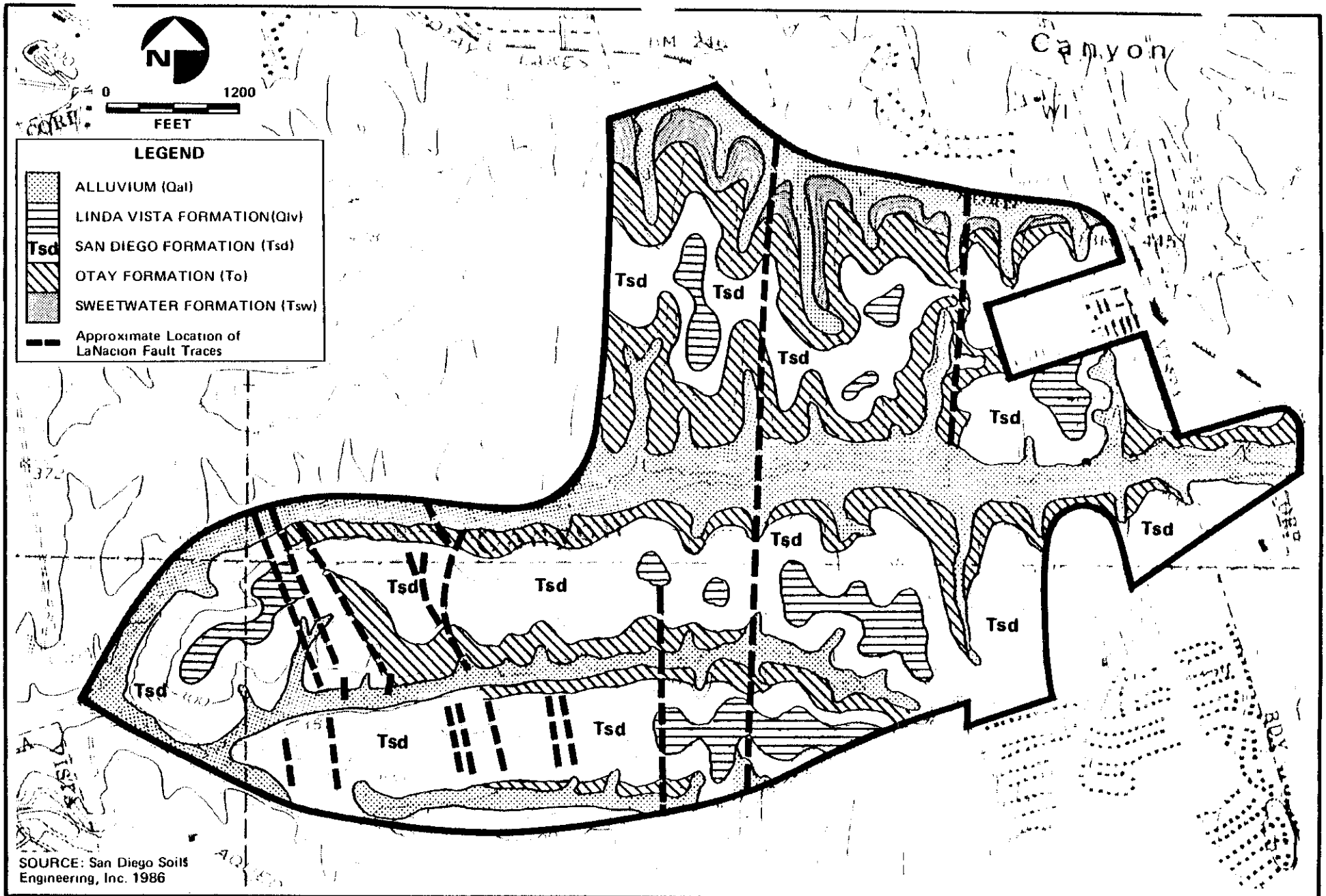
The project site is situated on a dissected ancient marine terrace within the coastal subarea of the Peninsular Ranges Geomorphic Province. Topographically, the site is characterized by a series of roughly east-west trending canyons with perpendicular finger canyons. The canyons are separated by

ridges with gently to steeply sloping hillsides and relatively flat mesa tops. Onsite elevations range from 490 feet above mean sea level (MSL) on a hilltop in the northern site area to approximately 200 feet MSL in a canyon bottom near the western site boundary (Figure 4-B-1). Other onsite hills peak at 483 feet, 481 feet, and 381 feet MSL.

Nearly the entire site is covered with a variable thickness of topsoil and colluvium. Additional exposures include Quaternary alluvial and marine terrace deposits, and Mid- to Late-Tertiary marine and nonmarine sedimentary rocks. The site is underlain by the Pliocene San Diego Formation, the Oligocene Otay and Sweetwater Formations, and, presumably, at depth by Mesozoic igneous and metamorphic rocks.

The regional structure of the site consists of flat lying to gently southward dipping sedimentary bedrock, although localized bedding may dip in varying directions. The major structural feature of the site is the La Nacion Fault Zone, with numerous fault traces crossing the site in a generally north-south direction (Figure 4-D-1). The fault traces generally dip steeply and are downdropped to the west. Vertical separations with apparent offsets of up to 55 feet have been mapped, with no mapped or inferred horizontal component. Fault locations shown on Figure 4-D-1 are approximate, and it is likely that numerous unmapped faults would be located during proposed grading (San Diego Soils Engineering, Inc. 1986).

The La Nacion Fault Zone is presently classified as "potentially active," which implies that movement has occurred in the last 2 to 3 million years, or within the Quaternary period. Geologic data to indicate that the fault system is "active", or that it has moved within approximately the last 11,000 years, has not been established. Specifically, no surface offset of geomorphic features has been observed. Leighton and Associates (1987) has indicated that the probability of recurrence of significant displacement on the La Nacion fault is approximately once every 10,000 to 20,000 years. Comparatively, known active faults which require building setbacks by the California Division of Mines and Geology (CDMG) contain much shorter recurrence intervals. Examples include the Hayward and Calavaras faults which actively move every



Simplified Geologic Map (topsoil not shown)

FIGURE 4-D-1

year, and portions of the San Andreas and San Jacinto faults which have recurrence intervals of approximately once every 100 to 200 years (Leighton and Associates 1987). The La Nacion fault system is not considered by the CDMG as a potentially active fault having a high potential for ground rupture, and consequently has not been mapped within an Alquist-Priolo Special Studies Zone (Leighton and Associates 1987). The Alquist-Priolo Act, established in 1972, is intended to identify and map special studies zones encompassing all potentially and recently active faults posing hazards to structures from surface displacement (CDMG 1985).

The geologic units encountered during the geotechnical investigation are described below in order of increasing age, and the site geology is shown in Figure 4-D-1. Following the description of lithology is a discussion of potential onsite geologic hazards.

Topsoil/Colluvium (Not shown on map)

Topsoil onsite consists primarily of potentially expansive clays and clay loams. The Soil Conservation Service of the U.S. Department of Agriculture (1973) has mapped soils on the site as belonging predominantly to four soil series: the Linne Series, Olivenhain Series, Diablo Series, and Salinas Series. A brief discussion of each of these onsite soil types is provided in Table 4-D-1. Topsoil depths in the project area range from 2 to 6 feet, with thicknesses generally greater within the Otay and Sweetwater Formations and less within the San Diego and Lindavista formations.

Colluvial deposits are accumulated by slope wash of weathered bedrock material and topsoil creep. These materials range from silty sands to silty clays and are generally loose/soft to medium dense. Moisture contents are variable and thicknesses generally range from 5 to 10 feet.

Alluvium (Qal)

Alluvial deposits are present in most of the swales and small gullies onsite as well as the major drainages. Alluvial soils are derived from the geologic

Table 4-D-1

DESCRIPTION OF SOIL PROPERTIES (USDA-SCS 1973)

Soil Series	Description	Location Onsite	Slopes (%)	Shrink-Swell Behavior	Erodibility	Suitability For Topsoil
Linne	Well drained, moderately deep clay loams derived from soft, calcareous sandstone and shale.	Most onsite canyon slopes	9-50	Moderate	Moderate to Severe	Fair
Olivenhain	Well drained, moderately deep to deep cobbly clay with a very cobbly clay subsoil.	Most mesa tops	2-30	Moderate	Severe	Fair to Poor
Diablo	Well drained, moderately deep to deep clays derived from soft calcareous sandstone and shale.	Underlying some canyon slopes	9-30	High	Moderate	Poor
Salinas	Well drained and moderately well drained clay loams that formed in sediments washed from Diablo, Linne, Las Flores, Huerhuero, and Olivenhain soils.	Canyon bottom alluvium	2-9	Moderate	Slight to Moderate	

formations present onsite and consist of poorly consolidated, medium to dark brown, clayey, fine-grained sand; silt; and sandy clay. Maximum observed alluvium depth onsite was 28 feet, although deeper deposits are anticipated due to variable alluvial channel geometry. Groundwater was encountered at various depths within the alluvium, although this was interpreted as localized perched groundwater rather than a regional aquifer (San Diego Soils Engineering, Inc. 1986).

Lindavista Formation (Qlv)

The Pleistocene age Lindavista Formation forms a relatively thin unit covering the higher onsite ridges. It was deposited as marine terrace sediments and consists of a reddish brown, silty to clayey, fine to coarse-grained sandstone with occasional cobbles. This unit is typically dense and massively bedded, with a maximum observed thickness of 40 feet onsite. Common exposures on most ridgetops consist of residual deposits up to 3 feet thick.

San Diego Formation (Tsd)

The San Diego Formation is Pliocene in age and is found at higher elevations throughout the site. Generally, it increases in thickness west of the La Nacion Fault traces (Figure 4-D-1). Onsite this unit consists of a light grey-green to yellow-green, silty, fine-grained sandstone with occasional cobble lenses and cemented seams. The San Diego Formation is generally massive, medium dense to dense, and contains some poorly lithified, friable zones.

Otay Formation (To)

The Otay Formation is Oligocene and was deposited in a shallow marine environment with volcanically derived sediments from the west and south. Onsite, this unit consists largely of a light grey to white, dense to very dense, fine to medium grained, silty sandstone. Also observed in the Otay were grey-brown sandy to clayey siltstones, claystone lenses, and continous seams of bentonite up to 5 feet thick. These seams are horizontally bedded, dense, hard, and generally massive. Generally, the bedrock units of the Otay

Formation have good strength characteristics, are suitable to support structural and fill loads, and may be used as compacted fill. The expansion potential for the Otay Formation ranges from very low for the sandstones to very high for the bentonitic clays.

Sweetwater Formation (Tsw)

The late Oligocene Sweetwater Formation underlies, and is gradational with, the Otay Formation, and unconformably overlies Mesozoic rocks of the southern California batholith. The Sweetwater Formation consists of light brown to orange-brown, fine- to coarse-grained sandstone with some clay and gravel. This unit is generally dense to very dense and massive. The Sweetwater Formation would not be expected to outcrop at finished grade in any building areas, although it could appear in some road cuts.

Seismicity: The project site is considered a seismically active area, although there are no known active faults on or adjacent to the property (San Diego Soils Engineering 1986). The nearest major active fault is the Coronado Banks fault, located approximately 20 miles to the west. Other significant regional faults include the Elsinore (40 miles northeast of the site), the San Clemente (45 miles west) and the San Jacinto (65 miles northeast). As discussed, several traces of the potentially active La Nacion Fault Zone cross the project site (Figure 4-D-1). However, seismic risk for the project site is considered low to moderate relative to southern California as a whole, due to the classification of the La Nacion as "potentially active," and the substantial distance to known active faults (San Diego Soils Engineering 1986).

The seismic hazard most likely to impact the project site is groundshaking following a large earthquake on one of the major regional faults. The Elsinore and San Clemente faults are most likely to affect the project site with groundshaking from a major earthquake. Maximum probable events for the Elsinore (7.0) and San Clemente (7.3) faults could produce peak horizontal accelerations of 0.10 g.

Liquefaction: Liquefaction and dynamic settlement of soils can be caused by strong vibratory motion in response to earthquakes or machine vibrations. Research and historical data indicate that loose, granular soils are susceptible to liquefaction and dynamic settlement, while the stability of most silty clay and clays is not adversely affected by vibratory motion. Among granular soils, finer textured varieties are more susceptible to liquefaction than coarse-grained types, and soils of uniform grain size are more likely to liquefy than well-graded materials (Seed and Idriss 1970). Liquefaction is generally known to occur only in saturated or near-saturated soils at depths shallower than about 100 feet below the surface.

The dense, cohesive nature of the bedrock soils underlying much of the site generally precludes the possibility of liquefaction. A number of areas, however, are underlain by alluvial and/or colluvial soils, which exhibit a low to moderate potential for liquefaction and dynamic settlement. This is due to the often granular, saturated nature of these materials, which increases their susceptibility to liquefaction and settlement as described above.

Landsliding: No evidence of landsliding or landslide features was identified during the geotechnical investigation. Therefore, seismically induced landsliding is not considered a signficant hazard on the project site (San Diego Soils Engineering 1986).

Lurching and Shallow Ground Rupture: Ground rupture is not considered a significant onsite hazard due to the absence of active faulting. Rupture related to groundshaking from regionally active faults is not considered a significant hazard, although it is a possibility at any site.

Tsunamis and Seiches: The site is not subject to inundation by tsunamis and seiches due to its elevation above sea level and the lack of freshwater bodies.

D.2 Impacts

Based on the review and collection of geotechnical data, it has been determined that development of the site is feasible from a geotechnical

standpoint (San Diego Soils Engineering, Inc. 1986). There appear to be no significant geotechnical constraints onsite that cannot be mitigated by proper planning, design and sound construction practices. The engineering properties of the soil and bedrock materials, topography and surface drainage offer favorable conditions for site development. There are, however, several potential geotechnical concerns as listed below:

- Topsoil/Colluvium: Surficial topsoil and colluvial deposits on the site are typically expansive in nature. These materials would not be suitable for support of conventional shallow foundations or as a base for fill soils.

- Alluvium: The alluvial soils that occur onsite are compressible in their present state and may settle appreciably under the surcharge of fills or foundation loadings. These soils are generally considered acceptable for reuse as compacted fill, provided the expansive clayey soils are placed 5 feet below finished grade and mixed with the onsite granular soils.

- Otay Formation: Localized beds of bentonitic clay occur throughout much of the site in the Otay Formation. These clay beds are highly expansive and possess low shear strengths affecting slope stability. If bentonite seams are exposed at finished pad or slope grade, overexcavation or slope stabilization will be recommended on a case by case basis during grading. It is anticipated that excavation can be accomplished with the aid of heavy rippers and that the excavated materials will be of very good quality for select fill. However, there is a potential for generating oversized material by such excavation in cemented bedrock zones. This material may exceed the size normally allowed in fill material and may require case-by-case mitigation.

- Sweetwater Formation: Excavation in dense zones of this unit could produce oversized material, requiring site-specific mitigation as described above.

- San Diego Formation: Under the proposed grading plan the San Diego formation should be the predominant geologic unit exposed by project development. This unit contains zones which are poorly lithified and very friable. The presence of those zones on cut slopes could result in significant erosion hazards, and may require slope stabilization fill construction to mitigate erosion. Additionally, this formation contains cemented zones which could generate oversized material when excavated. As discussed, this would require individual mitigation.

- La Nacion Fault Zone: Both the San Diego Soils Engineering, Inc. (1986) and Leighton and Associates (1987) investigations concluded that the presence of the La Nacion fault (and related fault strands) is not significant from the standpoint of siting residential and normal commercial structures. These determinations are qualified with statements to the effect that the proposed grading activities may produce additional data regarding the location and history of onsite faulting, which in turn could affect recommendations for building locations and specifications. In addition, both investigations recommended the acquisition of additional data as part of the process for siting critical structures. Critical structures are generally defined on the basis of population density and potential for environmental damage, and include facilities such as schools, hospitals, police or fire stations, large commercial or industrial centers, dams and reservoirs, and petroleum storage facilities.

D.3 Mitigation Measures

The geotechnical report by San Diego Soils Engineering (1986) identified mitigation measures for potential impacts associated with geologic units, seismicity, earthwork, slope stability, foundation stability, drainage, shrinking and bulking, oversized material, compaction, expansion, and erosion and seepage. Recommended measures include, but are not limited to, the following:

- Prior to grading, the site should be cleared of surface obstructions and stripped of brush and vegetation. Subsurface obstructions extending below finished grade should be removed and replaced with compacted fill.

- It is recommended that surficial soils and any existing fill be overexcavated to bedrock material in areas to receive fill. The final depth of removal should be evaluated by the geotechnical consultant at the time of grading.

- Alluvial soils, because of their compressibility, should be completely removed to bedrock in areas proposed for construction where possible. Areas of deep alluvium and shallow groundwater may be partially removed and surcharged to reduce settlement of the alluvium to acceptable amounts. Settlement monuments should be utilized in these areas as directed by the geotechnical consultant.

- Subgrade soils in the drainage course of the main central canyon may require stabilization prior to backfilling, to achieve the required compaction values. The necessity and methods for stabilization should be determined on a case-by-case basis by the geotechnical consultant during excavation.

- Temporary construction slopes should be cut at no steeper than 1.5 to 1 (horizontal to vertical) and be no higher than 25 feet. All construction slopes should be observed by the geotechnical consultant during excavation so that specific recommendations may be provided.

- All fill placed at the site should be compacted to a minimum compaction of 90 percent, based upon ASTM Laboratory Test Designation D 1557. Fill should be compacted by mechanical means in uniform lifts of 6 to 8 inches in thickness.

- All grading and placement of fill should be performed in accordance with the City of Chula Vista Grading Ordinance and all other applicable regulations and guidelines.

- Following overexcavation of unsuitable materials, all areas to receive fill and/or other improvements should be scarified to a depth of 6 to 8 inches, brought to near optimum moisture conditions, and compacted to at least 90 percent of the laboratory maximum density.

- All fill should consist of approved earth material. The geotechnical consultant should be contacted for evaluation of imported fill at least two working days prior to importing.

- Stabilization fills should be utilized in areas deemed appropriate by the geotechnical consultant. The types and specifications of stabilization fills should be determined during excavation by the geotechnical consultant.

- Fill-over-cut-slopes should include drainage facilities, and conform with the recommendations of the geotechnical consultant.

- To avoid expansive soils exposed at finished grade, predominantly granular soils (UBC Expansion Index less than 20) within the upper 5 feet of finished grade should be used.

- To provide for unforeseen variation in shrinkage and bulking quantities, provisions should be made for export, import, or onsite balancing, and quantities should be monitored during project grading.

- Disposal of rocks generated by grading which are larger than normally available as fill materials should comply with specifications identified by the geotechnical consultant.

- Vertical and lateral overexcavation requirements for cut/fill transition lots should be evaluated by the geotechnical engineer on an individual basis.

- The height, slope ratio, and compaction of all cut-and-fill slopes should conform to specifications identified by the geotechnical consultant, as appropriate.

- All cut slopes should be observed by the geotechnical consultant during grading. Where bentonite seams are observed, appropriate buttresses or enlarged side hill keys should be utilized as indicated by the geotechnical consultant.

- Foundations, slabs, footings, and retaining walls should be designed in accordance with specifications identified by the geotechnical consultant, based on the type of soils and pertinent structural considerations encountered. The soil expansion potential should be evaluated on a lot-by-lot basis during and after completion of grading.

- All foundation excavations should be observed by the soils engineer prior to the placement of forms, reinforcement or concrete.

- Sulfate testing should be conducted at the completion of grading to confirm the reactivity of subgrade soils.

- Construction of proposed utilities in the alluvium areas should not take place until primary consolidation has occurred as determined by the geotechnical consultant. Utilities should be provided with flexible joints at appropriate locations.

- Tentative grading plans for the project site should be reviewed by the geotechnical consultant upon completion.

- Continuous observation should be conducted by the geotechnical consultant during grading to confirm anticipated conditions and to provide appropriate adjustments.

- Fault setbacks for critical structures should be evaluated individually based on fault mapping during grading, building requirements, and site-specific investigation. The designation of fault setbacks, if necessary, should be identified prior to approval of grading plans, and should be indicated on those plans.

- After completion of grading operations the geotechnical consultant shall prepare a final as-graded map, delineating the location of all faults encountered during grading, for submission to the Environmental Review Section of the City of Chula Vista Planning Department.

- All facilities onsite should be constructed in accordance with the Uniform Building Code to minimize the effects of seismic ground-shaking.

D.4 Analysis of Significance

Available geotechnical data indicates that there are no major geologic constraints on the project site that would preclude development. Potential identified impacts include the expansion of surficial deposits, the compaction of alluvial soils, the effect of bentonitic clay seams and poorly lithified zones on slope stability, the generation of oversized material from cemented or dense bedrock, and the presence of the potentially active La Nacion Fault Zone. No significant geotechnical constraints would affect the proposed project.

E. HYDROLOGY/WATER QUALITY

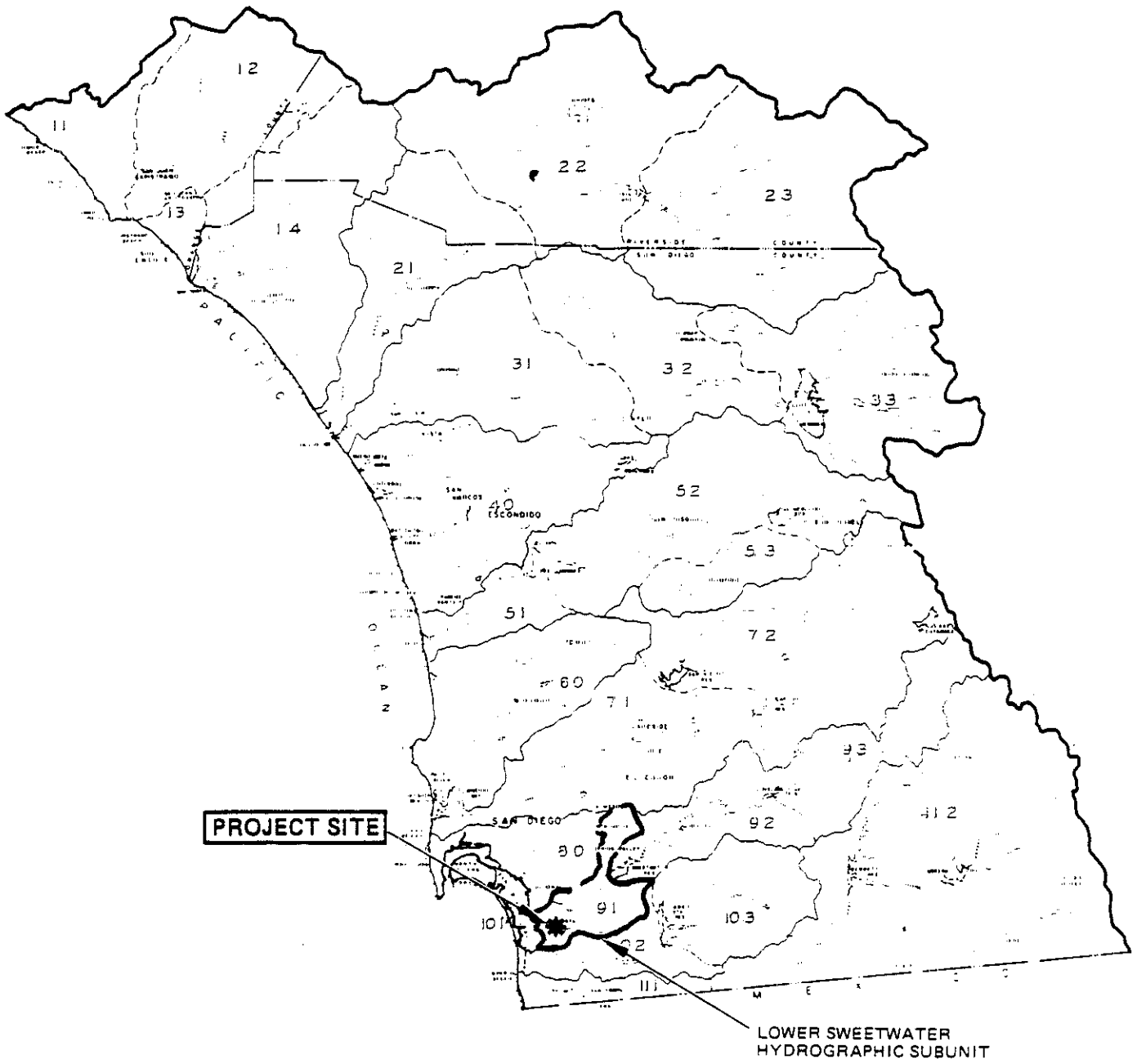
A preliminary drainage study was prepared for the project site by Rick Engineering Company in July 1986. This investigation is summarized below and the complete report is on file with the Environmental Review Section of the City of Chula Vista Planning Department. Additionally, the following section incorporates hydrologic and design data from Cinti & Associates (1986), San Diego Soils Engineering, Inc. (1986), the State Water Resources (SWR), and Regional Water Quality (RWQ) Control Boards (1975, 1979), Lawrence, et al. (1964), Wigington, et al. (1983), and WESTEC Services (1976, 1985).

E.1 Existing Conditions

Drainage Basins

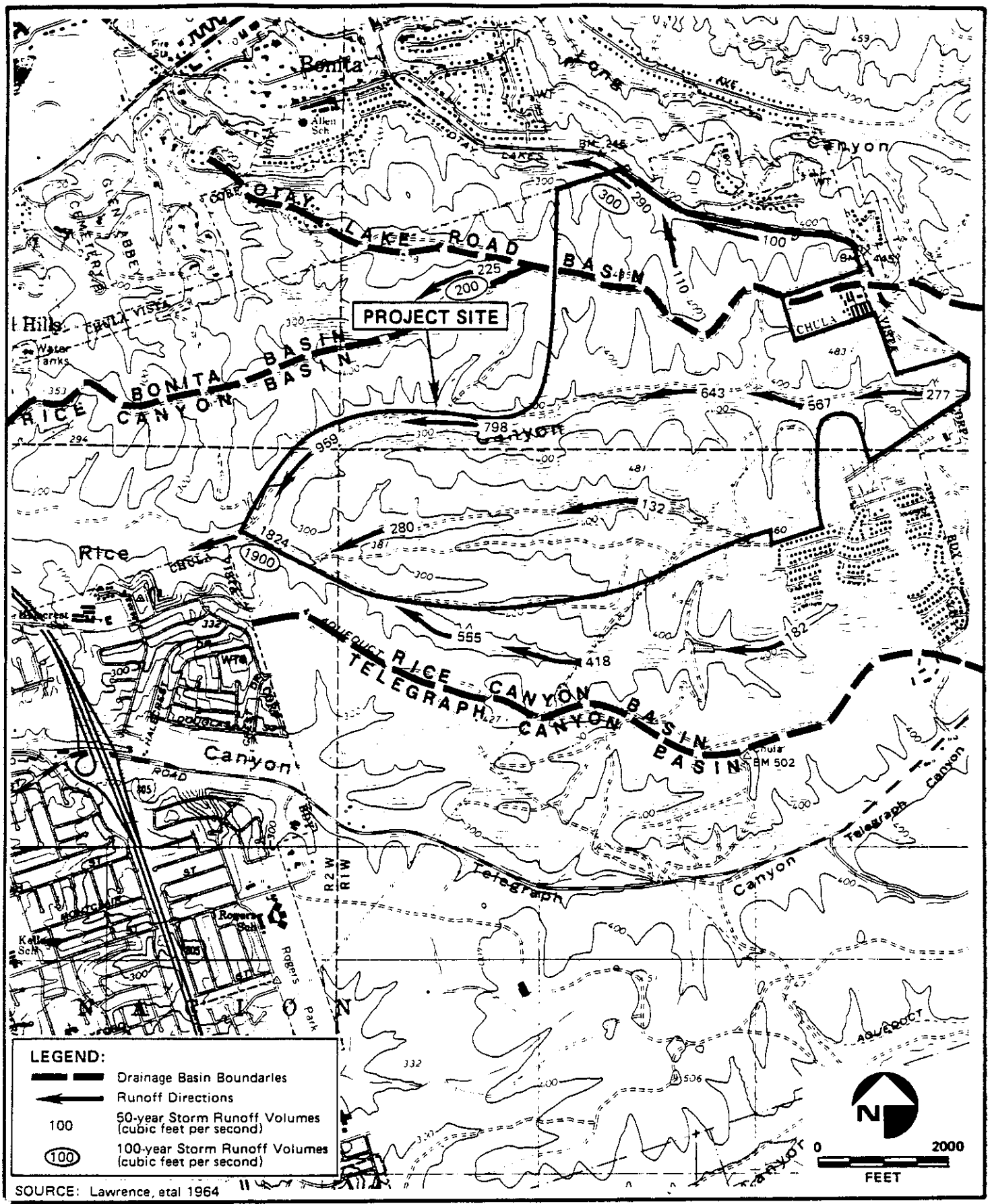
The project site is within the Lower Sweetwater subunit of the Sweetwater Hydrographic Unit, one of 11 major drainage basins within the San Diego Basin (Figure 4-E-1). Annual precipitation in the Lower Sweetwater subunit varies from approximately 11 to 14 inches. The project site is included in the watershed of the Sweetwater River, and incorporates portions of two major drainage basins; the Rice Canyon and Otay Lakes Road basins. Additionally, the Bonita Canyon basin is adjacent to the northwestern portion of the site. Runoff directions and volumes are diverse, due to the varied and generally rugged topography of the site. Major drainage channels flow primarily to the west through Rice and Bonita Canyons, and northwest through Otay Lakes Canyon. Figure 4-E-2 shows the locations and flow directions of these main channels, as well as boundaries of the 3 drainage basins and estimated 50- and 100-year storm runoff volumes. The 50-year volumes were calculated by Lawrence, et al. (1964) for existing and ultimate conditions. Ultimate runoff was based on land use projected in General Plan Studies, and included factors such as relief, soil classification, vegetation, and infiltration rates. Rick Engineering (1986) used a U.S. Army Corps of Engineers computer model to project the 100-year storm runoff volumes. To accomplish this, the project vicinity was divided into 10 subbasins, with 100-year storm runoff calculated for each individual subbasin, as well as appropriate combinations (Figure 4-E-3 and Table 4-E-1). For areas within and adjacent to the project site, runoff figures for 50- and 100-year storms did not differ significantly (Figure 4-E-2).

Three major east-west trending streams drain into Rice Canyon in the project site (Figure 4-E-2). At their convergence point, these 3 streams produce ultimate runoff of over 1800 cubic feet per second (cfs) for a 50-year storm, and 1900 cfs for a 100-year storm. A sediment basin and a double 96-inch storm drain are located here, with the storm drain running west to intersect an open channel outlet adjacent to Interstate 805. These facilities have been designed to handle the projected ultimate 50-year storm flow. However, because the variations in flow volumes between 50- and 100-year storms are



Lower Sweetwater Subunit of The Sweetwater Hydrographic Unit

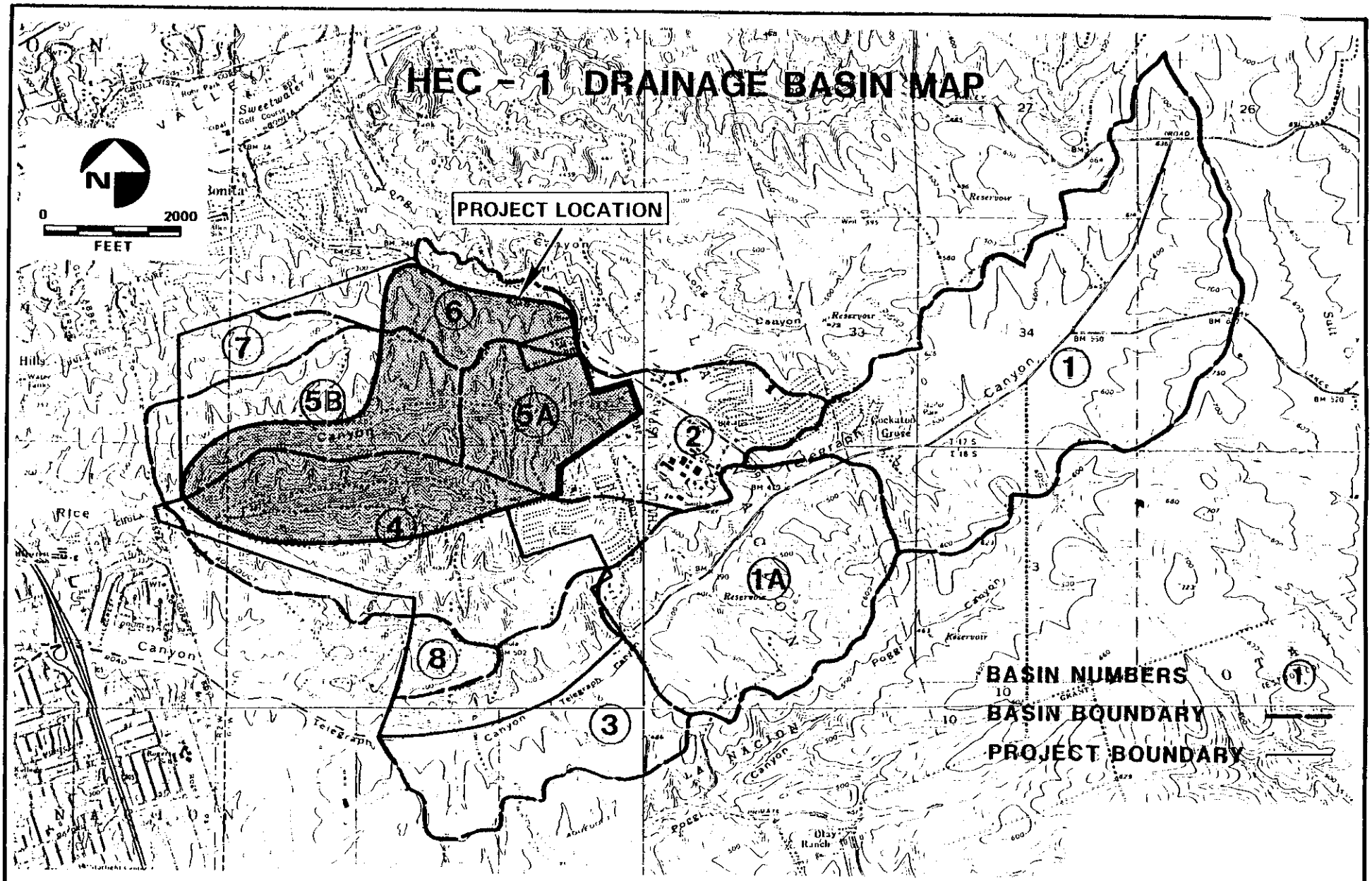
FIGURE 4-E-1



SOURCE: Lawrence, etal 1964

Drainage Basin Boundaries with 50-and 100-year Storm Runoff Volumes

FIGURE 4-E-2



Computer Model Drainage Basin Map

FIGURE 4-E-3

WES Service

Table 4-E-1

DRAINAGE BASIN CHARACTERISTICS AND RUNOFF

Basin No.	Area (sq. mi.)	Peak Discharge, Q100 (cubic feet per second)
1	1.89	1550
1A	1.08	700
1+1A	2.97	2100
3	.85	680
1+1A+3	3.82	2300
8	.12	150
7	.19	200
6	.37	300
2	.49	385
5A	.44	370
2+5A	.92	685
5B	.52	460
2+5A+5B	1.44	1030
4	1.29	890
2+5A+5B+4	2.74	1900

Source: Rick Engineering Co. 1986.

slight, these facilities are considered adequate to handle 100-year storm runoff (Bowling 1986). Within the project site, Rice Canyon is essentially unimproved, with all 3 main channels in a relatively natural condition. The main or northern channel, however, is heavily eroded in areas, with steep undercut banks. It is likely that at least a portion of this erosion is attributable to increased runoff associated with development upstream.

Drainage into the Otay Lakes Road Basin originates onsite in a number of small tributary canyons. Ultimate flow into the main channel west of Otay Lakes Road totals 290 cfs for a 50-year storm and 300 cfs for a 100-year storm. A number of drainage improvements exist along Otay Lakes Canyon, including a 66-inch storm drain northwest of the project site. The channel is designed for 50-year storm runoff, although as previously discussed, these facilities are considered adequate for a 100-year storm.

Ultimate 50-year storm runoff in the Bonita Basin is calculated at 225 cfs, while the figure for a 100-year storm is 200 cfs. This discrepancy is likely due to differences in the size of the drainage basin, and the level of upstream development used for calculations. Bonita Canyon is essentially in a natural state, with no drainage improvements located there.

Groundwater

During the geotechnical investigation of the property, a number of exploratory borings and trenches were excavated at various depths up to 94 feet. No regional groundwater table was encountered, although locally perched groundwater was observed in alluvial deposits at depths of 10 and 19 feet. This was attributed to localized seepage between permeable bedrock units, and the assumption was made that additional perched groundwater bodies exist onsite (San Diego Soils Engineering 1986). The level of these aquifers could fluctuate significantly with seasonal or cyclic variations in precipitation.

Water Quality

No known specific, qualitative investigation has been conducted for the water quality characteristics of surface runoff or groundwater on the project site.

Surface water quality in the Sweetwater Hydrographic Unit generally declines with increasing distance (west) from the eastern drainage divide, and with a reduction in the quantity of discharge (SWR, RWQ 1975). The project site is located in the westernmost subunit of the Sweetwater Hydrographic Unit, and drains to an ephemeral portion of the Sweetwater River below the Sweetwater Reservoir. By these criteria, therefore, relatively poor surface water quality would be expected in the project site vicinity. In addition, the major drainage channels flowing through and adjacent to the project site drain urbanized areas to the east and north. Urban development generally increases the potential for runoff contamination, with urban runoff commonly contributing bacteria, pesticides, nutrients, organics, solids, and metals to downstream waters (Wigington, et al. 1983). This is due to the interception of airborne pollutants by precipitation, and the accumulation of contaminants in surface runoff or drainage structures. A summary comparison of average runoff wasteloads for various land uses is shown in Table 4-E-2.

The State Water Resources and Regional Water Quality Control Boards (1979) have identified existing and potential beneficial uses for inland surface waters. In the Lower Sweetwater Subunit, existing uses consist of industrial service supply, noncontact water recreation, warm freshwater aquatic habitat, wildlife habitat, and the preservation of rare and endangered species. No potential was identified for additional future use of surface water.

Existing beneficial uses for groundwater in the Lower Sweetwater Subunit were identified as municipal and domestic supply, agricultural supply, and industrial service supply. Potential additional future use for groundwater in the subunit consists of groundwater recharge (SWR, RWQ 1979). These designations are regional, however, and do not reflect site-specific conditions throughout the subunit. A number of locations within the Lower Sweetwater Subunit (including the groundwater aquifer associated with the Sweetwater River Valley) were previously rated as inferior for domestic and irrigation uses (SWR, RWQ 1975). These ratings were based on observed levels of bacteria, various salts, boron, fluorine, and chlorine. These concentrations are attributed to the migration of connate waters into local valleys and previous intrusions of sea water.

Table 4-E-2

SUMMARY OF SURFACE RUNOFF POLLUTION COEFFICIENTS
FOR VARIOUS LAND USES

Land Use	Solids (lb/acre/yr)			Nutrients (lb/acre/yr)		Parameter (lb/acre/yr)	
	Total Solids	Suspended Solids	Dissolved Solids	Nitrogen (N)	Phosphorus (P)	Biochemical Oxygen Demand (BOD)	Chemical Oxygen Demand (COD)
Open Space, Barren	1,050	500	550	2.0	0.3	6.0	40
Grains, Hay	650	400	250	10	0.8	20	150
Citrus, Wainut Vegetables	650	400	250	30	1.5	30	200
Residential, Trailer Parks	900	500	400	12	2.0	30	230
Commercial, Parking	1,450	950	500	12	1.0	40	300
Industrial	1,250	700	550	12	1.2	30	240
Picnic, Golf Courses Green Lawns	650	400	250	15	0.5	18	100

Source: SWR, RWQ 1975.

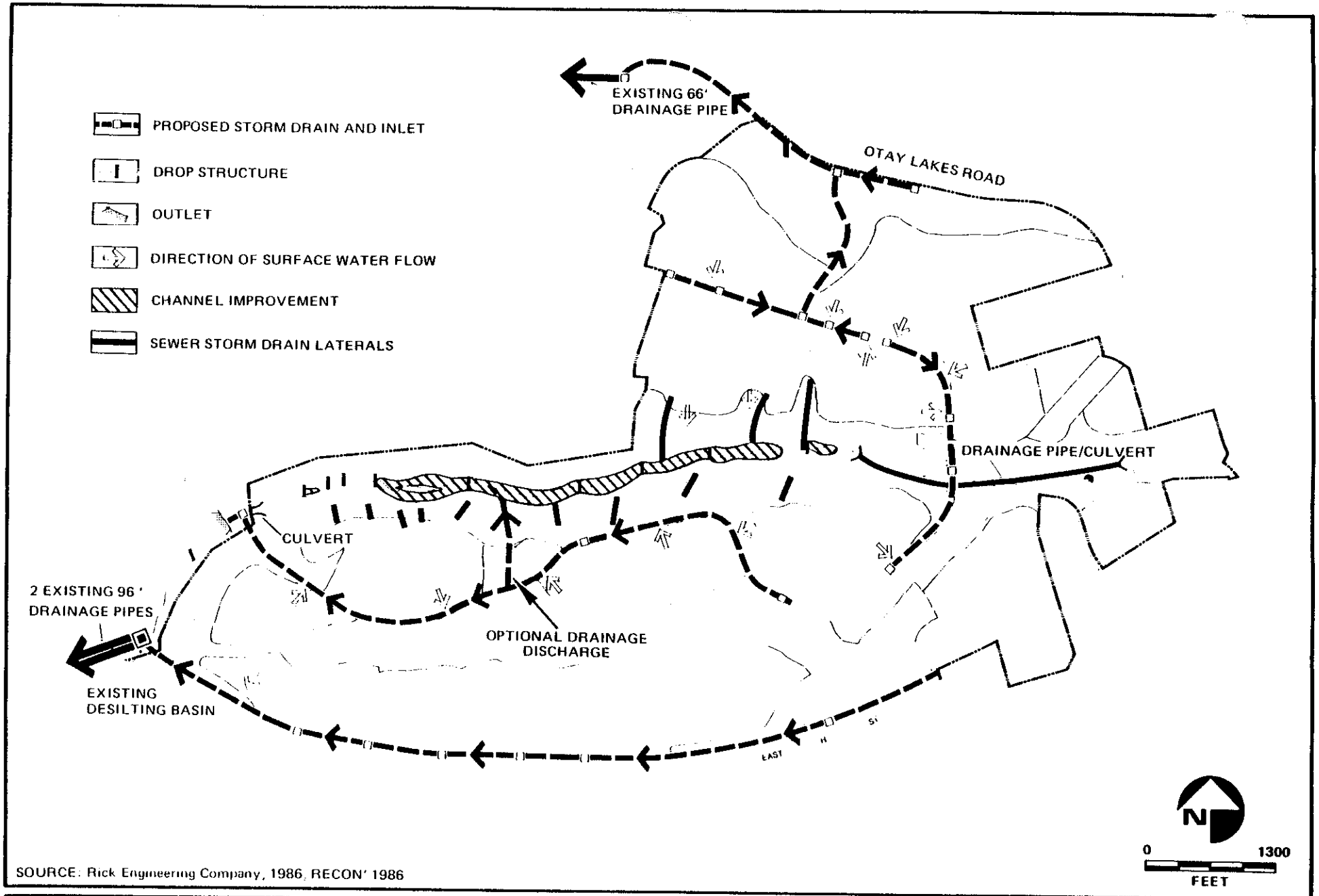
E.2 Impacts

Drainage Basins

The proposed development would require significant grading, infilling of drainages, and construction of impervious surfaces to accommodate the planned residential community (Figure 4-B-2). This would produce changes to both the nature and quantity of runoff within the site. Grading and drainage alteration would change the direction and velocity of runoff, and increase the potential for erosion by removing vegetation and creating artificial slopes. The construction of impervious surfaces would decrease the infiltration rate of precipitation and runoff onsite, as well as increasing the overall quantity of runoff moving over and off the site.

An increase in offsite runoff would magnify the potential for downstream erosion and flooding problems. However, as previously discussed, downstream facilities have been assumed adequate to handle a 100-year storm flood (Bowling 1986). Therefore, the proposed project would not be expected to result in significant impacts to the capacity of existing downstream drainage and flood control facilities.

Potential impacts would exist, however, to existing offsite facilities controlling downstream sediment movement. Specifically, the existing sediment basin located near the southwestern corner of the site could be affected (Figure 4-E-4). This structure is designed to reduce stream velocity, and consequently remove dissolved and suspended sediment loads. Grading and construction activities would likely produce an increase in downstream sediment load, due to the associated alteration of topography and removal of vegetation. This additional sediment yield would result in potentially adverse short-term effects to the offsite catchment basin. After the completion of development operations, however, onsite and downstream sediment loads would likely stabilize at or near pre-development levels due to proposed drainage improvement, slope stabilization, and revegetation plans (Thomas 1987).



SOURCE: Rick Engineering Company, 1986; RECON' 1986

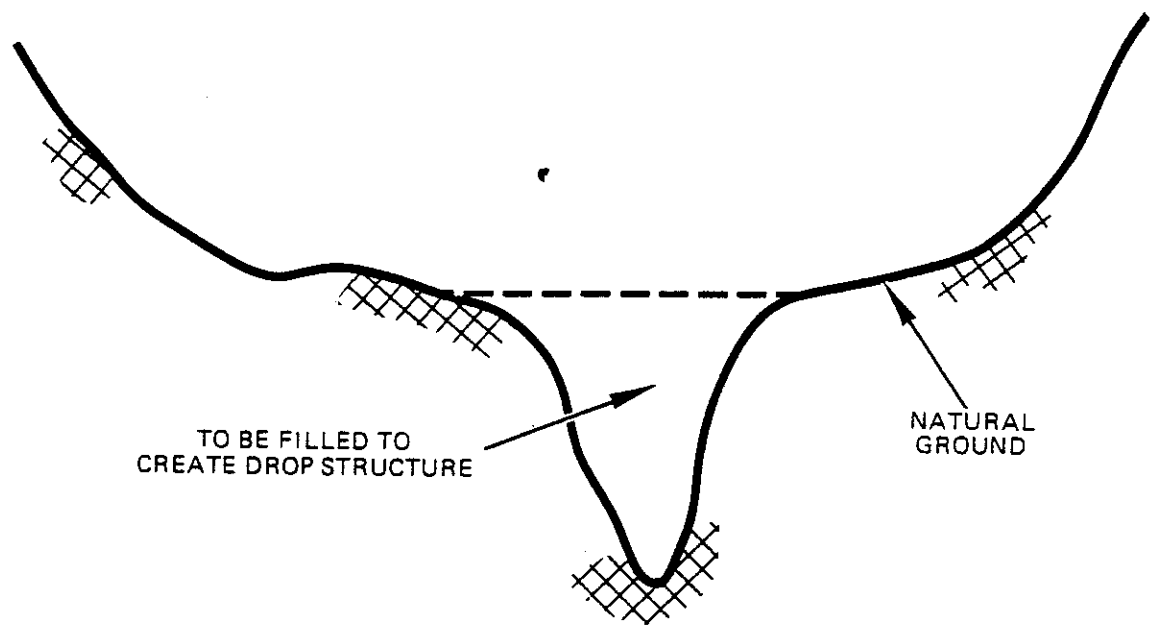
Proposed Storm-water Plan

FIGURE 4-E-4

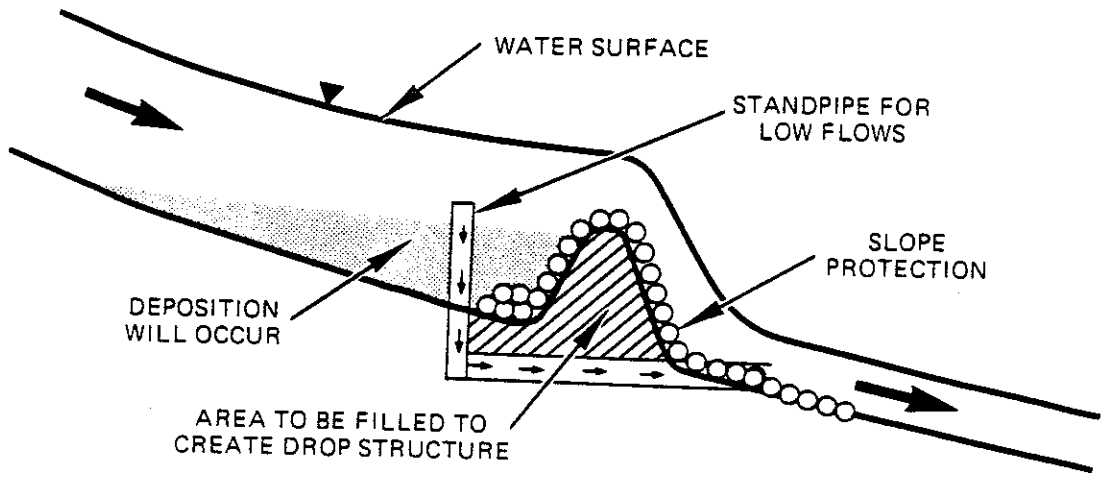
The increase in runoff from the proposed project would result in an acceleration of erosion in drainage channels and disturbed areas. This would produce additional undercutting of onsite stream banks, as well as impacting existing downstream drainage improvement facilities. A number of developments unrelated to the drainage system are also proposed in the main (northern) leg of Rice Canyon. These include the placement of fill in the eastern portion of the canyon to accommodate the proposed community park, a sewer maintenance road, hiking and equestrian trails, and artificial slopes associated with residential structures. Accelerated erosion and runoff in the main channel would pose a threat to all the proposed project facilities located there, as well as to individuals and animals utilizing the canyon area.

The proposed project development would include an onsite drainage system to control runoff and erosion, and prevent degradation of downstream facilities (Figure 4-E-4). This system would incorporate natural and improved channels, closed conduits, pipelines, and erosion control facilities to regulate surface water within the site.

The most significant development (and potential impacts) associated with the proposed drainage system would be located in the main (northern) leg of Rice Canyon. Proposed improvements here include nearly 2500 feet of drainage pipeline, a number of stabilizing excavations within the channel, 10 erosion-control drop structures up to 10 feet in height, a number of lateral storm drains from residential developments, a series of channel improvements to steep cut and fill banks, two 72-inch culverts totaling approximately 600 feet in length, and the use of riprap to stabilize appropriate bank locations (Figure 4-E-4). These features are designed to contain projected runoff within the existing and modified channel, protect against erosion of the onsite drainage system and associated slopes, and prevent the transport of excessive sediment downstream. The proposed channel alterations, drop structures, and use of riprap were identified by Rick Engineering (1986) as a means to reduce runoff velocities and stabilize the main Rice Canyon channel. Figures 4-E-5 and 4-E-6 show typical designs for these facilities, with proposed locations of all proposed drainage structures displayed on Figure 4-E-4.



TYPICAL SECTION

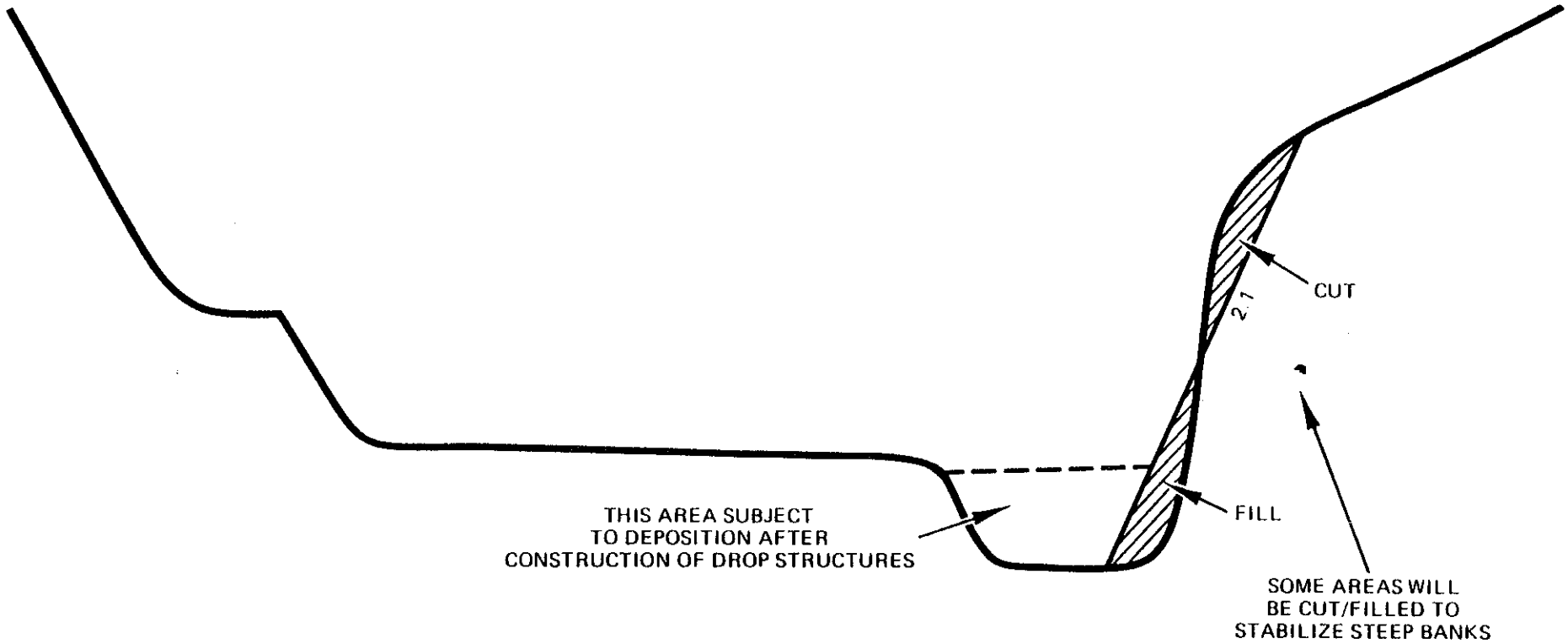


PROFILE

ed from Rick Engineering, 1986

Typical Drop Structure Section and Profile

FIGURE 4-E-5



Adapted from Rick Engineering, 1986

Typical Section of Proposed Channel Improvements in Rice Canyon

FIGURE 4-E-6

Additional potential impacts from proposed drainage improvements in Rice Canyon include the destruction or damage of riparian and native grassland habitat. This would be a short-term impact associated with construction of the identified drainage improvement facilities. These impacts would be compounded by similar activities for facilities unrelated to drainage improvement. In the long-term, project development is expected to provide a positive impact to riparian habitat in Rice Canyon by increasing the amount of runoff (and hence vegetation) in the drainage, and stabilizing the channel boundaries. Potential impacts to biological resources are discussed in more detail in Section 4.C.

Proposed facilities within the southern two legs of Rice Canyon which would be utilized to to facilitate drainage from the project site include a series of storm drains and natural channels. The runoff in these areas would follow the existing drainage courses to the sediment basin near the southwest corner of the site. From there, runoff would continue into the existing dual 96-inch drainage pipelines and flow to the west. No significant impacts related to drainage are anticipated in the southern Rice Canyon tributaries, provided the proposed improvements are implemented.

Runoff into the Otay Lakes Basin would flow through a system of storm drains utilizing natural and improved channels. These improvements would include several lengths of closed conduit, with runoff eventually flowing into the existing 66-inch drainage pipeline in Otay Lakes Canyon (Figure 4-E-4). Additionally, a previous study of the site (WESTEC 1985) concluded that the Otay Lakes Canyon channel might require lining to alleviate erosion associated with the steepness of the Otay Lakes road grade. This situation is not discussed specifically by Rick Engineering (1986), and represents a potential impact to slopes and facilities along the drainage. No significant impacts to drainage are anticipated in Otay Lakes Canyon from the proposed project, however, provided that the identified improvements are implemented.

Groundwater

Significant adverse effects related to regional groundwater bodies are not anticipated from the proposed project, due to the lack of such aquifers in the project site (San Diego Soils Engineering, Inc. 1986). Locally perched groundwater bodies were identified, however, with the conclusion that additional perched aquifers were likely onsite. These represent a significant potential flooding impact to proposed structures and facilities, especially during wet climatic periods when groundwater levels rise. The geotechnical investigation recognizes this potential impact, and identifies specific mitigation measures which are listed in this section. No significant impacts from locally perched groundwater would be expected if these mitigation measures are implemented.

Water Quality

The proposed development would be expected to generally decrease water quality both within and downstream from the site. This is due primarily to impacts associated with urban development as previously discussed; specifically, increases in runoff, erosion, and the discharge of contaminants would accompany the implementation of the Rancho del Rey SPA-I Plan. The increase of runoff and the accompanying potential for erosion would present the most significant impact to the project site and downstream drainage. A generally high erosion potential exists throughout the site due to the granular, cohesionless nature of most soils present (San Diego Soils Engineering 1986). This would be accelerated somewhat due to the planned replacement of relatively clayey soils with sandy fill in a number of areas. Fill material is superior to clay soil in terms of compaction (for building pads, etc.), but is more susceptible to erosion due to the lack of cohesive elements. Additionally, the proposed project involves a signficant amount of landform alteration, including the construction of a number of large artificial slopes in existing tributary drainages (Figure 4-B-2). These would be susceptible to erosion, especially during the period initially after construction and before the establishment of vegetation. An increase in erosion would result in additional sediment loads in both onsite and downstream runoff. This would reduce water

quality by the presence of higher total dissolved solids (TDS) levels in the form of sediment, fertilizers, salts, and other materials picked up along the runoff course. Extensive measures to mitigate potential impacts related to erosion have been identified by San Diego Soils Engineering (1986) and Rick Engineering (1986). Significant impacts to water quality from erosion are not anticipated if these measures are implemented.

Additional potential impacts to water quality from the proposed development include the discharge of hazardous or toxic materials, either directly or indirectly, into drainage systems. This could include contaminants such as oil, grease, and heavy metals from automotive sources, pesticides and herbicides from residential or municipal uses, and bacteria from human or animal wastes. A number of existing laws regulate the discharge of hazardous and toxic substances into water courses, and the expected generation of such materials on the project site would constitute a very small incremental contribution to overall regional water contamination. Nonetheless, the proposed project would contribute to the regional increase in the quantity of these pollutants, and the overall change in character of receiving waters. However, due to the small quantities of projected contamination and the existence of controlling legislation, no significant impacts to water quality would be expected from these sources.

Implementation of the proposed drainage system would require approval by the City of Chula Vista Department of Public Works. Additionally, a number of mitigation measures relating to hydrology/water quality have been identified by Rick Engineering (1986) and San Diego Soils Engineering (1986), as listed below. Assuming these measures are implemented, and the City of Chula Vista approves the proposed drainage system, no significant impacts to hydrology/water quality would be expected from the proposed project.

E.3 Mitigation Measures

The mitigation measures listed below were generated as a result of technical investigation of the project site and represent the best known information on hydrology/water quality to date. Subsequent investigation, if conducted, should be used to augment the following recommendations where appropriate.

- The proposed drainage system should be included as a portion of the project development, contingent upon approval by the City of Chula Vista Department of Public Works.

- All drainage facilities, including brow ditches, storm drains, and culverts, should be regularly maintained to insure proper working condition. Additionally, the offsite sediment basin near the southwest corner of the property should be monitored to insure adequate desilting of downstream runoff. A maintenance district should be established for the sediment basin, to delineate the appropriate fees, schedules, and responsibilities in maintaining the structure.

- The final design and location of all drainage facilities in the north leg of Rice Canyon should be reviewed by a qualified biologist. Construction and installation of these facilities should be concurrent with all other proposed improvements in the canyon.

- Adequate surface drainage and runoff control should be provided on all building pads and slopes, pursuant to the recommendations of the geotechnical consultant during grading.

- The placement of fill in alluvial areas should be conducted to insure adequate subsurface and subgrade drainage. The geotechnical consultant should evaluate the drainage requirements of alluvial areas on a case-by-case basis.

- Pad drainage should be designed to collect and direct surface waters away from proposed structures to approved drainage facilities. For earth areas, a minimum gradient of 2 percent should be maintained, and drainage should be directed toward approved swales or drainage facilities. Drainage patterns approved at the time of fine grading should be maintained throughout the life of proposed structures.

- Subdrains should be placed under all fills located in drainage courses at identified or potential seepage areas. Their specific locations should be

evaluated in the field during grading by the geotechnical consultant. General subdrain locations should be indicated on the approved grading plan, and subdrain installation should be reviewed by the Engineering Geologist prior to fill placement.

- Subdrain specifications should conform to the recommendations of the geotechnical consultant.

- Drainage structures should be utilized behind stabilization fills to minimize the buildup of hydrostatic and/or seepage forces. The locations and specifications of these drains should conform to the recommendations of the geotechnical consultant.

- Drainage structures should be utilized at contacts between permeable and nonpermeable geologic units if deemed necessary by the geotechnical consultant during grading.

- The use of cohesionless soils on slopes should be avoided to decrease the erosion potential.

- Surface runoff into downslope natural areas and graded areas should be minimized. Where possible, drainage should be directed to suitable disposal areas via nonerosive devices (i.e., paved swales and storm drains).

- Graded berms, swales, area drains, and slopes are designed to carry surface water from pad areas and should not be blocked or destroyed. Water should not be allowed to pond in pad areas, or flow down graded or natural slopes.

- Sources of uncontrolled water, such as leaky water pipes, drains, swimming pools, etc., should be repaired if identified.

- All subdrain outlets should be mapped at the completion of grading and shown on the as-built plans.

- A revegetation plan acceptable to the City of Chula Vista should be prepared by a qualified landscape architect, with input where appropriate from the project biologist. All existing and proposed disturbed areas, especially slopes, should be revegetated as soon as possible after the completion of grading.

- All access roads and trails within canyons should be constructed of pervious materials to reduce runoff.

E.4 Analysis of Significance

Available information indicates that there are no major hydrologic/water quality constraints on the project site which would preclude development. Potential identified impacts include accelerated erosion and water quality degradation to both onsite and downstream areas. Assuming that all identified mitigation measures are implemented, however, no significant hydrology/water quality impacts would be expected from the proposed project development.

F. TRAFFIC CIRCULATION AND ACCESS

This section is adapted from a transportation analysis report prepared for the Rancho del Rey SPA-I project by Urban Systems Associates, Inc. in October 1986 (revised in March 1987), and an independent review of the report by Willdan Associates completed in April 1987. Urban Systems Associates, Inc. (U.S.A, Inc.) was retained by the applicant to evaluate the potential circulation and access impacts from the proposed project. Willdan was retained by the City of Chula Vista to review the U.S.A., Inc. report. The complete technical transportation report and review are included in this document as Appendix A.

Methodology and Assumptions

Several assumptions were included in the analysis of potential impacts of the proposed project on the transportation system of Chula Vista. The projected

regional growth rate within the City of Chula Vista was assumed to be 4 percent annually, although the SANDAG growth projections show less than 3 percent annual increase in population growth and in traffic generation. The purpose of using the 4 percent estimate was to ensure that adequate transportation facilities will be available to accommodate not only the Rancho del Rey project but also other approved and identified developing projects in the rapidly growing eastern Chula Vista area. This factor was applied to existing traffic volumes which had been increased to reflect development of approved but unconstructed subdivisions.

To determine traffic impacts likely generated by project development and concurrent regional growth, the trips generated by the project for each year of buildout (1988 to 1993) were distributed on the existing and proposed circulation facilities. Then, the existing traffic volume on East "H" Street, east of Interstate 805 (I-805), was adjusted upward by the 4 percent growth rate, representing an increased "background" traffic. The "background" traffic, when added to the distributed yearly project-generated traffic, resulted in cumulative average daily traffic volumes for each year of development. The final buildout volume represents the level of development to be accommodated without additional major regional transportation improvements such as the construction of Route 125.

In addition to the growth rate adjustment, a "passerby" trip effect was incorporated as an assumption in calculating the levels of trip generation for the proposed project. Linked trips or "passerby" trips are trips in which there are multiple stops (e.g., a person leaves work, then stops at a dry cleaner and grocery store before arriving at home). In these cases, intervening stops are actually part of the work-to-home trip and do not represent additional trips on the street system. An assumption regarding the number of "passerby" trips to Plaza Bonita Center and Terra Nova Shopping Center was incorporated into the yearly growth forecasts for traffic volumes on Bonita Road directly east of I-805 and on East "H" Street directly east of I-805; the increase in volumes on the segments of these two streets east of I-805 is the direct result of trips generated by the shopping centers, attracted from the I-805 freeway and the existing communities to the west of the freeway. Since both shopping centers

have easy access to and from I-805, shoppers are assumed to be drawn from other centers which are not as accessible (such as the Chula Vista Shopping Center in downtown Chula Vista). The methodology for calculating the "passerby" trips is contained in the U.S.A., Inc. traffic analysis (Appendix A).

As regional growth to the east of the shopping center entrances results in an increase in traffic volumes at the I-805/Bonita Road and I-805/East "H" Street interchanges, the convenience for shoppers outside the area will be reduced. A portion of the traffic generated by growth to the east will gradually displace the trips generated outside the region that are now destined for the shopping centers.

The final assumption in the traffic analysis is with regard to trip distribution for the project. The trips estimated to be generated from the project were distributed according to the assumed yearly phasing of the SPA-I Plan area onto the existing street system according to assumed street segment distribution percentages (distribution percentages were derived from SANDAG's September 1984 computer forecast of the Chula Vista area). Based on an initial trip distribution and assignment of trips to the street network, the number of trips assumed for Phase I of the SPA-I Plan, the employment park, required a reduction of approximately 10,000 trips. This reduction was necessary to help assure that the street system would not be over capacity prior to construction of proposed Route 125. Additionally, the reduction was necessary to accommodate traffic from approved and bonded tract maps and the assumed 4 percent regional growth rate. If the 4 percent growth rate is not realized during the buildout of SPA-I, additional trips could be transferred to the SPA-I residential element or employment park, or to future SPA Plans (i.e., if regional growth was less than 4 percent, the need for Route 125 and other regional improvements would be delayed beyond the buildout period for SPA-I). The U.S.A., Inc. trip distribution percentages assumed that the proposed extension of Route 125 south from the Southbay Parkway would not be constructed by the time that the proposed project is completed.

Levels of service (LOS) for roadways and intersections are a function of traffic movement and delay. Descriptions of basic LOS conditions are listed below in Table 4-F-1.

Table 4-F-1

LEVEL OF SERVICE (LOS) DEFINITIONS

Level of Service	Operating Conditions
A	Free flow; speed controlled by driver's desires, speed limits, or physical roadway conditions.
B	Stable flows; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	Stable flow; speeds and maneuverability more closely restricted.
D	Approaches unstable flow; tolerable speeds can be maintained, but temporary restrictions to flow cause substantial drops in speed. Little freedom to maneuver, comfort and convenience low.
E	Volumes near capacity; flow unstable; stoppages of momentary duration. Ability to maneuver severely limited.
F	Forced flow; low operating speeds; volumes below capacity, queues form.

The Chula Vista Subdivision Manual specifies 50,000 ADT as the design volume for a prime arterial and 25,000 ADT as the design volume for a major street. The County of San Diego identifies the Level of Service "C" capacity for a prime arterial (six-lane divided roadway) as 44,600 vehicles per day with 50,000 being the low limit for Level of Service "D" and 57,000 being the low limit for Level of Service "E".

The El Rancho del Rey Specific Plan Amendment EIR (WESTEC 1985) addressed transportation impacts to Telegraph Canyon Road, East "H" Street, East "J" Street, Paseo del Rey, Paseo Ranchero, Paseo Ladera, Buena Vista Way, Ridgeback Road, Otay Lakes Road and the SPAs I-IV internal roadways. The traffic analysis for the SPA-I Plan addresses East "H" Street, Otay Lakes Road and the SPA-I internal roadways, while the remaining roads will be addressed by future SPA Plans.

The Specific Plan's projected cumulative traffic volumes for the SPA-I roadways were based on the 1995 SANDAG forecast. It was projected that East "H" Street from I-805 to Ridgeback Road would carry 47,800 daily trips; and between 17,100 and 30,100 ADTs from Ridgeback Road to Otay Lakes Road. Otay Lakes Road would carry 15,500 to 24,500 daily trips on average. In the project's internal street system, the loop road would carry between 11,300 and 6,600 average daily trips; Road A would carry 11,800 trips daily; Road B would carry 7,000 trips daily; and Road C would carry 6,300 average daily trips.

The traffic analysis for the Specific Plan anticipated that the primary project impacts would be at the East "H"/I-805 interchange. Impacts at other intersections were identified and recommended mitigation measures and resulting LOSs follow. It was determined that Otay Lakes Road and East "H" Street intersection would operate at a Level of Service "A" provided East "H" Street has six lanes (three eastbound, three westbound), with the other lanes also serving as right turn lanes and a separate left turn lane. Otay Lakes Road at the intersection with East "H" Street should be four lanes (two northbound, two southbound) with the outer lanes also serving for right turns and separate left turn lanes. The Otay Lakes Road at the Road "A" intersection would operate at a Level of Service "C/D" provided Otay Lakes Road has four lanes (two northbound, two southbound) and Road "A" has four lanes (two eastbound, two westbound). In order to bring Otay Lakes Road up to a full Level of Service "C", there should be a dual left turn from Road "A" onto Otay Lakes Road. The East "H" Street at Buena Vista intersection would operate at a Level of Service "A" with East "H" Street as a six-lane prime arterial with a separate left-turn lane. Buena Vista would be designated as a four-lane collector, without a separate left-turn lane. The East "H" Street at Ridgeback Road would operate at a Level of Service "C" with six lanes on East "H" Street plus dual left turn lanes. Ridgeback Road would need four lanes plus dual left turn lanes.

F.1 Existing Conditions

Existing regional access to the project vicinity is provided by I-805 via interchanges with East "H" Street, Bonita Road, and Telegraph Canyon Road.

Direct access to the project site is provided via East "H" Street and Otay Lakes Road which bound the project on the south and north-northeast sides, respectively.

I-805 is a major north-south, eight-lane divided freeway which branches off Interstate 5 in Sorrento Valley and reconnects in San Ysidro. Currently, the freeway carries 92,800 and 88,700 average daily trips (ADT) north and south of "H" Street, respectively (see Figure 4-F-1). South of Telegraph Canyon Road, I-805 carries 70,000 ADT.

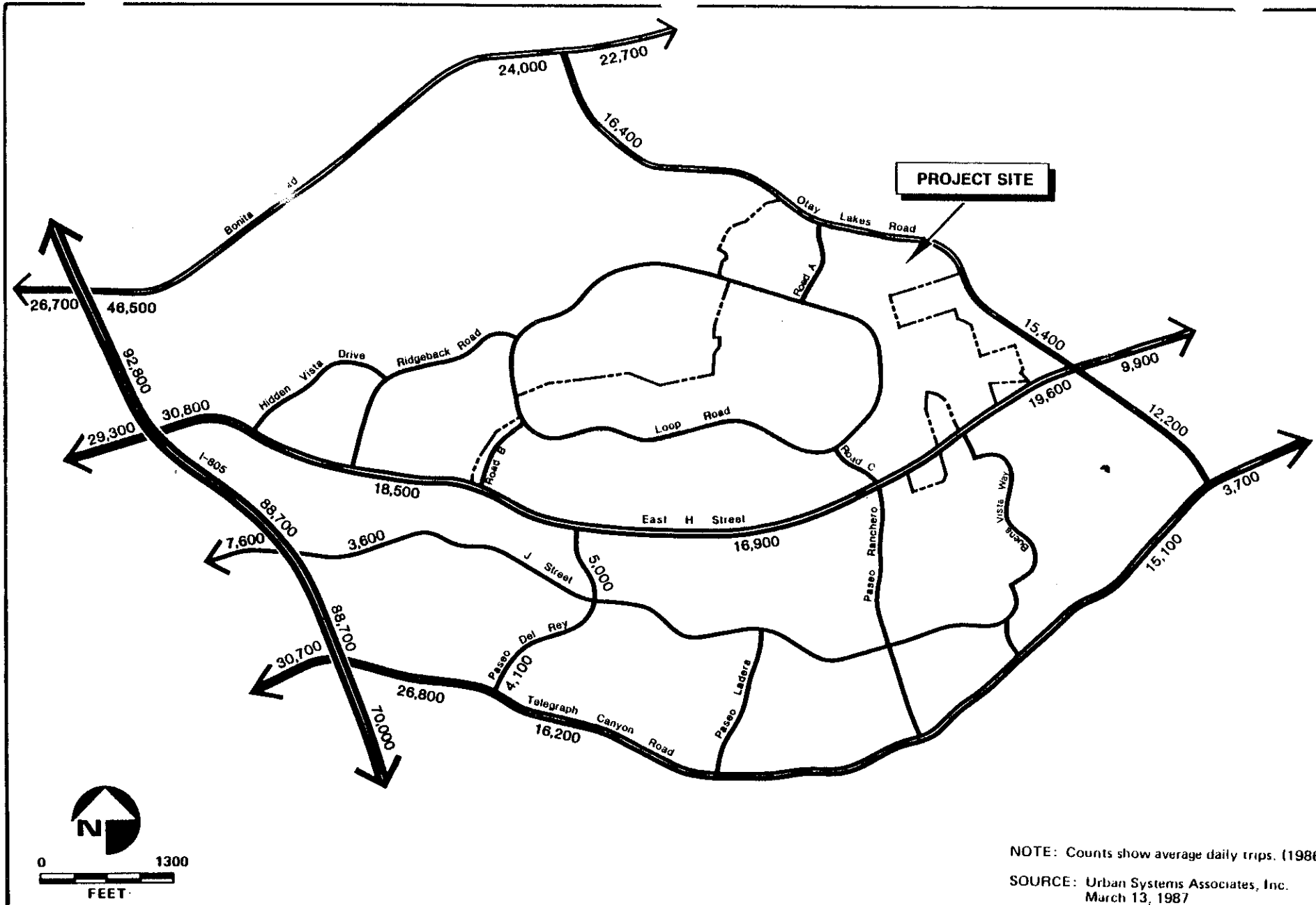
East "H" Street varies from two to four lanes in width and carries 29,300 ADT west of I-805; 30,800 ADT just east of I-805; 18,500 ADT between Ridgeback Road and Paseo del Rey; 16,900 ADT between Paseo del Rey and Buena Vista Way; and 19,600 and 9900 ADT on the west and east side, respectively, of the East "H" Street/Otay Lakes Road intersection (Figure 4-F-1). East "H" Street is planned as a six-lane prime arterial from I-805 east to Otay Lakes Road, a four-lane prime arterial east of Otay Lakes Road to the proposed extension of Route 125, and a four-lane major road east of Route 125.

Otay Lakes Road varies from two to four lanes in width and carries between 16,400 and 15,400 ADT from Bonita Road south to East "H" Street and 12,200 ADT south to Telegraph Canyon Road.

Telegraph Canyon Road varies from a six-lane divided road between I-805 and Otay Lakes Road to a two-lane road west of Otay Lakes Road; Telegraph Canyon Road carries from 26,800 ADT just east of Interstate 805 to 15,100 ADT just west of Otay Lakes Road (Figure 4-F-1). Telegraph Canyon Road is planned to be a six-lane prime arterial from I-805 to Otay Lakes Road.

Bonita Road is a four-lane major road which carries 46,500 ADT directly east of I-805; 24,000 ADT immediately west of the Otay Lakes Road intersection; and 22,700 ADT east of the Otay Lakes Road intersection.

There are currently traffic signals located on Telegraph Canyon Road at the intersections of the I-805 northbound on and off ramps, Crest Drive, Paseo del



NOTE: Counts show average daily trips. (1986).

SOURCE: Urban Systems Associates, Inc. March 13, 1987

Existing Traffic Flow

FIGURE 4-F-1

Rey, and Medical Center Drive. There are also existing traffic signals at the intersections of East "H" Street with Otay Lakes Road, with Hidden Vista Drive, with Paseo del Rey, and with the I-805 northbound ramps.

F.2 Impacts

The proposed land uses for the SPA-I Plan are generally consistent with the land uses contained within the previously approved Specific Plan. As a result, the trip generation rate of the SPA-I Plan is similar to that estimated for the Specific Plan. Table 4-F-2 compares the anticipated total vehicle trips generated by the proposed SPA-I area, using SANDAG's trip generation rates for the San Diego region.

The Specific Plan was approved for a total of 44,322 trips while SPA-I would generate 41,054 trips for the same area. This represents a decrease in trip generation of about seven percent caused by a reduction in acreage planned for the employment park plus the varied density planned for the residential element of the proposed SPA-I Plan. Recent revisions (March 1987) to the SPA-I Plan, which occurred subsequent to the initial U.S.A., Inc. analysis, have increased the total number of average daily trips by 376 over the 41,054 ADT figure. This increase of less than 4 percent is not considered a significant or substantial increase and does not warrant a modification to the traffic analysis (Willdan 1987).

Trip Generation, Distribution and Assignment

The distributed trips from SPA-I along with the existing (1986) traffic plus an assumed increase in traffic from approved but unconstructed development together with a factor for regional growth were assigned to off-site street segments in annual increments to determine the size of streets and off-site improvements necessary to accommodate traffic from the phased construction of SPA-I. Trips from schools, parks, and community facilities were not assigned to the external street system, assuming that they would remain internal to the SPA-I Plan area (U.S.A., Inc.). According to Willdan, however, a portion of these trips would have origins outside of the SPA-I Plan area.

Table 4-F-2

TRIP GENERATION COMPARISON
ADOPTED SPECIFIC PLAN VS PROPOSED SPA-I

Land Use	Dwelling Units*			Trips Generated (ADT)	
	Specific Plan	Proposed SPA-I	Trip Rate	Specific Plan	Proposed SPA-I
Residential:					
0-6 du/ac	1,391	982	10/du	13,910	9,820
7-20 du/ac	810	1,219	8/du	6,480	9,752
TOTAL	2,201	2,201			
	RESIDENTIAL TOTALS:			20,390	19,572
Employment Park:					
Industrial/ Business	111.6/ac	71.1 ac	200/ac	22,320	14,220
Commercial	0	13.4 ac	400/ac	0	5,360
	NON-RESIDENTIAL TOTALS:			22,320	19,580
Community Facilities:					
Schools	10.2/ac	12.6 ac	60/ac	612	756
Parks & Community Facilities	55.4/ac	61.2 ac	Varies	1,000	1,146
	COMMUNITY FACILITIES TOTALS:			1,612	1,902
			TOTALS:	44,322	41,054

*Source: McMillin Development, 3/20/87

Source: U.S.A. Inc. 1987

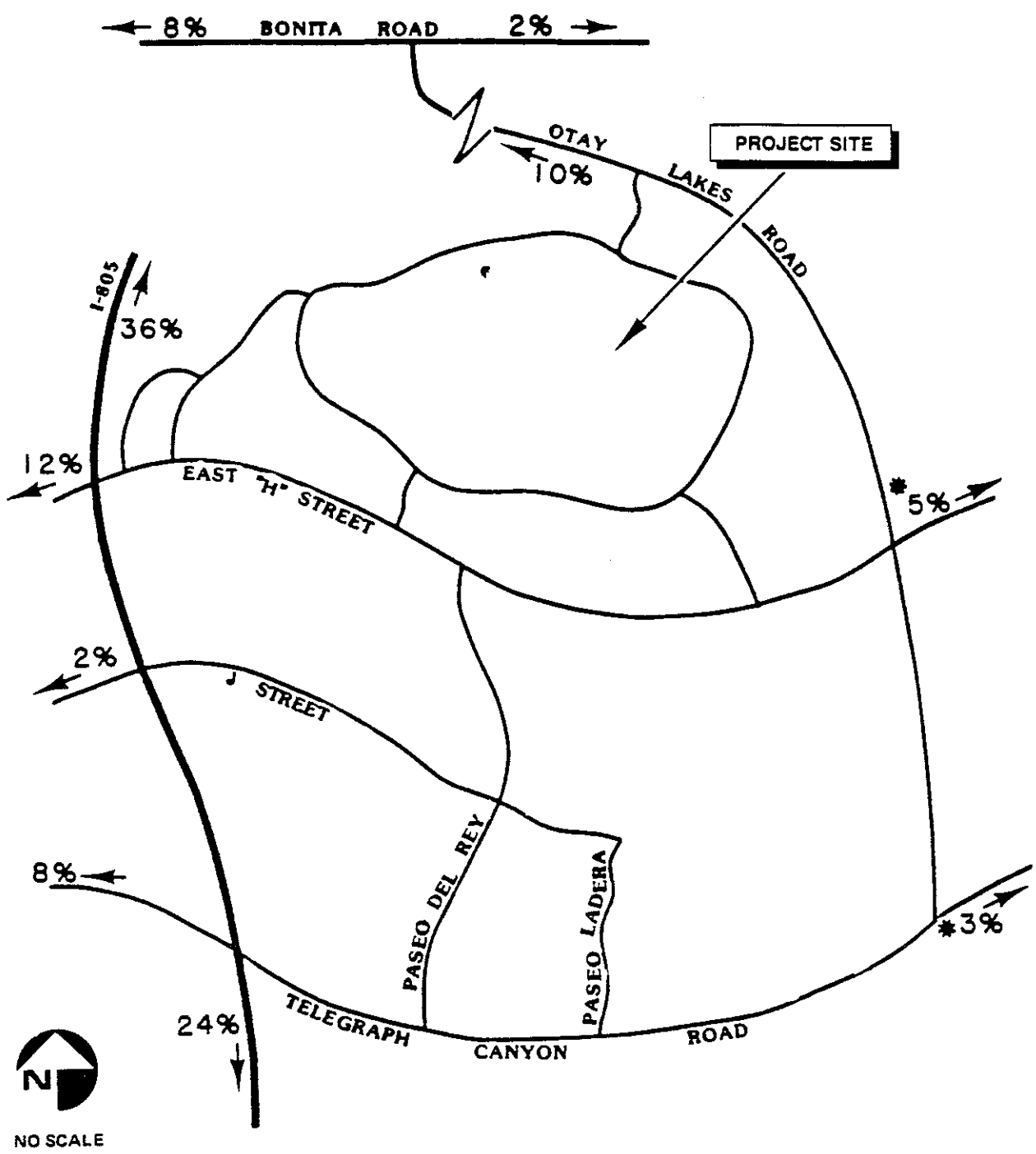
This small increase in external traffic, however, is offset by the U.S.A., Inc., assumption regarding no reduction in total external trips to account for vehicle trips between onsite residential and onsite commercial/industrial areas or for residential trips that remain within SPA-I residential areas. Because these two factors roughly balance, no re-assignment of external trips is necessary for the accuracy of the analysis (Willdan 1987).

The traffic distribution to I-805 from East "H" Street, based on engineering judgement and SANDAG regional computer forecast results, is assumed to be approximately 60 percent to and from the north and 40 percent to and from the south.

Cumulative Yearly ADT Including Regional Growth

The transportation analysis includes consideration of traffic impacts for the yearly cumulative development of SPA-I including additional traffic from approved tentative maps for areas to the east, and the assumed regional growth (again approximately 4 percent), over the period of buildout for the project. For the purposes of the transportation analysis, the buildout of SPA-I was projected to occur over a 6-year period beginning in 1988.

To determine traffic impacts likely from project development plus the growth of the region, the trips assumed to be generated by the project for each year between 1988 and 1993 were distributed according to the distribution percentages (Figure 4-F-2). Existing traffic volume on East "H" Street east of I-805 was adjusted upward by 4 percent each year. This increased "background" traffic was added to the distributed and assigned yearly project traffic. Ten thousand of the total number of trips projected to result from development of the employment park area were not assigned. The resulting average daily traffic volumes for the years 1988 to 1993 are shown in Figures 4-F-3 to 4-F-8. Cumulative average daily traffic volumes for the horizon year (1993) are illustrated in Figure 4-F-9. Table 4-F-3 summarizes the land uses and the yearly ADTs for each of the four areas depicted in Figures 4-F-3 to 4-F-8.

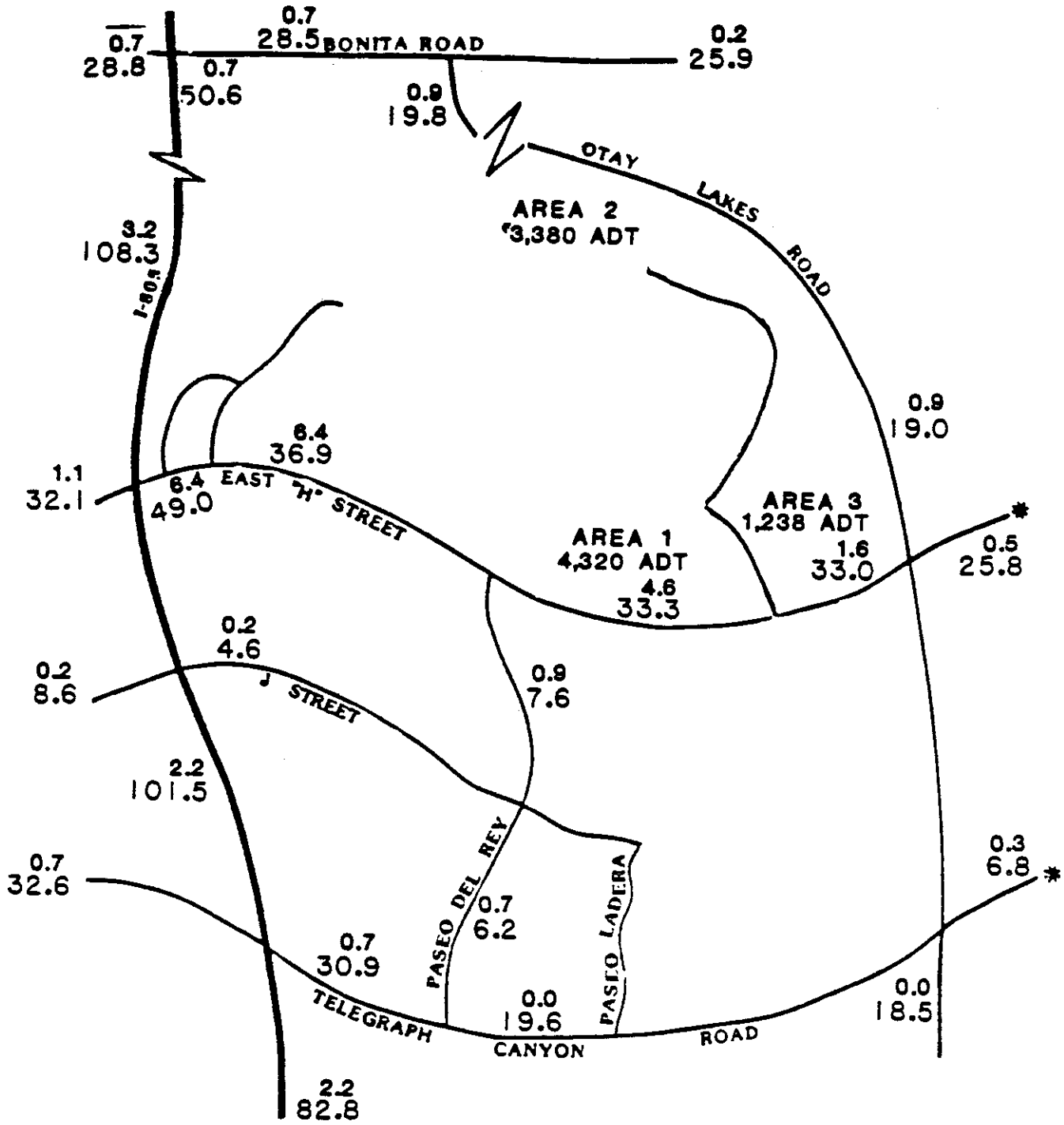


* No connection to SR-125 assumed

SOURCE: U.S.A. INC., 1987

Distribution Percentages for SPA I

FIGURE 4-F-2



LEGEND:

(XXX) = Project Cumulative Traffic (ADT)

XXX = Project + Existing + 4% Background Growth (ADT)

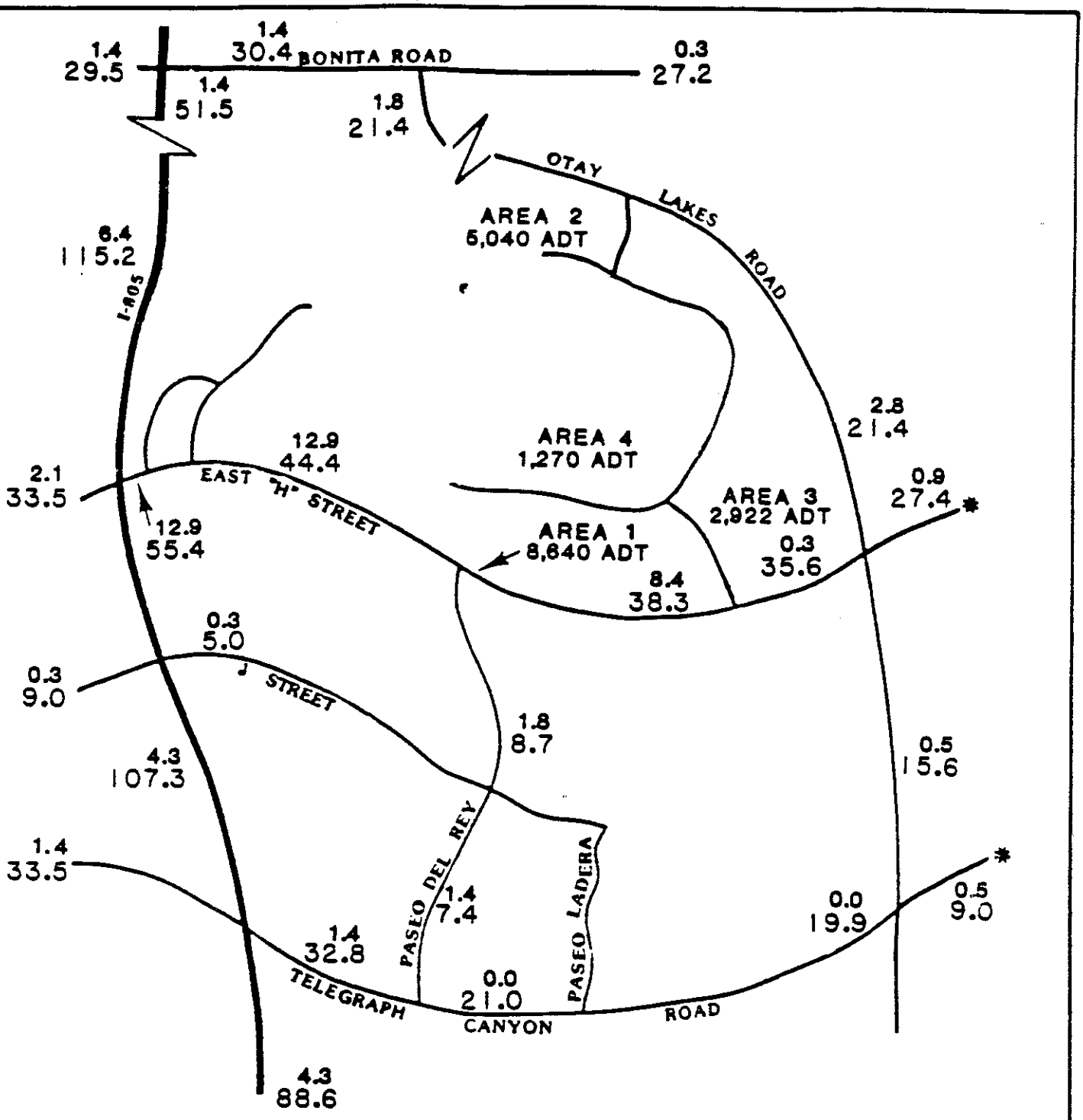
✱ = No Connection to SR-125 Assumed

N

(NO SCALE)

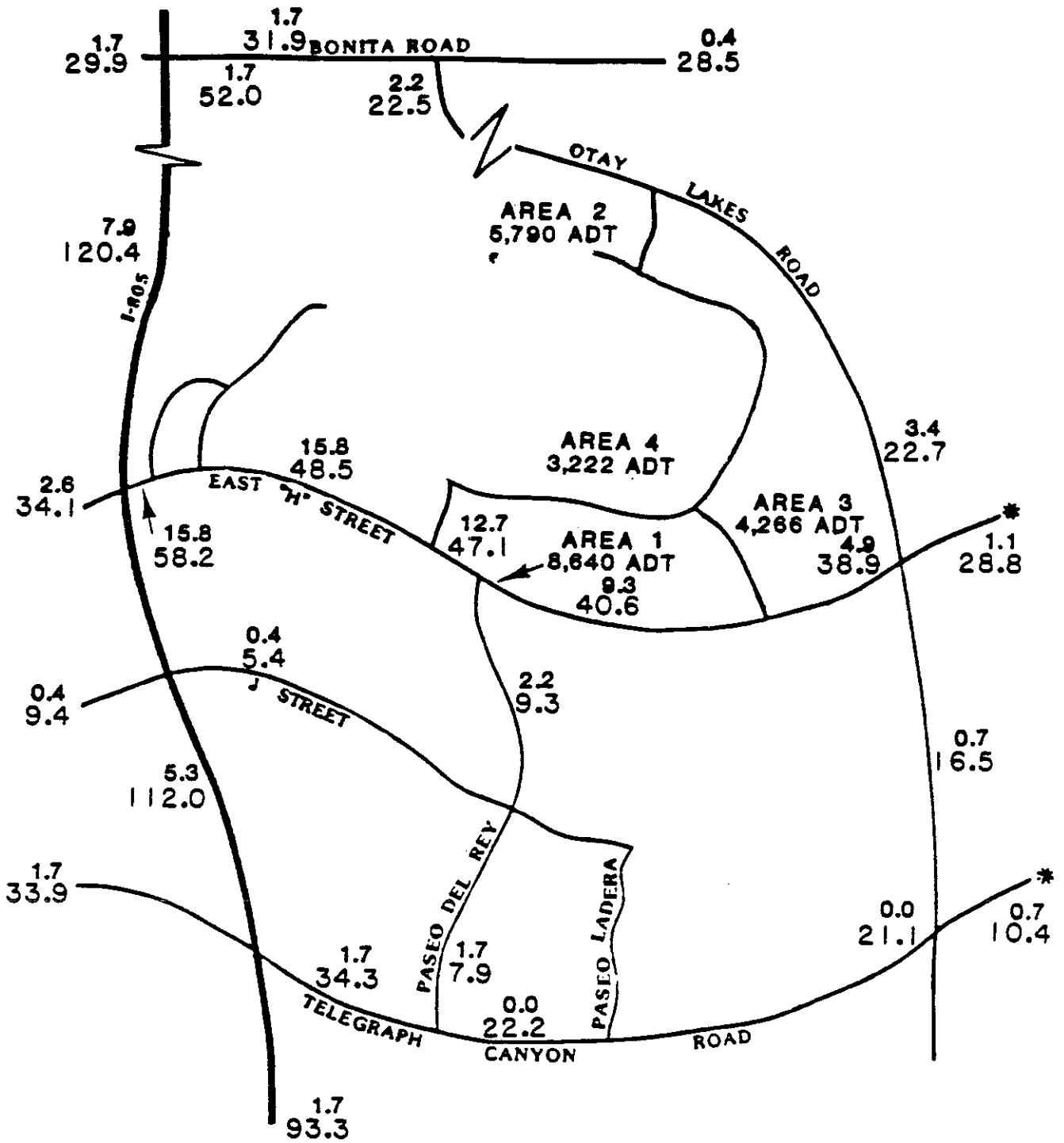
Cumulative ADT (In Thousands) for Threshold One (1988)
(Project + Existing + 4% Growth)

FIGURE 4-F-3



Cumulative ADT (In Thousands) for Threshold Two (1989)
(Project + Existing + 4% Growth)

FIGURE 4-F-4



LEGEND:

(XXX)= Project Cumulative Traffic (ADT)

XXX= Project + Existing + 4% Background Growth (ADT)

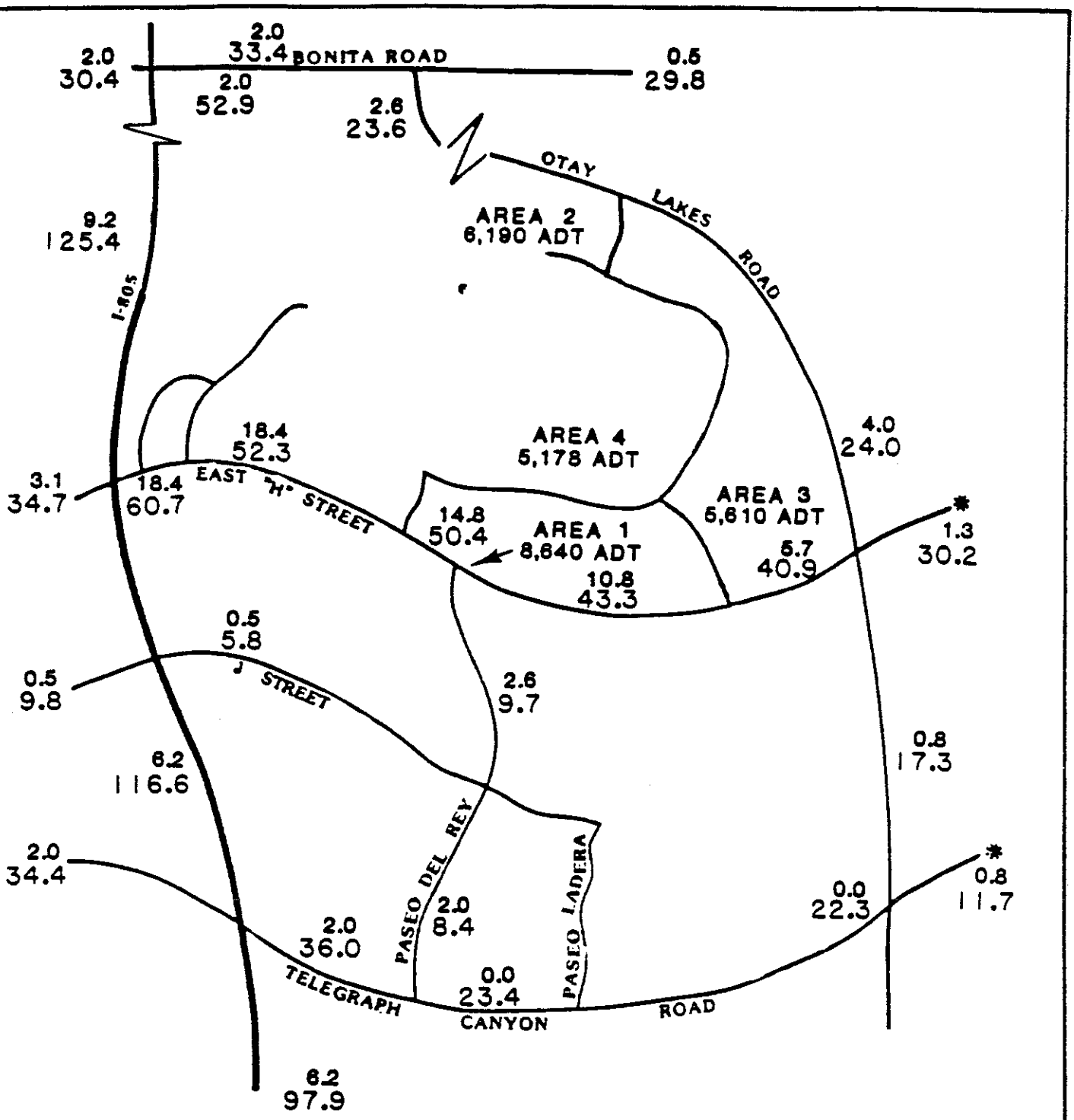
✱ = No Connection to SR-125 Assumed

N

(NO SCALE)

Cumulative ADT (In Thousands) for Threshold Three (1990)
(Project + Existing + 4% Growth)

FIGURE 4-F-5



LEGEND:

(XXX)= Project Cumulative Traffic (ADT)

XXX= Project+Existing + 4% Background Growth (ADT)

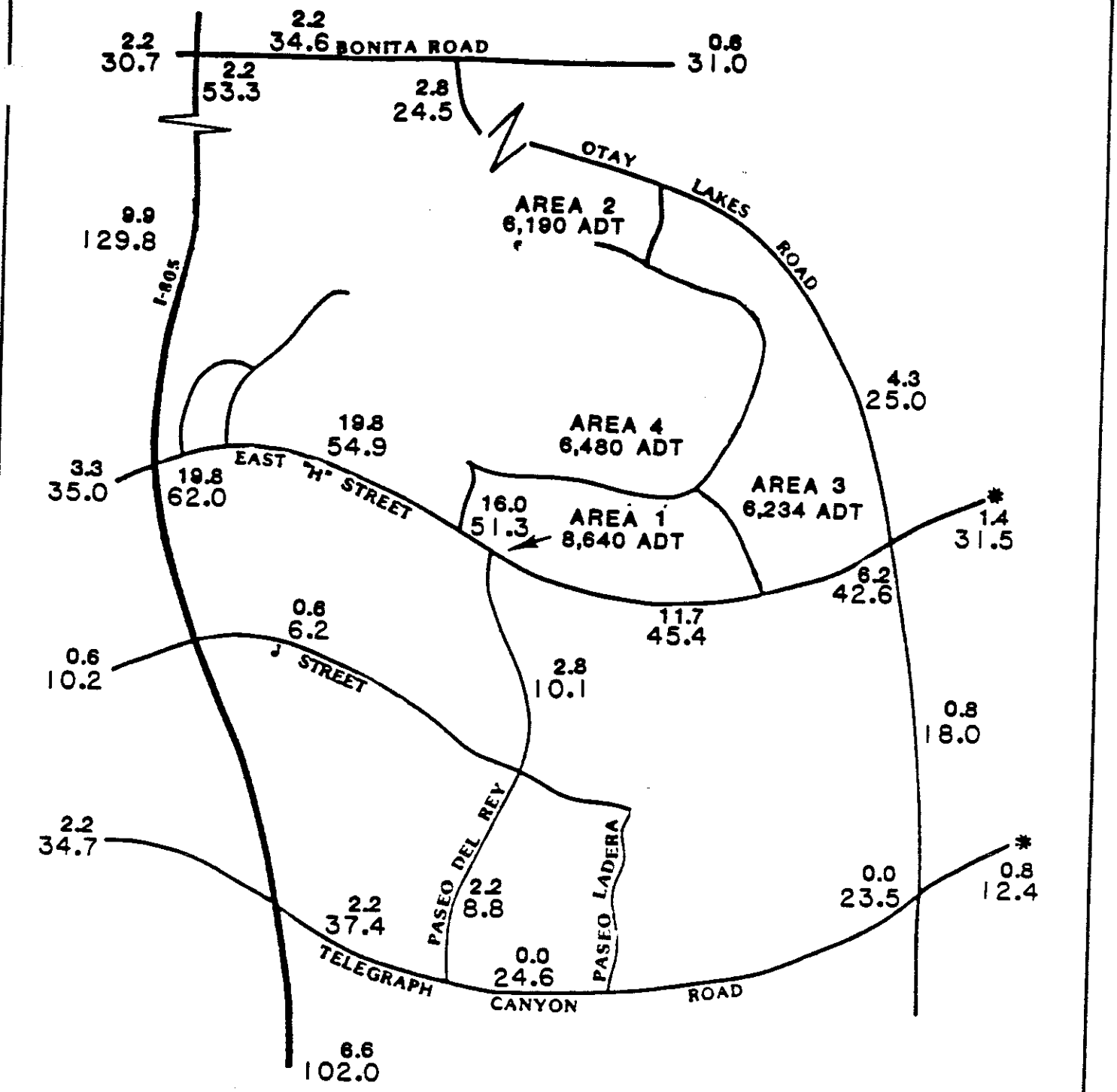
✱ = No Connection to SR-125 Assumed

N

(NO SCALE)

Cumulative ADT (In Thousands) for Threshold Four (1991)
(Project + Existing + 4% Growth)

FIGURE 4-F-6



LEGEND:

(XXX) = Project Cumulative Traffic (ADT)

XXX = Project + Existing + 4% Background Growth (ADT)

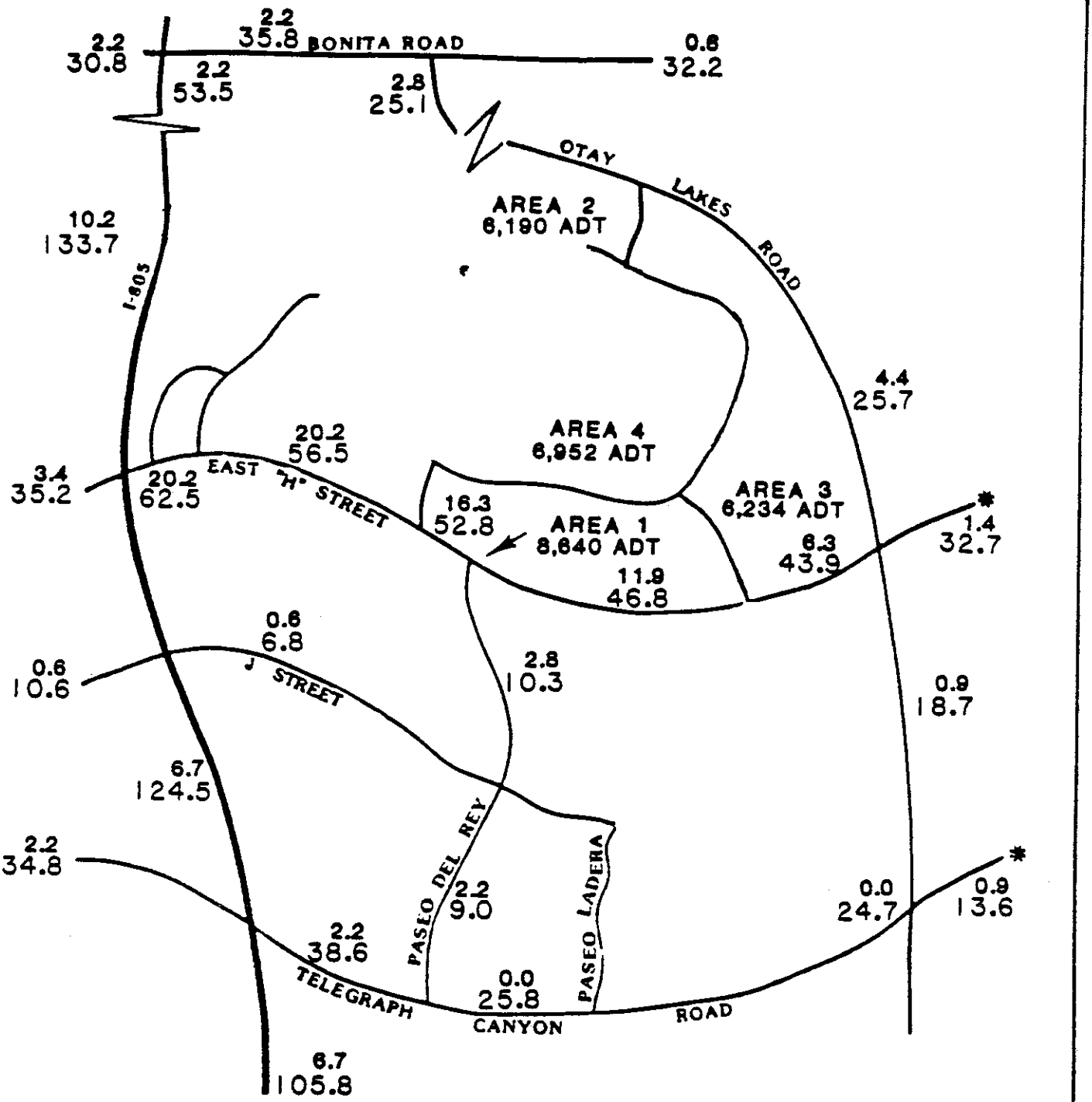
* = No Connection to SR-125 Assumed

N

(NO SCALE)

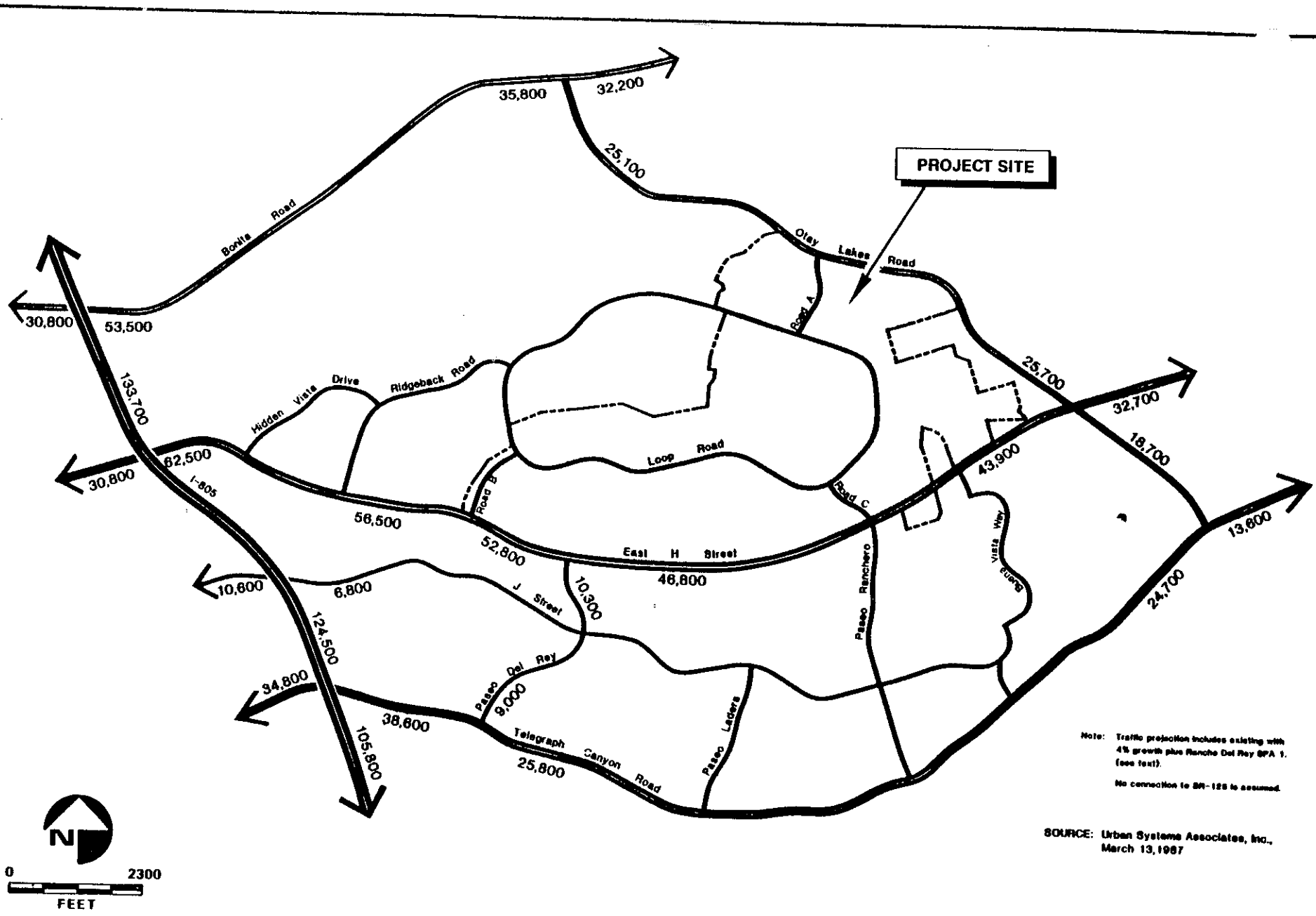
Cumulative ADT (In Thousands) for Threshold Five (1992)
(Project + Existing + 4% Growth)

FIGURE 4-F-7



Cumulative ADT (In Thousands) for Threshold Six (1993)
(Project + Existing + 4% Growth)

FIGURE 4-F-8



Projected Cumulative Traffic Flow (Project + Existing + 4% Growth)

FIGURE 4-F-9

VEST rvice

Table 4-F-3

LAND USE DEVELOPMENT AREA BY YEAR[b]

	Area Use[a]	1988	1989	1990	1991	1992	1993	Total
1	Comm. AC	3	3	3	3	1.4	—	13.4
	Industrial AC	18	18	18	17.1	—	—	71.1
2	0-6 D.U./AC	338	166	75	40	—	—	619
	6-20 D.U./AC	—	—	—	—	—	—	—
3	0-6 D.U./AC	15	18	—	—	—	—	33
	6-20 D.U./AC	136	188	168	168	113	—	773
4	0-6 D.U./AC	—	119	64	154	35	—	372
	6-20 D.U./AC	—	10	164	52	119	59	404
	RESIDENTIAL TOTALS	489	501	471	414	232	59	2,201

TRIPS GENERATED BY YEAR

Area	1988	1989	1990	1991	1992	1993	Total
1	4,800	4,800	4,800 [c]	4,620 [c]	560 [c]	—	19,580
2	3,380	1,660	750	400	—	—	6,190
3	1,238	1,684	1,344	1,344	904	—	6,514
4	—	1,270	1,952	1,956	1,302	472	6,952
TOTALS	9,418	9,414	8,846	8,320	2,766	472	39,236

[a]Trip Generation Rates: Comm. AC. = 400/AC
Ind. Ac. = 200/AC
0-6 D.U./AC = 10/D.U.
6-20 D.U./AC = 8/D.U.

[b]Source: McMillin Dev. 12/8/86.

[c]These trips have not been assigned as projected. However, if 4 percent regional growth is not realized during these years, these trips can be assigned as an increment of regional growth.

If a different growth rate is realized during the time in which SPA-I is being developed, a supplemental analysis is recommended to determine the addi tional incremental amount of development that could be accommodated in SPA-I without an eastern connection to a roadway in the Route 125 corridor. The phased street system improvements necessary to accommodate the phased development of SPA-I include widening East "H" Street to six lanes from I-805 to Otay Lakes Road, along with modifications to the "H" Street/I-805 interchange, and improvements to the interchanges of I-805 at both Bonita Road and Telegraph Canyon Road.

Peak Hour Analysis at I-805/East "H" Street Interchange

Analyzing the peak hour impacts is important from a traffic standpoint, as peak hours place the greatest demand on the surrounding street system and intersections. The afternoon (p.m.) peak hourly volumes are assumed to be 8 percent of the average daily traffic volumes along East "H" Street approaching the I-805 interchange.

The East "H" Street northbound off-ramp intersection is projected to operate at least at LOS "C" during the horizon year (1993) morning (a.m.) peak hour. The eastbound and northbound off ramp traffic flows are projected to the less than p.m. peak hour flows, and will therefore decrease the intersection utilization projected for the p.m. peak hour, which is projected to result in LOS "C" at the ramp intersection.

The widening of East "H" Street in the eastbound direction will improve the LOS in that direction. However, even with the interchange improvements and widening for eastbound traffic, the LOS for East "H" Street is projected by U.S.A., Inc. to be "D" (which Willdan concurs with) west of the project and east of Hidden Vista Drive. This condition would be interim until Route 125 is constructed, and would represent a significant short-term impact of project buildout. The City of Chula Vista will permit the LOS provided it is only on an interim basis.

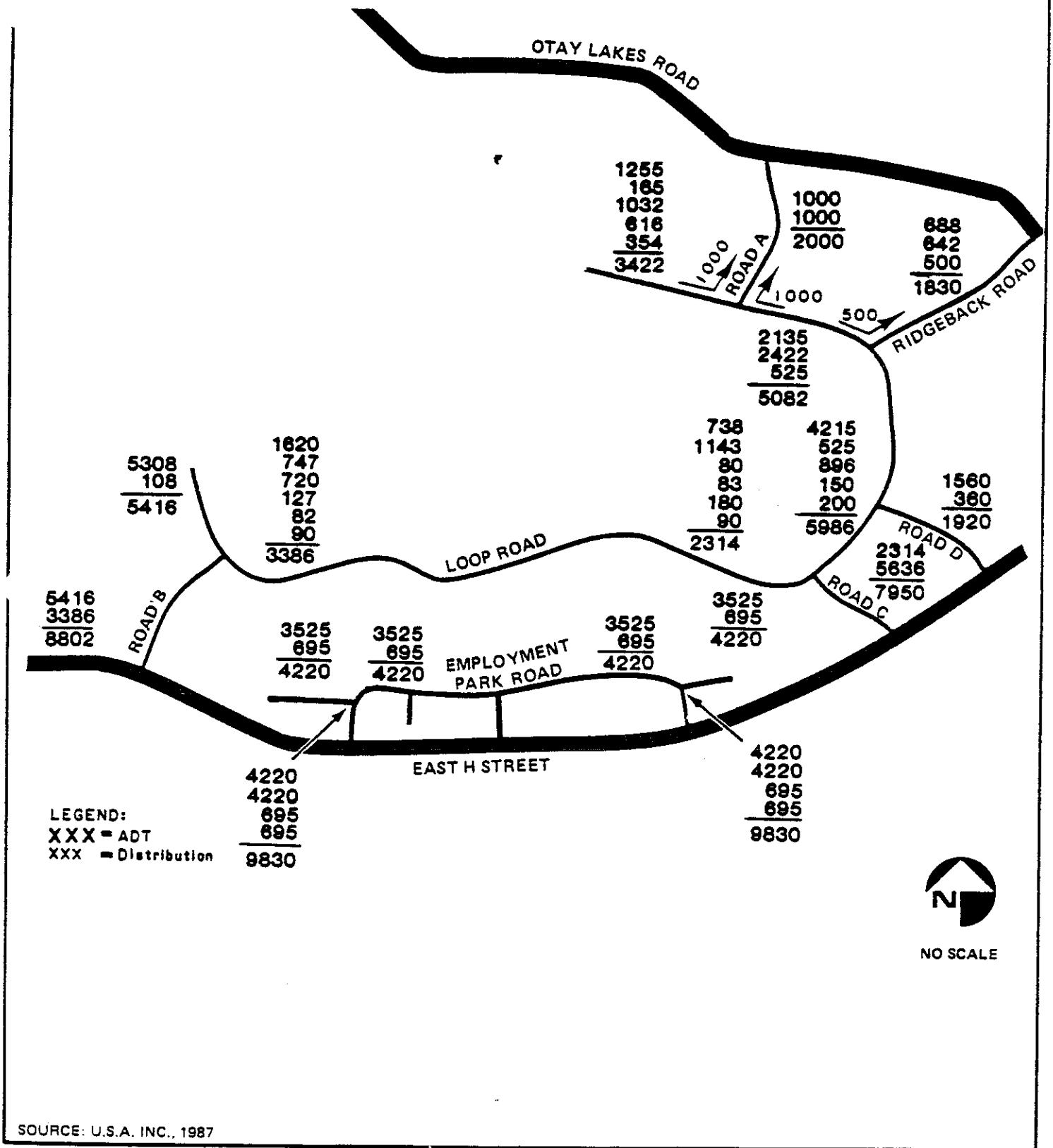
The SPA-I Plan transportation analysis assumed that, during the p.m. peak hour, the northbound East "H" Street/I-805 ramp intersection would operate at LOS "C" and the Hidden Vista Drive intersection is also projected to operate at a LOS "C". The a.m. peak hour is not projected to be a critical time period. The outbound traffic flow through the Hidden Vista Drive/East "H" Street intersection has minimal conflicting turning movements out of the shopping center entrance and into the residential area to the north since the peaking characteristics for these uses produce a greater traffic flow during the p.m. peak hour.

Long-range Cumulative Impacts

Long-range cumulative impacts were evaluated utilizing the SANDAG/Route 125/Otay Mesa buildout forecast volumes as prepared by SANDAG. When the proposed project is included in this forecast, traffic volumes on all roadways in the project vicinity would be within acceptable limits under the proposed street system. The project itself will not preclude the implementation of the Route 125 roadway system. One potential area of concern is Otay Lakes Road, which is recommended to be a six-lane major or a four-lane major road with special treatment (U.S.A., Inc.) as discussed in the section on mitigation measures.

Internal Circulation

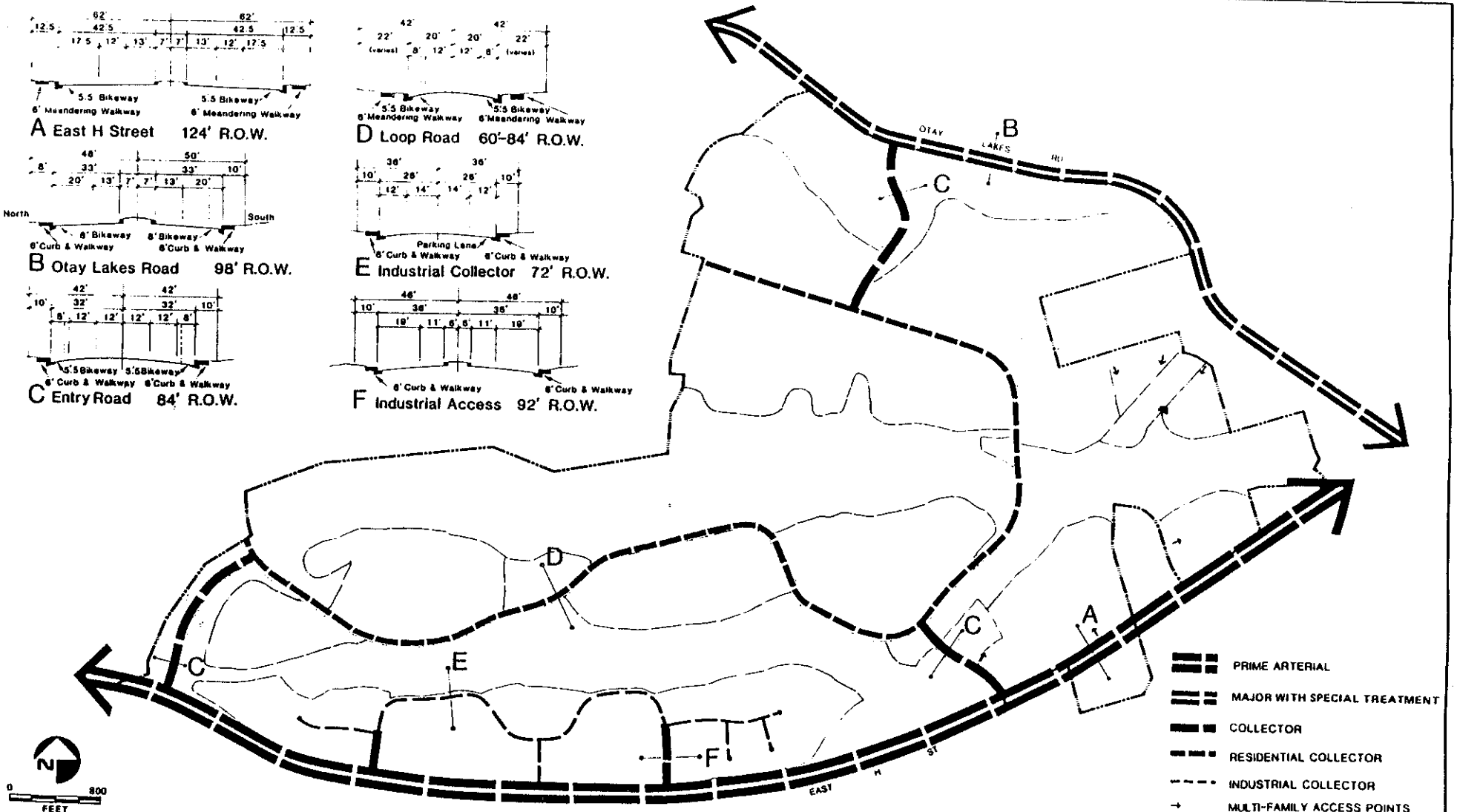
The project-generated trips were assigned to the primary streets within both the residential and employment park areas (Figure 4-F-10). The recommended street classifications are shown on Figure 4-F-11, the proposed circulation plan. In support of the classifications, Willdan (1987) made additional recommendations to avoid some potential traffic and circulation impacts. These recommendations are discussed within the Mitigation Measures that follow.



SOURCE: U.S.A. INC., 1987

Trip Assignment and ADT for SPA I Internal Streets

FIGURE 4-F-10



SOURCE: Cinti and Associates, 1987

Proposed Circulation Plan

FIGURE 4-F-11

WESTEC Services, Inc

F.3 Mitigation Measures

The phased development of the Rancho del Rey SPA-I could be accommodated without any unmitigable transportation impacts provided the recommended phased street system is constructed. The findings for the El Rancho del Rey Specific Plan Amendment (83-2) recommended several mitigation measures related to specific transportation facility improvements within the Specific Plan Amendment Area (SPA Plans I-IV). Some of these measures apply directly to the SPA-I Plan area. The following discussion lists each of the required Specific Plan Amendment improvements and discusses their applicability to the SPA-I Plan.

(1) Finding: Widen Telegraph Canyon Road in phases to four lanes between Paseo Ladera and Paseo Ranchero as required for future development projects. This finding is applicable to the SPA Plans located south of East "H" Street (i.e., SPA-I will take primary east-west access on East "H" Street rather than Telegraph Canyon Road).

(2) Finding: Construct East "H" Street as a six-lane prime arterial between I-805 and Otay Lakes Road. The construction on East "H" Street is currently being completed; funding for the construction is being provided through an assessment district in which each of the SPA Plan areas are being assessed proportionately.

(3) Finding: Provide appropriate turning lanes at major intersections along East "H" Street. These lanes have been incorporated into the design of East "H" Street and are incorporated into the U.S.A., Inc. transportation analysis for SPA-I.

(4) Finding: Construct Paseo Ranchero as a four-lane collector from Telegraph Canyon Road to East "H" Street. This improvement will be completed by the SPAs located south of East "H" Street.

(5) Finding: Extend Ridgeback Road to the loop road as a four-lane collector. Provide roads "A," "B," and "C" as four-lane

collectors. These improvements have been incorporated into the internal street system design for SPA-I.

(6) Finding: Construct Otay Lakes Road between East "H" Street and Camino del Cerro Grande as a four-lane collector. This improvement is addressed in the SPA-I phasing plan.

(7) Finding: Review specific projects on an individual basis to determine required extension or widening of on- and offsite facilities. A transportation analysis for the SPA-I Plan was prepared by U.S.A., Inc. and reviewed by Willdan Associates and is presented as Appendix A to this EIR.

(8) Finding: Participate in the overall monitoring of the adequacy of the circulation system in the eastern Chula Vista area to assure adequacy of service levels given cumulative impacts. An analysis of projected cumulative impacts was presented in the U.S.A., Inc. report (Appendix A); additionally, the applicant will participate as necessary in the required monitoring efforts.

Additionally, the findings state that "(p)rior or concurrent with the first SPA submission the applicant shall submit a more detailed traffic analysis to determine the number of turning lanes and any mitigation necessary to assure an adequate level of service at the I-805 and East "H" Street/Telegraph Canyon Road interchanges." This analysis was incorporated into the U.S.A., Inc. report (Appendix A).

A summary of the recommended phasing of transportation improvements for SPA-I is contained within Table 4-F-4. The City of Chula Vista has retained a consultant to prepare a street phasing and financing program for the portion of the Chula Vista Sphere of Influence east of I-805. This program is expected to be completed by Fall 1987. The program will include consideration of all major street improvements needed to support the full development of this portion of eastern Chula Vista and will include development thresholds for each improvement. Because this program will be more comprehensive than

Table 4-F-4

PHASING OF THE RECOMMENDED TRANSPORTATION IMPROVEMENTS

Threshold				
Year**	Dwelling Units (DU)	Acres (Employment Center)	Segment Improvements	Intersection/Interchange Improvements
1988 (#1)	489	21	o East "H" Street to 4 lanes* between easterly terminus of present 6-lane segment and Otay Lakes Road.	o Signalize East "H" Street/I-805 northbound offramp.
			o Otay Lakes Road to 4 lanes.	o Restripe for 3 eastbound lanes between I-805 northbound offramp and Tierra Nova Shopping Center driveway.
1989 (#2)	880	42	o East "H" Street to 6 lanes between Ridgeback Road and Otay Lakes Road.	o Modify existing East "H" Street northbound offramp to provide a free right-turn lane directly into new fourth eastbound lane.
			o Widen East "H" Street to 4 eastbound lanes.	o Modify interchange traffic signal and relocate controller to provide a third continuous eastbound through lane from the interchange bridge.
1990 (#3)	1,461	63***	o No additional improvements to East "H" Street.	o Improvements (i.e., loop ramp or dual left-turn lane) in the northwest quadrant of the East "H" Street/I-805 interchange to accommodate the westbound to southbound movement to I-805.
1991 (#4)	1,875	63***	o No additional improvements to East "H" Street.	o No additional improvements recommended.

Table 4-F-4 (Continued)

PHASING OF THE RECOMMENDED TRANSPORTATION IMPROVEMENTS

Year**	Threshold: Dwelling Units (DU)	Threshold: Acres (Employment Center)	Segment Improvements	Intersection/Interchange Improvements
1992 (#5)	2,107	63***	• No additional improvements recommended.	• No additional improvements recommended.
1993 (#6)	2,166	63***	• No additional improvements to East "H" Street between Hidden Vista Drive and Otay Lakes Road. • Otay Lakes Road (south of Bonita Road) to 4 lanes. • Restripe Paseo del Rey to 3 lanes, between East "H" Street and Telegraph Canyon Road, one lane each direction plus a central two-way left-turn lane (optional).	• The Road "B", Employment Park access roads and Road "C" intersections with East "H" Street should have dual left turns for eastbound to northbound turns.

Source: U.S.A., Inc., 1987.

*East "H" Street is currently under construction to a six-lane width.

**The estimated years presented in this table may change due to the start date of project construction and the relationship of these improvements to other regionwide improvements.

***Additional development may occur (subject to future approval by the City) if regional growth is less than that forecast or if Route 125 is constructed.

the phasing plan and the thresholds illustrated in Table 4-F-4, the program should take precedence. If, however, the overall phasing and financing program is not adopted, the requirements of Table 4-F-4 should apply. The phasing should ultimately include:

- The widening of East "H" Street to six lanes from Interstate 805 to Otay Lakes Road.

- Modification of the "H" Street/I-805 interchange including the signalization and provision of a free right-turn lane for the northbound offramp, restriping for four eastbound lanes east to Terra Nova Shopping Center, providing a third continuous eastbound through-lane from the interchange, and providing a dual left-turn lane for westbound motorists to travel southbound on I-805.

- The provision of a dual left-turn lane for eastbound to northbound turns at the intersections of Road A, Road B, Road C, and the Employment Park access roads with East "H" Street.

- The restriping of Paseo del Rey to three lanes (one lane each direction plus a central two-way left-turn lane) between East "H" Street and Telegraph Canyon Road.

With the implementation of the above improvements, the LOS for East "H" Street would be "D" west of the project and east of Hidden Vista Drive for an interim period, until Route 125 is constructed between Telegraph Canyon Road and the Southbay Parkway. In order to mitigate this short-term significant impact, the reduced LOS should only be allowed if there is firm assurance that Route 125 will be constructed. In addition, the proposed project should be further restricted (beyond the 10,000 trip reduction from the employment center) to maintain a maximum volume of 56,500 vehicles per day on East "H" Street east of Hidden Vista Drive until such time as the construction of Route 125 is assured to the satisfaction of the City Engineer (U.S.A., Inc. 1987).

From the long-term cumulative standpoint, Otay Lakes Road may potentially produce an adverse impact on the circulation system within the project vicinity if not built to accommodate the trips generated by the project. In order to remedy the potential impact, the final improvement plans for the SPA-I development should take into account the special treatment (i.e., restricting parking, minimizing points of access, and allowing for multiple turn lanes at critical intersections and 6-lanes at the Otay Lakes Road/East "H" Street intersection) necessary along Otay Lakes Road and should accommodate it within the improvement plans. The specific improvements will vary along the length of the road. As such, each development seeking approval for a new driveway or street connection should be required to submit a traffic study addressing the cumulative improvement needs. Alternatively, prior to any driveway or street connections, an overall street alignment showing through- and turn-lanes should be prepared by the applicant and approved by the City.

Lastly, the following circulation improvements to the internal street system should be included within the recommended street classifications to alleviate any potential impacts to internal project circulation:

- Residential areas should be designed such that there is no direct driveway access onto the loop road.

- Access ways to the residential area roads A, B, C, and Ridgeback Road should be designed to minimize the number of driveways and preclude vehicles from backing directly onto the roadways.

- Intersections of the Loop Road with the external access streets should be specially designed to accommodate turn lanes.

- The main portion of the Employment Park roadway should be striped for one travel lane in each direction, plus a two-way left-turn lane; driveways to the various lots should be combined where feasible to minimize the number of driveways on the street.

All the above improvements should be reviewed and approved by the City's traffic engineer at the time final improvement plans are submitted.

In conclusion, the incorporation of all mitigation measures, would generally mitigate the potential project impacts to a level of insignificance. This assumes that the total ADT on East "H" Street east of Hidden Vista Drive does not exceed 50,000 trips until specific assurances regarding the construction of Route 125 are in place. At that point, trips on East "H" Street may increase to a maximum of 56,500 on an interim basis. If the 56,500 trip maximum is reached, no further permits will be issued until Route 125 is in place and the ADT on East "H" Street has dropped below 50,000. In the long term, therefore, the maximum allowable ADT on East "H" Street will be 50,000.

F.4 Analysis of Significance

The proposed Rancho del Rey SPA-I development would produce significant traffic circulation and access impacts within the project vicinity, particularly along East "H" Street and at the "H" Street/Interstate 805 interchange. However, implementation of the recommended mitigation measures would reduce the impacts to a level of insignificance, if a maximum volume of 50,000 vehicles per day on East "H" Street east of Hidden Vista Drive is not exceeded until the construction of State Route 125 is assured to the satisfaction of the City Engineer, and an interim maximum of 56,500 ADT on this roadway segment is not exceeded at any time.

G. FISCAL ANALYSIS

The information contained within this section has been summarized from a fiscal impact analysis report prepared by Public Affairs Consultants (PAC), Inc. (1987) and an independent review of the report by Kenneth Fabricatore (1987), an economic consultant to the City of Chula Vista. The report and review are attached to this document in Appendix I.

G.1 Existing Conditions

The Rancho del Rey project is proposed to be built out by 1996. For purposes of this analysis, it has been assumed that the first year of full buildout will be in fiscal year 1989. The analysis takes into consideration all city operating costs and revenues that might be attributable to the development of Rancho del Rey. In addition, the analysis covers the known capital revenues associated with the development.

City operating costs were projected based on a computer model that took into consideration the fiscal year amended 1986-1987 budget of the City of Chula Vista and input received from the various city operating departments. The model includes an allocation of indirect and overhead costs to 15 direct service activities of the city. The 15 activities and associated 1986-1987 direct service budgeted expenditures are as follows:

Activity/Department	1986-87 Full Cost
General Government and Non-Departmental	$ 1,666,216
Planning	1,151,829
Community Development	667,920
Police/Animal Regulation	10,809,812
Fire Protection	4,936,792
Building & Housing	1,280,232
Public Works/Engineering	
Public Works	
Street Maintenance	1,331,200
Street Tree Maintenance	448,033
Traffic Operations	281,033
Traffic Signal & Street Light Maintenance	928,497
Sewer Systems Maintenance	570,222
Pump Station Maintenance	125,198
Engineering	2,801,322
Parks & Recreation	3,018,043
Library	2,046,242
TOTAL	$32,062,591

Revenue projections were based on the existing revenue sources of the city. Computer modelling of the relationship of individual revenue accounts to population, land use and other factors was developed to simulate the changes in revenue that could be expected over the development of this project. A

separate model of assessed valuation/property tax changes was developed to project the effect on City property tax revenues based on the developer's projection of buildout rate and product pricing.

G.2 Impacts

The effect of the Rancho del Rey project on city operating expenditure activities is as follows:

No Impact	One-time Impact	On-going Impact
Legislative & Administrative*	Planning	Park & Recreation
Community Development	Building Inspection	Public Works Operations
	Engineering	Police
	Fire Prevention	Library Operations
		Fire Suppression
		Planning
		Building Inspection
		Engineering Services

*Approximately $3,275,610 of Legislative & Administrative costs have been allocated as overhead to other activities, leaving $1,666,216 as the fixed costs of city administration.

It has been determined that the proposed project would create minimal fiscal impacts to the "Legislative and Administrative" and "Community Development" activities. The Planning Department would experience both a one-time and on-going impact as the plans for the development of the Rancho del Rey area are formalized and processed. According to Fabricatore (1987), the major impact is short-term and service fees tend to offset costs during the buildout period. However, the proposed development would continue to place demands on planning, building inspection, and engineering services even after development is completed. It is not now possible to quantify the costs. However, these costs represent a slight, but not significant, net cost to the City of Chula Vista.

The building inspection activity would also experience both a one-time and on-going impact as the construction on the site takes place; neither the magnitude nor the cost of these activities can be estimated without specific construction plans for the site. The full costs for these services are recovered through the levying of fees upon the subject construction. The impact incurred by the city would not be significant.

There would also be a one-time and on-going impact upon engineering services during and after the development of the property. Because specific methods and schedules for development have not yet been proposed, it is not possible to project the cost of this impact at this time. The City's engineering fees are being established on a full cost recovery basis, however, thereby assuring that the costs incurred by the city for engineering services would be fully offset.

Fire prevention would experience one-time costs for fire inspections of the building plans for all structures proposed for the property. In addition, annual fire safety inspections would be required for all public, commercial, industrial, and multi-family residential structures. Single-family residential structures would not be subject to annual fire safety inspections and would experience only initial one-time fire prevention costs (Alexander 1987). The costs for these initial and ongoing inspection services can not be estimated at this time due to the lack of specific building plans for the property.

On-going impacts would also occur to the Parks and Recreation, Public Works, Police, Library, Fire and Planning Departments as well as Engineering, Building Inspection, and Sewer Services. Projected on-going costs at SPA-1 buildout for the impacted activities are shown in Table 4-G-1, with the bases for these projected city operating costs discussed more fully in Appendix I. In addition to the costs listed in Table 4-G-1, planning, building inspection and engineering services would experience ongoing costs from the proposed project. No estimates can be established for these costs, however, without site-specific construction plans.

The independent fiscal review located in Appendix I identifies a number of additional issues related to one-time and ongoing costs from the proposed

Table 4-G-1

PROJECTED ON-GOING COSTS AT SPA-I BUILDOUT

	Year 3	Year 6	Year 9
Public Works			
Street Operation	$ 64,890	$ 126,589	$ 140,227
Street Tree Maintenance	9,682	19,390	20,743
Traffic Signal/Street Light Maintenance	29,283	41,801	42,988
Traffic Operations	13,699	26,725	29,604
Sewer System Maintenance	14,497	32,913	37,982
Pump Station Maintenance	3,183	7,226	8,339
Parks & Recreation			
Recreation	22,868	60,377	65,668
Park Maintenance	126,075	249,162	249,162
Open Space	18,923	40,205	41,361
Police	183,746	485,144	527,653
Fire	*	*	*
Library Operations	35,414	93,503	101,696
Total General Fund	$522,260	$1,183,035	$1,265,423
Sewer Service Fund	66,661	151,341	174,650
Grand Total	$588,921	$1,334,377	$1,440,075

*On-going costs associated with fire prevention cannot be established until the generation of specific building plans. It is not anticipated, however, that such costs would significantly affect the total on-going project costs (McTighe 1987).

project. Specifically, these include the areas of police services, sewer capacity, development processing, and general fund liability, as discussed below.

Cost estimates for police services generated by PAC (1987) total a per capita expenditure of $91.27 for the proposed project (Appendix I). This is based on the City of Chula Vista Police Department service level objective of 1.6 employees per 1000 residents. This ratio (as well as the resulting cost estimate derived by PAC) reflects the City Police Department's urban development model, which assumes a blend of residential, commercial, and industrial uses for a given area (Kohls 1987). According to Fabricatore (1987, Appendix I), however, the Rancho del Rey development will contain more commercial/industrial use relative to its population base than exists citywide. Specifically, the project will contain about 15 acres of commercial/industrial use per 1000 residents, compared to the citywide average of around 7 acres per 1000 residents. Therefore, Fabricatore concluded that the proejcted allocation of police service expenditures underestimates costs attributable to the proposed project, due to the above normal commercial/industrial use and its associated police service requirements. Fabricatore determined that police expenditures could be more accurately allocated on the basis of developed acres (i.e., residential and nonresidential), although the projectd difference in costs was not considered significant enough to warrant further analysis (Appendix I).

An additional cost to the City of Chula Vista not incorporated in the initial fascal analysis is an annual sewer capacity charge levied by the City of San Diego for use of the Metro sewer system. The omission of this cost does not, however, represent a significant impact on the overall fiscal analysis (Fabricatore 1987).

The City receives one-time revenues associated with the processing of land development projects. Fees for building, plumbing, electrical, housing and sewer connection permits along with charges for environmental reviews, plan checks, zoning and engineering fees, etc., have been established by the city to recover costs incurred for these activities. The one-time revenues from these

Table 4-G-2

SERVICES AND AMOUNT OF ON-GOING REVENUES AT SPA-I BUILDOUT

GENERAL FUND	Year 3	Year 6	Year 9
Property Tax	$203,698	$ 415,368	$ 437,248
Sales & Use Tax	126,636	271,254	351,659
Franchise Tax	32,889	60,106	72,542
Property Transfer	40,652	25,309	7,423
Utility Users Tax	47,039	87,720	108,444
Business Licenses	6,240	13,729	19,969
Bicycle Licenses	64	144	183
Animal Licenses	727	1,636	2,080
Other Taxes	7,003	14,314	15,031
Motor Vehicle In-lieu	61,321	137,995	175,444
Cigarette Tax	4,791	10,369	13,387
Fines, Forfeitures & Penalties	2,247	5,057	6,430
Swimming Pools	2,189	4,925	6,262
Recreation Program	810	1,823	2,317
Other Income	355	799	1,016
Investment Earnings	14,383	28,181	32,681
General Fund Total	$551,044	$1,078,729	$1,252,116
SPECIAL FUNDS			
Traffic Safety	$ 6,750	$ 15,189	$ 19,311
State Library Act	2,643	5,948	7,563
Sewer Service	88,433	159,889	190,440
Special Gas Tax	26,058	58,641	74,555
Open Space Maintenance	18,923	40,205	41,361
Total Special Funds	$142,807	$ 279,872	$ 333,230
Grand Total All Funds	$693,851	$1,358,601	$1,585,346

sources are expected to offset the city's expenditures, however, since those activities are also ongoing services, they may result in a net cost to the city (Fabricatore 1987). Services and the amount of on-going revenues projected at buildout of Rancho del Rey are shown in Table 4-G-2. At the time of PAC's analysis, the ongoing planning, engineering services, and building inspection costs were not incorporated.

Projected combined operating funds costs and revenues at Rancho del Rey buildout are as follows:

REVENUE	
General Fund	$1,253,665
Special Funds	333,605
Total Revenue	$1,587,270
COSTS	
General Fund	$1,265,424
Special Funds	174,650
Total Costs	$1,440,075
NET IMPACT	$ 147,195

As can be seen from the above figures, operating revenues are projected to exceed operating costs. However, the general fund revenue increase of $1,253,655 per year would be reduced by $1,265,424 annual costs, thus resulting in a small general fund deficit of $12,000 per year (Fabricatore 1987). As a result, a minor impact on the city's general fund would likely occur upon implementation of the Rancho del Rey project even though the impact on the city's total budget is estimated to be positive. The Rancho del Rey project is, however, expected to have an overall positive fiscal impact on the City of Chula Vista. The development is expected to have a neutral effect on the city's capital expenditures and revenues, in that the development would provide contributions to the financing of public facilities that serve the project, or would provide for the developer of the property or the property

itself would be obligated to provide the financing for such facilities through the use of public debt mechanisms tied to the property.

G.3 Mitigation Measures

The Rancho del Rey project would not result in any significant adverse fiscal impacts to the City of Chula Vista; therefore, no mitigation is necessary.

G.4 Analysis of Signficance

Implementation of the Rancho del Rey project is expected to result in an overall positive fiscal impact to the City of Chula Vista. Since no significant adverse fiscal impacts are expected, no mitigation measures are recommended.

H. NOISE

H.1 Existing Conditions

The primary source of noise in the vicinity of the project site is vehicular traffic along East "H" Street and Otay Lakes Road. The Average Daily Traffic (ADT) volumes along East "H" Street in the vicinity of the project range from approximately 16,900 to 19,600 ADT (U.S.A., Inc. 1987). For Otay Lakes Road, the existing traffic volumes are approximately 15,400 ADT. Figure 4-F-1 shows the existing traffic volumes utilized in the analysis.

The City of Chula Vista requires that noise levels of exterior living areas (yards and patios) for residential land uses not exceed 65 dB(A) CNEL. In addition, for multi-family residential projects, the California Noise Insulation Standard (California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4) requires that interior noise levels in multi-family residential living spaces not exceed a CNEL of 45 dB(A). The City of Chula Vista also applies this interior noise standard to single-family residential homes. With windows closed, typical residential units can be expected to attenuate up to 20 dB(A).

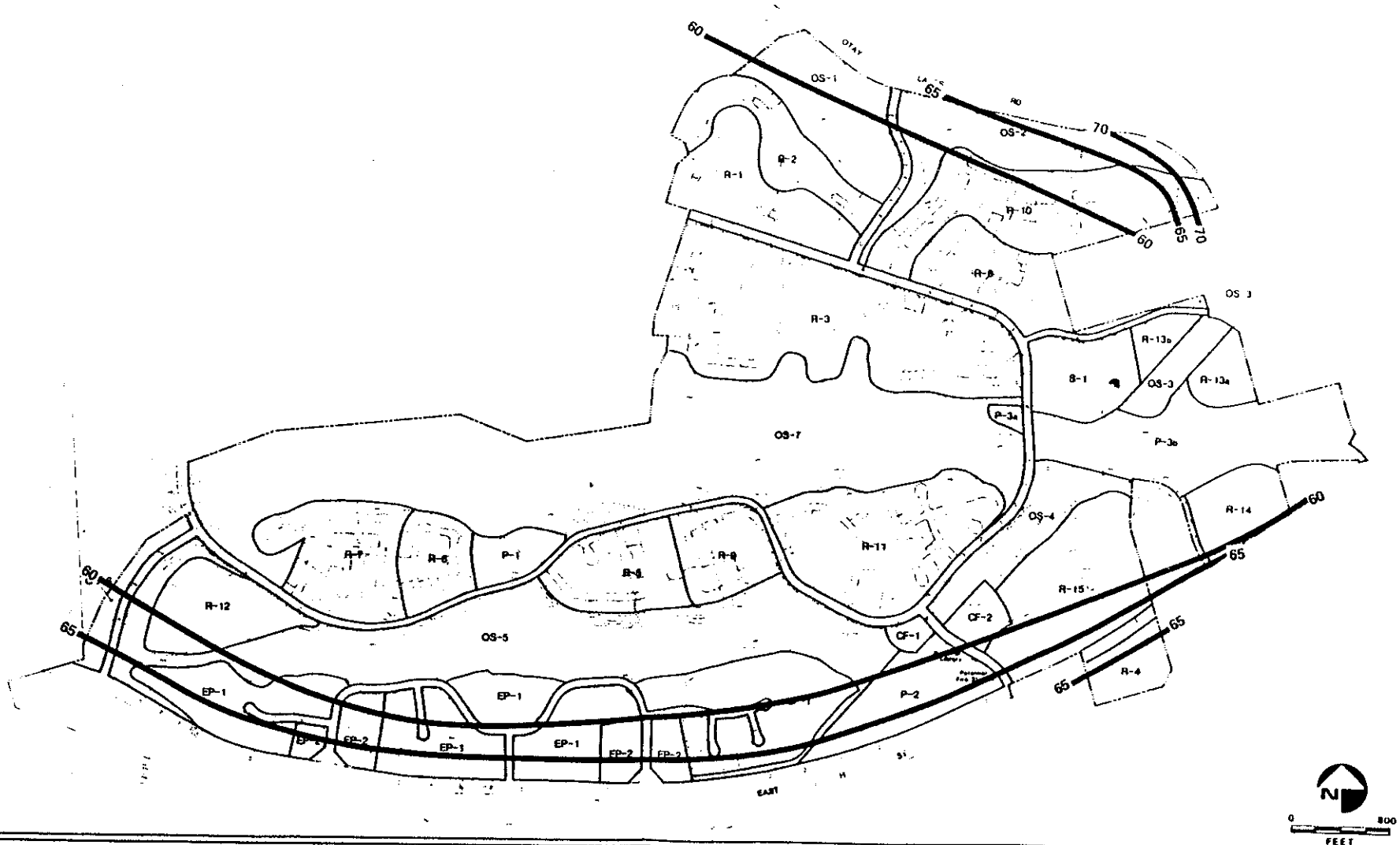
The vehicular traffic noise analysis was conducted utilizing the Stamina 2.0 noise prediction model (Federal Highway Administration Report Number DF-81/001a). The model was used to estimate existing noise levels generated by traffic on Otay Lakes Road and East "H" Street. For details of the analysis, see the complete acoustical report in Appendix J.

The existing noise environment was analyzed to determine the noise levels that the project site is currently exposed to, prior to grading and development. Noise modeling of the calculated traffic volumes and unaltered topography indicates that onsite noise levels are generally less than 65 dB(A) CNEL. However, noise levels within approximately 300 feet of the center line of East "H" Street are 65 dB(A) CNEL or greater. In addition, along Otay Lakes Road, the northeasterly portion of the site is currently exposed to noise levels exceeding 70 dB(A) CNEL. Ambient noise levels at other portions of the site are lower, as the effects of complex topographic shielding effectively reduce onsite noise levels. Figure 4-H-1 shows existing onsite noise levels.

H.2 Impacts

Future noise levels were calculated in a similar manner as the existing noise conditions, using the FHWA Stamina 2.0 noise model. To determine the maximum noise levels that could be experienced onsite, community buildout traffic volumes provided by the U.S.A., Inc. transportation analysis were used for East "H" Street and Otay Lakes Road (Figure 4-F-3). In addition, traffic volumes for the internal roadways were developed by U.S.A., Inc. based on proposed land uses, densities, and trip generation rates (Figure 4-F-4). These projected volumes were also used to model the future onsite noise levels. The analysis of future conditions utilized the proposed finish grade elevations of the project, which are different from the existing elevations.

Noise modeling of future site conditions indicated that noise levels at the facades of the buildings adjacent to portions of East "H" Street and Otay Lakes Road would exceed 65 dB(A) CNEL. Noise levels would range from 74 dB(A) CNEL along East "H" Street to 75 dB(A) along Otay Lakes Road. The noise contours which would result if no building shielding were to occur at first



Existing Noise Environment (in CNEL)

FIGURE 4-H 1

WESTEC Services, Inc

floor levels are depicted in Figure 4-H-2. Noise levels resulting from traffic would, therefore, exceed the city's guidelines (by up to 9 dB(A)) for residential land uses. If mitigation measures are not implemented to reduce the excessive exterior noise levels, then a significant noise impact would occur.

The proposed employment park along East "H" Street would be subject to similar noise levels; however, industrial/commercial land uses may be exposed to noise levels of up to 75dB(A) CNEL. Therefore, no impact would occur upon development of the employment park.

A detailed site plan is not available for the multi-family planning area; however, based on the tentative maps, projected exterior noise levels at the multi-family areas along East "H" Street (parcels R-14 and R-15) could exceed 65 dB(A) CNEL. The majority of those multi-family areas would likely be set back from the adjacent roadway; however, due to the excessive exterior noise levels, a significant noise impact would still occur. In addition to the exterior impact, the units exposed to noise levels exceeding 65dB(A) CNEL would likely be subject to interior noise levels greater than 45dB(A), representing a significant interior noise impact.

The East "H" Street park parcel P-2, located at the intersection of East "H" Street and entrance Road C, would also be exposed to traffic-generated noise levels exceeding 65dB(A), the City of Chula Vista's accepted noise standard for parklands. At the time of this analysis, specific development plans were not available; however, the park would likely be subject to significant noise levels in the future.

H.3 Mitigation Measures

To mitigate the projected significant exterior noise impacts, the Stamina 2.0 model was used to determine the effectiveness of proposed structures, walls or berms, in reducing noise exposure to acceptable levels. Various barrier heights and lengths were evaluated to determine the most effective method to reduce onsite noise.

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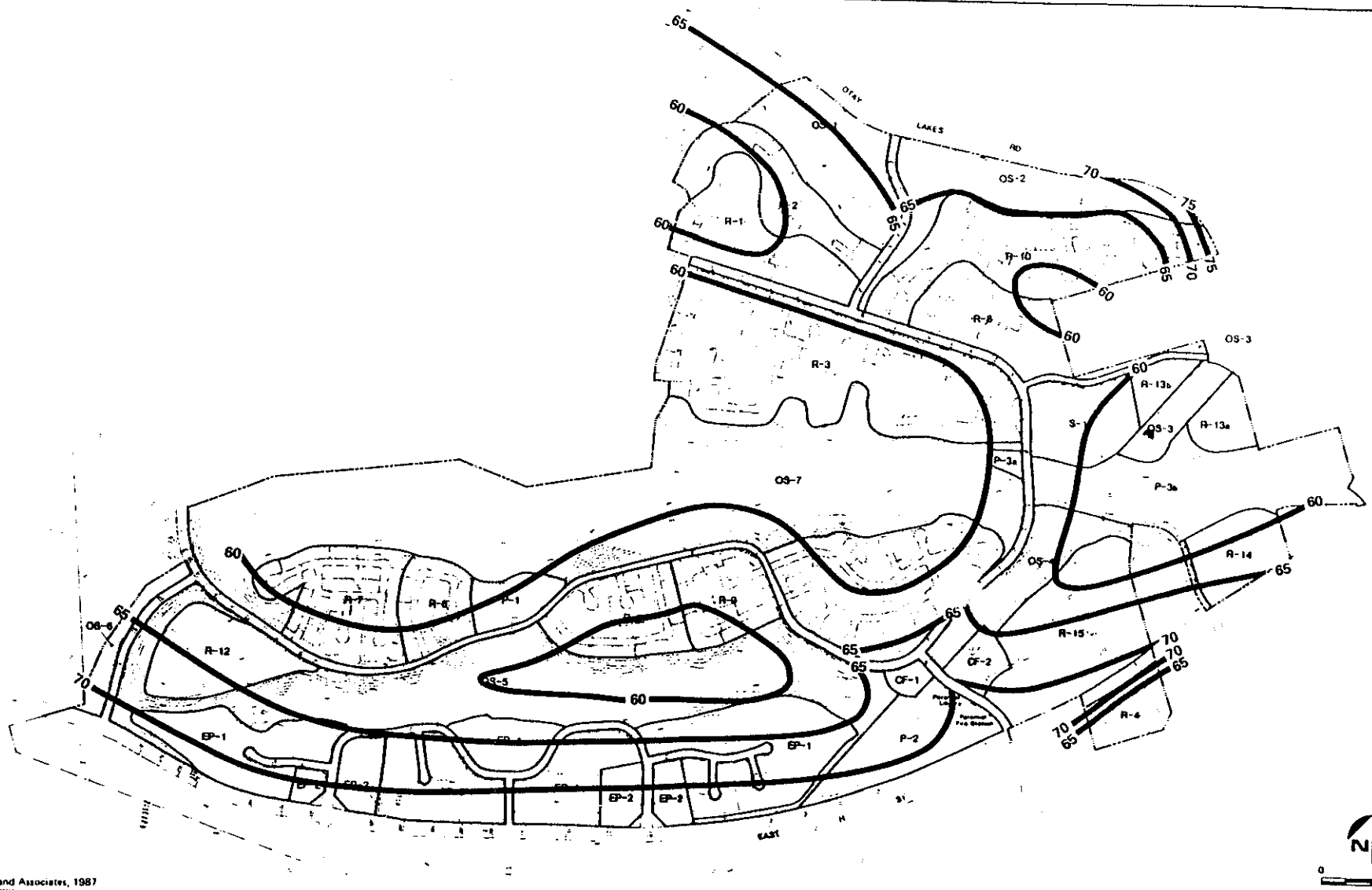

SOURCE: Cinti and Associates, 1987

Unmitigated Future Noise Environment (in CNEL)

FIGURE 4-H-2

WESTEC Services, Inc

It was determined that three- to seven-foot masonry walls and/or berms located along portions of East "H" Street and Otay Lakes Road, in conjunction with the actual construction of the proposed structures, would reduce projected first floor, exterior, noise levels to 65 dB(A) CNEL for residential areas. The proposed fencing plan (Figure 4-B-9) features some of the walls that were identified. No mitigation measures would be required for the employment park area. Figure 4-H-3 depicts the mitigation measures which would be required for the project to conform with the city's exterior noise requirement and the resultant noise level contours.

An alternative to the proposed barriers would be to setback all residences beyond the 65dB contour, thus eliminating the significant noise impacts on future residents. In the case of Rancho del Rey, the 65dB contour shown in Figure 4-H-2 represents the noise levels if no building shielding were to occur. In order to adjust the 65dB contour to reflect building attenuation, at least 40 percent of the area must be covered by buildings; in Chula Vista the maximum building coverage for multi-family development is 50 percent. The first row of buildings would reduce noise levels behind them by 3 dB, with each additional row contributing to an additional 1.5 dB reduction in noise (FHWA 1978). Currently, specific site plans are not available; however, once site development plans are established, attenuation attributable to buildings can more accurately be calculated and the adjusted 65dB contour and setback can be established.

Additionally, it has been determined that upon submittal of detailed development plans for the park, an additional acoustical analysis may be required to determine appropriate mitigation measures for reducing the significant noise levels at the park. Measures could include placing less noise sensitive uses closer to the roadway and more sensitive uses further away, or incorporating berms or a combination of berms and walls adjacent to the roadway to reduce noise within the park.

In the case of interior noise impacts, standard building shell construction normally attenuates up to 20 dB(A). Subsequent to construction of the proposed barriers, projected noise levels would be less than 65 dB(A) for most

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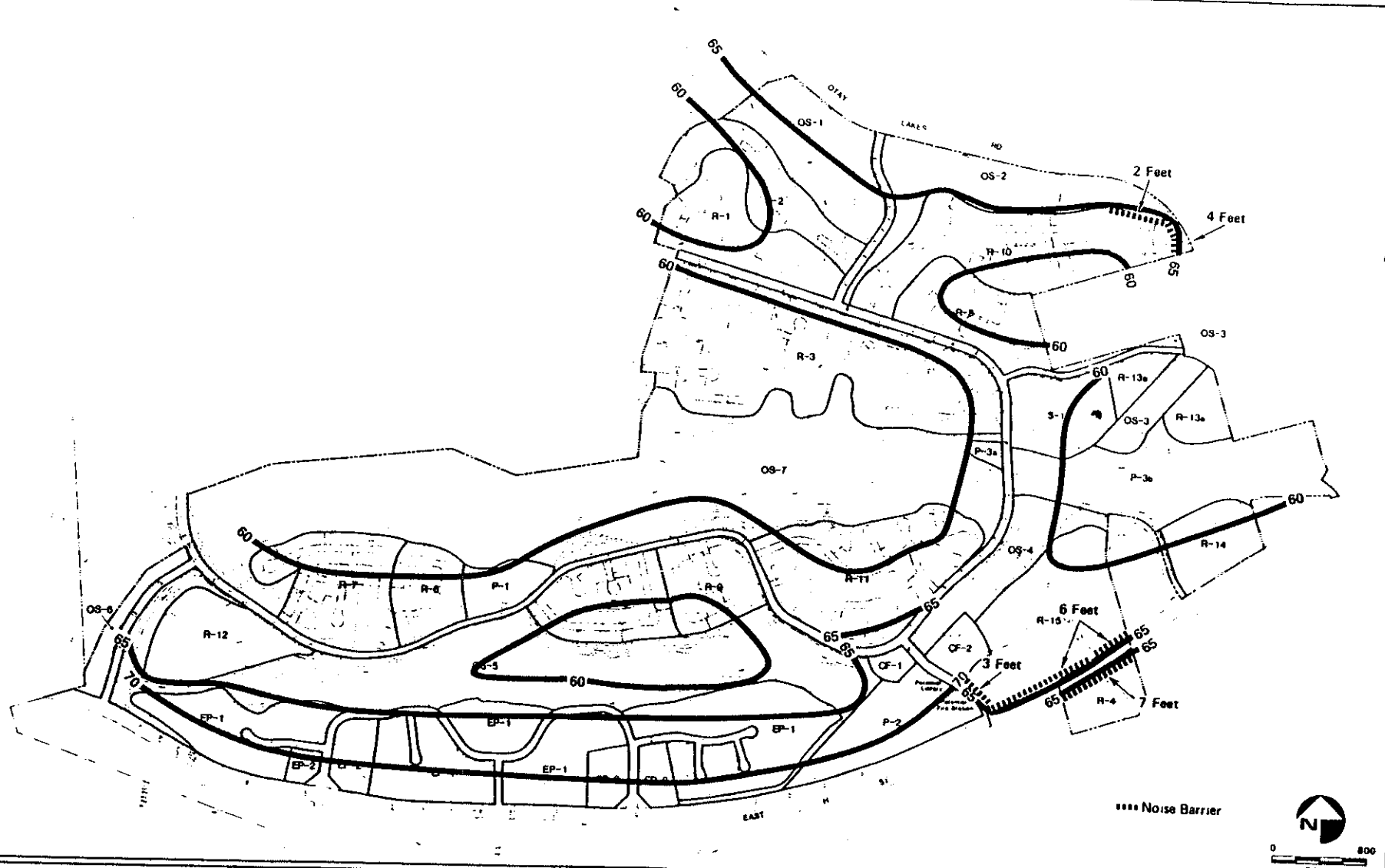


Mitigated Future Noise Environment (in CNEL)

FIGURE 4-H-3

WESTEC Services, Inc

of the project site. Therefore, interior noise levels are not expected to exceed 45 dB(A) CNEL. However, to comply with Title 25, acoustical engineering studies will be required for all residences exposed to noise levels of 60dB(A) or greater to determine that the appropriate design and use of building materials has been incorporated, thereby reducing interior noise levels to 45 dB(A) CNEL.

These measures should be incorporated as a condition of final tentative map approval in order to insure implementation. Upon completion of construction of the barriers and enhanced building construction, any projected future noise impacts would be mitigated to a level of insignificance.

H.4 Analysis of Significance

Upon buildout of the proposed Rancho del Rey SPA-I development, portions of the site, particularly along East "H" Street and Otay Lakes Road, would be subject to noise levels exceeding the City of Chula Vista's exterior noise standards. In addition, areas of the site exposed to noise levels 65dB(A) or greater could experience significant interior noise impacts. However, implementation of the identified mitigation measures would reduce a majority of the impacts to a level of insignificance. The exception to this would be the multi-family areas adjacent to East "H" Street (parcels R-15 and R-14), and the East "H" Street park (parcel P-2), which will require further analysis once detailed development plans are made available.

I. PARKS/RECREATION AND OPEN SPACE

Information for the following section was obtained primarily from the Rancho del Rey SPA-I Plan (as amended), produced by Cinti and Associates (1986, 1987). Additional data sources include Rose (1986), the City of Chula Vista (1973, 1974, 1986), WESTEC Services, Inc. (1976), and Stokes (1987).

I.1 Existing Conditions

The project site is essentially undeveloped and consists of rugged, east-west trending canyons, ridges, and mesas (Figure 4-B-1). Onsite vegetation is

comprised predominantly of native coastal sage scrub, although riparian and native grassland communities exist within the larger canyons. Onsite improvements are limited to a 138 kV tower transmission line (within a 250-foot SDG&E easement), a 96 kV transmission line (without a designated easement corridor), and a number of unimproved dirt roads and trails. SDG&E has indicated that up to four additional lines will be constructed within the existing 250-foot easement, although specific locations and dates have not been provided (Rose 1986).

Parks and Recreation - There are currently no parks or organized recreational facilities located within the project site. There is, however, evidence of informal, unauthorized recreational use. Specifically, this includes hiking, horseback riding, and off-road vehicle use. Indirect evidence (expended cartridge cases) of either recreational shooting or hunting has also been observed onsite (WESTEC 1976).

The project site is within neighborhood and community park districts established under the City of Chula Vista General Plan Parks and Recreation Elements (1974 as amended). The General Plan calls for a system of parks designed to serve as many diverse areas and needs in the community as possible. Parks are to be located adjacent to elementary school playgrounds when possible to promote multiple use of facilities and within proximity to those they are designed to serve. Regional park needs are met outside the city through the Sweetwater Regional Park, Otay Reservoir, and Silver Strand Beach (WESTEC 1976). Therefore, Chula Vista is primarily concerned with developing community and neighborhood parks.

The City of Chula Vista requires the dedication of appropriate land for public parks with new development. The requirements are listed in Section 17.10.040 of the Municipal Code. The pertinent dedication standards are listed below:

Park Land Dedication Standards

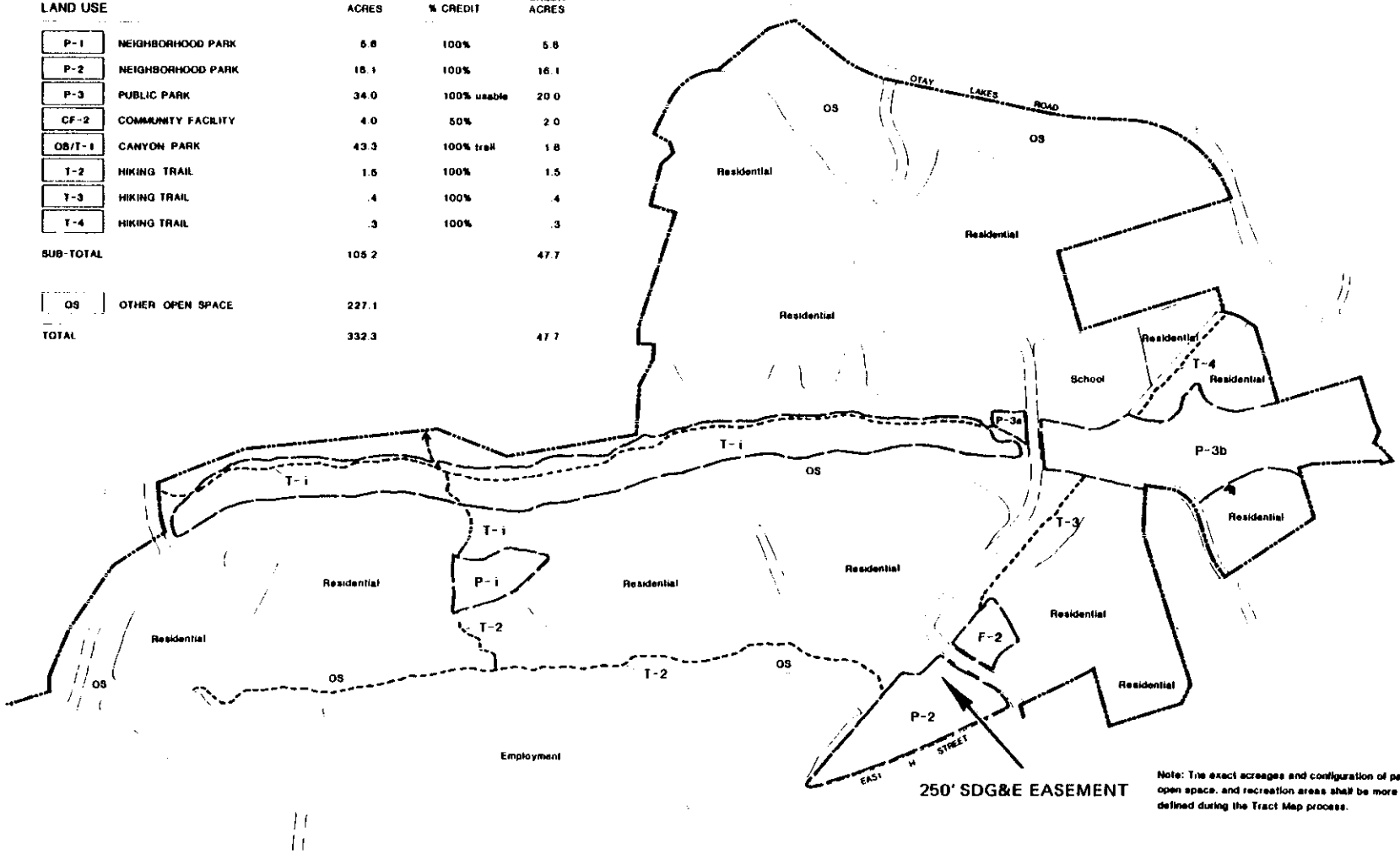
Dwelling Unit (du) Type	Required Park Dedication (Square Feet/du)
Single-family	322
Condominiums	272
Duplexes	218
Multiple-family	174
Mobile Homes	157

Open Space - As stated, the project site is currently undeveloped and consists entirely of open space. Much of the site has been designated as proposed open space in the City of Chula Vista General Plan Open Space Element (1973 as amended). This document, however, states that "Designation of privately owned areas on the Open Space Element map does not imply that ... areas so designated will not be allowed to develop." Rather, the intent is to identify areas suitable for preservation as open space, and to allow further consideration when development is proposed.

Unlike park lands, the requirements for open space preservation do not include specific acreage quantification. Consequently, the need, amount, and location of open space is usually determined by site-specific factors such as environmental or design related conditions. Within the proposed site, open space designations have resulted from three major concerns: sensitive environmental resources, an existing utility easement, and construction siting requirements for the proposed facilities. Proposed open space (aside from that included in parks and recreational sites) includes approximately 227 acres located primarily within the three major onsite canyons (Figure 4-I-1).

Sensitive environmental resources exist in all the major canyons onsite in the form of active (albeit ephemeral) drainage systems and unique wildlife communities (including sensitive plant and animal species). Wetland habitat is located in all main branches of Rice and Otay Lakes Canyons, and significant populations of state-listed endangered plant species have been observed there. Specifically, Otay tarweed is located in both Otay Lakes Canyon and the northern leg of Rice Canyon, and the latter also contains stands of San Diego

LAND USE		ACRES	% CREDIT	CREDIT ACRES
P-1	NEIGHBORHOOD PARK	5.6	100%	5.6
P-2	NEIGHBORHOOD PARK	16.1	100%	16.1
P-3	PUBLIC PARK	34.0	100% usable	20.0
CF-2	COMMUNITY FACILITY	4.0	50%	2.0
OS/T-1	CANYON PARK	43.3	100% trail	1.8
T-2	HIKING TRAIL	1.5	100%	1.5
T-3	HIKING TRAIL	.4	100%	.4
T-4	HIKING TRAIL	.3	100%	.3
SUB-TOTAL		105.2		47.7
OS	OTHER OPEN SPACE	227.1		
TOTAL		332.3		47.7



Note: The exact acreages and configuration of parks, trails, open space, and recreation areas shall be more precisely defined during the Tract Map process.

N

0 1300

FEET

SOURCE: Cinti and Associates, 1987

Proposed Recreation/Open Space

FIGURE 4-1-1

thornmint. Additionally, this canyon contains suitable habitat for a number of sensitive animal species (see Section 4.C for a more detailed discussion of biological resources). Specific biological and canyon design study reports have been prepared for the project site, and contain proposed measures to protect and preserve sensitive environmental resources within the open space areas (Appendices C and H).

As described, a 250-foot utility easement containing one 138 kV tower line crosses the southeast portion of the project site (Figure 4-I-1). Utility corridors are considered permanent open space by the City of Chula Vista General Plan (1973 as amended); the SDG&E easement was designated as open space in the SPA-I Plan.

Construction requirements of the proposed project facilities have also contributed to the designation of proposed open space. Specifically, many of the canyon areas are too steep or otherwise unsuitable to accommodate construction.

I.2 Impacts

Parks and Recreation - Based upon the referenced park land dedication standards for the City of Chula Vista, the following requirements would apply to the project site:

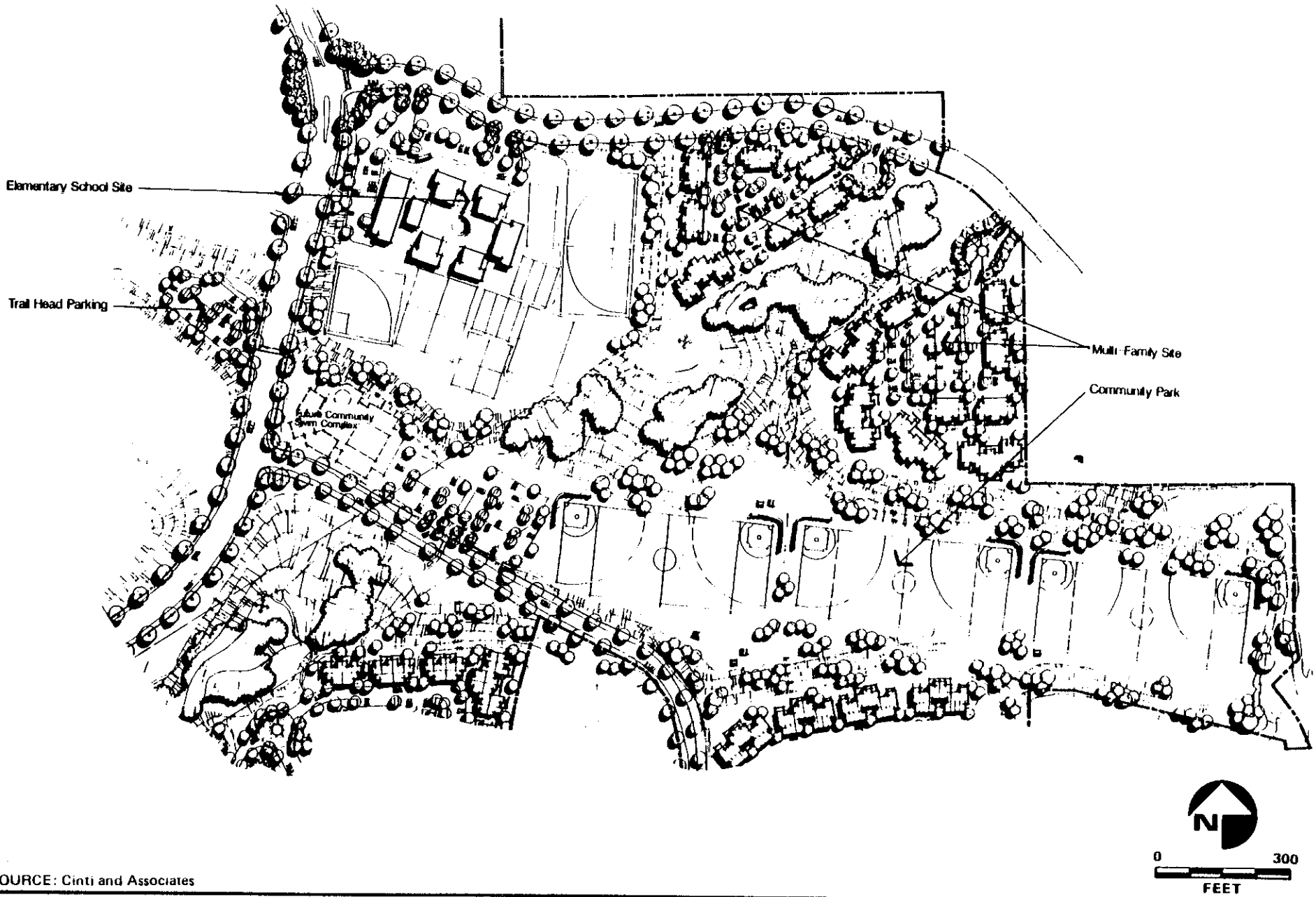
Number of du's	Type of du	Land Dedication Required (sq.ft./du)	Total Park Acres Required
982	Single-family	322	7.25 ac
975	Condominiums	272	6.01 ac
244	Duplex	218	1.22 ac
2,201			14.48 ac

The acreage proposed for park land dedication includes the public (community) and neighborhood parksites, as well as a portion of the community facility site east of the "C" collector street (CF-2). These areas, along with a breakdown of proposed park acreage, are shown on Figure 4-I-1.

The applicant has proposed to utilize the difference between proposed and required park acreage as a credit toward future development in the remaining Rancho del Rey SPA areas. Additional information on the proposed park land dedication credit system is contained in Appendix B, Public Facilities and Financing.

All parks and recreational facilities are conceptual as proposed and are subject to change prior to final plan approval. The City of Chula Vista has identified a number of specific recreational uses for the Rancho del Rey project site, including a community center, an olympic-size swimming pool, a canyon interpretive center, and night-lighted recreational facilities. The City has proposed additional discussion with the applicant to finalize parks and recreation requirements (City of Chula Vista 1986). Several of the stated recreational uses have since been incorporated into the SPA-I Plan, and are included in the discussion of specific park facilities below. The city has also indicated that the exact location, nature, and phasing of specific park facilities should be addressed in more detail. The Planning Department has proposed to provide input on this matter after consulting with the City Department of Parks and Recreation. Once minimum requirements for specific parks and recreational facilities are determined, they would be applied to the SPA-I Plan prior to project approval. Following is a description of the proposed park and recreation sites, which incorporates the preceding comments where appropriate.

The public park would be located in the uppermost portion of Rice Canyon from the west side of the loop road to the eastern property boundary (Figure 4-I-1). This site would require significant infilling of the canyon to accommodate the proposed facilities, presenting potential impacts to biological, visual, and hydrology/water quality resources. These potential impacts are discussed in more detail in the specific sections of this report dealing with those resources. The public park would conceptually provide facilities for organized group activities such as field sports, picnicking, and other recreational activities including a swimming complex (Figure 4-I-2). This site has also been tentatively identified as a suitable location for night-lighted recreational facilities. The establishment of such facilities could pose



SOURCE: Cinti and Associates

Proposed Public Park

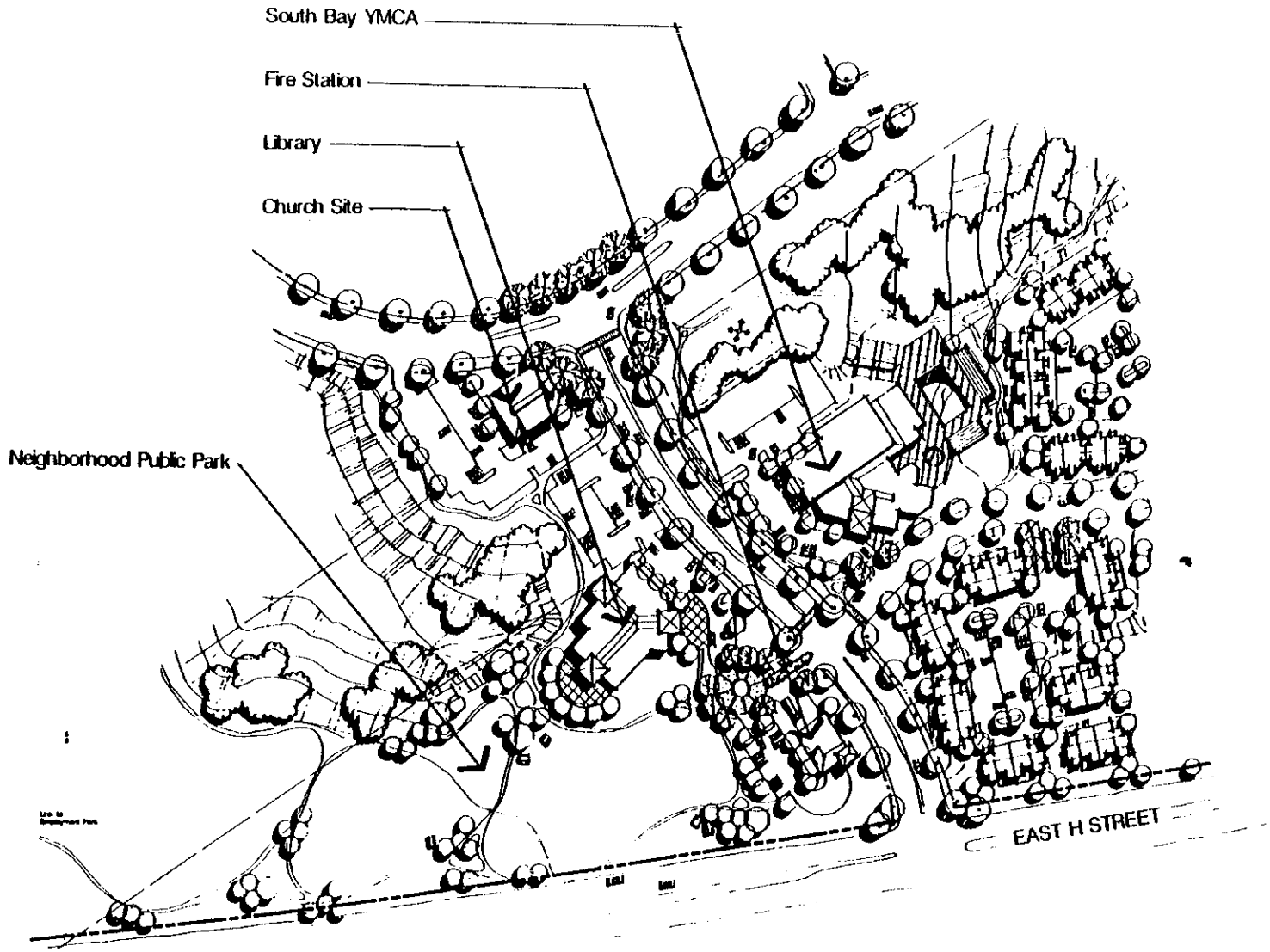
FIGURE 4-1-2

potential impacts with adjacent residential development (See Figures 4-I-1 and 4-I-2).

The public park includes a parcel along the west side of the loop road (designated P-3a) conceptually proposed as a staging area for canyon hiking and equestrian trails (Figures 4-I-1 and 4-I-2). This would consist of a small fill area serving as a trail head and assembly/parking area. An interpretive structure with signs describing the canyon ecology has also been discussed for this site, although specific details have not been proposed. Design parameters for such a facility would require approval by the city prior to project implementation.

The East "H" Street park would be located along East "H" Street between the Employment Park to the west and the four-lane "C" collector street to the east (Figure 4-I-1 and 4-I-3). The primary facilities would conceptually consist of a par course, picnic sites, and large turfed areas. This park is also proposed for noontime and after-work recreational opportunities to those working in the adjacent Employment Park. Located within the boundaries of the park site (but not included as park acreage) are both a proposed 1-acre library and 1-acre fire station site. There has been discussion of locating a 3-acre complex on this site which would incorporate the 1-acre fire station as well as a 2-acre firefighter training facility, although no specific proposals have been made to date. The City Planning Department has stated that the location and design of proposed library and fire facilities will require additional study prior to finalization of the SPA-I Plan (City of Chula Vista 1986).

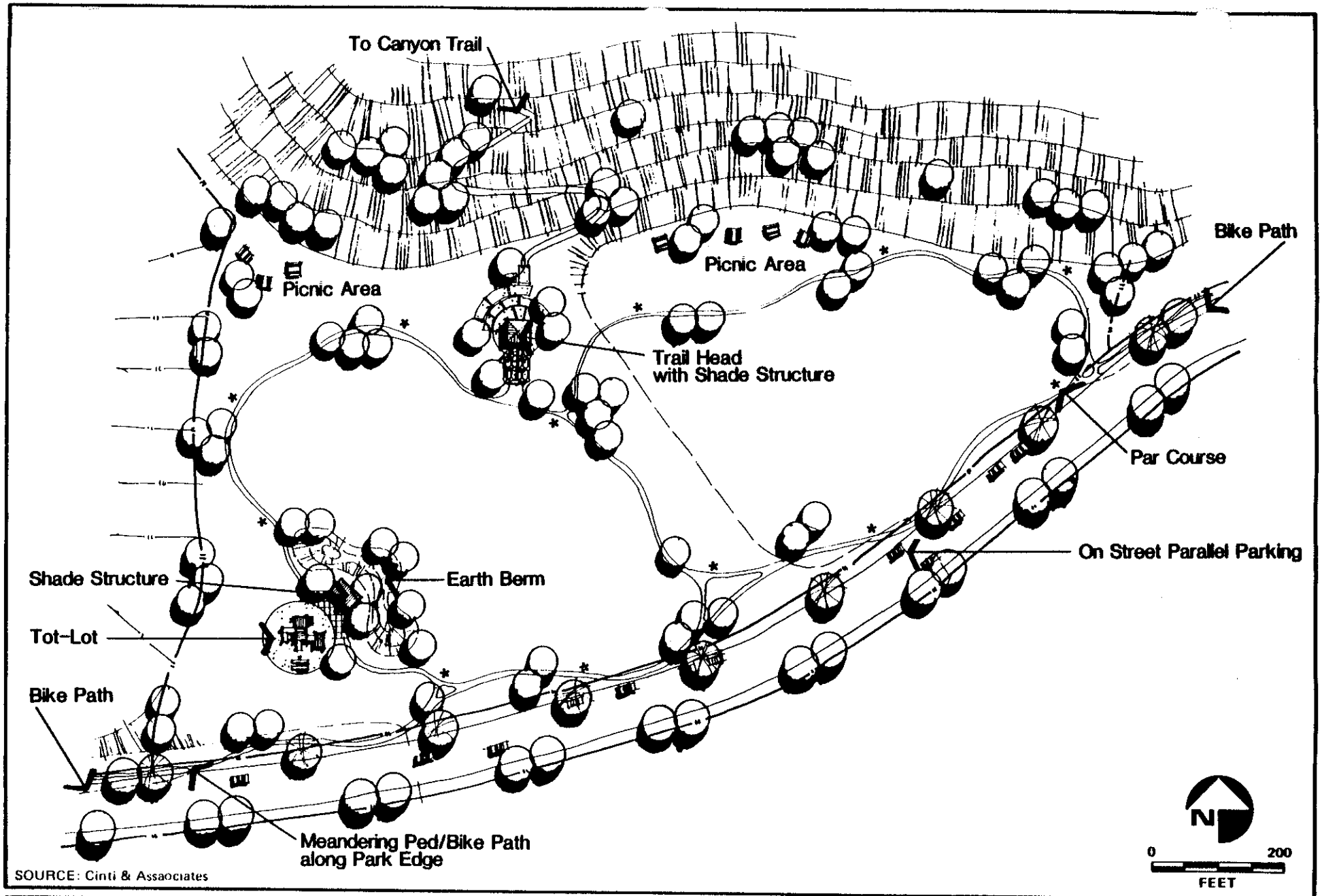
The neighborhood park would be located within the residential development areas on the south side of Rice Canyon (Figures 4-I-1 and 4-I-4). This park is conceptually designed as a supplement to the smaller yards associated with homes in this area, and is proposed for relatively passive activities, including "tot lots," picnic areas, a par course, and a developed trail head for hiking trails into Rice Canyon.



SOURCE: Cinti & Associates 1986

Proposed East H Street Park

FIGURE 4-1-3



SOURCE: Cinti & Assaociates

Proposed Neighborhood Park

FIGURE 4-1-4

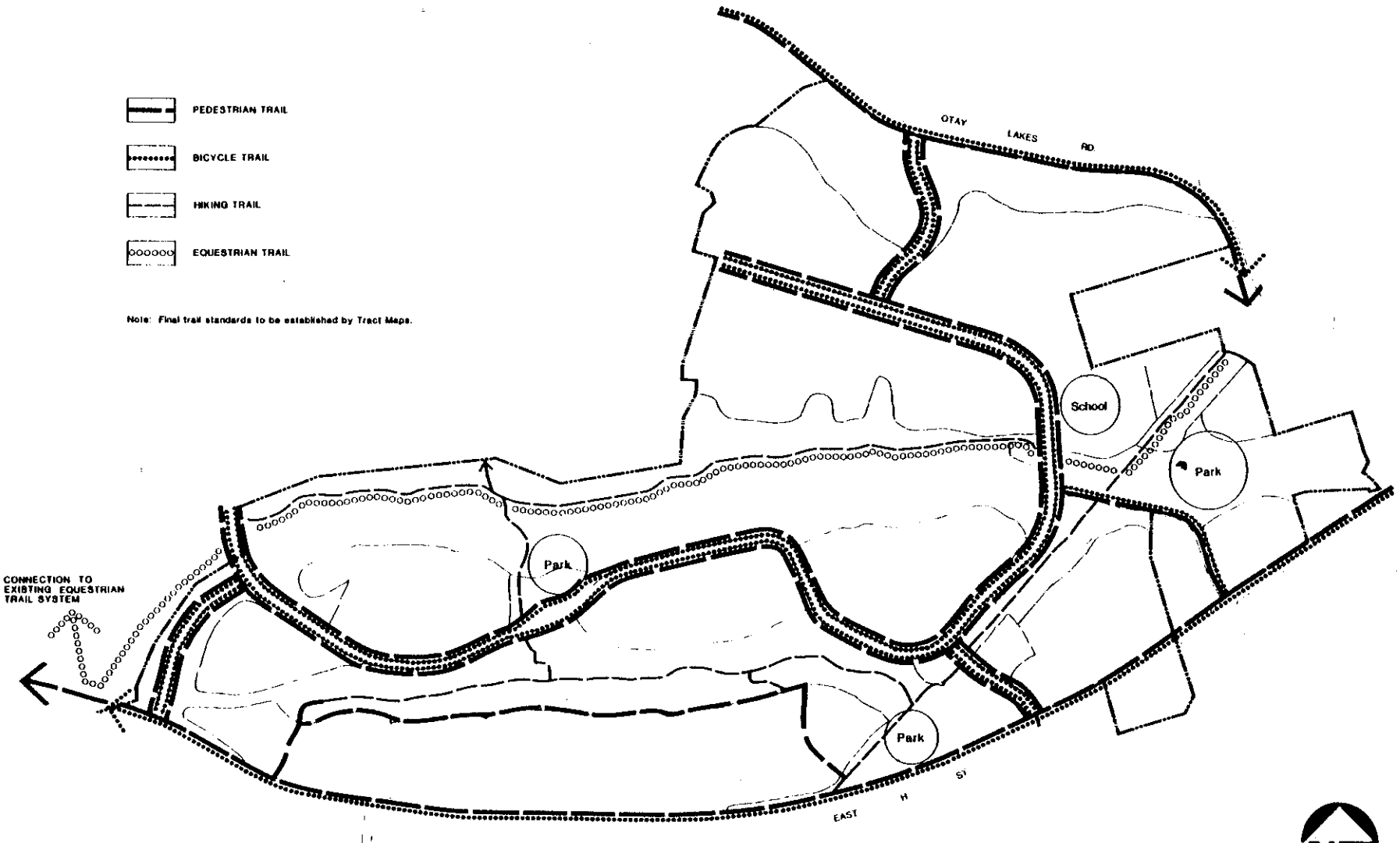
Two Community Facility parcels are conceptually proposed in the eastern portion of the project site, adjacent to the "C" collector street (Figure 2-4). A number of potential uses have been identified for these sites, including recreation areas, churches, and day care centers. Specific uses proposed in the SPA-I Plan include a church site (CF-1) and the South Bay YMCA (CF-2). The actual use of each site could vary depending on City requirements, and would be determined prior to plan approval.

Four types of trails have been proposed for the project site as depicted in Figure 4-I-5; bicycle trails, pedestrian trails, hiking trails, and equestrian trails. The proposed locations of these trails are conceptual and subject to change prior to final plan approval.

The bike routes are proposed as Class II bike lanes: on-street facilities designated by a 6-inch solid white stripe. Bike lanes are designed for one-way travel in the direction of traffic flow and are typically established on both sides of the street except through intersections. Class II bike lanes are proposed for all major and collector streets within the project site. Specific design for bike lanes has not been proposed and should comply with Caltrans bikeway criteria to meet state standards.

Pedestrian trails are proposed along all major and collector streets within the site, as well as the interior streets not shown on Figure 4-I-5. Typically, these would consist of sidewalks adjacent to both sides of the roadway. Along the loop road, pedestrian routes would be adjacent to the roadway on one side of the street, and would meander through a landscaped area on the other. The pedestrian trail system would be designed to link all major residential and recreational areas.

A series of hiking trails is proposed to traverse the major onsite open space areas, including the northern and central legs of Rice Canyon and the SDG&E easement. These trails would pass through the community and neighborhood park sites, where a number of trailheads would be established. Because of the sensitivity of biological resources in the northern leg of Rice Canyon, the hiking trails there would share a common site with, or be adjacent to, the



SOURCE: Cinti and Associates, 1987

Proposed Trails Plan

FIGURE 4-1-5

sewer maintenance road and equestrian trails. These are proposed to be surfaced with decomposed granite to provide a conducive environment to hiking/riding, as well as to reduce runoff in the canyon. As previously discussed, hiking trail facilities would include a staging area in the west end of the public park, and trailhead connections in neighborhood parksites. These facilities would provide access from a number of residential areas to the open space trail systems.

An equestrian trail is proposed to extend east-west through the project site within portions of the SDG&E easement and Rice Canyon open space (Figure 4-I-5). This trail would connect with an existing equestrian trail west of the site, and could be extended northeast of the project site to link with regional equestrian facilities (Cinti and Associates 1986).

Open Space - Potential impacts to open space within the project site would result from the construction of facilities related to recreation, storm and sewer drainage, road improvements and residential development. The primary resource concern in the open space areas is biology, particularly the sensitive plants and unique habitats previously discussed. A biological investigation was conducted on all the open space areas, and a canyon design study was performed for the northern leg of Rice Canyon (where the majority of the listed improvements would occur). These reports have identified a number of potential impacts and mitigation measures, several of which are listed below in this section. The majority of these are related to the preservation and/or reestablishment of vegetation and wildlife habitat, and involve minimizing and consolidating proposed construction activities. Additional information on the results of these investigations can be found in Section 4.C and Appendices C and H of this report. Significant impacts to open space areas are not anticipated if identified mitigation measures are implemented.

I.3 Mitigation Measures

The proposed project contains sufficient park land acreage to comply with the City of Chula Vista Park Land Dedication Standards, although specific design features should be finalized prior to plan approval. Additionally, a number of

open space areas and community/recreational facilities would be subject to impacts associated with proposed improvements. The mitigation measures listed below should be incorporated into the final tentative maps for the proposed project.

- The proposed improvements and development schedule for all parks, recreation areas, community facilities, and interpretive/information centers should be approved by the Environmental Review Section of the City of Chula Vista Planning Department prior to final tentative map approval.

- Development in proposed parks and open space adjacent to the SDG&E easement should be compatible with existing and future improvements within the easement as determined by the Environmental Review Section of the City of Chula Vista Planning Department.

- The proposed community facilities should include a library, fire station, and fire training site if deemed necessary by the City of Chula Vista.

- Bicycle lanes should be designed and constructed in accordance with Caltrans "Planning and Design Criteria for Bikeways in California" to comply with state standards.

- All improvements in the Rice Canyon open space should be constructed simultaneously, if possible, to minimize impacts to sensitive biological and hydrological resources.

- All access roads and trails within the Rice Canyon open space should utilize similar or adjacent locations to minimize disturbance.

- Improvements within the Rice Canyon open space should be limited to those necessary to meet identified access, drainage, sewage, and recreational goals.

- All drainage, sewer, recreation, road, and other improvements proposed within open space areas should be placed so as to cause minimum impact to sensitive biological and hydrological resources. The proposed design and location of these facilities should be reviewed by a qualified biologist prior to construction.

- All disturbed areas within open space should be revegetated with appropriate species as determined by a qualified biologist.

- All roads and trails within open space areas should be surfaced with pervious materials to minimize impacts associated with construction and runoff.

I.4 Analysis of Significance

The proposed project would result in the establishment of park land in excess of city requirements, and would preserve much of the existing open space in Rice and Otay Lakes Canyons. While the location and size of the proposed parks is not expected to be an issue, the nature and schedule of development within the parks are conceptual and have not been finalized. These details would need to be established prior to final tentative map approval, although they are not expected to significantly alter impacts associated with parks and recreation if acceptable to the City of Chula Vista. Therefore, no significant impacts to parks and recreation would be expected from the proposed project.

A number of adverse impacts to biological resources have been identified from proposed development in the designated open space areas. Two specific investigations of these impacts have been performed, however, and sufficient mitigation measures have been identified to reduce those impacts below levels of significance (Appendices C and H).

J. PUBLIC FACILITIES AND SERVICES

Due to rapid growth presently occurring within eastern Chula Vista, many public services would be subject to cumulative impacts from the proposed

Rancho del Rey SPA-I development in combination with similar projects within the jurisdiction of the facilities/services providers. As a result, uncertainties regarding the type and size of new facilities, and the developers' responsibilities regarding the funding of new facilities are being addressed in ongoing planning efforts of the facilities/services providers. The following analysis of public services addresses Rancho del Rey's contribution to the public facilities that serve eastern Chula Vista.

J.1 WATER

Existing Conditions

The site currently does not require water service. The project area is located within the jurisdiction of the Otay Water District (OWD), Improvement District (I.D.) No. 22, which was formed to provide a vehicle for financing facilities to provide water to El Rancho del Rey. OWD is one of 24 member agencies of the San Diego County Water Authority (SCWA). SCWA receives water from the Colorado River and the State Water Project through a contract with the Metropolitan Water District (MWD) of southern California.

Imported water makes up 90 percent of San Diego County's annual water demand of 550,000 acre-feet per year. In 1985 the Central Arizona Water Project began to divert Arizona's allotted share of Colorado River water into Arizona. Total diversion will ultimately take place over a period of 3 to 4 years as additional facilities are constructed. This will reduce the amount of water available to the Metropolitan Water District by 600,000 acre-feet per year. However, existing and proposed SCWA facilities are designed to meet the projected needs of its member agencies through the year 2000.

A number of alternatives are being studied by MWD to secure additional water supplies for the future. Negotiations have been conducted between the Metropolitan Water District and the Imperial Irrigation District to acquire water from the Salton Sea. If approved, this reallocation would recover 25 percent of the amount lost due to the Arizona allocation. However, negotiations are currently at a standstill pending the finalization of an EIR on

the impacts of transferring conserved water out of the Imperial Valley (Rhodes 1986). Therefore, no supplemental long-term water sources for the MWD service area have been secured at this time.

A Water Supply Master Plan was prepared for El Rancho del Rey (WESTEC 1985) to define a phased planned development of the water system for the entire El Rancho del Rey plan area and adjacent development areas including Improvement District Nos. 5, 10, and 22. The Master Plan identifies facilities required for full development of the project area and specifies sizes and locations of pipelines, reservoirs, and pressure-reducing valves.

In addition, the Final Central Area Water Master Plan Update has been prepared by the Otay Water District to identify facilities required to provide adequate service to the Chula Vista area bounded by I-805 to the west, the Otay River to the south, the lower Otay Reservoir to the east, and Bonita to the north. This report constitutes the most current information on water supply and demand in the project site vicinity, and incorporates all previous Water Master Plans in this area, including the 1972 Montgomery Master Plan (Arroyo 1987). Currently, the No. 4 connection is the only source of water for the Central Area system and I.D. No. 22. This connection is served by pipeline No. 3 of the Second San Diego Aqueduct; OWD will expand its capacity by constructing a new connection (Connection No. 9) to the SCWA's Second San Diego Aqueduct east of the Gotham and Lehigh Street intersection. The new connection will have a rated capacity of 22 million gallons per day (mgd), and should be operational by fall of 1987 (OWD 1987). Both connections will be working in parallel through pipelines serving the 624 Pressure Zone. A new 8 mg reservoir (Reservoir 22-3) would accompany the new connection.

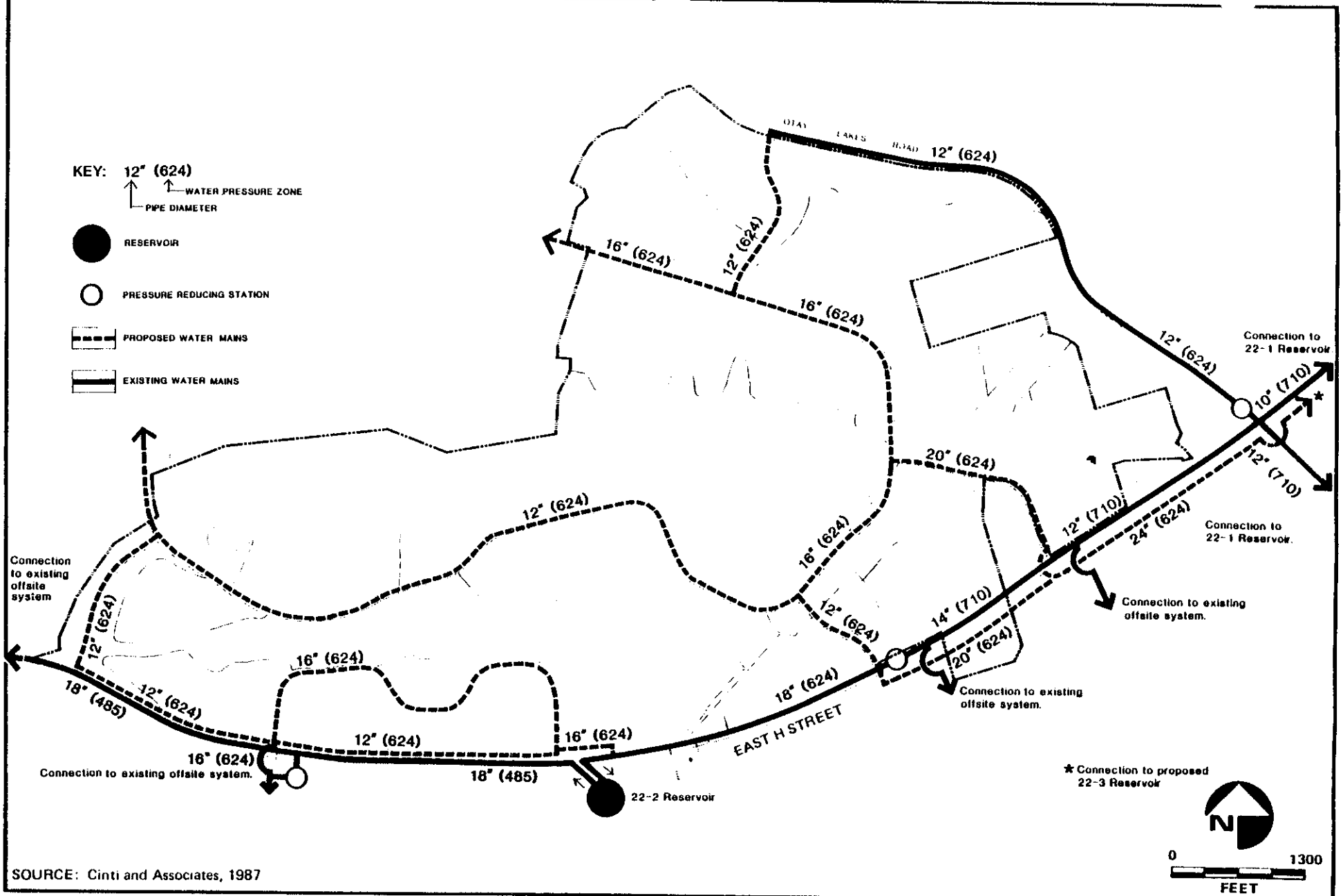
Rancho del Rey's contribution to the offsite Water District facilities would be the construction of a 30-inch transmission line beneath East "H" Street, from the proposed 22-3 reservoir to the intersection of Yuba and "H" Streets. From this intersection to Buena Vista Way, a 24-inch transmission line would need to be installed (Arroyo 1986). The transmission line would run from the proposed 2 mg 22-4 reservoir, southeast of the project site and adjacent to 22-1, to the project site.

OWD has divided the project site into three water pressure zones for planning purposes (Figure 4-J-1). Pressure Zone 710 includes onsite elevations between 450 feet MSL and 560 feet MSL and comprises the southeastern portion of the site. The 710 Pressure Zone would receive water from a 20-inch water main connected to a 3.0 million gallon (mg) reservoir (Reservoir 22-1); this water would be pumped to the 710 Pressure Zone from a 0.95 million gallon reservoir (Reservoir 5-1) located 2400 feet southwest of Reservoir 22-1. OWD plans to raise Reservoir 5-1 by approximately 8 feet to allow the operation of this reservoir parallel with the Patzig Reservoir and the new 8 mg Reservoir 22-3. A 24-inch pipeline will replace the existing 16-inch line which transports water from Reservoir 5-1 to and along Telegraph Canyon Road (approximately 1 mile south of the project area).

Pressure Zone 624 includes locations in the project vicinity ranging from 360 to 450 feet MSL, and comprises the majority of the project site. Pressure Zone 624 would receive water from Reservoir 5-1 and the 12.2 million gallon Patzig reservoir located approximately 700 feet north of Reservoir 5-1. The new 8 mg Reservoir 22-3 will serve the 624 zone and provide capacity to be used as a forebay for the future 980 zone pump station, just outside of the project's water pressure zones. The majority of the western and central portion of the project area is served by Pressure Zone 485, which serves elevations ranging from 150 to 360 feet above MSL. Water flows to Pressure Zone 485 from Reservoir 22-2 directly south of the project boundary. This reservoir has a capacity of 1.0 million gallons and is located south of East "H" Street below the southern project boundary. Internal transmission lines are proposed onsite to transfer water throughout the project site (Figure 4-J-1).

Impacts

Based on water demand projections contained within the Rancho del Rey SPA-I Plan, at full project buildout the total domestic water demand would be 1.54 million gallons per day (mgd). Table 4-J-1 shows a breakdown of water demand by land use. This projected water demand represents an incremental increase in regional water consumption, and therefore constitutes an adverse impact to water supply. However, because projected consumption represents only a minor contribution to regional water use (approximately three-tenths of one percent of annual water consumption in San Diego County), this impact is not considered significant.



SOURCE: Cinti and Associates, 1987

Proposed Water Plan

FIGURE 4-J-1

Table 4-J-1

PROJECTED WATER DEMAND

Land Use	Units	Demand Factor	Demand
Residential	3201.0 du	490 g/day*	1.08 mgd
Employment Park	84.5 ac	3500 g/ac/day	0.30 mgd
Parks (net irrigated)	50.1 ac	2700 g/ac/day	0.14 mgd
School (net irrigated)	8.8 ac	2250 g/ac/day	0.02 mgd
TOTAL			1.54 mgd

*Assumes 2.74 persons per unit.

The projected demand represents a small portion of the total demand within the OWD service area due to similar proposed developments in eastern Chula Vista. Timely provision of adequate water service to the Rancho del Rey development could be achieved, according to OWD, provided the regional facilities and the 30-inch to 24-inch Rancho del Rey transmission lines are constructed according to the proposed schedules. Funding of the regional facilities could be provided by annexation fees, water rates, Mello Roos Community Facilities District, assessment districts, or a combination of methods. Rancho del Rey would be required to fund the construction of the transmission line beneath "H" Street and all onsite distribution pipelines. No adverse impacts would be incurred as a result of project implementation provided construction of water facilities coincides with construction of SPA-I development areas.

Mitigation Measures

No significant impacts to OWD facilities are anticipated provided the proposed modifications and facilities within the Final Central Area Water Master Plan Update are constructed in response to demand, and that financing and construction of the Rancho del Rey transmission line is provided by the applicant. With the adoption of conservation measures, the project's water requirements would be reduced. As a result, no mitigation measures would be required. To further reduce onsite water demand, the City of Chula Vista and State of California have policies and regulations regarding water conservation.

These include landscape techniques such as the utilization of drought-resistant plants, drip irrigation systems, subsurface multiporous tubing and moisture sensors. Other water-saving techniques include implementation of low-flow shower and faucet restrictors and toilet dams. The incorporation of such measures would reduce water consumption within the Rancho del Rey SPA-I development.

Analysis of Significance

The project would incrementally reduce both the regional and Otay Water District water supply, and would adversely impact the existing OWD facilities. However, due to OWD plans to construct new and expanded facilities within the Water District, provision of adequate water service would represent no impact to the District. However, Rancho del Rey would be responsible for the funding and construction of the transmission lines specifically required for the proposed development. A reduction of onsite water requirements would occur with the adoption of conservation measures within the Rancho del Rey development. Therefore, no adverse impacts to water service would occur provided facilities are constructed in accordance with need. If proposed water facilities are not constructed, however, a significant incremental reduction of supply and significant impacts to existing OWD facilities would occur. Because of the relatively small water demand projected from the proposed development, no significant impacts to regional water supplies would result from project implementation.

J.2 SEWER

Existing Conditions

Currently the site is undeveloped and requires no onsite sewer facilities. The City of Chula Vista provides sewer service in the project vicinity. The City transports sewage to the San Diego Metropolitan Sewer System (METRO) which discharges at the Point Loma Regional Plant. The City currently holds 17.1 million gallons per day capacity in the METRO System, and currently utilizes 9.0 mgd, leaving 8.1 mgd for future capacity.

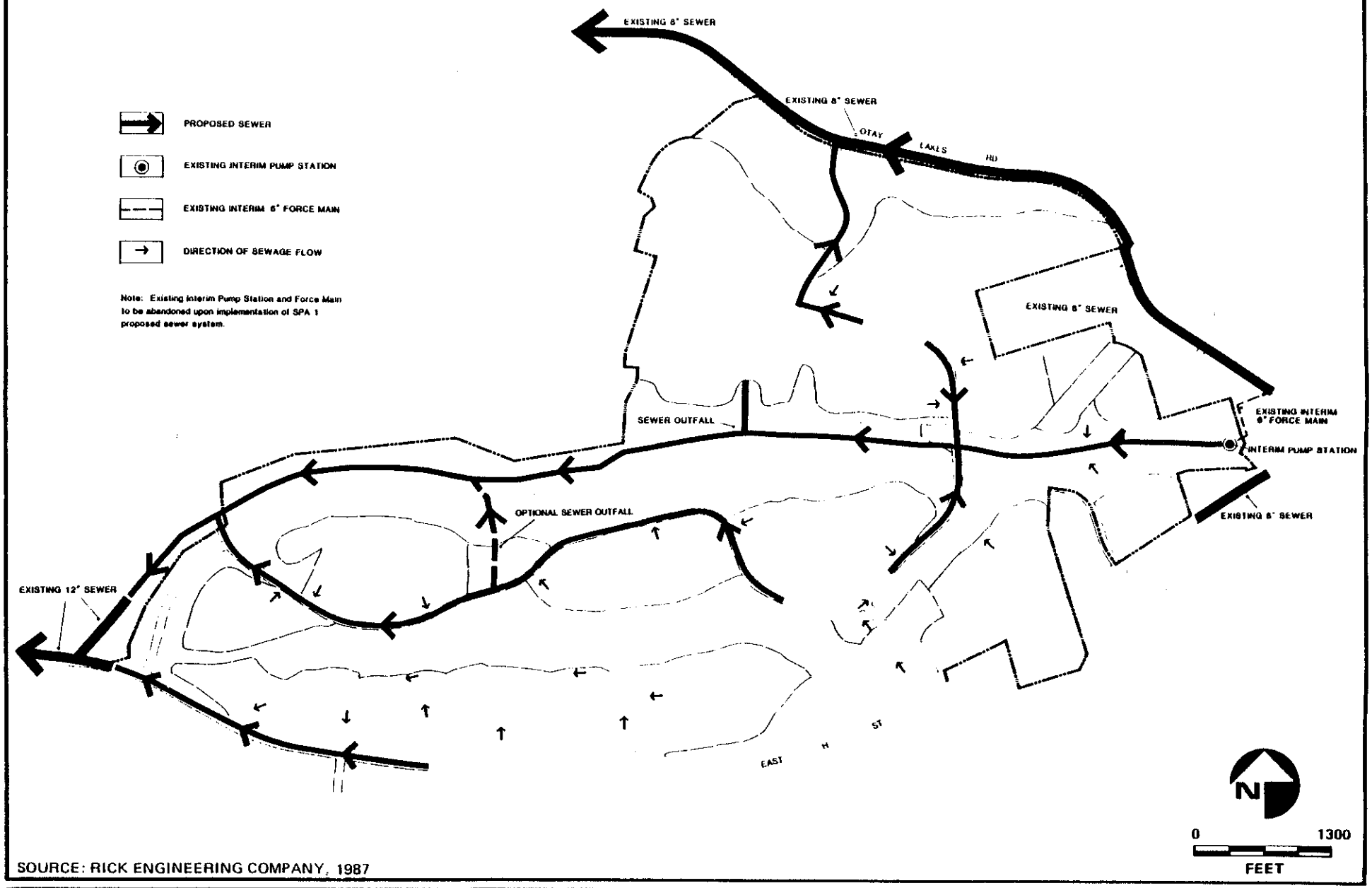
There are three drainage systems onsite: Otay Lakes Road along the northern boundary of the project site, Rice Canyon in the central portion of the site, and Telegraph Canyon to the south of East "H" Street and the site (Figure 4-J-2).

Existing sewer lines include an 8-inch sewer line along Otay Lakes Road, which flows to a 39-inch trunk line at Bonita Road, and an 8-inch to 12-inch line located along East "H" Street at the east and west corners of the project area. The East "H" Street line connects to a 15-inch line which flows north, paralleling I-805. The 15-inch line enlarges to an 18-inch line which flows northwest to an existing 42-inch trunk line at Plaza Bonita Road. A 6-inch interim force main is located near the eastern project boundary, connecting the interim pump to the Otay Lake Road system. The Telegraph Canyon system is comprised of a 15-inch sewer trunk south of the project site.

The METRO System treats its sewage at the Point Loma Sewage Treatment Plant, which is currently operating at its 160-mgd capacity. In mid-1987, the facility will expand its capacity to 200 mgd; the ultimate capacity of the plant may be as high as 240 mgd.

Impacts

Based on the sewage generation rates contained within the Rancho del Rey SPA Plan, an average sewage flow of .75 million gallons per day would be generated. The rates are shown below in Table 4-J-2 by land use. A number of improvements are proposed to transport project-generated waste into the METRO System via City of Chula Vista sewage infrastructure.



SOURCE: RICK ENGINEERING COMPANY, 1987

Proposed Waste Water Plan

FIGURE 4-J-2

Table 4-J-2

WASTE WATER GENERATION RATES

Residential Density (du/ac)	Projected** Population (pop./du)	Proposed Units (du)	Projected* Flow (g/du/day)	Project Flow (mg/day)
2	3.50	63	280	0.02
4	3.38	284	270	0.08
6	2.66	879	213	0.19
8	2.50	180	200	0.04
12-20	2.30	795	184	0.15
School Site	= 31.2 pop./ac x 80 = 2,496 gpd/ac			0.03
Employment Park	= 37.5 pop./ac x 80 = 3,000 gpd/ac			0.25
				0.75 mgd

Source: Cinti and Associates, 1987.

*Assumes 80 gallons/day/person.
**Based on 3.5 persons/EDU (City of Chula Vista 1987)

The northernmost portion of the site, comprised mainly of residential neighborhoods, would drain .07 million gallons of sewage per day to the Otay Lakes Road System. The SPA-I area's contribution to the Rice Canyon System would be .67 million gallons of sewage per day. The Rice Canyon System would be comprised of two trunk sewers, North and South, that are proposed onsite. The North Trunk of Rice Canyon would be located in the canyon running east-west between the northern and central ridges. The South Trunk of Rice Canyon would be constructed within the residential neighborhoods on the south side of East "H" Street. The system would carry flows generated from both existing and proposed residences, the employment park, school properties, and the existing pump station. The North and South trunks would merge at a point west of the proposed employment park, ultimately connecting to the existing 12-inch line in "H" Street at Terra Nova (Figure 4-J-2). The interim pump station serving the Otay Lakes Road system, on the east boundary of the project site, would be eliminated as a result of the onsite improvements.

The engineering analysis contained within the sewer addendum study (Appendix E), indicates that the available capacities of the Otay Lakes and Rice Canyon sewerage basins would not be exceeded as a result of projected sewage contributions from the proposed development. The Rancho del Rey project would, however, contribute to the regional increase in sewage quantities associated with rapid urban growth, although in itself, this would not constitute a significant regional impact. The City of Chula Vista is currently monitoring the municipal sewer system as part of a pending sewer system master plan. This study was prompted by the fact that a number of sewer lines within the city-wide system are presently at or beyond design capacity (Frankle, 1987). The results of this investigation should be utilized to more accurately assess the potential impacts to regional sewage systems from the proposed project. The developer would be responsible for construction of all onsite sewage infrastructure, and may be required to contribute to any offsite improvements that may be necessary for adequate service.

In addition to the described sewage facilities, the proposed SPA-1 development includes the construction of a sewer line maintenance road in the Rice Canyon drainage basin. This road would be located predominantly along existing trails adjacent to the main Rice Canyon channel, and is intended to provide access for sewer line maintenance operations. Additional proposed uses for the road include equestrian and hiking trail sites, as described in Section 4-I of this report. Portions of the proposed maintenance roadway may deviate from existing trails, resulting in potential impacts to biological and/or hydrological resources. These potential impacts are discussed in Sections 4-C and 4-E respectively. The location of the maintenance road would also coincide with that of the main sewer line in Rice Canyon. In order to facilitate sewer maintenance operations, the City of Chula Vista Engineering Department has determined that above-ground manholes will be required along the sewer line at approximately 400-feet intervals. These manholes would be located along the side of the proposed road to facilitate vehicular, animal, and pedestrian traffic, and would be equipped with bolted covers to preclude theft or damage.

In order to provide sufficient access, the proposed road must be designed to accommodate the appropriate sewer maintenance vehicles and schedules. Specifically, the roadway must provide at least a 10-foot width of unobstructed, all-weather surface (Thomas 1987). This can be accomplished by surfacing the roadway with either decomposed granite to the specifications of the City of Chula Vista Engineering Department, or surfacing with asphalt. The use of decomposed granite would require appropriate load capabilities and road maintenance to meet the needs of the City Engineering Department.

Mitigation Measures

The Rancho del Rey development would not produce any significant adverse impacts to the City of Chula Vista's sewer infrastructure. Implementation of the proposed project may require the developer to contribute financially or through construction of the facilities required to provide adequate sewer service to the project site, based on the project's contribution. Construction of the sewer line maintenance road could result in significant impacts to biological and/or hydrological resources, with appropriate mitigation measures contained in those sections of the EIR. In addition, the following mitigation measures should be implement :

- The sewer line maintenance road should be surfaced with decomposed granite to the specifications of the City of Chula Vista Engineering Department, if possible. Otherwise, the maintenance road should be surfaced with asphalt, after conducting additional studies to determine the effects (if any) of an asphalt roadway on biological and hydrological resources in Rice Canyon.

- Manholes on the Rice Canyon sewer line should consist of above-ground structures to facilitate sewer maintenance operations. These should be located along the side of the maintenance road to avoid interference with vehicular, animal, or pedestrian traffic, and should be equipped with bolted covers to preclude theft or damage.

Analysis of Significance

The Rancho del Rey proposed SPA-I Plan would not produce adverse impacts on the City of Chula Vista's sewer infrastructure provided the developer constructs the required onsite sewer improvements and all identified mitigation measures are implemented.

J.3 SCHOOLS

Existing Conditions

The project site is currently undeveloped, and therefore, generates no demand for educational facilities. The site is located within the jurisdiction of two school districts: Chula Vista Elementary School District serves grades kindergarten through six, and Sweetwater Union High School District provides education to junior high and high school students.

During the 1985/86 school year, the Chula Vista District was operating at capacity with 13,821 students enrolled. The closest elementary schools to the project site are Allen, Tiffany, Valley Vista and Sunnyside Elementary Schools. The Sweetwater District was operating beyond capacity with an enrollment of 24,578 students during the 1985/86 school year. The closest secondary schools to the site include Bonita Vista and Hilltop Junior High and High Schools. In addition to the Rancho del Rey project, other developments in eastern Chula Vista will contribute new students to the school districts. The school districts' plans for new facilities have been considered in this analysis.

Three elementary schools are planned to be built over the next five years, according to the Chula Vista Elementary School District. One school will be located adjacent to Southwestern College (approximately 1/2 mile southeast of the project site), another in Terra Nova (approximately 1/2 mile west of the project off East "H" Street), and the third in Eastlake I (approximately 3 miles east of the site off Otay Lakes Road). The capacity of each new school would be approximately 600 students. Sufficient numbers of students

have not yet been generated to signal an immediate need for any of these facilities at this time. The capacities of the permanent facilities within the Chula Vista Elementary School District and the current enrollments at the schools that would service the development are as follows:

	Capacity*	Current Enrollment[1]
Allen	651	477
Tiffany	744	692
Valley Vista	500	483
Sunnyside	806	739

*These capacity figures are based on current classroom use, and assume a maximum of 31 students per classroom.

[1]1986-87 school year

In the case of secondary schools, the state's rated capacity for Bonita Vista is 1284 students; the current enrollment at the school is 1250 students. According to the Sweetwater Union High School District, a second junior high located within a future phase of the Rancho del Rey development should begin construction by the time Bonita Vista Jr. High reaches enrollment capacity. Bonita Vista High School's maximum capacity is 1400 students; while the current enrollment is 1385. A second high school, located in Eastlake, is scheduled for construction in 1988 with the facility opening by September 1990. The potential for another high school site is currently being discussed by the School District and United Enterprises, a private developer with large holdings just south of Eastlake.

Impacts

The Chula Vista Elementary School District assumes an average of 0.3 elementary students per dwelling unit (WESTEC 1987); full buildout of the project would result in 2201 residences, and according to the District's assumption, 660 new students. For the purpose of this analysis, the School District's generation rate will be used to ensure adequate assessment of facilities according to School District standards. Of the schools that would

service the Rancho del Rey development, Tiffany and Valley Vista Elementary Schools will receive 6 and 5 portables, respectively, for the '87-'88 school year (Six 1987). Allen and Sunnyside Elementary Schools will operate one classroom short if the student growth rate continues at the current rate. Therefore, while phasing of the project would result in an incremental generation of students, an additional elementary school would eventually be required to provide adequate educational services to the Rancho del Rey development.

In addition to the three elementary schools planned in the project vicinity, a 12.6-acre parcel on the Rancho del Rey project site has been reserved as a future elementary school site. Development of the school facility is not proposed as part of the SPA Plan. The developers of Rancho del Rey may dedicate the land to the School District, thereby receiving credit against the total cost of financing the facility. It is anticipated that funding would be derived from a Mello-Roos Community Facilities District, where the community facilities district established may issue bonds or levy special taxes to finance the school construction. Construction of the facility is proposed to begin once a sufficient number of students are generated.

The Chula Vista Elementary School District does not anticipate that implementation of the proposed project would result in any impacts on the provision of adequate educational facilities if funding and land for the proposed onsite facility are guaranteed by the applicant. The District's policies state that elementary schools must be developed in accordance with need; if a school is not built onsite or those planned within the vicinity are not phased concurrently with housing, a significant impact would be incurred on the existing facilities within the District. However, this would represent only a short-term impact if the additional elementary school was eventually developed onsite. If facilities are built concurrently with housing, no impact would occur.

The Sweetwater Union High School District assumes an average of 0.3 students generated per dwelling unit, and therefore, assumes that 660 secondary students would be added to the School District at full project buildout. This EIR analysis utilizes the School District's generation figure.

Initially, junior high students generated by development of the Rancho del Rey SPA-I would be sent to Bonita Vista Junior High School. Assuming the new junior high school within a future phase of the Rancho del Rey development is built before Sweetwater Union High School District is unable to provide adequate services, no impact to schools would occur. A tentative completion date of 1994 has been established for the Rancho del Rey facility. According to State Assembly Bill No. 2926, the applicant must contribute to the construction of the school through development fees assessed by the school district. Otherwise, current facilities would be significantly impacted on a short-term basis until new facilities are built.

High school students generated by the implementation of the Rancho del Rey project would be sent to Bonita Vista High School. The completion of the EastLake High School would represent a significant increase in the School District's capacity, and may accommodate some students currently enrolled at Bonita Vista High School. If a third high school site is established south of Eastlake, additional capacity would be acquired by the School District. Therefore, the Sweetwater School District foresees no significant impacts to current facilities as long as the schedule of constructing new facilities remains concurrent with need. As mentioned previously, the phasing of development would incrementally generate new students, allowing the school districts more time in planning new schools, and therefore reducing the impact on current facilities within the school districts to a level of insignificance.

Mitigation Measures

Although development of the Rancho del Rey project would increase demand on the School Districts' facilities due to the additional students generated by the project, new facilities are planned to compensate for the decreased capacity. Provided that land dedication, financing, and construction of the new schools are achieved in a timely fashion, no impact would result and therefore, no mitigation measures would be required. Due to the number of current and proposed growth projects in eastern Chula Vista, the capacity of the School Districts and the ability of the Districts to provide educational services are expected to experience cumulative impacts. However, because the provision of additional capacity is a primary concern of the School

Districts, and because the projected increases in the number of students are being incorporated into their long-range plans, these cumulative impacts should be mitigated by the phased implementation of additional facilities in eastern Chula Vista.

Analysis of Significance

If the required elementary and high schools are not provided in conjunction with Rancho del Rey development, the effect of this project constitutes an incremental significant impact. The cumulative effect produced by the proposed development and similar developments east of the project site is a concern of the school districts. However, since the required facilities are currently in the planning phase, and assuming construction schedules remain the same, and that the developer of Rancho del Rey contributes the allotted share of land and financial assistance for the proposed facilities, no significant impact on school facilities is expected to result from implementation of the project.

J.4 FIRE PROTECTION

Existing Conditions

The project site is within the service area of the Chula Vista Fire Department. The closest station to the project area is Fire Station No. 4, located at 861 Otay Lakes Road, (approximately one-half mile southeast of the project site). Station No. 4 consists of 1 company staffed with 3 firefighters and operates at a response time of 2 to 3 minutes to the project site and vicinity (Mandeski 1987). In addition, a similar response time could be met by Station No. 2, located at 80 East "J" Street. According to the Safety Element of the General Plan (1974), a response time of 4 or less minutes is considered acceptable, and fire stations are geographically distributed to provide for the appropriate response. The maximum acceptable response time according to the Chula Vista Fire Department is 7 minutes (Lopez 1987). The response times to the project site are thus considered acceptable although the exact response time and the station which would respond depends on the location of

the onsite emergency. While new facilities would be sited and constructed in response to population growth in eastern Chula Vista and associated increases in response times, no specific thresholds currently exist to determine when the ultimate need for these facilities would occur.

Impacts

The proposed development would incrementally increase demand for fire protection services within the project vicinity. In addition, it would contribute to the cumulative impact of growth in eastern Chula Vista on fire facilities.

A potential site, 1 acre in size, has been reserved for a fire station in the southern portion of the project area, midway along East "H" Street. However, the Fire Department has proposed an increase in the site size from 1 to 3 acres to incorporate a training facility for area firefighters. The current training facility is located on a 1-acre parcel adjacent to Station No. 2 on East "J" Street. That parcel is proposed to be developed with an additional station, to be built by June or July 1987. Therefore, a new centrally located facility would be required to service the Bonita, San Diego, and Chula Vista Fire Departments. According to the Fire Department, the Rancho del Rey parcel is the optimum location for the new facility. While Rancho del Rey will be responsible for dedicating a fire station site, the associated financing requirements have not been finalized.

Station No. 4 is scheduled for relocation further east to meet increased fire protection demands as a result of proposed development east of Rancho del Rey in the City of Chula Vista. This would occur within 4 to 5 years, after the Rancho del Rey Station is completed. Therefore, assuming that the proposed Rancho del Rey station is constructed in a timely manner, the provision of adequate fire service to the proposed project would represent no impact on fire services. If the facility is not constructed as planned, a significant adverse impact would be incurred by the proposed project on existing facilities.

A related impact of the Rancho del Rey project on the provision of fire services is related to the site design of the project. The Fire Department has voiced a concern with the number of homes which are proposed to be located adjacent to the open space chaparral areas of Rice Canyon. Because the chaparral is highly flammable, certain site-related, landscaping, and architectural design features would need to be incorporated into the final design of the lots to insure that a signficant hazard was not created upon project implementation.

Mitigation Measures

To maintain adequate fire protection service to the Rancho del Rey project site, expansion of existing City Fire Department facilities would be required. With Station No. 4 being planned for relocation further east, the addition of the Rancho del Rey station would be necessary to maintain acceptable response times to the project and vicinity. Assuming these facilities are constructed, the proposed project would not produce any adverse impacts on current facilities and no mitigation measures would be required.

Mitigation measures necessary to counteract the onsite fire potential include adequate backyard setbacks and flame resistant vegetation combined with a low fuel firebreak; these measures should be incorporated into the final design of the lots adjacent to open space areas, such as Rice Canyon, to the satisfaction of the City Fire Department. Review of these and other fire prevention measures should be a condition of tentative map approval. In addition, adequate water pressure must be provided to meet the City's fire flow requirements. These measures are incorporated, thus reducing the onsite fire potential to insignificance.

Analysis of Significance

The demand on existing fire facilities within the vicinity of the project would increase as a result of project implementation, representing a significant impact. The provision of a new facility onsite would compensate for the increased demand thus reducing the impact to a level of insignificance. In

addition, the use of low fuel firebreaks, setbacks and/or flame-resistant vegetation on lots and hillsides adjacent to open space areas, such as Rice Canyon, would reduce the onsite fire potential to a level of insignificance.

SECTION 5
REQUIRED CEQA SECTIONS

5.1 GROWTH INDUCEMENT

The Chula Vista General Plan (1970) estimates that by 1990 nearly half of the city's population will be living in new communities located on the mesas and foothills east of Interstate 805. The city desires to maintain control over the pace and quality of development in order to assure that growth is orderly and meets city standards.

The County of San Diego Regional Land Use Element and Map (August 1984) contains several goals regarding urban growth. The thrust of these goals is to manage urban growth so that balanced communities are planned appropriately with facilities and urban levels of service. The Land Use Element also states that future urban growth should be located contiguous to existing urban areas while the rural character of non-urban lands should be retained (County of San Diego 1984:II-2).

The City of Chula Vista has been developing and refining a growth management plan for the past several years. The plan's intent throughout its many revisions has been to direct growth in and around the city in an orderly fashion, to avoid leapfrog development, to protect and preserve the city's amenities, and to guide growth in a general west to east direction. The proposed growth management plan is intended to supplement and complement the city's General Plan, and to provide a more specific approach to the direction of growth.

The city's policy is intended to promote incremental growth from west to east, but to remain flexible to allow consideration of topographic, economic, social, and other factors relative to new development when necessary. Provision of public facilities concurrent with growth is considered an important guide, as is the idea of urban in-filling as opposed to "leapfrog" development. Preservation of open space and greenbelts by methods such as dedication of land, purchasing of development rights, clustering, and zoning practices is recommended as part of growth management in Chula Vista.

The proposed Rancho del Rey SPA-I project involves a SPA Plan and tentative maps for an 808.6-acre residential community with associated commercial, industrial and public facilities. The SPA-I project constitutes the first of four SPAs to be developed in the El Rancho del Rey Specific Plan Amendment area. Land surrounding the site is currently developed with residential (and some associated commercial and community facility) land uses. The implementation of the Rancho del Rey SPA-I Plan and tentative maps would include construction of 2201 residential units of mixed densities and types; 2 employment parks parcels totalling 84.5 acres; 2 community facility parcels totalling 5.6 acres; 2 neighborhood parks totalling 21.7 acres; a 34.0-acre community park; a 12.6-acre school site; and 7 open space parcels totalling 272.6 acres. The Rancho del Rey SPA-I community would require facilities, improvements, and extensions to provide urban levels of servcie including water, sewer, educational facilities, recreational facilities, circulation, law enforcement and fire protection.

The proposed project incorporates most of these measures expressed in the city and county growth management plans. The public facilities and utilities are planned to be provided concurrently with need, and an open space and park system are proposed. A circulation system, including pedestrian and bicycle trails connecting various portions of the community, is also planned.

Implementation of the proposed Rancho del Rey SPA-I Plan would not have significant, adverse growth inducing impacts. Approval of the project may encourage potential adjacent developments (in SPAs II-IV) to occur sooner than would otherwise take place without the project. However, since the project site is surrounded by land zoned for urban growth, the development of Rancho del Rey would not conflict with the City of Chula Vista goals for directing growth.

In the environmental analysis performed for the Master EIR for the El Rancho del Rey Specific Plan (WESTEC Services, 1985), the full range of environmental effects were determined to be potentially significant for implementation of the Specific Plan and were addressed in that document. The issues which were determined to be not significant in that analysis, and were subsequently deleted from the current analysis of the potential effects of the Rancho del Rey SPA-I Plan implementation, include air quality, solid waste disposal, energy consumption and conservation and socioeconomic impacts.

5.2 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed use of the project site environment would involve the elimination of open space land uses and the development of a permanent, multifaceted urban community. While some open space opportunities would, therefore, be precluded, the proposed development would conform to current (and proposed) long-term land use designations.

The Rancho del Rey SPA-I project would provide a variety of land uses including employment, residential, commercial, open space, educational, and recreational uses in an area within the City of Chula Vista's sphere of influence which is growing rapidly. The project would result in an increased housing stock for the City of Chula Vista and in a net gain of public use funds. This development would, however, have certain other long-term effects on the environment.

The following discussion is a summary of the project-related impacts which may be significant on a cumulative basis, i.e., when combined with other existing, approved, and reasonably foreseeable future projects, and may affect the overall maintenance and enhancement of the long-term productivity of the area. A more detailed impacts analysis for each issue is included in Section 4 of this EIR. The reader is referred back to the appropriate subsection for the complete analysis.

Traffic Circulation and Access: The effects of project traffic in combination with ultimate development of the surrounding Rancho del Rey SPA-I vicinity, as discussed in Section 4.F, were evaluated in the traffic analysis completed for this project. The local cumulative impacts were considered in that study, and circulation improvements necessary to accommodate total traffic generation were identified. The improvements which would be required as conditions of project development are indicated in the Traffic Circulation and Access mitigation measures. The project would also, however, contribute to the overall increase of traffic volumes in the City of Chula Vista and the entire San Diego region.

Water Availability: The proposed project would incrementally increase regional water consumption, although implementation of the SPA Plan would represent an insignificant impact on current water availability. The conservation measures as proposed by the project would reduce water requirements. Regional water supply impacts, however, are potential with any proposed development unless a solution to the loss of California's imported Colorado River supply is found.

Sewer Services: Development of Rancho del Rey SPA-I would incrementally reduce the capacity at the Point Loma Metro Sewer System; however, due to the large area served by the system and the comparatively small increase generated by Rancho del Rey, the project would not represent a significant impact to regional sewer services. When combined with similar projects within the vicinity, a potentially significant cumulative impact could occur upon the City of Chula Vista's sewer infrastructure if not mitigated through the construction of additional facilities. These facilities would require additional maintenance. It should be noted, however, that the additional facilities proposed as a portion of the SPA-I plan would increase the total amount of gravity flow sewer line, and allow the elimination of an existing interim pump station.

Hydrology/Drainage: Development of the project site could increase the potential for downstream drainage and flooding problems due to increased runoff associated with urban development. As a condition of project development, therefore, engineering and design features would be required to ensure that the volume and rate of runoff does not exceed existing, predevelopment levels. With these features, the project would not contribute to cumulative, offsite drainage impacts. The project would, however, require the maintenance of additional drainage facilities onsite that were not previously necessary.

Considering the existing and proposed land use designations on the site, planned urban development is considered an appropriate and productive long-term use of the project site. In addition, the proposed development contains both local and regional beneficial impacts, including increased economic and

recreational opportunities. However, the proposed uses of the site would have indirect, adverse effects on the long-term enhancement of the area as well.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Development of the project site would result in the loss of open space resources. However, during previous approvals on the initial stages of the project it was determined that the proposed development constitutes a more beneficial use of the site.

Visual resources on the project site would be substantially altered by the proposed development. The provisions contained in the SPA Plan do not, however, conflict significantly with the City of Chula Vista's urban zone classification. Grading of the project site for development, however, would permanently alter the existing site topography.

Energy and water resources would be committed in site preparation activities (grading and construction) and as part of future site usage. The project would also require a permanent commitment to provide public services. Energy sources, i.e., natural gas, electricity and fossil fuels consumed during construction, are irreplaceable. A permanent loss of natural resources used for building materials and support of urban land uses would also occur.

Ambient noise levels in the project vicinity would increase because of higher traffic volumes as well as other noise sources associated with urban activities. Noise levels would not exceed land use compatibility standards, however, if mitigation measures are incorporated.

Biological resources on the project site would be permanently altered from their existing state. Although a portion of the site is proposed to be retained in open space, ridgetops and the upper portions of ridges would be altered from chaparral to non-native plants. Areas near development would be altered to conform to fire safety requirements. Finally, riparian areas would be affected by the installation of drainage structures in the canyon areas.

SECTION 6
ALTERNATIVES

The California Environmental Quality Act (CEQA) requires that an EIR include a discussion of reasonable project alternatives, including a No Project Alternative. This discussion is to focus on alternatives "capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance" (CEQA: Section 15126(d)(3)).

Three alternatives were identified and discussed in the Master Environmental Impact Report for the El Rancho del Rey Specific Plan Amendment Area (EIR-83-2): the Existing Specific Plan (No Project) Alternative, the Alternative Specific Plan Amendment, and the No Development Alternative. For the purposes of this EIR, the reader is referred to the Master Plan EIR for the El Rancho del Rey Specific Plan for the discussion of these alternatives in addition to the following.

6.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the project site would remain in tis present condition (see Section 3: Existing Conditions) and no development would occur. The formal and informal open space uses currently associated with the site would likely continue; unless existing access points to the site were restricted, use of onsite dirt roads by pedestrians and off-road vehicles would be expected to increase as development intensifies in the vicinity of the site. East "H" Street would not be widened, none of the other community facilities would be constructed, and none of the utilities would be extended to the project site.

Land Use: Implementation of the No Project Alternative would not require the discretionary actions related to the project as proposed. Because of the compatability of the SPA Plans and tentative map studies to the El Rancho del Rey Administrative Plan and Specific Plan Map, no land use policy impacts would occur under the proposed project; additionally, no impacts to vicinity

land uses are projected under the proposed project. Similarly, the No Project Alternative would not result in any impacts to land use policies or vicinity land uses.

Landform/Aesthetics: Implementation of the No Project Alternative would not result in the significant unmitigable impacts to landform and related impacts to views in the project vicinity that are projected to occur with implementation of the proposed project. The project site would remain in its existing natural state and would not be subject to the extensive grading and alteration of scenic corridors along East "H" Street and Otay Lakes Road. No landform or aesthetic impacts would occur under the No Project Alternative.

Biological Resources: The No Project Alternative would result in no changes to existing biological resources on the project site. Alteration of the existing chaparral-covered hillsides and drainageway would not occur. The Rice Canyon drainage would be expected to continue to erode under this alternative, with the rate of erosion related to the intensity of development upstream of the project site.

Geology/Soils: No impacts to onsite geological and soils resources would occur under the No Project Alternative. Because no onsite construction would be occurring, the remedial grading (as well as the extensive project design-related grading) would not be necessary. None of the concerns regarding the La Nacion fault would be applicable under this alternative.

Hydrology/Water Quality: Because the No Project Alternative would require no grading for its implementation, would create no new sources of urban runoff and would not increase the amount of impermeable surfaces on the project site, impacts related to water quality and hydrology would not occur with this alternative. The site would continue to drain in its present drainage pattern; increases in runoff would be attributable solely to increased upstream development east of the project site.

Traffic Circulation and Access: Implementation of the No Project Alternative would result in no gain in the number of trips to be carried by the existing

local and regional street systems in eastern Chula vista and by Interstate 805. Likewise, none of the street improvements would be implemented with this alternative. Therefore, no adverse impacts would be expected to result from this alternative.

Noise: Noise levels on the project site would be reduced from levels forcast for the project at proposed buildout. Increases in ambient noise levels on the project site would be attributable only to offsite development in the vicinity of the project site.

Parks, Recreation and Open Space: No new demands for recreational facilities would be created with implementation of the No Project Alternative, additionally, none of the proposed recreational facilities or trails would be constructed under this alternative.

Public Facilities and Services: The No Project Alternative would require no new public facilities or services for the project site; no impacts on existing facilities and services would occur.

SECTION 7
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SECTION 8
ORGANIZATIONS AND PERSONS CONTACTED

Cinti and Associates

Gary Cinti

Jay Kniep

McMillan Development

Craig Fukuyama

Ken Baumgartner

Rick Engineering

Roger Ball

John Goddard

City of Chula Vista

Doug Reid - Planning Department

Anthony Lettieri - Planning Consultant, Lettieri-McIntyre and Associates

Shauna Stokes - Parks and Recreation Department

Tom Garraby - Engineering Department

Charles Glass - Engineering Department

Steven Thomas - Engineering Department

Point Loma Plant - METRO System

Ed McCampbell

Otay Water District

Manuel Arroyo

Ralph Barber

San Diego County Water Authority

Charles Rhodes

San Diego Gas and Electric

Don L. Rose

Sweetwater Union High School District

Andy Campbell, Director of Planning

Chula Vista Elementary School District

Debbie Turner

SECTION 9
CONSULTANT IDENTIFICATION

This report was prepared by WESTEC Services, Inc. of San Diego, California. Members of WESTEC Services' professional staff and consultants contributing to the report are listed below:

David W. Claycomb; M.S. Natural Resources Management
Kimberly Glasgow; B.A. Geography/Environmental Studies
Pamela Hathaway; M.L.A. Landscape Architecture
Dennis R. Marcin; B.S. Geology
Stephen Lacy; M.S. Biology
John McTighe; Public Affairs Consultants - Fiscal Consultant
Kenneth D. Fabricatore; Economic Consultant
Sam Kab; U.S.A., Inc. - Traffic Consultant
Bob Sergeant; Willdan Associates
Kenneth Shaw; San Diego Soils Engineering, Inc. - Geotechnical Consultant
Greg Farrand; Leighton and Associates - Geotechnical Consultant

I hereby affirm that to the best of our knowledge and belief, the statements and information herein contained are in all respects true and correct and that all known information concerning the potentially significant environment effects of the project has been included and fully evaluated in this EIR.

David W. Claycomb
Senior Project Manager

Pamela L. Hathaway
Project Manager

COMMENTS AND RESPONSES

RANCHO DEL REY SPA I
ENVIRONMENTAL IMPACT REPORT

RANCHO DEL REY

RECEIVED

August 7, 1987

Mr. Doug Reid
Environmental Review Coordinator
City of Chula Vista
P. O. Box 1087
Chula Vista, CA 92012

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT - RANCHO DEL REY SPA I (EIR 87-1)

Dear Mr. Reid:

Please accept this letter as a formal comment to the Draft Environmental Impact Report prepared for Rancho del Rey SPA 1 (EIR 87-1), dated June 1987.

Included as a part of this letter is a letter from Urban Systems Associates, Inc., dated August 6, 1987, providing comments to the Draft EIR on our behalf.

Sincerely,

Craig Fukuyama

CF/sg

2727 Hoover Avenue National City, California 92050-9973 (619) 477-4117

COMMENTS AND RESPONSES
RANCHO DEL REY SPA I ENVIRONMENTAL IMPACT REPORT

The following comments were received during the public review period for the Draft EIR for the Rancho del Rey SPA I project and during the City of Chula Vista Planning Commission hearing on August 12, 1987. Comments are presented in the lefthand column with respective responses in the righthand column. Comments have been arranged by subject area to allow for complete and concise responses to related issues.

US.

URBAN SYSTEMS ASSOCIATES, INC.
traffic engineering & transportation planning
consultants to business and government

AUGUST 6, 1987

MCMILLIN FINANCIAL
ATTENTION: MR. KEN BAUMGARTNER
2727 HOOVER AVENUE
NATIONAL CITY, CA 92050

DEAR KEN:

AS YOU REQUESTED, FOLLOWING ARE OUR COMMENTS ON THE TRAFFIC CIRCULATION AND ACCESS SECTION OF THE RANCHO DEL REY SPA-1 DRAFT EIR DISTRIBUTED ON JUNE 30, 1987.

PAGE 4-84: THE FIRST PARAGRAPH STATES THAT THE COUNTY OF SAN DIEGO IDENTIFIES THE LEVEL OF SERVICE (LOS) "C" FOR A SIX LANE PRIME ARTERIAL AT 44,600 VEHICLES PER DAY AND LOS "D" AT 50,000 VEHICLES PER DAY. HOWEVER, THE 1985 HIGHWAY CAPACITY MANUAL INCLUDES PROCEDURES FOR DETERMINING THE LEVEL OF SERVICE FOR ARTERIAL STREETS BASED UPON TRAFFIC SIGNAL SPACING, CYCLE LENGTH, EFFECTIVE GREEN TIME, LANE GROUP FLOW RATES, AVERAGE STOPPED DELAY, LANE GROUP CAPACITIES, AND SIGNAL PROGRESSION FACTORS. USING THE HIGHWAY CAPACITY MANUAL METHODS, URBAN SYSTEMS' MAY 12, 1987 LETTER TO WILLDAN ASSOCIATES, COPY ATTACHED, INCLUDES A CALCULATION OF LOS ON EAST "H" STREET, BETWEEN HIDDEN VISTA DRIVE AND RIDGEBACK ROAD, THAT SHOWS A LOS "C" AT A TRAFFIC VOLUME OF 56,600 VEHICLES PER DAY. DISCUSSION OF LEVELS OF SERVICE FOR THIS STREET SEGMENT SHOULD REFERENCE THE HIGHWAY CAPACITY MANUAL METHOD RATHER THAN RELYING ON THE COUNTY'S MORE GENERALIZED LEVEL OF SERVICE GUIDELINES.

PAGE 4-86: PARAGRAPHS THREE AND FIVE DISCUSS FUTURE STREET CLASSIFICATIONS IN THIS "EXISTING CONDITIONS" SECTION.

PAGE 4-90: THE FOURTH PARAGRAPH REFERS TO THE "HORIZON YEAR" AS BEING 1993. HOWEVER, FOR TRAVEL FORECASTING PURPOSES THE "HORIZON YEAR" REFERS TO THE YEAR AT WHICH THE ENTIRE LAND USE INCLUDED IN THE FORECAST WILL BUILD OUT. THE ENTIRE EAST CHULA VISTA REGION WILL BUILD OUT FAR BEYOND THE YEAR 1993. THE CUMULATIVE AVERAGE

4540 Kearny Villa Road, Suite 106, San Diego, CA 92123 (619) 560-4911

(1) (2) (3)

(1) In response to this letter of comment and concerns expressed at the Planning Commission hearing of August 12, a meeting was held between the applicant's traffic consultant, the City of Chula Vista's traffic consultant and representatives from the City's traffic engineering and planning departments on September 15, 1987. The purpose of the meeting was to clarify the methods and assumptions in the original traffic analysis and the review of that analysis by the City's consultant, specifically regarding the level of service on East H Street and the trip phasing for the proposed Rancho del Rey SPA I employment park. At the meeting, it was concluded that the assumptions in the analysis had been unclear to the reviewers and, therefore, the results had not been reproducible. After the assumptions were clarified, it was agreed that the level of service on East H Street could be maintained at "C" or better if two conditions were met: (1) 10,000 of the trips from the employment center must be reserved until State Route 125 is open; in the event that State Route 125 is not constructed, these trips will be reserved indefinitely; and (2) the trips which are allowed prior to construction of State Route 125 must be relatively evenly distributed throughout the employment center; that is, the construction of the employment center must be distributed in such a way that would guarantee that the employment center ingress and egress from East H Street was not concentrated at any one access point.

(2) The street classifications discussed in the referenced section are planned street conditions as opposed to projections of future traffic counts based on development proposals. Approved plans are generally discussed in the Existing Conditions section of an EIR to set the context for the projections discussed in the Impacts section.

(3) Comment noted. In most cases in the EIR discussion, the date of the referenced figures (e.g., 1993) is given along with the figures for clarification; in this case, "horizon year" was a misnomer for the buildout year for the Rancho del Rey SPA I project.

DAILY TRAFFIC VOLUMES FOR THE "HORIZON YEAR" SHOWN IN **FIGURE 4-F-9** ARE VOLUMES GENERATED BY THE 1993 LEVEL OF DEVELOPMENT FOR SPA-1, EXISTING TRAFFIC, APPROVED TENTATIVE MAPS AND A FOUR PERCENT PER YEAR REGIONAL GROWTH RATE ASSUMING NO EAST "H" STREET CONNECTION TO SR-125.

PAGE 4-100: IN THE FIRST PARAGRAPH, THE PHASED IMPROVEMENTS REFERRED TO ARE NECESSARY TO ACCOMMODATE APPROVED TENTATIVE MAPS IN THE AREAS EAST OF RANCHO DEL REY, A FOUR PERCENT REGIONAL GROWTH RATE AND EXISTING TRAFFIC, NOT ONLY THE PHASED DEVELOPMENT OF SPA-1.

(4) THIRD PARAGRAPH, CLARIFY THE "HORIZON YEAR (1993)" PER COMMENT FOR PAGE 4-90.

(5) FOURTH PARAGRAPH, THE LEVEL OF SERVICE "D" FOR EAST "H" STREET IS NOT PROJECTED BY URBAN SYSTEMS. SEE THE COMMENT FOR PAGE 4-84 AND URBAN SYSTEMS' MAY 12, 1987 LETTER TO WILLDAN FOR A CALCULATION OF LOS "C" FOR THIS SEGMENT OF EAST "H" STREET.

PAGE 4-107:

(6) THE DWELLING UNIT THRESHOLD FOR YEAR 1989 SHOULD BE 990 DWELLING UNITS NOT 880.

PAGE 4-109:

(7) LAST PARAGRAPH, THE LOS FOR EAST "H" STREET HAS BEEN CALCULATED TO BE "C" NOT "D". SEE COMMENTS FOR PAGES 4-84 AND 4-100.

PLEASE GIVE ME OR SAM KAB A CALL IF YOU HAVE ANY QUESTIONS REGARDING OUR COMMENTS.

SINCERELY,

Andy Schlaefli

ANDY SCHLAEFLI

CC:CRAIG FUKUYAMA

(4) Comments noted. Refer to response number 3.

(5) Comment noted. Refer to response number 1.

(6) Comment noted. The referenced change does not affect the outcome of the analysis.

(7) Comment noted. Refer to response number 1.

US

URBAN SYSTEMS ASSOCIATES, INC.

traffic engineering & transportation planning
consultants to business and government

MAY 12, 1987

MR. ROBERT M. SERGEANT
DIVISION MANAGER
WILLDAN ASSOCIATES
6363 GREENWICH DRIVE, #250
SAN DIEGO, CA 92122

DEAR BOB:

URBAN SYSTEMS ASSOCIATES, INC. WAS PLEASED TO READ YOUR APRIL, 15, 1987, LETTER TO WESTEC SUMMARIZING YOUR REVIEW OF THE TRANSPORTATION ANALYSIS FOR RANCHO DEL REY-SPA 1 PREPARED BY URBAN SYSTEMS, DATED MARCH 13, 1987.

AS WE UNDERSTAND YOUR REVIEW, YOU AGREE THAT TRAFFIC IMPACTS FROM THE RANCHO DEL REY-SPA 1 PROJECT HAVE BEEN ADEQUATELY ADDRESSED AND CAN BE MITIGATED TO A LEVEL OF INSIGNIFICANCE. HOWEVER, YOU DO STATE A CONCERN ABOUT THE SHORT-TERM TRAFFIC VOLUME PROJECTION OF 56,500 ON EAST "H" STREET EAST OF HIDDEN VISTA DRIVE PRIOR TO THE SR-125 CONNECTION TO THE EAST. YOUR CONCERNS ARE BASED ON THE CITY OF SAN DIEGO COUNCIL POLICY 600-4 WHICH INDICATES A MAXIMUM DESIREABLE AVERAGE DAILY TRAFFIC (ADT) FOR A SIX LANE ROAD OF 50,000 ADT AT A LEVEL OF SERVICE "C", AND THE COUNTY OF SAN DIEGO STREET CLASSIFICATION GUIDE WHICH RECOMMENDS A LESSER VOLUME FOR A LEVEL OF SERVICE "C".

URBAN SYSTEMS RECOGNIZES THAT THE USE OF RECOMMENDED ADT GUIDES IS NEEDED FOR THE GENERALIZED PLANNING OF STREET CLASSIFICATIONS AND DETERMINING THE NUMBER OF LANES NEEDED TO ACCOMMODATE PROJECTIONS OF FUTURE TRAFFIC. HOWEVER, THE ADT PROJECTED ON A STREET LINK, OR SEGMENT, BETWEEN INTERSECTIONS MAY NOT BE THE BEST INDICATION OF THE LEVEL OF SERVICE EXPERIENCED BY MOTORISTS. ON PRIMARY ARTERIALS SUCH AS EAST "H" STREET WHERE PARKING WILL BE PROHIBITED, DRIVEWAYS AND MEDIAN BREAKS WILL BE MINIMAL IN NUMBER, AND THE ROADSIDE DEVELOPMENT WILL BE OF LOW DENSITY, THE LEVEL OF SERVICE WILL BE CONTROLLED BY THE EFFICIENCY OF THE SIGNALIZED INTERSECTIONS RATHER THAN THE GENERALIZED ADT CAPACITIES SHOWN ON PLANNING STREET CLASSIFICATION CHARTS.

IN ORDER TO MORE ACCURATELY ESTIMATE THE LEVEL OF SERVICE THAT CAN BE EXPECTED ON EAST "H" STREET EAST OF HIDDEN VISTA DRIVE, BEFORE THE CONNECTION TO SR-125, WE ARE PROVIDING FOR WILLDAN'S CONSIDERATION ADDITIONAL INFORMATION AS A SUPPLEMENT TO OUR MARCH 13, 1987, TRAFFIC REPORT. THIS ADDITIONAL INFORMATION QUANTIFIES THE **PEAK HOUR** TRAFFIC VOLUMES RATHER THAN THE AVERAGE DAILY TRAFFIC, AND RELATES THE ARTERIAL LEVEL OF SERVICE TO THE APPROACH DELAY AT THE INTERSECTIONS RATHER THAN TO DAILY VOLUMES.

CHAPTER 11 OF THE 1985 HIGHWAY CAPACITY MANUAL, INCLUDED AS **ATTACHMENT 1**, PROVIDES THE METHODOLOGY AND PROCEDURES FOR APPLICATION OF FORMULAS USED TO PREDICT THE ARTERIAL LEVEL OF SERVICE BASED ON SIGNAL SPACING, CYCLE LENGTH, EFFECTIVE GREEN TIME, LANE GROUP FLOW RATES, AVERAGE STOPPED DELAY, LANE GROUP CAPACITIES, AND PROGRESSION FACTORS. **ATTACHMENT 2** INCLUDES CALCULATIONS THAT FOLLOW THE PROCEDURES IN CHAPTER 11 TO ESTIMATE THE ARTERIAL LEVEL OF SERVICE ON EAST "H" STREET BETWEEN HIDDEN VISTA DRIVE AND RIDGEBACK ROAD.

THE ASSUMPTIONS WE HAVE LISTED IN **ATTACHMENT 2** ARE CONSISTENT WITH OUR TRAFFIC REPORT OF MARCH 13, 1987, AND THE PHYSICAL CHARACTERISTICS OF A SIX LANE SUBURBAN PRIMARY ARTERIAL WITH GOOD SIGNAL SPACING AND PROGRESSION THROUGH TRAFFIC SIGNALS BECAUSE OF RELATIVELY LOW CROSS-STREET VOLUMES. AS THE RESULTS OF OUR CALCULATIONS SHOW, BASED ON AN AVERAGE TRAVEL SPEED BETWEEN 22 AND 28 M.P.H., THIS SEGMENT OF EAST "H" STREET WILL EXPERIENCE A LEVEL OF SERVICE "C" WITH THE PEAK HOUR APPROACH VOLUMES GENERATED BY THE PROJECTED 56,500 ADT AT THIS SEGMENT.

IN SUMMARY, WE ASK THAT YOU CONSIDER THE TRAFFIC IMPACTS FROM RANCHO DEL REY-SPA 1 TO BE MITIGATED TO INSIGNIFICANCE BY THE PROPOSED STREET IMPROVEMENTS. SPECIFICALLY, WE ARE PROVIDING ADDITIONAL INFORMATION FOR YOUR CONSIDERATION THAT SHOWS A LEVEL OF SERVICE "C" ON EAST "H" STREET BETWEEN HIDDEN VISTA DRIVE AND RIDGEBACK ROAD. THIS ADDITIONAL INFORMATION IS BASED ON CHAPTER 11 OF THE 1985 HIGHWAY CAPACITY MANUAL AND MORE ACCURATELY REFLECTS THE ARTERIAL LEVEL OF SERVICE RATHER THAN GENERALIZED PLANNING LEVELS OF SERVICE BASED ON AVERAGE DAILY TRAFFIC.

IF YOU HAVE ANY QUESTIONS REGARDING OUR SUPPLEMENTAL ANALYSIS, PLEASE GIVE ME OR SAM KAB A CALL.

SINCERELY,

Sam Kab

for ANDY SCHLAEFLI
VICE PRESIDENT

APS:ALE

ATTACHMENTS:

CC: TOM GARIBAY, CHUCK GLASS, KEN BAUMGARTNER, CRAIG FUKUYAMA

ATTACHMENT 1

CHAPTER 11

URBAN AND SUBURBAN ARTERIALS

CONTENTS

I. INTRODUCTION

Urban and suburban arterials are signalized streets that primarily serve through traffic and provide access to abutting properties as a secondary function. For purposes of this manual they are defined as facilities with a signalized intersection spacing of 2 mi or less and turning movements at intersections that usually do not exceed 30 percent of total traffic volumes. Roadside development along arterials can be diverse producing features as traffic that generally have a driver's desired speed.

In the system of urban highway transportation facilities, arterial streets are between collectors and downtown streets on one side and multilane suburban highways and rural roads on the other side. The difference is mainly determined by their functions and the character and intensity of roadside development.

Collector streets provide both land access and traffic circulation services within residential, commercial, and industrial areas. Their access function is more important than that of arterials and, unlike arterials, their operation is not always dominated by traffic signals.

Downtown streets are usually signalized facilities that often resemble arterials. However, their main function is not to move through traffic but to provide access to local business by passenger cars, transit buses, and trucks. Turning movements at downtown intersections are often greater than 10 percent of total traffic because downtown flow involves a substantial amount of circulatory traffic.

Typical of downtown streets are numerous pedestrian conflicts and lane obstructions caused by stopping or standing taxicabs, buses, trucks, and parking and unloading of vehicles which cause turbulences in the traffic flow. Downtown street function may change with the time of the day, and for this reason certain strategically located downtown streets are converted to arterial type operation during the peak traffic hours.

Multilane suburban highways and rural roads differ from suburban arterials in the following features: (1) their roadside development is not as intense, (2) the density of traffic access points is not as high, and (3) signalized intersections are more than 2 mi apart. These conditions result in a smaller number of traffic conflicts, a smoother flow, and the dispersion of the platoon structure associated with arterial traffic.

Urban and suburban arterials include multilane divided arterials, multilane undivided arterials, two-lane, two-way arterials, and one-way arterials. Based on FHWA statistics in the early 1980's, approximately 17 percent of the urban and suburban arterial miles in urbanized areas of more than 100,000 people are multilane divided arterials, 27 percent are multilane undivided arterials, and 13 percent are two-lane, two-way arterials (one travel lane in each direction). The remaining 3 percent of the national distribution of urban arterial miles are one-way arterials.

APPLICATIONS

The methodology contained in this chapter can be used by those concerned with the planning, design, and operations of arterials to evaluate the level of service (LOS) on an existing or proposed facility. The methodology does not address arterial capacity. The capacity of an arterial is generally dominated by the capacity of its signalized intersections, which can be addressed by the procedures of Chapter 9. In some cases, there are special midblock restrictions that also limit the capacity. In general, the user can best conduct an arterial capacity analysis by analyzing the queue capacity of the signalized intersections and other such points.

The methodology of this chapter is oriented to the evaluation of an existing operations situation, or evaluating a specific design proposal, by a level-of-service determination. The person doing such design or operations work will be able to investigate the effect of signal spacing, arterial class (as defined herein), and traffic flow on the arterial level of service. The methodology makes use of the signalized intersection procedures of Chapter 9 for the lane group containing the through traffic. By considering lane arrangement (e.g., presence or absence of left turn lanes), number of lanes, the analyst may influence which traffic flow is on the "through traffic" lane group and the capacity of the lane group. This in turn influences the arterial LOS determination by changing the intersection evaluation and possibly the arterial classification.

These interested in planning applications may apply the entire arterial methodology in a straightforward but somewhat complicated way by using various default values when computing the stopped delay by the Chapter 9 procedures. However, knowledge of the intended signal timing and quality of progression is vital. If it is lacking, there can be no meaningful assessment of arterial level of service, even on a "planning" level.

The LOS criteria also can be applied when travel time and delay runs are used to assess the impact of optimizing signal timing or other improvements to the arterial and to consistently evaluate the entire arterial system in an urban area.

The above applications of the methodology *always* require the determination of the LOS and associated measures of effectiveness (i.e., travel time, delay, speed). In certain cases the determination of LOS values is the final objective; at times even LOS values associated with different alternatives are compared and a decision is made using these values.

CHARACTERISTICS OF ARTERIAL FLOW

The operation of vehicles on arterial streets is influenced by three major factors: (1) the arterial environment, (2) the interaction between vehicles, and (3) the effect of traffic signals. These factors determine the capacity of an arterial street and the level of traffic service offered to its users. They constitute the basic elements of the methodology discussed in Section II of this chapter.

The *arterial environment* includes the geometric characteristics of the facility and adjacent land uses. The number of lanes and lane width, type of median, access point density, and spacing between signalized intersections are among the environmental factors, as well as the existence of parking, level of pedestrian activity, speed limit, and population of the city.

The arterial environment affects a driver's choice of task speed. Even if the effect of the other factors is negligible, the environment restricts driver's desired speed, that is, we say the maximum speed at which a driver would like to travel under a given set of environmental conditions. The average desired speed of all drivers on an arterial segment or section is referred to in this chapter as *free flow* speed.

The *interaction between vehicles* is determined by traffic volumes, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles in uninterrupted flow, to a lesser extent between signals.

Very seldom can a driver travel at his desired speed. Most of the time, the presence of other vehicles restricts the speed of a vehicle to another because of differences in desired speeds among drivers, or because downstream vehicles are accelerating from a stop and have not yet reached their driver's desired speeds. Therefore the average speed of a vehicle to traverse over a certain length of road, or running speed, is usually lower than the desired speed of its driver because of the effect of vehicle interactions. Likewise the average running speed of all vehicles on an arterial segment is usually lower than the free flow speed of the segment.

Traffic signals force vehicles to stop and to remain stopped for a certain time and then release vehicles in platoons. The delays and speed changes caused by traffic signal operations considerably reduce the capacity of an urban arterial and lower the quality of traffic flow.

The decrease of the average stop per vehicle, or average

SOURCE: 1985 Highway Capacity Manual

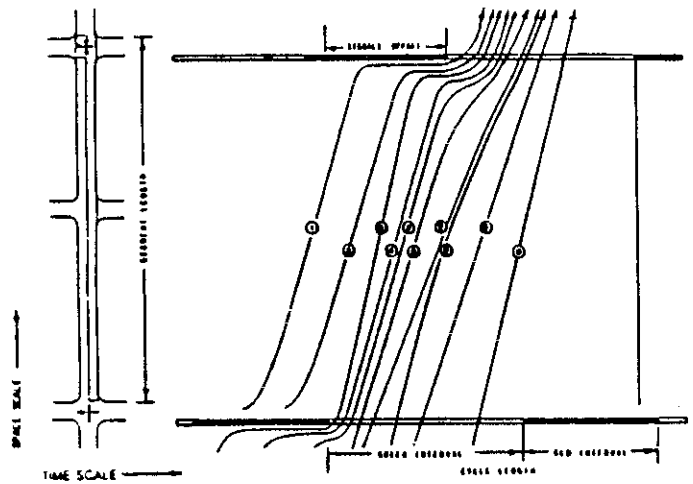


Figure 11-1. Typical time-space trajectories of vehicles on a one-lane arterial segment.

stopped delay, depends mainly on the proportion of red time experienced by the arterial segment, the progression of vehicles arriving on green (or quality of traffic signal progression), and the traffic volume. The travel speed (which includes some low delay as intersection effects, including stops and all associated approach delay) over an arterial segment is generally lower than the corresponding running speed. Similarly, the *average travel speed* of all vehicles on the segment is lower than their average running speed unless no vehicles stop.

Figure 11-1 shows suspended time-space trajectories of representative vehicles using one lane of an arterial. Vehicles 1 and 2 turned onto the arterial from side streets and the rest were discharged from the upstream signal. Vehicles 1, 2, and 3 arrived at the downstream signal approach during the red interval and had to stop. Vehicle 4 would have arrived at the stop line on green but had to stop because vehicle 3 was not yet in motion and touched vehicle 4. Vehicles 5, 6, and 7 did not stop but had to reduce their speeds because they were still affected by the congestion caused by the signal. Vehicle 8 was delayed because its driver's desired speed was higher than that of vehicle 7's driver. Vehicles 9 and 10 traveled at their driver's desired speeds.

The travel speeds of vehicles 1, 2, 3, and 4 were lower than their respective running speeds, which, in turn, were lower than the desired speeds of their drivers. The travel speeds of vehicles 5, 6, 7, and 8 were equal to their corresponding running speeds, but each of the speeds were lower than their driver's desired speed. Finally, for vehicles 9 and 10, whose drivers were traveling at their desired speeds, the three types of speeds have the same values.

ARTERIAL LEVEL OF SERVICE

The arterial level of service is based on the *average travel speed* for the segment, section, or entire arterial under consideration. This is the basic measure of effectiveness (MOE) for this chapter. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay.

The arterial levels of service are defined primarily in a table within the methodology. However, some broad descriptions of the various levels are useful.

Arterial level of service is defined in terms of *average travel speed* of all through vehicles on the arterial. It is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, such factors as inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS. Arterials with high signal densities are even more susceptible to these factors. Arterial LOS D will probably be observed even before substantial intersection problems, but both such problems and even poorer arterial LOS values are not far behind arterial LOS D.

Table 11-1. Arterial Levels of Service

ARTERIAL CLASS	I	II	III
Range of Free Flow Speeds (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
LEVEL OF SERVICE	AVERAGE TRAVEL SPEED (MPH)		
A	≥ 35	≥ 30	≥ 25
B	≥ 28	≥ 24	≥ 19
C	≥ 22	≥ 18	≥ 13
D	≥ 17	≥ 14	≥ 9
E	≥ 13	≥ 10	≥ 7
F	< 13	< 10	< 7

The following general statements may be made regarding arterial level of service:

Level-of-service A describes primarily free-flow operations at average travel speeds usually about 90 percent of the free flow speed for the arterial class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.

Level-of-service B represents reasonably unimpeded operations at average travel speeds usually about 70 percent of the free flow speed for the arterial class. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension.

Level-of-service C represents stable operations. However, ability to maneuver and change lanes in midblock locations may be more restricted than in LOS B, and longer queues and/or adverse signal coordination may contribute to lower average travel speeds of about 50 percent of the average free flow speed for the arterial class. Motorists will experience an appreciable tension while driving.

Level-of-service D borders on a range in which small increases in flow may cause substantial increases in approach delay and, hence, decreases in arterial speed. This may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free flow speed.

Level-of-service E is characterized by significant approach delays and average travel speeds of one-third the free flow speed or lower. Such operations are caused by some combination of adverse progression, high signal density, extensive queuing at critical intersections, and inappropriate signal timing.

Level-of-service F characterizes arterial flow at extremely low speeds below one-third to one-quarter of the free flow speed. Intersection congestion is likely at critical signalized locations, with high approach delays resulting. Adverse progression is frequently a contributor to this condition.

Table 11-1 contains the arterial level-of-service definitions, which are based on average travel speed over the segment being considered (up to and including the entire facility). The "arterial class" concept is defined as part of the Methodology to follow.

II. METHODOLOGY AND PROCEDURES FOR APPLICATION

The methodology provides the *framework* for arterial evaluation. If field data are available, the framework can be used to determine the level of service of a given arterial segment by reference to running time and intersection delay measures of effectiveness. Rather than encountering field evaluations on a limited method, the transportation specialist should consider this as a better and more accurate alternative.

Note that field data on free flow speed will help in determining the arterial class and also in estimating the running time per mile in cases where the specific arterial does not yet exist. data on *free flow speed* or comparable facilities would be more useful.

The procedure to determine arterial level of service has seven steps, as shown in Figure 11-2.

1. Establish the *location and length* of arterial to be considered.

2. Determine the *arterial class*, using the classification scheme presented herein in conjunction with the measurement of free flow speed.

3. Divide the arterial into segments for the purpose of the evaluation, where each segment consists one or more arterial segments.

4. Compute the arterial *running time* for each segment, and aggregate for the sections (depending on whether or not sections larger than the individual segments were defined).

5. Tabulate the necessary information on each intersection, and compute the approach delay at each intersection using these factors:

   a. Intersection parameters for the through movement:

      C, the cycle length,
      g/C, ratio.

2. the ... rates, and
c. the capacity of the through-lane group

b. Quality of the signal progression
c. Relation between approach delay and stopped delay

6. Compute average travel speed
a. By section to prepare a speed profile
b. Over the entire facility

7. Assign the level of service (LOS) by referring to the table that defines the LOS ranges.

On two-way arterials, the methodology must be applied twice (i.e., once in each direction).

Steps 4 through 6 can be superseded by field data measurements of the average speed by timing travel time and delay studies along the arterial. Appendix I presents the field data collection procedures needed to provide the necessary data.

The remaining sections of this "Methodology" address each of the foregoing steps.

STEP 1—ESTABLISH THE ARTERIAL TO BE CONSIDERED

As a preliminary to subsequent steps, it is useful to precisely define the limits and length of the arterial to be considered, including the assembly of all relevant physical, signalization, and traffic data.

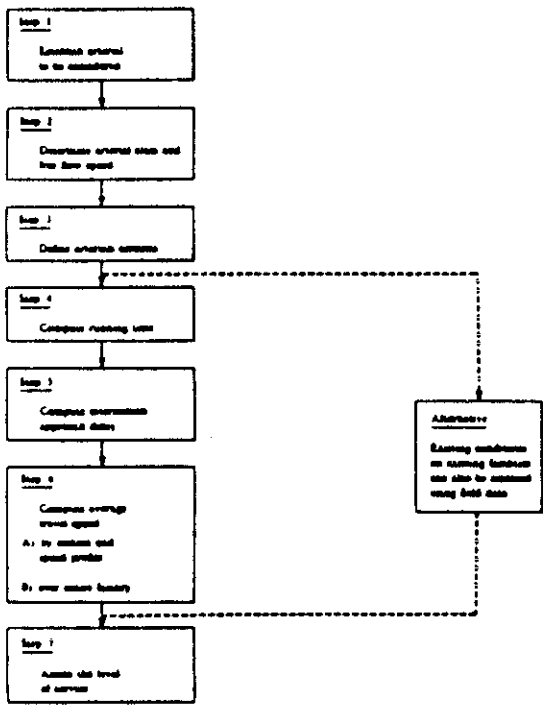


Figure 11-2. Arterial level of service methodology.

Consideration should be given to whether the extent of the arterial being analyzed is sufficient, or whether additional sections should be considered.

STEP 2—DETERMINE THE ARTERIAL CLASS AND FREE FLOW SPEED

There are three arterial classes defined in this chapter, based on the arterial's function and design. Within each class, there is also a range of free flow speeds to consider.

In all cases, the arterial must be classified first by *functional category*, and then by *design category*. In some cases, the measurement of the free flow speed will be a valuable aid in determining the proper arterial class because of ambiguities in the classification.

Both free flow speed and actual average travel speed can be measured by arterial travel time studies. Thus, the applications of this chapter can be based entirely on actual field measurements. Appendix I presents the necessary field procedures.

Free flow speed is the average speed of motorists over those portions of arterial sections that are not close to signalized intersections, as observed during very low traffic volume conditions while drivers are not constrained by other vehicles or by traffic signals. The average free flow speed should approximate the *desired* speeds of the motorists for the given facility and its use. Free flow speeds may be measured by test cars or by spot speed observations away from the intersections.

The functional category must be identified first: is the facility a principal arterial or a minor arterial?

A *principal arterial* serves major through movements between important centers of activities in a metropolitan area and a substantial portion of trips entering and leaving the area. It also connects freeways with major traffic generators. In small cities (under 50,000), its importance is derived from the service provided to traffic passing through the urban area. Service to abutting land is very subordinate to the function of moving through traffic.

A *minor arterial* is a facility that connects and augments the principal arterial system. Although its main function is still traffic mobility, it performs this function at a somewhat lower level and places more emphasis on land access than on the principal arterial.

A system of minor arterials serves trips of moderate length and distributes travel to geographical areas smaller than those served by the principal arterial.

Within the functional classification, the arterial is further classified by its *design category*.

Typical suburban design represents an arterial with partial to almost full control of access with separate left turn lanes and no parking. It may be multilane divided or undivided, or a two-lane facility with shoulders. Signals are spaced for good progressive movement (one to four signals per mile) or at even greater distances. Roadside development is of low density and the speed limits are usually 40 to 45 mph.

Intermediate design represents an arterial with partial control of access. It may be a multilane divided or an undivided one-way or a two-lane facility. It may have some separate or continuous left-turn lanes and some portions with parking permitted. It has a higher density of roadside development than the typical suburban design. It usually has 4 to 8 signals per mile. Speed limits are normally 30 to 40 mph.

Typical urban design represents an arterial with basic or no amount of access from driveways. It is an undivided one-way or two-way facility with two or more lanes. Parking is usually permitted. Generally, there are no separate left turn lanes and some pedestrian interference is present. It commonly has 8 to 12 signals per mile. Roadside development is almost wall-to-wall residential and/or commercial strip development. Speed limits range from 25 to 35 mph.

Refer to Figure 11-1 for illustrations.

Table 11-2 should be used as an aid in the determination of the functional and design categories, in addition to the above definitions. Once the functional and design categories are understood, the arterial class may be established by referring to Table 11-3.

As a practical matter, there are sometimes ambiguities in determining the proper categories. The measurements or estimates of the *free flow speed* is a great aid in this determination, because each arterial class has a characteristic range of free flow speeds. As will be used in this chapter, note the following:

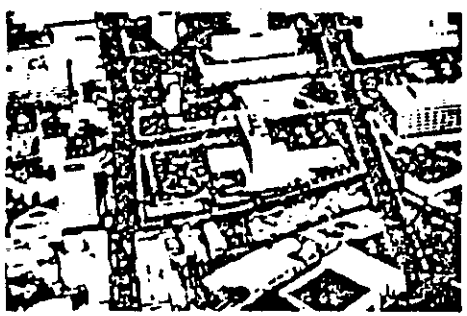
Arterial Class	Range of Free Flow Speeds, (mph)
I	35 ——— 45
II	30 ——— 35
III	25 ——— 35

Free flow speed alone cannot be used to determine the arterial class, but can be used as an effective check on the classification scheme.

The information on arterial class is used in Steps 4 and 7 of the methodology.

(a) Typical Suburban Design

(b) Intermediate Design



(c) Typical Urban Design

TABLE 11-3 AN AID IN ESTABLISHING ARTERIAL CLASSIFICATION

CRITERIA	FUNCTIONAL CATEGORY	
	PRINCIPAL ARTERIALS	MINOR ARTERIALS
Mobility function	Very important	Important
Access function	Very minor	Substantial
Trips connected	Freeways, important activity centers, major traffic generators	Principal arterials
Predominant trip length	Relatively long trips between major points and through trips entering, leaving, and going through the city	Trips of moderate length within moderate sized geographical areas

CRITERIA	URBAN CATEGORY		
	SUBURBAN DESIGN	INTERMEDIATE	URBAN DESIGN
Control of access	Partial to almost full	Partial	Little or no control
Arterial type	Multilane divided, undivided or two-lane with shoulders	Multilane divided or undivided, one-way, two-lane	Undivided one-way, two-lane, two or more lanes
Parking	No parking	Some parking	Parking permitted
Separate left-turn lanes	Yes	Some	No
Signals per mile	1 to 4	4 to 8	8 to 12
Speed limits	40 to 45 mph	30 to 40 mph	25 to 35 mph
Pedestrian interference	None	None	Some
Roadside development	Low density	Moderate	High density

TABLE 11-5 ARTERIAL CLASSES ACCORDING TO TRIPS FUNCTION AND DESIGN CATEGORY

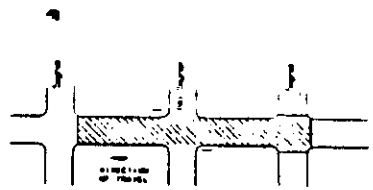
URBAN CATEGORY	FUNCTIONAL CATEGORY	
	PRINCIPAL ARTERIAL	MINOR ARTERIAL
Typical Suburban Design and Control	I	II
Intermediate Design	II	III
Typical Urban Design	III	III

STEP 3—DIVIDE THE ARTERIAL INTO SECTIONS

The basic unit of the arterial is the segment, which is the one-directional distance from one signalized intersection to the next. Figure 11-4 illustrates the concept of "segments" on one- and two-way arterials.

If two or more consecutive segments are comparable in arterial class, segment length, speed limit, and general land use and activity, the user may wish to aggregate them into a section. All results would then focus on the section rather than on the component segments, because of the judgment that they can be aggregated.

In cases in which the length of the consecutive segments differs by 30 percent or more, segments should not be aggregated into the same section. Different sections should be defined when a section is defined, it is the average segment length that should be used in finding the running time per mile in the next step.



(a) Segment on a One-Way Arterial

(b) Segment on a Two-Way Arterial

Figure 11-4 Illustration of segments.

STEP 4—COMPUTE THE ARTERIAL RUNNING TIME

There are two principal components to the total time a vehicle spends in a section, and on the arterial: arterial running time and intersection approach delay. This step is focused on computing the first of these terms so that it may be used in the denominator of the equation:

$$\text{ART SPD} = [(3{,}600) \times (\text{Length})] / [(\text{Running Time Per Mile}) \times (\text{Length}) + (\text{Total Intersection Approach Delay})] \quad (11\text{-}1)$$

where

ART SPD = arterial or section average travel speed, in mph,
Length = arterial or section length, in miles,
Running Time Per Mile = total of the running time per mile on all segments in the arterial or section, in sec,
Total Intersection Approach Delay = Total of the approach delay at all intersections within the defined arterial or sections, in sec. This is easily related to the stopped delay of Chapter 9.

The 3,600 is a conversion factor to compute ART SPD in mph.

In special cases, there may be unusual midblock delays due to pedestrian crosswalks at which vehicles must regularly stop. There may be other such factors. Such delays may be added as a third term in the denominator of Eq. 11-1.

To compute the running time in a segment, the user must know:

- The arterial class.
- The segment length, in miles.
- The free flow speed, in mph.

The segment running time may then be found by looking up Table 11-4.

If a section has been defined that encompasses several segments, it is the average segment length that should be used in finding the running time per mile from Table 11-4. However, it is then multiplied by the section length.

Within each arterial class, there are a number of factors that can influence the actual free flow speed and the running speed per mile. Table 11-4 shows the effect of length directly; this has been synthesized from arterial research conducted by FHWA and other sources. In addition, there are such factors as the presence of parking, opportunities for side frictions, and the local development and street use. In this chapter, these factors are taken to influence the free flow speed, so that observation of free flow speed is a proxy for these unstated factors. Once free flow speed is estimated, the running speed used also reflects these unstated factors. Table 11-4 contains higher running times for the lower free flow speeds within each class.

If for some reason it is not possible to observe the free flow speed on the actual facility or on comparable existing facilities, Table 11-4 contains a note on which "default" values to use.

TABLE 11-4. SEGMENT RUNNING TIME PER MILE

Arterial Class	I			II		III		
Free Flow Speed (mph)	45	40	35	35	30	35	30	25
Average Segment Length (miles)	Running Time per Mile (sec/mi)							
0.05							227	265
0.10				165	185	165	180	220
0.15				135	141	140	150	180
0.20	109	113	123	130	134	130	140	165
0.25	106	110	119	120	127	122	132	151
0.30	99	103	116					
0.40	94	96	109					
0.50	85	91	103					
1.00	80	90	103					

NOTES
1 It is best to have an estimate of free flow speed. If this is lacking, however, then use the above table assuming the following default values:

Art. Class	Free Flow Speed (mph)
I	40
II	33
III	30

2 [illegible]
3 [illegible]
4 [illegible]
5 [illegible]

However, there should be a local history of free flow speeds on different arterial types.

Example—What is the running time on a segment that is 0.20 mi long and has a free flow speed of 40 mph? The arterial is a principal arterial, suburban design.

Solution—Note that the arterial is Class I, based on Table 11-3. Referring to Table 11-4, the running time per mile is estimated at 115 sec per mile, so that the segment running time is 115 × 0.20 = 23 sec.

Example—Consider the above case, but with an average 30-sec midblock delay due to a pedestrian crosswalk. What should be done?

Solution—The analysis should be done as above, but the 30 sec should be added as a third term in the denominator of Eq. 11-1 when the computations are done.

Example—There are three consecutive segments on a north-south two-lane two-way facility (i.e., one lane in each direction), of lengths 0.15, 0.17, and 0.13 mi respectively, all with a free flow speed of 30 mph. It is a principal arterial. What is the northbound running time in the section? The arterial is Class III.

Solution—Note that it is reasonable to define a single section if all necessary conditions are met, including all lengths within 20 percent of the average segment (see Step 3 of the Methodology). From Table 11-4, the running time per mile for a Class III arterial with 30 mph free flow speed is 150 sec per mile for a 0.15-mi segment. This is the average length of the three segments within this section. The actual running time is computed by:

$$(150) \times (0.15 + 0.17 + 0.13) = 67.5 \text{ sec}$$

in the section.

Example—What is the southbound running time in the same section?

Solution—The southbound running time is found in the same way, and the answer is therefore the same. However, this is a useful reminder that two-way arterials must be evaluated in each direction; the answers will generally be different because of the influence of intersection delay (the effect of different signal progression quality in the two directions will contribute to this).

As noted in Table 11-4, it is logical that there is a dependence of segment running time on traffic flow rate. However, arterial research conducted for FHWA in the early 1980's did not establish a quantitative relation for such a dependence. It logically exists, but is not strong. Certainly it is not as strong as the effect of segment length on segment running time. Nor is it as strong as the substantial variation of intersection approach delay with traffic flow rate.

As a practical matter, computations of arterial travel speed for different traffic flow rates would be dominated by the changes in intersection approach delay, whether or not the segment running time dependence were clearly identified. Thus the absence of such an explicit factor does not affect the practical result, namely the computation of arterial travel speed.

STEP 5—TABULATE INTERSECTION INFORMATION AND COMPUTE DELAY

In order to compute the arterial or section speed, the individual intersection delays are needed. Because the arterial function is to serve through traffic, the dominant lane group in which the through traffic is included is to be used for characterizing the arterial.

The correct delay to use in the arterial evaluation is the total approach delay, which can be related to the intersection stopped delay as follows:

(Total Approach Delay = 1.3 × (Intersection Stopped Delay) + (Second Order Term)

The "second order term" is a refinement on the effect of the signal progression on the approach delay, as distinct from the effect on the stopped delay. Given the precision of the various estimates in the stopped delay itself, this refinement can be neglected. Thus the intersection approach delay can be computed by:

$$D = 1.3\,d \quad (11\text{-}2)$$

where

D = intersection approach delay, in sec/veh, and
d = intersection stopped delay, in sec/veh,

and where the intersection stopped delay is computed in accord with Chapter 9. In general, the user will have the summary information available because the intersections would have had to have been evaluated individually as part of the overall effort.

The random intersection stopped delay equation is:

$$d = 0.38C\,\frac{[1 - g/C]^2}{[1 - (g/C)(X)]} + 173\,X^2\left[(X - 1) + \sqrt{(X - 1)^2 + (16X/c)}\right] \quad (11\text{-}3)$$

where

d = average stopped delay per vehicle for the subject lane group, in sec/veh,
C = cycle length, in sec,
g/C = green ratio for the subject lane group, the ratio of effective green time to cycle length,
X = v/c ratio for the subject lane group, and
c = capacity of the through lane group.

The progression factor, PF, must be applied to this to yield the stopped delay.

Equation 11-3 predicts the average stopped delay per vehicle for an assumed random arrival pattern for approaching vehicles. The first term of the equation accounts for uniform delay, i.e., the delay that occurs if arrival demand in the subject lane group is uniformly distributed over time. The second term of the equation accounts for incremental delay of random arrivals over uniform arrivals, and for the additional delay due to occasional cycle failures. The equation yields reasonable results for values of X between 0.0 and 1.0. Where oversaturation occurs for long periods (> 15 min) it is difficult to accurately estimate delay.

[illegible] may extend to adjacent intersections. The equation may be used with caution for values of X up to 1.2, but delay estimates for higher values are not recommended. Oversaturation, i.e., $X > 1.0$, is an undesirable condition that should be eliminated if possible.

The information needed to compute the intersection stopped delay is almost certainly available from computations done using Chapter 9.

If for any reason the capacity is not readily available or if the adjusted demand flow rate (demand v with units of vph) is desired, recall that the v/c ratio X is defined by $X = v/c$. The "adjusted demand flow rate" is computed by correcting for the peak-hour factor and the lane utilization factor, as done in Chapter 9:

$$v = (V/PHF) \times U \qquad (11\text{-}4)$$

where

v = adjusted demand flow rate for the lane group, in vph,
V = demand volume for the lane group, in vph,
PHF = peak-hour factor, and
U = lane utilization factor.

The lane utilization factor is shown in Table 11-5, which is taken from Chapter 9.

In certain applications in which approximations are needed or desired (such as a *planning* application of the methodology), it may also be useful to recall a default relation for the capacity of the lane group:

$$c = 1{,}800 \times N \times (g/C) \qquad (11\text{-}5)$$

where N is the number of lanes in the lane group and both C and g/C have been defined above. When Eq. 11-5 is used to compute a capacity value (rather than using the multiple correction factors of Chapter 9), the evaluation becomes highly approximate. This may be used in "planning" applications of the arterial methodology. Note that some detailed information on signal timing and quality of progression is needed in *all* applications of the arterial methodology.

The *quality of the progression* on the segment that includes the intersection has a significant impact on the intersection delay. There are five "arrival types" defined in Chapter 9:

1. *Type 1*—This condition is defined as a dense platoon arriving at the intersection at the beginning of the red phase. This is the worst platoon condition.
2. *Type 2*—This condition may be a dense platoon arriving during the middle of the red phase, or a dispersed platoon arriving throughout the red phase. Better than Type 1, this is still an unfavorable platoon condition.
3. *Type 3*—This condition represents totally random arrivals. This occurs when arrivals are widely dispersed throughout the red and green phases, and/or where the approach is totally uncoordinated with other signals—either because it is at an isolated location or because nearby signals operate on different cycle lengths. This is an average condition.
4. *Type 4*—This condition is defined as a dense platoon arriving during the middle of the green phase, or a dispersed platoon arriving throughout the green phase. This is a moderately favorable platoon condition.
5. *Type 5*—This condition is defined as a dense platoon arriving at the beginning of the green phase. *It is the most favorable platoon condition.*

TABLE 11-5. LANE UTILIZATION FACTORS

NO. OF THROUGH LANES IN GROUP (EXCLUDING LANES USED BY LEFT-TURNING VEHICLES)	LANE UTILIZATION FACTOR U
1	1.00
2	1.05
≥ 3	1.10

The arrival type is best observed in the field, but could be approximated by examining time-space diagrams for the arterial or street in question, using the platoon ratio R, as explained in Chapter 9. As noted in Chapter 9, the arrival type should be determined as accurately as possible, because it will have a significant impact on delay estimates and level-of-service determination.

As noted, *the stopped delay estimate obtained from Eq. 11-3 is for an assumed random arrival condition.* In most cases, arrivals are not random, but are platooned as a result of signal progression and other factors. As part of the input data for an operational analysis, five arrival types were defined, and one would be specified for each lane group. The delay obtained from Eq. 11-3 is multiplied by the platoon adjustment factor, given in Table 11-6.

When the signal progression is favorable to the through-vehicle lane group, delay will be considerably less than that for random arrivals. Similarly, when signal progression is unfavorable, delay can be considerably higher than that for random arrivals. The variation of delay with progression quality increases as the v/c ratio, X, approaches 1.00, and is greater for pretimed signals than for other types of signalization. Left-turn movement delays are generally unaffected by progression: protected left-turn phases are rarely progressed, and permissive left-turn delay is thus dependent on opposing traffic.

Delay is a complicated variable that is sensitive to a variety of local and environmental conditions. These procedures provide reasonable estimates for delays expected for average conditions. They are most useful when used to compare operational conditions for various geometric or signalization designs. When evaluating existing conditions, it is advisable to measure delay in the field. Appendix III of Chapter 9 contains guidelines for intersection delay measurements using lane occupancy and volume counts.

Example—Consider an arterial segment with a through lane group with $N = 2$ lanes, a demand volume of 1,500 vph and a $PHF = 0.91$. Further, there is a pretimed signal with a cycle length of 90 sec and a g/C ratio of 0.60. Vehicles arrive as a dense platoon at the beginning of the green. What is the estimated intersection approach delay?

Solution—To use Eq. 11-3 to compute intersection stopped delay, it is necessary to know C, g/C, X, and c. The last two terms must be computed because they are not given.

From Eq. 11-4, the adjusted demand flow rate is

$$v = (1{,}500/0.91) \times (1.05) = 1{,}731 \text{ vph}$$

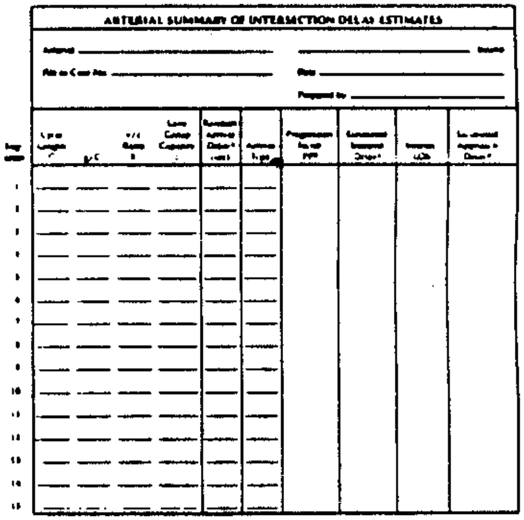
where the lane utilization factor is read from Table 11-5.

There is no source for capacity information other than the default relation of Eq. 11-5.

TABLE 11-6. PLATOON ADJUSTMENT FACTOR, PF

TYPE OF SIGNAL	LANE GROUP TYPES	V/C RATIO, X	ARRIVAL TYPE 1	2	3	4	5
Pretimed	TH, RT	≤ 0.6	1.85	1.35	1.00	0.72	0.53
		0.8	1.50	1.22	1.00	0.82	0.67
		1.0	1.40	1.18	1.00	0.90	0.82
Actuated	TH, RT	≤ 0.6	1.54	1.08	0.85	0.62	0.40
		0.8	1.25	0.98	0.85	0.71	0.50
		1.0	1.16	0.94	0.85	0.78	0.61
Semi-actuated*	Main St. TH, RT	≤ 0.6	1.85	1.35	1.00	0.72	0.42
		0.8	1.50	1.22	1.00	0.82	0.53
		1.0	1.40	1.18	1.00	0.90	0.65

* [illegible]



[illegible]

Figure 11-5. Arterial summary of intersection delay estimate worksheet.

$c = 1,800 \times 3 \times (0.60) = 1,930$ vph

Thus the remaining computations are approximate, and are intended primarily for planning purposes.

The v/c ratio is computed from $X = v/c$, where $X = 1,731/1,930 = 0.90$. This may be used in the delay computations.

Using Eq. 11-3 with

$C = 90$ sec

$g/C = 0.60$

$X = 0.90$

$c = 1,930$ vph

the uniformum random stopped delay is computed as $d = 16.4$ sec/veh.

By virtue of the assumptions of the arriving vehicles, the "arrival type" is Type 3. Given a protected signal and a v/c ratio of 0.90, entrance Table 11-6 to find the platoon factor $PF = 0.67$ for a v/c ratio of 0.80 and $PF = 0.83$ for a v/c ratio of 1.00. Interpolating, the v/c ratio of 0.90 would have $PF = 0.75$. Thus the estimated stopped delay is $0.75 \times 16.4 = 12.3$ sec/veh.

The approach delay is related to the stopped delay by a factor of 1.3 as cited in Eq. 11-2, so that the approach delay is $1.3 \times 12.3 = 16.0$ sec/veh.

The computations must be done for each signalized intersection, or obtained from the results of Chapter 9 evaluations. Figure 11-5 is a summary worksheet for the intersection delay computations. An additional blank worksheet is contained at the end of the chapter in Appendix II.

STEP 6—COMPUTE AVERAGE TRAVEL SPEED

The average speed is to be computed by section and over the entire arterial. It is recommended that the user also prepare a speed profile of the facility, and supplement the LOS assessment with insights gained from the speed profile and the levels of service of the individual intersections.

Figure 11-6 shows some illustrative data filled in on a worksheet which is provided to ease the task of assembling the information. A blank worksheet is contained at the end of the chapter in Appendix II.

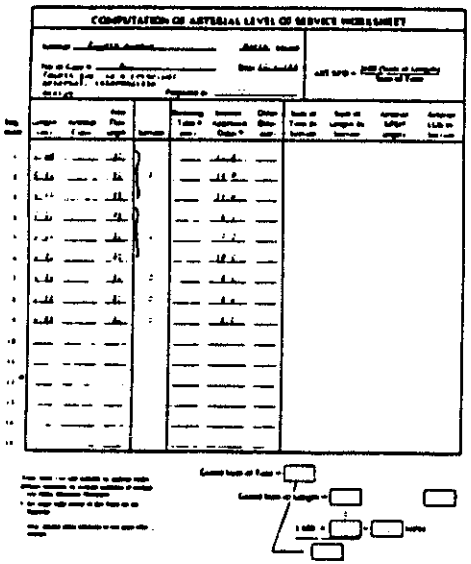


Figure 11-6. Computation of arterial level of service worksheet.

Equation 11-1 is used in each section and on the overall facility to compute the arterial speed in the section or on the facility:

$$\text{ART SPD} = [(3,600) \times (\text{Length})]/[(\text{Running Time Per Mile}) \times (\text{Length}) + \text{Total Intersection Approach Delay})]$$

where the terms have already been defined.

Figure 11-7 shows the worksheet (Fig. 11-6) with the computations done and entered. Doing such computations for each section and for the total, the speed profile illustrated on Figure 11-8 may be constructed. For segments 1 and 9, the running time per mile for a segment length of 0.10 mi is used, but is multiplied by the actual segment lengths.

Sample Computations. It is given that Fourth Avenue is a principal arterial intermediate design, with a 35-mph free flow speed. From Table 11-3, it is arterial class II. In section 3 of the arterial, the average segment length is 0.20 mi. From Table 11-4, the running time per mile is 128 sec, per mile for a class II arterial with a 35 mph free flow speed and this segment length.

The total running time in the section is given by

$$128 \times (0.20 + 0.20 + 0.20) = 76.8 \text{ sec}$$

The total intersection approach delay is given in Figure 11-6 as $(5.0 + 7.0 + 10.0) = 22.0$ sec, so that the total time is $76.8 + 22.0 = 98.8$ sec.

The arterial speed in the section is $3,600 \times 0.60/98.8 = 21.9$ mph.

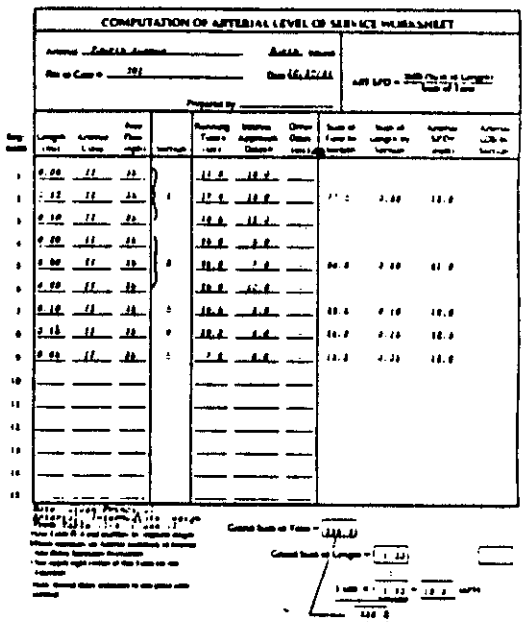


Figure 11-7. Computation of arterial level of service worksheet.

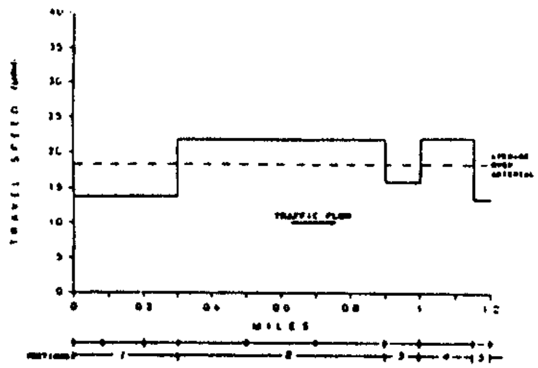


Figure 11-8. Speed profile by arterial section.

STEP 7—ASSESS THE LEVEL OF SERVICE

There is a distinct set of arterial level-of-service values established for each arterial class. These are based on the differing expectations drivers are judged to have for the different classes of arterials.

In defining the levels of service, both the free flow speed of the class and the intersection LOS definitions were taken into account. In general, the arterial levels of service are based on the smooth and efficient movement of the through traffic along an entire arterial. Therefore, it is necessary to expect less delay per segment than the corresponding intersection level of service.

Table 11-1 gives the arterial level-of-service definitions for each of the three arterial classes. The level-of-service definitions vary with the arterial class: the lower the arterial class (i.e., the higher the class number), the lower the driver's expectations when driving on that facility, and the lower is the speed associated with a given level of service. Thus, a Class III arterial provides LOS B at a lower speed than does a Class I arterial.

The user must be aware of this aspect in explaining [illegible] of arterials when upgrading is involved. If [illegible] results in upgrading a facility from Class II to Class I, it is possible that the LOS will not change (or may even [illegible] degrade) despite average speed and other improvements, because expectations would be higher.

Note that the concept of an overall arterial level of service is generally only meaningful when all segments on the arterial are of the same class. If there are different arterial classes represented, the LOS criteria are different.

The intersection levels of service used in Chapter 9 are given in Table 11-7. The arterial levels of service are also shown in this table. The arterial LOS definitions were made with the understanding that a smooth, good quality service to the through traffic is the prime concern. Thus, the arterial LOS definitions generally expect that there will be less delay per intersection than the corresponding intersection levels of service.

TABLE 11-7. LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS AND ARTERIALS

INTERSECTION LOS			
LEVEL OF SERVICE			STOPPED TIME DELAY PER VEHICLE (SEC)
A			≤ 5.0
B			5.1 to 15.0
C			15.1 to 25.0
D			25.1 to 40.0
E			40.1 to 60.0
F			> 60.0
ARTERIAL LOS			
ARTERIAL CLASS	I	II	III
Range of Free Flow Speeds (mph)	45 to 35	35 to 30	35 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
LEVEL OF SERVICE	AVERAGE TRAVEL SPEED (MPH)		
A	≥ 35	≥ 30	≥ 25
B	≥ 28	≥ 24	≥ 19
C	≥ 22	≥ 18	≥ 13
D	≥ 17	≥ 14	≥ 9
E	≥ 13	≥ 10	≥ 7
F	< 13	< 10	< 7?

III. SAMPLE CALCULATIONS

CALCULATION 1—ARTERIAL CLASS AND CLASSIFICATION

1. *Description*—An arterial with three lanes in each direction and signal spacing of 0.15 mi passes through an area with moderate roadside development. It is undivided. Virtually all of the traffic passes through the area; there is very little pedestrian activity. Identify the arterial class.

2. *Solution*—To determine the arterial class, it is necessary to decide the design and functional categories of the arterial, and then to use Table 11-3 to specify the arterial class.

The sample statement that "virtually all of the traffic passes through the area" defines the *functional category*; it is a principal arterial.

Table 11-2 can be used to assist in determining the design category: note that there are approximately 7 signals per mile (based on a 0.15-mi spacing), there is moderate roadside development, there is very little pedestrian activity, it is a multilane undivided facility. Thus the design category is found to be "intermediate."

Referring to Table 11-3, one concludes that the arterial is *Class II*. This information is used in determining the level-of-service definitions to be used in evaluating the arterial. Further, lacking more specific information, one can expect a free flow speed in the order of 33 mph (refer to the top of Table 11-1), with a range being 30 to 35 mph.

CALCULATION 2—COMPUTATION OF ARTERIAL LEVEL OF SERVICE

1. *Description*—Given a multilane divided arterial that functions as a principal arterial. There is significant control of access, no parking, and a signal spacing of approximately 0.30 mi between signals that are pretimed. There is little roadside development, and there are two lanes in each direction and a measured free flow speed of 39 mph.

Detailed information on the intersection parameters and the arterial segments for the southbound flow is contained in Figures 11-9 and 11-10. The programme is [illegible] in the southbound direction.

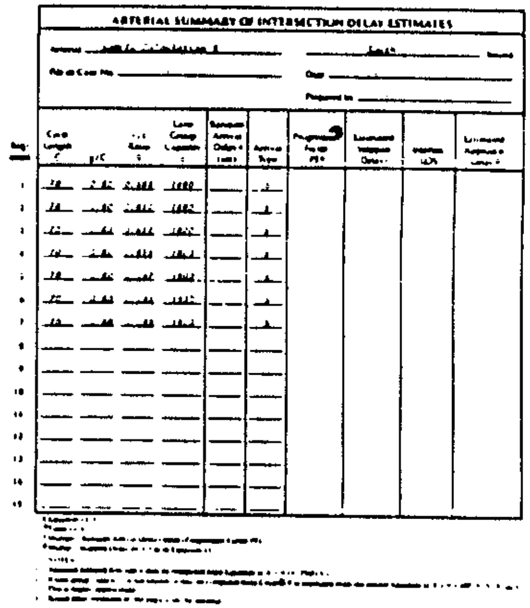
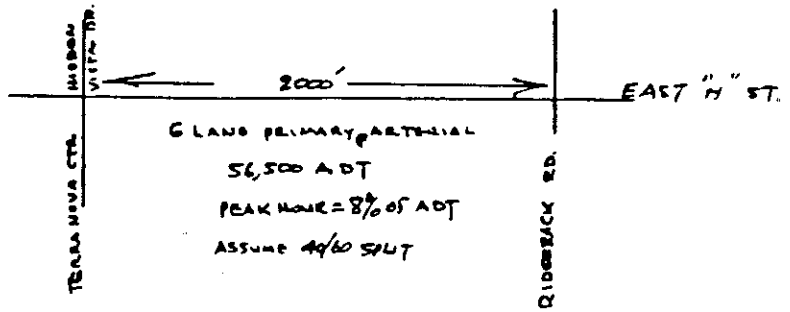


Figure 11-9. Sample calculation 2—description—using arterial summary of intersection delay estimates worksheet.

REFERENCE: 1985 HIGHWAY CAPACITY MANUAL, CHAPTER 11.
"URBAN AND SUBURBAN ARTERIALS"

ARTERIAL LEVEL OF SERVICE

STEP 1 – ESTABLISH THE ARTERIAL TO BE CONSIDERED:



LENGTH = $\frac{2000'}{5,280}$ = **.38 MILE**

PEAK HOUR APPROACH VOLUME = 56,500 ADT X .08 X .60 = **2712 VEH/HR. FOR LANE GROUP**

ADJUSTED DEMAND FLOW RATE $v = (V/PHF) \times f_w = \frac{2712}{.90} \times 1.10 = 3315$

STEP 2 – DETERMINE THE ARTERIAL CLASS AND FREE FLOW SPEED:

FUNCTIONAL CATEGORY = PRINCIPAL ARTERIAL
DESIGN CATEGORY = TYPICAL SUBURBAN DESIGN
THEREFORE, AS SHOWN IN TABLE 11-3, **ARTERIAL CLASS = I**

STEP 3 – DIVIDE THE ARTERIAL INTO SECTIONS:

THE INTERSECTION SPACING IS SUCH THAT THE ESTABLISHED ARTERIAL CAN BE EVALUATED CONSIDERING A SINGLE SEGMENT.

STEP 4 – COMPUTE THE ARTERIAL RUNNING TIME:

1. ARTERIAL CLASS = I
2. SEGMENT LENGTH = .38 MI.
3. FREE FLOW SPEED = 45 MPH
4. FROM TABLE 11-4, SEGMENT RUNNING TIME/MILE = 95 SEC/MI.

THEREFORE; 95 SEC/MI X .38 MI = **36.1 SEC.**

STEP 5 - TABULATE INTERSECTION DATA AND COMPUTE DELAY:

C = CYCLE LENGTH ; ASSUME 120 SEC CYCLE

g/C = GREEN RATIO ; ASSUME .60

c = CAPACITY OF THROUGH LANE GROUP FOR PLANNING PURPOSES USE DEFAULT

RELATION $c = 1700 \times N \times g/C$

$c = 1700 \times 3 \times .6 = 3060$

$v = (V/PHF) \times (U) = \frac{2712}{.90} \times 1.10 = 3315$

$X = v/c = \frac{3315}{3060} = 1.08$

d = INTERSECTION STOPPED DELAY

$$d = .38C\frac{[1-g/C]^2}{[1-(g/C)(X)]} + 173(X)^2\left[(X-1)+\sqrt{(X-1)^2+\left(\frac{16X}{c}\right)}\right]$$

$d = .38(120)(.25) + 173[.219]$

$d = 11.4 + 37.6 = 49.2$ $\quad d \times PF = 49.2 \times .61 = 30$

NOTE: ASSUME PROGRESSION FACTOR = .61 FROM TABLE 11-6

$D = d(1.3) = 30.0 \times 1.3 = 39.0$

STEP 6 - COMPUTE AVERAGE TRAVEL SPEED:

$$\text{ART SPD} = \frac{[3600 \times \text{LENGTH}]}{\left[(\text{RUNNING TIME/MI})(\text{LENGTH}) + \text{INTERSECTION APPROACH DELAY}\right]}$$

$$\text{ART SPD} = \frac{1368}{(36.1 \times .38) + (39)} = \frac{1368}{\frac{45}{52.7}} = \boxed{26.0 \text{ MPH}}$$

STEP 7 FROM TABLE 11-7

LOS $\cong$ C $\quad (\geq 22 \text{ MPH} \leq 28 \text{ MPH})$

State of California — Business, Transportation and Housing Agency

Memorandum

To : STATE CLEARINGHOUSE
Attention GLENN STOBER

Date August 10, 1987

File No.: 11-SD-805
7.3

From : DEPARTMENT OF TRANSPORTATION
District 11

Subject: Rancho del Rey - SCH 87070102

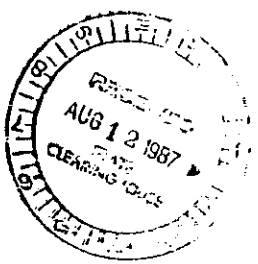
Caltrans District 11 comments on the DEIR are as follows:

(8) 1. Mitigations should be proposed for project-specific and cumulative traffic impacts to Interstate Route 805 and future State Route 125. Our contact person for traffic information and mitigations is Gary Klein, District Project Studies Engineer, (619) 237-6134.

(9) 2. It is recommended that a facilities benefit assessment district be established to fund the acquisition of Park and Ride sites along the proposed alignment of State 125. Residential developments should be required to provide information on ridesharing options and transit. Our contact person for ridesharing information is Manuel Demetre, Chief, Ridesharing Branch, (619) 237-6977.

James T. Cheshire
JAMES T. CHESHIRE, Chief
Environmental Planning Branch

MO:fj



(8) Mitigation measures for impacts to the regional roadway network are discussed in the EIR on pages 4-105 through 4-111.

(9) Comments noted. The City will consider the recommendation for a facilities benefit assessment district for the acquisition of sites for park-and-ride facilities along the proposed alignment of State Route 125 and will decide whether such a program is warranted for the proposed development. Further, the applicant will be required to provide information for rideshare and transit options to future homeowners in the Rancho del Rey development.

July 27, 1987

TO: Douglas R. Reid, Environmental Review Coordinator

FROM: Manuel A. Mollinedo, Director of Parks and Recreation

SUBJECT: Comments on EIR 87-1, Rancho del Rey SPA I Plan

This Department has reviewed the Parks and Recreation and Open Space Elements of the Draft EIR for Rancho del Rey SPA I and has the following comments.

(10) The parkland dedication standards listed in the EIR are being amended by this Department. A report will be going to Council on August 18 requesting approval of the amended standards. However, the developer for Rancho del Rey would still meet the new standards with the amount of acreage being dedicated.

The proposed parks and recreational facilities are still conceptual and subject to change. Details on exact location, phasing and specific facilities are still being addressed. The improvements listed in the EIR will probably not change significantly.

The Department approves of the proposed improvements for the Open Space areas which include development of fire breaks, revegetation of disturbed areas and development of trails surfaced pervious with materials.

If you have any questions, or need additional information, please do not hesitate to call.

/cs

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(10) Comments noted. The applicant will provide parks and recreation facilities as deemed acceptable by the City of Chula Vista Parks and Recreation Department. The Rancho del Rey Draft Public Facilities Plan and Financing Analysis (September 1987) discusses the financing of these and other public facilities and services. Details regarding the applicant's responsibility regarding provision of parkland and construction of recreational facilities are incorporated in the plan. The Plan is being finalized currently based on comments from service providers and from representatives of the City of Chula Vista administrative and planning departments.

RESOLUTION

The Board of Directors of Eucalyptus Ridge Condominium Home Owners Association resolves to go on record objecting to the planned placement of ANY ballfields on the eastern most edge of Rice Canyon, bordering the Eucalyptus Ridge Condominium community. We feel that the addition of this proposed recreational facility will negatively impact the character and quality of our community and will pose unnecessary hardships on our property and residents.

We further resolve that we understand that there is a critical need to provide public recreational facilities for the community. However, we feel that with the present proposed plan our EXISTING community will be forced to bear an unreasonable impact.

EUCALYPTUS RIDGE HOME OWNERS ASSOCIATION
BOARD OF DIRECTORS

PASSED AUGUST 10, 1987

11

11

Comments noted. The potential for land use conflicts between the existing Eucalyptus Ridge residential community and the recreation facilities proposed as part of the Rancho del Rey SPA I development was discussed at the public hearing for the project on August 12, 1987. At the hearing, it was agreed that the applicant will submit a Park Master Plan (to be reviewed by the Chula Vista City Council) which addresses the issues of noise, lights and aesthetics. Further, the City Parks and Recreation Department has agreed that only four of the proposed ballfields will be lit at night; the two easterly ballfields will not be nightlit, thus reducing the potential for noise and light-related impacts to existing residences. Other details which could be incorporated into the final design of the ballfields include the provision of a combination fence-and-landscape buffer around the perimeter of the fields to reduce visual impacts to the residences and increase the privacy of the residential areas; one of the objectives for the design of this buffer would be to protect residents from trespassing by park users while maintaining access from residences to the ballfields and the rest of the park. Incorporation of concerns related to the interface between proposed park facilities and existing residences will be the responsibility of the City Council and the City Parks and Recreation Department as part of their review of the applicant's future submittal.

Sweetwater Union High School District
ADMINISTRATION CENTER
1130 FIFTH AVENUE
CHULA VISTA, CALIFORNIA 92011-2496
(619) 691-5500

DIVISION OF BUSINESS SERVICES

August 27, 1987

Mr. Tony Litterie
City of Chula Vista
Planning Department
276 Fourth Avenue
Chula Vista, CA 92010

Dear Mr. Litterie:

Re: El Rancho del Rey Draft EIR

The staff of the Sweetwater Union High School District has reviewed the draft Environmental Impact Report (EIR) for the El Rancho del Rey sectional planning area. We would like the opportunity to offer some comments with respect to the EIR.

The proposed project will have a significant impact upon the existing school facilities. This project is within the Bonita Vista Junior High School and Bonita Vista High School attendance areas. These schools are presently at 97 percent and 100 percent capacity, respectively. Thirty-five additional students will place the junior high school at 100 percent of its permanent capacity. As a result of this project, it is estimated that approximately 220 junior high school students and approximately 420 high school students will be generated in this attendance area.

(12)

The EIR states that the proposed new high school (Eastlake), and the plans for a junior high school will adequately mitigate the impact this development will have on the school facilities. Although these new facilities will be able to mitigate the project's initial needs, this will be a temporary solution. These schools will be at or near capacity upon build-out of the EastLake Planned Community development, therefore, this development will have a cumulative impact upon school facilities.

(13)

The present school impact fee of $1.50 per square foot will be insufficient in providing the necessary funds to alleviate the impact. The present school impact fee of $1.50 per square foot will be insufficient in providing the necessary

(14)

facilities within the allotted time period to meet the needs of the Ran el Rey SPA I development. At the time of the writing of the EIR, figures regarding the attendance and capacity of the affected schools were received from the individual schools; additionally, plans for new facilities were considered. While no percentage of current attendance to total capacity of the schools was calculated, the figures received at that time indicated that the schools were rapidly reaching capacity and that additional solutions would be necessary prior to the time that the residential units at Rancho del Rey were occupied.

A comment received at the public hearing from Planning Commissioner Cannon requested that the school capacity and plans for future school facilities be verified.

In response to this comment, the Sweetwater Union High School District and the Chula Vista Elementary School Districts were recontacted. The capacity and the enrollments in the current and previous years at the four elementary schools in the project vicinity are as follows:

(12)

	Capacity (1)	Enrollment 1986-87	Enrollment 1987-88
Tiffany	837	644	826
Allen	651	449	495
Sunnyside	837	698	797
Valley Vista (2)	465	495	469

(1) Capacity figures assume an average of 29.5 students per room.

(2) Three classrooms have been omitted from Valley Vista's capacity calculation; these are special education classrooms and vary in size depending on purpose. Five portables are scheduled to be available for use at Valley Vista in the near future.

Source: Ms. Debbie Turner, Planning Department, Chula Vista Elementary School District (personal communication, September 25, 1987)

With regard to the capacity of the junior high and high school facilities in the vicinity of the project, Mr. Andy Campbell, Director of Planning for the Sweetwater Union High School District (personal communication, September 25, 1987) explained that current plans exist for a high school and for a junior high school; the junior high school is proposed to be located in Rancho del Rey SPA II. In the interim period, Bonita Vista Junior High will become a middle school, thus increasing the capacity of this school. Eastlake High School is scheduled to open in September 1990 and should accommodate the students from future SPAs in the Rancho del Rey development. Assuming that current phasing of the SPAs is adhered to, no capacity problems related to junior high or high schools is projected.

(13) Comment noted. As identified on page 4-161 of the EIR, the Rancho del Rey SPA I development, in conjunction with the Eastlake development and other developments in eastern Chula Vista, could have an incremental effect on the schools in the area, if facilities were not provided in conjunction with generated need. See response number 12.

(14) As a result of the school district's concerns regarding the impacts of the Rancho del Rey SPA I development on the area's schools, a revised assessment of impacts and potential mitigation measures was prepared as part of the revised Public Facilities Plan and Financing Analysis. This revised Plan indicated that the applicant would be required to participate in a Mello-Roos financing plan for facilities rather than simply paying the $1.50 per square foot impact fee. This plan would guarantee payment by the applicant in direct relationship to the level of impact on the area junior high and high schools and would require full funding of the subject elementary school. The school district has agreed that this revised plan would adequately mitigate the impacts of the proposed project on schools within the district.

funds to alleviate the impact. The District requests that any approval of the project require an alternative financial agreement between the developer and the Sweetwater Union High School District prior to recordation of the final map.

If you have any questions or concerns regarding this matter, please do not hesitate to contact me at (619)691-5553. Thank you for your time and consideration.

Respectfully,

Thomas Silva
Director of Planning

TS/sly

... Dedicated to Community Service
10595 JAMACHA BOULEVARD SPRING VALLEY, CALIFORNIA 92078
TELEPHONE 462-2222 AREA CODE 619

RECEIVED
BY.....
AUG 10 19?
PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

August 7, 1987

CITY OF CHULA VISTA
P.O. Box 1087
Chula Vista, CA 92012

Attention: Mr. Douglas Reid
Environmental Review Coordinator

Subject: Rancho del Rey SPA I
(W.O. No. 1729.3)

Gentlemen:

We have had the opportunity to review the draft Environmental Impact Report (EIR) on the Rancho del Rey Sectional Plan Area (SPA) I. Following are our comments to this draft EIR:

In general, the description of the existing conditions is accurate except for the last sentence of the last paragraph on Page 4-147. It appears that this sentence is out of context. On Page 4-149, the 16" main in the 624 zone in the northern loop, west of the intersection between the 12" and 16" mains, should be 12". A copy of Figure 4-J-1 is attached for further clarification. (15)

Eight months ago a "task force" of the South San Diego County Water Agencies was formed to review future plans by the County Water Authority (CWA) to meet increasing demands in the south county. This task force has identified problems in the ability of the CWA to supply water during the warmest days of the summer, which has a significant impact on the District's available supply of water. An increase in demand within the Otay Water District will aggravate this problem. The CWA expects to complete construction of certain pipelines to alleviate it by possibly 1992. (16)

(15) Comments noted. The revisions do not significantly affect the analysis regarding the provision of water to the project site.

(16) Comments noted. The comments do not address the adequacy of the EIR, therefore, no further response is necessary.

- 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.

---

*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.

Year ending June 30,	Preferential entitlement of Otay M.W.D.	Water sales of S.D.C.W.A. to Otay M.W.D.
1986	2.2%	3.2%
1985	2.1%	3.2%
1984	2.1%	3.7%
1983	2.1%	4.0%
1982	2.0%	3.2%
1981	1.9%	3.6%
1980	1.9%	3.8%
1979	1.8%	3.9%
1978	1.8%	3.4%
1977	1.7%	2.8%

The Otay M.W.D. has been able to use more than "its share" because other member agencies habitually use less than their entitlements, and particularly those agencies that have their own sources of water. The Sweetwater Authority, with two reservoirs, is such an agency. Here are their figures for the last 10 years:

Year ending June 30,	Preferential entitlement of Sweetwater Auth.	Water sales of S.D.C.W.A. to Sweetwater Auth.
1986	6.9%	4.4%
1985	7.0%	1.1%
1984	7.2%	.0+%
1983	7.3%	.0+%
1982	7.6%	.0+%
1981	7.6%	.0+%
1980	7.7%	1.0%
1979	7.7%	1.4%
1978	7.8%	3.9%
1977	8.0%	4.0%

[the ".0+%" means they did buy some water that year, but less than one-tenth of one per cent.]

San Diego County Water Authority

But just as member agency Otay M.W.D. uses more than their entitlement from the S.D.C.W.A., the S.D.C.W.A. likewise uses more than its entitlement from the Metropolitan Water District of Southern California (MWD). On the next page are the figures I have available for the last 10 years:

Ye	ding June 30,	Preferential entitlement of S.D.C.W.A.	Water sales of M.W.D to S.D.C.W.A.
	1986	11.2%	29.5%
	1985	11.2%	27.6%
	1984	10.7%	25.7%
	1983	not available	24.8%
	1982	" "	31.2%
	1981	" "	27.8%
	1980	" "	27.1%
	1979	10.9%	27.6%
	1978	11%	30%
	1977	13%	25%

In this case it is the City of Los Angeles which habitually uses less water than its entitlement because the City of Los Angeles has its own aqueduct from Owens ~~Lake~~ Valley.

I would offer the following pessimistic observations about the future availability of water:

-- Arizona so far is using only 30% of their new entitlement to Colorado River water that was until recently California's entitlement. In the not too distant future they will probably be taking their full entitlement. (See attached letter from M.W.D.)

-- People in northern California have seemingly been able to easily defeat every attempt to increase the amount of water being transferred from northern California to southern California. The California aqueduct is operating below its capacity because of the defeat of the Peripheral Canal and similar schemes that are required before it can operate at full capacity.

-- More and more court rulings seem to be going against the City of Los Angeles in terms of just continuing to drain Owens Valley.

On the other hand, in a recent meeting I heard a very optimistic viewpoint expressed by a Director of the Otay M.W.D.:

-- A deal will soon be made so that Imperial Irrigation District will sell us some of their water.

-- The "Galloway project" to purchase or lease water rights from people in other western states in the Colorado River watershed will soon be accomplished.

-- The preferential rights of the S.D.C.W.D.A. to M.W.D cannot be enforced.

-- He was not aware of the preferential rights of Otay M.W.D. within S.D.C.W.A.

Conclusion

Recent snow packs have been above normal and Arizona has not yet taken much of their new entitlement, so water is still plentiful to San Diego. Over the long run, however, when snow packs are normal, and Arizona is taking their full

Comm. Cannon: Impact Report, specifically, with regard to the capacity of the schools. The Environmental Impact Report states that capacity has not been reached in the Bonita schools --Allen, Valley Vista, or Sunnyside. It is my understanding, in discussions with the elementary school district that is not the case and during the 1985-87 school year those schools exceeded capacity. I think an analysis needs to be closely looked at in the Environmental Impact Report with regard to the lack of a junior high school being within the planning stages of Sweetwater Union High School District. Bonita Vista Junior High School is at capacity at this point in time, or very near it, and there is no junior high school currently planned in any foreseeable period of time. Rather than just say these things are on development boards, I think we should look at the alternative side and say, what happens if these things aren't built and what are we going to do with the children that are generated by this project. The elementary school district, as I understand it, is proposing three different schools, and potentially, I assume that would take care of the elementary students in the area, but the junior high, specifically, I understand is not on the drawing board at this point in time.

Lastly, while I understand the project alternatives were covered in the original Environmental Impact Report that we reviewed, I would like to see rather than just a no project alternative, a project alternative involving: 1) lower density, and 2) a lack of an employment park, specifically in relationship to how those proposals would affect the traffic bases that we've seen in the Environmental Impact Report.

(21)

That's all of my comments.

At the public hearing, Commissioner Cannon requested clarification on the alternatives to the proposed project design based on concerns regarding the traffic situation. A No Project alternative was discussed in the subject EIR and the alternatives prepared for the previous Master EIR for the project were incorporated by reference.

Based on revisions to the traffic analysis (see response number 1), the rate of development of the employment park will be monitored with regard to traffic levels on East H Street. Assuming that all required street improvements are implemented on schedule and that other conditions regarding phasing of proposed development in the employment park are enforced (i.e., no single phase may concentrate development in any one portion of the overall employment center site but must distribute buildings and associated trips among the various access points), traffic levels on this roadway and on all other roadways which will carry project-related traffic are projected to sustain levels of service C or above based on the proposed phasing of the employment park and the complete buildout of the residential portion of the project. The conditions of approval for the project regarding monitoring of levels of service on East H Street and restricting the total number of trips to be generated by the employment park prior to the construction of Route 125 are designed to further ensure that level of service C is not exceeded on East H Street; the only exception to this provision is that, if guarantees have been established that Route 125 will be built, additional trips from the employment park will be permitted to utilize East H Street and the level of service may drop to D for an interim period between the time guarantees are made and trips begin to be transferred to the completed Route 125.

(21)

Mr. Rowe: there are so many viable options, and I would really encourage the City Department of Parks and Recreation to rethink their priorities and think about where else they can put these.

There is another option, too, so far, it seems like every agency going in here wants its own independent cut of the pie. You've got the Y.M.C.A., there's a school going in there, and there's the city parks, they all want their own ball fields, they don't want to share. Why can't they build common fields, why can't the school build some fields and let it also be available to the public, the U.M.C.A., etc., they all want to build ball fields. Take a good close look at these plans; everybody is building their own field. It doesn't make sense. I think there should be some cooperation between all the agencies and organizations going in there.

One thing that hasn't been pointed out, I don't think, is that there are no drawings or plans that show any kind of barriers or fence around the baseball fields, which is again going to induce people to park in our complex and walk down that slope--already a slightly unstable slope--to get to the ball fields. There is no mention of a fence there. It only makes sense that people would park in our complex and walk down to the ball fields as a short cut.

We are going to be impacted by that shopping center, that's going to create noise. I knew when I bought that the shopping center was going in there, but I thought, you know, we've got a canyon, an open space to divide this ridge from the shopping center. But there is not going to be that divider and that barrier any more, that buffer is going to be gone.

I would encourage you to take a hard look at the impact we already suffer and direct the Planning Department and the Department of Parks and Recreation and the developer to think of some alternative sites for these fields; again, keeping in mind that there is an indisputable need for active recreational facilities in the city.

Commissioner Green: Have you made your feelings clear to the developer about this?

Mr. Rowe: Yes. Members of our home owners association attended the two McMillan public meetings and we were very vocal and adamant in our discussions with them.

Comm. Green: You understand that we are not in position to do anything about the plan tonight, we're only considering the E.I.R. and when the plan comes up again I suppose you will all be up here.

Mr. Rowe: Yes.

Comm. G[illegible]: Why don't you see the developer between now and then and see if he will accommodate you?

Mr. Rowe: We have talked to the developer and he said basically they're doing what has been demanded of them by the City Department of Parks and Recreation, and that is they put ball fields in there. I don't think our beef is with the developer, I think our beef is with Chula Vista.

Chairman Shipe: Is there anyone else who would like to address the Commission on this item? One more call. If not, I'll close the public hearing. The final E.I.R. will be scheduled for consideration by the Planning Commission when the project is considered. Any comments received from the State Clearinghouse will be accepted and responded to in the final E.I.R.

Comments from Planning Commissioners:

Commissioner Cannon: I had four comments and would like some further input. It appears to me from all of the workshops we have had that Route 125 is not a certainty; it's not a certainty in size, not a certainty in location, not a certainty in its existence. It also appears to me that the traffic impacts, while they say they do not rely on 125, in reality they are, because the bottom line is "will be at Service Level D unless and until 125 is built." And I find Service Level D unacceptable. I think most people would. So, I would like to see in the Environmental Impact Report some analysis realistically looking at some of the alternatives in the event 125 is not put into place, and lowering the ADT's to a point where it can truly be insignificant, in other words, a cut-off point. If we have that cut-off point, at least at that point in time if 125 isn't built we can say, okay, developer don't build any more until such time as we have the roads in place. Otherwise I see us back in the same point that we're in, at least on Bonita Road, and that is, we don't have the road and there isn't any likelihood of being able to change that. That was one.

The second point was one that I believe was raised by Mr. Watry. There is nothing in the Environmental Impact Report with regard the problem, potentially, of cut off of water due to Arizona taking its share of the Colorado River water. I'd like to see two factors involved here: One, what happens with major developments on a cumulative basis should Arizona, in five years from now, take its entire amount of water allotted to it, and two, what is the cost going to be estimated to the Otay Water District who import all of their water. What's that cost going to be to the home owner, how much is it going to go up.

Next, some of the information given to us with regard to schools appears to me to be erroneous in the Environmental

Mr. R y: will be dedicated to the City of Chula Vista as permanent open space." So somebody's dedicating it again, rededicating it to the City of Chula Vista as permanent open space, just what we were told, why we moved there. Now, I notice is some of the fact sheets, 105 acres parks and trails dedicated to Chula Vista, exceeding the 15 acre city ordinance requirement. Great. Now the only problem is maybe if I want a little open space, I can't go to sleep on certain Saturday nights, I'm getting now so that I'm early to bed and early to rise, I never was, but maybe it's age catching up with me. On certain Saturday nights I can't sleep because, I don't know why the college needs that kind of amplification. If I was that interested in the game going on, I'd go there and see. I've been in the stadium and the view is good, everything is going on, I don't need someone else to tell me what's happening, but I get it right blasting in my bedroom window from the college. The lights aren't too bad because they are far enough away so that they don't interfere with us, but the lights down here will be a darned nuisance. It will be like the perimeter of a concentration camp, only it will be to--what will it be, concentration camps keep the inmates from getting out. That's about it, I've gotten off the subject, I know. I'm sorry.

Greg Rowe: I feel like I'm playing a couple of roles here tonight. I'm the chairman of the City's Resource Conservation Commission, which, as you know, serves the role of reviewing the environmental impact statements that this commission reviews on various projects. We were not able to make a recommendation to you on this project for several reasons; one, we have had two members leave our commission recently due to terms ending and I had to remove myself from any discussion of this E.I.R. because Doug Reid asked me, "Will this project that the E.I.R. involves cause you any more than $10,000 worth of damage?" And I said, minimal. I read the E.I.R,, I looked out my bedroom window and said, there goes about ten or twenty thousand dollars of the resale value of my home. So, I'm not speaking on behalf of the Resource Conservation Commission tonight, I'm speaking on behalf of myself.

You see a poster over here on the wall that one of the members of our home owners association put together themselves. I have a version of that I'd like to hand out to the Commission, I also have a photograph I'd like you to pass around, too. The photograph is what it looks like out my bedroom window, that was taken about a year or two ago and if the City Department of Parks and Recreation is successful in their demands on McMillan to fill that in and install baseball diamonds there and soccer fields, you can imagine what I'm going to be seeing out that window along with all the other residents that currently have that view at our development right now. There is

Mr. Ro

a poster that I don't see that McMillan has put together that basically shows a view of what the canyon would look like in profile, how much they would be filling in and how close to level the field would be to the building pad upon which our development is constructed, and it looks like it would be 30, or maybe 40 or 50 feet lower. So you can imagine a minimum of 50 feet right below our windows the sound of soccer at 7 o'clock in the morning, going on until 10 o'clock at night, which seems to be the typical time that these lighted baseball fields are used. I think you can imagine the kind of impact that's going to create upon us, already, right now, when youth are using the soccer fields at Bonita Vista High School in the fall, there's audiences, parents, friends and what not, attending the games. You can hear the cheering and the raucus going on that far away, a good quarter of a mile away, at 7 o'clock in the morning, easily, even with the windows closed. You take that same level of noise--bleachers, crowds and everything--put them right under our bedroom window, I think you can imagine how little sleep we are going to get.

I would direct your attention to Section 4, page 136 of the E.I.R., in which it says, "This site has also been tentatively identified as a suitable location for night-lighted recreational facilities. The establishment of such facilities could pose potential impacts with adjacent residential development." I con't know why they use the word "could", it's quite obvious that it will. No arguing about it.

On the other hand, there's an indisputable need for parks in this city, especially active recreation. We need more golf courses, we need more tennis courts, we need more racquetball facilities, but the thing I would point out, if I may walk over here, is that the City has something like 16 acres right here that they are demanding remain for passive recreation, just grass. Why not take these baseball fields and put them over here. There is plenty of space, they won't be affecting anyone except the residents of this development, and they will know what they are getting. I would say at the very minimum take one or two of these ball fields and put them over here. Let them bear the impact of the baseball fields near their homes.

I think as some of the other residents have pointed out, we bear a tremendous impact already, with the college, the McMillan condos are going to be built next to us, the Bonita Vista Junior High School, the high school, we have students trespassing through our complex all day and all night; they steal our exterior fire extinguishers, they park in our guest parking spaces; whenever the Grateful Dead play at the college we have to chase those people out. We are already bearing a tremendous impact from all directions. I think for the City to demand that the developer impose this kind of active recreation facility on us is really the last straw. It wouldn't be so bad except that

Mr. K[illegible]de: in the past. We have high noise levels from Southweste... P.A. right now; it's an intermittent problem but it's an existing problem, we can hear every play from our living rooms, bedrooms, dining rooms and garages. Trespassing by students going to and from Bonita Vista Junior and Senior High Schools is a problem right now. We have tried to stop it, it is difficult to stop, and there is a result in vandalism. It's very expensive to us. We have a high occurence of forced entrance into our homes, and thefts, due in part to the access in and out of the canyon. If we increase the frequency of people going in and out of there, I think logically we can conclude that we will have more problems. This is an adult community, basically, there are very few of us with children, it is deserted during the day. A lot of us have had to resort to very expensive security systems just to keep things nailed down, myself included.

My point in mentioning the current problems is to illustrate the fact that a highly used public facility is going to increase our burden. I guess I'm here to ask the question about the ball fields: Is it really fair to the existing residents. I feel and the consensus of the board members from this ridge and our members is, we don't feel it's fair. We're not trying to stop progress, but we think as existing residents we deserve a fair shake. I also feel that if you can identify a problem, you should be able to come up with a workable solution. Some solutions that we have suggested: Move the ball fields so that they border a yet to be developed area in Rancho del Rey proper, perhaps behind the commercial property that is proposed to be put in, ideal place, plenty of parking, no impact to any residents, or future prospective residents of El Rancho del Rey. Decrease the number of ball fields; eliminate the two easternmost fields, if you look at the chart, which are adjacent to us; use that area for low impact activity open space, bike trails, jogging trails, hiking trails. Omit the proposed lighting, require a dusk to dawn curfew be part of the deal. If people are in there only during the daylight hours then we don't have any drunken revelry during the night. Provide architectural barriers around Eucalyptus Ridge to minimize noise and limit trespassing and litter problems. The cost of such barriers should be bared by Rancho del Rey partners or the City of Chula Vista, or both. Start a meaningful, and I stress, meaningful two-way dialog between the partnership proposing the development and all of the owners of the area who involved.

One thing I would like to say, I support the concept of a master planned community; I also support the work of the City of Chula Vista to insure that we all have a beautiful and a safe city, but it must be remembered that no master planned community stands alone. The only way the master plan concept can be used to its fullest is if it carefully considers the impact of the development on its neighbors. Thank you very much.

George [illegible]way: I'll try to be brief; Dan Kincade pretty well spoke for me, the previous speaker. I'm a newcomer to Chula Vista, relative newcomer, about eight years. For six I lived within a stone's throw of your civic center, a very nice place to live, we preferred a little less traffic and we didn't want to buy until we knew we had moved here. We looked at maybe 40 or 50 housing tract developments and condominiums, and Eucalyptus Ridge was home; we were early residents, it's only two years old, 1985, built by a good builder, a good organization in the community, ADMA, Nathan Adler.

Now, when I purchased this Eucalyptus Ridge we just wanted a little more elbow room, we didn't want to be isolated. "Eucalyptus Ridge is private and uncrowded and will stay that way. Naturally secluded by surrounding canyons, the ridge consists of only sixty condominium homes, a small community by any standard." I'm not saying now that Nathan Adler was engaged, or his people were engaged in any false presentations, because they are honorable people. Now, the sales people also pointed that out, "that beautiful canyon view that's dedicated, will always stay that way." I don't know what dedicated means, Nathan Adler dedicated it to the City of Chula Vista, or did the City of Chula Vista dedicate it to the community as open space. One thing I don't like is subterfuge but there again I'm not blaming the City of Chula Vista because this hasn't been finalized anyhow. This is what the hearings are about.

Now, let me go to McMillan. I have friends who live in McMillan's homes and McMillan is a good citizen in the community, too; his people are all nice. I went to McMillan's briefings, to one of the briefings, where they truthful and above board so I'm not complaining about McMillan; however, if I didn't go to a hearing, or read between the headlines, or go further than the brochures, I'd say hurray for ADMA, hurray for--great, everything's great, just lively, just what we need here, if I didn't be informed of some of the facts.

"It is also," this is McMillan's Rancho del Rey, "It is also important to note that no development of major uses is planned in the north and middle legs of Rice Canyon." I live in the north leg of Rice Canyon, it's my back yard "Development will occur only along the plateaus." A plateau isn't a hundred feet down in a canyon, or 150 feet down. "Development will occur only along the plateaus while the canyons will be preserved in their natural state as open space with some recreational uses." Great, I don't argue with that at all. Now, "Rancho del Rey will offer a genuine feeling of openness. Nobody likes to feel congested or squeezed in, which is nearly half of Phase I is reserved for permanent open space for recreational use." Great, I'm in favor of it. "The beautiful north leg of Rice Canyon has been envisioned as a canyon preserve and

Georg[illegible]h: I am also a home owner at Eucalyptus Ridge, and I live on 'H' Street, and my biggest concern, other than the noise from the ball fields, and playing tennis at Rohr Field in Rohr Park on Saturday and Sunday morning, if any of you have ever been there, the noise from the baseball field is so loud that you can't even hear yourself talk on the tennis courts. There is a lot of noise, and that's one baseball field, not six.

My biggest concern is living on 'H' Street, if that's widened to six lanes, there's going to be an enormous amount of traffic right outside of my front door. The gentleman was talking about setbacks and walls for the new development that going to go on, but what about the ones that are there already. I'm not sure if this was known when ADMA built the complexes that are there but it's only about 30 feet from my front door to the street. If they do away with the parking on 'H' Street and widen that to six lanes, then that's an awful lot of noise to have right outside your front door, and a lot of traffic. Those are my concerns about the project.

Keith Hammond: I'm Keith Hammond. My concerns here tonight, when I arrived in the city and I bought this particular condo, one thing that really struck me about it, was the fact that it was not surrounded by anything but open canyons. I understand that development must go on to a degree, but it seems that, looking at some of the charts, our complex has canyons all around it, except for 'H' Street. And some of the proposal is to fill up all the canyons and build on, I assume, the west side, to fill up the canyon and build multi-unit complexes up to our fence, or at least the driveway up to the fence. Behind us they plan on filling in the lighted playing fields, and obviously, towards the south there is a proposed shopping center, I understand it's been in the works and it's no so much we are opposed that, as the fact that all of these things at once effectively isolate us on 360 degrees: 'H' Street, the shopping center, the ball fields, and then multi-unit complexes to the west. My concern is the fact that from an open area to completely enclosed within a few short years is kind of a hard thing to take when you just finished buying your first home. I'm not so much opposed to all of the development, but having a lighted playing field directly outside of, within a relative distance from your place, lighted fields means they will be used until probably 10 o'clock in the evening, and then always the victorious crowd from these ball games usually hang around, which is only the American way, they usually get loud and boisterous, but that's all right only if you don't have to live there. All of a sudden, after five years, we are going to look at a massive amount of noise. Southwestern College has a large playing field, they have loud speakers and you can hear every call, but that doesn't happen all the time. You can hear every play by play description, and I'm in the center of the complex. We don't have air conditioning so in the summer we have to keep our windows

Mr. Hammon: open. It's really kind of a shame to see all of a sudden we're right in the middle of the city instead of out in the country as we are now. I understand there is a certain amount of development, but I'm basically opposed to having the playing fields in that nice canyon. There is beautiful cactus there, beautiful barrel cacti, that I have heard, takes years--50 years--to grow, just to get a few inches, and the area is littered with them. I hate to see all of a sudden everything so cultured, paved over, so manmade, you can't even take a walk down there without having to see something of man.

Daniel Kincade: Daniel Kincade, 1417 Summit Drive, Chula Vista. As a resident of the East 'H' Street area that will be affected by the proposed Rancho del Rey development, I'm deeply concerned and upset by the proposed placement of the recreational fields. I am concerned by the possible effects it will have on my neighborhood and on my property. I'm upset at the paradoxical position that I find myself and my fellow residents in with the current proposed plan for the east end of Rice Canyon. We find ourselves in a lose-lose situation. If we come up and object strenuously to recreational activities, we come out as being selfish, short sighted, anti-community. That's not our intention at all. If we remain silent we find ourselves forced to endure hardships and handicaps that did not exist when we bought our property. We were specifically told by the ADMA group and by the City of Chula Vista that was open space. Open space, to me in my simple mind, means open space, not soccer fields, baseball fields with lights. So, we recognize that the canyon will be developed and I think we're all realists about this. We also recognize that people will make financial gain on developing this canyon. We have a financial interest at stake also. We would like to make a gain on our property when we sell it; it's our residence, our home, but I think anybody in here think it would be nice to look forward to an increase in resale value. We are very seriously concerned about what's going to happen with baseball fields in our back yard. At Eucalyptus Ridge, where I live with my family, we are going to face some radical changes in our community. Among these are the expansion of East 'H' Street to six lanes, development of some major shopping center on our eastern boundary at East 'H' and Otay Lakes Road, the loss of the canyon on our western boundary due to the proposed El Rancho del Rey project, addition of more condominiums nearly on our property line, loss of our views of canyon space, addition of noise pollution, light pollution, trespassing and parking problems due to the proposed ball fields. Add to this list of problems, our old problems that we have right now. We have illegal parking by people going to special events at Southwestern; this problem is going to be compounded due to the fact that there will be no onstreet parking on East 'H' when it's converted to six lanes as we've been told. This causes safety problems and litter problems; people leave glass containers on the property, people are trespassing on private property, they block our fire lanes and they have caused some serious problems

Public Hearing on Draft EIR-87-1, Rancho del Rey SPA I,
by the City Planning Commission, August 12, 1987

Ken Baumgartner: My name's Ken Baumgatner, 2727 Hoover Avenue, National City, with McMillan Development Company, basically the proponents of this project. I have here tonight the authors of most of the technical documents that were available to the City, for their consultant to review, and would like to offer any of their assistance to answer questions on anything that might come up in the hearing tonight. That concludes my remarks.

Chairman Shipe: I'd like to ask a question. I imagine that's your exhibit on the wall.

Mr. Baumgartner: The middle exhibit is not; the other exhibits are.

Chairman Shipe: Whose is the middle exhibit, or why is that up there?

Mr. Baumgartner: I believe that's the staff's exhibit. It is not our exhibit.

Maria Tollefson: Maria Tollefson, 1439 Summit Drive, Chula Vista. I am here tonight as a member of the Board of Directors of the Eucalyptus Ridge Homeowners Association. Other members of our condominium complex will speak tonight, but I would like to officially present to this board a resolution that was passed last Monday night by our Board of Directors, and it reads:

"The Board of Directors of Eucalyptus Ridge Condomium Home Owners Association resolves to go on record objecting to the planned placement of any ball fields on the eastern most edge of Rice Canyon, bordering the Eucalyptus Ridge Condominium community. We feel that the addition of this proposed recreational facility will negatively impact the character and quality of our community and will pose unnecessary hardships on our property and residents.

"We further resolve that we understand that there is a critical need to provide public recreational facilities for the community. However, we feel that with the present proposed plan our existing community will be forced to bear an unreasonable impact."

And I think if you look at that middle diagram, the blue stripe is where we are located and just adjacent to it, you will see, in green, the proposed ball fields, which, I understand, are proposed to be lighted ball fields. Thank you.

Comm. Cannon: Are the lighted ball fields at the same elevation as your condominiums.

Ms. Tollefson: I understand they are going to be about 35 feet lower, which necessitates a great infilling of that Rice Canyon.

Comm. Carson: Mr. Chairman, my question was, I'd like for you to give me a definition of unnecessary hardships.

Ms. Tollefson: Unnecessary hardships, I know there are other people in our community complex who are going to define that better. Obviously, the lights, the noise level, they are not just going to be used for, I assume, baseball, but soccer and other things. Possibly, since I understand there is to be no barrier placed between our condominium complex and the ball field, traffic problems, people walking down to the ball fields. That's what we consider to be xome of them; also, if you look at that, we have designated some of the other impacted areas that are around us and we think with the addition of this it will just simply add to the impaction. As I said, other people are going to talk about the hardships.

Chrmn. Shipe: How many people reside in the condominiums?

Ms. Tollefson: We have 60 complex.

Chrmn. Shipe: Sixty, and how many units is that?

Ms. Tollefson: That's 60 units.

Chrmn. Shipe: Do you have any idea how many children reside in the condominiums.

Ms. Tollefson: How many children, total? If you're talking about children, I would say, well, my children who are 18, they are in high school, I would say the maximum are approximately 10 to 15, at the most, very few. It's, I would say, basically an adult community.

Comm. Tugenberg: I notice in the corner that you have proposed shopping center soon to be built. Do you have any additional information on that?

Ms. Tollefson: We understand from meeting with Corky McMillan that that is to be a Ralph's shopping center, that Ralph's have proposed to build on that site, and from we have received in the mail, I think it has been proposed by the land, I mean the parcel of land, we have received that in the mail. No one has told us it's going to be Ralph's.

Comm. Tugenberg: A question for Mr. Lettieri. Is that imminent?

Dir. of Plan. Krempl: Mr. Chairman, let me respond to that. That property has been zoned for shopping center purposes for some time and simply hasn't developed. There were a number of false starts. Staff has been working with a developer and an architect and they are in the process of going through the Design Review Committee in terms of a shopping center proposal.

allotment, and southern California grows and grows, and if other people do not sell us their water rights, we could have real difficulties. And the Otay M.W.D. is literally and figuratively at the very end of the pipeline.

Are you familiar with the behavior of lemmings?

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

July 28, 1987

Mr. Peter J. Watry, Jr.
81 Second Avenue
Chula Vista, CA 92010

Dear Mr. Watry:

Responding to your letter of July 17, I have enclosed a few publications that respond to your general area of inquiry. You also asked three specific questions that follow, in order:

1. Thus far, what proportion of their new allotment is Arizona taking?

The Central Arizona Project is currently moving about 30 percent of the amount of water it is capable of carrying. Arizona has an entitlement to a little over one million acre-feet of water a year. Metropolitan has requested, and been granted, the continued use of surplus Colorado River water and we hope these surpluses will continue for a few more years.

2. When do you estimate that Arizona will be taking their full allotment?

It is not likely that Arizona will be able to use its full allotment prior to 1990. At some point in the final decade of the 20th century, the Central Arizona Project will be running at full capacity. It is not likely that Arizona will be leaving water in the river after year 2000.

3. Where do we stand on Imperial Irrigation District negotiations?

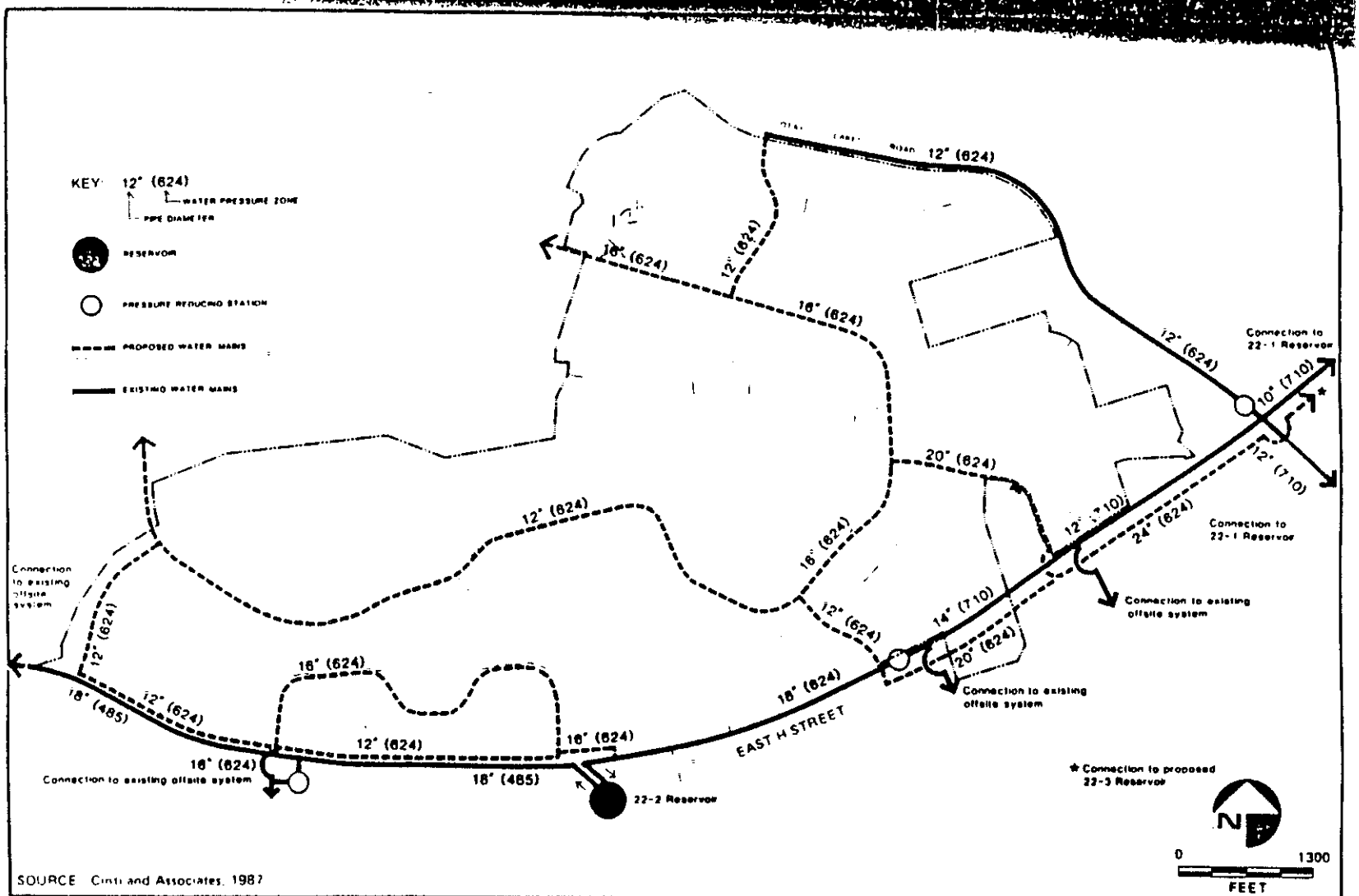
In your terms, I would state that reaching an agreement with IID is a probability. Negotiations have resumed, there is much common ground, and I think we will reach a mutually beneficial agreement.

Please feel free to contact me if you have any additional questions.

Sincerely,

Jay Malinowski
Assistant Director of
Public Affairs

JWM:rf



Proposed Water Plan

FIGURE 4-J-1

WESTEC Services, Inc.

Additionally, the Otay Water District Board of Directors has directed Staff to condition future water service commitments based upon the ability of the CWA to provide an adequate supply of water. Staff has also been directed to work with other governmental agencies to ascertain acceptable wording in the conditions of such commitments that will be acceptable to everyone concerned. This District will do all it can to provide a level of service that would not be detrimental to current or future customers. To accomplish this, we will appreciate your close coordination with Otay on current and future developments in Chula Vista.

(17)

Please call me if you have any questions.

Very truly yours,

Manuel Arroyo
District Planning Engineer

MA:cp

Attachment

cc: Anthony Lettieri, City of Chula Vista
Tom Garibay, City of Chula Vista
Ken Baumgartner, McMillin Development Co.
Chuck Rhodes, San Diego County Water Authority

(17)

As a result of an initial analysis regarding the ability of the water district to adequately serve the proposed project, the Central Area Water Master Plan for the Otay Water District was updated with the specific intention of evaluating potential impacts of providing water service to the Ranch del Rey SPA I project, as well as future phases of the El Rancho del Rey community. This update was referenced in the EIR and is included in the EIR Appendices.

OTAY WATER DISTRICT
... Dedicated to Community Service
10595 JAMACHA BOULEVARD SPRING VALLEY, CALIFORNIA 92078
TELEPHONE 462-2225 AREA CODE 619

November 14, 1986

RECEIVED
BY_____
NOV 17
PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

Mr. George Kremple
Director of Planning
City of Chula Vista Planning Dept.
276 Fourth Avenue
Chula Vista, CA 92010

Subject: Rancho Del Rey SPA I Plan
(W.O. No. 1729)

Dear Mr. Kremple:

In a meeting on November 12, 1986, regarding Rancho Del Rey SPA 1 Plan, we were asked to comment on this project and our ability to supply water. We reported that we had just completed a review of the master plan prepared by Montgomery Engineers in March of 1982. It was indicated that a final draft should be available within the next three weeks. Mr. Lettieri inquired if we had any comments regarding the preparation of the EIR. We indicated that we wanted to check the feasibility of including the construction of a long term storage reservoir for the service area in this EIR. This issue raised several questions and it was decided to meet immediately after the meeting to discuss it further. Mr. Ken Baumgarter, from McMillin Company, said that he believed the preparation of the EIR for SPA 1 should not include the construction of a long term reservoir because this was a regional problem and not necessarily a McMillin problem.

We have reviewed the matter further and concur with the comments offered by Mr. Baumgarter. However we do wish to advise that a 50 million gallon reservoir will be needed initially to provide an adequate water supply to the service area which will be bounded by I-805 to the West, the Otay River to the South, lower Otay Reservoir to the East, and the Bonita area to the North. Additional storage will be required as future development occurs.

(18)

(18) Comments noted. The applicant will contribute to the improvements necessary to adequately serve water to the proposed project to the satisfaction of the Otay Water District and the City of Chula Vista. Details regarding the applicant's contribution to the construction of necessary facilities are discussed in the revised Public Facilities Plan and Financing Analysis for the Rancho del Rey SPA I project.

We have concluded that a separate EIR should be prepared by the Otay Water District for the construction of the storage reservoirs needed.

Very truly yours,

Manuel Arroyo

Manuel Arroyo
District Planning Engineer

MA:cp

cc: Tony Lettieri, City of Chula Vista
Doug Reid, City of Chula Vista
Ken Baumgarter, McMillin Company

State of California — The Resources Agency

Memorandum

Date: JUL 10 1987

To:
1. Gordon F. Snow, Ph.D.
   Assistant Secretary for Resources
2. City of Chula Vista
   276 Fourth Avenue
   Chula Vista, CA 92010
   Attention: Douglas Reid

From: Department of Water Resources
Los Angeles, CA 90055

Subject: DEIR, for Rancho del Rey, SCH 87070102

Your subject document has been reviewed by our Department of Water Resources staff. Recommendations, as they relate to water conservation and flood damage prevention, are attached.

(19) After reviewing your report, we also would like to recommend that you further 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

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AUG 07 1987
STATE CLEARINGHOUSE

(19) Comments noted. The City will consider the recommendation for a comprehensive program for water reclamation and reuse and will decide whether such a program is warranted for the proposed development. Refer to the following discussion regarding water supply availability in the Otay Water District and southern California.

DEPARTMENT OF WATER RESOURCES 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."

- 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.

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.

RECEIVED

August , 1987

AUG 03 198?

PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

TO: Doug Reid, Environmental Review Coordinator
Planning Commission Members

FROM: Peter Watry
81 Second Avenue
Chula Vista, CA. 92010

SUBJECT: Water and the E.I.R. for El Rancho del Rey

Environmental Impact Reports dealing with individual projects seldom address the overall question of the availability of water so I am taking the occasion of the El Rancho del Rey E.I.R. to offer a broader view of the water problem. I am concentrating on the Otay M.W.D. because all of the future large projects in Chula Vista, including El Rancho del Rey, will be in its District -- plus the United Enterprises property plus Otay Mesa!

(20)

Otay Municipal Water District

It is easy to be concerned, if not pessimistic, about the Otay M.W.D. Otay M.W.D. is 100% dependent on imported aqueduct water and has very little storage capacity. Now normally the San Diego County Water Authority attempts to supply all the water that their member agencies request, and in the past there have been few instances when they could not. But if significant shortages should occur in the future then they might resort to the "preferential entitlements" that each member agency has. "Preferential entitlements" are based on the proportion of all payments by each agency to S.D.C.W.D. to meet capital costs, including the annexation fees, taxes and that portion of water purchases related to capital expenditures. They have not been used so far. But if "push comes to shove," Otay M.W.D. might be in trouble. Otay M.W.D. has always used more water than their "preferential entitlement" as the following figures for the last 10 years demonstrate:

(20)

The EIR discusses regional water availability on pages 4-146 and 4-147; in summary, the EIR states that the project will be served by the Otay Water District, a member agency of the San Diego County Water Authority (SDCWA), which receives water from the Colorado River and the State Water Project through a contract with the Metropolitan Water District (MWD) of southern California. As summarized in the EIR and detailed in the letter from Mr. Watry, the uncertainty of the subject water supply is related to changes in the use patterns of several agencies which have entitlements to this supply, including the State of Arizona, the SDCWA, the City of Los Angeles and the Otay Water District.

Planning Commissioner Cannon raised a question at the public hearing regarding the affect on water rates for customers in the Otay Water District which will result from changes in available supplies from the Colorado River. Planners at the Otay Water District, MWD, and SDCWA assume that changes in water supply which will occur within the next several years will require improvements and additions to existing infrastructure to ensure that a consistent, high quality source of water is available to their customers. These infrastructural changes will affect the cost of providing water and, therefore, will affect water rates over the next several years; however, the exact amount of increase in water rates which will be attributable to any particular change in the provision of water (e.g., the loss of a portion or all of the currently available Colorado River water) is the subject of extreme speculation and, therefore, is impossible to accurately predict.