

DRAFT EIR (Submitted NOV 24 1976)

PROPOSED FINAL EIR (Approved _____)

FINAL EIR (Certified Complete on _____)

Silverado-Modjeska Community Plan and Environmental Impact Report

SCREEN CHECK EIR
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community plan

A

TABLE OF CONTENTS

PART A - SILVERADO-MODJESKA COMMUNITY PLAN

1.000	<u>INTRODUCTION</u>
1.100	THE PLANNING AREA
1.200	PURPOSE OF THE COMMUNITY PLAN
1.300	PLANNING BACKGROUND
1.400	GENERAL AREA CHARACTERIZATION
1.500	CONSULTANT STUDIES
1.600	PUBLIC PARTICIPATION
1.700	PROBLEMS AND ISSUES
2.000	<u>SAFETY ELEMENT</u>
2.100	PURPOSE
2.200	FIRE HAZARD
2.300	FLOOD HAZARD
2.400	GEOLOGIC HAZARDS
3.000	<u>OPEN SPACE AND CONSERVATION ELEMENT</u>
3.100	PURPOSE
3.200	OPEN SPACE
3.300	VEGETATION AND WILDLIFE
3.400	ARCHAEOLOGY AND PALEONTOLOGY
3.500	WATER RESOURCES
3.600	LAND FORMS
3.700	SAND AND GRAVEL EXTRACTION

4.000 RECREATION ELEMENT

4.100 PURPOSE

4.200 REGIONAL PARKS

4.300 LOCAL PARKS

4.400 RIDING AND HIKING TRAILS

4.500 EQUESTRIAN CENTERS

4.600 TRAIL STOPS

4.700 BIKEWAYS

5.000 CIRCULATION ELEMENT

5.100 PURPOSE

5.200 ROAD CLASSIFICATIONS

5.300 STANDARDS OF STREET DESIGN

6.000 SCENIC HIGHWAY ELEMENT

6.100 PURPOSE

6.200 VISUAL ANALYSIS

6.300 SCENIC CORRIDOR

6.400 ROADWAY DESIGN

7.000 LAND USE AND COMMUNITY DESIGN ELEMENT

7.100 PURPOSE

7.200 THE LAND USE CONCEPT

7.300 LAND USE CATEGORIES

7.400 COMMUNITY LAND USE PLAN

7.500 RESERVE AREA STATUS

8.000 HOUSING ELEMENT

8.100 PURPOSE

8.200 GROWTH TRENDS

8.300 CURRENT HOUSING STOCK

8.400 HOUSING CONSUMPTION

8.500 SPECIAL NEEDS

9.000 SUMMARY OF RECOMMENDATIONS

LIST OF MAPS

- 1.1 Location
- 1.2 Land Ownership
- 1.3 Existing Land Use Element
- 1.4 Slope

- 3.1 Vegetation and Wildlife
- 3.2 Landforms
- 3.3 Sand and Gravel Extraction

- 4.1 Regional Park Sites
- 4.2 Trail Network

- 5.1 Circulation

- 6.1 Concept A - Santiago Canyon Scenic Highway
- 6.2 Concept B - Santiago Canyon Scenic Highway
- 6.3 Scenic Highway Corridor

- 7.1 Canyon Areas
- 7.2 Special Opportunity Areas
- 7.3 Community Plan Land Use Map

- 8.1 Existing Population

- 9.1 Community Plan Summary

LIST OF TABLES

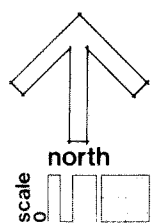
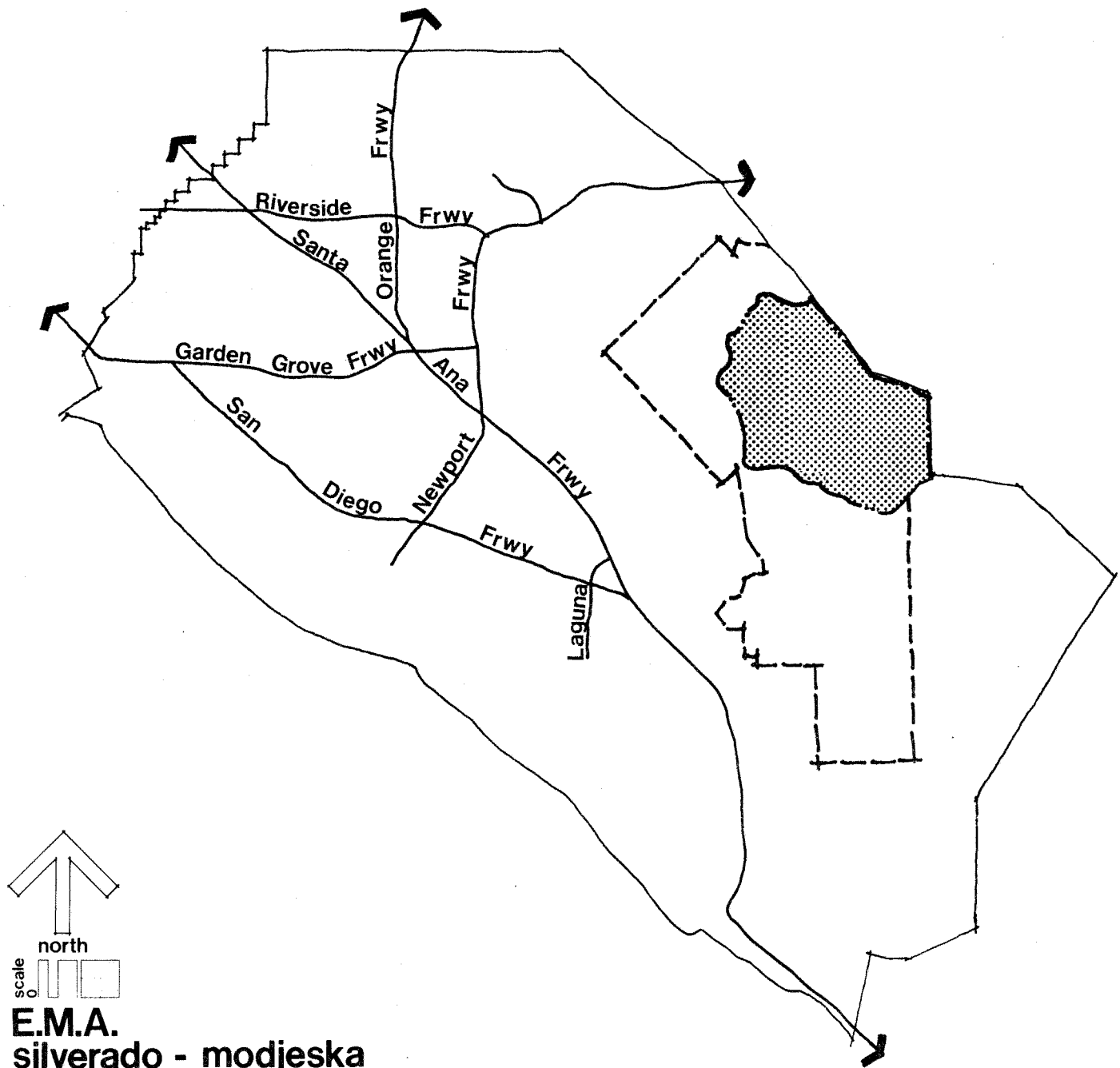
- 4.1 Designated Trails
- 7.1 Land Use Categories
- 7.2 Existing Lots Under Four Acres in Silverado and Modjeska Canyons
- 8.1 New Housing Units
- 8.2 Percentage Distribution of Home Sales
- 8.3 Percentage Change in Median Home Prices

LIST OF FIGURES

- 1.1 Cross Section of Study Area
- 2.1 Examples of Residential Development in Silverado Canyon
- 7.1 Grading Guidelines for Rural Residential Areas (10-40 acres)

introduction

1



E.M.A.
silverado - modjeska
community plan

location map

-  **silverado - modjeska**
-  **foothill corridor**

map
no.

1.1

1.000 INTRODUCTION

1.100 THE PLANNING AREA

The study area for the Silverado-Modjeska Community Plan is composed of approximately 50 square miles on the eastern boundary of Orange County (Map 1.1) and contains a population of 1400. Access is limited to that provided by Santiago Canyon Road in the extreme southwest section of the study area.

Most of the study area is in the Cleveland National Forest (85 percent); however only 60 percent of that land is actually owned by the Federal government due to the sale of some parcels during the early part of this century (Map 1.2). The provision of public services such as drainage, fire protection, circulation, liquid and solid waste disposal, have important area-wide and regional significance, but this Community Plan is primarily directed at private lands within the study area.

1.200 PURPOSE OF THE COMMUNITY PLAN

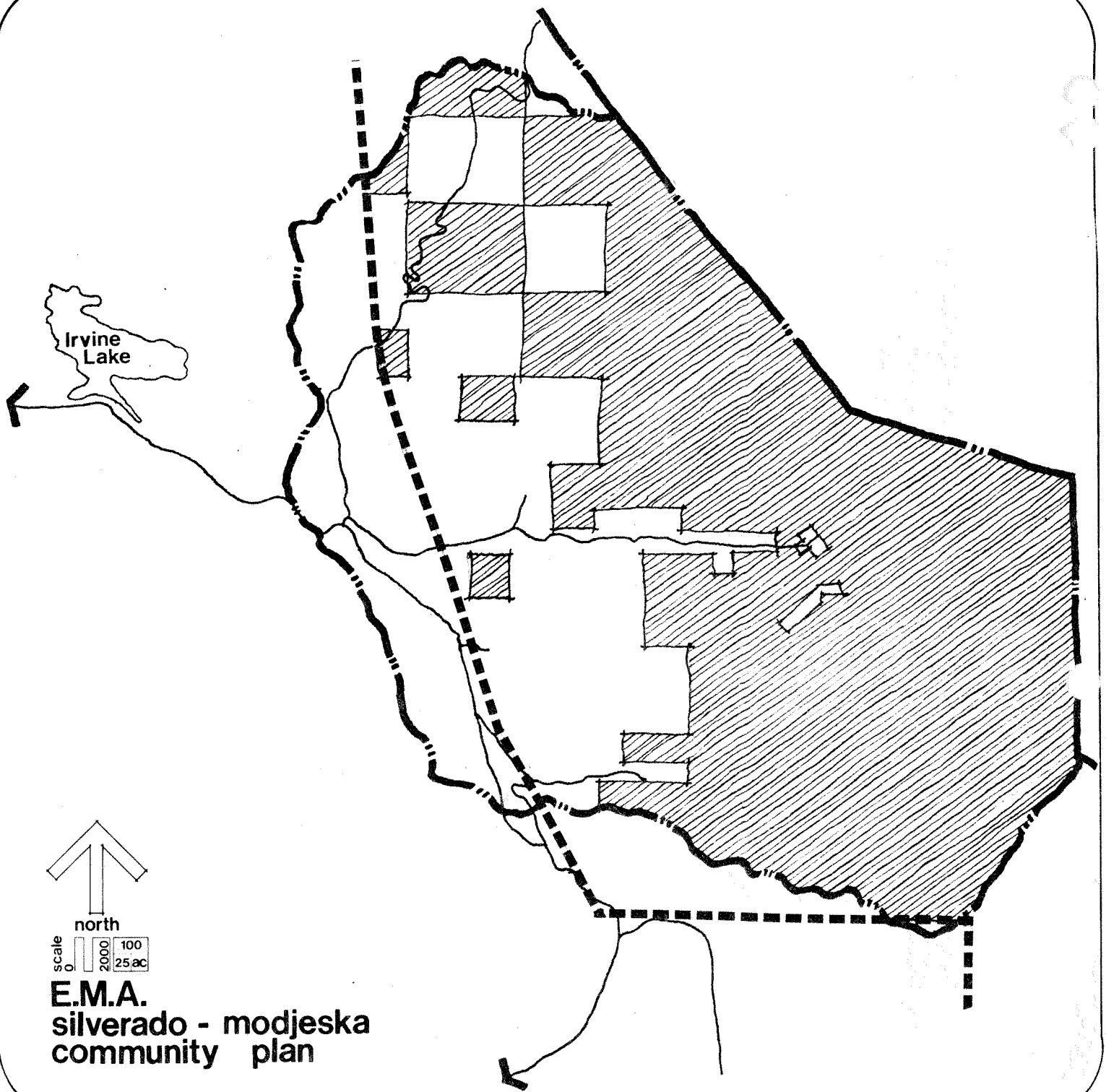
This Community Plan is considered a refinement of the Orange County General Plan and the Foothill Corridor Policy Plan. The principles and policies in the General Plan and Foothill Corridor Policy Plan which are applicable to the Silverado-Modjeska area are general guides for future development. This Community Plan attempts to apply these principles and policies to a particular area.

This Community Plan is not a final site plan, but rather a compendium of problems and issues, implementation recommendations, and development guidelines organized in the context of the following State-mandated plan elements: Safety, Open Space and Conservation, Recreation, Circulation, Scenic Highway, Land Use and Community Design, and Housing. In addition to this document, a Community Plan Land Use Map (1000 scale) has been prepared to illustrate certain recommendations in detail.



For the purpose of this Plan the recommendations made within the various elements will be of the following two types:

Implementation Recommendations:

These are action oriented recommendations directing that a specific course of action be taken by the County in implementing the General Plan, Foothill Corridor Policy Plan and this Community Plan.



land ownership

-  federal land
-  cleveland national forest boundary

map
no.

1.2

Recommended Development Guidelines:

These are recommended standards or principles by which future judgements are to be made in interpreting the policy intent of the General Plan, the Foothill Corridor Policy Plan and this Community Plan with respect to subsequent and more specific development projects in the study area.

1.300 PLANNING BACKGROUND

1.310 Orange County General Plan*

The entire study area is presently designated a "Reserve Area" by the Land Use Element of the General Plan, and no urban land uses have been adopted within the area (Map 1.3). The "Reserve Area" designates land where residential, commercial or industrial land uses are not yet ready for implementation or where such land uses have not been adopted. Within this "Reserve Area" both public and private planning is encouraged, but actual development (particularly large scale development) is not encouraged.*

Removal of land from Reserve Status and/or the designation of any type of urban land uses must be accomplished by an amendment to the General Plan. In addition to other General Plan policies, approval of a request to remove land from reserve area status is based upon the degree to which all of the following criteria are satisfied:

1. Adequate public services, facilities and utility capacities exist or have been planned and budgeted to adequate capacity and will be available at the time of development.
2. Existing or planned and budgeted traffic and/or transit facilities will permit access to employment and activity centers without exceeding local or regional transportation facility capabilities.
3. Implementation of land uses will give consideration to broadening housing opportunities for low and moderate income families.
4. Residential and employment centers will be brought closer together to minimize vehicular miles travelled.
5. A minimum of natural hazards exist or can be mitigated to the County's satisfaction.

6. Natural resources are either insignificant or can be preserved to the County's satisfaction.
7. Applicable air and water quality standards for respective air basins and watersheds can be met.
8. Regional impact of proposed land uses have been evaluated by the County and required amendments to all applicable General Plan elements have been identified.
9. Urban land uses have been adopted within the reserve area.

1.320 Foothill Corridor Policy Plan

During 1974, concerned landowners, citizen groups and individuals, formed an "ad hoc" committee in search of useful information and processes which would evaluate whether and what land uses were appropriate for the Foothill Corridor Area (Map 1.1). The "ad hoc" committee secured the services of a private consulting firm to prepare the Foothill Corridor Policy Plan.

The Foothill Corridor Policy Plan has established the following overall goals which apply to the Silverado-Modjeska area:

1. Provide for a rural environment and lifestyle.
2. Maintain the natural scenic beauty of the area.
3. Insure that any development is responsive to and compatible with the natural features and socio-economic aspects of the area.
4. Provide for regional and local recreational uses compatible with the existing residential environment.
5. Insure a positive economic environment.
6. Promote the awareness of area residents, landowners and governmental agencies to the activities and programs that are conducive to maintaining and promoting the rural characteristics of the area.

In addition to goals, policies and objectives, the Policy Plan contains an implementation section which calls for the development of "community plans", whereby each identified community "can plan and develop its individual identity", yet utilize the Policy Plan as a guideline for planning, thus preserving the goals for the

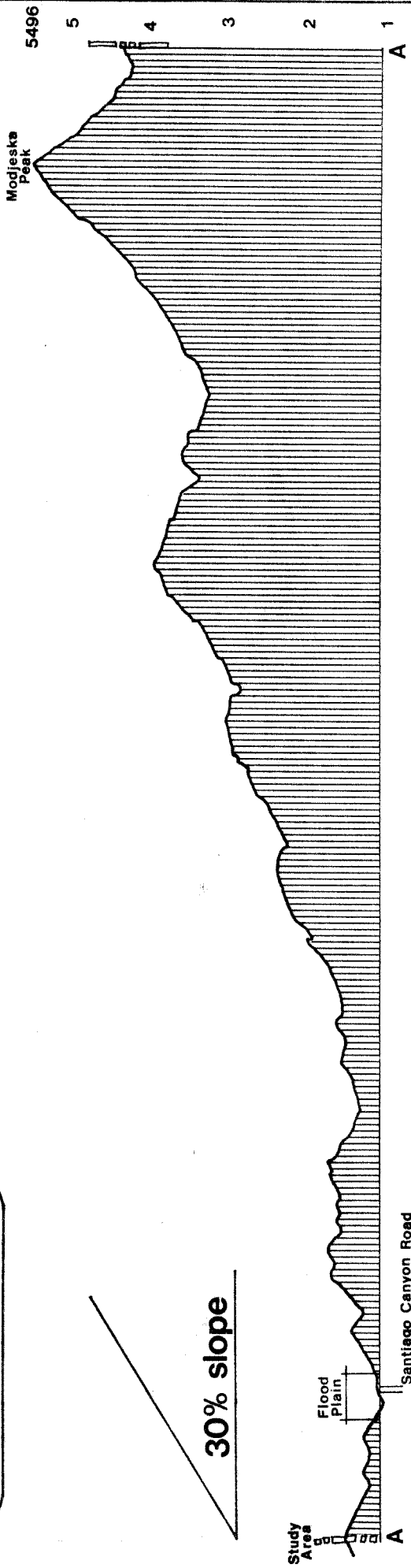
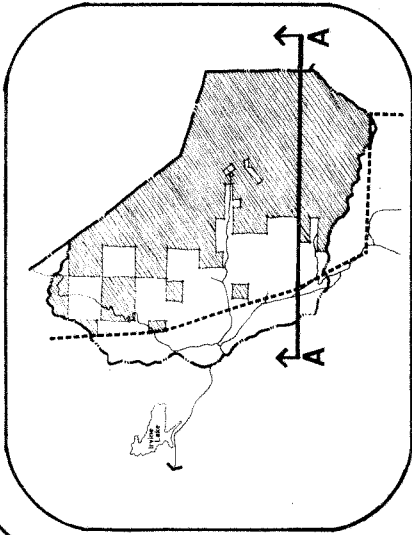


figure no.

11

Cross section of study area
(2 to 1 vertical exaggeration)

entire Foothill Area. Specific land use and density allocations are left to the Community Plans. The Silverado-Modjeska Community Plan is composed of three of the eleven "Community Planning Areas" identified in the Foothill Corridor Policy Plan. (See Map 7.1).

In January, 1974, the Policy Plan was accepted by the Board of Supervisors, and since that time it has been utilized as interim guidance for the area; it has also been used as the basic guidance for preparation of this Community Plan.

Specific "objectives and policies" outlined by the Policy Plan are referred to in the various elements of this Community Plan when applicable.

1.400 GENERAL AREA CHARACTERIZATION

More specific information concerning existing environmental conditions in the study area than that discussed in this section is included in appropriate elements and EIR later in this plan. For the reader's general introductory information the following is provided:

1.420 Landform

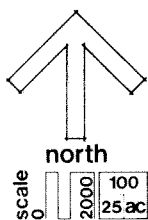
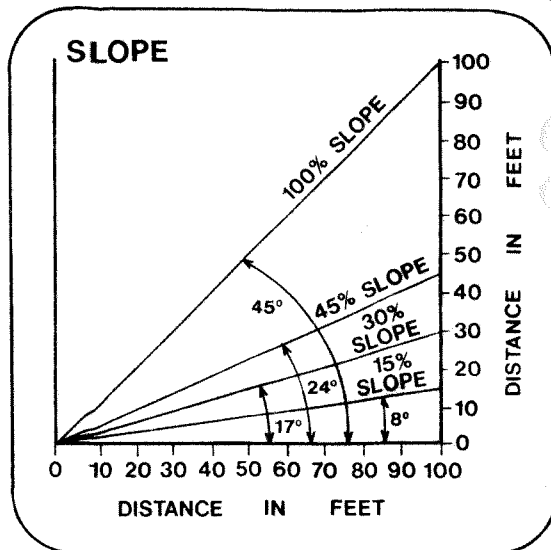
Landform characteristics are the primary feature with which the Silverado-Modjeska area is identified, composed of the most rugged terrain and highest elevations in Orange County.

The study area consists of a series of canyons rising from Santiago Creek to the Santa Ana Mountain Range. Elevations range from 400 feet to 5,687 feet in a horizontal distance of less than 5 miles (Figure 1.1 and in Map 3.2). It is readily apparent that access to meet the needs and safety requirements of any development is extremely limited.

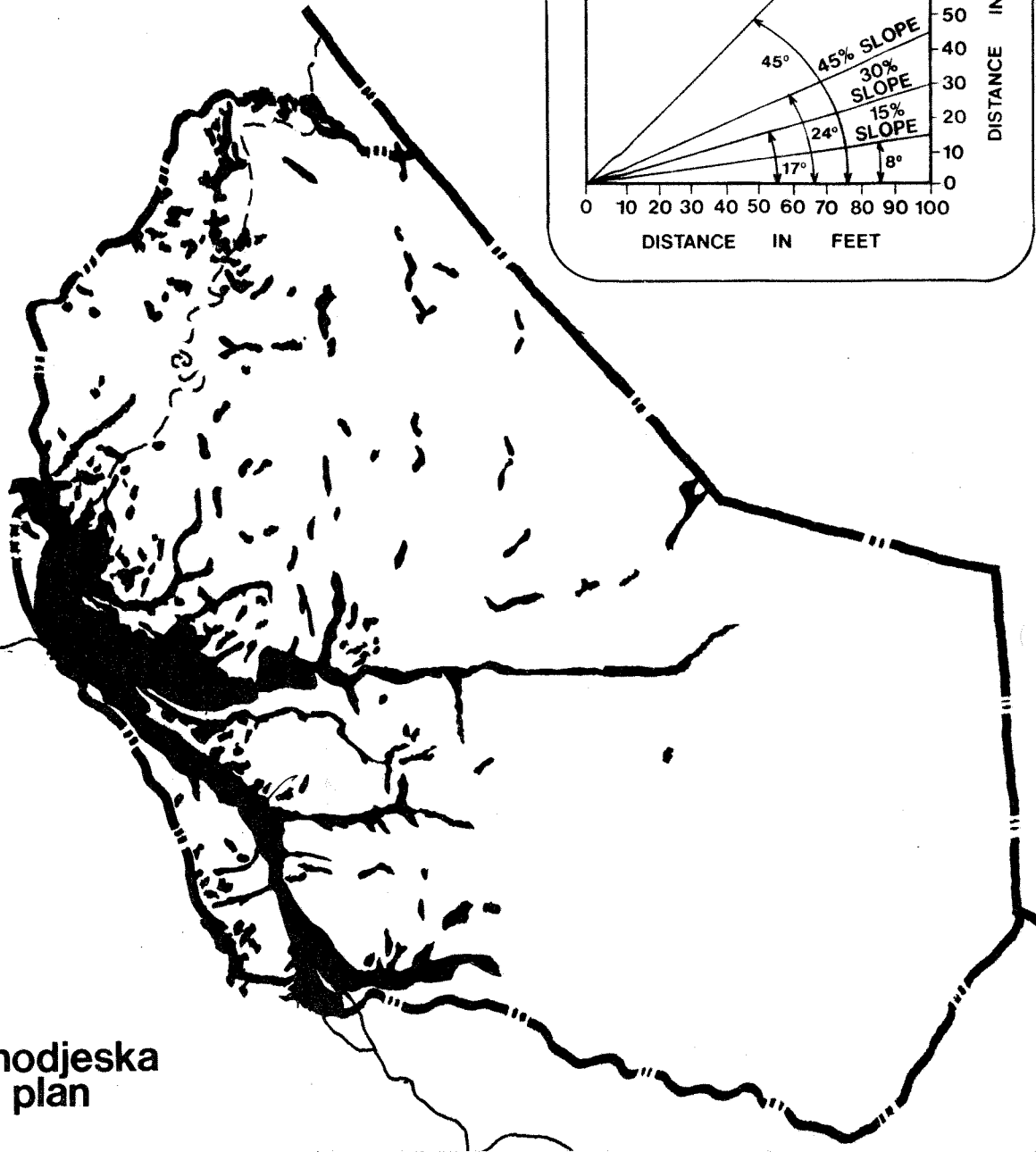
1.410 Slope

The study area is characterized by excessive slope conditions. The percentage of slope generally increases with elevation easterly toward the main divide ridge of the Santa Ana Mountains. Over 85 percent of the land is in slopes in excess of 30 percent (Map 1.4). Directly associated with the steep topography are other constraints concerning structural stability, high erosion, limited access and extreme fire hazard.

The physical conditions suggest a basic development pattern for the study area which conforms to the massive and dominant



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 silverado - modjeska
 community plan



slope

- 0 - 30%
- 30% +

SLOPE IS THE VERTICAL RISE OR FALL OVER A GIVEN DISTANCE EXPRESSED AS A PERCENTAGE. USUALLY IT IS STATED IN RELATION TO 100' HORIZONTAL DISTANCE.

map
no.

1.4

character of the natural landscape and which is limited by the cost of providing access and mitigating hazards.

1.500 CONSULTANT STUDIES

Special studies in Archaeology, Paleontology, Mineral Resources, Biological Resources, Marketing, Development Guidelines and Cost-Revenue were conducted by private consultants and form technical supplements to the Community Plan.

1.600 PUBLIC PARTICIPATION

The Silverado-Modjeska Community Plan is based upon a considerable amount of citizen participation throughout the planning process. This involvement is being achieved through a citizen committee, (which has met over 50 times with the County and/or its consultants), questionnaire surveys and open public forums (five of which were held prior to completion of the draft plan). Additional citizen committee meetings and open public forums are to continue during the remainder of the planning effort. Comments received in response to this plan and corresponding Environmental Impact Report will also be considered during finalization of the plan.

1.700 PROBLEMS AND ISSUES

In order to clarify the major problems and issues in the study area, the following summary of basic concerns of local government, citizens, property owners and others have been compiled.

1.710 Short-Range Issues

1. Delineation of areas which could be removed from "Reserve Area" status at this time.
2. Development control of existing residential areas.
3. Poor grading practices by individual owner-builders.
4. Preservation of the natural environment and rural character of the area.
5. Preservation of historic sites.
6. Liquid waste disposal.

1.720 Long-Range Issues

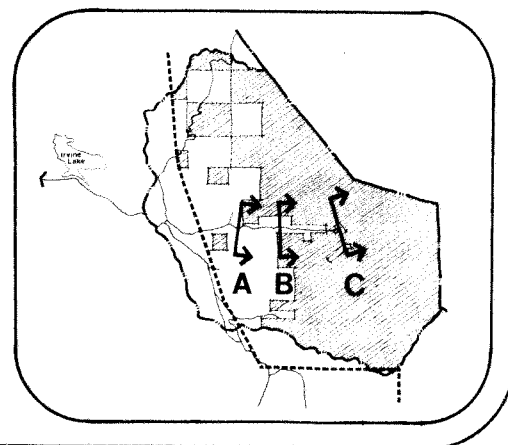
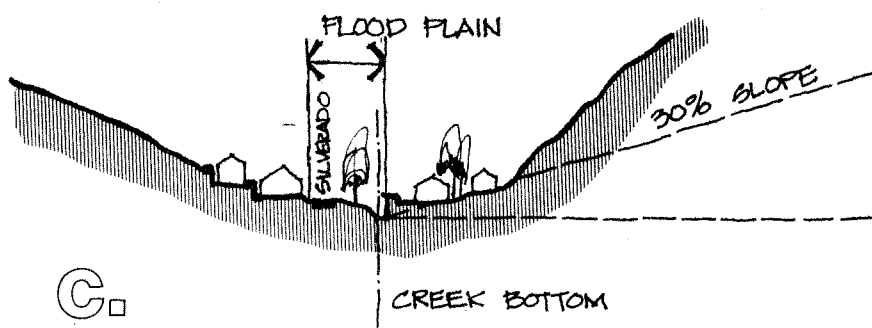
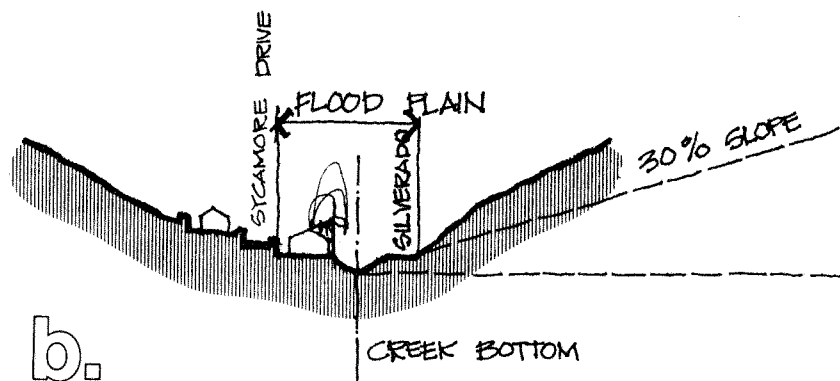
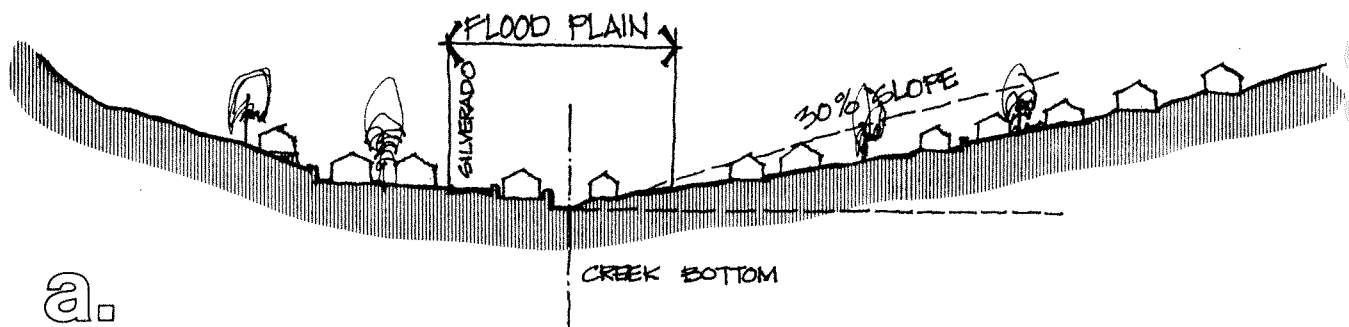
1. Location and development intensity of regional parks.

2. Access to the Cleveland National Forest.
3. Rehabilitation and ultimate use of sand and gravel extraction sites.
4. Preservation of scenic highway corridor.
5. Development of all regional recreation opportunities.
6. Water contamination due to septic tanks.

These and other issues will be discussed in the context of Community Plan Elements. Within each element specific recommendations and guidelines are developed which (if adopted) are designed to provide direction to the County's regulation of activities in the planning area. All recommendations and guidelines are repeated in the final section of the Community Plan (9.000 Summary of Recommendations).

safety element

2



**Examples of Residential Development
in Silverado Canyon**

figure no.

2.1

2.000 SAFETY ELEMENT

2.100 PURPOSE

The Silverado-Modjeska Safety Element generally identifies fire, flood, geologic and noise hazards in the study area and makes recommendations to ensure adequate mitigation measures. In hazard evaluations, the following policies of the Foothill Corridor Policy Plan have provided guidance in the preparation of this plan:

1. Restrict and control development in areas subject to consistently high noise levels and work to restrict noise levels.
2. Restrict development in designated floodplains and geologically unsafe areas.
3. Insure that any new development provides access and water for fire protection.

The Silverado-Modjeska planning area is of particular concern with regard to public safety. A combination of physiographic features, the rapid change in elevation across the planning area, the steep walled canyons, concentration of drainage courses, lack of access, dry climate, type and density of natural vegetation, and proximity to regional fault systems, are all conditions which contribute to high levels of risk for the area. Analysis of existing conditions indicate a high propensity for such hazards as landslides, mud-debris flows, fire and flooding over the planning area. These natural hazards join to create an environment in which the concern for safety becomes critical. These conditions are particularly evident in both Silverado and Modjeska Canyons where the majority of existing development is nestled on canyon floors below steep canyon walls of questionable stability or in the path of potential flooding (Figure 2.1). Therefore, the Silverado-Modjeska area is considered as one of high risk potential in which severe hazards or combinations of hazards may exist. Each type of hazard is addressed separately in this element.

2.200 FIRE HAZARD

The entire study area is classified as an extreme fire hazard area by federal, state and local authorities. This is due to the inter-related factors of dense and flammable vegetation, steep terrain, dry and windy climate, severe inaccessibility and lack of extensive water service. As the Silverado-Modjeska area is opened up to more uses, the incidence of fire is expected to increase, although the extent of such fires is expected to be more control-

lable. Regardless of the manner in which private lands are developed, the large open space lands of the National Forest can be expected to pose a significant fire threat.

A major existing development problem in the subject area is subdivision by the Tentative Parcel Map (TPM) process. It has become extremely difficult to properly condition T.P.M.'s in order to achieve an acceptable level of risk and on several occasions the finding that the "site is not physically suitable for the type of development" had to be made, thus requiring disapproval by the county of the project in question.

There appears to be a real and important conflict with the desire to maintain natural open space and at the same time minimize the fire hazard by fuel modification.

Development of canyon bottoms rather than a ridgeline is more defensible for fire protection, but scattered housing in the canyon bottoms will require a fire engine at every structure during wildland fires. Clustering of structures surrounded by greenbelts is a preferred method of development that will enable more effective utilization of emergency equipment.

2.300 FLOOD HAZARD

The major stream course through the planning area is Santiago Creek which is the largest tributary of the Santa Ana River in Orange County, cutting a course 28 miles long from its headwaters near mile-high Santiago Peak to its mouth in the City of Santa Ana. Its watershed of 100 square miles is the third largest outside the Santa Ana River floodplain in the County. Thus, Santiago Creek ranks as a major floodplain for containment and discharge of storm water in this region.

Stream flow through the planning area is seasonally intermittent with peak flow during the winter months of highest precipitation. When Santiago Creek is not in use by nature as a flow-way for storm water, it is a dry, sandy-rocky creek bed. Periodic flows pose particular danger to existing residential development on the narrow canyon floors of Silverado and Modjeska Canyons where only minimal flood protection is provided. An FP-2 overlay zone is in the process of being applied to the Santiago Creek floodplain. Although a step in the right direction, the implementation of this overlay zone will not necessarily prohibit development that will obstruct the natural flow of flood waters. Safety, aesthetics, cost of public services and congestion call for a complete ban on future development in these floodplain areas.

Recommended Development Guidelines

1. Future channelization of Silverado and Santiago floodplains and development which would necessitate such channelization should be discouraged.
2. Flood control devices and facilities where absolutely required, should be designed to blend with the natural character of the creek.

2.400 GEOLOGIC HAZARDS

The geology of the study area is composed of volcanic bedrock which is exposed in the higher peaks overlain with sedimentary deposits of marine and terrestrial origins at the lower elevations. The varying characteristics of these different formations, together with the steep slopes of the area strongly influence the slope stability of the planning area. There are numerous existing and potential slide sites in the planning area, as well as mud-debris flow and rockfall areas. These constitute a serious natural hazard and will require special investigation and mitigating measures for any site development.

Faulting over the planning area is structurally local in nature with no evidence of recent seismic activity. Fault features are evident where lithologic units are offset and represent historical structural changes in the mountain building process of the Santa Ana Range. This type of local structural faulting is characteristic of any mountainous area. The planning area is in local proximity to regionally active fault systems such as the Christianitos, Whittier-Elsinor, and Newport-Inglewood Faults. These regional fault systems require consideration within the planning area, but the planning area in this respect is not significantly different from the areas in Southern California.

Recommended Development Guidelines

1. No development should be allowed on land in excess of 45% slope.
2. Hillsides should be protected against the loss of soil retaining vegetation.
3. Any public or private development proposal made within the planning area should be accompanied with sufficient information which can identify existing hazards, including faults, landslides and fire.

- a. The information should be presented in detail adequate to enable the reviewing agency to make determination of the level of risk for the type of development proposed.
 - b. The information should encompass the geographic area of the proposal and, if necessary, the surrounding area if such area has relative impact with regards to hazards.
 - c. The information should include a map(s) showing precise location of all hazards with regard to the proposal.
 - d. The information should contain a description of the methods used in preparation of the map data.
 - e. The information should contain the methodology and all evidence for any conclusions presented.
4. For areas which have been identified as having hazard potential in Guideline No. 3, the developer/subdivider should demonstrate the feasibility of mitigation measures to the satisfaction of County agencies.
 5. The foregoing guidelines should become operable under any one of the following conditions:
 - a. Any application to the County for a change in zoning.
 - b. Any application to the County for a tentative parcel map or subdivision.
 - c. Any application for construction under existing or proposed zoning on undeveloped land.
 - d. Any proposal to construct a public works project.

open space and
conservation element

3

3.000 OPEN SPACE AND CONSERVATION ELEMENT

3.100 PURPOSE

The purpose of this element is to provide guidelines for the identification, evaluation and management of the study area's natural resources. The Silverado-Modjeska area possesses an unusual abundance of valuable resources. This makes it a significant locality in Orange County where the regard for conservation becomes a major concern. Urban development which often destroys or seriously depletes natural resources has not yet dramatically encroached upon the area. Opportunity to conserve and effectively manage these resources still exists. Particular attention during preparation of this plan was placed on the following policies which were identified in the Foothill Corridor Policy Plan:

1. Provide for grading criteria sensitive to the different land characteristics of the area.
2. Provide for the treatment of "critical" areas of topography in the study area, such as streambeds, ridgelines and hill-sides, which are important in the preservation and maintenance of the natural character and rural feeling of the area.
3. Identify archaeological, paleontological and historical sites for possible conservation.
4. Provide for the preservation of significant vegetation and wildlife areas.
5. Provide criteria for sand and gravel operations which will insure their compatibility with the scenic and rural environment of the surrounding area.
6. Promote the Santiago Creek Greenbelt concept outlined in the General Plan.
7. Establish priority areas for the retention of natural open space.

3.200 OPEN SPACE

Open space is a primary factor contributing to the study area's rural character. Canyon residential areas are well defined by topography and large expanses of undeveloped lands.

Most of the area is in public ownership as part of the Cleveland National Forest and can be expected to remain as permanent open space. However, this does not preclude the necessity of conserving open space within the private lands adjacent to the National Forest (Map 1.2). In other words, it cannot be assumed that federal lands will provide the only significant open space in the study area. The development of individual parcels will be expected to include open space conservation in accordance with the natural environmental conditions of the area. The following categories of open space provide a basic framework by which open space conservation may be accomplished.

Managed Open Space

The following areas are considered significant enough to warrant public management as open space areas.

1. Cleveland National Forest
2. Regional Parks
3. Floodplains
4. Significant archaeological, paleontological and historical sites.

Functional Open Space

Natural constraint areas and natural environmental resource areas which can be integrated into private development are included in the functional open space category.

1. Areas with slopes greater than 45 percent.
2. Canyon riparian areas.
3. Scenic highway corridors.
4. Major ridgelines.
5. Fuel breaks

The Land Use Element of the Silverado-Modjeska Community Plan utilizes this open space framework by encouraging a rural development which concentrates dwelling units in canyon bottoms in order to retain the hills as natural open space and by designating specific areas for public acquisition, and by encouraging multiple use fuel breaks. Other elements attempt to achieve functional open

space within specific development guidelines.

3.300 VEGETATION AND WILDLIFE

The Silverado-Modjeska area supports several rich and diverse plant and animal biotic communities. The natural plant communities are in excellent condition, and show a high species diversity. This in turn supports a rich and diverse fauna.

The most valuable biotic asset in the Silverado-Modjeska area is the large area (primarily public lands) of undisturbed floral and fauna habitat. With the exception of pine and spruce woodland, no exceptionally unusual plant or animal species are known to occur in the area.

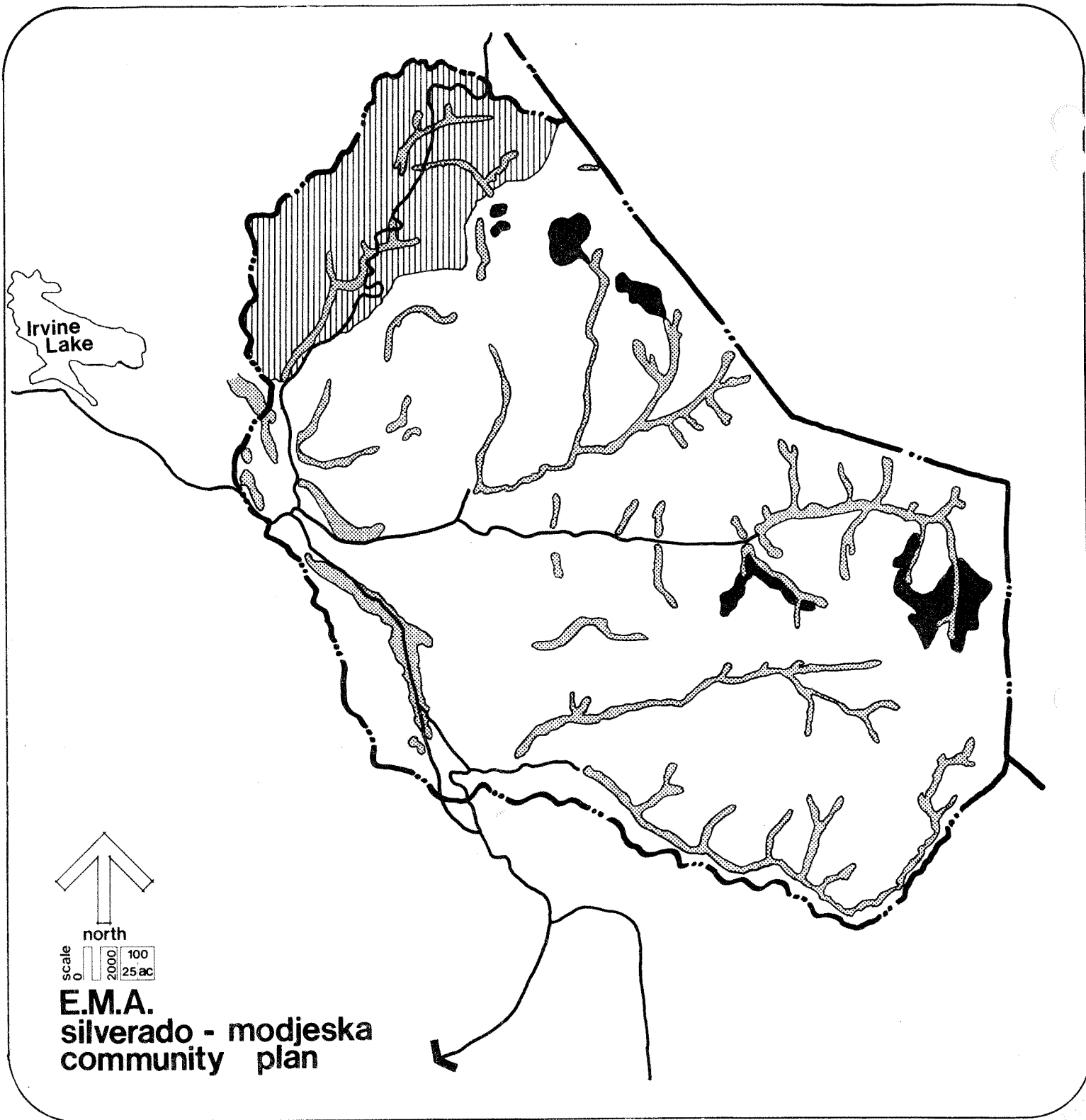
The location of various vegetation communities are depicted in Map 3.1. These communities generally consist of coastal sage scrub at low elevations, grading into dense chamise and broadleaf chaparral at higher elevations. Riparian woodlands are present in some of the drainage areas. At the lower elevations, there are broad washes bordered by oak woodland and grass lands.

Each of these plant communities supports a full complement of wildlife species, and provides foraging grounds for birds and other animal habitats.

The entire length of Santiago Canyon serves as an important wildlife migration corridor connecting the Santa Ana Mountains to Irvine Lake and the Santa Ana River/Santiago Creek Greenbelt to the north, and the Aliso Creek Greenbelt to the south. As urban expansion continues in Orange County, these corridors will eventually become extremely important to the movement of wildlife between the Santa Ana Mountains and the sea through the Aliso Creek corridor, and to habitats further inland through the Santa Ana River Corridor. The lower Santiago Canyon area below Irvine Lake and the upper Santiago Canyon in the Silverado-Modjeska area will also be an important link in this system.

Recommended Development Guidelines

1. The isolated stands of knobcone pine, bigcone spruce and coulter pine should remain in a natural state and setting and be preserved as a scientific, educational and aesthetic resource.
2. The cliffs and rock outcroppings located in Harding, Upper Santiago and Baker Canyons should remain in a natural state and be preserved for use only as habitats for birds of prey.



vegetation and wildlife

-  **Black Star Canyon Vegetation & Wildlife Area**
-  **Natural Riparian Vegetation**
-  **Pine & Spruce Woodland Area**

map
no.

3.1

3. The riparian vegetation contained in Black Star, Baker, Hall, Upper Ladd to include east and west forks, Upper Silverado, Williams, Upper Modjeska, Harding and all of Santiago Canyon should be preserved for its function as a natural habitat and migratory route for wildlife.
4. The riparian vegetation of Santiago Canyon should be preserved for its function as a wildlife migration route between the Santa Ana Mountains and the Lomas De Santiago Hills and for its function as a wildlife migration corridor linking the Santa Ana Mountains and Lower Santiago Creek and Aliso Creek areas.
5. Access to existing riparian vegetation on public lands should be via designated hiking trails only.
6. The abundant and diverse plant and animal communities contained in Black Star Canyon should be preserved as a wildlife habitat and nature study area by the acquisition of the proposed regional park.
7. Naturally occurring springs, water courses and other permanent water sources, should have restricted human access and be preserved to function as water sources for plants and wildlife.
8. Channelization or alteration of Silverado and Santiago Creeks should be discouraged to preserve natural ponding in the creeks to function as a water source for wildlife.

3.400 ARCHAEOLOGY AND PALEONTOLOGY

The Silverado-Modjeska area is located at the apex of a tri-cultural boundary point between different groups which once existed in Southern California. Santiago Peak is considered to be one of the focal points of American Indians who occupied this area at the time of the first Spanish contact.

The planning area possesses a unique display of paleontologically significant fossils and fossil bearing material. An unusual sedimentary strata (geologic rock unit) is well exposed in locations along the southwest flank of the Santa Ana Mountains in the western portion of the Silverado-Modjeska area. The fossil bearing strata has been the subject of interest and study for nearly 100 years and has received attention from state, national and international scientific organizations.

The Silverado Canyon paleontological sites and the Black Star Canyon Indian Village archaeological site are particularly significant and should be preserved as scientific and educational resources. These sites have been designated as Conservation areas on the Community Plan Land Use Map.

Implementation Recommendations

1. Direct the GSA to initiate an acquisition feasibility study for the Silverado Canyon paleontological sites. Such acquisition, if feasible should be accomplished either before or as part of any development proposal, application for construction or division of land concerning the property.
2. Direct the GSA to initiate an acquisition feasibility study for the Black Star Canyon Indian Village archaeological site. Such acquisition, if feasible should be accomplished either as part of the proposed Black Star Canyon Regional Park or as a part of any development proposal, application for construction or division of land on the property.

Recommended Development Guidelines

1. As either public or private land, the following guidelines should be applied to the Silverado Canyon Paleontological sites:
 - a. The sites should be considered for public acquisition either before or as a part of any development proposal, application for construction or division of land on the property,
 - b. No grading or other development excavation should be made on the sites,
 - c. Pedestrian access along and through the Silverado Creek streambed and from the narrows northward to the southern Silverado site should not be restricted,
 - d. Future measures taken to preserve the sites should also provide the means for supervised and controlled examination and collection to avoid indiscriminate and wasteful use of the resource,
 - e. The sites should be protected and retained in a natural state or stabilized in their present state until such time as more specific recommendations as to their management and deposition can be made.

2. As either public or private land, the following guidelines should be applied to the Black Star Canyon archaeological site:
 - a. No grading or other development excavation should be made on the site.
 - b. The ultimate use of the site should be for an educational interpretive center which will permit the retention of the site in as natural a setting as possible to represent prehistoric living conditions.
 - c. The site should be open to the interested public wishing to visit and experience this landmark site.
 - d. Prior to any proposed use of the site, a thorough scientific investigation should be made to identify all outstanding features and make recommendations as to the most appropriate design and management of an interpretive center facility.
 - e. The site should be protected and retained in a natural state or stabilized in its present state until such time as more specific recommendations as to its management and final disposition can be made.
3. For all development projects in the Silverado-Modjeska area, the the following guidelines for archaeological and paleontological sites should be observed.
 - a. With each project or initial study a literature search for valid archaeological and paleontological surveys will be conducted by qualified persons. If such a search determines that no valid survey has been performed, such a survey will be performed as a part of the initial study.
 - b. If archaeological or paleontological resources are discovered during grading, further grading of the resource area should be deferred temporarily to permit an archaeologist or paleontologist to examine the site and to determine the extent and relative scientific value of the site. Prior to resumption of grading, a determination is to be made whether to preserve, salvage or destroy the site.

- c. If evidence is found that an archaeological or paleontological resource is being or will be impacted by a public or private project, a test and report of the impacted area, the affected resources, and the impacts of the project on the resource should be made. The study should be made by a qualified archaeologist or paleontologist after which a report should be submitted to the approving agency for the project defining the scientific importance of the find and a recommendation as to its preservation or disposition.
- d. Prior to approving the project, the approving agency should make a determination based on the above report as to the ultimate disposition of the site.
- e. When the determination is made that a site is to be preserved for later study, it should be retained in a natural state or converted to a park site, permanent open space or other use which will assure the preservation and availability of the site for later study. A determination should be made that the site will be purchased by the County or other public agency, or that appropriate incentives or tradeoffs will be provided to the owner in return for the loss of any development rights on the site.
- f. When the determination is made that a site is to be salvaged, the project developer and the paleontologist shall coordinate their activities so as to adequately salvage the site.
- g. When a survey study, EIR or other information presented to the approving agency indicates the probable presence of archaeological or paleontological resources, an archaeologist or paleontologist should be retained to observe those grading activities deemed appropriate by the qualified specialist.
- h. Resources recovered are the property of the land owner who shall be encouraged to donate them to a museum or educational institution after study and evaluation.

3.500 WATER RESOURCES

3.510 SEWAGE DISPOSAL

There are no sewer facilities for the Silverado-Modjeska Planning Area. Sewage disposal is currently handled on an individual level by the use of cesspools and septic tanks. There has been some concern in the past that seepage from faulty tanks, extensive flooding and the keeping of livestock would eventually contaminate Irvine Lake Reservoir. The "Comprehensive Rural Water and Sewerage Plan" in 1971 identified the study area as the number one priority area

for the development of a sewerage system. It contended that the subsurface disposal systems had created a potential for chemical and bacteriological contamination of surface and underground waters.

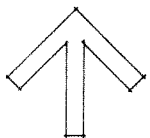
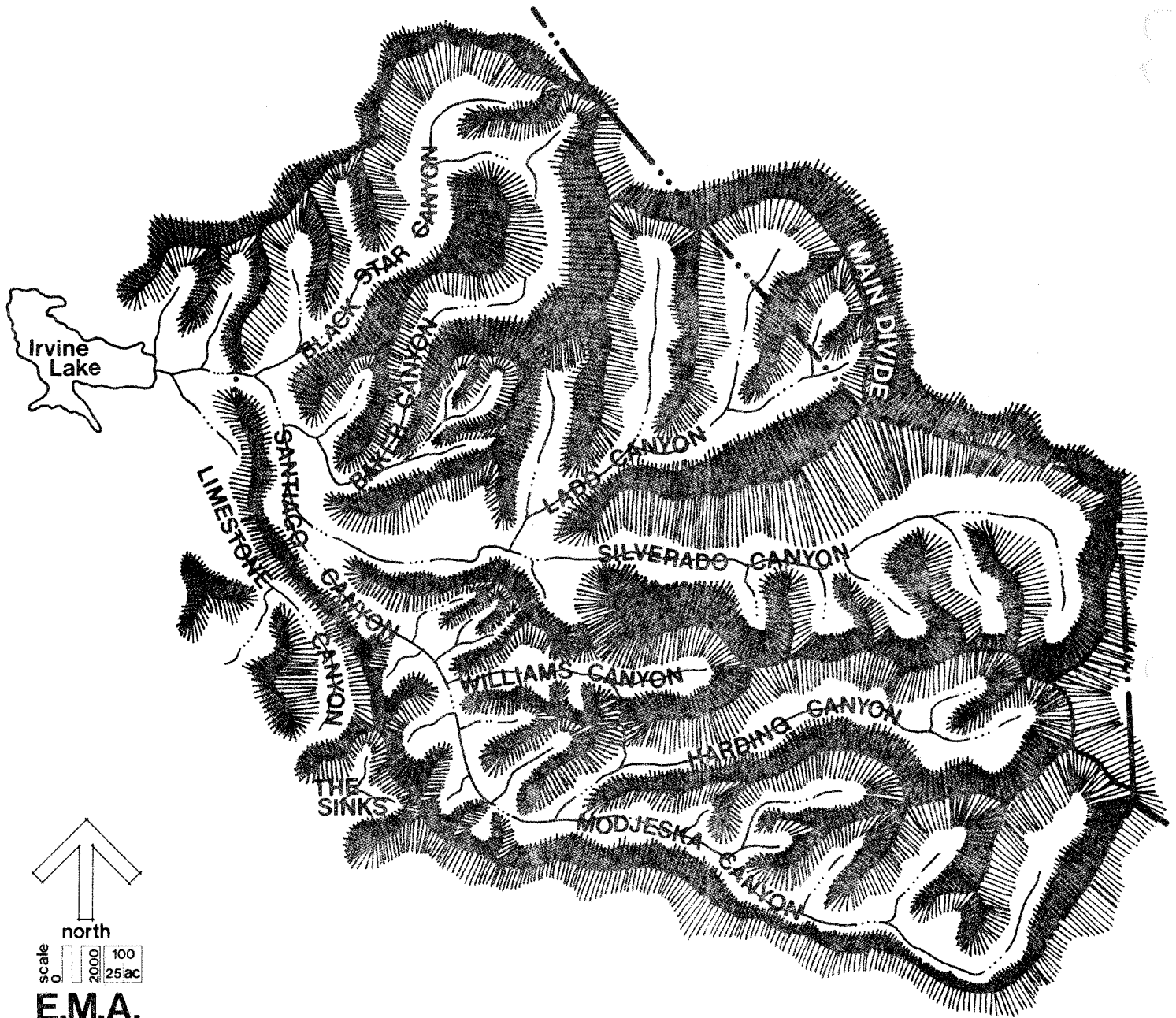
More recent research by the Santiago Canyon Water District (S.C.W.D.) indicates that individual sewage systems may not be a serious public health danger. The saturation point for septic tanks in the study area cannot be identified accurately in advance, but it becomes apparent once it has been passed. Consultants to S.C.W.D. have estimated that the highly developed portions of Silverado and Modjeska Canyons can only tolerate about 100 more dwelling units without risking soil contamination. The lower reaches of these canyons together with Williams Canyon and the area along Santiago Canyon Road may accept about 1000 additional dwelling units.

As a general guide, County health officials do not recommend septic tanks for densities greater than one dwelling unit per four acres. It is their experience that subdivisions may create lots on which septic tanks cannot be later approved because of inappropriate soil conditions. Even under the best site conditions, officials do not recommend that anything less than one acre lots be approved for septic tanks on a permanent basis.

Because of the rural nature of the community, many residents keep animals of various kinds. The possibility that contamination could result from the washing of animal waste into the streams was brought to the attention of the County health officials. After an investigation by the Environmental Quality Division of the Health Department it was concluded that the small number of animals kept in the stream areas did not present a serious hazard.

Many of the older homes and their sewage systems have been constructed in the floodplain area. The possibility of a flood destroying many of these and exposing contamination has been suggested as a serious threat. S.C.W.D. does not consider this to be an important problem. They contend that a long used method of sewage disposal is dilution. Any contamination exposed by a flood of the magnitude necessary to destroy the individual systems would be miniscule and relatively harmless.

It is estimated that sewage flow in the study area is 70,000 to 75,000 gallons per day. This is a relatively low amount given the size of the area and population. The District attributes this to careful usage due to community awareness of a potential water shortage.



scale
0 100 200
25 ac

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community plan

landforms

map
no.

3.2

Because of the low demand, individual sewage systems are considered by S.C.W.D. to be the only financially practical method of disposal in the area at this time. A trunk system in the canyon areas would require carrying the sewage down below Irvine Lake for treatment and disposal, or annexation into the Orange County Sanitation District. The cost of this process would be prohibitive for the community. S.C.W.D. has suggested that a sewerage system in Silverado-Modjeska will only become feasible when Irvine land is tract developed, resulting in a broad enough financial base to support such a system.

3.520 WATER

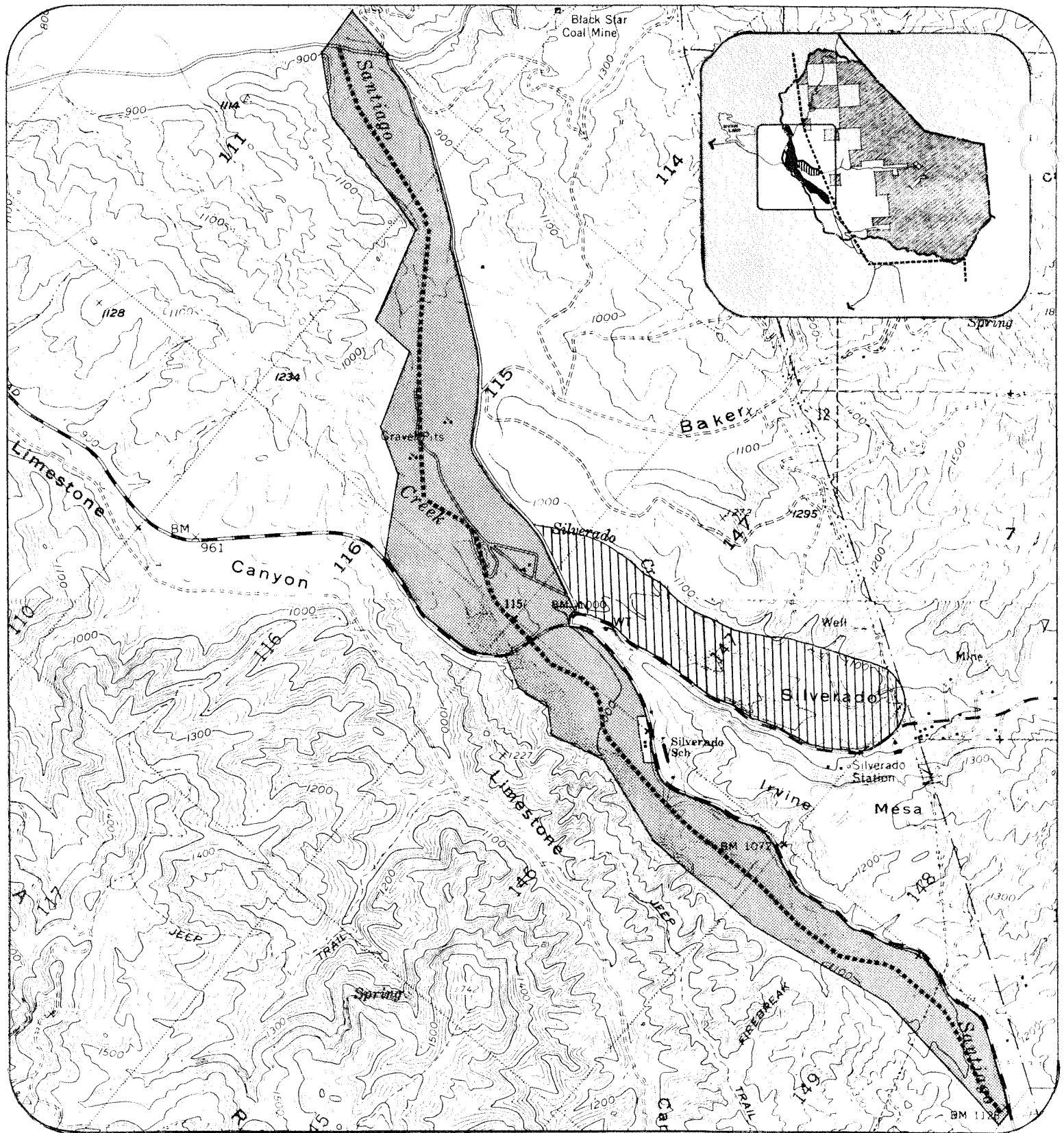
The Santiago Canyon Water District (S.C.W.D.) is responsible for the supply and distribution of water in the canyon areas. This District was formed in 1963 as a consolidation of several small water mutuals.

Water is obtained from the Metropolitan Water District (M.W.D.) through the Santiago Aqueduct. It is treated by the East Orange County Water District (E.O.C.W.D.) filtration plant in Peter's Canyon and then pumped through transmission mains in Silverado, Santiago, Williams and Modjeska Canyons.




S.C.W.D. is a mountain district. There is a 1000-foot verticle lift from the East Orange County filtration plant to the highest customer. Pumping costs in the area are consequently very high. Last year, over 40 percent of the total cost for water provision in the area was for power. S.C.W.D. estimates that during the period of 1978-1981 water costs will increase six times as a result of the renegotiation of pumping contracts with the Edison Company to reflect increases in the cost of oil.

There are approximately 900,000 gallons of storage in the study area distributed in six small reservoirs. Use is estimated to range from 175 gallons per minute on a minimum use day to 450 gallons per minute on a maximum use day. The average consumption is 1,395,000 cubic feet per month.

Water service is currently available in only a limited part of the study area. There are 560 domestic connections, (includes church, school, recreation, commercial and residential connections), and one industrial connection. The District estimates that they can provide water for up to 200 additional domestic users within the existing service area without expanding pump, storage or transmission facilities. Any development over 200 new connections will require an expansion of these facilities. Given the available water supply, the ultimate service capacity in the area is estimated to be 3,000 connections.



sand & gravel extraction

-  existing sand & gravel zone
-  future sand & gravel site
-  haul road (future trail)

map
no.
3.3

3.600 LANDFORMS

The study area's unique topography is an objective of prime conservation efforts in order to maintain prominent views to and from hill areas, reinforce the rural image of the area, and maintain the existing quality of the natural landscape. (Map 3.2)

The Land Use Element of this Community Plan attempts to reduce the overall need for grading by concentrating development in the canyon bottoms and maintaining most ridgelines and hillsides in permanent open space.

Recommended Development Guidelines

1. All cut and fill banks shall be finished to harmonize with the existing topography and geology. This includes maintaining a percentage slope of cut and/or fill similar to the surrounding area. Abrupt changes of graded areas are to be avoided, rounding all edges into the natural topography and planting with compatible vegetation.
2. All cut and fill banks shall be planted with appropriate erosion retardant cover where geological and soil conditions permit, and native fire resistant plants should be used near structures or along fire break areas where appropriate.
3. Roads should be located and sized to minimize the amount of grading required following the natural contours where possible.

3.700 SAND AND GRAVEL EXTRACTION

In addition to the existing operations in Santiago Creek, there are two proposed sand and gravel extraction sites in the study area. One is an extension of the existing operation into Silverado Canyon (Map 3.3), and the other is located in upper Williams Canyon. It has not been the purpose of the Community Plan to decide whether or not these two sites should be developed. These two sites have already been designated (5.1) Natural Resources by the General Plan. However, the following guidelines are recommended to be considered during any rezoning case.

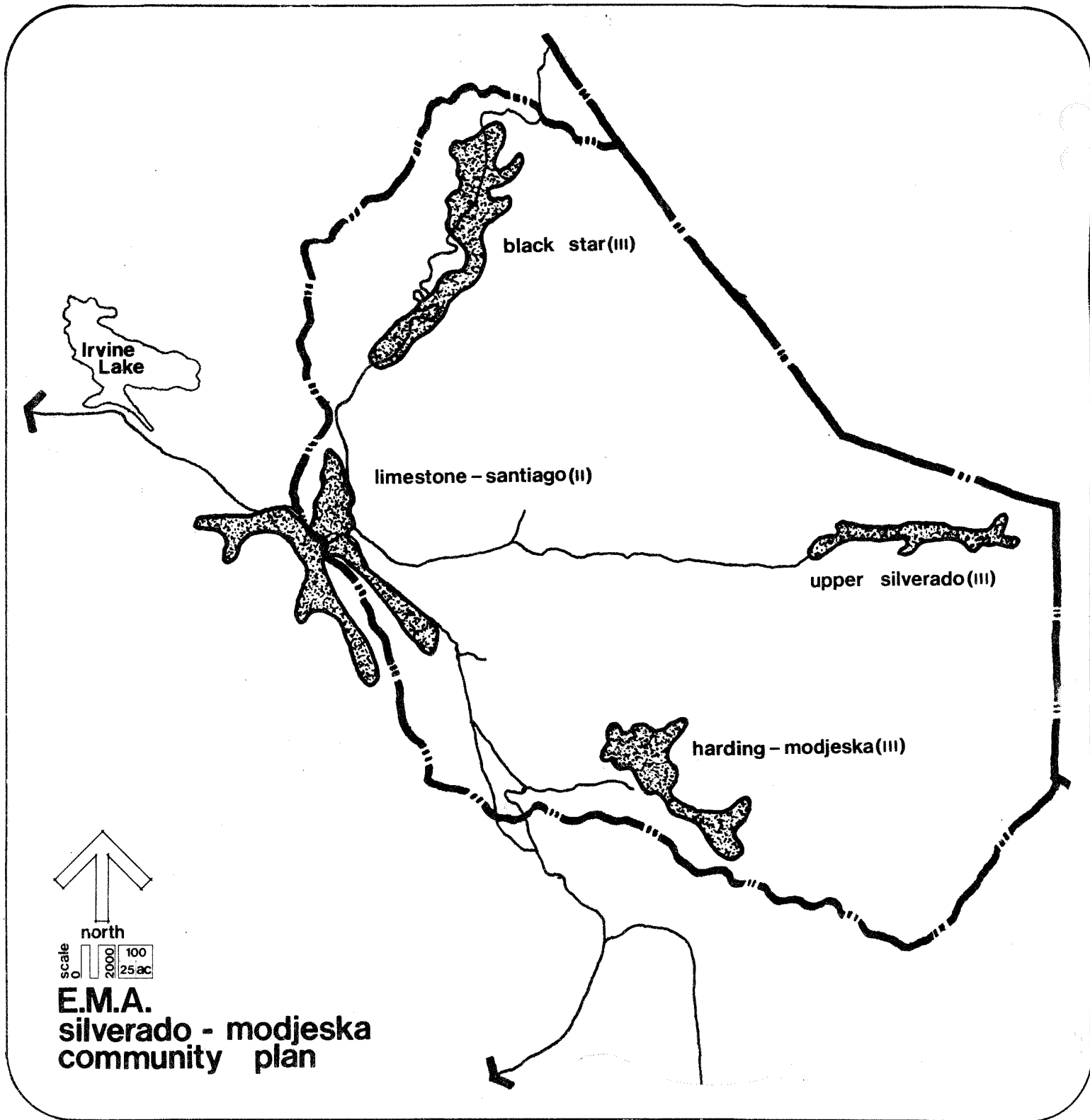
Recommended Development Guidelines

1. Landscape screening of extraction sites should be fully effective for 80% of the life of the operation.

2. The rehabilitation of the site should be compatible with the land uses designated by the Community Plan for the surrounding area.
3. The rehabilitation plan must demonstrate that the essential environmental character of the area remains in tact.

recreation element

4



regional parks

 **proposed park site** (priority group)

acquisition priority group

I: 1972 - 1980

II: 1980 - 1985

III: 1985 - 1990

**map
no.**

4.1

Source: master plan of regional parks

4.000 RECREATION ELEMENT

4.100 PURPOSE

Regional parks, riding and hiking trails, and bikeways are identified for the study area in the Recreation Element of the General Plan. The purpose of the Community Plan Recreation Element is to evaluate these existing proposals, discuss problems and opportunities, and propose implementation techniques. The following specific considerations, originally outlined in the Foothill Corridor Policy Plan, were addressed in developing this element:

1. Resolution of potential traffic problems between existing residential areas and proposed regional park sites.
2. Designation of additional access routes to the Cleveland National Forest.
3. Designation of additional equestrian and hiking trails which will form loop systems in conjunction with the trails adopted in the 1965 Master Plan of Riding and Hiking Trails.
4. Designation of roads recommended to be designed to accommodate bicycle and equestrian traffic and requiring wider-than-normal right-of-way.
5. Development of recreation priorities and implementation programs.

4.200 REGIONAL PARKS

The County's adopted Master Plan of Regional Parks (MPRP) proposes four regional parks in the study area, most of which are intended to provide more intensive recreational uses than those presently provided by the Cleveland National Forest. These proposed park sites are located on Map 4.1.

The Silverado-Modjeska area is considered to be a regional recreation resource primarily because of its strategic location adjacent to the Cleveland National Forest. In general, the National Forest does not lend itself to intensive recreational uses because of the steep topography. A "dispersed" concept of low intensity uses is also difficult to implement because of basic access and circulation difficulties.

Silverado Canyon is now the primary access route to most of the Cleveland National Forest which lies in the study area. However,

the recreational traffic that Silverado Canyon carries is not compatible with its residential development. This situation would be expected to worsen if Upper-Silverado Regional Park is developed. A similar conflict exists in Modjeska Canyon with respect to the proposed Harding-Modjeska Regional Park site.

In addition to the residential-recreation traffic conflicts along these access routes, the Upper Silverado and Harding-Modjeska Regional Park sites are very limited for intensive recreational development and use. Vehicular parking at both locations would be a significant problem.

Remedies to these problem situations are warranted and are proposed below.

Limestone - Santiago Regional Park

This regional park site is actually composed of two distinct areas. Limestone Canyon has long been recognized as a truly unique site. This portion of the park site is located outside the Community Plan study area. The Santiago portion lies totally within the study area in the Santiago Creek floodplain which is now being utilized for sand and gravel extraction. The park is in Priority Group II on the MPRP, which means that acquisition is intended for the period 1980-85. The County's zoning and other permits authorizing this sand and gravel operation required the applicant to produce a detailed, phased rehabilitation plan. The rehabilitation plan will facilitate park development upon the conclusion of extraction operations sometime after 1985. It includes provisions for the planting of shrubs and trees to serve as visual barriers along Santiago Canyon Road, the filling of open pit extraction areas, and grading of haul roads for eventual use as equestrian and bicycle trails. The development of the Limestone - Santiago sites will create a focal point for recreational facilities in the entire Silverado-Modjeska planning area and will provide a vital link in a larger regional recreation system extending from Villa Park Dam to O'Neill Regional Park.

An "Activity Center" located near the intersection of Santiago and Silverado Canyon Roads will provide picnic areas, equestrian center, and scenic turnout, as well as providing access to the regional park. This location has good potential because of its relation to the designated regional park and its easy access to the scenic highway. In relation to the creek trail system, this site is a good location for a rest stop for bicycle riders, horseback riders, and hikers. For the present, this site is used for the sand and gravel operations and parking.

8

The present situation in the sand and gravel industry indicates that the existing extraction may be prolonged well beyond 1985. Furthermore, it is anticipated that the floodplain area immediately east of the existing plant and extending into Silverado Canyon will be the subject of a zone change from A1 to S&G in the near future. If granted the new zone change will significantly extend the life span of the plant operation and delay the development of many recreational opportunities.

Implementation Recommendation

Direct the EMA to consider changing the MPRP Priority Group for the Santiago site of the proposed Limestone-Santiago Regional Park from II to III, while retaining the Limestone site as Priority Group II.

Black Star Canyon Regional Park

Black Star Canyon Regional Park is designated as a Priority Group III site on the MPRP (1980-85 acquisition). Its development will provide recreational opportunities and additional access to the Cleveland National Forest without infringing upon the existing or proposed residential areas.

A development plan for Black Star Canyon Regional Park is dependent upon a future specific plan for Southern California Edison's proposed hydroelectric facility at Hidden Ranch. The development of this facility is proposed for sometime after 1990. The precise alignment for Black Star Canyon Road as an arterial highway is also unlikely to be resolved before that time.

Nevertheless, it is desirable to begin to develop the canyon's recreational potential as soon as possible in order to (1) begin to shift recreational traffic away from residential areas, (2) control existing recreational uses of the canyon, and (3) provide badly needed picnicking facilities. Despite the possibility of a totally new alignment for Black Star Canyon Road, the existing roadway should be used for maximum recreational access now and in the future. Portions of Black Star Canyon Regional Park lying within federal lands may be developed in advance of those which must be acquired from private land owners.

Implementation Recommendations

1. Direct the EMA to consider changing Black Star Canyon Regional Park from MPRP Priority Group III to Group II.
2. Direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon for the purpose of recreational access.

3. Direct the EMA to conduct a feasibility study of a phased development plan for Black Star Canyon Regional Park which considers the following segments:

- a. Lower Black Star (Federal)
- b. Indian Village Area (So. Cal. Edison)
- c. Hidden Ranch (So. Cal Edison)

Upper Silverado and Harding-Modjeska Regional Parks

These regional parks are proposed for acquisition between 1985-90 (Priority Group III) on the MPRP. Development of the Upper Silverado site will necessitate extensive improvements to Santiago Canyon Road and subject existing residential areas to increased noise, traffic hazards and maintenance problems. This residential-recreation conflict together with the extreme physical constraints of the site itself indicate that this site is unsuitable for intensive use as a regional park. The Harding-Modjeska site suffers the same type of access problems as Upper Silverado. It is also an important watershed area which is being acquired by Santiago County Water District, and therefore has very limited development potential.

Although not suitable as a regional park, the canyon bottoms of Harding and upper Santiago Canyon are especially desirable environments for equestrian and hiking trails which are discussed in a later section of this element.

Implementation Recommendation

Direct the EMA to consider the deletion of the Upper Silverado and Harding-Modjeska sites from the Master Plan of Regional Parks.

4.300 LOCAL PARKS

While there are no local parks or public picnic facilities, the Silverado Recreation and Park District maintains two recreation buildings for use by residents. One is located in Silverado Canyon and the other in Modjeska Canyon. Both have kitchen and restroom facilities and are available for private use. The District also organizes year-round programs and activities for the community.

In view of the immediate proximity of vast amounts of open space, low population, and desires of residents, local parks in the form of recreational open space have not been necessary in the planning

area. It is anticipated that this trend for specialized community recreational facilities and activities will continue, which makes the dedication of acreage a relatively counterproductive means of providing for local recreation needs.

4.400 RIDING AND HIKING TRAILS

The undeveloped character and topography of the planning area coupled with the strong local and countywide demand for equestrian facilities naturally lead to the creation of an extensive equestrian and hiking trails network.

The Master Plan of Riding and Hiking Trails designates eleven trails in the Silverado-Modjeska area. All of these trails exist in various stages of repair. (Table 4.1)

TABLE 4.1

DESIGNATED TRAILS (M.P. OF RIDING & HIKING TRAILS)

<u>Name</u>	<u>Length</u>
Harding Truck Trail	9.5 Miles
Main Divide Truck Trail	23.0
Santiago Truck Trail	6.0
Silverado Truck Trail	5.3
Silverado Trail	2.8
Black Star Trail	4.0
Ladd Canyon Trail	4.2
West Ladd Canyon Trail	4.0
Maple Springs Truck Trail	5.1
Silverado Motorway Trail	2.1
Halfway Canyon Trail	<u>1.5</u>
Total	67.5 Miles

It should be realized that the standards which have been applied to other trails in the County are not appropriate to mountain topography. In fact strict standards are neither possible nor desirable if the trail system is to take advantage of the unique Silverado-Modjeska environmental conditions and opportunities.

The trail system in Silverado-Modjeska is intended to provide one of the major recreational opportunities in the National Forest. It is believed that low intensity uses by equestrians and hikers throughout the area will maintain the environment in a natural state, be compatible with the interests of property owners and residents, and avoid congestion as much as possible.

The Community Plan Land Use Map illustrates a trail network utilizing existing trails and truck trails, and creating certain additions which will substantially improve the system by forming major loop systems. It is believed that these general locations offer the best opportunities for a trail network which can and will be utilized by the general public. Some of the designated trail locations are conceptual and some may not be suitable for both hikers and equestrians. It should also be realized that truck trails are essentially roads which will continue to carry some vehicular traffic.

Implementation Recommendation

Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail system delineated on the Community Plan Land Use Map.

4.500 EQUESTRIAN CENTERS

The Master Plan of Riding and Hiking Trails also designates one equestrian center in the Silverado-Modjeska area in Upper Silverado Canyon. In view of the existing problems with stables in the canyon floodplain area and future difficulties with the development of a regional park in this area, the appropriateness of an equestrian center on this specific site is questionable. Two additional sites have, therefore, been identified as having more potential for equestrian centers.

One equestrian center could be located in the proposed Limestone-Santiago Regional Park site near the intersection of Santiago Canyon Road and Silverado Canyon Road. This center would be part of the "Activities Center" and include family picnic units, a water supply, cooking facilities, sanitary facilities, water troughs, hitching rails, boarding stables, rental horse facilities, parking areas and "bunkhouse" facilities with sleeping cubicles.

This center should take first priority for construction and should be the largest (35-40 acres) in the planning area because it will be the "hub" of the area's trails network and will provide major "organized" activities (trail rides, pack trips,) moonlight rides, nature study hikes). A second equestrian center should be located in the central area of the proposed Black Star Canyon Regional Park. This center should be approximately 20 acres in size and should contain boarding stables, rental horse facilities, parking areas for horse trailers, and overnight camping facilities for riders and hikers, and should also provide for organized activities including moonlight rides.

Implementation Recommendation

Direct the EMA to consider deleting the Upper Silverado equestrian center site and adding the Santiago and Black Star equestrian center sites to the Master Plan of Riding and Hiking Trails.

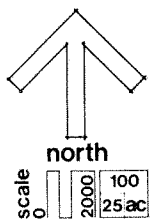
4.600 TRAIL STOPS

The Master Plan of Riding and Hiking Trails further designates seven trail stops in the Silverado-Modjeska area. These presently exist as undeveloped turnout areas.

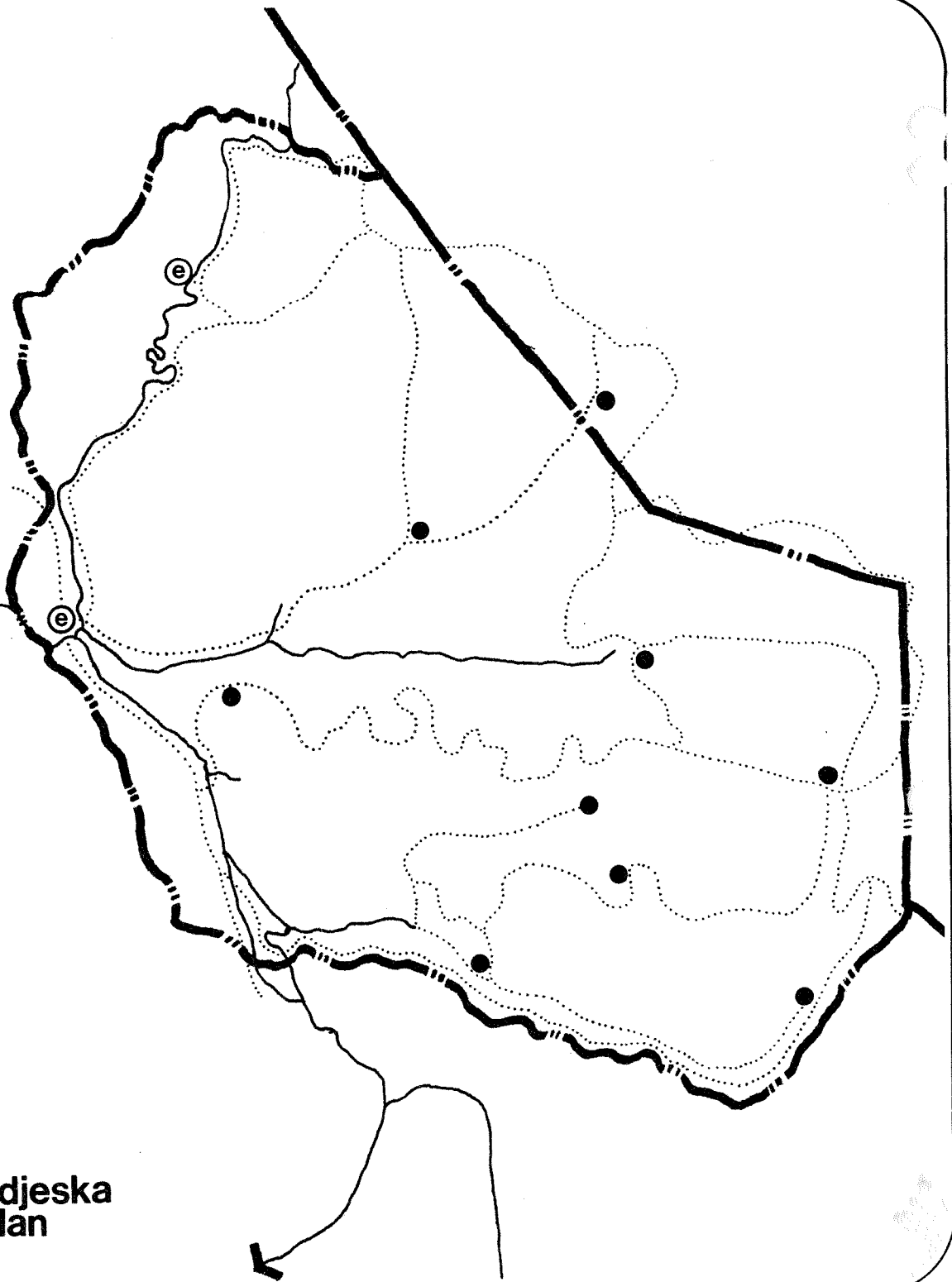
- . Ladd - junction of Ladd Canyon Trail and West Ladd Canyon Trail
- . Silverado - on Silverado Truck Trail near National Forest boundary
- . Bear Flat - on Silverado Truck Trail near Bear Flat
- . Laurel Springs - on Harding Truck Trail east of Laurel Springs.
- . Old Camp - on Joplin Trail near Jameson Spring
- . Unnamed - on Silverado Motorway Trail, one-half mile north of Maple Spring
- . Truck Trail
- . Unnamed - at eastern end of Silverado Canyon Road.

The Community Plan Land Use Map delineates recommended trail stops which add to, relocate or delete those designated on the Master Plan of Riding and Hiking Trails in order to fit the recommended trail system.

In conjunction with these recommended trails stops, staging areas should be considered in Black Star Regional Park, the Holtz Ranch



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community plan



trail network



proposed trails



proposed trail stop



proposed equestrian centers

map
no.

4.2

area in Silverado Canyon and upper Modjeska Canyon. Hiking camps should be considered for Black Star Canyon Regional Park, Ladd Canyon Spring, Maple Spring and Old Camp.

Implementation Recommendation

Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail stops delineated on the Community Plan Land Use Map.

4.700 BIKEWAYS

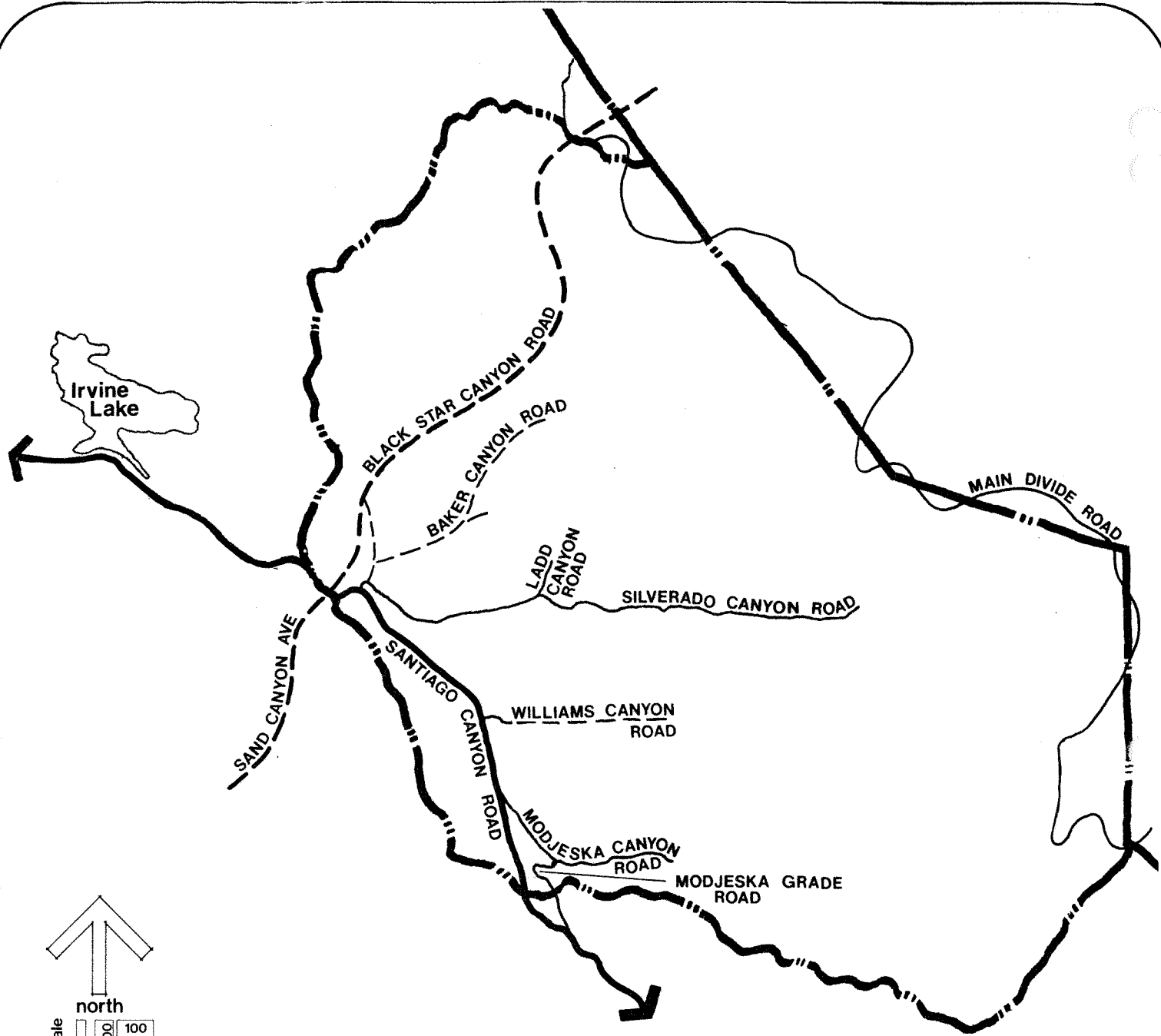
The Master Plan of Countywide Bikeways designates Santiago Road and a portion of the Santiago Creek floodplain as bikeways.

Recommended Development Guidelines

1. That portion of the proposed Santiago Canyon Road Bikeway within the planning area should eventually be located within the floodplain.
2. In the interim, any improvements of Santiago Canyon Road should consider the incorporation of a temporary bikeway lane.




circulation element

5



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circulation

-  **primary**
-  **secondary (conceptually proposed)**
-  **local**

map
no.

5.1

5.000 CIRCULATION ELEMENT

5.100 PURPOSE

The purpose of this circulation element is to identify and analyze circulation needs and issues within the planning area. During preparation of this element particular attention was directed toward the following policies of the Foothill Corridor Policy Plan:

1. Provide for rural road standards.
2. Separate to the maximum degree possible, through traffic, weekend and recreation traffic from resident traffic.
3. Promote alternative access to the Cleveland National Forest away from residential canyon areas.
4. Discourage and limit through traffic in residential areas.

5.200 ROAD CLASSIFICATIONS (Map 5.1)

5.210 Arterial Highways

5.211 Santiago Canyon Road

This is a two lane roadway running from Newport Boulevard to Live Oak Canyon Road where it becomes El Toro Road. Traffic is normally light except for weekends which is primarily due to visitors to the recreation areas. The major traffic hazard is at the intersection of Silverado and Santiago Canyon Roads. The Orange County Master Plan of Arterial Highways (MPAH) designates Santiago Canyon Road a "Primary Arterial Highway", having an ultimate 100-foot right-of-way (four lanes divided) and capable of handling 20,000 to 30,000 average daily trips (ADT). This designation can accommodate future traffic volumes estimated to result from existing and proposed land uses in the study area, and therefore, no change to this designation is necessary.

5.212 Black Star Canyon Road

Black Star Canyon Road begins north of the intersection of Santiago Canyon and Silverado Canyon Roads and then leads over the mountains to Corona. Only a short portion of the road north of Silverado Canyon Road is paved; the remainder is only graded. This road is the only access to the northern part of the planning area. An extension of Sand Canyon Avenue over the foothills from the Irvine area to the western boundary of the Silverado-Modjeska area for the purpose of linking up with Black Star Canyon Road is designated on the MPAH

as a "Conceptually Proposed Primary Arterial Highway"*. The Black Star Canyon portion is in the process of being downgraded on the MPAH from a Conceptually Proposed Primary Arterial to a Conceptually Proposed Secondary Arterial Highway (80 foot right of way, four lanes undivided). A feasibility study on that section of Black Star from the Forest Service gate to Corona was conducted by the Orange County and Riverside County Road Departments in 1971. This study suggested a new alignment for the road and designated an ultimate 100 foot right-of-way (two 12 foot paved lanes in each direction designed to carry 20,000 to 30,000 ADT).

In the long term, Black Star Canyon is envisaged as an integral part of the Community Plan's recreational strategy to separate residential areas from major recreation areas. The canyon road should provide a major access route to the Cleveland National Forest in conjunction with Main Divide Road. As discussed previously, utilization of Black Star Canyon Road for such access purposes should be encouraged while through-traffic access to the forest via Silverado and Modjeska Canyons should be discouraged.

In relation to the study area within Black Star Canyon, an arterial classification for Black Star Canyon Road is desirable at this time to allow full utilization of this regional recreational resource and to preclude piecemeal and ultimately conflicting rural residential developments (as has already occurred in Silverado and Modjeska Canyons). It is also desirable to provide this alternative access to the Cleveland National Forest and to develop additional recreation opportunities as soon as possible.

A primary justification for the Black Star arterial has been based upon projected trip demands which lie outside the Silverado-Modjeska area. It is not possible at this time to accurately predict when the proposed Black Star Canyon arterial might be feasible, but it is apparent that its priority is relatively low and that its cost (due to topographical constraints) would be relatively high. For the purposes of this study, it has been assumed that the arterial will not be constructed until after 1990.

Implementation Recommendation

As an interim measure and in conjunction with the partial development of Black Star Canyon Regional Park (see Recreation

- * The location of a "Conceptually Proposed" Arterial indicates that origin-destination needs have been determined based on adopted land use plans. Prior to the establishment of the centerline alignment of the arterials, environmental and highway evaluations will be necessary.

Element)), direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon to accommodate recreational traffic.

5.220 Local Streets

5.221 Silverado Canyon Road

Silverado Canyon Road is a non-arterial highway "county road" with both substandard alignment and right of way. A traffic study in February, 1974, estimated that sufficient traffic volumes ultimately would be generated to justify amending the Master Plan of Arterial Highways (MPAH) to include Silverado Canyon Road as a Secondary Arterial Highway between Santiago Canyon Road and Ladd Canyon Road and as a Commuter Highway from there to the upper end of the canyon.

The existing capacity of Silverado Canyon Road between Santiago and Ladd is 6,000 to 8,000 vehicles per day (20 ft. roadway in a 60 ft. right-of-way). Should maximum build-out occur under the Community Plan, improvements in accordance with rural local street standards will probably be necessary.

From Ladd Canyon to the National Forest, Silverado Canyon Road is narrow and winding with an approximate 18 ft. roadway in a 40 ft. right-of-way. The existing capacity is estimated to be 4,000 vehicles per day. It provides the only access to the Silverado residential area and presently provides the primary access to the National Forest. The existing conditions of this street are not conducive to recreation traffic, bikeways and riding and hiking trails, and upgrading is not possible without substantial disruption of the local community.

In order to preserve and enhance the existing community in Silverado, residential and recreational development must be limited to that which will not require any significant upgrading of Silverado Canyon Road from Ladd Canyon to the Cleveland National Forest. Retention of Upper Silverado Regional Park on the Master Plan of Regional Parks and the allowance of any further subdivision in the canyon (both of which are contrary to the recommendations of this plan) would create pressures for the widening of Silverado Canyon Road.

An evaluation of a 1974 traffic study indicates that its estimates for developable legal building sites in upper Silverado Canyon were based on one unit per every four acres in the canyon, an unrealistically high figure due to the fact that there are hundreds of such parcels which are physically unbuildable. There are 341

existing dwelling units in this area, and it is now estimated that no more than 470 units are possible rather than close to 1,000 as previously estimated. It is suggested that some spot widening will be sufficient to take care of this increase if regional recreation traffic through the canyon is not encouraged.

5.222 Ladd Canyon Road

Ladd Canyon Road presently exists as a narrow 18 foot wide paved road serving approximately fifteen dwellings. Further development in Ladd Canyon, either clustered or dispersed at the one unit to four acres density proposed by this plan, will significantly effect the requirements for this road and should be evaluated when development proposals are submitted.

5.223 Modjeska Canyon Road

Under circumstances similar to Silverado Canyon, Modjeska Canyon Road is also a non-arterial county road with both substandard alignment and right of way. From Santiago Canyon Road to Modjeska Grade Road, it has 20 feet of roadway in a 60 foot right of way and an existing capacity of 6,000 to 8,000 vehicles per day. Should maximum build-out occur under the Community Plan, improvements in accordance with rural local street standards will probably be necessary.

From Modjeska Grade Road to the Cleveland National Forest boundary, Modjeska Canyon Road is narrow and winding with an approximate 18 foot roadway in a 40 foot right of way. There are approximately 140 existing dwelling units in this area, and it is estimated that no more than a total of 350 units are feasible. It is suggested that some spot widening will be sufficient to take care of this increase.

In order to preserve and enhance the existing community in Modjeska, residential and recreational development has been limited to that which will not require any significant upgrading of Modjeska Canyon Road from Modjeska Grade Road to the Cleveland National Forest boundary. Retention of the Harding-Modjeska Regional Park on the Master Plan of Regional Parks, and the allowance of significant additional dwelling units in the canyon (both of which are contrary to the recommendations of this plan) would create pressures for the widening of Modjeska Canyon Road. Expansion of Tucker Wildlife Sanctuary would cause similar pressures.

5.300 STANDARDS OF STREET DESIGN

Although traffic generation is a function of land use, the amount

of traffic to be accommodated on a given street section is not the only criterion of physical road design. Visual aspects of scenic highways and criteria for fire safety may dictate different design standards for various road sections. Of particular concern is that the rural atmosphere of the planning area be reflected in street improvements by eliminating curbs, gutters and sidewalks and that the placement of roadways respects the natural terrain and existing trees to the maximum degree possible.

Standard plans have been adopted by the County for rural streets. These standards may be considered for application in areas where proposed development conforms to some degree to the following criteria:

1. The lots are of a size generally identified with a rural community.
2. The area is in hill and canyon areas characterized by small somewhat isolated rural communities.
3. The prevailing character of the area to be developed is in equestrian or outdoor oriented rural uses and the lifestyle of the proposed development is compatible with the life-style of the surrounding developed area.
4. The area to be developed is either by itself, or along with adjacent developments, of sufficient size to represent a rural community.
5. The area has not been developed for urban uses served by streets constructed to standard urban sections.
6. The topography in the area is such that rural street standard sections can be constructed without excessive grading.
7. The area is proposed to be developed in a manner which if pedestrian facilities are needed will provide for said facilities separate and apart from the rural street standard right of way.
8. The area is proposed to be developed in a manner which will provide adequate off-street drainage facilities including ditches, paved channels, and underground conduits.
9. The developer can provide evidence that arrangements will be made as part of the proposed project to assure that future residents will pay for additional maintenance costs, if any, resulting from the construction of rural

street standard sections, either through special maintenance zones of County service areas or a similar device.

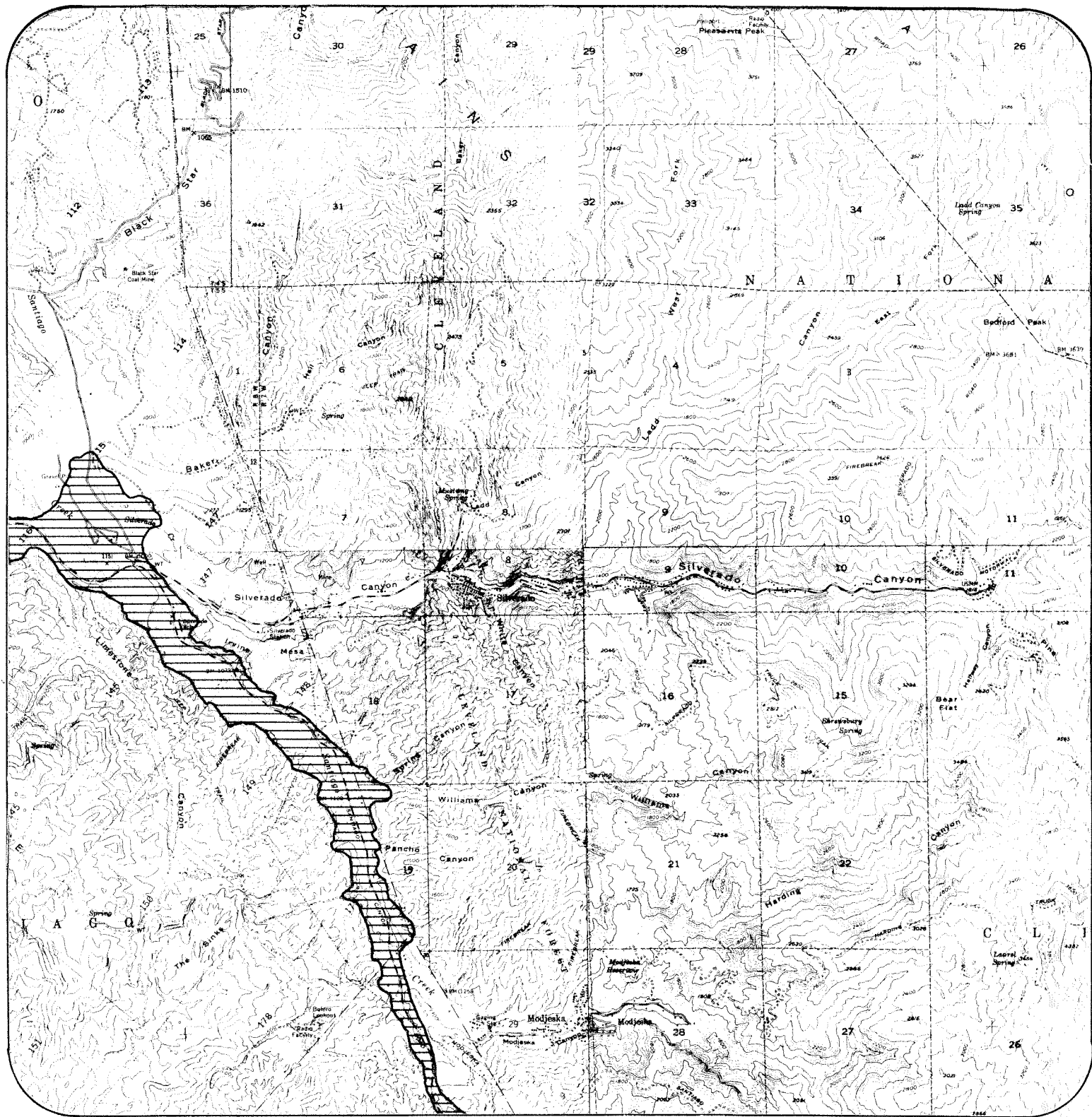
The physical characteristics of the entire Silverado-Modjeska area and the overall intent of the area's residential character (existing and proposed) conform to all of these criteria for rural street standards, although certain topographical constraints, development intensities and existing settlement patterns will make the application of even these standards impractical for some development areas.

Recommended Development Guidelines

1. Wherever possible, developments in the study area should meet the adopted criteria for the application of rural streets, and the streets therein should be constructed in accordance with the appropriate rural street standard.
2. Consideration should be given to the exclusion of upper Silverado Canyon Road (from Ladd Canyon to the National Forest) and Modjeska Canyon Road from these and other arterial standards when it can be demonstrated that no adverse safety effects will be encountered.
3. Consideration should be given to modification of these standards when opportunities to preserve trees and the natural terrain are present.
4. The design of new roads and all existing road improvements should be subject to site plan review.

scenic highway element

6



scenic highway corridor

map
no.

6.3

6.000 SCENIC HIGHWAY ELEMENT

6.100 PURPOSE

The County's Scenic Highway Element designates Santiago Canyon Road from Weir Canyon Road to Live Oak Canyon Road as a "Type I" Recreation Corridor, "a route that traverses a ribbon of park-like development and a scenic corridor of relatively high aesthetic value giving easy access to a multiplicity of recreation activities, with control of access." The Scenic Highway Element for the Silverado-Modjeska Community Plan analyzes the characteristics of Santiago Canyon Road's scenic corridor and proposes guidelines for its recreational and residential development.

6.200 VISUAL ANALYSIS

The visual quality of the Silverado-Modjeska area is unique because of the character of the back drop scene of steep hillsides and towering ridge lines against the sky. What makes Santiago Canyon Road a scenic highway are the natural vistas of the rolling hillsides and the silhouetted ridge lines which are viewed from the roadway. There are two distinct types of scenic corridors found within the planning area. The first is characterized by the broad, flat floodplain at the intersection of Silverado and Santiago Canyon Roads. The second consists of a narrow canyon floor, extending from Irvine Mesa to Modjeska Canyon.

6.300 SCENIC CORRIDOR

Map 6.3 defines a visual corridor for the Santiago Canyon Road Scenic Highway. The delineation of this corridor is intended to identify those areas immediately adjacent to the road in which development would have the greatest visual impact. The designation of a specific scenic corridor is useful and necessary for the purpose of visual analysis and site plan review. However, it must be realized that there are several existing development controls and proposed Community Plan guidelines which are intended to implement and define the scenic highway. To a great extent, natural constraints, such as steep, surrounding hillsides and the floodplain which parallels the roadway for most of its length in the study area will help to maintain the visual quality of the scenic corridor. The Land Use Element of the Community Plan recommends specific performance guidelines for areas within view of all public roads; it recommends residential densities along the scenic highway which are compatible with the scenic highway concept; it recommends public open space and recreational uses immediately adjacent to the roadway which will ensure further design control. Furthermore, the existing Sign Restrictions zoning district provides adequate

review procedures for any signs in conjunction with proposed land uses.

Recommended Development Guidelines

1. Site plan review should be required for all development within the scenic corridor.
2. All development within the scenic corridor should be screened from the highway to reduce external visibility and reduce noise levels by aid of landscaped buffer strips and/or planted earth berms.
3. Development in Irvine Mesa should provide setbacks or landscaping to screen the view of structures from Silverado Canyon Road and Santiago Canyon Road.
4. The northern entrance to Modjeska Canyon should emphasize the landscape corridor similar to the existing olive groves. This entry treatment should screen housing and structures from the road.
5. Residential development within the corridor should be sound attenuated where necessary to meet County health standards.

6.400 ROADWAY DESIGN

The Master Plan of Arterial Highways designates Santiago Canyon Road as a primary arterial highway. Two alternative design concepts have been developed for the road as a scenic highway, incorporating the proposed Santiago Regional Park. (Figures 6.1 and 6.2). Concept A proposes split level travel lanes, while Concept B proposes two separate roadways straddling the floodplain and regional park. Further study will be necessary to fix a precise alignment in which particular emphasis must be placed on the following:

1. Incorporating more specific development proposals for Santiago Regional Park, which have yet to be made.
2. Providing safe and effective access to the canyon residential areas.
3. Minimizing the impact of the road on the wildlife migration corridor in Santiago Canyon.

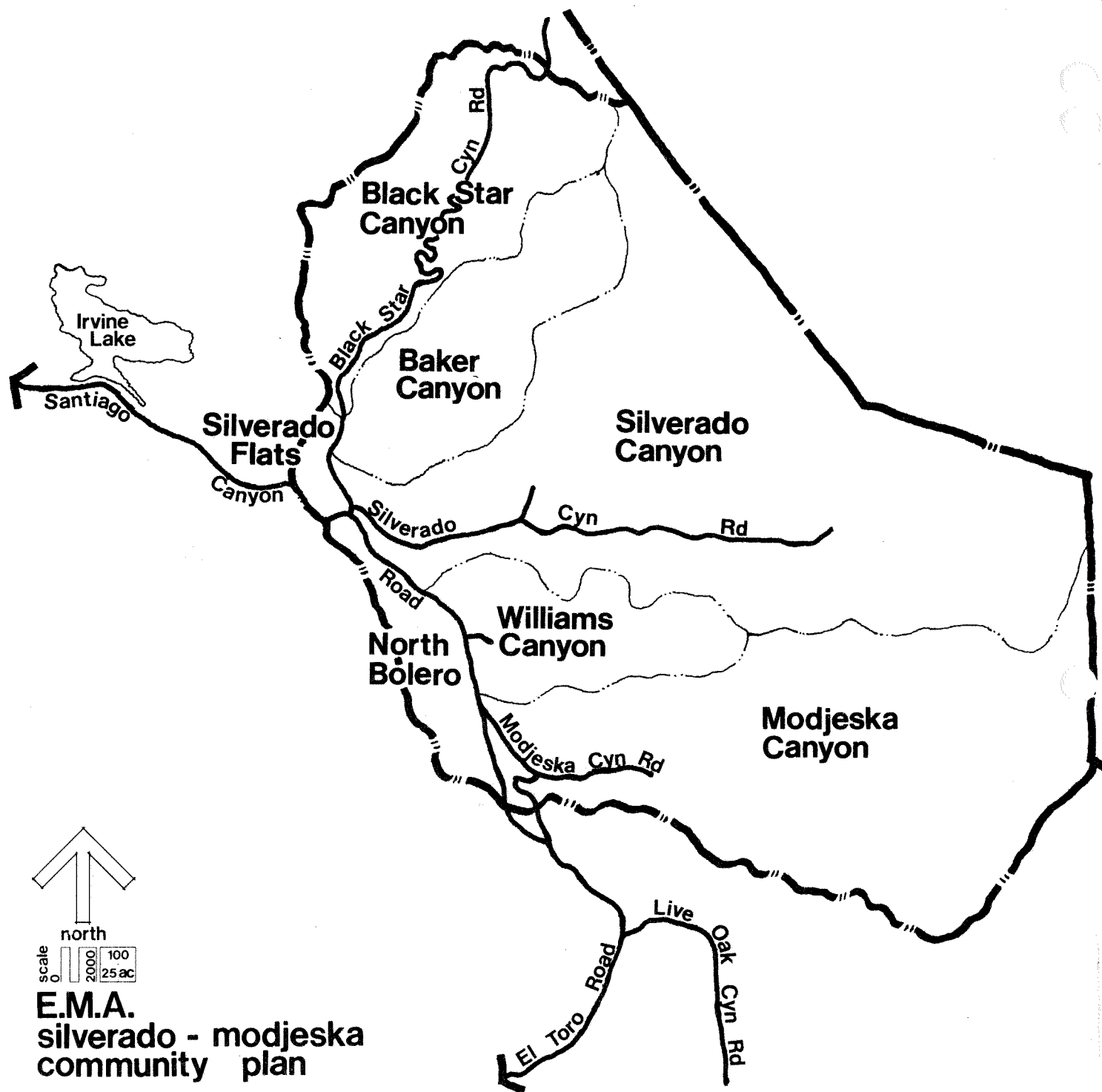
4. Providing safe and effective access to Santiago (and Limestone) Regional Park and those recreation facilities located along or in the floodplain.

Implementation Recommendations

1. Direct the EMA to conduct and consider the results of such a wildlife migration study in the precise alignment and design of Santiago Canyon Road.
2. Direct the EMA to consider the conceptual alternatives in this Community Plan and various development plans for Santiago Regional Park in the precise alignment and design of Santiago Canyon Road.

land use and
community design element

7



canyon areas

map
no.

7.1

7.000 LAND USE AND COMMUNITY DESIGN ELEMENT

7.100 PURPOSE

This element concerns the physical land use aspects of the study area and has several important functions:

1. To allocate ultimate land uses to the extent that available information allows.
2. To provide standards and guidelines for all future development.
3. To provide recommendations regarding the Reserve Area status of the study area, future General Plan amendments and rezoning actions.

The level of detail which is addressed in this element varies due to the size of the study area, the relative importance of particular planning problems, issues, areas and development phasing considerations. The extended time span (10-30 years) of existing and proposed sand and gravel operations and unresolved questions concerning the environmental, marketing and financial feasibility of major public and private projects make detailed plans of some areas unrealistic at this time. Nevertheless, it is possible to define the general character of all future development in the study area.

7.110 Basic Assumptions

It is important to state the basic assumptions which underlie this land use plan. If in the future, one or all of these assumptions prove to be invalid, the Community Plan should be revised accordingly.

1. In spite of all existing hazards and the resultant development problems, there will be a continued demand for residential land uses throughout the Silverado-Modjeska area.
2. Regardless of the number of legal building sites which exist in the already developed areas of Silverado and Modjeska Canyons, it is estimated that physical constraints and existing sewerage, floodplain and other regulations will permanently restrict new development to 100 additional dwelling units in the two developed canyon areas.
3. A sewer system for the Silverado-Modjeska area is not financially feasible, and therefore on-site sewage disposal will be necessary for all proposed development.

4. Development in Irvine Flats, Baker and Black Star Canyons is ultimately dependent upon new roads which will lead directly to Santiago Canyon Road via the Black Star Canyon arterial highway (Sand Canyon Avenue).
5. The existing sand and gravel operation along Santiago Canyon Road will continue for at least the next 15 years.
6. Regardless of the appropriateness of its location or density, the existing residential development is recognized as the primary land use in Upper Silverado and Modjeska Canyons.
7. That portion of the Cleveland National Forest in the study area is essentially a wilderness area in which the U.S. Forest Service will not develop any recreation facilities other than those associated with equestrian and hiking trails.
8. Except for designated regional parks, the Harding Canyon watershed area, and small areas for special facilities, public agencies are not in a position to purchase large areas of privately owned land for open space purposes.

7.120 Foothill Corridor Policy Plan

This element, as with all the others, is based on the goals and policies in the Foothill Corridor Policy Plan. A primary goal of the Foothill Corridor Policy Plan is the retention and reinforcement of the "Rural Character" of the community and is exemplified in the following policies:

1. Allow for a variety of densities compatible with the existing pattern of residential development and open space.
2. Limit the use of attached units or mobilehome parks.
3. Provide only for neighborhood commercial facilities integrated within residential areas and discourage any regional and community commercial uses.
4. Limit industrial uses to natural resource extraction.
5. Allow for the raising and keeping of animals on individual lots.
6. Protect the existing residential communities.

7.130 Rural Character

The existing residential villages in Silverado and Modjeska do not have an integrated economic base, and most often working residents commute to urban centers for their livelihood. The unique type of housing which is presently available and the fact that the area is basically undeveloped are the characteristics most cited by residents as "rural." While, these are likely to change, the basic and long term rural character of the Silverado-Modjeska area will always be provided by its unique topography.

7.200 THE LAND USE CONCEPT

In consideration of an overall land use concept for the study area, the Community Plan Land Use Element attempts to resolve three important issues, namely the protection of the existing residential communities, the separation of local residential and regional recreation traffic, and the protection of steep hillsides, ridgelines and other significant environmental features. In response to these issues the land use concept separates residential and recreational functions by canyon area and emphasizes development in canyon bottoms.

North Bolero, Modjeska Canyon, Williams Canyon and Silverado Canyon are reserved for exclusive residential use. These areas contain the existing residential development and limited infill opportunities exist. Concentration of development in canyon bottoms is emphasized in order to take advantage of better access and fire protection relative to the steep hillsides and narrow ridgelines. Existing residential densities in Silverado and Modjeska Canyons are recognized but further development is allowed at significantly lower densities to mitigate sewage and flood hazard problems. Baker Canyon, Black Star and Silverado Flats contain both recreation and residential uses which have been specifically allocated on the basis of topography, existing uses and proposed regional parks.

7.300 LAND USE CATEGORIES

Based upon the general intent of the Foothill Corridor Policy Plan, the physical constraints which characterize the study area, and the conditions discussed in the Safety and Open Space Conservation Elements of the Community Plan, the following land use designations have been developed. In order to simplify implementation, existing General Plan land use designations are referred to or utilized to define the intent of the Community Plan designation wherever possible. However in a few cases land use categories not presently existing have been proposed. These new designations are recommended for incorporation into the County General Plan. Areas for

which land use designations and other development guidelines are proposed are delineated on the Community Plan Land Use Map enclosed with this document.

The Community Plan allows residential densities ranging from 1 dwelling unit per gross acre to 1 dwelling unit per 40 gross acres for new development areas. In calculating densities or lot sizes allowable under this plan, gross acreage should be used; all references to acreage in this text mean gross acres. In the developed portion of Silverado and Modjeska Canyons where existing densities exceed 1 du/ac, the creation of any new lots is not recommended. The Community Plan Land Use Map indicates these existing higher density areas for purposes of comparison and not as a guide to the creation of lot sizes.

Various residential densities have been allocated in order to maintain compatibility with existing development, allow adequate safety margins for the mitigation of various hazards, maintain some limited agricultural uses, and to conserve the character and amenities of the natural environment.

Table 7.1 illustrates the basic residential density and other land use categories which are used in the Community Plan together with compatible General Plan land use designations.

In general, clustering of dwelling units should be considered in situations which will allow a property owner to develop in the canyon bottom areas while ensuring that lands in steep terrain will be preserved as natural open space. However, it must be realized that given the potential problems with sewage disposal, there are limits to the capacity of canyon bottoms to accommodate new dwelling units. For any given parcel, the number of dwelling units per gross acre should not be exceeded with the possible exceptions of Holtz Ranch and Irvine Mesa (see Section 7.440), and under no circumstances should lot sizes be allowed less than 20,000 square feet.

7.310 Rural Residential

This category applies to open space areas in which limited residential use as a compatible adjunct to the primarily natural character of the terrain is to be allowed. These lands would accomplish two purposes: 1) to preserve open space areas in their natural state to the maximum extent possible through public acquisition, dedications, or private ownership, and 2) to provide opportunities for rural residential lifestyles in areas where more intensive development would be environmentally disruptive. If property owners do not desire this residential designation it is assumed that uses appropriate to the (5.4) Other Open Space designation are also

TABLE 7.1

LAND USE CATEGORIES

<u>Community Plan Land Use and Residenital Density</u>	<u>General Plan Land Use Designation</u>
1 du/40 acs.....)	
)	
1 du/20 acs.....)	
)	
1 du/10 acs.....)Rural Residential (Proposed)
)	
1 du/4 acs.....)	
)	
1 du/2 acs.....)	
1 du/ac.....)	(1.11) Low Density Residential
2 dus/ac.....)	(1.12) Low Density Residential
3 dus/ac.....)	(1.22) Med-Low Density Residential
4 dus/ac.....)	(1.31) Medium Density Residential
Recreation.....)	
)(5.3) Recreation
Regional Park.....)	
Conservation.....)	(5.41) Conservation

compatible within areas designated rural residential.

The general character of development within this category is intended to give an impression of dominant open space with sparsely developed, scattered residential uses. Small to moderate size ranchos with either an agricultural or equestrian theme would typify the intended uses where private development takes place. Landforms should be retained in their natural state to the maximum extent feasible by clustering units to minimize grading and the length and number of new roads. The units may be placed at appropriate locations on the site, providing access, water, sewage, and site plan review guidelines can be met and providing that the selected site is not hazardous for development.

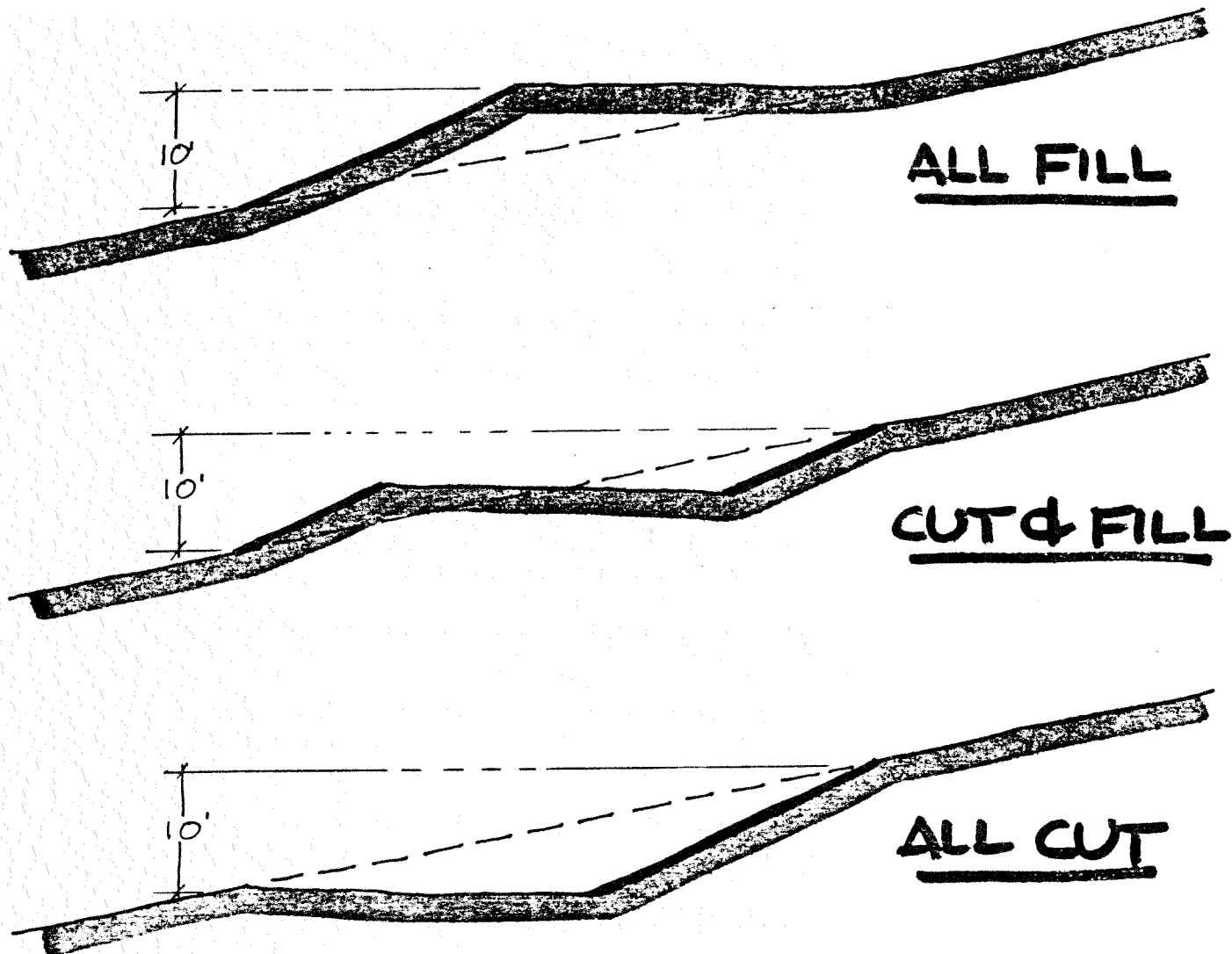
Within the rural residential category, specific densities ranging from 1 unit per 2 acres to 1 unit per 40 acres have been allocated on the Community Plan Land Use Map based upon average natural slope and relative accessibility. However, because of the wide range of these densities and the terrain over which they are applied, two different sets of development guidelines are necessary within the Rural Residential category.

10-40 ACRE LOTS

Lands within this density range are characterized by steep slopes and relative inaccessibility, and it is the intent of the Community Plan to preserve the undeveloped characteristics of the significant ridgelines and hillsides.

Recommended Development Guidelines

1. The vertical height of any grading activity should not exceed 10 feet (see Figure 7.1).
2. Landscape screening should obscure development and grading scars from view from any public road.
3. No structure should obscure any ridgeline as seen from any public road.
4. Graded building pads should not exceed the dimensions of structures.
5. No grading should occur on slopes exceeding 45 percent except for fuelbreaks and community-wide emergency access routes.
6. Site plan review should be required for all structures.



GRADING GUIDELINE FOR RURAL RESIDENTIAL AREAS (10-40 Acres)

These mountainous areas are subject to development restrictions and protection of the natural topography and vegetation. The objective is to prevent scarring of the hillsides. The above figures illustrate the grading guideline to be used throughout these areas limiting slope height to 10 feet. This would permit a 32 foot pad for a 20 percent slope condition (only enough for a small road) and ensure that any house would have to fit to the natural slope.

figure no.

7.1

7. In order to preserve the natural character of the terrain, a maximum of 5% of the site may be developed with impervious surfaces (i.e., buildings, driveways, roads, etc.).

2-4 ACRE LOTS

Lands within this density range are located in canyon bottoms which have been designated for residential development, but are characterized by some severe physical constraints, such as flooding and slope instability, and significant riparian vegetation.

Recommended Development Guidelines

1. All natural riparian vegetation should be preserved except for the building site and access route.
2. Graded building pads should not exceed the dimensions of structures.
3. Further subdivision of parcels within the standard project floodplain should be prohibited. In calculating gross acreage, lands within the floodplain should be excluded.
4. Site Plan review should be required for all structures when any development is proposed for slopes exceeding 30 percent.

Implementation Recommendations

1. Direct the EMA to prepare a zoning district for inclusion in the County Zoning Code in order to implement the intent of the Rural Residential category.
2. Direct the EMA to consider the amendment of the Land Use Element of the General Plan to incorporate the additions and revisions recommended herein.

7.320 Low Density Residential

One dwelling unit per acre is recommended as the highest density to be allowed for new development in areas which have relatively flat terrain and ready access to the existing road network and services. In calculating gross acreage, lands within the floodplain should be excluded.

7.330 Existing Low to Medium Density Residential

Residential densities from two to four dwelling units per acre are identified on the community plan land use map and are intended to reflect existing development densities in Silverado and Modjeska Canyons. It is estimated that there are approximately 330 undeveloped parcels which are under four acres in both canyons. Most of these are generally considered to be unbuildable because of slope, size, soil and flood problems. Of these undeveloped parcels, for example, approximately one-third have more than 50 percent of their area lying within the proposed FP-2 zone (see Table 7.2).

Recommended Development Guidelines

1. Lot splits, divisions of land and subdivision should not be allowed.
2. The amalgamation of small undeveloped lots into more suitable building sites should be encouraged.

Implementation Recommendations

1. Direct the EMA to strictly enforce all codes and ordinances.
2. Direct the EMA to maintain the existing agricultural uses and implement Guidelines 1 and 2 above as part of any general plan amendment and zone change.

TABLE 7.2

EXISTING LOTS UNDER FOUR ACRES IN
SILVERADO AND MODJESKA CANYONS

	<u>SILVERADO CANYON</u>	<u>MODJESKA CANYON</u>
Developed Lots	365	117
Undeveloped Lots	<u>270</u>	<u>63</u>
Total Lots < 4 Acres	635	180
Developed Lots in Floodplain*	96	35
Undeveloped Lots in Floodplain*	<u>87</u>	<u>20</u>
Total Lots in Floodplain*	183	65

*Lots which have 50 percent or more area within the proposed Floodplain Zone.

7.340 Recreation

The Recreation category is intended to identify private and commercial recreation facilities such as equestrian centers, special purpose recreation facilities, recreation vehicle camps, golf courses. Such facilities should be oriented to and compatible with any current proposals for Santiago Regional Park and the equestrian and hiking trail in the Santiago Creek floodplain. This Recreation category meets the definition of the (5.3) Recreation designation of the General Plan.

7.350 Regional Park

Lands in this category are recommended for eventual public acquisition as part of the County's regional park system.

7.360 Conservation

Historical and paleontological sites in Silverado-Modjeska which have been singled out for special treatment in the Open Space Conservation Element of this Community Plan have been placed in a Conservation category which corresponds to the (5.41) Conservation designation of the General Plan. (See Section 4.300.)

7.370 Neighborhood Commercial

Existing neighborhood commercial sites in the developed portions of Silverado and Modjeska Canyons are recognized as adequate for present and future needs.

Recommended Development Guidelines

1. Commercial uses in Silverado and Modjeska Canyons are to be limited to existing sites. No new sites should be permitted.
2. No commercial sites should be allowed in Williams Canyon.
3. Neighborhood commercial uses may be approved in other residential areas under the following conditions:
 - a. The facility must be intended primarily to serve the adja-

cent residential neighborhood.

- b. The circulation and access needs can be met adequately.
- c. The need for the facility can be adequately demonstrated.
- d. Neighborhood commercial use will not cause undue impacts on neighboring properties.
- e. Neighborhood commercial sites should not be located along Santiago Canyon Road Scenic Highway.
- f. Site plan review should be required.

7.400 COMMUNITY LAND USE PLAN

The land use plan presented with this document (see 1000 scale Land Use Map attached) has evolved out of a detailed evaluation of numerous land use alternatives proposed by staff, interested citizens, property owners and consultants. Various alternatives to this plan are presented in the accompanying Environmental Impact Report.

This plan emphasizes new development in canyon bottom areas under 30 percent slope and/or in close proximity to Santiago Canyon Road. Marketing studies indicate that new development will consist of generally larger dwelling units with greater person per household rates than existing units. Densities of all new development are well below existing residential densities in order to avoid problems of sewerage, grading, fire, flood and congestion which are characteristic complaints of existing canyon dwellers.

Existing development trends in the study area toward large lots are reinforced by the plan and directed in a manner which will assist in providing services, preserving riparian areas and utilizing the natural topography.

Residential land use categories are summarized in Table 7.1. Assuming maximum buildout, this plan allows for approximately 1791 dwelling units, an increase of 1254 over existing units. For all private lands in the four residential canyons, this represents an overall gross density of one dwelling unit per four acres. It is believed that this plan configuration will minimize the threat of fire hazard to new development, allow a phasing of development which will not create additional sewage problems, alleviate the need for full urban services and facilities, and best implement the spirit and letter of the Foothill Corridor Policy Plan.

Following is a discussion of the proposed land uses by individual planning area:

7.410 North Bolero

Most land uses in North Bolero are affected by the 100-year flood-plain and on-going sand and gravel operations. No development pressure is anticipated until the completion of sand and gravel extraction sometime after 1985, and therefore, the existing Reserve Area status designated by the General Plan is appropriate. Almost the entire area is under the single ownership of the Irvine Company.

Recommended Development Guidelines

1. That portion of North Bolero owned by the Irvine Company should be planned, removed from Reserve Status and rezoned as a whole unit.
2. A specific plan or area plan for North Bolero should be approved before any subdivision is approved.
3. Such specific or area plans should include implementation proposals for all applicable guidelines in this Community Plan.
4. All development should be restricted from the ridge which forms the western boundary of the study area.
5. The southern portion of North Bolero which has already been removed from Reserve Area status should be allowed to develop at recommended densities.

7.420 Modjeska Canyon

Modjeska Canyon should maintain its existing residential theme with development concentrated in the canyon floors, the ridge area next to Santiago Canyon Road and a portion of a lower ridge area at the southern and eastern limits of private lands within the area.

Implementation Recommendations

Direct the EMA to recognize the existing residential village and the new development areas which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Recommended Development Guidelines

1. Neighborhood commercial facilities are to be limited to the existing location and type. All other areas in Modjeska Canyon are to be free from commercial development of any type.
2. Tucker Wildlife Sanctuary should be restricted from further expansion.
3. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity. Any development which proposes large tree removal should be subject to site plan review.
4. All future development should preserve the natural character of the creek within the canyon. If development must take place within the floodplain, the location of structures should minimize the need for channelization (i.e., walls, berms, fill, etc.).
5. New roads and further divisions of land should be discouraged in the Rural Residential (1 du/10-40 acs) category.

7.430 Williams Canyon

This canyon area contains approximately eight developed lots. Development of the canyon bottom is limited by the same type of physical constraints and potential hazards which are found in Silverado and Modjeska Canyons (sewage, flooding, fire access and landslides). The entire canyon is affected by a proposed sand and gravel extraction site for which a rezoning application has been on record since 1965 (ZC 65-14). Williams Canyon is proposed in this plan for limited and low density residential uses. Large lots are proposed to enable equestrian uses and the raising and keeping of animals. The residential image of Williams Canyon is intentionally different from Silverado and Modjeska, emphasizing more open space within the residential areas.

Implementation Recommendations

1. The issues involved in Zone Change 65-14 should be resolved before Williams Canyon is amended in the General Plan.
2. In any consideration of a sand and gravel extraction operation in Williams Canyon, compatibility with existing and future residential uses should be demonstrated.

Recommended Development Guidelines

1. Development of existing parcels smaller than two acres is recognized, but no further division of parcels or subdivisions should allow lots smaller than two acres.
2. No commercial facilities of any kind should be allowed in this canyon area.
3. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity. Any development which proposes large tree removal should be subject to site plan review.
4. All future development should preserve the natural character of the creek within the canyon.
5. New roads and further divisions of land should be discouraged in the Rural Residential (1 du/10-40 acs) category.

7.440 Silverado Canyon

The existing residential development in upper Silverado Canyon is recognized, but except for some minor expansion in several branching canyons, further subdivision is not recommended. Significant new residential development is concentrated in areas apart from the existing residential village, particularly Ladd Canyon, Holtz Ranch and Irvine Mesa; these areas are particularly significant because they contain large land ownerships and can be expected to develop as planned units. It is also recognized that opportunities may exist in each of these three areas to better implement the intent of the various elements of the Community Plan through further clustering if water and sewerage can be provided.

Implementation Recommendations

Direct the EMA to recognize the existing residential village and the new development areas which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Development Guidelines

1. Neighborhood Commercial facilities are limited to the acreage which is already zoned C1. No new commercial areas should be allowed.

2. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity. Any development which proposes large tree removal should require site plan review.
3. All future development should preserve the natural character of the creek within the canyon. If development must take place within the floodplain, the location of structures should minimize the need for channelization (i.e., walls, berms, fill, etc.).

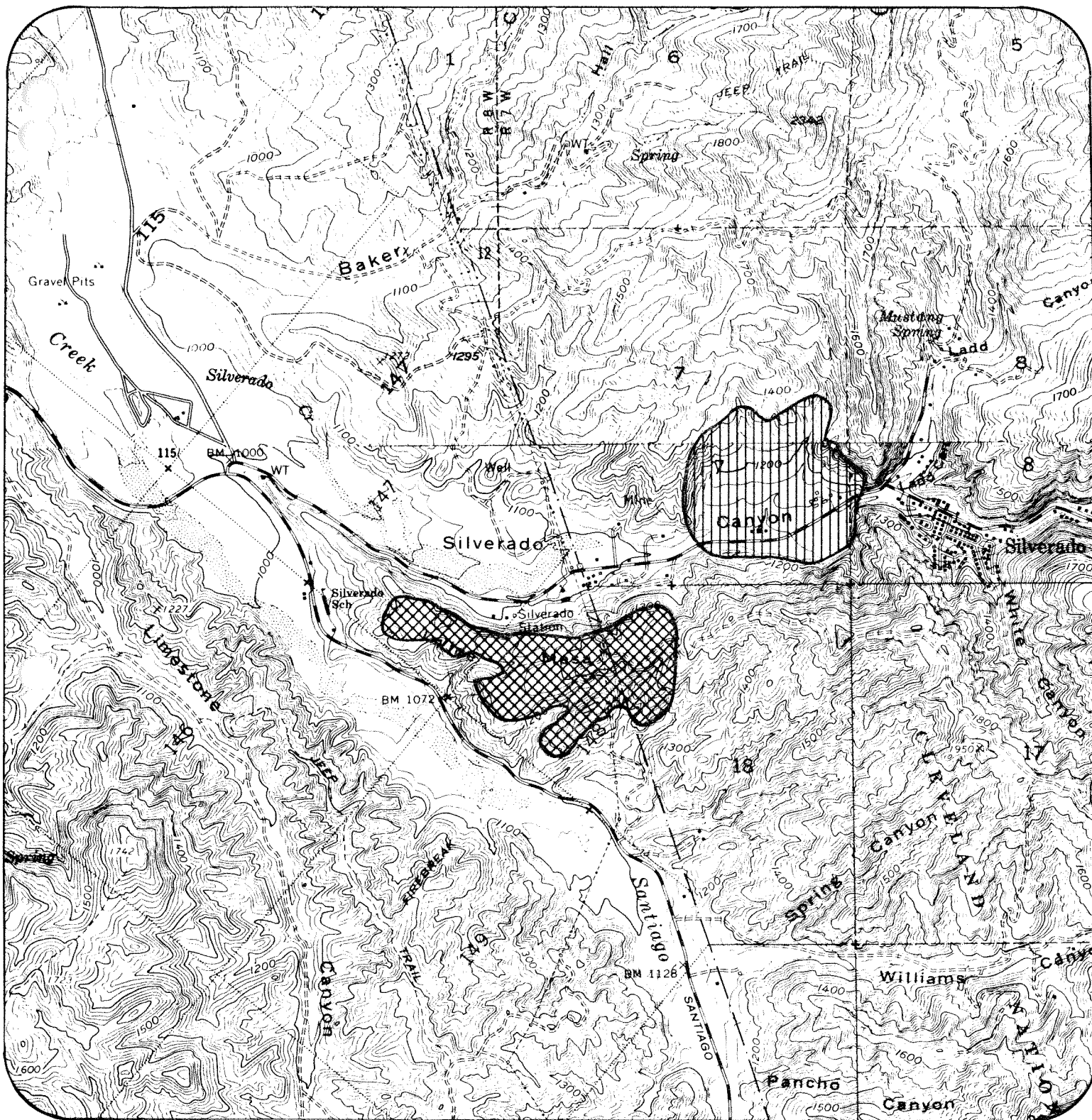
Special Opportunity Areas

In the environmental analysis, two areas were identified as being particularly suitable for development. Map 7.2 delineates these areas generally known as the Holtz Ranch and Irvine Mesa. Compared to other areas in Silverado-Modjeska, these two are relatively flat and accessible. Furthermore, they are large and involve single property owners. It is recognized that Holtz Ranch and Irvine Mesa are suitable for medium density residential uses (3.5 - 5.0 dwelling units per acre) if and when liquid waste disposal problems can be solved to the county's satisfaction. This suitability should not be assumed to downgrade the physical constraints and hazards which exist on both sites nor the need for careful adherence of any development proposals to the overall intent of the Community Plans to preserve the existing physical and social environment. The medium density range is significantly higher than the maximum density allowed for these areas by the Community Plan Land Use Map. It is anticipated that comprehensive site planning will be necessary, including some kind of on-site sewage disposal system, before such densities may be allowed. In consideration of development in these special opportunity areas, the following conditions should be met:

- a. The feasibility of sewage disposal must be demonstrated before the area is removed from Reserve Area status in the General Plan.
- b. Development proposals must include specific implementation proposals for all applicable guidelines in this Community Plan.
- c. "Planned Community" zoning must be applied to the entire parcel in which the opportunity area is located.
- d. Development areas must be limited to the contiguous area under 30 percent slope.
- e. Non-development areas are to remain in permanent open space.

7.450

Lands in the Baker Canyon area range from narrow box canyons to low rolling hills and are generally in large land ownerships. Existing development in the area consists of picnic grounds and a recreation



special opportunity areas

-  holtz ranch
-  irvine mesa

map
no.

7.2

vehicle trailer park in Hall Canyon (Flying B Ranch). Thirty spaces with complete hook-ups are now operating in the trailer park. Such recreational uses are more appropriate in these back canyon areas than residential development on the basis of service provision, hazard mitigation and fire protection.

In order to maintain a link with Santiago Regional Park and prevent possible recreation and residential conflicts, a recreation corridor is recommended along the entire length of the Baker Canyon floor, extending to the Santiago Creek floodplain.

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Recommended Development Guidelines

1. Recreational uses designated on Irvine Company lands should be oriented toward the proposed riding and hiking trails, regional park facilities and floodplain and open space. It is also recognized that such recreational uses may be integrated into the adjacent residential developments.
2. Residential development in the Rural Residential (1 du/2-4 acres) category may be clustered under the following conditions:
 - a. "Planned Community" zoning for all lands in the Rural Residential (1 du/2-4 acres) and zoning to implement adjacent Recreation categories must be applied at one time.
 - b. Development proposals should include implementation proposals for all applicable guidelines in this Community Plan.
 - c. Liquid waste disposal must meet all conditions of the County Health Department and the Santiago County Water District.
 - d. Non-development areas are to remain in permanent open space.

7.460 Black Star Canyon

The General Plan reserves Black Star Canyon for a major future addition to the County's recreation inventory. The conditions under

which these designations were made have not changed (Hidden Ranch hydro-electric facility and conceptual arterial highway), and further study has indicated the suitability of the canyon for regional recreation and conservation purposes.

The Community Plan Land Use Map delineates a proposed site for Black Star Canyon Regional Park which is significantly different from that delineated in the General Plan. The new delineation which appears in this Community Plan emphasizes the need for a relatively large acreage in which a variety of both active and passive recreation activities can be accommodated while preserving the unique landform, wildlife and vegetation character of the canyon. It should be noted that large portions of the proposed site lie within federal lands. It is also anticipated that any new alignment for Black Star Canyon Road would provide adequate access through or around the park site.

Most of Black Star Canyon Road which does not lie within the proposed regional park is contained within a recreation corridor in order to preclude residential strip development and to take advantage of the opportunities of the riparian environment. The remainder of Black Star Canyon is suitable for limited residential use to the extent that it does not interfere with recreation access.

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

7.470 Silverado Flats

All potential land uses in the Silverado Flats area are directly affected by the 100 year floodplain and on-going sand and gravel operations. No development pressure is anticipated until the completion of sand and gravel extraction sometime after 1990, and therefore, the existing Reserve Area status designated by the General Plan is appropriate. The most important land uses here are the proposed regional park and floodplain trail system (see Recreation Element).

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

7.500 RESERVE AREA STATUS

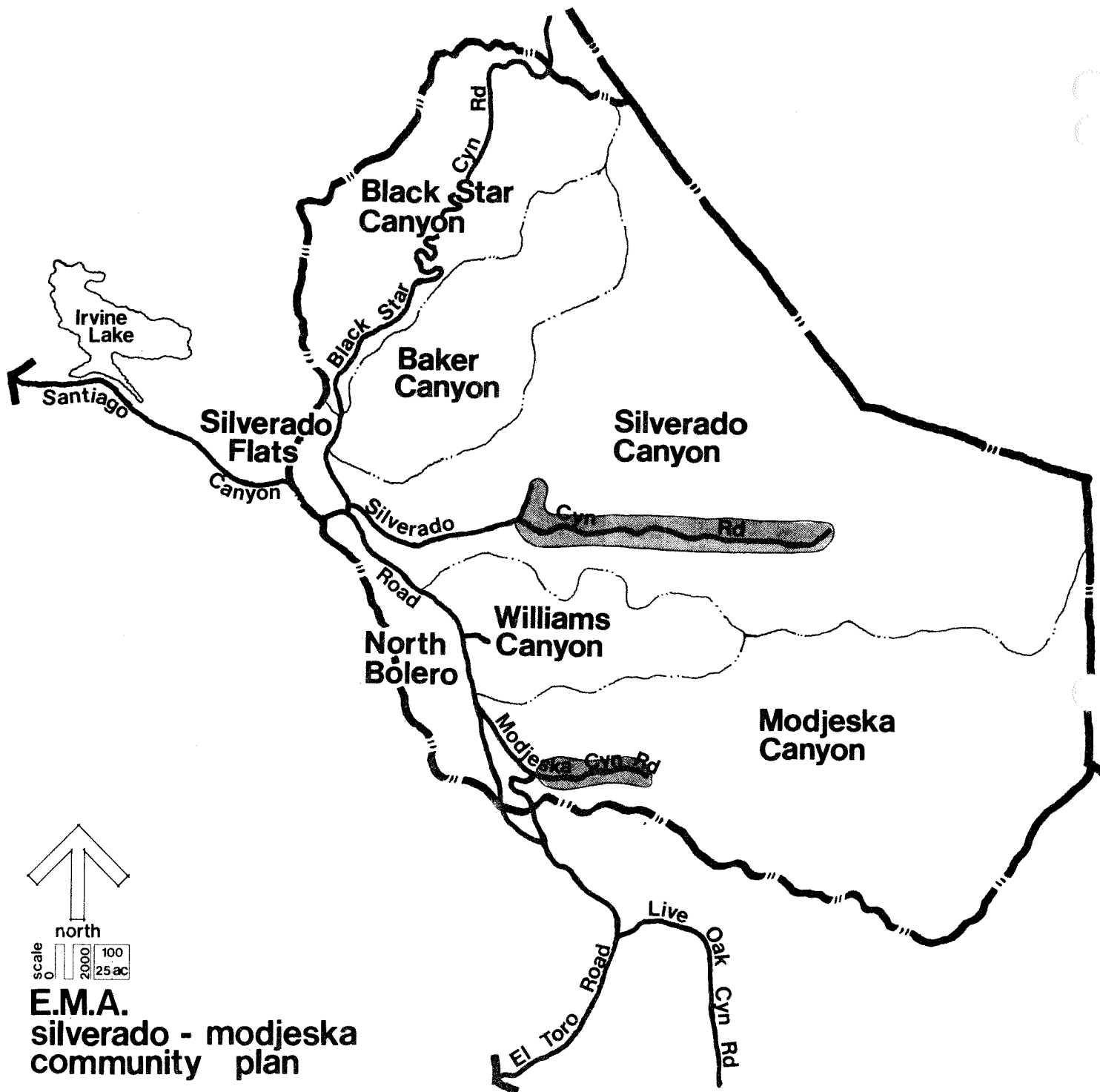
Although land use categories are proposed by the Community Plan for

incorporated into the General Plan, no change is recommended for the Reserve area status of the Silverado-Modjeska study area.

In considering the removal of the Reserve area status of any lands within the study area, sewage disposal, road access, and natural hazard mitigation are of primary concern.

housing element

8



existing population (1970)

 residential concentrations

	North Bolero	Modjeska Canyon	Williams Canyon	Silverado Canyon	Baker Canyon	Black Star Canyon	Silverado Flats	Totals
Existing Dwellings	4	153	13	362	1	4	0	537
Population	10	398	34	941	3	10	0	1398

map
no.

8.1

8.000 HOUSING ELEMENT

8.100 PURPOSE

This element inventories existing housing supply, demand and discusses special housing needs.

8.200 GROWTH TRENDS

In general, the growth which the County has experienced over the last decade and a half has had minimal impact on the Silverado-Modjeska Planning Area. With the exception of market forces which influenced the transition of the Planning Area's housing stock from seasonal to primary housing use, the area has remained largely isolated from the rapid population and employment increases. Non agricultural wage and salary employment within the planning area is estimated to total less than 50 jobs. In addition, with the exception of the gravel processing operation, employment within the planning area is limited to jobs which serve the existing community. The population is estimated to have increased by only 100 persons since 1970 to a current total of 1,500 persons. This addition translates into an average annual growth rate of 1.4 percent in the planning area during the 1970-1975 period. By contrast, the County's population increased at an average annual rate of 3.5 percent during the same period. Map 8.1 illustrates how population growth in the planning area has been concentrated within Silverado and Modjeska Canyons.

8.300 CURRENT HOUSING STOCK

The current inventory of housing in the Silverado-Modjeska Study Area is estimated at 650 units, an increase of 34 units since the 1970 Census. Available data from the Santiago County Water District (Table 8.1), which was used in lieu of building permits, indicates that building activity was heaviest during 1974 and 1975, an interesting contrast to the general recession which struck the housing industry.

TABLE 8.1

NEW HOUSING UNITS

1971-1976
SILVERADO MODJESKA PLANNING AREA
UNITS

1971 (6 mos)	1
1972	4
1973	4
1974	8
1975	13
1976 (to date)	2

SOURCE: Santiago County Water District

NOTE: Data is unavailable prior to June 1971.

New construction tends to have a valuation of \$30 per square foot. Overall new home sizes appear to average about 1600 square feet and on average have at least three bedrooms. Because of the unusual subdivision characteristics of the Planning Area, accurate data on average lot size is unavailable, but local sources indicate that buildable lots tend to be relatively small.

8.400 HOUSING CONSUMPTION

8.410 Current Sales

Table 8.2 presents a distribution of Home Sales by the number of bedrooms. As can be readily seen, one and two bedroom units account for the overwhelming majority of home sales. This is due to the nature of the existing housing stock, which is comprised primarily of one and two bedroom units initially built as vacation homes. Local sources indicated that the lack of three and four bedroom units has been a factor which has impeded the expansion of the local housing market.

TABLE 8.2

PERCENTAGE DISTRIBUTION OF HOME SALES BY NUMBER OF BEDROOMS
SILVERADO - MODJESKA PLANNING AREA

	ONE	TWO	THREE	FOUR	FIVE	TOTAL
1975	31%	61%	7%	--	--	100%
1974	35	55	4	4%	2%	100%
1973	26	50	22	--	2	100%

8.420 Price Changes

Table 8.3 presents a distribution of median homes prices by the number of bedrooms. According to the 1970 Census the median home value in the planning area was \$17,600. A comparison of the 1975 median home price to the 1970 median home value (which is an adequate equivalent of price) indicates that prices in the market area have risen at an estimated average annual rate of 11.0 percent during the 1970-75 period. By comparison, market prices of existing homes in Orange County have risen at an average annual rate of 9.2 percent for the same period.

TABLE 8.3

PERCENTAGE CHANGE IN MEDIAN HOME PRICES (1973-75)

SILVERADO-MODJESKA PLANNING AREA

MEDIAN PRICE	<u>1975</u>	<u>1974</u>	<u>1973</u>	PERCENT <u>'75/'74</u>	CHANGE <u>'74/'73</u>
TOTAL	\$30,450	\$25,000	\$23,000	22%	9%
ONE BR.	22,100	17,150	16,400	20	5
TWO BR.	32,500	26,800	23,900	21	12
THREE BR.	45,000	35,000	31,400	29	12
FOUR BR.	N.A.	45,000	N.A.	--	--
FIVE BR.	N.A.	37,500	32,500	--	15

While the relatively more rapid escalation of home prices in the planning area does provide some indication of the strength of demand, it should be noted that the relatively slower rate of expansion in supply in the planning area has been partly responsible for the difference in the rates of increase. In addition, the rise in median prices was particularly sharp during 1975, thus influencing the 5-year average.

Several points are worth noting. First, for the period covered (the only period for which complete data is available) the turnover of homes has averaged about 50 homes annually, or about 8 percent of the inventory.

Secondly, while a relatively large number of three-bedroom homes entered the market in 1973, recent years have seen very few three-bedroom homes on the market. This low turnover when compared to the one-and two-bedroom homes, whose turnover has remained relatively constant, is an indication of the strength of the demand for three-and-four-bedroom homes.

8.500 SPECIAL NEEDS

Silverado-Modjeska contains no significant pockets of poor or minority residents, nor are there many handicapped residents currently or expected to be living in the area. Characteristics such as steep topography, geologic problems, lack of sewers, inadequate water distribution and the lack of public transportation and nearby major employment centers inhibit the development of lower income housing in the study area. While many of these problems can be corrected, the increased cost to the developer would be reflected to the buyer in higher prices.

summary of
recommendations
and guidelines

9

The following is a concise listing of all Implementation Recommendations and Recommended Development guidelines proposed for adoption in this Community Plan:

2.000 SAFETY ELEMENT

2.300 FLOOD HAZARD

Recommended Development Guidelines

1. Future channelization of Silverado and Santiago floodplains and development which would necessitate such channelization should be discouraged.
2. Flood control devices and facilities where absolutely required, should be designed to blend with the natural character of the creek.

2.400 GEOLOGIC HAZARDS

Recommended Development Guidelines

1. No development should be allowed on land in excess of 45% slope.
2. Hillside should be protected against the loss of soil retaining vegetation.
3. Any public or private development proposal made within the planning area should be accompanied with sufficient information which can identify existing hazards, including faults, landslides and fire.
 - a. The information should be presented in detail adequate to enable the reviewing agency to make determination of the level of risk for the type of development proposed.
 - b. The information should encompass the geographic area of the proposal and, if necessary, the surrounding area if such area has relative impact with regards to hazards.
 - c. The information should include a map(s) showing precise location of all hazards with regard to the proposal.
 - d. The information should contain a description of the methods used in preparation of the map data.

- e. The information should contain the methodology and all evidence for any conclusions presented.
4. For areas which have been identified as having hazard potential in Guideline No. 3, the developer/subdivider should demonstrate the feasibility of mitigation measures to the satisfaction of County agencies.
5. The foregoing guidelines should become operable under any one of the following conditions:
 - a. Any application to the County for a change in zoning.
 - b. Any application to the County for a tentative parcel map or subdivision.
 - c. Any application for construction under existing or proposed zoning on undeveloped land.
 - d. Any proposal to construct a public works project.

3.000 OPEN SPACE AND CONSERVATION ELEMENT

3.300 VEGETATION AND WILDLIFE

Recommended Development Guidelines

1. The isolated stands of knobcone pine, bigcone spruce and coulter pine should remain in a natural state and setting and be preserved as a scientific, educational and aesthetic resource.
2. The cliffs and rock outcroppings located in Harding, Upper Santiago and Baker Canyons should remain in a natural state and be preserved for use only as habitats for birds of prey.
3. The riparian vegetation contained in Black Star, Baker, Hall, Upper Ladd to include east and west forks, Upper Silverado, Williams, Upper Modjeska, Harding and all of Santiago Canyon should be preserved for its function as a natural habitat and migratory route for wildlife.
4. The riparian vegetation of Santiago Canyon should be preserved for its function as a wildlife migration route between the Santa Ana Mountains and the Lomas De Santiago Hills and for its function as a wildlife migration corridor linking the Santa Ana Mountains and Lower Santiago Creek and Aliso Creek areas.

5. Access to existing riparian vegetation on public lands should be via designated hiking trails only.
6. The abundant and diverse plant and animal communities contained in Black Star Canyon should be preserved as a wildlife habitat and nature study area by the acquisition of the proposed regional park.
7. Naturally occurring springs, water courses and other permanent water sources, should have restricted human access and be preserved to function as water sources for plants and wildlife.
8. Channelization or alteration of Silverado and Santiago Creeks should be discouraged to preserve natural ponding in the creeks to function as a water source for wildlife.

3.400 ARCHAEOLOGY AND PALEONTOLOGY

Implementation Recommendations

1. Direct the GSA to initiate an acquisition feasibility study for the Silverado Canyon paleontological sites. Such acquisition, if feasible should be accomplished either before or as part of any development proposal, application for construction or division of land concerning the property.
2. Direct the GSA to initiate an acquisition feasibility study for the Black Star Canyon Indian Village archaeological site. Such acquisition, if feasible should be accomplished either as part of the proposed Black Star Canyon Regional Park or as a part of any development proposal, application for construction or division of land on the property.

Recommended Development Guidelines

1. As either public or private land, the following guidelines should be applied to the Silverado Canyon Paleontological sites:
 - a. The sites should be considered for public acquisition either before or as a part of any development proposal, application for construction or division of land on the property,
 - b. No grading or other development excavation should be made on the sites,

- c. Pedestrian access along and through the Silverado Creek streambed and from the narrows northward to the southern Silverado site should not be restricted,
 - d. Future measures taken to preserve the sites should also provide the means for supervised and controlled examination and collection to avoid indiscriminate and wasteful use of the resource,
 - e. The sites should be protected and retained in a natural state or stabilized in their present state until such time as more specific recommendations as to their management and deposition can be made.
2. As either public or private land, the following guidelines should be applied to the Black Star Canyon archaeological site:
- a. No grading or other development excavation should be made on the site,
 - b. The ultimate use of the site should be for an educational interpretive center which will permit the retention of the site in as natural a setting as possible to represent prehistoric living conditions.
 - c. The site should be open to the interested public wishing to visit and experience this landmark site,
 - d. Prior to any proposed use of the site, a thorough scientific investigation should be made to identify all outstanding features and make recommendations as to the most appropriate design and management of an interpretive center facility.
 - e. The site should be protected and retained in a natural state or stabilized in its present state until such time as more specific recommendations as to its management and final deposition can be made.
3. For all development projects in the Silverado-Modjeska area, the the following guidelines for archaeological and paleontological sites should be observed.
- a. With each project or initial study a literature search for valid archaeological and paleontological surveys will be conducted by qualified persons. If such a search determines that no valid survey has been performed, such a survey will be performed as a part of the initial study.

- b. If archaeological or paleontological resources are discovered during grading, further grading of the resource area should be deferred temporarily to permit an archaeologist or paleontologist to examine the site and to determine the extent and relative scientific value of the site. Prior to resumption of grading, a determination is to be made whether to preserve, salvage or destroy the site.
- c. If evidence is found that an archaeological or paleontological resource is being or will be impacted by a public or private project, a test and report of the impacted area, the affected resources, and the impacts of the project on the resource should be made. The study should be made by a qualified archaeologist or paleontologist after which a report should be submitted to the approving agency for the project defining the scientific importance of the find and a recommendation as to its preservation or disposition.
- d. Prior to approving the project, the approving agency should make a determination based on the above report as to the ultimate disposition of the site.
- e. When the determination is made that a site is to be preserved for later study, it should be retained in a natural state or converted to a park site, permanent open space or other use which will assure the preservation and availability of the site for later study. A determination should be made that the site will be purchased by the County or other public agency, or that appropriate incentives or tradeoffs will be provided to the owner in return for the loss of any development rights on the site.
- f. When the determination is made that a site is to be salvaged, the project developer and the paleontologist shall coordinate their activities so as to adequately salvage the site.
- g. When a survey study, EIR or other information presented to the approving agency indicates the probable presence of archaeological or paleontological resources, an archaeologist or paleontologist should be retained to observe those grading activities deemed appropriate by the qualified specialist.
- h. Resources recovered are the property of the land owner who shall be encouraged to donate them to a museum or

educational institution after study and evaluation.

3.600 LANDFORMS

Recommended Development Guidelines

1. All cut and fill banks shall be finished to harmonize with the existing topography and geology. This includes maintaining a percentage slope of cut and/or fill similar to the area. Abrupt changes of graded areas are to be avoided, rounding all edges into the natural topography and planting with compatible vegetation.
2. All cut and fill banks shall be planted with appropriate erosion retardant cover where geological and soil conditions permit, and native fire resistant plants should be used near structures or along fire break areas where appropriate.
3. Roads should be located and sized to minimize the amount of grading required following the natural contours where possible.

3.700 SAND AND GRAVEL EXTRACTION

Recommended Development Guidelines

1. Landscape screening of extraction sites should be fully effective for 80% of the life of the operation.
2. The rehabilitation of the site should be compatible with the land uses designated by the Community Plan for the surrounding area.
3. The rehabilitation plan must demonstrate that the essential environmental character of the area remains in tact.

4.000 RECREATION ELEMENT

4.200 REGIONAL PARKS

Implementation Recommendations

1. Direct the EMA to consider changing the MPRP Priority Group for the Santiago site of the proposed Limestone-Santiago Regional Park from II to III, while retaining the Limestone site as Priority Group II.

2. Direct the EMA to consider changing Black Star Regional Park from MPRP priority Group III to Group II.
3. Direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon for the purpose of recreational access.
4. Direct the EMA to conduct a feasibility study of a phased development plan for Black Star Canyon Regional Park which considers the following segments:
 - a. Lower Black Star (Federal)
 - b. Indian Village Area (So. Cal. Edison)
 - c. Hidden Ranch (So. Cal Edison)
5. Direct the EMA to consider the deletion of the Upper Silverado and Harding-Modjeska sites from the Master Plan of Regional Parks.

4.400 RIDING AND HIKING TRAILS

Implementation Recommendation

Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail system delineated on the Community Plan Land Use Map.

4.500 EQUESTRIAN CENTERS

Implementation Recommendation

Direct the EMA to consider deleting the Upper Silverado equestrian center site and adding the Santiago and Black Star equestrian center sites to the Master Plan of Riding and Hiking Trails.

4.600 TRAIL STOPS

Implementation Recommendation

Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail stops delineated on the Community Plan Land Use Map.

4.700 BIKEWAYS

Recommended Development Guidelines

1. That portion of the proposed Santiago Canyon Road Bikeway within the planning area should eventually be located within the floodplain.
2. In the interim, any improvements of Santiago Canyon Road should consider the incorporation of a temporary bikeway facility.

5.000 CIRCULATION ELEMENT

5.200 ROAD CLASSIFICATIONS

5.210 Arterial Highways

Implementation Recommendation

As an interim measure and in conjunction with the partial development of Black Star Canyon Regional Park (see Recreation Element), direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon to accommodate recreational traffic.

5.300 STANDARDS OF STREET DESIGN

Recommended Development Guidelines

1. Wherever possible, developments in the study area should meet the adopted criteria for the application of rural streets, and the streets therein should be constructed in accordance with the appropriate rural street standard.
2. Consideration should be given to the exclusion of upper Silverado Canyon Road (from Ladd Canyon to the National Forest) and Modjeska Canyon Road from these and other arterial standards when it can be demonstrated that no adverse safety effects will be encountered.
3. Consideration should be given to modification of these standards when opportunities to preserve trees and the natural terrain are present.
4. The design of new roads and all existing road improvements should be subject to site plan review.

6.000 SCENIC HIGHWAY ELEMENT

6.300 SCENIC CORRIDOR

Recommended Development Guidelines

1. Site plan review should be required for all development within the scenic corridor.
2. All development within the scenic corridor should be screened from the highway to reduce external visibility and reduce noise levels by aid of landscaped buffer strips and/or planted earth berms.
3. Development in Irvine Mesa should provide setbacks or landscaping to screen the view of structures from Silverado Canyon Road and Santiago Canyon Road.
4. The northern entrance to Modjeska Canyon should emphasize the landscape corridor similar to the existing olive groves. This entry treatment should screen housing and structures from the road.
5. Residential development within the corridor should be sound attenuated where necessary to meet County health standards.

6.400 ROADWAY DESIGN

Implementation Recommendations

1. Direct the EMA to conduct and consider the results of such a wildlife migration study in the precise alignment and design of Santiago Canyon Road.
2. Direct the EMA to consider the conceptual alternatives in this Community Plan and various development plans for Santiago Regional Park in the precise alignment and design of Santiago Canyon Road.

7.000 LAND USE AND COMMUNITY DESIGN ELEMENT

7.300 LAND USE CATEGORIES

7.310 Rural Residential

10-40 ACRE LOTS

Recommended Development Guidelines

1. The vertical height of any grading activity should not exceed 10 feet.

2. Landscape screening should obscure development and grading scars from view from any public road.
3. No structure should obscure any ridgeline as seen from any public road.
4. Graded building pads should not exceed the dimensions of structures.
5. No grading should occur on slopes exceeding 45 percent except for fuelbreaks and community-wide emergency access routes.
6. Site plan review should be required for all structures.
7. In order to preserve the natural character of the terrain, a maximum of 5% of the site may be developed with impervious surfaces (i.e., buildings, driveways, roads, etc.).

2-4 ACRE LOTS

Recommended Development Guidelines

1. All natural riparian vegetation should be preserved except for the building site and access route.
2. Graded building pads should not exceed the dimensions of structures.
3. Further subdivision of parcels within the standard project floodplain should be prohibited. In calculating gross acreage, lands within the floodplain should be excluded.
4. Site plan review should be required for all structures when any development is proposed for slopes exceeding 30 percent.

Implementation Recommendations

1. Direct the EMA to prepare a zoning district to implement the intent of the Rural Residential category.
2. Direct the EMA to consider the amendment of the Land Use Element of the General Plan to incorporate the additions and revisions recommended herein.

7.330 Existing Low to Medium Density Residential

Recommended Development Guidelines

1. Lot splits, divisions of land and subdivision should not be allowed.
2. The amalgamation of small undeveloped lots into more suitable building sites should be encouraged.

Implementation Recommendations

1. Direct the EMA to strictly enforce all codes and ordinances.
2. Direct the EMA to maintain the existing agricultural uses and implement Guidelines 1 and 2 above as part of any general plan amendment and zone change.

7.370 Neighborhood Commercial

Recommended Development Guidelines

1. Commercial uses in Silverado and Modjeska Canyons, are to be limited to existing sites. No new sites should be permitted.
2. No commercial sites should be allowed in Williams Canyon.
3. Neighborhood commercial uses may be approved in residential areas under the following conditions:
 - a. The facility must be intended primarily to serve the adjacent residential neighborhood.
 - b. The circulation and access needs can be met adequately.
 - c. The need for the facility can be adequately demonstrated.
 - d. Neighborhood commercial use will not cause undue impacts on neighboring properties.
 - e. Neighborhood commercial sites should not be located along Santiago Canyon Road Scenic Highway.
 - f. Site plan review should be required.

7.400 COMMUNITY LAND USE PLAN

7.410 North Bolero

Recommended Development Guidelines

1. That portion of North Bolero owned by the Irvine Company should be planned, removed from Reserve Status and rezoned as a whole unit.
2. A specific plan or area plan for North Bolero should be approved before any subdivision is approved.
3. Such specific or area plans should include implementation proposals for all applicable guidelines in this Community Plan.
4. All development should be restricted from the ridge which forms the western boundary of the study area.
5. The southern portion of North Bolero which has already been removed from Reserve Area status should be allowed to develop at recommended densities.

7.420 Modjeska Canyon

Implementation Recommendations

Direct the EMA to recognize the existing residential village and the new development areas which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Recommended Development Guidelines

1. Neighborhood commercial facilities are to be limited to the existing location and type. All other areas in Modjeska Canyon are to be free from commercial development of any type.
2. Tucker Wildlife Sanctuary should be restricted from further expansion.
3. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity. Any development which proposes large tree removal should be subject to site plan review.
4. All future development should preserve the natural character of the creek within the canyon. If development must take place within the floodplain, the location of structures should minimize the need for channelization (i.e., walls, berms, fill, etc.).
5. New roads and further divisions of land should be discouraged in the Rural Residential (1 du/10-40 acs) category.

7.430 Williams Canyon

Implementation Recommendations

1. The issues involved in Zone Change 65-14 should be resolved before Williams Canyon is ammended in the General Plan.
2. In any consideration of a sand and gravel extraction operation in Williams Canyon, compatibility with existing and future residential uses should be demonstrated.

Recommended Development Guidelines

1. Development of existing parcels smaller than two acres is recognized, but no further division of parcels or subdivisions should allow lots smaller than two acres.
2. No commercial facilities of any kind should be allowed in this canyon area.
3. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity. Any development which proposes large tree removal should be subject to site plan review.
4. All future development should preserve the natural character of the creek within the canyon.
5. New roads and further divisions of land should be discouraged in the Rural Residential (1 du/10-40 acs) category.

7.440 Silverado Canyon

Implementation Recommendations

Direct the EMA to recognize the existing residential village and the new development areas which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Recommended Development Guidelines

1. Neighborhood Commercial facilities are limited to the acreage which is already zoned C1. No new commercial areas should be allowed.
2. Large trees (exceeding five inches in diameter) should be preserved or replaced in conjunction with any development activity, and any removal should require site plan review.
3. All future development should preserve the natural character of the creek within the canyon. If development must take place within the floodplain, the location of structures should minimize the need for channelization (i.e., walls, berms, fill, etc.).
4. Holtz Ranch and Irvine Mesa should be considered for medium density residential uses (3.5 - 5.0 dwelling units per acre) under the following conditions:
 - a. The feasibility of sewage disposal must be demonstrated before the area is removed from Reserve Area status in the General Plan.
 - b. Development proposals must include specific implementation proposals for all applicable guidelines in this Community Plan.
 - c. "Planned Community" zoning must be applied to the entire parcel in which the opportunity area is located.
 - d. Development areas must be limited to the contiguous area under 30 percent slope.
 - e. Non-development areas are to remain in permanent open space.

7.450 Baker Canyon

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

Recommended Development Guidelines

1. Recreational uses designated on Irvine Company lands should be oriented toward the proposed riding and hiking trails, regional park facilities and floodplain and open space. It is also recognized that such recreational uses may be integrated into the adjacent residential developments.
2. Residential development in the Rural Residential (1 du/2-4 acres) category may be clustered under the following conditions:
 - a. "Planned Community" zoning for all lands in the Rural Residential (1 du/2-4 acres) and zoning to implement adjacent Recreation categories must be applied at one time.
 - b. Development proposals should include implementation proposals for all applicable guidelines in this Community Plan.
 - c. Liquid waste disposal must meet all conditions of the County Health Department and the Santiago County Water District.
 - d. Non-development areas are to remain in permanent open space.

7.460 Black Star Canyon

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

7.470 Silverado Flats

Implementation Recommendations

Direct the EMA to recognize the residential and recreation categories which are identified on the Community Plan Land Use Map by means of a General Plan amendment.

8

Environmental impact report

B

Table of Contents

I. Introduction and summary (In Final EIR Only)	
II. Project Description	1
III. Existing Environmental Conditions, Environmental Impacts, and Mitigation Measures proposed to minimize the Impacts	
A. Introduction	1
B. Physical and Natural Environment	1
1. Landforms and Slopes	1
2. Geology, Soils, and Minerals	3
3. Hydrology	6
4. Fire Hazard	7
5. Biological Resources	9
6. Archaeology, Paleontology and History	10
C. Urban Environment	16
1. Existing Land Use	16
2. Existing Circulation	17
3. Existing Zoning	18
4. Current Planning Programs	20
5. Housing and Demography	33
6. Climate and Air Quality	35
7. Public Services and Utilities	37
IV. Unavoidable Adverse Environmental Impacts	51
A. Short-term Impacts	51
B. Long-term Impacts	51
V. Alternatives to the Proposed Project	53
A. Overall Land Use Alternatives	53
1. No Development Alternative	53
2. No Project Alternative	53
3. Increased Densities	55
4. Maximum Development	57
B. Design Alternatives	58
1. Irvine Mesa and Holtz Ranch	58
2. Ladd Canyon	59
3. Rural Residential	59

VI.	The Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity	61
VII.	Irreversible and Irretrievable Commitment of Energy Supplies and Other Resources	62
VIII.	Growth Inducing Impacts of the Proposed Project	63
IX.	Agencies and People Contacted	64
X.	Appendix (Available at Rm. 201, 811 N. Broadway, Santa Ana)	

List of Exhibits

<u>Exhibit Number</u>	<u>Title</u>	<u>Opposite Page</u>
Map 1	Landforms	2
Map 2	Geologic Hazards	3
Map 3	Faults	4
Map 4	Floodplain	7
Map 5	Vegetation and Wildlife	10
Map 6	Historical Sites	13
Map 7	Existing Zoning	18
Map 8	Noise Contours	21
Map 9	Regional Parks	22
Map 10	Trail Network	23
Map 11	Circulation	26
Table 1	Air Quality for 1974	37
Table 2	Air Quality for 1975	38
Table 3	Current Estimated Mobile & Stationary Source Emissions for Silverado-Modjeska	40
Table 4	Projected Mobile & Stationary Source Emissions for Silverado- Modjeska	42
Map 12	Service Facilities	45
Table 5	Estimated Student Projections	46
Map 13	Water and Sanitary Districts	48
Table 6	Comparison of Population by Alternative	54
Table 7	Comparison of Dwelling Units by Alternative	56

II. PROJECT DESCRIPTION

Located in the Santa Ana Mountains, the Silverado-Modjeska Planning Area contains approximately 32,000 acres, most of which lies within the boundaries of the Cleveland National Forest. The land is rugged and not readily suitable for any type of intense urbanization. Topographic and geologic constraints, the widespread use of septic tanks and limited road access have all strongly influenced maintenance of the current low intensity land use pattern, but due to taxes, regional recreational demands, and continual pressures for development, it is increasingly difficult for the area to maintain its rural atmosphere. The Community Plan addresses these constraints and pressures, as well as the adopted principles and policies in the Orange County General Plan and the Foothill Corridor Policy Plan.

The short-range concerns which this Community Plan addresses include development control of existing residential areas, poor grading practices, and the creation of additional development controls. The long-range issues include the location and development intensity of regional parks, water quality and sewage disposal, as well as access to the Cleveland National Forest, rehabilitation and ultimate use of the sand and gravel extraction sites, preservation of the scenic highway corridor and historic sites, and development of all regional recreation opportunities. These issues, and other concerns identified during the course of the study program, are addressed in the Community Plan itself, along with the recommendations for action.

See Section 1.000 (pp. 1-6) in the Community Plan Text for a greater discussion of problems and issues.

III EXISTING ENVIRONMENTAL CONDITIONS, ENVIRONMENTAL IMPACTS, AND MITIGATION MEASURES PROPOSED TO MINIMIZE THE IMPACTS

A. INTRODUCTION

Existing environmental conditions of the study area are described in the Community Plan. A general discussion of the existing environment, plus additional specific information are presented here. References to the section in the Community Plan where additional information is located are also noted. The Community Plan proposes "Recommended Development Guidelines", which will mitigate the impacts of the proposed development, and as such are included as mitigation measures in the following discussions.

B. PHYSICAL AND NATURAL ENVIRONMENT

1. Landforms and Slope

a. Existing Conditions

The Silverado-Modjeska Planning Area exhibits a variety of physical features. The landform structure consists of the lineal Santiago Canyon with branching canyons extending into the steep-walled Santa Ana Mountains. The major branching canyons generally



E.M.A.
silverado - modjeska
community plan

landforms

map
no.

1

trend in a westerly or southwesterly direction. These consist of Black Star Canyon, Baker Canyon, Silverado Canyon, Harding Canyon, Williams Canyon, and Modjeska Canyon (see map 1).

The area contains some of the most rugged terrain and highest elevations in Orange County. Elevations in the planning area range from 400 feet along the lower stream channels to 5,687 feet at Santiago Peak, in a horizontal distance of less than five miles. Over 85% of the planning area is in excess of 30% slope. The severity of the steep slopes and rugged terrain increases in intensity in the easterly section of the planning area, toward the main divide ridge of the Santa Ana Mountains.

See Section 3.600 (p. 20) in the Community Plan for a further discussion of landforms in the Study Area.

b. Impacts

The land designated by this community plan for recreation and residential land uses will be irreversibly altered through earthwork operations necessary to develop the land to its proposed use. This development will occur principally in the canyon bottoms of Modjeska, Williams, Silverado, Baker, and Black Star Canyons as well as the ridge areas adjacent to Modjeska Canyon and Santiago Canyon Road and the hill area to the east of Irvine Flats.

c. Mitigation Measures

The Community Plan proposes development guidelines for specific density categories and canyon areas which, if adopted, would help mitigate the impact of development on the existing landforms. The specific guidelines which apply to land forms are listed below, along with the section of the Community Plan in which they can be found:

- (1) All manufactured slopes shall be finished to harmonize with the existing natural slopes. (3.600)
- (2) All manufacutred slopes shall be planted with appropriate erosion retardant cover where geologic and soil conditions permit, and native fire resistant plants should be used near structures or along firebreak areas where appropriate. (3.600)
- (3) Roads should be located and sized to minimize the amount of grading required, following the natural contours where possible. (3.800)
- (4) The vertical height of any grading activity should not exceed 10 feet. (This limit would prevent scarring of the hills.) (7.310)
- (5) In order to preserve the natural character of the ter-

rain, a maximum of 5% of the site may be developed with impervious surfaces (i.e., buildings, driveways, roads, etc.), and graded building pads should not exceed the dimensions of the structures. (7.310)

2. Geology, Soils and Minerals

a. Existing Conditions

The geology of the planning area is composed of volcanic and meta-sedimentary formations overlain with sedimentary deposits. The varying characteristics of the geologic formations, together with the steep slopes strongly influence the slope stability of the planning area. There are numerous existing and potential slide sites in the planning area, as well as mud-debris flow and rockfall areas. These constitute a serious natural hazard that will need to be investigated and mitigated in detail before further development takes place (see map 2).

There are several fault lines throughout the study area, but none are considered active (see map 3). The site is within close proximity of three active faults, the Christianitos Fault, 9 miles to the southeast, the Whittier-Elsinor Fault, 8 miles to the northeast, and the Newport-Inglewood Fault, 22 miles to the south.

See section 2.400 (pp. 9-10) in the Community Plan Text for further discussion of geology in the planning area.

Soils in the study area are characteristically loamy, with clayey soils found along the creek beds. These soils are predominately shallow, and located on steep terrain, with erosion problems.

Since there are no sewer systems, the study area is dependent on septic-tanks and cesspools to handle effluent. The percolation capacity of the soils is the determining factor in assessing the feasibility of septic tanks in a particular soil situation, and consequently the feasibility of a particular development.

The Orange County Health Department does not feel that septic tanks are an acceptable long-term solution. They do feel that as an alternative short-term measure, septic tanks can be allowed on sites no smaller than 4 acres.

On the other hand, the Santiago Water District does not feel there is any great danger with septic tanks and that the minimum lot size should be 1 acre. Since specific studies have not been done, it is impossible to determine which standard is accurate.

Numerous mineral resources have been identified and extracted from the Silverado-Modjeska area. The most important are

those with the relatively low unit value but high cumulate value earth materials, including sand and gravel, clay, and potentially, some expansible shale.

Extraction of sand and gravel from Santiago Creek is currently in progress. Sand and gravel consisting of 65% aggregate and 30% sand is distributed along the 2000' wide creek bed from Irvine Lake to the southeast confluence with Silverado Creek. Much of the boundary of the current proposed extraction area falls within the designated 100 year flood plain.

See Section 3.700 (pp. 20-21) in the Community Plan for a discussion of Sand and Gravel Extraction in the planning area.

b. Impacts

Due to the unstable nature of the geology and slopes, development in the planning area will increase the probability that landslides, mud-debris flows, and rockfalls will occur.

Although ground rupture associated with faulting is not expected to impact the planning area, the site will be subject to motion in the form of ground shaking, as are other areas located within the seismically active Southern California region.

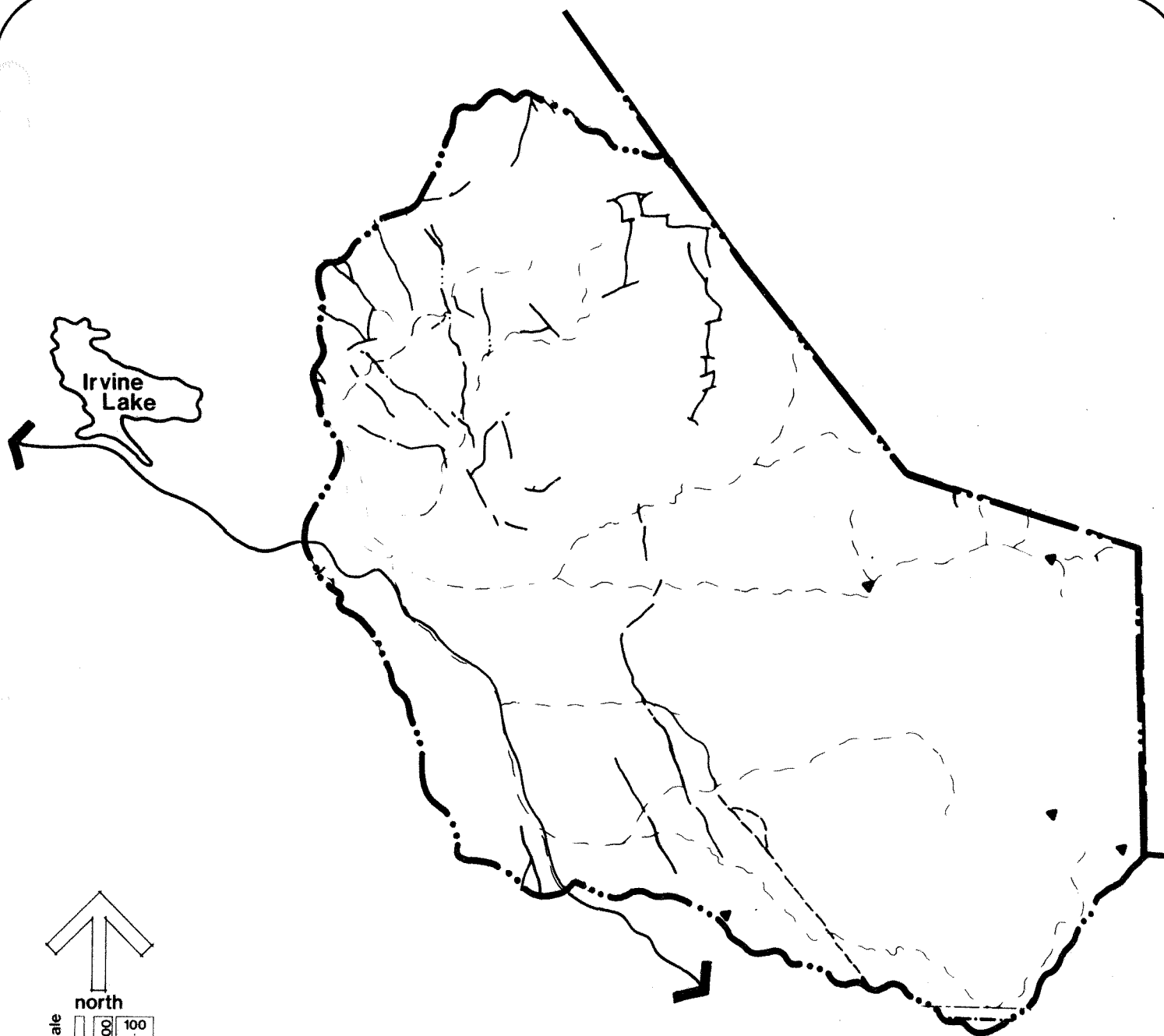
The U.S. Department of Agriculture Soil Conservation Service, in studying soils in the region determined that problems do exist, specifically severe slopes and an insufficient depth to bedrock.

A major problem which needs to be studied is the capacity of the soil to absorb the effluent which will be generated by development in the study area. If the soil saturation point is exceeded, the soil will become contaminated, and percolate effluent directly into the ground water system. The groundwater feeds into Irvine Lake, which is a source of potable water for northeastern Orange County.

Development may cover some of the metallic minerals which exist in the study area. A portion of the area in Williams Canyon which is proposed by the Community Plan to be developed as a rural residential area is currently designated as a natural resource area by the General Plan (5.1). The conflict between the designated extraction and proposed residential uses will present problems, related to noise levels associated with sand and gravel extraction and the conflict between circulation patterns. The existing sand and gravel extraction from Santiago Creek will seriously impact the visual and aesthetic quality of the study area, specifically the creek channel.




c. Mitigation Measures

The recommended development guidelines identify the following



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faults

-  **potentially active fault**
-  **fault with no evidence of recent activity**
-  **earthquake epicenters magnitudes greater than 4.0 are noted**

map
no.

3

actions which, if adopted, would help to mitigate these impacts. The section of the Community Plan where these guidelines can be found is also shown.

(1) Geology, Slope Stability, and Faults

- (a) No development should be allowed on land in excess of 45% slope. (2.400)
- (b) Hillside should be protected against the loss of soil retaining vegetation. (2.400)
- (c) Any public or private development proposal made within the planning area should be accompanied with sufficient information which can identify existing hazards, including faults, landslides and fire. (2.400)

(2) Soils

- (a) Before a project can be approved, a soils engineer will examine the proposed building site to determine that sufficient depth and stability are present in the soil mass to support the proposed project.
- (b) Before any project is approved a soils engineer will test the percolation capabilities of the site soil to determine if septic tanks or cesspools can be developed safely. If such a determination cannot be made, the development shall be denied.

(3) Minerals

- (a) Landscape screening of extraction sites should be fully effective for 80% of the life of the operations. (3.700)
- (b) The rehabilitation of the site should allow land uses which are compatible with this Community Plan in the surrounding area. (3.700)
- (c) The rehabilitation plan must demonstrate that the essential environmental character of the area remains in tact. (3.700)

Along with the above guidelines, the following mitigation measures should also be implemented:

- (4) Since development will inevitably cover, and thereby render irretrievable, minerals, any public or private development plan to change the present designation will include a study of the existing mineral matter, including its relative value.
- (5) before any development plan is adopted for the Williams Canyon area, the pending sand and gravel extraction zone case must be resolved.

3. Hydrology

a. Existing Conditions

No large bodies of water exist within the Silverado-Modjeska area, however, a potential reservoir site is located in Harding Canyon. This site is proposed by the Santiago County Water District, and will hold potable water for the area. Many small fresh water springs are known to exist within the area which serve as an important source of water for wildlife in the area. No known extensive underground water sources or basins exist in the area. Stream flow through the planning area is seasonally intermittent with peak flow during the winter months of highest precipitation. Torrential rains pose particular danger to existing residential development on the narrow canyon floors of Silverado and Modjeska Canyons where no flood protection is provided.

Santiago Creek flows northwesterly through the area toward Santiago Reservoir (Irvine Lake). Streamflow from the planning area enters Santiago Reservoir where it is stored not only for agricultural uses, but for a potable supply for nearby cities as well. Such domestic use of the water requires sensitive use of the upper watershed area, which is comprised of the Silverado Modjeska planning area.

Historically, during major floods Santiago Creek has inundated large areas of the plains below the foothills, including portions of the cities of Orange, Santa Ana, and Tustin, as well as unincorporated territory. As recently as 1969 a major threat emerged to the safety of these areas when the stream flow reached capacity level at many points, barely staying within the confines of the creek. In the higher elevations within the planning area, disaster struck the canyon communities of Silverado and Modjeska where many homes had been built in the creek floodplain. Property damage there was heavy; marooned residents had to be evacuated by helicopter and a number of lives were lost. Floodplain areas have now been delineated and are depicted in map 4.

See Section 2.300 (pp. 8-9) in the Community Plan for a further discussion of flood hazards in the Silverado-Modjeska Area.

b. Impacts

The greatest impact to the hydrology in the study area will be the increased danger of soil and, consequently, water contamination from the subsurface disposal systems. There has been concern in the past that the seepage from faulty tanks, extensive flooding, and the keeping of livestock would eventually contaminate Irvine Lake Reservoir and the area's water supply. The existing developed canyons can only tolerate about 100 more dwelling units without risking soil contamination, because of the uncertain capacity of the soil to hold effluent.

A major portion of the proposed development occurs adjacent to the floodplains in many of the canyon areas. With the advent of heavy rains and the potential for flooding these developments could be inundated and destroyed by flood waters if precautioning measures are not followed.

Development in the study area could also impact the natural appearance of the waterways.

c. Mitigation Measures

The Health Department recommends a lot size of 4 acres or larger for any new development if septic tanks and leaching fields are to be used. These septic tanks and leaching fields must be properly located so as to not present a danger of contamination to any watercourse.

Since the Community Plan is proposing higher density developments than advised by the Health Department, thereby increasing the danger of contaminating the groundwater, the following mitigation measure is proposed:

- (1) Before any project is approved, a soils engineer will test the percolation capabilities of the site soil to determine if septic tanks or cesspools can be developed safely. If such a determination cannot be made, the development shall be denied.

To mitigate the flood hazard the following measures are proposed:

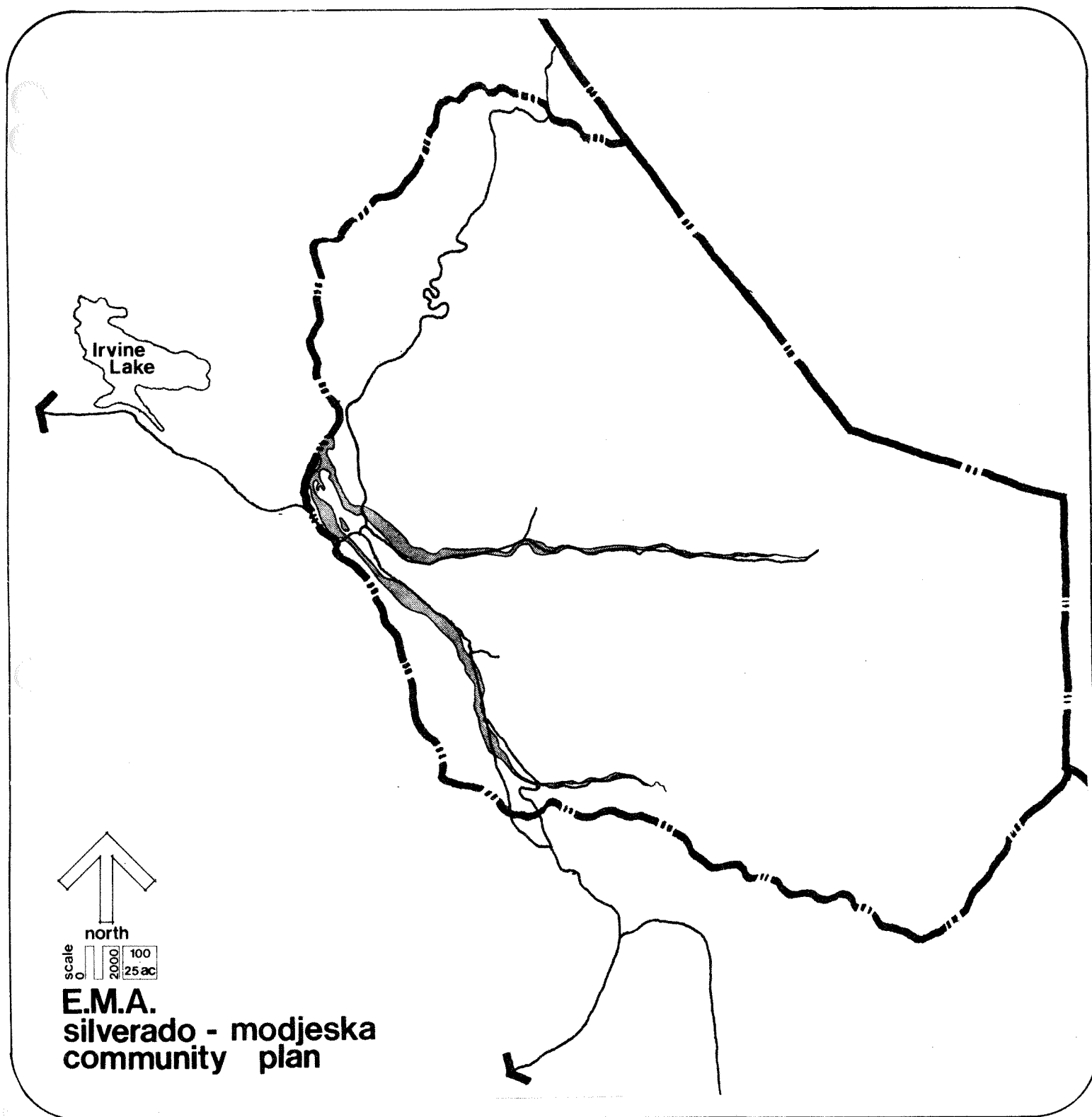
- (1) No development will be allowed in any of the floodplain areas.
- (2) All developments are required to show that they are flood safe, not in the flood plain, and not situated in such a position that they will increase the flood problem by blocking water flow.

The Community Plan offers the following guidelines to insure that the natural character of the waterways is maintained along the proposed recreation areas:

- (1) Future channelization of Silverado and Santiago floodplains and development which would necessitate such channelization should be discouraged. (2.300)
- (2) Flood control devices and facilities where absolutely required, should be designed to blend with the natural character of the creek. (2.300)

4. Fire Hazard

a. Existing Conditions



floodplain

map
no.

4

The California Division of Forestry has developed a scale of fire hazards for California, rating the hazard as moderate, high or extreme on the basis of a combination of three criteria: weather conditions, vegetative cover (fuel loading), and slope. The Silverado-Modjeska area has been rated as an extreme fire hazard area due to dry weather and rugged terrain covered with highly flammable brush. In 1967 the Paseo Grande Fire burned 66,000 acres including much of Black Star Canyon. Since that time several small fires have occurred, demonstrating the ever-present fire danger.

Critical factors in the area's fire-fighting operations are water supply and access. Due to the lack of fire hydrants in most of the planning area, water supplies must be hauled to fire sites. Access to most areas is extremely difficult due to narrow, winding, unimproved roads. Quick responses are difficult with standard fire fighting equipment in areas off the paved roads is increasingly difficult and time consuming.

See Section 2.200 (pp. 7-8) of the Community Plan for a further discussion of fire hazard in the study area.

b. Impacts

Future development in the Silverado-Modjeska area will increase fire hazard as a result of additional people (residents, campers, hikers) and somewhat from the necessary construction activities (workers and equipment). Further development in the study area will increase the exposure of people and property to fire danger.

c. Mitigation Measures

Measures which would mitigate some of the impacts due to the fire hazards include:

- (1) Requiring that all building design and construction materials meet the latest state of the art in fire prevention and fire retardant materials.
- (2) Before a development is approved the developer will be required to prove that sufficient water pressure exists in the area for fire fighting.
- (3) Sufficient access for fire fighting vehicles will be provided by the development.
- (4) Fire retardant vegetation will be required in close proximity to new development.
- (5) Development will not be allowed in areas where adequate fire protection is not possible.

5. Biological Resources

a. Existing Conditions

The rich and diverse plant and animal communities found in the Silverado-Modjeska study area are an unusual phenomenon in Southern California. There are several biotic communities that are relatively pristine including, several relictual species of conifer (pine and spruce) woodlands, found at several localities in the planning area. The significant vegetation area are depicted in map 5. The planning area generally consists of coastal sage scrub along hillsides, with riparian woodlands located in the drainage areas, bordered by oak woodland and grasslands. Each of these plant communities supports a full compliment of wildlife species, and provides foraging grounds for birds and other animal habitats.

Lower Santiago Canyon supports 'wash' riparian, coastal sage scrub, chamise chaparral, and oak woodland plant communities. The openness of the creekbed, the diversity of surrounding vegetation, and the presence of cliffs along the west bank, make this an excellent area for both riparian and other wildlife species, including Red-shouldered Hawk, Copper's Hawk, American Kestrel, Redtailed Hawk, Barn Owl, Screech Owl, Great-horned Owl, and White-tailed Kite. The Peregrine Falcon is the only rare and endangered animal species known to utilize the area, and it has only been observed as a rare transient.

Black Star Canyon is a very diverse area. All the major undisturbed plant communities can be found in a relatively small area and, as a result, wildlife is abundant. The oak woodland area below Hidden Ranch is the largest stand in the planning unit. The closeness of these habitats to urban Orange County makes it an ideal location for nature study for the diverse plant and animal species concentrated at this single locality.

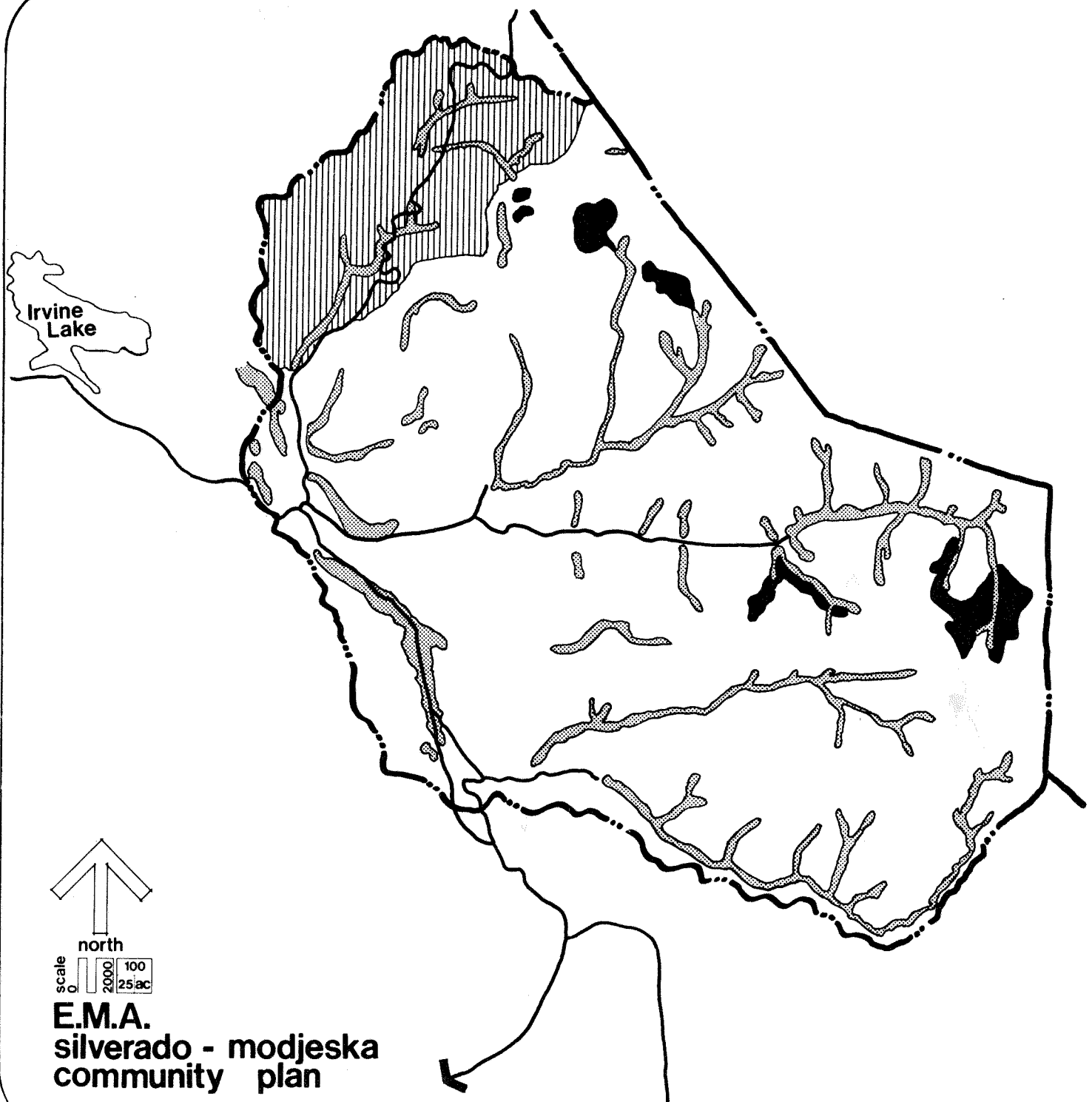
See Section 3.300 (pp. 13-14) in the Community Plan for a further discussion of vegetation and wildlife, as well as the appendix of this environmental impact report.

b. Impacts

The unique, rich, and diverse plant and animal communities found in the Silverado-Modjeska Study area still exist primarily because human influences have not encroached into the area. Further development in the study area will result in greater human encroachment into the as yet pristine areas. This development will result in the loss of native vegetation, increased erosion, reduction in the number of plants and animals, changes in species composition, decrease in the number of species, and the potential encroachment on rare and endangered species.

c. Mitigation Measures

In order to protect the natural environment existing in the study area, the Community Plan proposed the following guidelines:



vegetation and wildlife

-  **Black Star Canyon Vegetation & Wildlife Area**
-  **Natural Riparian Vegetation**
-  **Pine & Spruce Woodland Area**

map
no.

5

- (1) The isolated stands of knobcone pine, bigcone spruce and coulter pine should remain in a natural state and setting and be preserved as a scientific, educational and aesthetic resource. (3.300)
- (2) The cliffs and rock outcroppings located in Harding, Upper Santiago and Baker Canyons should remain in a natural state and be preserved for use only as habitats for birds of prey. (3.300)
- (3) The riparian vegetation contained in Black Star, Baker, Hall, Upper Land (including the east and west forks), Upper Silverado, Canyons should be preserved for its function as a natural habitat and migratory route for wildlife. (3.300)
- (4) The riparian vegetation of Santiago Canyon should be preserved for its function as a wildlife migration route between the Santa Ana Mountains and the Lomas De Santiago Hills and for its function as a wildlife migration corridor linking the Santa Ana Mountains and Lower Santiago Creek and Aliso Creek areas. (3.300)
- (5) Existing riparian vegetation contained in public lands should only have access via designated hiking trails. (3.300)
- (6) The abundant and diverse plant and animal communities contained in Black Star Canyon should be preserved as a wildlife habitat and nature study area by means of acquisition for the proposed regional park. (3.300)
- (7) Naturally occurring springs, water courses and other permanent water sources, should have restricted human access and be preserved to function as water sources for plants and wildlife. (3.300)
- (8) Channelization or alteration of Silverado and Santiago Creeks should be discouraged to preserve natural ponding in the creeks to function as a water source for wildlife. (3.300)

Along with these guidelines developers will be required to preserve the significant native vegetation on their site, and show that they are not disturbing areas of biotic significance (either plant or animal).

6. Archaeology, Paleontology and History

a. Existing Conditions

The Silverad-Modjeska area is an exceptional locality in Orange County because it possesses an unusual abundance of scientific and educational resources. Significant archaeological, biological, historical, and paleontological

sites have been identified and recorded within the area. These, along with other physical and geologic resources have provided a "natural laboratory" for study and research. Some resource sites have been made available and utilized by educational institutions in Orange County as well as the adjacent counties of Los Angeles, San Bernardino, and Riverside. Use of these sites over the years has provided the public as well as the scientific community with a better understanding of the region's physical and cultural heritage. The following discussion presents the current knowledge of the archaeological, paleontological and historical sites in the study area.

(1) Archaeology

The Silverado-Modjeska area contained physiological, biological and ecological resources which were conducive to prehistoric man's occupation of the area. A number of fresh water springs as well as food and material resources existed which provided early inhabitants of the area the basic necessities for existence. The Indians encountered at the time of Spanish contact were preceded by a series of prehistoric peoples (not necessarily related to the historic cultures), who date back as far as 15,000 years in the Southern California area.

In the Santa Ana Mountains proper, very little archaeological work has been accomplished and thus far has only produced evidence of the recent Shoshonian tradition. During the 1930's, the W.P.A. dug several recorded sites within the Silverado-Modjeska area. These excavations lacked scientific controls and/or records, so that large portions of the artifacts have disappeared, and our knowledge consists of raw, gross descriptions. It is upon these older projects that the archaeology of the Silverado-Modjeska area is known.

Because of the paucity of these previous investigations, which were directed primarily at recovering artifacts, the other important scientific data necessary for site interpretation is not available. Further investigation is necessary to complete our knowledge of the area's history. See the appendix for the report by the archaeological consultant.

(2) Paleontology

The Silverado-Modjeska area possesses a unique display of fossils and fossil bearing material, found in the three basic units of sedimentary material. The very young surficial deposits contain only fossils which have been transported from in-place older fossil bearing units. The most significant fossils in the Silverado-Modjeska Modjeska area are found in the younger Cretaceous strata.

Important fossils (mainly from an academic standpoint) have been found in the older Jurassic Period strata (Bedford Canyon Formation) as well. Although this strata has yielded relatively few fossils they represent an important occurrence and have been the subject of several scientific papers.

The Bedford Canyon Formation is the oldest rock unit in Orange County and is exposed in the central and eastern portion of the Silverado-Modjeska area. It represents the best exposure of Jurassic-age sedimentary rocks along the Pacific slope of Southern California. Interpretation of its origin involves a most significant sequence of historical geologic events.

See the appendix for the report by the paleontological consultant and Section 3.400 (pp. 14-17) in the Community Plan for a further discussion of Archaeology and Paleontology.

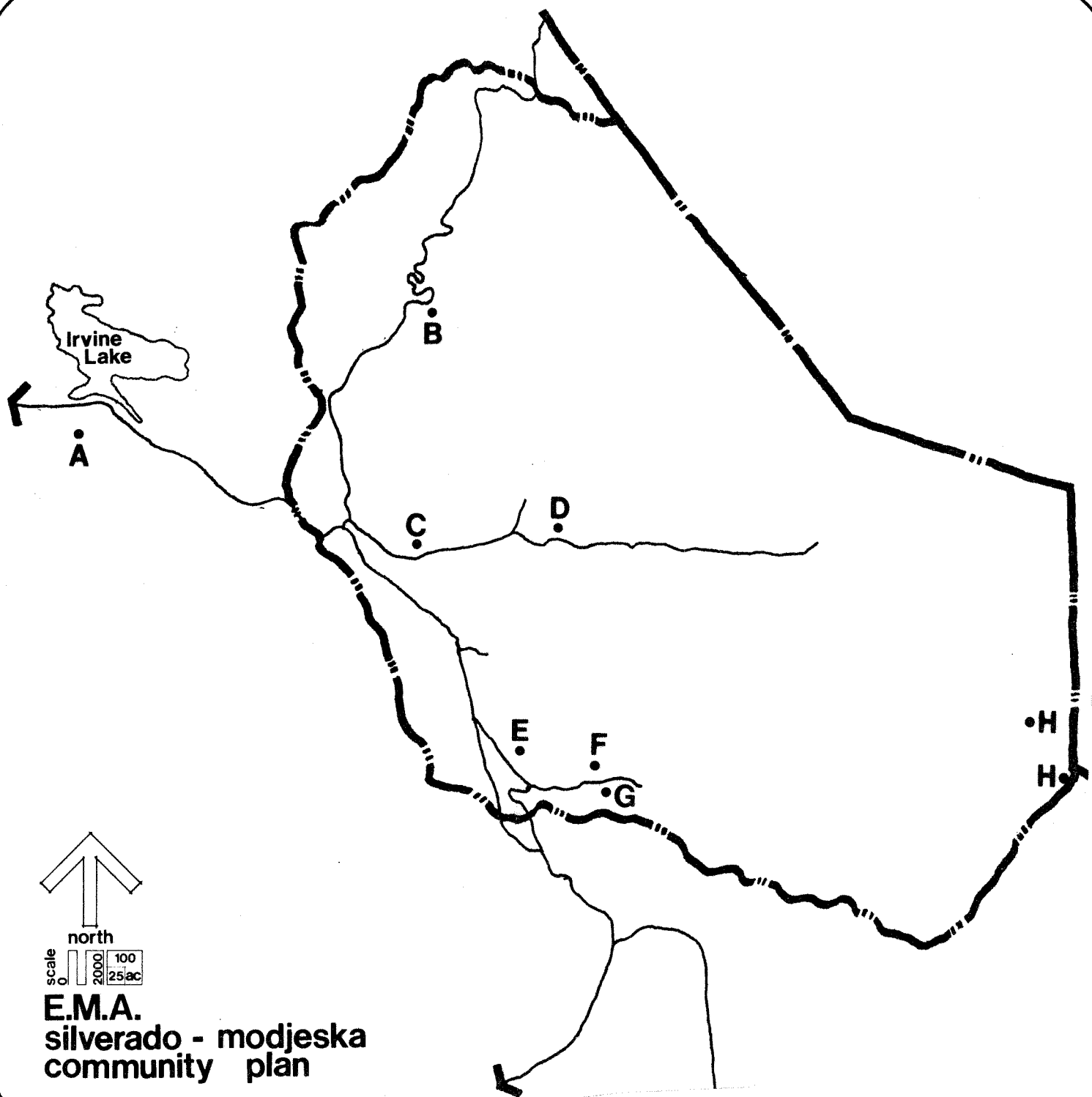
(3) History

The early history of Orange County is the history of the Silverado-Modjeska Area. Many state historical sites (numbered below) are located within the area, and tell of the life that once existed here (see map 6).

- (a) #202 - SILVERADO - Located in Canada de la Madera (Timber Canyon), Silverado was a mining boomtown founded in 1878 when silver was discovered nearby. During the colorful life of its boom, 1878-1881, miners flocking to the area established a thriving community, served daily by stage from Los Angeles and Santa Ana. (Silverado Canyon).
- (b) #205 - MODJESKA'S HOME - The famous Shakespearean actress, Madame Helena Modjeska (1840-1909) bought 200 acres in Santiago Canyon which she named the "Forest of Arden". The famous architect Stanford White designed the home in 1888. Having built her canyon home she rested there during the intervals of her stage activity, occupying the place for 20 years.

Around 1892, Madame Helena Modjeska had two olive groves totaling 50 acres set out on her Santiago Canyon property. Lack of water for them led to the construction of Modjeska Reservoir in Harding Canyon. Modjeska's gardens were once the show place of Orange County. After her death of 1909 this canyon and the northwest peak of Saddleback were renamed in her honor. The home is now private property but has been kept intact and remains a monument to a woman who contributed immeasurably to the cultural life in Orange County. (Modjeska Canyon).

- (c) #217 - BLACK STAR CANYON INDIAN WILLAGE SITE - This is the site of an Indian Village and, also, the site of a skirmish



historical sites

- | | |
|------------------------------------|-------------------------------|
| A hangman's tree | E santiago indian cave |
| B black star indian village | F flores peak |
| C carbondale | G modjeska home |
| D silverado | H old saddleback |

map
no.

6

between the whites and the Indians. The Indians had stolen some horses and the whites followed them to their camp, where a battle ensued. The whites left with the horses that the Indians had not killed. In 1878 a coal mining company named Black Star Coal Mining Company had a mine at the mouth of the canyon and the name was attached to the canyon. (Black Star Canyon)

After bituminous coal was discovered here a group of Anaheim men bought 168 acres from James Irvine. Some 1500 feet of tunnels and drifts were dug and a number of buildings erected. The mine was worked until 1894. The site now is similar to when Indians lived there. Large boulders with acorn grinding holes still dot the area.

(d) Other recognized historical sites, either in the study area or nearby, include:

- 1) SANTIAGO INDIAN CAVE - Because of its dryness, this 41 foot by 26 foot natural cave produced numerous well preserved artifacts, including the only Indian baskets ever found in Orange County.
- 2) FLORES PEAK - The ridge between Harding and Modjeska Canyon was the scene of a bloody shoot-out in 1857 between a 119-man posse and a gang called the 'Manillas.' Juan Flores and his gang of cut-throats had their camp in a bend of the Santiago below Modjeska. They had murdered Sheriff Barton and his posse and pillaged San Juan Capistrano, where they had killed a storekeeper. General Andres Pico and his men routed Juan Flores and the 'Manillas' out, ran them to the top of the peak directly across the canyon from the Modjeska Home, where an ensuing battle took many lives. Juan Flores, the desperados bandit leader, eluded capture by plunging over a 100-foot precipice but was later caught and hung in Los Angeles.
- 3) HANGMAN'S TREE - The site where two bandits were hung for killing Sheriff Barton.
- 4) CARBONDALE - A town of two hundred leaped into existence on this flat in 1880 after the Southern Pacific took over the Santa Clara Coal Mine. Its original name "Harrisburg" was rejected by postal authorities. As "Carbondale" its post office lasted from May 11, 1881, to January 29, 1884. When the mine pinched out, so did the town, which included a number of tents and shacks, a store, hotel and saloon.

b. Impacts

Two known sites of scientific significance exist within the study area, the paleontological site in Silverado Canyon, and the archaeological site in Black Star Canyon. Both of these sites are of significant value, and without adequate protection

by the county, could easily be destroyed. The entire study area is considered rich in artifacts, but without precautions and safeguards these artifacts will be lost forever, destroying the only remaining clues to previous cultures which existed in this area of Orange County.

The potential for loss of historic sites in the study area does exist. Since the area was prospected heavily during the late 1800's, mines, cabins, or other remains might still exist in the study area, and could easily be destroyed by development.

c. Mitigation Measures

Two implementation recommendations proposed in the Community Plan relate directly to the known archaeological and paleontological sites within the study area.

- (1) Direct the GSA to initiate an acquisition feasibility study for the Silverado Canyon paleontological sites. Such acquisition, if feasible should be accomplished either before or as part of any development proposal, application for construction or division of land concerning the property. (3.400)
- (2) As either public or private land, the following guidelines should be applied to the Silverado Canyon Paleontological site:
 - a. The sites should be considered for public acquisition either before or as a part of any development proposal application for construction or division of land on the property. (3.400)
 - b. No grading or other development excavation should be made on the sites. (3.400)
 - c. Pedestrian access along and through the Silverado Creek streambed and from the narrows northward to the Silverado site should not be restricted. (3.400)
 - d. Future measures taken to preserve the sites should also provide means to manage the sites by means of supervised and controlled examination and collection to avoid indiscriminate and wasteful use of the resource. (3.400)
 - e. The sites should be protected and retained in a natural state or stabilized in their present state until such time as more specific recommendations as to its management and deposition can be made. (3.400)
- (3) Direct the GSA to initiate an acquisition feasibility study for the Black Star Canyon Indian Village archaeological site. Such acquisition, if feasible should be accomplished either as part of the proposed Black Star

Canyon Regional Park or as a part of any development proposal, application for construction or division of land on the property. (3.400)

- (4) As either public or private land, the following guidelines should be applied to the Black Star Canyon archaeological site:
 - a. No grading or other development excavation should be made on the site. (3.400)
 - b. The ultimate use of the site should be for an educational, interpretive center which can retain the site in as much of a natural setting as possible to represent prehistoric living conditions. (3.400)
 - c. The site should be made available to the interested public wishing to visit and experience this landmark site. (3.400)
 - d. Prior to any proposed use of the site, a thorough scientific investigation should be made to identify all outstanding features and make recommendations as to the most appropriate design and management of an interpretive center facility. (3.400)
 - e. The site should be protected and retained in a natural state or stabilized in its present state until such time as more specific recommendations as to its management and final disposition can be made. (3.400)
- (5) For all development projects in the Silverado-Modjeska Area, the following guidelines for archaeological and paleontological sites should be observed:
 - a. With each project or initial study a literature search for valid archaeological and paleontological surveys will be conducted by qualified persons. If such a search determines that no valid survey has been performed, a walkover survey will be performed as a part of the initial study. (3.400)
 - b. If archaeological or paleontological resources are discovered during grading, further grading of the resource area should be deferred temporarily to permit an archaeologist or paleontologist to examine the site and to determine the extent and the relative scientific value of the site. Prior to resumption of grading, a determination is to be made whether to preserve, salvage or destroy the site. (3.400)
 - c. Determination should be made of any known or newly located archaeological, paleontological, or historical sites to determine their eligibility for the National Historic Register.

The archaeological study which will be conducted prior to any development will identify any historic sites which might exist and would propose mitigation measures for the preservation of these historical sites, if deemed necessary.

C. URBAN ENVIRONMENT

1. Existing Land Use

a. Existing Conditions

The principal land use in the planning area is open space and recreation. Formal recreational uses are limited to the Tucker Wildlife Sanctuary, Silverado Motorway, Flying "B" Ranch, and Silverado Rifle Range. However, there are many informal recreational uses which are dispersed throughout the study area. These include such activities as riding, hiking, hunting, and off-highway vehicles (OHV). There are several active mineral extraction sites in the planning area, and other potential sites have been identified. Of primary significance at this time is the sand and gravel extraction in Santiago Canyon.

Single family dwelling units located on a variety of lot sizes are the primary residential use, and these are concentrated in Silverado and Modjeska Canyons. The residential areas in Silverado and Modjeska Canyons were originally large acreages, which have been progressively divided by the "Division of Land" procedure until hundreds of urban sized lots have been created. Many of these lots were originally sold as second home sites, and most have been developed on a lot by lot basis.

Although the condition and location of existing dwellings provide each village site with its unique character, physical constraints and health and safety hazards may severely limit further expansion and development.

See section 7.130 (p. 41) in the Community Plan for a further discussion of the rural character of the existing land use.

b. Impacts

The primary impact of the Community Plan will be to open up areas for development, thereby reducing the open space acreage. This development will put an increased demand on the community service facilities, i.e., schools, water, sewage, electricity and streets, proportionate to the increase in population. Although the plan does propose developing portions of the existing roadway system, as well as upgrading some of the existing roads, no new roads are proposed to accommodate the increased demand.

c. Mitigation Measures

The Community Plan allows for a maximum of 1791 dwelling units in the study area, an increase of 1251 units over existing development. This increased development represents an overall gross density, in the four residential canyons, of one dwelling unit per four acres. It is believed that this plan configuration will minimize the threat of fire hazard to new development, allow development which will not create additional sewage problems, alleviate the need for full urban services and facilities, and best implement the spirit and letter of the Foothill Corridor Policy Plan.

2. Existing Circulation

a. Existing Conditions

The major access road for the study area is Santiago Canyon Road. Access to the residential and recreational areas is by way of the local rural roads which connect to Santiago Canyon Road, namely Silverado Canyon Road, and Modjeska Canyon Road. All of these roads are hilly and winding, with no street lights or signals. Most of the automobile accidents in the study area occur at night around sharp-turns and secondary junction points off of Santiago Canyon Road. Weekend traffic creates a considerable amount of congestion in the area.

See Section 5.200 (pp. 30-35) in the Community Plan, and Section III, C,4 in this environmental impact report for further discussion of the existing and proposed circulation in this area.

b. Impacts

The existing circulation system can accommodate some residential growth. The proposed community plan is not expected to overload the residential circulation system, but the weekend and recreational traffic will overload the existing circulation system.

c. Mitigation Measures

The Community Plan proposes to upgrade Black Star Canyon Road for recreational access to the proposed Black Star Canyon Regional Park and to the Cleveland National Forest. This will alleviate a portion of the recreational traffic. Furthermore, the Community Plan proposes to delete the upper Silverado and Harding Modjeska Regional Parks because of the adverse impacts they would have on circulation in the study area. (See section III, C,4 of this environmental impact report for further information on these deletions).

The Community Plan also proposes several additional riding and hiking trails to provide access into the Cleveland National Forest. The Community Plan offers the following implementation recommendation and development guidelines to mitigate the existing and project circulation problems:

(1) Implementation Recommendation

As an interim measure and in conjunction with the partial development of Black Star Canyon Regional Park, direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon to accommodate recreational traffic. (5.212)

(2) Development Guidelines

- (a) Wherever possible, developments in the study area should meet the adopted criteria for the application of rural streets, and the streets therein should be constructed in accordance with the appropriate rural street standard. (5.300)
- (b) Consideration should be given to the exclusion of upper Silverado Canyon Road (from Ladd Canyon to the national forest) and Modjeska Canyon Road from these and other arterial standards when it can be demonstrated that no adverse safety effects will be encountered. (5.300)
- (c) Consideration should be given to modification of these standards when opportunities to preserve trees and natural terrain are present. (5.300)
- (d) The design of new roads and all existing road improvements should be subject to site plan review. (5.300)

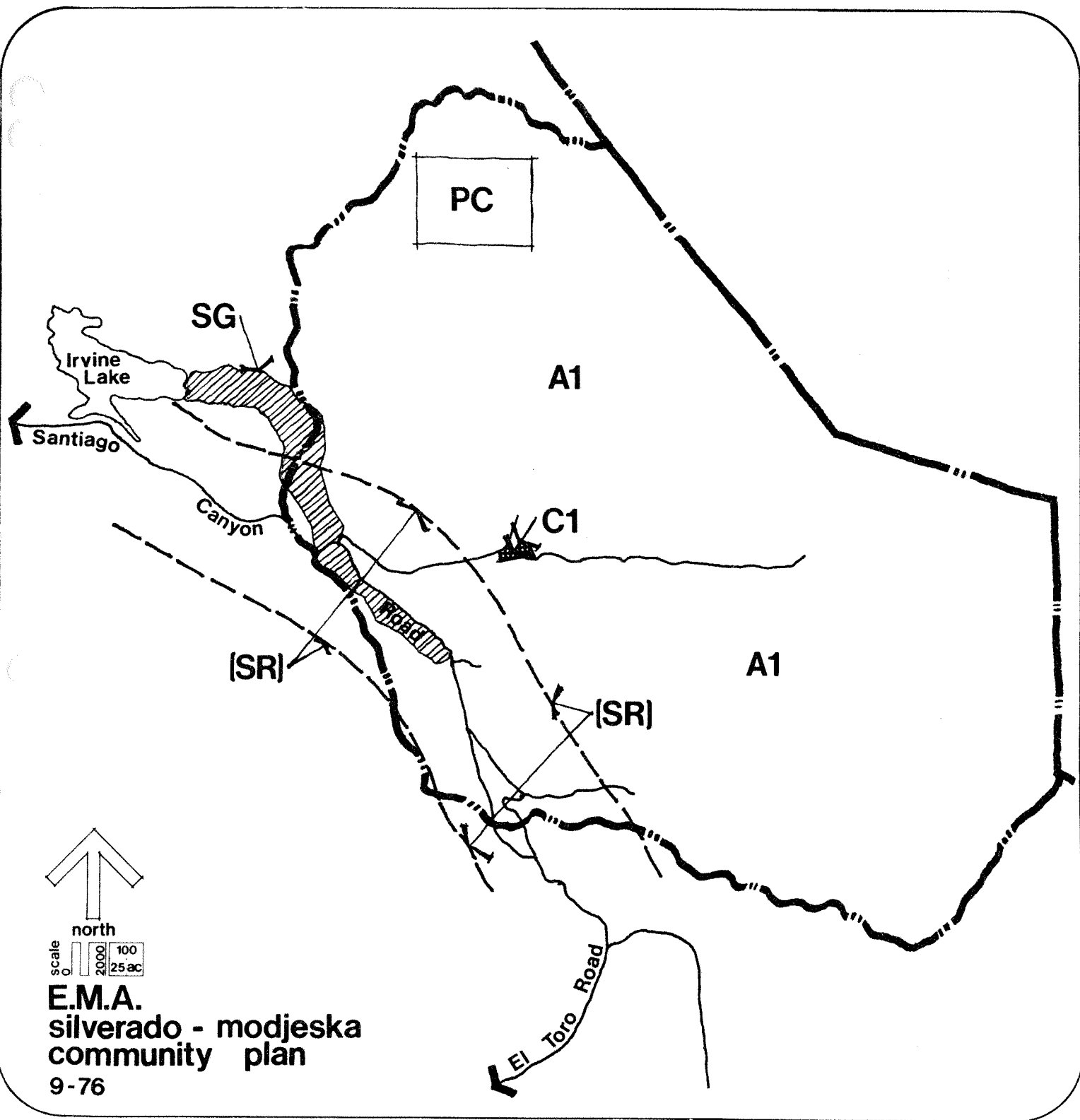
3. Existing Zoning

a. Existing Conditions

There are five zoning classifications in the Planning Area: A1-"General Agriculture", C1-"Local Commercial", PC-"Planned Community", S&G-"Sand and Gravel Extraction", and SR-"Sign Restrictions." Map 7 locates these zoning districts in the study area.

(1) A1-"General Agriculture"

The majority of the planning area, 96%, is zoned A1-"General Agriculture." This zoning was applied to the entire planning area in 1947, and has remained almost unchanged.



existing zoning

[A1] general agriculture

[C1] local business

[SR] sign restriction

[PC] planned community

[SG] sand & gravel extraction

map
no.

7

This zoning district was established to provide for limited farming, low intensity uses and open space. Residential uses are secondary to the principal uses permitted in the district. It is also intended that this district be used as an interim zone for areas planned for more intensive use.

The majority of residential development in the Planning Area has occurred under this zoning. The original regulations for the A1 zoning district allowed the creation of 7,200 square foot parcels as compared with the present required 4 acre minimum parcels. A 'Use Permit' can be granted for more intensive uses, such as the existing riflerange, Tucker Wildlife Sanctuary and the Flying B' Ranch.

(2) C1-"Local Business"

This zoning district was established to provide areas for limited commercial use which offer retail, service, and professional facilities. The only area with this zoning is a 4-acre site located on Silverado Canyon Road at the junction of Ladd Canyon Road.

(3) PC-"Planned Community"

This zoning district was established to provide for the development of parcels of land as coordinated, comprehensive projects, taking advantage of the superior environment which will result from large scale community planning.

The Hidden Ranch Planned Community (PC) is located in the northern portion of the Silverado-Modjeska planning area, and encompasses 819 acres. The PC was adopted in 1968, prior to any formal planning in the area. It is proposed as a rural residential estate development oriented to commercial recreation and equestrian areas. Overall density for the project is 1 dwelling unit per acre (du/acre), including a mobile home park at 5 du/acre.

The present owner of the property, Southern California Edison, has stated that they do not intend to develop the property as proposed by the PC. Initially, the Hidden Ranch PC site was purchased by the Edison Company for possible use as a pump storage project in conjunction with another site in nearby Fremont Canyon, outside the planning area. A pump storage project on the PC site would require a reservoir, and a pumping and generating station on site for generation of hydroelectric power. In view of the existing energy situation, the Edison Company considers this a potential use for the site.

(4) SG - "Sand and Gravel Extraction"

This zoning district was established to provide for the commercial extraction and processing of valuable natural resources in a manner that is most beneficial to the citizens of Orange County. It is also intended to provide assurance that excavated areas will be maintained or modified in order to guarantee that the property will be suitable for a useful purpose after the sand and gravel operation is completed.

(5) SR - "Sign Restrictions"

This district is established for the control of signs in areas which require protection of vistas of natural landscape, scenic corridors, recreation facilities, and access routes to recreation areas. This zoning has been applied to Santiago Canyon Road, due to its identification as a scenic highway.

b. Impacts

The Community Plan is proposing land use categories which do not currently exist in the study area. Included with these land use categories are specific development guidelines, which restrict development to insure maintenance of the rural character of the study area. Zoning districts do not currently exist which will provide the regulations for some of the proposed land use categories.

c. Mitigation Measures

The EMA is directed to prepare a zoning district to implement the intent of the rural residential category, and to consider amending the LUE to incorporate the development guidelines and land use revisions proposed by this plan.

4. Current Planning Programs

a. Existing Conditions

(1) The Orange County General Plan

(a) Land Use Element

The Orange County General Plan, adopted in December 1973, placed the study area in a "Preserve Area" status as part of a phased development program. This was defined as those areas essentially composed of open space, where development was not expected within ten years. Designated land uses were agriculture, open space, recreation, and natural resources. The citizens and property owners of the entire foothill area, expressing the need for a plan for their area, contracted with a private consultant to prepare a plan. In January, 1974, the Foothill

Corridor Policy Plan was recognized by the County as an interim policy plan. The plan contains goals, policies, and objectives, along with implementation guidelines. A major thrust of this plan was to call for development of a community plan.

Amendment 75-1 to the Land Use Element of the Orange County General Plan, adopted by the Board of Supervisors on September 11, 1975, revised the phased program of development utilized by the Land Use Element and replaced the "Preserve Area" status with a newly defined "Reserve Area" status, which encourages planning. Removal of land from the "Reserve Area" status can only be accomplished by an amendment to the General Plan and will depend upon the degree to which the nine development criteria are satisfied. This criteria is included in the Community Plan in Section 1.310 (pp. 2-3).

The planning efforts in the Foothill Corridor Policy Plan and the Silverado-Modjeska Community Plan reflect commitment to the phased program of development contained in the Land Use Element.

See Section 7.000 (pp. 39-53) of the Community Plan for a further discussion of the Land Use Element.

(b) Open Space and Conservation Element

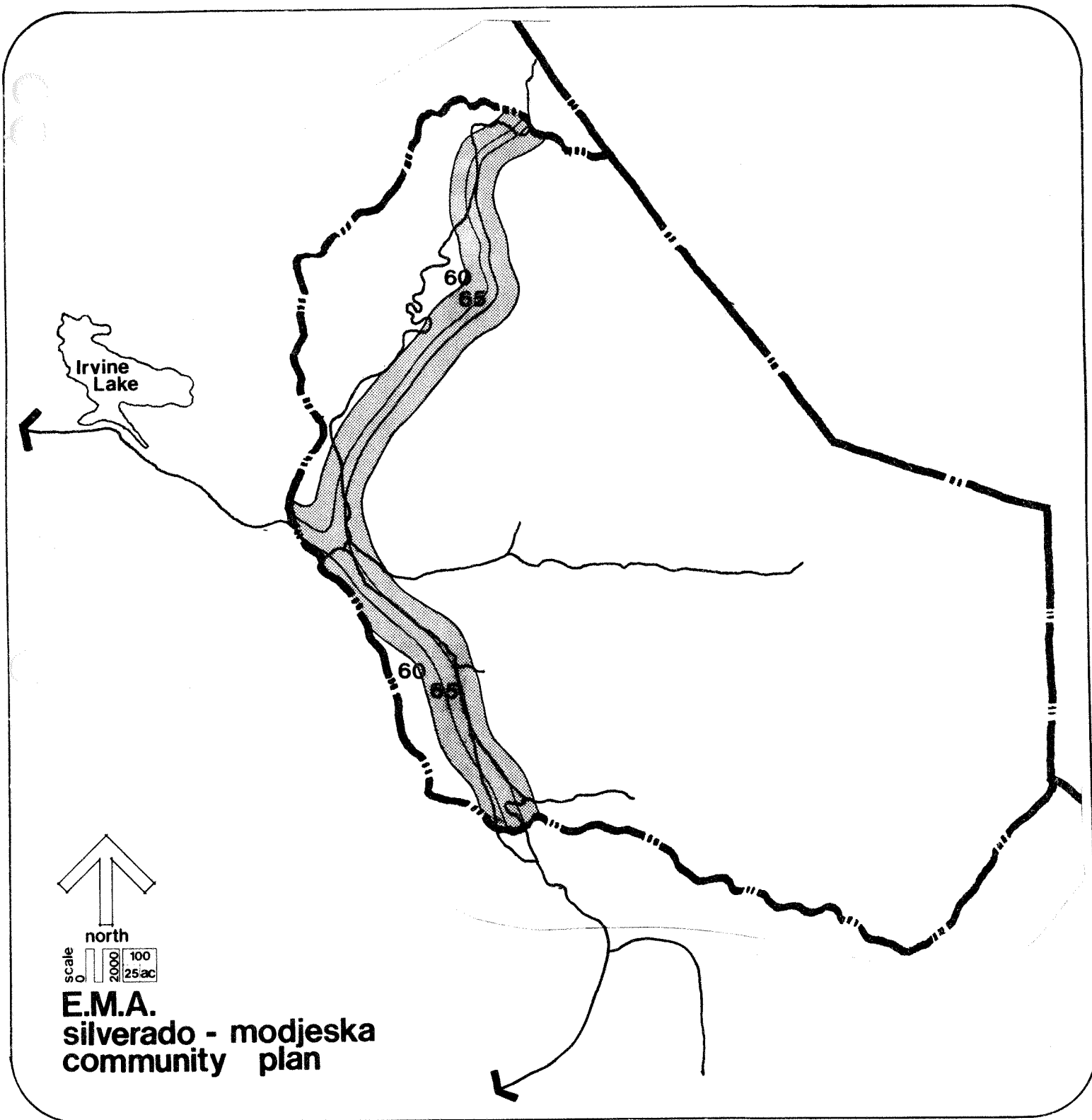
These elements were adopted on June 27, 1973, and designate much of the study area as Open Space Conservation and Scenic Corridors.

Please see section 3.000 (pp. 11-21) of the community Plan for a further discussion of the Open Space and Conservation Element.

(c) Noise Element

The Silverado-Modjeska Planning Area is not currently impacted by excessive noise levels. The Noise Element of the Orange County General Plan projects that the arterial highways in the study area will be the prime source of noise in the future. If this area is developed according to the 1983 Land Use Element and the Master Plan of Arterial Highways, noise levels in excess of 60 CNEL can be expected along Santiago Canyon Road and along Black Star Canyon Road (see map 8).

The Orange County Noise Element offers goals and policies which are designed to "protect the health, safety, and general welfare of County residents by reducing noise levels and establishing compatible land uses in noise impacted areas." The policies adopted by the County to help implement the Noise Element include guidelines for



noise contours

map
no.

8

noise control in transportation systems, the integration of noise considerations in land use planning, the adoption and enforcement of noise abatement programs and the identification and employment of mitigation measures to reduce the impact of noise levels on sensitive land uses.

(d) Safety Element

The Safety Element of the Orange County General Plan was adopted in February of 1975. This element identifies, maps, and analyzes the relevant hazards in the county, and proposes goals and policies to reduce the level of risk in the county.

One of the goals of the safety element is to mitigate potential disasters through land use and development standards designed to respect the tremendous forces of nature. To achieve this goal the Safety Element notes fault locations of earthquakes greater than 4.0, landslide and shaking susceptibility areas, floodplains, and fire hazard areas. These hazards are discussed in Sections III, B, 1, 2, 3, and 4 of this environmental impact report.

For a further discussion of the Safety Element see Section 2.000 (pp. 7-10) in the Community Plan.

(e) Scenic Highways Element

This element establishes the county's responsibility for the protection and enhancement of Orange County's natural and man-made scenic beauty by identifying those portions of the county highway system which requires special scenic conservation treatment. Santiago Canyon Road is the only highway in the study area which is designated as a scenic highway.

See Section 6.000 (pp. 36-38) in the Community Plan for a further discussion of the Scenic Highway Element.

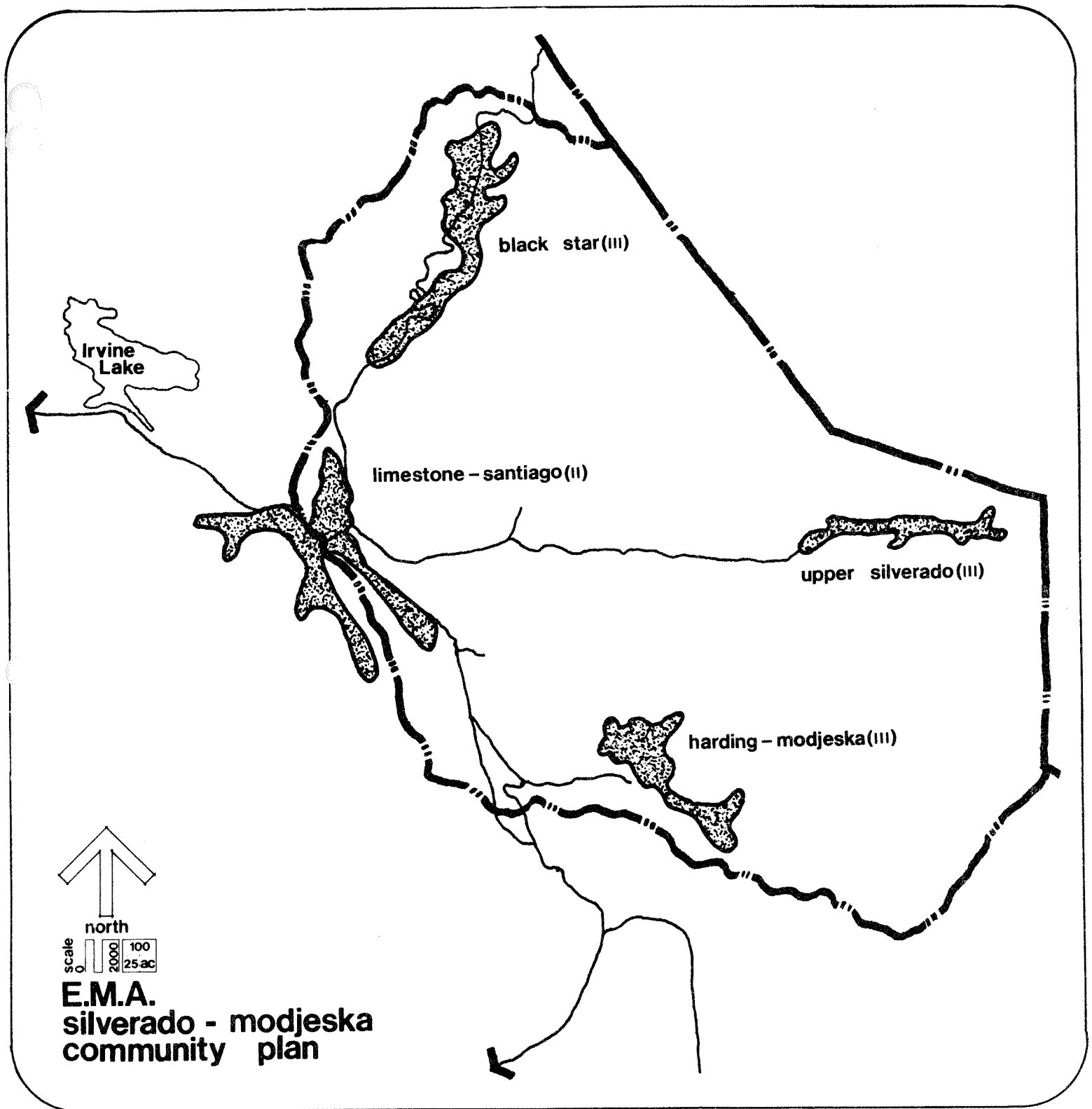
(f) Recreation Element

This element is composed of the Master Plan of Regional Parks, the Master Plan of Riding and Hiking Trails, the Master Plan of Bicycle Trails, and the Master Plan of Local Parks.

For a further discussion of the Recreation Element, see Section 4.000 (pp. 22-29) in the Community Plan.

1) Master Plan of Regional Parks

The primary goal of the Orange County Master Plan of Regional Parks is to provide regional recreational



regional parks

 **proposed park site** [priority group]

acquisition priority group

I: 1972 - 1980

II: 1980 - 1985

III: 1985 - 1990

map
no.

9

Source: master plan of regional parks

facilities that offers recreational or scenic attractions of countywide significance, and is of sufficient size (over 100-acres) to offer facilities for family and group picnicking, camping, nature study, and diversified play areas for all age groups. These facilities can also accomodate swimming pools, athletic fields, bowling greens, water-oriented facilities, and golf courses (where size permits), but is not limited to such uses.

The Master Plan of Regional Parks designates as second and third priorities four different proposed regional parks in the study area, (see Map 9).

These park sites are:

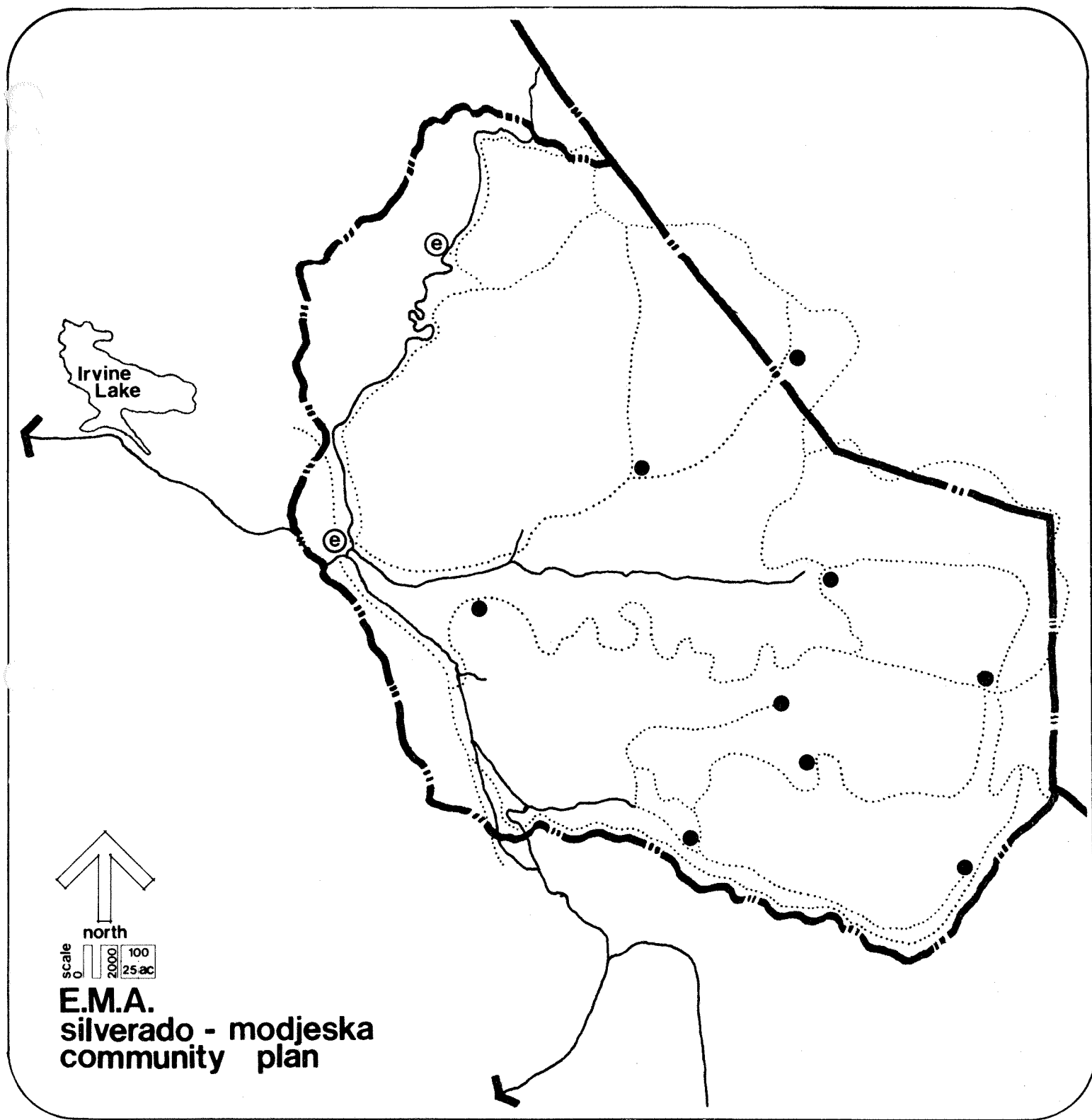
- o Limestone-Santiago
- o Black Star Canyon
- o Upper Silverado
- o Harding Modjeska.

The Community Plan recommends that the priorities of both Limestone-Santiago and Black Star Regional Parks be changed, lowering the priority of the Santiago portion of Limestone-Santiago to Priority Group III, while retaining the Limestone portion in Priority Group II, and upgrading Black Star from Priority Group III to Priority Group II. Upper Silverado and Harding-Modjeska are proposed to be deleted from the MPRP.

See Section 4.200 (pp. 22-25) of the Community Plan for a further discussion of these proposed regional parks.

2) Master Plan of Riding and Hiking

The Master Plan of Riding and Hiking Trails identifies several trails in the Silverado-Modjeska planning area (this element has not been amended since 1965), including:



trail network

 **proposed trails**

 **proposed equestrian centers**

 **proposed trail stop**

map
no.

10

<u>Trail</u>	<u>Miles</u>	<u>From</u>	<u>To</u>
Harding Truck Trail	9.5	Tucker Wildlife Sanctuary	Maple Springs Road
Main Divide Truck Trail	23.0	Santa Ana Canyon Road	El Cariso (Riverside County)
Santiago Truck Trail	6.0	Modjeska Canyon Road	Old Camp
Silverado Truck Trail	5.3	Silverado Ranger Station	Silverado Trail
Silverado Trail	2.8	Silverado Truck Trail	Maple Springs Road
Halfway Trail	1.5	Old Camp	Harding Trail
Black Star Trail	4.0	Black Star Ridge	Cleveland National Forest
Ladd Canyon Trail	4.2	Main Divide	Lower Silverado
West Ladd Canyon Trail	4.0	Ladd Canyon	Main Divide Truck Trail
Silverado Motorway Trail	2.1	Silverado Canyon Road	Silverado Trail
Maple Springs Trail	5.1	Silverado Canyon Road	Silverado Trail

The Community Plan proposes that the trails Map 10 be included in the Master Plan of Riding and Hiking Trails. Trail stops are proposed at the junction of Ladd Canyon Trail and West Ladd Canyon Trail, on the Main Divide Truck Trail approximately one mile into Riverside County, on the Silverado Truck Trail both near the Cleveland National Forest boundary and near Bear Flat, on the Harding Truck Trail east of Laurel Spring, and on the Joplin Trail near Jameson Spring, on Silverado Motorway Trail, one-half miles north of maple spring and at the eastern end of Silverado Canyon Road.

See Sections 4.400, and 4.500 (pp. 26-29) in the Community Plan for a further discussion of the riding and hiking trails.

3) Master Plan of Bicycle Trails

The Master Plan of Bicycle Trails designates one bicycle trail along Santiago Canyon Road. The Community Plan does not propose any additions to this plan.

See Section 4.700 (p. 29) in the Community Plan for a further discussion of the Local Parks.

4) The Master Plan of Local Parks

The Master Plan of Local Parks was adopted by the Orange County Board of Supervisors in March of 1976.

The recommended minimum standard for Local Parks is at least 4 acres of developed local park land for each 1,000 residents. School sites are assumed to represent 1.5 acres of this minimum.

The Silverado-Modjeska Recreation and Park District provides service for the area. The district maintains and operates two recreational buildings with kitchen and restroom facilities, located in Silverado Canyon and in Modjeska Canyon.

See Section 4.300 (pp. 25-26) in the Community Plan for further discussion of the Local Parks.

(g) Circulation Element

The Master Plan of Arterial Highways identifies only two arterials in the study area. Santiago Canyon Road is designated as a primary arterial highway (4 lane divided or six lane undivided highway on 100 feet of right-of-way). Black Star Canyon Road is designated as a conceptually proposed primary arterial highway (see Map 11).

The Circulation Element, and the Master Plan of Arterial Highways, are currently being amended. The only change in the study area is the proposal to downgrade Black Star Canyon road from a primary arterial highway to a secondary arterial highway, based on the reduced demand projections for this highway.

For a further discussion of the Circulation Element see Section 5.000 (pp. 30-35) of the Community Plan.

(2) Special Planning Studies

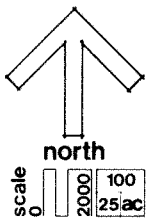
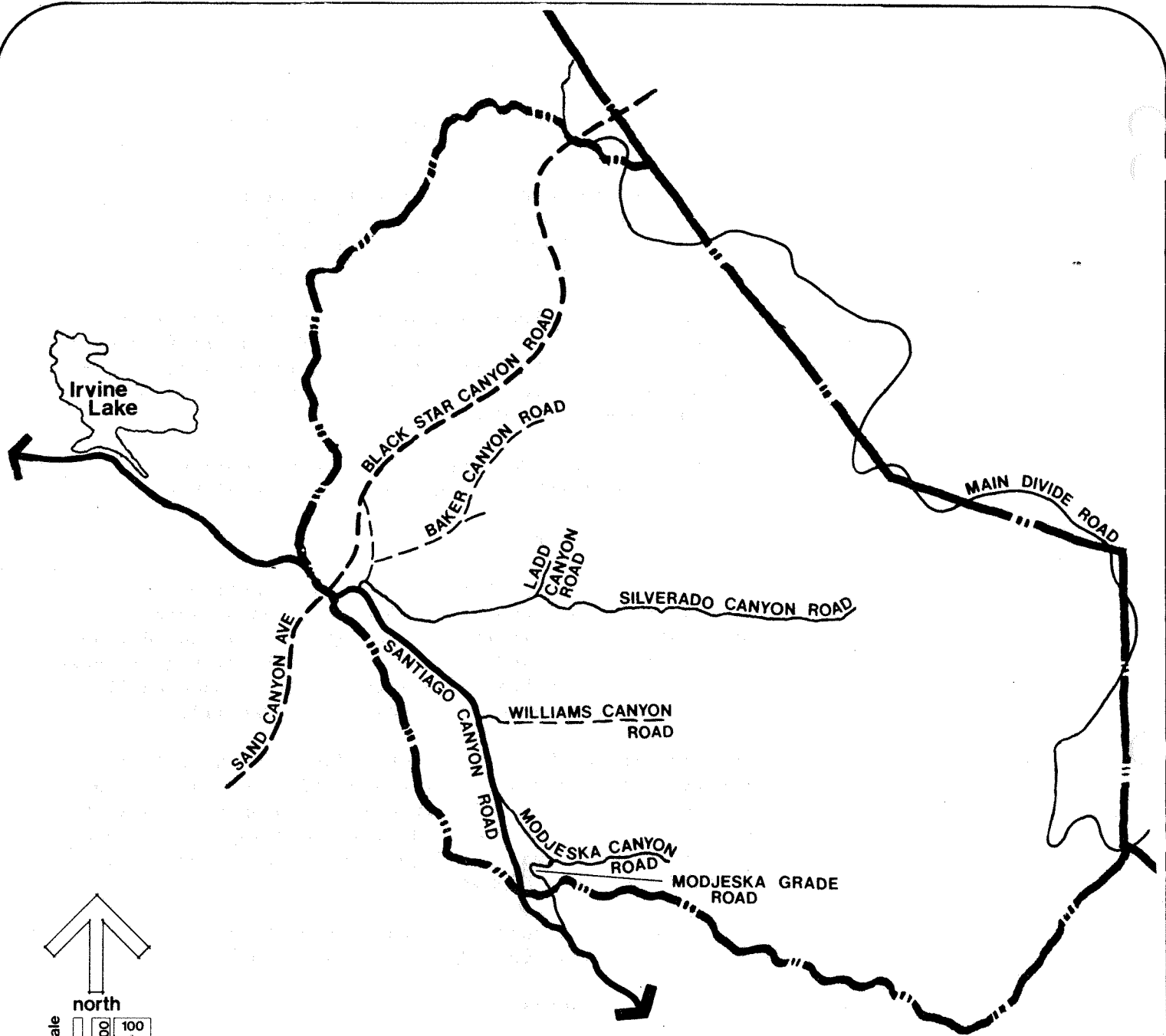
At the present time, a number of studies within or near the study area or its vicinity are underway. A short discussion of each follows:

(a) Trabuco Unit Plan

The U. S. Forest Service is preparing a land use management plan for the Cleveland National Forest.

(b) Foothill Corridor Concept Plan

This program responds to the major policy issues such as circulation, development, mineral resources, flood control, and recreation. The result will be the translation of policies into a general conceptual plan. It is proposed that this effort will provide regionwide information for the more detailed plans being prepared in the Foothill Corridor.



E.M.A.
silverado - modjeska
community plan

circulation

-  **primary**
-  **secondary (conceptually proposed)**
-  **local**

map
no.

11

(c) Scenic Highway Specific Plan

At the recommendation of the Scenic Highway Advisory Board, the Planning Commission approved a priority list of studies for the highways designated on the Scenic Highway Element of the County General Plan.

The approved priorities of those highways in or near the study area, and the status of each is as follows:

- 1) Live Oak Canyon Road (high priority) -- specific plan underway with completion expected in 1976.
- 2) El Toro Road (high priority) -- included in the Aliso Creek Corridor specific plan.
- 3) Santiago Canyon Road (medium priority) -- not scheduled.

(3) Floodplain Zoning

An FP-2 overlay zone is in the process of being applied to the Santiago Creek Floodplain. This zone is designed to regulate construction in the floodplain. New structures or additions to existing structures must be shown to be "flood safe" before the necessary use permits will be granted.

b. Impacts

(1) The Orange County General Plan

(a) Land Use Element

The recommended Community Plan is the beginning step of the planning process encouraged by the Land Use Element to remove the study area from the "Reserve Area" status. Once this plan is adopted, and the nine General Plan requirements are fulfilled, the area can be assigned the urban land use designations identified in this plan, through the General Plan Amendment process, and developed according to the adopted Community Plan's recommended development guidelines.

(b) Open Space and Conservation Element

The proposed Community Plan designates much of the study area for additional development, particularly those areas characterized by lower slopes and canyon areas.

(c) Noise Element

The development of the study area according to the proposed Community Plan will not result in greater traffic levels than those projected in the Noise Element, and therefore will not impact the projections made in this element.

(d) Safety Element

The Community Plan, identifying areas of potential disaster, attempts to design around these hazard areas, which exist in great quantities in the study area, and proposes development which should be relatively safe. This conforms with the Plan Implementation Program outlined in the Safety Element.

(e) Scenic Highways Element

Development of the proposed Community Plan will increase development along this road, the traffic on this road, and may reduce its value as a scenic highway.

(f) Recreation Element

1) Master Plan of Regional Parks (MPRP)

The proposed Community Plan will alter the adopted MPRP by deleting two of the proposed parks, and changing the priorities of two other proposed parks.

2) Master Plan of Riding and Hiking Trails (MPRHT)

The Proposed Community Plans proposes that the current list of proposed riding and hiking trails be developed with the addition of certain links which will form a loop system.

3) Master Plan of Bicycle Trails (MPBT)

None proposed.

4) Master Plan of Local Parks

The proposed Community Plan does not propose any additions to the current local park facilities, as required by the Local Park Code (Ord. No. 2649), by supplying 4 acres of developed park land for every 1000 residents.

(g) Circulation Element

The traffic level in the study area will increase with development of the recommended Community Plan, but this increase was taken into account in the proposed Circulation Amendment. No significant impacts are anticipated.

(2) Special Planning Studies

(a) Trabuco Unit Plan

The Community Plan, when adopted, will commit those areas of the Cleveland National Forest within the study area to a specific development plan, before the National Forest has completed their land use suitability study. The Community Plan proposals were presented to representatives of the National Forest, and it was determined that the Community Plan is consistent with their proposals.

(b) Foothill Corridor Concept Plan

This Community Plan is proposing policies, guidelines, and a Community Plan for a portion of the area covered by this Concept Plan. By making these proposals, the Community Plan is superseding the Concept Plan in the Silverado-Modjeska area by making proposals prior to the completion of the Concept Plan.

(c) Scenic Highway Specific Plan

The only highway in the study area proposed for a Scenic Highway Specific Plan is Santiago Canyon Road, which has been given a medium priority and is not currently scheduled for development. Adoption of this plan may preclude options for the specific plan of this road as a scenic highway.

(3) Floodplain Zoning

This FP-2 overlay zoning will further implement the goals and policies of the Community Plan.

c. Mitigation Measures

(1) The Orange County General Plan

(a) Land Use Element

The following implementation guideline is proposed to incorporate the intent of the Community Plan into the Land Use Element:

- 1) Direct the EMA to consider the amendment of the Land Use Element of the General Plan to incorporate the revisions recommended herein. (7.310)

(b) Open Space and Conservation Element

The proposed Community Plan proposes to keep the majority of the study area in open space, principally those areas considered significant enough to warrant public management (i.e., the Cleveland National Forest, Regional Parks, Floodplains, and significant archaeological, paleontological and historical sites), and those areas characterized by significant natural constraints and natural resources (i.e., slopes in excess of 45 percent, canyon riparian areas, scenic highway corridors, major ridgelines, and fuel breaks).

(c) Noise Element

The Community Plan proposes recreational uses adjacent to the two arterials expected to be the greatest noise generators. Recreational uses are identified in the Noise Element of the General Plan to be noise sensitive and should not be subject to noise levels in excess of 65 CNEL. The Noise Element suggests the following mitigation measure:

- 1) A study should be conducted to determine the compatibility of the proposed land use with the noise level. The proposed land use should be evaluated through the design, environmental review and site plan process to assess whether additional noise attenuation measures should be imposed.

(d) Safety Element

None proposed.

(e) Scenic Highway Element

Existing development controls, along with the Community Plan recommended guidelines will serve to mitigate the impact and development will have on the scenic highways. These controls and guidelines are noted here:

1) Existing Development Controls

- a) To a great extent, natural constraints, such as steep, surrounding hillsides and the floodplain which parallels the roadway for most of its length in the study area will help to maintain the visual quality of the scenic corridor.

- b) The Land Use Element of the Community Plan recommends specific performance guidelines for areas within view of all public roads.
- c) The Land Use Element recommends residential densities along the scenic highway which are compatible with the scenic highway concept.
- d) The Land Use Element recommends public open space and recreational uses immediately adjacent to the roadway which will ensure further design control.

The existing Sign Restrictions zoning district provides adequate review procedures for any signs in conjunction with proposed land uses.

2) Recommended Development Guidelines

- a) Site plan review should be required for all development within the scenic corridor. (6.300)
- b) All development within the scenic corridor should be screened from the highway to reduce external visibility and reduce noise levels by aid of landscaped buffer strips and/or planted earth berms. (6.300)
- c) Development in Irvine Mesa should provide setbacks or landscaping to screen the view of structures from Silverado Canyon Road and Santiago Canyon Road. (6.300)
- d) The northern entrance to Modjeska Canyon should emphasize the landscape corridor similar to the existing olive groves. This entry treatment should screen housing and structures from the road. (6.300)

The Community Plan also proposes two alternative design concepts for Santiago Canyon Road, incorporating the proposed Santiago Regional Park as a scenic buffer around the highway. The following implementation recommendation is proposed regarding Santiago Canyon Road:

- a) Direct the EMA to consider the conceptual alternatives in this Community Plan and various development plans for Santiago Regional Park in the precise alignment and design of Santiago Canyon Road. (6.400)

(f) Recreation Element

1) Master Plan of Regional Parks (MPRP)

In order to mitigate the inconsistency between the MPRP's and the Community Plan, the following implementation recommendations are proposed:

- a) Direct the EMA to consider changing the MPRP Priority Group for the Santiago site of the proposed Limestone-Santiago Regional Park from II to III, while retaining the Limestone site as Priority Group II. (4.200)
- b) Direct the EMA to consider changing Black Star Regional Park from MPRP Priority Group III to Group II. (4.200)
- c) Direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon for the purpose of recreational access. (4.200)
- d) Direct the EMA to conduct a feasibility study of a phased development plan for Black Star Canyon Regional Park which considers the following segments: (4.200)
 - Lower Black Star (Federal)
 - Indian Village Area (So. Cal. Edison)
 - Hidden Ranch (So. Cal Edison)
- e) Direct the EMA to consider the deletion of the Upper Silverado and Harding-Modjeska sites from the Master Plan of Regional Parks. (4.200)

2) Master Plan of Riding and Hiking Trails (MPRHT)

In order to eliminate the inconsistency between the adopted MPRHTS the Community Plan proposes the following implementation recommendations.

- a) Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail system delineated on the Community Plan Land Use Map. (4.400)
- b) Direct the EMA to consider deleting the Upper Silverado equestrian center site and adding the Santiago and Black Star equestrian center sites to the Master Plan of Riding and Hiking Trails. (4.500)

- c) Direct the EMA to consider amending the Master Plan of Riding and Hiking Trails to reflect the trail stops delineated on the Community Plan Land Use Maps. (4.600)

3) Master Plan of Bicycle Trails

The Community Plan proposes the following development guidelines to better implement the development of the proposed bikeway:

- a) That portion of the proposed Santiago Road Bikeway within the planning area should eventually be located within the floodplain. (4.700)
- b) In the interim, any improvements of Santiago Road should consider the incorporation of a temporary bikeway facility. (4.700)

4) Master Plan of Local Parks

Because of the close proximity to open space and recreational uses, no mitigation measures are proposed to mitigate the lack of local parks and the violation of the Local Park Code.

(g) Circulation Element

Although this Community Plan does not propose any additional roads, it does propose implementation of the MPAH and the development of a safe and efficient highway system through the following policies:

- 1) Provide for rural road standards. (5.100)
- 2) Separate to the maximum degree possible, through-traffic, weekend and recreation traffic from resident traffic. (5.100)
- 3) Promote alternative access to the Cleveland National Forest away from residential canyon areas. (5.100)
- 4) Discourage and limit through traffic in residential areas. (5.100)

The Community Plan proposes the following implementation recommendation to mitigate the need for access to the Black Star Regional Park.

- 1) As an interim measure and in conjunction with the partial development of Black Star Canyon Regional Park (see Recreation Element), direct the EMA to conduct a feasibility study of upgrading the existing roadway in Black Star Canyon to accommodate recreational traffic. (5.212)

Furthermore, the Community Plan proposes that the adopted Rural Street Standards be applied to developments within the study area which conform to a given "rural" standard (pp. 33-34 of the Community Plan), which is anticipated to include the entire study area. The following development guidelines are recommended:

- 1) Wherever possible, developments in the study area should meet the adopted criteria for the application of rural streets, and the streets therein should be constructed in accordance with the appropriate rural street standard. (5.300)
- 2) Consideration should be given to the exclusion of upper Silverado Canyon Road (from Ladd Canyon to the national forest) and Modjeska Canyon Road from these and other arterial standards when it can be demonstrated that no adverse safety effects will be encountered. (5.300)
- 3) Consideration should be given to modification of these standards when opportunities to preserve trees and the natural terrain are present. (5.300)
- 4) The design of new roads and all existing road improvements should be subject to site plan review. (5.300)

(2) Special Planning Studies

(a) Trabuco Unit Plan

None Proposed.

(b) Foothill Corridor Concept Plan

This Community Plan has taken into account the policies and goals of the Foothill Corridor Policy Plan, upon which the Concept Plan is based, and has incorporated those policies and goals into the Community Plan wherever possible. The Community Plan should, therefore be in conformance with the Concept Plan when it is completed.

(c) Scenic Highway Specific Plan

The Community Plan proposes development guidelines and two alternative design concepts for the development of Santiago Canyon Road as a scenic highway. Please see section III, C, 4, c, (1), (e) for further discussion of the implementation recommendations and development guidelines proposed by the Community Plan for the scenic highway.

(3) Floodplain Zoning

None proposed.

5. Housing and Demography

a. Existing Conditions

(1) Growth Trends

The study area has remained largely isolated from the rapid population and employment changes occurring in the remainder of Orange County. Future employment growth depends primarily on the expansion of community services, although a significant recreation complex could also be an employment generator. In any case, no more than 60 new jobs can be expected to be added within the planning area during the next five years.

The locational, geographical and community service disadvantages which have tended to isolate the study area in the past remain, and indicate that short term growth will be relatively subdued. However, growth could be expected to accelerate with the removal of certain restricting factors, such as sewerage, and circulation.

See Section 8.200 (p. 54) in the Community Plan for a discussion of growth trends in the Silverado-Modjeska Area.

(2) Current Housing Stock

There is a limited variety of housing types in the Silverado-Modjeska Study area. The majority of the housing stock is comprised of older single family units with one to two bedrooms. Fifty-nine percent of these units built prior to 1950. Development in the study area has occurred on a lot-by-lot basis, with most of the homes originally built as vacation or retirement homes. There are no mobile homes or trailer units in the study area.

There are about 500 vacant legal building sites in the village areas, however considering physical constraints only about 100 of these sites are considered buildable.

At the present growth rate, considering the existing developable areas, it is estimated that buildout will not occur for 20 to 25 years.

See Section 8.300 (pp. 54-55) in the Community Plan for a discussion of the current housing stock.

(3) Housing Consumption

The majority of home sales in the study area are one to two bedroom units.

Prices in the market area have risen an estimated average annual rate of 11.0 percent during the 1970-75 period. By comparison, market prices of existing homes in Orange County have risen an average annual rate of 9.2 percent for the same period.

See Section 8.400 (pp.55-57) in the Community Plan for a discussion of housing consumption.

(4) Population Characteristics

Based on the 1970 Census information, the Planning Area exhibits the following characteristics as contrasted to the county-wide population:

- a) There is a greater percentage of single persons.
- b) The average age is older.
- c) There are more males than females.
- d) There is a greater percentage of people over school age, and a smaller percentage under school age.
- e) The average family income is 20% less.
- f) There is lower percent of persons employed.

The above characteristics indicate that a relatively large percent of the population may be retired.

A profile of current home buyers in the area suggests a new trend is developing. The majority of homes recently purchased in Silverado and Modjeska Canyons are purchased by home buyers characterized as follows:

- a) Between 25 and 35 years of age.
- b) A couple with no children or one to two children of preschool or elementary school age.
- c) Employees in a professional occupation.
- d) Earning an annual income of \$17,000 or more per year.
- e) Generally purchasing their second home with many families having previously lived for three to eight years in a tract home.
- f) Generally dissatisfied with tract development and desire a rural environment.

(5) Special Needs

Due to the lack of low-to-moderate income housing employment centers, and physical constraints, there are no significant pockets of low income or minority residents. See Section 8.500 (p. 57) in the Community Plan for a further discussion of special needs.

b. Impacts

The recommended Community Plan will allow a maximum of 1291 additional dwelling units to be built in the planning area. Only 100 of these units will be in the existing village areas. None of these units are expected to be low-to-moderate income units, due primarily to the costs related to topography, large lots and the lower densities.

c. Mitigation Measures

Holtz Ranch and Irvine Mesa are the only areas within the Silverado-Modjeska Community Plan which are relatively flat and accessible. The Community Plan allows the possibility of a "Planned Community" development in these areas, which could accommodate some moderate income units.

6. Climate and Air Quality

a. Existing Conditions

The climate of the planning area is Mediterranean, modified by the Santa Ana Mountain Thermal Belt. Temperatures range from 50° F to 90° F during summer months, and 40° F to 80° F during the winter months. Late afternoon breezes are common to the planning area. Humidity tends to be low due to the terrain and distance from the coast. The planning area experiences the hot, dry Santa Ana winds which are characteristic of the region, and which increase the fire potential. Rainfall in the planning area is moderate, occurring predominantly from December to March. Rainfall levels increase with the higher elevations, easterly across the planning area.

Air quality and emission levels for the whole of Orange County are not necessarily an accurate estimate of those levels in the Silverado-Modjeska planning area. Ambient air quality of a particular area is related to the amount of emissions and the degree of dispersion of air pollutants. Dispersion is related to meteorology and topography of the region. Temperature inversions and land-sea breezes are significant factors affecting air quality in the planning area. The inversion height in the study area has not been measured. It is assumed that the geographical location and local topography of the area would combine to create conditions similar to those in the nearby southwestern Orange County flatlands.

Table 1

Air Quality for 1974

Pollutant	Federal Air Quality Standards	El Toro Monitoring Station		California Air Quality Standards	El Toro Monitoring Station	
		Days Standard Exceeded	Highest Value Over Averaging Time		Days Standard Exceeded	Highest Value Over Averaging Time
Oxidant (Ozone)	0.08 ppm 1 hr. avg.	132 days ^a	0.48 ppm	0.10 ppm 1 hr. avg.	116 days ^f	0.48 ppm
Nitrogen Dioxide (NO ₂)	0.05 ppm annual avg.			0.25 ppm 1 hr. avg.	6 days ^g	0.33 ppm
Carbon Monoxide (CO)	9 ppm 8 hr. avg.	0 days	6 ppm	10 ppm 12 hr. avg.	0 days	4 ppm
	35 ppm 1 hr. avg.	0 days	8 ppm	40 ppm 1 hr. avg.	0 days	8 ppm
Sulfur Dioxide (SO ₂)	0.14 ppm 24 hr. avg.	0 days	0.02 ppm	10 ppm 24 hr. avg.	0 days	0.02 ppm
	0.03 ppm annual avg.	0 days	0.002 ppm	0.50 ppm 1 hr. avg.	0 days	0.04 ppm
Suspended Particulate Matter	75 ug/m ³ ACM ^d		69 ug/m ³	60 ug/m ³ ACM		69 ug/m ³
	260 ug/m ³ 24 hr. avg.		188 ug/m ³	100 ug/m ³ 24 hr. avg.	24% of samples over criterion	188 ug/m ³
Hydrocarbons (Corrected for Methane)	0.24 ppm 3 hr. avg. (6-gam)	175 days	2 ppm			
Lead (Particulate)				1.5 ug/m ³ 30 day. avg.	2 months	1.79 ug/m ³

a. Monitored for 11 months.

b. Monitored for 9 months.

c. Monitored for 6 months.

d. ACM: Annual Geometric Mean.

e. Monitored for 9 months.

f. Monitored for 10 months.

g. Monitored for 3 months.

Table 2
AIR QUALITY FOR 1975

Pollutant	Federal Air Quality Standards	El Toro Monitoring Station		California Air Quality Standards	El Toro Monitoring Station	
		Days Standard Exceeded	Highest Value Over Averaging Time		Days Standard Exceeded	Highest Value Over Averaging Time
Oxidant ^{xx} (Ozone)	0.08 ppm 1 hr. avg.	72 days	0.19 ppm	0.10 ppm 1 hr. avg.	56 days	0.19 ppm
Nitrogen Dioxide (NO ₂)	0/05 ppm annual avg.			0.25 ppm ^a 1 hr. avg.	3 days	0.41 ppm
Carbon ^b Monoxide (CO)	9 ppm 8 hr. avg.	0 days	5 ppm	10 ppm 12 hr. avg.	0 days	5 ppm
	35 ppm 1 hr. avg.	0 days	8 ppm	40 ppm 1 hr. avg.	0 days	8 ppm
Sulfur ^c Dioxide (SO ₂)	0.14 ppm 24 hr. avg.	0 days	0.007 ppm	0.04 ppm 24 hr. avg.	0 days	0.007 ppm
	0.03 ppm annual avg.			0.50 ppm 1 hr. avg.	0 days	0.03 ppm
					Annual Geometric Mean	Percent of Sample Over Criterion
Suspended Particulate Matter ^d	75 ug/m ³ AGM ^e		58 ug/m ³	60 ug/m ³ AGM ^e		58 ug/m ³
	260 ug/m ³ 24 hr. avg.		124 ug/m ³	100 ug/m ³ 24 hr. avg.	14% of Sam- ples over Criterion	124 ug/m ³
Hydrocarbons ^f (Corrected for Methane)	0.24 ppm 3 hr. avg. (6-9 a.m.)	66 days	2 ppm			
Lead ^g (Particulate)				1.5 ug/m ³ 30 day avg.	0 months	1.46 ug/m ³

xx Corrected for ultraviolet
photometric calibration.

- a. Monitored for 4 months
- b. Monitored for 5 months
- c. Monitored for 7 months
- d. Monitored for 7 months
- e. AGM: Annual Geometric Mean
- f. Monitored for 6 months
- g. Monitored for 7 months

There is no data on the ambient air quality or pollutant concentrations in the Silverado-Modjeska area. The nearest monitoring station operated by the OCAPCD is located at El Toro. The measurements for air pollutants recorded at El Toro during 1974 and 1975 are shown on Tables 1 and 2. As the figure shows, the area has significant air quality problems. The only pollutant which does not exceed any of the standards is sulfur dioxide. Of all the pollutants, hydrocarbons exceed the Federal air quality standard by the largest margin, a factor of eight. In addition, oxidant exceeds the Federal standard by a factor of five, and exceeds the California standard by a factor of four. Not all these pollutants are generated in the area, some are due to intrusion from other areas.

b. Impacts

Two types of impacts will be experienced in the Study Area with the implementation of the Community Plan. Short-term impacts are those impacts resulting from site construction, including exhaust emissions from construction equipment and dust generated from earth movement. Since construction will occur principally on a lot-by-lot basis throughout the study area, and no specific development proposals are included in the Community Plan, it is difficult to quantitatively assess the short-term impacts.

Long-term impacts will be the result of the permanent usage of the proposed units and pollutants generated by increased use of the automobile. Daily emissions can be determined through the multiplication of a usage rate by an emission factor for each pollutant.

Table 4 shows that the bulk of emissions are generated by motor vehicles. It is estimated that an average of 13 trips per day per dwelling unit, at 9 miles per trip can be anticipated in this area. Additional traffic will be generated by the recreational facilities planned for the area. It is projected that 17,000 additional trips per day can be expected as a result of the recreational facilities. Table 3 shows the current emissions found in the study area. As a point of comparison Table 4 shows both the current and projected emissions.

c. Mitigation Measures

Since a majority of the trips generated in the study area will be a result of the proposed regional parks, the primary mitigation measure would be to encourage the development of transit facilities in the area. The Orange County Transit District is in the process of developing a bus needs study which evaluates the needs anticipated to be generated in the next 5 years. This study is reviewed annually to insure that the needs projections are accurate, and will be met.

Table 3
Current Estimated Mobile & Stationary Source Emissions
for Silverado-Modjeska*

Primary Pollutant	Natural Gas Combustion ^a (Including space heating)		Generation of Electricity ^c				Vehicular Emissions		Total Emissions From All Sources	
			Fuel Oil Combustion		Natural Gas Combustion					
			Emission Factor ^b (lb/106ft ³)	Emissions (Tons/Day)	Emission Factor ^d (lb/kwh)	Emissions (Tons/Day)				
CO	20.0	0.00216	.00004	0.00024	.00004	0.00024	15.80 ^g	1.10038	1.10278	402.5147
HC	8.0	0.00086	.00002	0.00012	.00038 ^e	0.00226	1.10 ^g	0.07661	0.07759	28.3203
NO ^x	80.0	0.00864	.00197	0.01170	.00107	0.00636	1.20 ^g	0.08357	0.10391	37.9271
SO ^x	0.6	0.00006	.00510	0.03029	.00001 ^e	0.00006	0.20 ^h	0.01393	0.04428	16.1622
Particulates	19.0	0.00205	.00063	0.00374	.00030	0.00178	0.58 ^h	0.04039	0.04618	16.8557
* See following page for footnotes										

* See following page for footnotes

Footnotes for Table 3

- a. Based on typical natural gas consumption rates for residential dwellings, 400 ft³ per dwelling unit per day, and 540 dwelling units.
- b. "Compilation of Air Pollutant Emission Factors", EPA, AP-42 (revised, April 1973), Table 1.4-1 in lbs/million cubic feet of natural gas.
- c. Electrical power consumption of 22 kwh/du/day, and 540 dwelling units.
- d. Emission factors supplied by Mr. Kermit Rosenthal, Development and Environmental Control Engineering Section of S.C. Edison's Generation Division, as per Orange County's current usage, in lbs per kwh generated.
- e. No value available through Edison, therefore the value represents a nationwide average, as supplied by EPA, "Compilation of Air Pollutant Emission Factors", AP-42 (revised, April 1973), Table 1.4-1)
- f. Maximum projection, based on 13 trips per day per dwelling unit per day at 9 miles per trip=VMT.
- g. Light duty vehicles = 83.7% of total VMT, heavy duty gas vehicles = 10.2% of total VMT, heavy duty diesel vehicles = 5.3% of total VMT, and motorcycles = 0.9% of total VMT, according to Martin Kay of the So. California Air Pollution Control District, Southern Zone for the average throughout California.
- h. "Compilation of Air Pollutant Emission Factors" (Revised, April 1973) as supplemented September 1973, EPA, Table 3.1.1-1.
- i. Maximum projection, assuming fuel oil is used to generate all electricity required by the project.

TABLE 4
PROJECTED MOBILE & STATIONARY SOURCE EMISSIONS
FOR SILVERADO-MODJESKA

Primary Pollutant	Natural Gas Combustion Emissions (including space heating) ^a		Generation of Electricity				Vehicular Emissions ^f (Tons/Day)		Total Emissions From all Sources ^f	
			Fuel Oil Comb. Emissions (Tons/Day)		Natural Gas Comb. Emissions (Tons/Day)					
	Emission Factor ^b (lb/10 ⁶ ft. ³)	Emissions (Tons/Day)	Emission Factor ^d (lb/kwh)	Emissions (Tons/Day)	Emission Factor ^d	Emissions (Tons/Day)	Emissions Factors (gm/mi)	Emissions (Tons/Day)	Tons/ Day	Tons/ Year
CO	20.0	.00716	.00004	.00079	.00004	.00079	15.80 ^g	3.6496	3.6575	1335.01
HC	8.0	.00287	.00002	.00039	.00038 ^e	.00749	1.10 ^g	0.2541	0.2574	93.95
NO _x	80.0	.02866	.00197	.03881	.00107	.02108	1.20 ^g	0.2772	0.3447	125.80
SO _x	0.6	.00021	.00510	.10048	.00001 ^e	.00020	0.20 ^h	0.0462	0.14709	53.61
Particulates	19.0	.00681	.00063	.01241	.00030	.00591	0.58 ^h	0.1340	0.15322	55.93

* See following page for the footnotes

Footnotes for Table 4

- a. Based on a typical natural gas consumption rates for residential dwellings, 400 ft³ per dwelling unit per day, and 1791 units.
- b. "Compilation of Air Pollutant Emission Factors", EPA, AP-42 (revised April 1973), Table 1.4-1, in lbs./million cubic feet of natural gas.
- c. Electrical power consumption of 22 kwh/du/day, and 1791 units.
- d. Emission factors supplied by Mr. Kermit Rosenthal, Development and Environmental Control Engineering Section of So. Calif. Edison's Generation Division, as per Orange County's current usage, in lbs. per kwh generated.
- e. No value available through Edison, therefore this value represents a nationwide average, as supplied by EPA, (Compilation of Air Pollutant Emissions Factors," AP-42 (revised, April 1973), Table 1.4-1.
- f. Maximum projection, based on 13 trips per dwelling unit per day, at 9 miles per trip - (VMT).
- g. Light duty vehicles 83.7% of total VMT, heavy duty gas vehicles= 10.2% of total VMT, heavy duty diesel vehicles= 5.3% of total VMT, and motorcycles= 0.9% of total VMT; as calculated by Martin Kay of the So. California Air Pollution Control District, Southern Zone for the average throughout Southern California.
- h. Compilation of Air Pollutant Emission Factors (Revised). April 1973, as supplemented September 1973, EPA, Table 3.1.1-1.
- i. Maximum projection, assuming fuel oil is used to generate all electricity required in the study area.

Since the study area is removed from both commercial and employment centers the primary mitigation measure would be to limit housing to only secondary, recreational units, thereby eliminating some of the traffic and emissions. But, due to housing demands for primary homes in this area, that is not a feasible solution.

7. Public Services and Utilities

a. Existing Conditions

(1) Services

Map 12 denotes the location of the existing service facilities.

a) Police

The Orange County Sheriff's Department patrols the Silverado-Modjeska area. Four patrol cars are available during day and evening shifts, three cars during the night shift. The Sheriff's Department is responsible for protection from crimes against property or persons.

Traffic accidents are the responsibility of the California Highway Patrol. One patrol car covers the area during the week. This patrol is augmented by five motorcycle patrols on weekends.

b) Fire Protection

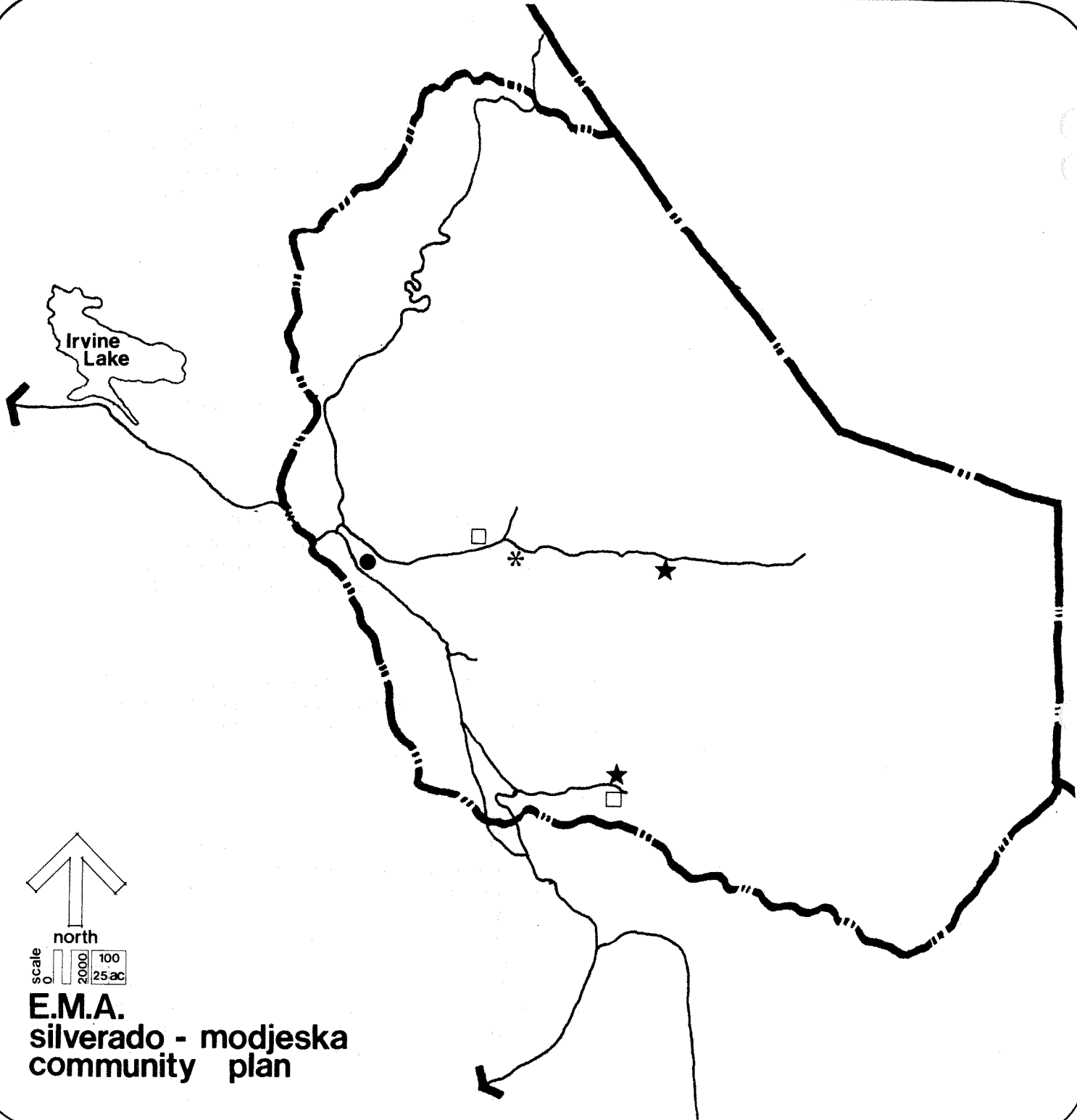
The property within the Cleveland National Forest is protected jointly by the U. S. Forest Service, the Orange County Fire Warden, and the State Forestry Department. The other areas are protected by the County with backup provided by the State.

Three County fire stations are located within the planning area, two in Silverado Canyon and one in Modjeska Canyon. These stations, which are staffed by volunteers, respond to structure fires and emergencies.





Orange County Fire Department also maintains a station at Irvine Lake which is open only during fire season (usually April to November) for protection of the watershed area. Eight full-time firemen are on duty at all times during fire season.

c) Schools

The Planning Area is within the Orange Unified School District. There is one school within the planning area, the Silverado Elementary School. This school



service facilities

-  school
-  library
-  community center
-  fire station

map
no.

12

is located 3/4 mile southeast of the intersection of Santiago Canyon Road and Silverado Canyon Road, on Santiago Canyon Road. The present enrollment in the Silverado Elementary School is 133 students, with a capacity for only 136 students. The student generation factor per dwelling unit for the area is 0.64 students/du. This figure contrasts with the 0.88 students/du factor for Orange County as a whole.

Junior High and High School students are bussed to schools in the Orange and El Modena areas. The district has no plans for new facilities in the area.

d) Libraries

The County operates a branch library in Silverado Canyon. The library is located on Silverado Canyon Road east of Ladd Canyon.

(2) Utilities

a) Water Supply

The Silverado-Modjeska planning area is served by the Santiago County Water District. The District obtains its water supply from the Santiago Aqueduct and a well at the eastern end of Silverado Canyon.

Water is distributed through transmission mains in Santiago, Silverado, Williams, and Modjeska Canyons. The water is pumped through these mains to reservoirs in Silverado and Modjeska Canyons, then to the service customers by a gravity feed system. The District currently provides water for 560 domestic connections and one industrial user, the Transit-Mix sand and gravel operation.

Approximately 1,000 additional service connections are possible in the existing service area with some increase in storage capacity (see map 13). 5,000 service connections are generally considered to be the ultimate capacity of the existing water supply, but would require increases in the storage areas.

Water service is available in only a limited part of the study area. If development is to occur outside the existing service area, that development will have to assume the expense of extending the existing facilities.

Although water service has been generally adequate,

<p>Table 5</p> <p>Projected Student Populations</p> <p>in the Silverado-Modjeska Area</p>	
<p>Using Current Student Generation Factors for the Study Area (0.64 Students per Dwelling Unit)</p>	<p>Using County-wide Student Generation Factors (0.88 Students per Dwelling Unit)</p>
<p>Elementary School 0.35 students per du 630</p> <p>Intermediate School 0.10 students per du 183</p> <p>High School 0.19 students per du 332</p> <hr/> <p>Total Projected Students* 1145</p>	<p>Elementary School 0.48 Students per du 866</p> <p>Intermediate School 0.14 students per du 252</p> <p>High School 0.26 students per du 457</p> <hr/> <p>Total Projected Students* 1575</p>
<p>* by 2005</p>	

rationing has occurred in some summer months due to high water use and limited storage, and may reoccur if remedial action is not taken. Furthermore, the water district has projected an increase of 100% in water rates and/or taxes in the next 10 years unless there is further growth in the area.

b) Wastewater

There are no sewer facilities for the Silverado-Modjeska planning area. Sewage disposal is currently handled on an individual basis by the use of cesspools and septic tanks.

Disposal of sewage in this manner poses potential problems for the area. Many of these systems are old and have become saturated beyond capacity. The possibility exists that seepage from these could find its way into the groundwater and eventually contaminate Irvine Lake Reservoir. Many of the older homes and their sewage systems have been constructed in the floodplain areas.

The "Comprehensive Rural Water and Sewage Plan" identified the Silverado-Modjeska area as the number one priority area for the development of a sewage system. They cited the use of subsurface disposal systems as having created a potential for chemical and bacteriological contamination of surface and underground waters.

Another problem that has been brought to the attention of health officials is animal waste. As in most rural areas, many residents have a number of horses, dogs, and other livestock. Due to the topography of the area, many animals are kept in corrals and shelters close to the creeks, and the possibility exists that their debris could contaminate the groundwater.

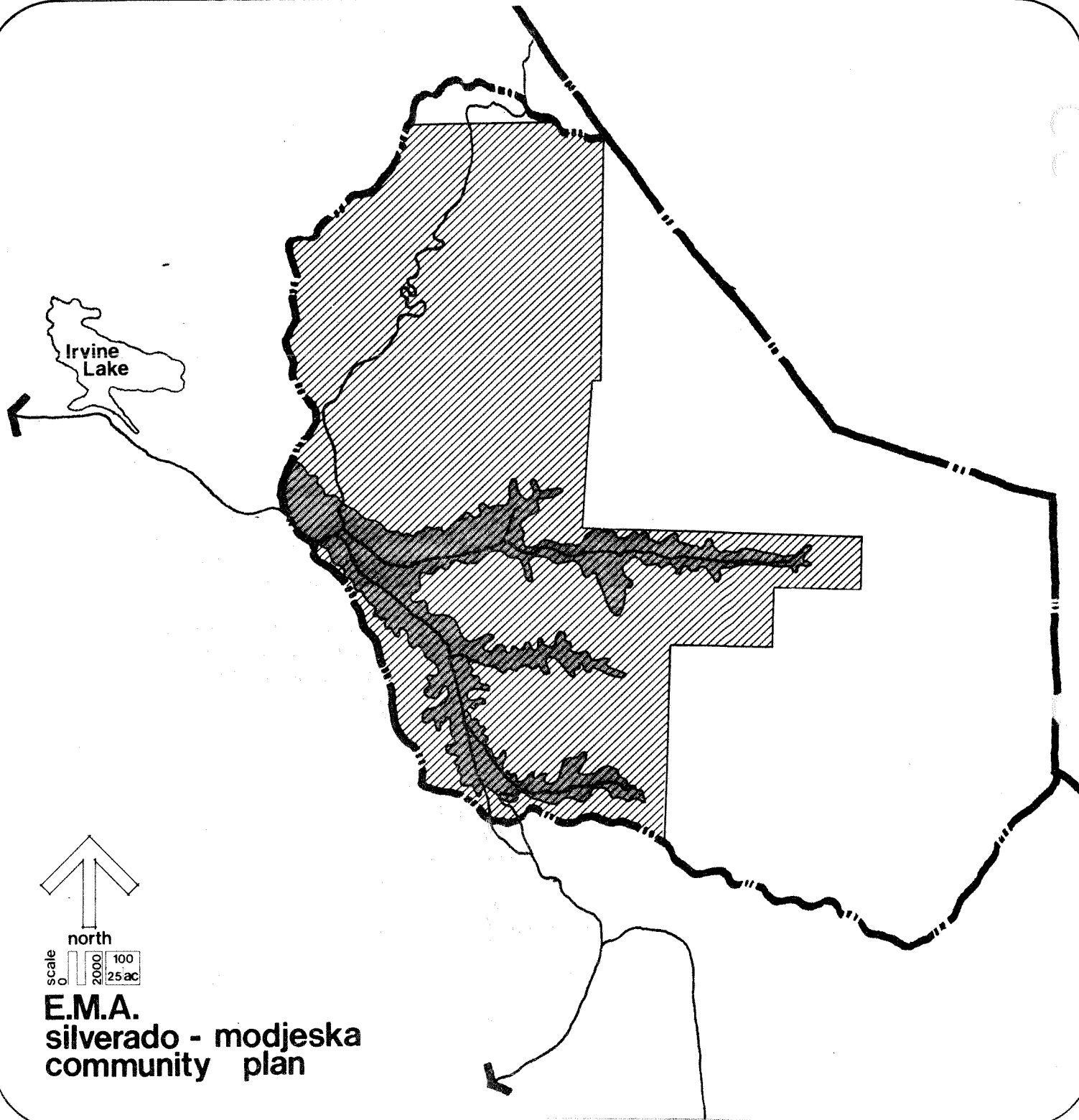
It is estimated that sewage flow in the Santiago Water District area has reached 150,000 gallons per day, the majority of this from the Silverado and Modjeska Canyon areas.

(c) Electricity

Electric power is provided by the Southern California Edison Company. All electrical lines are currently located above ground. In the future the smaller service lines could be underground.

(d) Natural Gas

There is no natural gas service available to the area. Many of the residents have butane or propane brought in by truck. There are no current plans for natural gas service.



water and sanitary districts

-  **EXISTING SERVICE AREA**
-  **SANTIAGO COUNTY WATER DISTRICT**

map
no.

13

b. Impacts

(1) Services

(a) Police

Population in the service area will increase by 4,000 people if the recommended Community Plan is developed. The increased population, increased regional park/recreation visitors, and the subsequent increased traffic will overload the existing patrols in the study area.

It is estimated that one additional patrol unit will be needed to service the study area after 1990 if the recommended Community Plan is adopted. Since investigators are added to the staff at the rate of 1 per 6,000 population, it is not felt that any additional investigators will be needed for the recommended Community Plan. The cost of the additional patrol unit will be \$269,343 annually.

(b) Fire Protection

The impacts on the existing fire hazard problem are discussed in Section III, B, 4, b of this environmental impact report. Simply stated, the fire hazard will increase as a result of the increase in people using the area. This increased hazard coupled with the increased dwelling units and park improvements will overload the existing volunteer stations by 1985, at which time a new volunteer station will be added in Williams Canyon.

The maintenance costs for these volunteer stations are independent of population growth. Since the area served by the Williams Canyon volunteer station is presently served by the Silverado and Modjeska Canyon stations, the total annual volunteer cost would not increase over the existing cost.

(c) Schools

Assuming that the student generation rate remains 0.64 students per dwelling unit, the study area will eventually generate 1150 students. If the generation rate increases to the county standard of 0.88 students per dwelling unit, then the study area will generate 1580 students. Table 5 breaks down these student populations according to school categories. It is most likely that the student generation rate will be somewhere between these two extremes.

The addition of one elementary school will be required to meet the increased student load. Intermediate and high school students will continue to be bussed to schools in the El Modena and Orange areas.

(d) Library

The existing library in Silverado Canyon is designed to serve up to 35,000 people. The existing library will be able to provide full-time service after the Community Plan is built out. Additional books and equipment will be needed to serve the increased demand.

(2) Utilities

(a) Water

Development of the recommended Community Plan, with its additional 1251 dwelling units plus park and commercial facilities, will require increased storage area, plus additional trunk lines and service extension lines. The cost for these facilities will be assumed by the developers. Current water usage per capital in Orange County is 200 gallons per day. The study area with the existing 1423 population, uses an estimated 103 MGY. With the development of the Community Plan, water consumption is expected to increase by 311 MGY to 414 MGY, by the year 2005.

(b) Wastewater

The Community Plan does not suggest the extension of sewer service into the planning areas. The impact of continued reliance on individual septic tanks, with the development of the plan could be seepage of effluent into the ground water system. This problem is discussed extensively in Sections III, B, 2 and 3 of this environmental impact report.

(c) Electricity

Southern California Edison anticipates being able to handle the increased demand of 10,045,530 kWh per year by 2005.

(d) Natural Gas

No impacts are anticipated.

C. Mitigation Measures

(1) Services

(a) Police

None proposed.

(b) Fire Protection

Section III, B, 4, c of this environmental impact report discusses those mitigation measures proposed to help alleviate the fire hazard problem.

(c) Schools

One elementary school is proposed to accommodate the increase demand. No other facilities are proposed.

(d) Library

None proposed.

(2) Utilities

(a) Water

Recognizing the excessive water demands in this area the following measures are suggested to minimize water consumption:

(1) Use small reservoir tank toilets.

(2) Use native plant material, which requires minimal water, for all landscaping.

(b) Wastewater

Mitigation measures for the possible ground water contamination are discussed in Section III, B, 2 and 3 of this report.

(c) Electricity

None proposed.

(d) Natural Gas

None proposed.

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IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The environmental impacts described in Section III consist of both short-term and long-term impacts with primary and/or secondary effects. The unavoidable adverse impacts have been described at length in previous sections, and are discussed below in a summary form. Their significance depends upon the mitigation measures to be ultimately incorporated into the proposed project, as discussed in Section III.

A. SHORT-TERM IMPACTS

1. Dust and noise during grading and construction.
2. Increased erosion before landscaping is established.
3. Increased probability of landslides until landscaping is established.

B. LONG-TERM IMPACTS

1. Irreversible landform alteration.
2. Increased probability of ground water contamination.
3. Increased danger of property destruction and loss of life due to floods.
4. Increased fire hazard.
5. Increased danger of property destruction and loss of life due to fires.
6. Loss of native vegetation.
7. Loss of wildlife habitat.
8. Possible destruction of archaeological sites.
9. Possible destruction of paleontological sites.
10. Possible destruction of historical sites.
11. Increased ambient noise levels.
12. Incremental degradation of local and regional air quality.
13. Cumulative growth inducements upon surrounding areas.
14. Lack of provision for employment centers.
15. Lack of provision for low to moderate income housing.
16. Increased traffic on existing arterials and local, rural roads.
17. Additional consumption of up to 0.28 MGD water.
18. Additional generation of 0.17 MGD waste water.

19. Additional consumption of 11,880 KWh of electricity, with the accompanying increased air pollutants.
20. Increased demand for fire protection services.
21. Increased demand and overload on existing elementary school.
22. Increased demand on intermediate and high schools near the study area.
23. Increased demand for buses, with the accompanying increased use of non-renewable resources, increased noise levels, and increased admissions necessary to bus the additional intermediate and high school students to schools in the adjoining areas.

V. ALTERNATIVES TO THE PROPOSED PROJECT

In the process of developing the recommended Community Plan, various alternatives were analyzed. While these alternatives do not mitigate the impacts of the proposed projects, they alter the degree of those impacts. There are two types of alternatives presented, "Overall Land Use Alternatives", and "Design Alternatives."

A. OVERALL LAND USE ALTERNATIVES

1. No Development Alternative

The purpose of this alternative is to discuss the impacts of stopping further development in the study area. Counting units currently being developed, and units currently planned for, it is assumed that development in the study area would stop at 665 units, resulting in a population of 1787. The Limestone-Santiago Regional Park would be built by 1990. Black Star Canyon Road and Santiago Canyon Road would be developed according to the Master Plan of Arterial Highways.

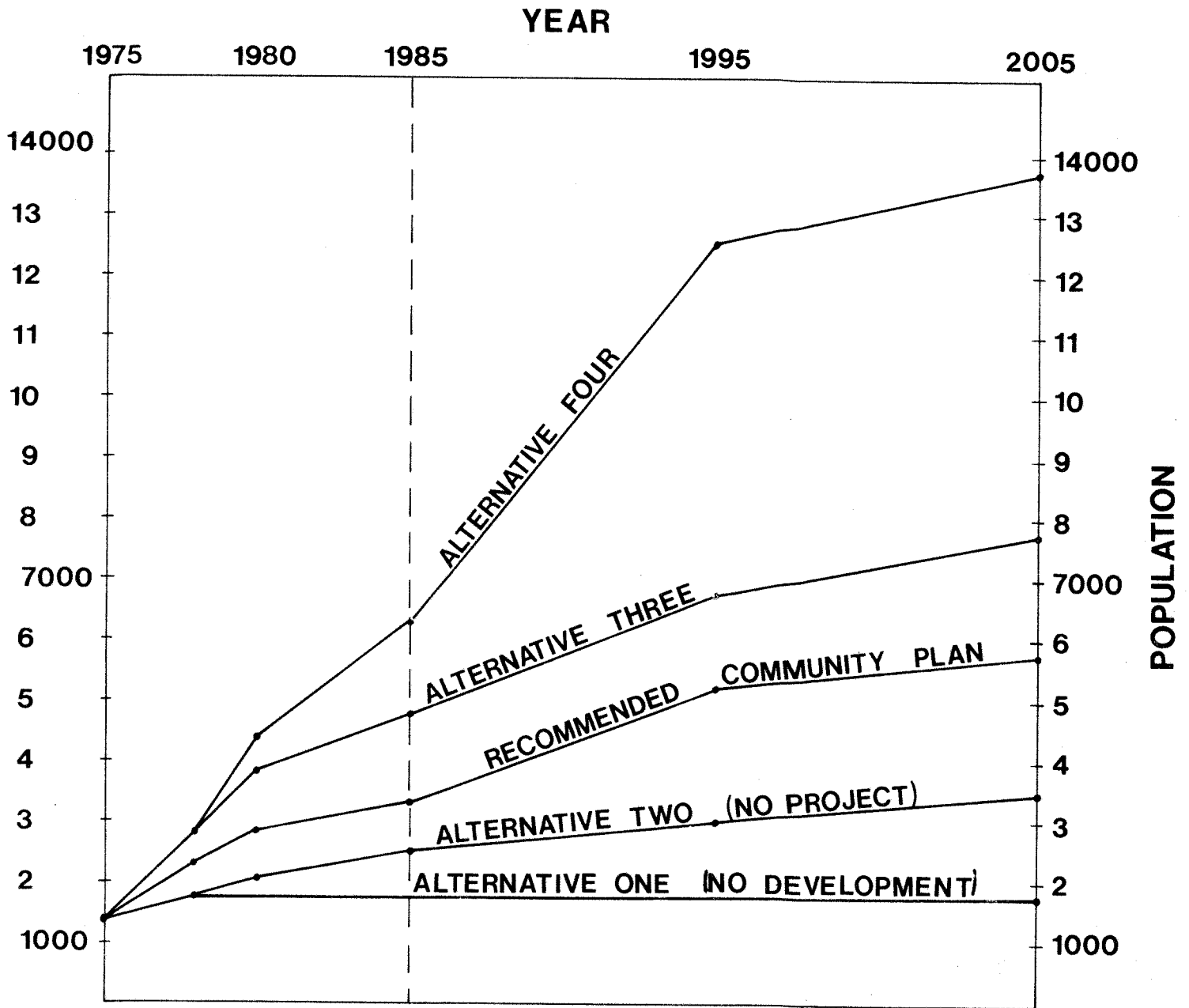
The most significant impacts will be the increased traffic congestion as a result of the Regional Parks in Upper Silverado and Harding-Modjeska Canyons. These parks and the resultant traffic will eventually require the upgrading (straightening and widening) of Silverado Canyon and Modjeska Canyon Roads. This upgrading would significantly impact the rural atmosphere of the area, generate greater noise levels, decrease the air quality, and generally degrade the environment.

2. No Project Alternative

The purpose of this alternative is to project land uses on the basis of existing trends under the A1 zoning. It was assumed that the A1 zoning would not allow residential clustering nor encourage any significant subdivisions. Commercial recreation would continue to be allowed.

New residential development at a net density of one dwelling unit per four acres would continue at a gradual pace on the canyon floors of Modjeska, Williams, and Silverado Canyons and on The Irvine Company lands in Baker Canyon. This overall concept of canyon bottom development reinforces the historic trend in the study area and leads to a narrow "strip development" along existing and potential roadways. Opportunities to develop in a more concentrated manner are limited because of fragmented land ownership and the lack of areawide planning. Without the benefit of the development controls proposed in the recommended Community Plan, these canyon bottom developments would continue in the pattern of existing developments, developed with poor grading practices and with many buildings placed within the floodplains and on areas of uncertain slope stability. Furthermore, considerable damage could be expected in the steep hillside areas as a result of new developments, particularly from the necessary access roads. Fire protection would become increasingly more difficult with the scattered development pattern that would evolve.

TABLE 6
COMPARISON OF POPULATION
BY ALTERNATIVE



Development according to this alternative will require minimal upgrading and widening of existing roads, the construction of an elementary school by 1985 and the construction of Black Star Regional Park by 1985 and Santiago Regional Park by 1995. Some commercial recreation will develop in Baker and Black Star Canyons.

This alternative represents a continuation of the status quo, development without planning for the services and needs of the community as a whole. This lack of planning for the resources and constraints abundant in this area will place an undue burden on the taxpayers for maintenance and control of this scattered development, and was the reason it was discarded as a viable alternative, and the reason the Community Plan was developed. Development areas, dwelling units, population, and a development timetable for this alternative are shown below.

Time	DU's	Population	Area	DU's	Population
1975	540	1423	North Bolero	50	158
1980	250	728	Modjeska Canyon	254	663
1985	125	364	Williams Canyon	117	520
1995	166	483	Silverado Canyon	658	1712
2005	148	438	Baker Canyon	68	178
			Black Star Canyon	82	205
			Silverado Canyon	0	0
<hr/>			<hr/>		
TOTAL	1229	3436	TOTAL	1229	3436

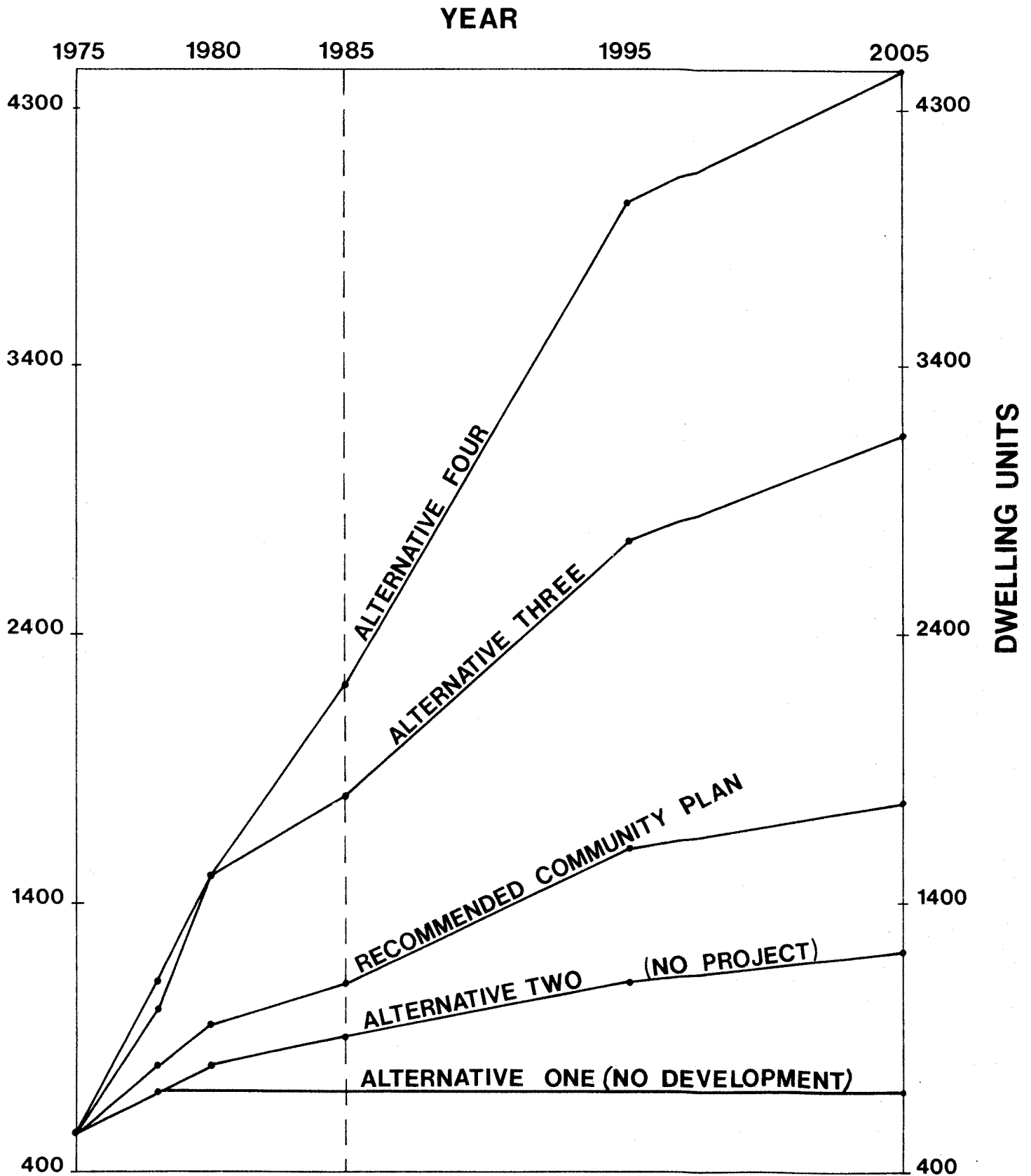
3. Increased Densities

This alternative has essentially the same land use patterns as the recommended Community Plan, but allows increased densities in Williams, Silverado and Baker Canyons resulting in one and a half times the dwelling units and population allowed in the recommended Community Plan.

This alternative would require periodic upgrading and widening of the existing roads, as well as new construction for the proposed planned community developments. New water storage reservoir and pump facilities will be required for the planned community developments, as well as some modification of the existing water system infrastructure. An additional sheriff's patrol unit would be required by 1985, at a cost of \$269,343 per patrol unit, annually. As with the recommended Community Plan, a new elementary school would be required by 1985, and Black Star Regional Park will be constructed by 1985, and the Santiago Regional Park will be constructed by 1995.

This alternative is based on the assumption that liquid waste and geologic problems would be handled on a site by site basis, ultimately determining the actual buildout. As with the first alternative, development would occur primarily along the canyon bottoms. The

**TABLE 7
COMPARISON OF DWELLING UNITS
BY ALTERNATIVE**



increased development in Williams, Silverado, and Baker Canyons would increase the amount of grading, thereby reducing the native vegetation and increasing the potential for landslides. The increased densities would increase the demand for services and facilities and would create a greater growth inducing impact. This increased growth would make it difficult, if not impossible, to meet the overall goals of the Foothill Corridor Policy Plan.

It is believed that the allowable densities suggested by this alternative are unrealistic in terms of the physical constraints of the area. Development of these densities would tend to create new problems with sewerage.

This alternative would decrease the area currently enjoyed as open space. Development areas, dwelling units, population, and a development timetable for this alternative are shown below.

Time	DU	Population	Area	DU	Population
1975	540	1423	North Bolero	70	231
1980	957	2362	Modjeska Canyon	345	914
1985	300	874	Williams Canyon	260	1170
1995	904	2961	Silverado Canyon	1016	4692
2005	<u>306</u>	<u>907</u>	Baker Canyon	236	995
			Black Star Canyon	126	458
TOTALS	3007	8527	Silverado Flats	<u>21</u>	<u>76</u>
			TOTALS	3007	8527

4. Maximum Development

This alternative attempts to reflect the maximum development potential of the area with minimal regard to land ownership and environmental problems. Residential development ranges from large lot estates to condominiums.

Clustering of these residential units will be encouraged in an attempt to retain as much of the natural character as possible. More intensive uses are allocated to the flatter, western portion of the study area. Dwelling units are also proposed for ridgelines and canyon bottoms. Residential developments such as those proposed here will require extensive grading and land form modification. Extensive commercial and private recreational facilities will be required to serve the needs of the increased population, as well as the development of Santiago and Black Star Regional Parks.

This alternative would require extensive upgrading, widening and new construction of roadways throughout the study area. Two elementary schools and one high school will be required to accommodate the increased student population. The demand for water will exceed the current capacity, and will require extensive modifications and the construction of new facilities. An additional sheriff's patrol unit

will be required in 1980 for this alternative, plus an additional investigator, at the additional cost of \$317,104 annually. A full-time fire station would be required in Williams Canyon by 1985 to provide protection for the area.

This alternative will reduce the open space area significantly. Development will take priority over natural areas, reducing native plant species and wildlife significantly, and would violate many of the principles of the Foothill Corridor Policy Plan. Furthermore, development at this scale would require the development of a sewage disposal system, which appears to be infeasible. Development areas, dwelling units, population, and a development timetable for this alternative are shown below.

Time	DU's	Population	Area	DU's	Population
1975	540	1423	North Bolero	350	1183
1980	1022	2857	Modjeska Canyon	777	2020
1985	661	2019	Williams Canyon	200	805
1995	1721	6122	Silverado Canyon	1933	5434
2005	<u>447</u>	<u>1257</u>	Baker Canyon	315	1380
			Black Star Canyon	166	531
TOTALS	4391	13678	Silverado Flats	<u>650</u>	<u>2325</u>
			TOTALS	4391	13678

B. DESIGN ALTERNATIVES

1. Irvine Mesa and Holtz Ranch

In the process of developing the Community Plan it became apparent that special development opportunities exist in these areas. Topographically and locationally these two areas are well suited to a more intensive development than the one-dwelling unit per acre recommended in the Community Plan. The areas proved to be amenable to development up to medium density residential (3.5-5 du/ac, 630-900 units). The Community Plan notes that if the following conditions are met, these areas should be developed at the medium density designation:

- a. "Planned Community" zoning must be applied to all the parcels which contain the two subject areas.
- b. Development proposals should include specific implementation proposals for all applicable guidelines in this Community Plan.
- c. Liquid waste disposal must meet all conditions of the County Health Department and the Santiago County Water District.
- d. Non-development areas are to remain in permanent open space.
- e. Development should be restricted to the contiguous area under 30 percent slope.

The development of these areas at medium density will significantly impact circulation on Silverado Canyon Road, and will require up-grading of the road from the project area to Santiago Canyon Road. This development could also require the extension of urban services (commercial and recreational) near these sites. The additional population will also require additional school space, police protection, fire protection, will generate additional pollutants, consume additional non-renewable resources and generally degrade the rural atmosphere.

2. Ladd Canyon

Land owners in this canyon area have indicated a desire for residential allocations in hopes of developing 200 - 400 dwelling units. The Community Plan rejected this proposal, allocating approximately 78 units to the area for the following reasons:

- a. The area is a box canyon, which allows only one access point. This could be a serious problem in the event a fire or flood were to block the exit;
- b. The average natural slope of the canyon bottom ranges from 20 to 40 percent, with excessive slopes in the upper canyon areas. Any development in this canyon will require excessive grading and slope modification, contrary to the guidelines established in the Community Plan;
- c. Roads and water are not readily available. The increased density in this canyon would require upgrading Silverado Canyon Road from Ladd Canyon to Santiago Canyon Road; and
- d. The construction of a road up Ladd Canyon would have to utilize the best and flattest portions of the canyon bottom, leaving slopes areas for homes, and the resultant extensive grading for site preparation; and
- e. There is a conflict between the desires of the land owners in lower Ladd Canyon for lower density development, and the desires of landowners in upper Ladd Canyon for higher densities.

In order to alleviate these problems the Community Plan designates 1 du/2 acs in the lower canyon area, and 1 du/4 acs in the upper canyon area. With the physical constraints in this area, development should not exceed these designations under any circumstances,

3. Rural Residential

During the development of the Community Plan, the concept of designating a density range of 10 to 40 acres dwelling unit was considered for those areas where excessive slope and poor vehicular access conditions exist. This range was proposed in order to allow flexibility at the site level, by providing densities which allow utilization of

of any readily developable sites which are not apparent at the Community Plan level. This consideration was rejected because it would encourage maximum development of the hillside areas, encourage road construction with the accompanying grading, and encourage scattered development patterns, which are difficult to service, control, and protect.

Development guidelines which could be established to give guidance to development at this range would be difficult to develop, and almost impossible to implement, thereby encouraging development at the maximum end of the range.

The Community Plan has designated instead 10, 20, and 40-acre lots in these areas. The size of the lots is dependent on average natural slope and circulation problems, i.e., 40 acres per dwelling unit designates areas away from the circulation system with excessive slopes, and 20 acres per dwelling unit designates sites closer to the circulation system, but still with excessive slopes. These designations are believed to most adequately represent the developability of these areas.

VI. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Development of the study area will commit those areas currently enjoyed as open space to urban uses such as housing, roads, and recreational facilities. Once the native ecosystem has been interrupted, reversal of the development back to open space will be impossible. Any development in the study area increases the risk of property damage and loss of life due to landslides and floods. Development based on individual sewerage increases the danger of contamination of the groundwater and, consequently, contamination of the potable water system.

The recommended Community Plan attempts to deal with the development pressures in the study area and the constraints and problems associated with the physical structure therein. The recommended Community Plan proposes development guidelines which would help mitigate many of the problems and hazards encountered with the existing development. The development areas were selected respecting the physical constraints, but, at the same time, trying to provide desirable development areas. The availability and limitations of public services and utilities were taken into consideration and, in part, determined the densities and development configurations.

The recommended Community Plan proposes limited development, but leaves open the possibility of more intensive development in the future if sewerage, circulation, and physical constraints are abated and greater development is deemed more valuable than open space.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF ENERGY SUPPLIES AND OTHER RESOURCES

The adoption of the recommended Community Plan will not be an irreversible commitment of the land until the development actually begins. The environmental changes produced by the implementation of the Community Plan will occur mainly as a result of alterations to the physical environment in the form of a commitment of land and community services.

The development of the study area according to the proposed Community Plan will eventually increase electrical consumption by 10,045,530 KWh/year over the current usage. It will require the building materials, gasoline, and electrical power necessary to construct a minimum of 42 houses a year over the next 30 years; the necessary materials to repair, upgrade, and develop roadways necessary to accommodate these developments; and the materials necessary to develop the proposed regional parks and recreational facilities.

Since the Community Plan does not propose any employment centers within the study area, residents will find it necessary to drive to the El Toro/Irvine area, the Orange/Santa Ana area or further for employment. Some convenience shopping will be provided in Silverado and Modjeska Canyons, as well as possible sites in Williams Canyon and the Holtz Ranch area. Major shopping facilities will not be included in the study area, requiring residents to drive to Orange/Santa Ana or El Toro/Irvine areas.

Without employment or major commercial centers provided in the study area, residents will be required to drive excessively, resulting in increased uses of the automobile which will help deplete our supply of petroleum products and increase air pollution.

The future development of the study area is anticipated to continue on an individual, lot-by-lot development basis. These single-family homes will probably be built without the benefit of alternate resources, such as solar energy, due to the high cost of these resources, especially when developed on an individual basis.

In conclusion, the development of the study area will be an energy-inefficient development. By following the mitigation measures in this IER and the development guidelines included in the Community Plan, some of these inefficiencies can be mitigated.

VIII. GROWTH INDUCING IMPACTS OF THE PROPOSED PROJECT

The Silverado-Modjeska Community Plan is a response to development pressures and safety hazards in the study area. The plan will be an incentive for development in that it identifies areas for growth. At the same time, the plan restricts growth in areas where development would be unsafe, but could occur under the current zoning. Rather than clearly inducing growth, the plan allows for safe and responsible rural development.

In light of existing urban growth, this plan is proposing development well beyond the current boundaries of the urban sprawl. Although housing exists in the study area, the Community Plan is proposing additional development which will require excessive driving for residents to reach employment and commercial centers. This development, segregated as it is from the urban area, will encourage sporadic development along the major circulation routes feeding into the study area. This sporadic development will require the extension of public utilities and services into areas where these utilities and services do not currently exist, which will induce further growth in these areas. Therefore, the overall effect of the study area will be to induce expansion of the urban sprawl toward the study area, as well as inducing some growth in the study area.

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Several individuals and organizations participated in the preparation of this Draft EIR.

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