

**FINAL
ENVIRONMENTAL IMPACT REPORT
GENERAL PLAN AMENDMENT**

**COMMUNICATIONS HILL
SPECIFIC PLAN**

**LEAD AGENCY
CITY OF SAN JOSE**

OCTOBER 1991

Reso. 63624

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VOLUME II OF II

PREFACE

This Environmental Impact Report (EIR) has been prepared by the City of San Jose as Lead Agency in conformance with the California Environmental Quality Act (CEQA) of 1970, as amended, and the City of San Jose Environmental Review Ordinance (City of San Jose, Title 21), to inform public decision makers and the public of the environmental effects of the projects and plans that they propose to approve or carry out.

The purpose of this EIR is to provide the environmental review for following proposals: 1) the Communications Hill Specific Plan; 2) the General Plan Amendment which would adopt the Communications Hill Planned Community; and 3) the associated General Plan text amendments.

An EIR is an informational document which informs public agency decision-makers and the public of the potentially significant environmental effects of a project, identifies possible ways to minimize the significant effects, and describes reasonable alternatives to the project. Public agency decision-makers are required to consider the information in the EIR along with other information which is presented to the agency.

CEQA standards for adequacy of an EIR require that an EIR be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

The Specific Plan which is addressed in this EIR is intended to provide further refinement and specificity to the generalized land use designations shown on the Land Use/Transportation Diagram of the Horizon 2000 General Plan. The Specific Plan process represents an interim step in the development approvals process, between the General Plan and rezoning/permit stages of approval. Similarly, this EIR is intended to provide an intermediate level of environmental clearance, commensurate with the level of specificity reflected in the Specific Plan. Under CEQA, this is known as "program-level" environmental review. As such, this EIR will not provide project-specific environmental clearance for future construction of development or infrastructure. Subsequent environmental review will be necessary for annexations/prezoning, rezonings and other required approvals.

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

PROJECT DESCRIPTION

The project consists of a proposal to adopt the Communications Hill Specific Plan; to amend the General Plan of the City of San Jose in order to establish the Communications Hill Planned Community; and to adopt related General Plan text amendments. The proposal is to redesignate the Communications Hill planning area from its current designations of Estate Residential (1.0 DU/AC), Medium Density Residential (8.0 DU/AC), Medium High Density Residential (8-16 DU/AC), High Density Residential (12-25 DU/AC) and Very High Density Residential (25-40 DU/AC), Non-Urban Hillside, Light and Heavy Industrial, General Commercial, and Public/Quasi-Public designations to a designation of Communications Hill Planned Community.

The Specific Plan area encompasses the Communications Hill area of south-central San Jose. It is bounded on the north by Curtner Avenue, on the south by Hillsdale Avenue-Snell Avenue and the Capitol Expressway, on the east by Monterey Road and on the west by the Guadalupe Corridor. The Oak Hill Cemetery, located at in the southwest quadrant of Monterey Road and Curtner Avenue, is excluded from the Specific Plan area.

The proposed Planned Community is consistent with the intent of the Horizon 2000 General Plan to develop Communications Hill as a dense, highly urbanized residential neighborhood in the largely undeveloped upland area (approximately 400 acres). However, the existing General Plan designation allows 5,000 additional dwellings primarily in the upland areas of the site while the proposed plan indicates a potential maximum buildout of 4,000 new dwelling units. The proposed Specific Plan units would be developed at a density of 25 plus/DU/AC up to a maximum cap of 4,000 new multi-family dwelling units for the entire planning area. Both the 4,000 and 5,000 dwelling unit figures represent the maximum number of potential new dwelling units for the Communications Hill Specific Plan area, calculated using the high end of the existing and proposed land use density ranges in the existing and proposed General Plan designations. These figures do not include any existing residences in the Specific Plan area.

The proposed Specific Land Use Plan also provides further delineation to the General Plan concept of multi-family neighborhoods, which includes a public school, parks, a playfield, open spaces, a neighborhood commercial center and civic uses for the hilltop areas, new industrial uses on the undeveloped areas below, and provides for the integration of the existing commercial, industrial and residential uses with the proposed new uses. The Specific Plan establishes goals and policies, an urban structure and design standards which provide the framework for the development of the Communications Hill Planned Community. These diverse uses are integrated within a grid of local streets located along

a central arterial spine provided by Vistapark Drive as it traverses the hill from north to south.

The three related amendments proposed for the Horizon 2000 General Plan text would consist of the following:

- Proposal to amend the Land Use/Transportation Diagram designation and General Plan text from Planned Residential Community to Planned Residential Community/Planned Community.
- Proposal to amend the text of the Planned Residential Community/Planned Community section of the General Plan to incorporate the Communications Hill Planned Community. This new section of the General Plan would include a synopsis of the Specific Plan objectives, public service projections, design considerations and a map of the Specific Land Use Plan.
- Proposal to amend the Urban Design policies 10 and 11 to allow building to exceed 45 feet in height in specified areas of Communications Hill. Mid- to high-rise structures would be allowed on 9 tall building sites (see Specific Plan, Figure 44), as well as in two areas described in the Specific Plan Design Standards for Multi-Family (see Specific Plan, page 58) and in the Village Center Specific Plan Design Standards (see Specific Plan page 65).

Three types of alternatives applicable to the proposed Specific Plan were investigated. These include 1) no project; 2) alternative urban structure; 3) alternative locations; and 4) an expanded quarry land use alternative. The No Project Alternative is further broken down into an Existing General Plan and an Existing Land Use alternative. There is also an evaluation of alternative water storage concepts which were considered along with the elevated tank concept proposed under the Specific Plan. In comparison with the proposed Specific Plan there is no environmentally superior alternative that has been identified.

The following summary of impacts identifies only those impacts which are potentially significant impacts, together with General Plan and Specific Plan policies and other program mitigation (applicable regulations and requirements) which would avoid, eliminate or reduce those impacts to less-than-significant levels. Individual environmental topics covered in Section II of this EIR also identify project-specific mitigation measures which would be applied at subsequent stages of development approval.

SUMMARY OF POTENTIALLY SIGNIFICANT IMPACTS AND MITIGATIONS

IMPACTS

MITIGATIONS

A. LAND USE

Loss of open space, intensification of Communications Hill land uses, alteration of the visual nature of the Specific Plan area and affect views from surrounding areas.
(Significant Impact)

Impacts resulting from loss of open space would be partially mitigated through incorporation of permanent space areas as proposed by the Specific Plan, but would remain a significant unavoidable impact.

(Significant Unavoidable Impact)

Potential for impacts related to internal incompatibility of Specific Plan land uses including reduced privacy which would result from increased use of Narvaez Avenue adjacent to existing residences, placement of multi-family residences next to an existing church on the north side of Hillsdale Avenue, and location of a multi-family neighborhood adjacent to the Millpond Mobile Home Park.
(Potential Significant Impacts)

Potential land use conflicts would be reduced by implementation of the following General Plan policies: A. City Concept; 1. Urban Conservation; Policy 2 (new development to enhance the desirable qualities of the community), and 4, Balanced Community; Policy 1 (jobs/housing balance), and 2 (varied residential densities integrated with transportation systems), and B. Community development; 4. Urban Design; Policy 6 (new structures should be designed and sited to protect privacy of existing residences). Specific Plan policies to further mitigate land use impacts include policies regarding integration of existing land uses, and the use of architectural guidelines to ensure the proper transition between areas with different land uses.

(Less-than-Significant Impacts with Mitigation)

Potential reduction in available mineral resources.
(Potential Significant Impact)

Impacts resulting from loss of mineral resources would be partially mitigated by the following General Plan Policies:

IMPACTS

MITIGATIONS

A. LAND USE (CONT'D)

F. Natural Resources; 2. Extractive Resources; Policies 1 (the value of mineral resources should be considered in urban development decisions); 2 (conserve and develop SMARA-designated mineral deposits); and 3 (consider regional importance of mineral resources). Other program mitigation states that in accordance with SMARA, the City may cause to be prepared an evaluation to ascertain the significance of the mineral deposits located in the planning area.

(Significant Unavoidable Impact)

B. GEOLOGY AND SOILS

Potential seismic hazards which could result from an earthquake include the following:

- a) Potential sympathetic rupture along one fault contact lineament could cause displacement of ground surface;
- b) Potential structural damage due to ground shaking;
- c) Potential ground failure due to liquefaction and lateral spreading;
- d) Potential for ground failure due to lurch cracking on alluvial soils, including soils adjacent to Canoas Creek; and potential for landsliding near three mapped landslide deposits

Seismic hazards would be mitigated by implementation of the General Plan policies; G. Hazards; Policies 1 (require Soils and Geologic review); 2 (avoid locating public improvements in areas with identified geologic hazards); 3 (erosion control measures); 5 (geotechnical feasibility studies required); 6 (adequate mitigation measures); and 2. Earthquakes; Policies 1 (new building design to resist earthquake stresses); 3 (appropriate seismic mitigation); 4 (public utilities and facilities only in mitigatable liquefaction areas); 5 (geotechnical studies for development proposals); and 6) utilities, communication and transportation facilities located and built to remain functional after an earthquake.

IMPACTS

MITIGATIONS

B. GEOLOGY AND SOILS (CONT'D)

and in other steeply sloping areas of the planning area.
(Potential Significant Impacts)

No Specific Plan policies applicable to geology).
(Less-than-Significant Impacts with Mitigation)

Potential for subsidence and settlement of former Hillsdale Mercury Mine tunnels.
(Potential Significant Impact)

The potential for subsidence and settlement of mine tunnels would be mitigated by implementation of the following General Plan policies: G. Hazards; 1. Soil and Geologic Conditions; Policies 1 (require soils and geologic review); 5 (City should continue to require geotechnical feasibility studies); 6 (adequate mitigation measures); and 8 (responsible agencies monitor and improve dams). (No Specific Plan policies applicable to geology.)
(Less-than-Significant Impact with Mitigation)

Geotechnical hazards which have the potential to cause structural damage or construction difficulties, as follows:

- a) Potential variable or high soil compressibility of quarry material and structural fill;
- b) Potential for soil expansion in colluvium and alluvium areas;
- c) Potential for erosion of exposed soils during grading and excavation;

Geologic hazards would be mitigated by implementation of the following General Plan policies: G. Hazards; 1. Soil and Geologic Conditions; Policies 1 (require soils and geologic review); 5 (City should continue to require geotechnical feasibility studies); 6 (adequate mitigation measures); and 8 (responsible agencies monitor and improve dams). (No Specific Plan policies applicable to geology.)
(Significant Impacts with Unavoidable Mitigation)

IMPACTS

MITIGATIONS

B. GEOLOGY AND SOILS (CONT'D)

- d) Potential for high groundwater near on-site springs;
- e) Potential for excavation difficulties in hard rock areas.
(Potential Significant Impacts)

Potential reduction in available mineral resources.
(Potential Significant Impact)

Impacts resulting from loss of economically productive mineral resources would be partially mitigated by the following General Plan Policies: F. Natural Resources; 2. Extractive Resources; Policies 1 (the value of mineral resources should be considered in urban development decisions); 2 (conserve and develop SMARA-designated mineral deposits); and 3 (consider regional importance of mineral resources). Other program mitigation states that in accordance with SMARA, the City may cause to be prepared an evaluation to ascertain the significance of the mineral deposits located in the planning area.
(Significant Unavoidable Impact)

C. FLOODING AND DRAINAGE

Increased runoff from development has the potential to increase flood flows of the Guadalupe River/Canoas Creek watershed, during the 100-year event; and

A portion of the Curtner Grove neighborhood would be located in an

Flooding impacts would be mitigated by implementation of the following General Plan policy: G. Hazards; 3. Flooding; Policy 1 (new development to provide protection from "100-year" flood). The Specific Plan policy which would also address these issues is: "Ensuring that services of surrounding neighborhood are

IMPACTS

MITIGATIONS

C. FLOODING AND DRAINAGE (CONT'D)

area currently subject to flooding during 100-year event.

(Potential Significant Impacts)

not adversely impacted by development within the Specific Plan area."

(Less-than-Significant Impacts with Mitigation)

D. WATER QUALITY

Soil erosion and siltation during construction grading and excavation could result in surface water impacts to Coyote Creek, Canoas Creek and the Guadalupe River.

(Potential Significant Impact)

Potential impacts to water quality would be mitigated through implementation of the following General Plan policy: E. Natural Resources; 3. Water Resources; Policy 1 (prevention of excessive siltation). (No related Specific Plan Policies.)

(Less-than-Significant Impact with Mitigation)

E. BIOLOGICAL RESOURCES

Potential loss of five oak trees;

Potential loss of freshwater seep habitat, a local source of water for wildlife;

Potential loss or modification of three-acre wetland for retention basin purposes;

Potential displacement Setchell's dudleya habitat, a special status plant which has been found on site;

Implementation of Marine and Wildlife Resource Policy 5; and Woods and Grasslands Policy 1 & 4 would partially mitigate these impacts. Avoidance of the vegetation and wild life resources would partially avoid significant impacts. Implementation of specific measures including coordination with Department of Fish and Game, U.S. Army Corps of Engineers and additional species surveys would further mitigate significant impacts.

(Significant Unavoidable Impacts)

IMPACTS

MITIGATIONS

E. BIOLOGICAL RESOURCES (CONT'D)

Potential loss of habitat of the Metcalf Canyon jewel flower, fragrant fritillary, uncommon jewel flower and California Tiger Salamander if these special status species are found in the Specific Plan area; and

Potential displacement of burrowing owls, a special status animal which has been sighted on Communications Hill.
(Potential Significant Impacts)

F. CULTURAL RESOURCES

There are four recorded prehistoric archaeological sites and four other potential sites which may be subject to disturbance by the grading and subsurface construction activities associated with development under the proposed Specific Plan.
(Potential Significant Impact)

Impacts to cultural resources in the Specific Plan area would be reduced by implementation of the following General Plan policies: E. Aesthetic, Cultural and Recreational Resources; 1. Historic, Archaeological and Cultural Resources; Policies 1 (preservation of significant sites should be a key consideration in the development review process); 8 (potentially significant sites should be investigated during the planning process so appropriate mitigations can be incorporated); and 9 (upon discovery of any Native American burials, construction should cease pending appropriate treatment and reburial). (No related Specific Plan policies).
(Less-than-Significant Impact with Mitigation)

IMPACTS

MITIGATIONS

G. VISUAL AND AESTHETIC RESOURCES

The conversion of existing open space to predominantly visible urban uses;

The substantial amount of grading required to construct roads, terraces and structures would significantly alter topography.

The addition of a 2.2 million gallon water tank to the ridgetop.
(Significant impacts)

Impacts to visual resources would be reduced but not eliminated by implementation of the following General Plan policies: B. Community Development; 4. Urban Design; Policies 1 (The City should continue to apply strong architectural and site design controls); 8 (Design solutions should address security, aesthetics and safety); and 12 (Development on slopes should preserve the natural character of the hills). Specific Plan Goals and Policies that would partially mitigate visual and aesthetic impacts include policies regarding preservation of the topography of the land wherever possible, improving the aesthetic quality of the major communications facilities on the hill, and design of public and private open space and parks for direct access and visibility for nearby residents.

The provision of 185-acres of open space area and design standards for grading and landscape design, would also reduce visual impacts. However, these mitigations would not completely reduce the impacts.

(Significant Unavoidable Impact)

IMPACTS

MITIGATIONS

H. TRAFFIC AND TRANSPORTATION

In the far-term (year 2000), negligible impacts to the regional transportation system are expected with full development under the Specific Plan, with the exception that impacts to the intersection of Canoas Garden and Curtner Avenue would occur if full vehicular access is permitted on the Millpond Drive connection. (Full vehicular access to Millpond Drive is not proposed by the Specific Plan at this time. The use of Millpond would be limited to shuttle buses, bicycles and pedestrians.)

(Less-than-Significant Impact)

Transportation-related impacts from future development of the site would be mitigated through implementation of the following General Plan policies: D. Services and Facilities; 2. Levels of Service; Policy 5 (The minimum overall performance of city streets during peak periods should be Level of Service "D"); and 1. Transportation; Policies 1 (inter-neighborhood traffic is discouraged on neighborhood streets); 3 (public street improvements required as development occurs); 7 (traffic impacts on regional facilities should be considered for major General Plan Amendments); 15 (provide safe, convenient pedestrian facilities); and 18 (implementation of transportation system management and transportation demand management measures). Specific Plan policies include incorporation of a multi-model transportation system that can be safely combined in the design of streets, encouragement of pedestrian circulation and use of public transit.

(Less-than-Significant Impact)

I. AIR QUALITY

Increased particulate (PM₁₀) emissions from construction activity during development of the Specific Plan area.

(Potential Significant Impact)

Short-term construction impacts would be mitigated by implementation of the following General Plan policies: F. Natural Resources; 6. Air Quality; Policy; 1 (consideration of cumulative air quality impacts and enforcement of regulations to reduce air pollution); and

IMPACTS

MITIGATIONS

I. AIR QUALITY (CONT'D)

Exceedance of BAAQMD thresholds for criteria air pollutants Particulate Matter PM_{10} , NO_x and HC would occur with Specific Plan development.
(Significant Impact)

The Specific Plan together with other major General Plan Amendments would result in exceedances of BAAQMD thresholds for three criteria air pollutants-particulate matter (PM_{10}), NO_x and HC.
(Significant Impact)

The Specific Plan proposes to locate one or possibly two school sites within 0.25 miles of industrial facilities, which raises concerns over possible exposure to Toxic Air Contaminants (TACs).
(Potential Significant Impact)

G. Hazards; 6. Hazardous Materials; Policy 1 (proper storage and disposal of hazardous materials); and 3 (no hazardous waste disposal facilities to be allowed within the City). (No related Specific Plan policies).
(Less-than-Significant Impact with Mitigation)

Operational air quality effects would be reduced but not eliminated by implementation of the following General Plan policies: F. Natural Resources; 6. Air Quality; Policy 1, (consideration of cumulative air quality impacts and enforcement of regulations to reduce air pollution); and program mitigation related to implementation of transportation control measures (TCMs) within a future Bay Area Congestion Management Plan.
(Significant Unavoidable Impact)

The above mitigation would not reduce the cumulative air quality impacts to a less-than-significant level.
(Significant Unavoidable Impact)

Program mitigation involves preparation of a health risk assessment in compliance with AB 3205 at the time of project-specific review for future development under the Specific Plan.
(Less-than-Significant Impact with Mitigation)

IMPACTS

MITIGATIONS

J. NOISE

Some of the areas proposed for residential uses would be subject to exterior noise levels in excess of 60 dB L_{dn} due to nearby ground transportation sources; and

The site is currently exposed to peak noise from aircraft overflights and auto races at the County Fairgrounds.
(Potential Significant Impacts)

Operational noise impacts related to ground and air transportation sources would be mitigated by implementation of the following General Plan policies: G. Hazards; 5. Noise; Policies 1 (achieve noise level objectives with appropriate noise attenuation techniques in new residential development); 2 (include attenuation in design of a new arterial streets); 9 (suppression of construction equipment noise); and 11 (new non-residential use next to sensitive receptors). Applicable Specific Plan policies include adoption of site planning and architectural guidelines, and noise attenuation techniques to protect Communications Hill residents and workers from excessive noise from arterials, freeways, and trains and airplanes traveling nearby. Another program mitigation which would minimize noise impacts is Title 24 requirements for multi-family residences.
(Less-than-Significant Impacts with Mitigation)

K. UTILITIES, FACILITIES AND SERVICES

Potential for increased demand for municipal utilities, facilities and services to reduce service levels for existing City residents, or cause inadequate service to future Specific Plan area residents.
(Potential Significant Impact)

Adequate service levels would be ensured through operation of the following General Plan policies: D. Services and Facilities; Goal 2 (establishes level of service goals for city services); Policies 2 (existing community should not be burdened by new development); 8 (water

IMPACTS

MITIGATIONS

K. UTILITIES, FACILITIES AND SERVICES (CONT'D)

quality standards for Water Pollution Control Plant); 9 (water conservation programs); 18 (cooperate with school districts in identifying impacts); and G. Hazards; 3. Flooding; Policy 1 (protection from 100-year flood); 4. Fire Hazards; Policy 2 (construct new development to uniform building code fire safety standards); and F. Natural Resources; 3. Water Resources; Policy 2 (conserve water supplies). Applicable Specific Plan policies address provision of economical service and desired service levels; ensuring that services of surrounding neighborhoods are not adversely affected; meeting the needs of Communications Hill residents and workers for public services by providing facilities on or near the Specific Plan area; and no development will be approved if it would adversely affect sewer odor impacts.
(Less-than-Significant Impact with Mitigation)

L. ENVIRONMENTAL HAZARDS

Within the Specific Plan area, grading and construction activities would disturb serpentine rock and soil materials which may contain detectable levels of naturally-occurring chrysotile asbestos. Potential impacts involve both chrysotile asbestos concentrations in the soil as a hazardous material and the release of airborne asbestos fibers.

Impacts related to naturally-occurring minerals would be mitigated through implementation of the following General Plan policies: G. Hazards; 1. Soil and Geologic Conditions; Policy 6 (adequate mitigation measures) and 6. Hazardous Materials; Policies 1 (proper storage and disposal of hazardous materials) and 6 (naturally-occurring asbestos to be

IMPACTS

MITIGATIONS

L. ENVIRONMENTAL HAZARDS (CONT'D)

A limited portion of the Specific Plan area may contain levels of naturally-occurring mercury found in silica-carbonate rock. Potential impacts involve exposure to mercury concentrations in the soil as a solid form (soil/dust ingestion) and to a lesser degree in a vapor form (inhalation).
(Potential Significant Impacts)

Development under the Specific Plan has the potential to interfere with communication facility transmission; and

Exposure of future residents to potential health risks from exposure to radio waves and microwaves is a less-than-significant impact.
(Potential Significant Impacts)

mitigated). (No related Specific Plan policies.)
(Less-than-Significant Impacts with Mitigation)

Specific Plan mitigation for potential impacts related to communication facility transmissions and health effects include restricting the overall height of structures to allow uninterrupted transmission of microwaves and setting back buildings at least 200 feet from communication facilities.
(Less-than-Significant Impacts with Mitigation)

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I. DESCRIPTION OF THE PROPOSED GENERAL PLAN AMENDMENT

A. BACKGROUND

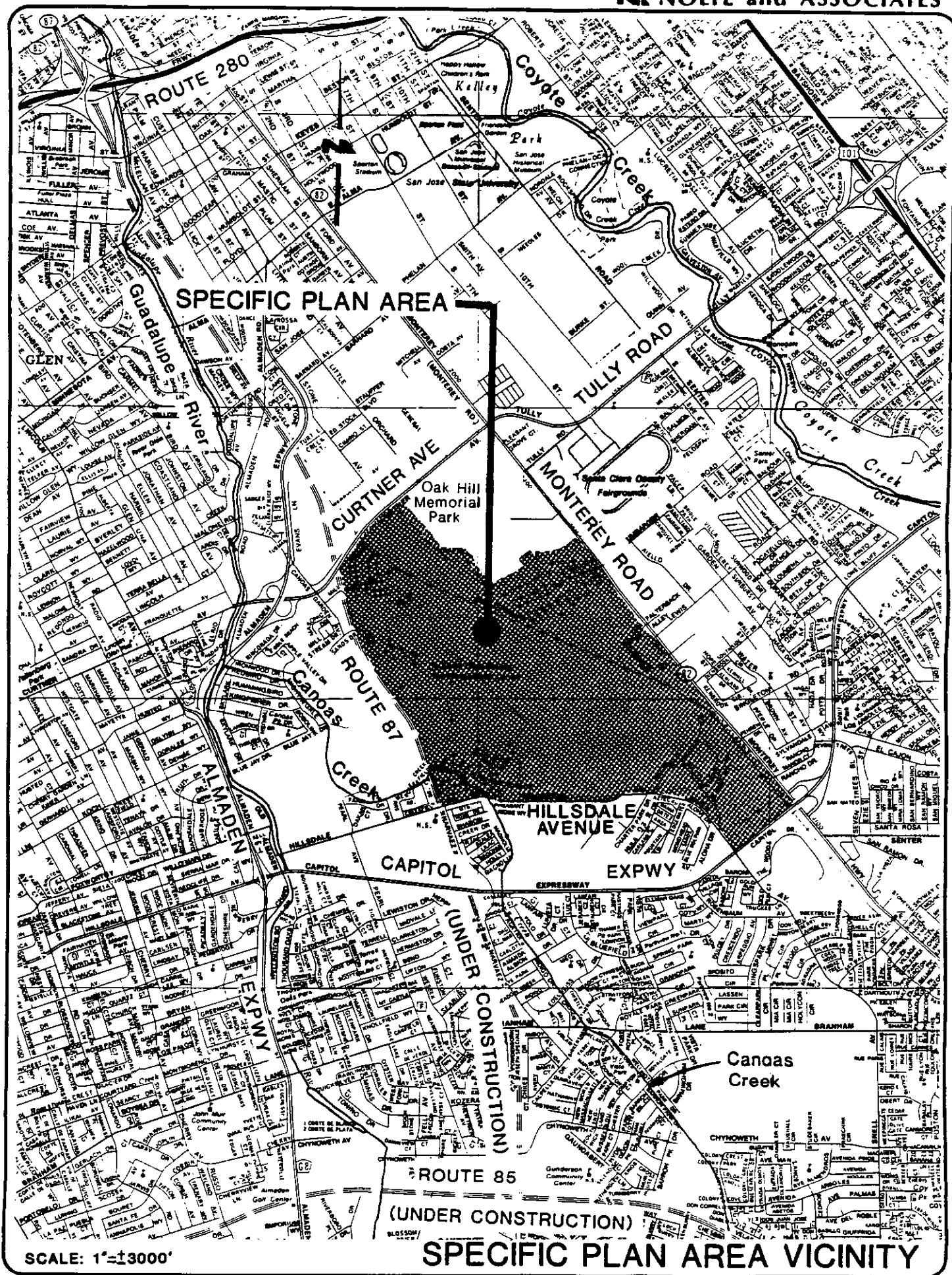
In 1984 the San Jose City Council adopted the Horizon 2000 General Plan which established the City's intent to permit the development of up to 5,000 multi-family residences on portions of the Communications Hill area of south-central San Jose (see Figures 1 and 2). The General Plan Land Use/Transportation Diagram also includes Vistapark Drive, an arterial road which would traverse the hill to serve this planned development. In previous General Plans the upland area had been designated as Non-Urban Hillside.

The dramatic increase in the number of planned housing units for Communications Hill was the result of an overall new direction for the City, partially triggered by the designation of the Edenvale and North Coyote Valley areas of southern San Jose as locations where job-producing high technology centers were intended to develop. With redesignation of 1,800 acres in these areas for Campus Industrial uses, as well as the commencement of downtown redevelopment occurring at that time, the City recognized the need for additional housing resources to complement its planned economic development. To provide support for a balanced jobs/housing ratio, the City initiated the redesignation of over 200 net acres of Communications Hill to High Density Residential (12-25 DU/AC) and Very High Density Residential (25-40 DU/AC) land use categories as part of the Horizon 2000 General Plan. The remaining acreage was retained as Non-Urban Hillside.

Communications Hill was recognized as a suitable location for development of a high-density urban community due to its close proximity to major transportation facilities and employment centers, its approximately 400 acres of vacant land, and the hill topography which precludes most commercial and industrial uses. It also was recognized that the Horizon 2000 General Plan process for the Communications Hill area was cursory, and that further study was necessary to determine the environmental constraints of the site and to determine more precisely which areas were suitable for residential development.

Lower elevation portions of the Specific Plan area adjacent to Monterey Road and along the Southern Pacific railroad tracks did not have their designations changed by adoption of the Horizon 2000 Plan. The portion of the project area bounded by Hillsdale, Snell, Capitol Expressway, and Monterey Road remained designated Light Industrial under the 1984 General Plan, while land north of Hillsdale Avenue between Monterey Road and the Southern Pacific railroad tracks maintained its Heavy Industrial designation.





B. PROJECT LOCATION

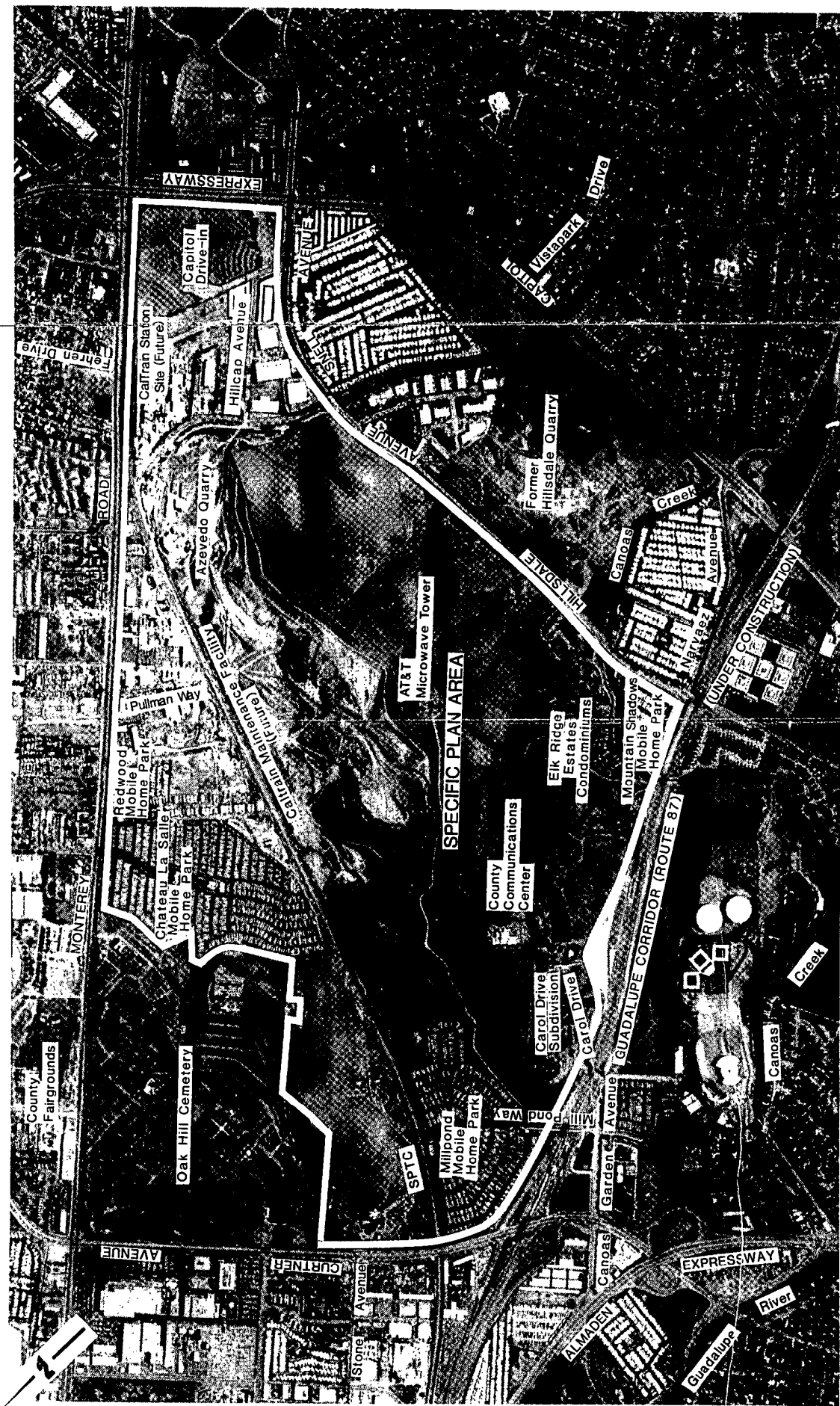
The approximately 900-acre Specific Plan area encompasses the Communications Hill area of south-central San Jose. The planning area is approximately four miles south of downtown, and is locally identified by the County and AT&T communication facilities situated on the two highest points of the hill. The Specific Plan area is bounded on the north by Curtner Avenue, on the south by Hillsdale Avenue-Snell Avenue and the Capitol Expressway, on the east by Monterey Road, and on the west by the Guadalupe Corridor (see Figure 3). Excluded from the Specific Plan area is the Oak Hill Cemetery, located in the southwest quadrant of Monterey Road and Curtner Avenue. However, its use was considered in the overall plan.

The largely undeveloped slopes of Communications Hill itself total about 400 acres and rise over 300 feet above the surrounding valley floor. Along with the downtown core to the north, it is one of the most visually prominent features in this part of the valley.

Current uses of the planning area include cattle grazing, large lot residences and utilities on the slopes and ridgetops, and a variety of residential, commercial, industrial and church uses around the base of the hill. The only residential development on the upper reaches of the hill is an established residential neighborhood consisting of approximately 20 single-family homes, located on Carol Drive just north of the County Communications Center. Four mobile home parks and a condominium development are located on the lower slopes of the hill. Level portions of the Specific Plan area located along Monterey Road are occupied by commercial/industrial uses and a gravel quarrying operation. The Southern Pacific railroad tracks bisect the area, generally from north to south.

C. PROJECT OBJECTIVES

The objective of the Communications Hill Specific Plan is to provide a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on and around Communications Hill. The predominantly residential land use proposed for the Specific Plan area, which includes 4,000 additional multi-family dwellings, is intended to provide housing needed to balance the rapid employment growth of the past few decades. New development areas within the Specific Plan boundaries are to be integrated with existing and planned residential, industrial and commercial uses, both on-site and in the project vicinity. Implicit in the planning process is a desire to establish a high-quality living environment through building guidelines and standards for the design of both public and private improvements.



SCALE: 1" = 1000'

PHOTO DATE: 10-3-80

EXISTING LAND USE AND CIRCULATION

D. PLANNING AREA HISTORY

In 1984, the City adopted the Horizon 2000 General Plan, which designated over 200 acres of Communications Hill for High Density (12-25 DU/AC) and Very High Density Residential (25-40 DU/AC) uses allowing a total of up to 5,000 dwellings on the hill. In the seven years since, there has been some multi-family development on the lower slopes, but no development on the upland areas of Communications Hill. The one project that has been constructed is a condominium development located north of Hillsdale Avenue near Narvaez Avenue.

Until now, the Communications Hill area has been largely bypassed development due to several factors, including: the need for major infrastructure improvements (streets, water, sewer, etc.) which cannot be provided in project-sized increments due to the unique terrain which requires a more comprehensive approach to servicing; the relatively high expense of hillside development; the availability of other properties with fewer development constraints; and the relative local inexperience with high-density hillside development. Limits on the local roadway network have also constrained development throughout central San Jose pending completion for the Guadalupe and West Valley Freeways (State Routes 87 and 85), both of which are scheduled to be completed in the Fall of 1994.

Interest in development of the Communications Hill area was recently renewed, due in part to the scheduled 1994 opening of the Guadalupe and West Valley Freeways which will lift transportation system-related constraints which had essentially precluded recent large-scale development in the south-central San Jose area.

During the first half of 1990, several Communications Hill property owners initiated discussions with City staff to assess the merits of embarking upon a Specific Plan process as a blueprint for development of the hill. The general consensus among the participants was that the best way to realize the full potential of the hill to become a unique, urban-scale community would be through the adoption of a Specific Plan. The major property owners concluded that, independently, they could not design and provide the full range of public utilities and services, or achieve maximum densities. A Specific Plan would provide a comprehensive and coherent design and phasing plan for necessary services and utilities, and identify financing mechanisms for funding them. In addition, it would provide consistent development guidelines and standards tailored to fit the entire hillside community.

Once it was decided to prepare the Communications Hill Specific Plan, the City established the Communications Hill Task Force to provide guidance and feedback to the City staff and consultants responsible for preparing the Specific Plan. The Task Force, formed in October 1990, consisted of elected and appointed officials,

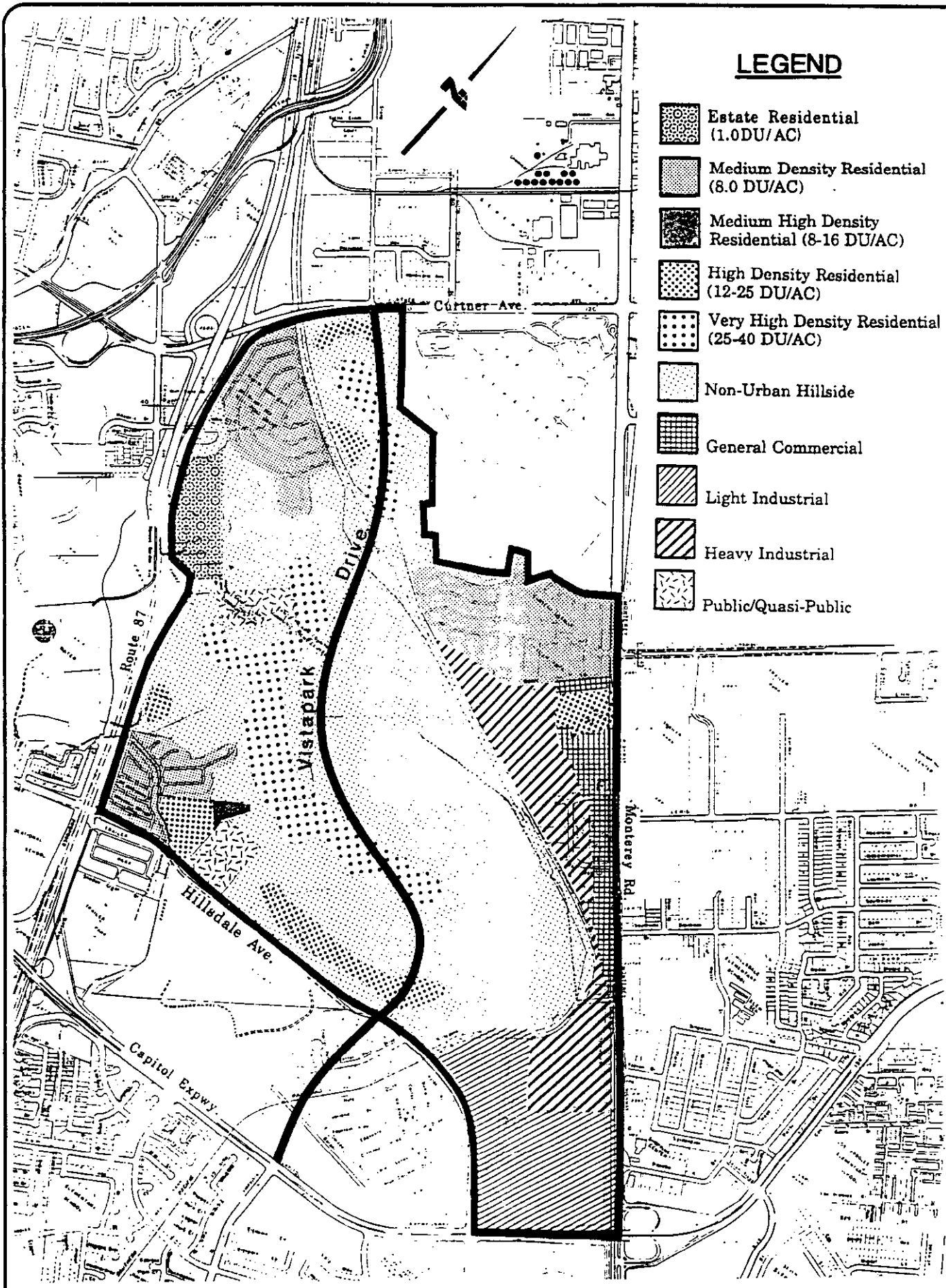
Communications Hill area landowners and their representatives, and neighborhood representatives (see Section X., B. PERSONS AND ORGANIZATIONS CONSULTED for a list of Task Force members). Detailed analyses and other technical data compiled during the planning process were reviewed by a Technical Advisory Committee consisting of City staff, and staff from affected outside agencies.

The Task Force initially met to familiarize themselves with the Specific Plan process and with Communications Hill's opportunities and constraints. Various design approaches were prepared by the project consultants and evaluated by the Task Force. The Task Force endorsed a refined Land Use Plan in April 1991. The Specific Plan process will culminate with adoption of the Specific Plan and the adoption of a General Plan Amendment (GPA) to incorporate the Communications Hill Planned Community as part of the Horizon 2000 General Plan. Planning Commission and City Council actions are scheduled to occur in late 1991 and early 1992.

Most of the area around the base of Communications Hill lies within the City limits of San Jose, while the hill itself is still largely within the unincorporated County. These unincorporated properties are situated within the City of San Jose Urban Service Area and Sphere of Influence, and planning of these areas is entirely within the City's jurisdiction. At the time of their development, the unincorporated properties will be rezoned and annexed to the City.

E. PROJECT DESCRIPTION

The project consists of a proposal to adopt the Communications Hill Specific Plan; to amend the General Plan of the City of San Jose in order to establish the Communications Hill Planned Community and to adopt related General Plan text amendments. The proposal is to redesignate the Communications Hill area from its current designations of Estate Residential (1.0 DU/AC), Medium Density Residential (8.0 DU/AC), Medium High Density Residential (8-16 DU/AC), High Density Residential (12-25 DU/AC) and Very High Density Residential (25-40 DU/AC), Non-Urban Hillside, Light and Heavy Industrial, General Commercial, and Public/Quasi-Public designations as shown in Figure 4, to a designation of Communications Hill Planned Community. The proposed land uses for the Planned Community, developed through the Communications Hill Specific Plan process, are shown on Figure 5. The three related amendments proposed for the Horizon 2000 General Plan text would consist of the following:



LEGEND

-  Estate Residential
(1.0 DU/AC)
-  Medium Density Residential
(8.0 DU/AC)
-  Medium High Density Residential (8-16 DU/AC)
-  High Density Residential
(12-25 DU/AC)
-  Very High Density Residential
(25-40 DU/AC)
-  Non-Urban Hillside
-  General Commercial
-  Light Industrial
-  Heavy Industrial
-  Public/Quasi-Public

SCALE: 1" = 1500'

HORIZON 2000 GENERAL PLAN

SOURCE: CITY OF SAN JOSE PLANNING DEPARTMENT

- Proposal to amend the Land Use/Transportation Diagram designation and General Plan text from Planned Residential Community to Planned Residential Community/Planned Community.
- Proposal to amend the text of the Planned Residential Community/Planned Community section of the General Plan to incorporate the Communications Hill Planned Community. This new section of the General Plan would include a synopsis of the Specific Plan objectives, public service projections, design considerations and a map of the Specific Land Use Plan.
- Proposal to amend the Urban Design policies 10 and 11 to allow building to exceed 45 feet in height in specified areas of Communications Hill. Mid- to high-rise structures would be allowed on 9 tall building sites (see Specific Plan, Figure 44), as well as in two areas described in the Specific Plan Design Standards for Multi-Family (see Specific Plan, page 58) and in the Village Center Specific Plan Design Standards (see Specific Plan, page 65).

The consistency of the Communications Hill Planned Community with the current General Plan is discussed subsequently in Section I., F. PLANS, POLICIES AND REGULATIONS.

1. Specific Plan

The proposed Specific Plan text and Specific Land Use Plan are consistent with the intent of the Horizon 2000 General Plan to develop Communications Hill as a dense, highly urbanized residential neighborhood in the largely undeveloped upland area (approximately 400 acres). However, the existing General Plan designation allows 5,000 multi-family dwellings primarily in the upland areas of the site while the proposed plan would allow a potential maximum buildout of 4,000 new multi-family dwelling units and 15 single-family. Both the 4,000 and 5,000 dwelling unit figures represent the maximum number of potential new multi-family dwelling units for the Communications Hill Specific Plan area, calculated using the high end of the land use density ranges in the existing and proposed General Plan designations. These figures do not include any existing residences within the Specific Plan area.

The proposed Specific Land Use Plan also provides further delineation to the General Plan concept of multi-family neighborhoods, and includes sites for a public school, parks, a playfield, open spaces, a 50,000 square foot neighborhood commercial center, plus additional commercial throughout the proposed residential areas, and civic uses. The Specific Plan further proposes re-use of approximately 27 acres of the Azevedo Quarry for heavy industrial uses, construction of roads and utilities, and

the designation of additional land as combined industrial/commercial which could accommodate up to 457,380 square feet of new industrial/commercial uses (see Figure 5). The Specific Plan provides for the integration of the existing commercial, industrial and residential uses with the proposed new uses. The Specific Plan establishes goals and policies, an urban structure and design standards which would establish the framework for the development of the Communications Hill Planned Community. The diverse uses proposed by the Specific Plan are integrated within a grid of local streets located along a central arterial spine provided by Vistapark Drive as it traverses the hill from north to south.

The maximum number of additional dwelling units proposed for the Communications Hill area under the proposed Specific Plan is a maximum of 4,000 multi-family units, plus approximately 15 single-family units. The multi-family units could be developed at a density of 25 plus/DU/AC, up to a maximum cap of 4,000 new multi-family dwelling units for the entire Specific Plan area. This figure has been determined based upon an assessment of existing topography, projected building types and parking requirements. The amount of space required for parking (both surface parking and parking structures) has been a critical factor in limiting the maximum number of potential multi-family units in the planning area.

2. Existing Uses in the Specific Plan Area

Existing residential and non-residential use areas are included in the Specific Plan area in order to assure that the Plan represents a unified, cohesive design integrating existing and proposed uses for the entire area. Existing residential uses, covering approximately 160 acres of the Specific Plan area, consist of single-family homes along Carol Drive, a condominium development in the southwest portion of the planning area, and four mobile home parks around the base of the hill. Existing non-residential uses which would remain include numerous auto-related services, the Capitol Drive-in theater, a pet hospital, a propane outlet and a construction yard along Monterey Road. West of the Monterey Road frontage, the existing uses include the Azevedo gravel mining quarry and associated asphalt plant operations adjoining the Southern Pacific railway line. Along Snell Avenue near Hillsdale Avenue are located light industrial structures and some mini-warehouses. Several small residences with ranch-related outbuildings and corrals are situated on parcels fronting on Hillsdale Avenue and Narvaez Avenue. Toward the west along Hillsdale, near the Guadalupe Corridor, there is a large church structure and a construction yard.

CAPITOL EXPRESSWAY

SNELL AVENUE

AVENUE CURTNER

HILLSCALE AVENUE

ROUTE 87

(UNDER CONSTRUCTION)

The lower elevation, southeast portion of the planning area, along Monterey Road and the Southern Pacific railway tracks, would maintain its existing non-residential emphasis. This area is separated from the proposed residential uses by open space, steep topography and Vistapark Drive and is proposed for light industrial, heavy industrial and combined industrial/commercial uses. The Specific Plan would redesignate the Azevedo Quarry area from Non-Urban Hillside to Heavy Industrial (north of Pullman Way) and combined Commercial/Industrial (south of Pullman Way). This change reflects the existing land use pattern adjacent to the east.

In several locations, Specific Plan land use designations deviate from the existing General Plan in order to reflect existing and approved land uses. For example, the planned Caltrain Maintenance Facility, to be situated on the southwest side of the railroad tracks in an area designated Non-Urban Hillside, is recognized as Heavy Industrial by its proposed Specific Plan category. The Specific Plan would designate existing residential areas shown in Figure 5 as single- or multi-family residential to reflect their current usage, but would not designate their densities.

3. Specific Plan Design Concepts

The development of the Communications Hill for high-density residential use would result in the conversion of the open space character of the highly visible hill to a character that is essentially urban. Under the Specific Plan, development of Communications Hill would consist of multi-family residences, single-family residences, a neighborhood commercial center, a civic facility, parks, and a school, a playfield and a civic building on top of the ridge. The design for the central ridge would incorporate the existing AT&T communication tower as the central unifying element of the new hilltop community. Four overall design concepts define the proposed Specific Plan as follows:

- The gridiron pattern of blocks over the hills organized around an arterial roadway that traverses the site;
- The ring of open space that encircles the hilltop residential development and provides a distinct edge to the upland community and separates it from the industrial and commercial uses on the lower elevations to the southeast; and
- High-density development, integrated neighborhood commercial uses, and design criteria which promote pedestrian activity.
- Flexible density of 25 Plus DU/AC for multi-family units with a cap of 4,000 new dwelling units.

The primary access to the new neighborhoods within the Specific Plan area would be provided by Vistapark Drive, which would connect to Curtner Avenue in the north and Hillsdale Avenue in the south. Access to Monterey Road in the east would be provided via Pullman Way. To serve the industrial/commercial area west of the railroad tracks, an extension of Hillcap would be constructed at the base of the quarry slope north of Hillsdale Avenue. Access to the southwest would be provided to connect with Narvaez Avenue, and in the northwest, an extension of Millpond Drive would be built (as a limited vehicular access road) to connect Canoas Garden Avenue with the hilltop area. Two nearby light rail stations were recently opened along the Guadalupe Corridor at Curtner Avenue in the north, and at Capitol Expressway to the south. A Caltrain passenger station is planned for the southeast corner of the site, adjacent to the railroad tracks near Fehren Drive and Monterey Road.

The Specific Plan land uses proposed for the General Plan Amendment are shown on Figure 5 and are described below. A complete description of the existing land uses in project area is provided in Section II., A. LAND USE.

PROPOSED LAND USES

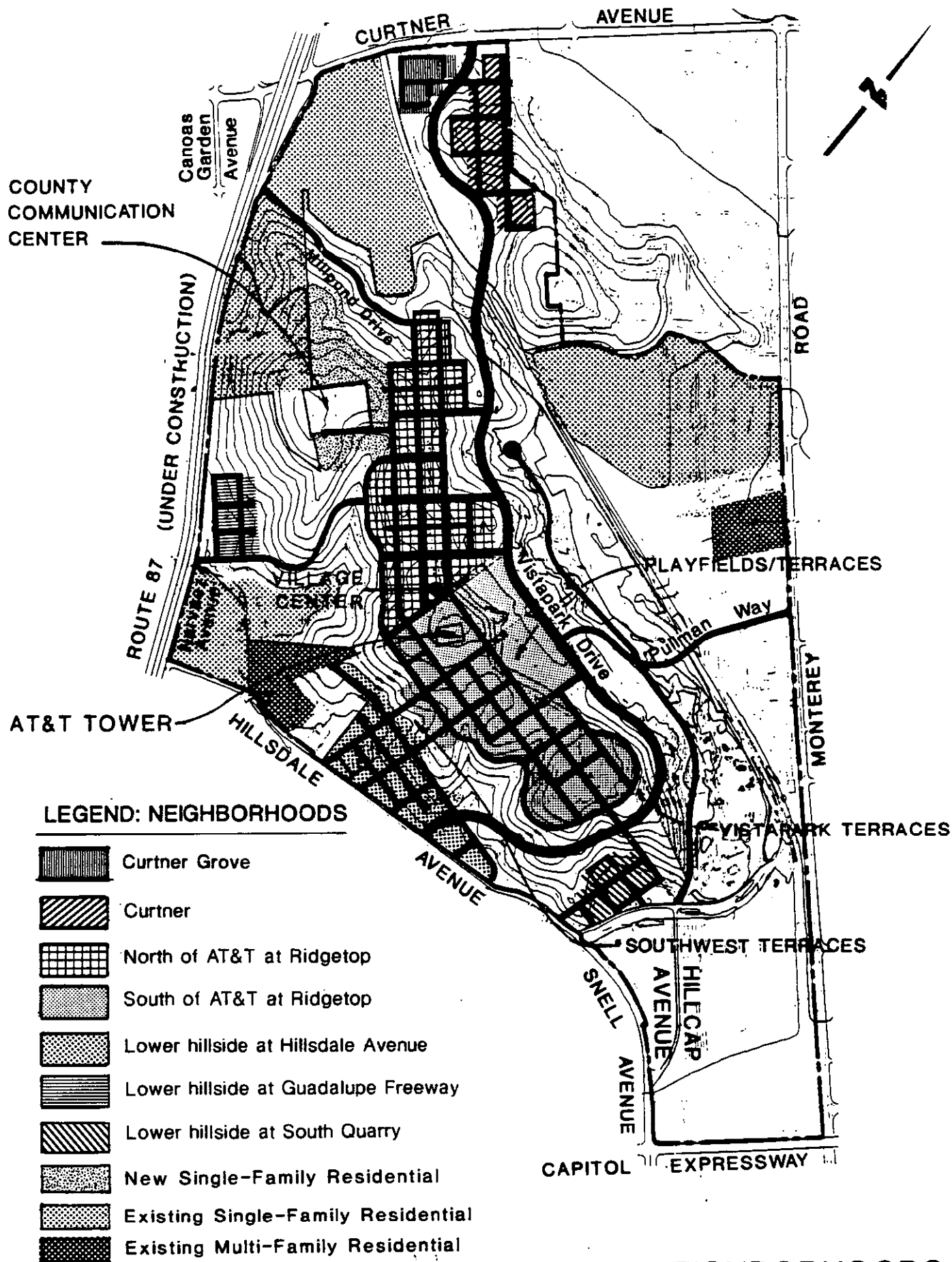
1. Single Family Residential - 154 Acres

a. Existing Single-family Residential - 137 Acres

The Specific Plan incorporates four existing areas designated as single-family residential. These include the Chateau La Salle mobile home park (60 acres), Mountain Shadows mobile home park (11 acres), the Carol Drive single-family area (25 acres), and the Millpond mobile home park (41 acres) which are shown on Figures 3 and 6. These areas are shown as single-family residential on the Specific Plan land use map.

b. Proposed Single-family Residential - 17 Acres

Fifteen single-family lots are planned for 17 acres of land on the northwest portion of the planning area. This area is located adjacent to the existing homes along Carol Drive and surrounds the County Communications facility. This area is also shown on the Specific Plan land use map as single-family residential.



2. Multi-Family Residential - 125 Acres

a. Existing Multi-family Residential - 25 Acres

The Specific Plan area includes two established multi-family residential areas that would not be modified by the Specific Plan: the Redwood Mobile Home Park on Monterey Road (7 acres), and the Elk Ridge Estates Condominiums (18 acres) located in the southwest corner of the planning area. These areas are indicated as multi-family residential on the proposed Specific Plan land use map, based upon their existing density and character.

b. Proposed Multi-family Residential - 100 Acres

The Horizon 2000 Plan states that multi-family housing on Communications Hill should range in density between 25 to 40 units per acre. The Specific Plan would permit up to 4,000 units for all multi-family residential development and require a density of at least 25 units per acre. Multi-family units would be located in six neighborhoods (see Figure 6). There are two areas where the topography or size of a block could accommodate densities greater than 40 du/ac as described in Section 3.2.b of the Specific Plan. Setbacks, parking, building heights and massing, entrances and other design standards for the multi-family housing are also described in Section 3.2.b of the Specific Plan.

3. Parks/Playfields - 23.8 Acres

The Specific Plan identifies sites for six parks and one playfield. The park sites range in size from .75 to 6.5 acres and would be distributed throughout the high-density neighborhoods to provide neighborhood-level recreational facilities. A five-acre playfield is planned to be located adjacent to the ridgetop elementary school site (See Table 1). Design standards for parks, such as pathways, stairs, grading and planting are outlined for each park in Section 3.1.e of the Specific Plan.

4. Open Space/Trails - 185 Acres

The grassy side slopes of the hilltop area would be a major open space component of the Plan. This band of open space is proposed to surround the ridgetop neighborhoods would remain undeveloped and give definition and boundedness to the neighborhoods. Access to open space areas would be provided by a walk/run/bike path system. The purposes of open space areas are further defined in Section 3.1.e of the Specific Plan.

5. School - 5 Acres (with adjacent 5-acre playfield-10 acres)

An elementary school (probably a K-8) is planned to utilize four acres of the lower hillside near the existing quarry, along Vistapark Drive. School facilities are discussed in Section 3.2.d of the Specific Plan (Civic Facilities and Emergency Services).

TABLE 1
SPECIFIC PLAN PARKS AND PLAYFIELD

PARKS	NET ACRES
Curtner Grove	6.0
AT&T Park	6.5
Northern Square #1	0.8
Northern Square #2	0.9
Playfield	5.0
Crescent Green	2.0
Southern Rectangle Park	1.6
TOTAL ACREAGE	23.8

6. Civic Use - .5 Acre

A 0.5-acre ridgetop neighborhood site, adjacent to the proposed Village Center and near the AT&T facility is designated for future civil use, such as a community center (see Section 3.2.d of the Specific Plan).

7. Church - 5 Acres

An existing church is located on a five-acre site along Hillsdale Avenue.

8. Utilities - 8 Acres

The existing two-acre AT&T microwave facility and the six-acre County communication facility would remain within their current fenced sites. In addition, an elevated water tank would occupy an approximately one-acre site located within the park adjacent to the AT&T microwave facility. The Specific Plan (Section 3.1.g Utilities), discusses design standards for the water tank and all the other proposed Specific Plan utilities.

9. Commercial

The bulk of retail commercial uses would be located within the Village Center (see Figure 6). Mom and Pop stores could be located on the ground floor of multi-family buildings. Design standards for these three types of commercial areas are described in Section 3.2.c Retail and Commercial, of the Specific Plan. Retail uses would be subject to standards for height and massing, parking, loading areas and street frontage.

a. Village Center - 3 acres

The street-oriented Village Center blocks would accommodate approximately 50,000 square feet of floor area including retail shops, commercial space, restaurants and possibly a day-care facility. Appropriate tenants would include regular convenience shopping and services for local residents, food and drink establishments, and specialty convenience stores such as bookstores and gift shops.

b. Mom and Pop Retail

There are no Mom and Pop store sites specifically designated on the Plan; however, these small stores (from 250 to 1,000 SF) would be dispersed throughout the multi-family neighborhoods. Preferred locations would include corner sites and parcels fronting on parks. No additional parking spaces would be required.

c. Additional Commercial

The 50,000 square feet listed for retail/commercial uses pertains to the Village Center and Mom and Pop stores only. The total could be increased to 80,000 square feet and include other areas within the Plan with the following provisions: 1) the additional 30,000 square feet that is to be part of mixed-use developments combining

residential and retail uses; 2) greater than 50 percent of the Village Center is complete prior to development of additional commercial (see Section 3.2.a of the Specific Plan); and 3) the additional commercial is located in areas identified by the Discretionary Alternate Use policies (see discussion of Discretionary Alternate Uses below).

10. Light Industrial - 14.8 Acres

A 14.8-acre area southeast of Hillsdale and Snell Avenues, currently developed with office structures and a mini-storage complex, is proposed to retain its current light industrial designation. The Light Industrial designation is intended for a wide variety of industrial uses and excludes uses with unmitigated hazardous or nuisance effects. Office uses as well as retail sales and service establishments serving businesses and their employees are appropriate uses in this designation. Examples of this use category are warehousing, wholesaling, and light manufacturing. The Hillcap Avenue area is further described as a potential location for transit-oriented development once the Caltrain station and parking lot are built (see Section 3.2.e of the Specific Plan).

11. Heavy Industrial - 50 Acres

New Heavy Industrial areas would consist of the Caltrain maintenance facility which is planned to occupy an approximately 20-acre site on the west side of the Southern Pacific railroad tracks, and an adjacent 7 acres which would provide for supporting Heavy Industrial uses. Approximately 23 acres of existing automotive repair, asphalt plant and other heavy industrial uses would retain their current Heavy Industrial designation. This category is intended for industrial uses with nuisance or hazardous characteristics which for reasons of health, safety or environmental effects, are best segregated from other uses. Extractive and primary processing industries are typical of this category. Applicable street frontage, height, signage and street trees design standards are discussed in Section 3.2.e of the Specific Plan.

12. Combined Industrial/Commercial - 148 Acres

The existing mixture of automobile repair, propane sales, drive-in theater, and quarry-related uses located in the southeastern portion of the planning area along Monterey Road is proposed for a Combined Industrial/Commercial designation. This use designation is also planned for the adjacent area which is currently being quarried for gravel. This category of use is designed to allow for 28 acres of new

development containing a mixture of compatible commercial and industrial uses. It is also intended to allow either commercial or industrial use in a 120-acre area which already exhibits such a mixed land use pattern as to make it difficult to define rational boundaries for each of these categories. This category, which does not allow new Heavy Industrial use, would be subject to building frontage, signage, street planting and other design standards presented in Section 3.2.e. of the Specific Plan.

13. Circulation

Specific Plan streets and non-vehicular pathways are proposed to link and integrate uses. Design standards for street classifications (arterial, access, perimeter and residential), street trees, intersections and grades are presented in Section 3.1.b of the Specific Plan.

a. Arterial Roadway

Vistapark Drive is the major arterial roadway planned to traverse the hill from Curtner Avenue on the north to Hillsdale Avenue on the south. This two- and four-lane roadway would remain separated from the main neighborhoods as it passes along and through multi-family, residential, school, playfield and open space areas. Vistapark Drive adapts to particular conditions of grading where it meets the neighborhood street grid and steep topography. To reduce the grading impact, the Specific Plan indicates a split right-of-way where extreme existing slopes occur or extensive grading is infeasible. A public right-of-way accommodating 4-lanes is designated for Vistapark Drive; however, preliminary studies of anticipated traffic volumes indicate that a 2-lane road is adequate to provide for circulation for most of its length. Nevertheless, right-of-way for a 4-lane road would be retained for its entire length.

b. Access Roads

Pullman Way. Pullman Way is planned to be extended from the Commercial/Industrial area, to pass under the SP rail tracks and through the planned Caltrain maintenance facility and light-industrial area before heading upslope to meet Vistapark Drive.

Hillcap Avenue. The extension of Hillcap Avenue north from Hillsdale Avenue to Pullman Way and then to a long internal cul-de-sac would provide access to the proposed new industrial area west of the railroad tracks.

Narvaez Avenue. An extension of Narvaez Avenue is planned to provide access to the neighborhood north of AT&T and the "Lower Hillside at Guadalupe Corridor" neighborhood. It would connect with off-site surface streets to the south and east.

Millpond Drive. An extension of Millpond Drive near the existing Millpond Mobile Home Park in the northwest corner of the planning area would be routed through the "North of AT&T at Ridgetop" neighborhood to provide future access for a shuttle bus to the light rail transit station at Curtner Avenue which may be provided in the future. Pedestrians and cyclists would be allowed on this road, but it would be closed to private motor vehicles.

c. Residential Streets

A major portion of the circulation network consists of residential streets. In general, these streets would follow the existing slope of the land with the narrowest right-of-way that safety would permit and a maximum 15 percent slope. On-street parking would serve as a buffer between moving cars and the pedestrians, and could reduce the amount of parking that individual developments would be required to provide. A planting strip along both sides of streets would mature to provide overlapping canopies.

d. Perimeter Streets

The streets which delineate the edge of the neighborhood play an important role in the defining of the overall form of Communications Hill. These are contour-following, curvilinear streets with development permitted only on the uphill side except where they engage the grid and become part of the residential street grid. These streets give a distinct edge to the neighborhood and minimize the grading impact.

e. Pedestrian/Bicycle/Pathway Connections

With the exception of Vistapark Drive, all residential streets would have sidewalks. Separate bike paths may be included with any of the proposed access streets if bike path grades can be lessened without additional adverse grading impacts. The grid street pattern would disperse vehicular traffic throughout the neighborhood which would facilitate safe cycling. Bicycle lanes would be integrated with the street layout and connect to public transit. Where steep topography precludes street extensions, stairs would allow pedestrian access and provide overlooks. As discussed in the

Specific Plan (see Section 3.1.c. Stairs and Pathways), a naturalistic hike/bike/run pathway separate from the street system passes through the 185-acre open space area which surrounds the residential neighborhoods.

14. Discretionary Alternative Uses

In anticipation of unforeseen opportunities and constraints, there are two areas of the Specific Plan which may benefit from additional and/or alternative uses to those which are proposed. Discretionary Alternative uses would follow the objectives of the General Plan, would be compatible with the intent of the Specific Plan and not threaten success of the Plan. At the discretion of the Director of Planning the alternate uses would be allowed in the following areas:

- A potential location for an additional school parcel would be in the neighborhood adjacent to Hillcap Avenue.
- Additional retail/commercial uses would be permitted in the block northwest of the Village Center provided that 50 percent of the retail frontage along the east perimeter street is completed first.

15. Interim Uses

The Plan proposes a small neighborhood ("Lower Hillside at south quarry") on the north side of Hillcap as part of the long-term planning goal for transit-oriented development. This housing area with its streets and pathways would provide another link to transit and reduce the need for commuting. However, development of this area most likely would not occur in the early phases of the development of Communications Hill. Interim uses comprising primarily recreational uses within open space, such as an equestrian facility, would be encouraged for this area in the near-term.

F. CONSISTENCY WITH PLANS, POLICIES AND REGULATIONS

1. Federal Policies

a. Clean Air Act

The purpose of the Clean Air Act is to protect and enhance air quality, as well as to promote the public health and welfare of the population. The U.S. Environmental Protection Agency established a set of Ambient Air Quality Standards which are primarily implemented by state and local agencies. **Consistency:** The proposed General Plan Amendment is located in the south end of the San Francisco Bay Area Basin, which is designated as air quality non-attainment for ozone, particulates and carbon monoxide. The future proposed development would result in an increase in air pollutant emissions, and these emissions are anticipated to exceed the applicable air quality criteria pollutant standards (see Section II., I. AIR QUALITY). Construction activities associated with future development would also generate minor temporary pollutant emissions, but would not result in exceedances of air quality standards. Because operational emissions would exceed thresholds for NO_x , HC and PM_{10} pollutants, the project would not be consistent with the Clean Air Act.

b. The Clean Air Act Amendments of 1990 (1990 CAAA)

The 1990 CAAA gave the U.S. Environmental Protection Agency (EPA) new authority to define the classifications of non-attainment areas. The 1990 CAAA requires that, within two or three years of enactment (November 15, 1990), the State submit to the EPA a revised State Implementation Plan (SIP). The EPA is required to impose sanctions on states that fail to submit an acceptable SIP or to execute required control measures. Where sanctions fail, the EPA is required to prepare a Federal Implementation Plan (FIP). **Consistency:** For the same reasons that the proposed General Plan Amendment would not be consistent with the Clean Act as discussed above, it would not be in compliance with the 1990 CAAA.

c. Clean Water Act - Section 404(b)(1)

Section 404(b)(1) addresses the preservation of water quality and consequently, requires the Corps of Engineers to evaluate the impacts of the discharge of dredged or fill material into the waters of the United States which includes adjacent and isolated wetlands. **Consistency:** Any future development plans affecting the seasonal wetlands within the planning area would be reviewed to determine if a permit would be required from the Corps in conformance with Section 404(b)(1). Preliminary

surveys identify approximately 7 acres as potentially subject to the Corps' Wetland Jurisdiction (see Section II., E. BIOLOGICAL RESOURCES). If a section 404 permit is required, a draft mitigation plan would be required which would detail replacement mitigation of lost wetlands.

d. Executive Order 11990 - Protection of Wetlands

Under this order, Federal agencies must provide direction to minimize the destruction, loss or degradation of wetlands. Federal agencies should avoid, to the greatest extent feasible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands. Agencies should also avoid new construction, unless no practicable alternative exists and all practicable measures have been implemented to minimize harm to wetlands. **Consistency:** Any future development within Specific Plan wetlands areas would be identified at the time a site-specific project is proposed. Preliminary estimates identify approximately seven acres of the 900 acre site as potentially subject to this order.

2. State Policies

a. State of California Wetlands Policy

This policy applies to the protection of marshlands and other wetlands. **Consistency:** The proposed General Plan Amendment may result in the future construction of a retention basin, roadway fill, housing, industrial uses and recreational uses within identified wetland areas on the site. Future development of specific projects would incorporate measures to mitigate potential impacts to these areas.

b. Surface Mining and Reclamation of Act (SMARA) of 1975

The purpose of the SMARA is to encourage the production and conservation of mineral resource areas, to prevent or minimize adverse effects associated with surface mining, and to ensure that mined lands are reclaimed to a usable condition. Pursuant to SMARA, the State Mining and Geology Board has designated the Communications Hill area as containing mineral deposits which are of regional significant as a source of construction aggregate materials. **Consistency:** The proposed General Plan Amendment is consistent with this plan in the short term, since it would not preclude the continued use of the Azevedo Quarry (assuming that the quarry operators' current request to Santa Clara County for a five-year extension of quarry use is approved). It is intended that the final contours remaining after the

quarry operation has terminated would approximate the rough grades planned for the Specific Plan in this area. The expansion of quarrying activities to adjacent parcels on the western side of the hill could result in impacts to existing residential uses. Mineral resources are further discussed under City of San Jose Extractive Resource policies below and in Section II., B. GEOLOGY AND SOILS.

3. Regional Plans and Policies

a. Association of Bay Area Governments (ABAG) the San Francisco Bay Area Environmental Management Plan

This plan was prepared in 1981 by ABAG with the assistance of the Bay Area Air Quality Management District (BAAQMD), the Metropolitan Transportation Commission (MTC), and the San Francisco Bay Regional Water Quality Control Board (RWQCB), under the direction of the Environmental Management Task Force. The Plan addresses problems of regional water quality, water supply, solid waste, and air quality in an attempt to meet State and Federal standards. In addition, the Plan designates agencies that are responsible for executing these activities.

Consistency: The Specific Plan would be consistent with the relevant policies of this plan, with the exception of air quality (discussed under 1982 Bay Area Air Quality Plan below).

b. ABAG Regional Plan 1980

This plan is an update and revision of the ABAG Regional Plan 1970-1990, and combines policies from subsequently adopted plan elements and other ABAG actions. The plan consists of Regional Strategies and Subregional Planning Areas, Objectives, Policies and Strategies. **Consistency:** The proposed General Plan Amendment is consistent with the ABAG Plan since it would allow the establishment of a unified community near industrial development. The provision of new housing on Communications Hill would meet demands associated with future job growth in the downtown core and thereby reduce commute trip distances.

c. 1982 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan, ABAG/BAAQMD/MTC

The 1982 Bay Area Air Quality Plan establishes regional policies and guidelines to meet the requirements of the Clean Air Act, as amended through 1977. The Bay Area is a non-attainment area for ozone, particulates and carbon monoxide since

Federal standards are exceeded for these pollutants. Though the Clean Air Act stipulated that standard attainment must occur by 1987, Bay Area pollutants still exceed these standards. **Consistency:** The proposed General Plan Amendment would not be consistent with this policy, since it would result in significant increases in air pollutant emissions (see Section II., I. AIR QUALITY).

4. County Policies

a. Santa Clara County Regional Parks, Trails and Scenic Highways Element

The Specific Plan proposes pedestrian/bike trails around the hill and incorporated into the extension of Millpond Avenue, and the extension of Narvez Avenue which would provide pedestrian and bike access to the proposed County trails along the Guadalupe Freeway/Light Rail Corridor. **Consistency:** The proposed General Plan Amendment is consistent with the County Element.

5. City of San Jose

a. Horizon 2000 General Plan

The Horizon 2000 General Plan of the City of San Jose is a comprehensive long-term plan. The elements of the Plan comprise an integrated, internally consistent and compatible statement of the official land use policy of the City of San Jose. The General Plan contains a statement of development policies and includes a Land Use/Transportation Diagram as well as text which sets forth the objectives, principles, standards, and Plan proposals.

The Land Use/Transportation Diagram, Major Strategies, and Goals and Policies set forth in the plan guide the action of the City in its attempts to achieve its long term objectives. Consistency of the proposed Specific Plan with the General Plan and major strategies and policies that are applicable to the proposed General Plan Amendment are presented below, along with a discussion of the Specific Plan.

b. Growth Management (Major Strategies)

The purpose of the Growth Management Strategy is to balance the City's housing needs while providing acceptable levels of service within the City budget constraints. The policy emphasizes balancing housing with other land uses and encouragement of development within existing urban areas. **Consistency:** The Communications Hill

Specific Plan is consistent with this strategy, principally because it would implement the objective of providing infill development.

c. Planned Residential Community

The Planned Residential Community land use category of the Horizon 2000 General Plan is intended for properties which, because of size, location or urban service conditions, require special consideration for purposes of future development. This designation is intended by the City to provide the private development sector with a greater degree of flexibility in the development of innovative projects while also incorporating special development and design objectives. While no specific minimum land area requirement is defined, properties to be considered for this designation must be of a sufficient size to provide an appropriate community environment within the surrounding fabric of the City. The uses allowed within this category encompass a full range of residential densities as well as limited amounts of other appropriate and compatible land uses. Existing Planned Residential Communities allow for the integration of residential uses with commercial development.

An amendment has been proposed to change the designation of Planned Residential Community to Planned Residential Community/Planned Community to reflect the unique mix of residential, retail, commercial and industrial uses integrated within the Communications Hill Specific Plan area.

The Planned Community designation would serve the same objectives as the Planned Residential Community. Future land development under the Planned Residential Community/Planned Community designation would require approval under Planned Development zoning and would be subject to all other applicable General Plan policies. Development within the land use designations adopted for the Specific Plan area would be required to conform to the normal guidelines for those designations unless special qualifications are outlined in the Communications Hill Specific Plan maps and text for the Planned Residential Community. Subsequent rezoning applications under the Specific Plan would occur through Planned Development (PD) zoning which would be required for project-specific development approval for each property. Rezoning requests would be reviewed for site-specific impacts, and any project-specific mitigation measures would be identified during the PD zoning approval process.

d. Extractive Resources Policies

To protect extractive resources, the City encourages the conservation and development of SMARA-designated mineral deposits wherever feasible. When urban development is proposed on lands which have been identified as containing economically usable extractive resources, the value of such resources should be taken into consideration. Policies also state that in making land use decisions involving areas which have a SMARA designation of regional significance at the time of consideration of such decision, the City should, in balancing mineral values against alternative land uses, consider the importance of these minerals to their market region as a whole and not just their importance to San Jose

Consistency: The Azevedo Quarry has been mined since 1971 which has resulted in substantial terrain modification. As of this writing, the quarry's 20-year permit from Santa Clara County has expired and a temporary extension has been granted while a permit application for expansion of the quarry is prepared. The quarry expansion area would extend west from the intersection of Hillsdale and Snell Avenues approximately 1,300 feet, and to the edge of the AT&T microwave tower property.

Proposed quarry excavation and reclamation plans would be prepared in full consideration of grading requirements for the Specific Plan. Final grades for the quarry area would approximate rough grading planned for Specific Plan development.

e. Non-Urban Hillside

Although a large portion of the upland area of the hillside is currently designated Non-Urban Hillside on the General Plan Land Use/Transportation Diagram, this area is anomalous to other hillside areas which surround the urbanized valley floor. Communications Hill is located within the urban framework of the City and does not fulfill the objective of defining the edge of urban density as do other areas designated Non-Urban Hillside which are located on the periphery of the City. Because Communications Hill is an urban infill site within the Greenline and within the Urban Service Area of San Jose, it is not subject to the 15% slope line restrictions applied to lands beyond the Greenline.

f. Building Height Policy

Current General Plan height policies limit building heights to 45 feet unless specifically excluded by the Horizon 2000 Urban Design policies. The Specific Plan

proposes heights which could exceed 45 feet. In order to make the Specific Plan and the General Plan consistent, the following amendment is proposed:

- Amend Urban Design policies 10 and 11 to allow the following exception:

For high-density housing sites (40 plus DU/AC) within the Communications Hill Specific Plan area and for commercial structures in the Village Center of the Specific Plan, the maximum building heights will be limited only by the criteria that structures do not interfere with transmissions for existing communications facilities on Communications Hill.

The Specific Plan would be consistent with the amended height policy as proposed above.

G. USES OF THIS EIR

This Environmental Impact Report (EIR) will be used to provide program-level environmental review for the proposed General Plan amendment. It is the intent of this EIR to provide the City of San Jose and the general public with relevant environmental information to use in considering the approval or denial of the proposed General Plan amendment request. Subsequent environmental review will be necessary for annexation/prezonings, rezonings, and other required approvals. This Environmental Impact Report will be instrumental in identifying the issues and scope for this subsequent environmental review.

H. ADDITIONAL ENVIRONMENTAL REVIEW

As mentioned, additional environmental review will be necessary for subsequent annexation/prezonings, zonings and other requested approvals. The additional studies identified in this EIR and listed below would be required in conjunction with such environmental review prior to site-specific development, with the exception of asbestos testing which would occur during construction.

- Geologic and Geotechnical
 Seismic Hazards:
 Surface Fault Rupture
 Landsliding
 Liquefaction
 Settlement

- Catastrophic risk analysis of water tank
- Landsliding
- Settlement
 - Geophysical survey to determine extent and size of tunnels
 - Mine collapse
 - Soil compression
- Mercury
 - Degassing
 - Health risk
- Expansive soils
- Erosion
- High groundwater
- Excavation difficulties
- Mineral resources
- Drainage
- Wetlands
- Biotics
 - California Tiger Salamander
 - Burrowing Owl
 - Metcalf Canyon Jewel Flower
 - Fragrant Fritillary
 - Setchell's Dudleya
 - Uncommon Jewel Flower
- Landscape Feasibility Studies
- Archaeology Studies
- Traffic (Near-Term Level of Service Analysis)
- Noise
- Vibrations
- Sewer Odor

II. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

A. LAND USE

EXISTING CONDITIONS

1. Overview of the Project Area

The Specific Plan area is located on and adjacent to Communications Hill, an "island" of largely undeveloped lands surrounded by a variety of land uses. This visually prominent area rises approximately 300 feet above developed areas of the Santa Clara Valley floor. The irregularly-shaped Specific Plan area is approximately one mile wide by two miles long and comprises approximately 900 acres. Previous subdivisions of Communications Hill have created many large and small properties with numerous property owners.

The primarily undeveloped part of the Specific Plan area, which covers approximately one-half of the total acreage, consists of rounded hills trending in a generally northwest-southeast direction. The terrain in the higher elevation areas has slopes ranging from 10 percent to over 35 percent, with broad, gently-sloping ridgetops. More level areas along the ridgetop, with generally less than 15 percent slopes, are the predominant areas that would be available for residential development. Vegetation in the undeveloped portions of the hill consists mainly of low grasses, with few trees and scattered patches of brush. Several areas continue to be used for grazing of livestock. The peripheral portions of the Specific Plan area, on the flatter areas around the base of Communications Hill, contain established residential, industrial, commercial and public uses.

Communications Hill is in close proximity to several principal arterials and freeways serving south-central San Jose. The Guadalupe Corridor (Route 87) forms the western boundary of the planning area. The light rail portion of the Route 87 transportation corridor was opened in April 1991, with the freeway portion scheduled for completion in the Fall of 1994. In addition to the Guadalupe Corridor freeway and light rail facilities referenced above, the roadways which bound the plan area include Monterey Road to the east, Curtner Avenue to the north, and the Capitol Expressway plus Hillsdale and Snell Avenues to the south. The Almaden Expressway is located three-quarters of a mile to the west, and interchanges with Highway 101 are located at Tully Road and the Capitol Expressway two miles to the east. The West Valley Freeway (Route 85) which traverses southern San Jose from east to west, approximately two miles south of Communications Hill, is also scheduled for completion in the Fall of 1994. The Southern Pacific Transportation Company railroad tracks traverse the planning area from northwest to southeast.

The Specific Plan area is drained by three waterways which generally flow southeast to northwest through the Santa Clara Valley. The Guadalupe River, located approximately one mile to the west, receives runoff from the northwest quadrant of the planning area. Runoff from the southwest portion of the Specific Plan area flows into Canoas Creek, a constructed channel which traverses in the southwest corner of the planning area. Canoas Creek flows into the Guadalupe River approximately one-half mile north of the planning area. The areas east of the Communications Hill drain into Coyote Creek located approximately one mile east of Monterey Road.

The Communications Hill area is one of the last (and certainly the largest) remaining undeveloped area in central San Jose among the lands which have been designated for urban development in the Horizon 2000 General Plan. Up to 4,000 multi-family units are proposed to be designated for residential use on approximately 175 acres of land that is currently vacant or underutilized. The maximum number of residences proposed by the Specific Plan is approximately 20 percent less than currently allowed by current General Plan for this site.

2. Existing Land Uses in the Proposed Planned Community Area

As noted above and shown on Figure 3, the current uses in the Specific Plan area consist of a variety of residential, commercial, industrial, public and agricultural uses. A more detailed discussion of existing land uses follows. (For a further description of existing visual conditions in the Specific Plan area, see Section II., G. VISUAL AND AESTHETIC RESOURCES.)

A number of different uses are located in the Monterey Road area. These include two mobile home parks in the north end of the study area, as well as auto wreckers, auto body shops, used automotive sales and service, a pet hospital, and a propane outlet located north of Pullman Avenue. South of Pullman Avenue are located the Evergreen Concrete Batch Plant, the Granite Construction yard and the Capitol Drive-in movie theater complex which also serves as a flea market.

West of the Monterey Road frontage, the Azevedo gravel mining and associated asphalt plant operations are located to the west of the Southern Pacific railway line. The quarry itself is characterized by highly modified, continually changing topography, dominated by steep cuts and piles of quarried material. The Azevedo quarry operation is further discussed in Section I., E. PLANS, POLICIES AND REGULATIONS, and in Section II., B. GEOLOGY. To the east of the area currently being quarried, is the site of the planned Caltrain Maintenance Facility which is proposed to occupy an area of approximately 20 acres along the railroad tracks.

Along Snell Avenue near Hillsdale Avenue, in the southern portion of the planning area, is located a pocket of light industrial structures and some mini-warehouses.

Most of the sloping hillsides which front on Hillsdale Avenue are undeveloped and/or used for grazing. Several small residences with ranch-related outbuildings and corrals reflect the area's ranching history. Toward the west along Hillsdale, near the Guadalupe Corridor, are situated a large church structure, a construction yard, the Elk Ridge Estates condominium complex and the Mountain Shadows Mobile Home Park. Canoas Creek flows between the hillside condominiums and mobile home area, across the southwest corner of the planning area. An existing single-family home fronts the planned freeway to the north of these residential pockets, and has access off Narvaez Avenue.

The central upland portion of the Specific Plan area consists of a series of largely undeveloped knolls. The only structures are the 115-foot tall AT&T microwave tower and the County communication facility which occupy the higher elevations. The County Center consists of a fenced area with numerous antennae, as well as a parking lot for its approximately 40 daytime employees (10 to 12 additional employees work each of the swing and night shifts), and a single-story support building. Electrical transmission lines (21 kv) on tall, wooden poles cross the hill in an east-west direction. In addition to the gated, unpaved road which provides access to the AT&T facility, rutted trails crisscross the upland area.

Fifteen single-family residences, situated on one-acre lots, line Carol Drive (a private road) on the upper west-facing slopes just below the County communications complex. Carol Drive is a steep narrow road which provides access to both the residences and to the County communications complex. Grassy unbuilt slopes surround the landscaped subdivision on three sides, and the Guadalupe Corridor runs nearby to the west.

The northwest quadrant of the Specific Plan area fronting on Curtner Avenue includes the existing Millpond Mobile Home Park on the level area west of the Southern Pacific railway tracks, and a former dairy farm which lies east of the tracks. The mobile home park obtains access via Canoas Garden Avenue and Millpond Drive under the Guadalupe Corridor. A narrow paved road provides access to the AT&T facility from the mobile home area. A residence and outbuildings in the vicinity of Stone Avenue indicate the location of the former dairy. South of these structures are the undeveloped lower knolls of Communications Hill which extend south to the central upland area, and are bisected by the Southern Pacific Railway line.

Development proposals have been filed with the City for two properties within the Specific Plan area. A portion of the 33.65-acre Capitol Drive-In at the southeast corner of the planning area is proposed to be developed into an indoor theater complex (PDC91-09-008). However, much of the existing outdoor theater and flea market uses would be retained. A property on the north side of Hillsdale Avenue (one-half mile west of Charter Park Drive) is proposed to be rezoned to A(PD) which would allow 148 single-family attached residences on 28 acres (PDC91-09-011). Both of the proposed land uses would be in conformance with the proposed Specific Plan.

3. Surrounding Land Uses

The planning area is surrounded by a variety of residential, commercial, industrial and public uses. The land uses to the east across Monterey Road are similar in character to adjacent uses on the west side and include vehicle repair, restaurant and some vacant or underutilized commercial areas, as well as a mobile home park. The County Fairgrounds lies to the northeast, on the east side of Monterey Road between Tully and Umbarger Roads less than 1/4 mile from the planning area boundary.

A multi-family apartment complex is located on the south side of the 6-lane Capitol Expressway across from the Capitol Drive-in. On the other three corners of the intersection of Capitol Expressway and Snell Avenue there are three gas stations. A mobile home park and mini-warehouses lie southwest of Snell Avenue opposite the light industrial/office buildings and mini-warehouses located within the planning area.

South of Hillsdale Avenue, commercial and residential uses are expected to occupy the currently vacant former Hillsdale Quarry site. Between Canoas Creek and the Guadalupe Freeway, across from the on-site Mountain Shadows Mobile Home Park, there is a similar mobile home park.

The western edge of the Specific Plan area is bordered by the Guadalupe Corridor. Beyond the Guadalupe to the west there are two large water tanks, three major churches and a senior citizens housing development. The churches share use of Canoas Garden Drive with the residents of Carol Drive and the Millpond Mobile Home Park. A new light rail park-and-ride is located at the southeast corner of Curtner Avenue and the transportation corridor. A second park-and-ride station is located at the southwest corner of the Capitol Expressway and Narvaez Avenue, just south of the planning area.

North of Curtner Avenue, existing land uses include light and heavy industrial uses, with the exception of one combined residence/business east of Stone Avenue. The

heavily-landscaped Oak Hill Cemetery occupies the southwestern quadrant of Curtner and Monterey Road, east of an undeveloped portion of the Specific Plan area and north of the Chateau La Salle Mobile Home Park.

4. Pending GPA and Rezoning Applications in the Surrounding Area

A General Plan Amendment (GPA) (GP91-7-1) is proposed for a 9.7-acre area located on the west side of Route 87, south of the terminus of Canoas Garden Avenue. The GPA is proposed to change the Land Use/Transportation Diagram from Non-Urban Hillside (9.7 acres) to Transit Corridor High Density Residential (12+ DU/AC) (6.5 acres), Public/Quasi-Public (0.7 acres) and Non-Urban Hillside (2.5 acres).

There are two rezoning applications for lands in the Communications Hill area which are also under review by the City. A 2.86-acre parcel on the east side of Evans Lane, 450 feet north of Almaden Expressway and Canoas Gardens Avenue, has been proposed to be rezoned from M-1 to A(PD) to allow 50 single-family attached units (PDC90-09-103). A rezoning from I to A(PD), to allow a 180-room Single Room Occupancy Residential Hotel on 0.885 acres, has been requested for the northwest corner of Curtner Avenue and Canoas Garden Avenue (PDCSH 91-05-043).

LAND USE IMPACTS

The future development of the Specific Plan project would result in development of approximately 4,000 multi-family dwelling units, 15 single-family residences, a 50,000 square-foot commercial Village Center including commercial throughout the community, re-use of approximately 27 acres of the Azevedo Quarry for heavy industrial uses, construction of roads and utilities, and the designation of additional land as combined industrial/commercial which could accommodate up to 457,380 square feet for new industrial/commercial uses. These land uses would significantly increase the land use intensity of the site compared with existing conditions.

Future development would also alter the visual character of the site, would generate increases in traffic, noise, air pollution and could impact biological resources. In addition, future residences would be located in an area of geologic hazards and potential exposure to asbestos, mercury and electromagnetic radiation. Land use compatibility and open space impacts are discussed below. A full discussion of the other environmental impacts related to land use are discussed subsequently in this EIR under the respective topic headings.

There are two types of land use impacts: direct and indirect. Direct land use impacts include effects such as displacement of existing uses requiring relocation, or severe impingement which renders the continuation of the use or activity infeasible. Future development under the proposed Specific Plan would result in no direct impacts to existing land uses in the vicinity. Indirect land use impacts include effects such as noise or visual intrusion which do not physically impinge on the affected property but which may interfere with the use or enjoyment of those lands. The indirect land use impacts which would result from the proposed project are addressed in the following paragraphs.

1. Loss of Open Space/Intensification of Land Use

The existing open space character of Communications Hill would be permanently changed by the intensification of land uses proposed under the Specific Plan. The largely vacant slopes and ridgetops would be modified to accommodate roads, buildings and other structures. Although a broad band of open space would encircle the hilltop development, the existing open space of the hill would be largely replaced with urban structures. The loss of open space would be most apparent to existing residents in the adjacent neighborhoods such as Chateau La Salle Mobile Home Park, Mountain Shadows Mobile Home Park, Elk Ridge Condominiums, Carol Drive Subdivision and Millpond Mobile Home Park. Motorists along the arterials which border the planning area as well as persons viewing the area from Highways 280, 101, and 85 and downtown San Jose would be aware of the changed character of the hill. Due to the high visibility and the size of the open space area on Communications Hill, its loss is considered a significant impact. Visual issues associated with loss of open space and intensification of land use are discussed in Section II., G. VISUAL AND AESTHETIC RESOURCES.

2. Compatibility with Land Uses Surrounding the Specific Plan Area

Much of the land within the Specific Plan area which borders off-site uses has already been developed. Within the planning area, the established uses which border the surrounding area would not have their land uses changed by the Specific Plan process, and as a result no land use impacts to adjacent lands outside the planning area would occur in these peripheral areas.

There are three locations within the planning area where undeveloped land borders off-site properties, namely along Hillsdale and Curtner Avenues, and along Route 87. The "Curtner Grove" and "Lower Hillside along Hillsdale Avenue" and "Lower Hillside at Guadalupe Freeway" neighborhoods (see Figure 6), would front on these

roadways. Due to the wide arterial and freeway rights-of-way (minimum 80 feet) separating on- and off-site uses in those areas, no indirect impacts are anticipated as a result of land use incompatibility. (For discussions of other impacts related to land use, see Section II., J. NOISE and Section II., G. VISUAL AND AESTHETIC RESOURCES.)

3. Internal Compatibility of Specific Plan Land Uses

Due to the open-space, roads, parks, and topography which would buffer the various Specific Plan use areas, few conflicts are anticipated to occur between the existing and proposed Specific Plan land uses. There are, however, several existing residential areas and an existing church which would experience a reduction in privacy under the proposed Specific Plan. Additionally, some glare could result from night lighting of the playfield and Village Center, and noise from the Caltrain Maintenance Facility could impact the Chateau La Salle Mobile Home Park. The planned school site could be subject to health risks depending upon the types of future industrial uses located near it, and there are possible impacts related to future expansions of the County Communication or AT&T facilities. These issues are discussed in turn below.

a. Reduced Privacy

The existing Mountain Shadows Mobile Home Park in the southwest corner of the Specific Plan area is bordered by the existing Elk Ridge Estate condominiums, Canoas Creek and the Guadalupe Corridor. The proposed "Lower Hillside at Guadalupe" neighborhood would not be immediately adjacent to it; however, use of an upgraded Narvaez Avenue to provide access to both lower and higher elevation Specific Plan neighborhoods would potentially create additional traffic and noise. These traffic and noise impacts, discussed in subsequent sections, would not be significant. The existing mobile home park and condominium complex would be subject to the extension of Narvaez Avenue along their western boundaries. Any resulting reduction in privacy would be restored by a solid wall or fence along the new roadway.

A new multi-family neighborhood (Lower Hillside at Hillsdale) would border an existing church complex to the south and west. Since the church would be separated in elevation from the future residences which would also be set back from property lines, no land use conflicts such as reduced privacy would occur. Additionally, careful site planning, including the strategic use of fences, walls and/or landscaping

to provide a screening between these properties, would further reduce potential conflicts to the existing church.

The existing single-family homes situated along Carol Drive would be bordered by fifteen additional single-family dwellings. Additional traffic, noise and reduction of privacy may result from the additional homes, especially during construction. However, because the existing homes face northwest away from the proposed development, and because residential densities of the two areas would be similar, there would be no overall land use conflicts or compatibility issues created. Traffic along Carol Drive would be reduced by providing an alternative access from the "north of AT&T at Ridgetop" neighborhood to the County Communications facility, which currently gains access via Carol Drive.

Under the proposed Specific Plan, the Millpond Mobile Home Park would be bordered by open space, a park and by the Curtner Grove neighborhood on the east, and would be subject to added traffic on Canoas Garden Avenue and the extension of Millpond Drive. The extension of Millpond Drive would provide limited access (shuttle bus, bicycle and pedestrian only) to the hilltop community. The existing mobile home park is located in a topographic bowl, with slopes of 15 percent and more rising between it and the proposed upland development. An open space buffer would be maintained, so adjacent conflicts would be minimized. Nonetheless, residents of the Millpond community would be aware of the new limited access road and nearby multi-family residents unless mitigated, as discussed subsequently under mitigation measures.

b. Glare

The proposed Village Center and playfield area could be developed with lights for security or for night playing. However, since these lights would be directed away from proposed residences to avoid potential glare, there would be no potential impact.

c. Noise

Existing single-family residences in the Chateau La Salle mobile home park would continue to be bordered by an existing cemetery (private open space), heavy industrial and mixed industrial/commercial uses, including the previously approved Caltrain maintenance facility. As discussed in Section II., J. NOISE, the train washer could affect residents of Chateau La Salle and any future Specific Plan

residents located within approximately 1,000 feet from the Caltrain facility, unless mitigated as discussed in the Noise section.

d. Schools

An elementary school site is proposed for a central location within the Specific Plan area. The school site would be located lower in elevation than adjacent multi-family areas to the south, and above the proposed industrial areas to the north. Since the school would be sited within 1/4 mile of proposed industrial uses, a Health Risk Assessment would be required under state law (AB3205). The school may be subject to potentially significant impacts from the future industrial uses unless mitigated as discussed in Section II, I. AIR QUALITY.

e. Utilities

The existing AT&T facility has been incorporated into the community plan by surrounding the existing two-acre facility with an additional six acres of park. Similarly, the County Communications facility to the northwest would be buffered on three sides by large single-family lots and on the west with open space. The potential for interference with communication transmissions, as well as health risks from electronic radiation, is discussed in Section II., L. ENVIRONMENTAL HAZARDS. The electromagnetic aspects of both facilities have been investigated, and proposed Specific Plan structures would be located well away from potential sources of electromagnetic radiation. Development proposed under the Specific Plan would not interfere with transmissions from the County communications facility or the AT&T microwave tower.

A proposed water storage tank would be installed in the vicinity of the AT&T facility, which would result in significant visual impacts, as discussed in Section II., G. VISUAL AND AESTHETIC RESOURCES.

f. Commercial

The proposed neighborhood Village Center, which would include retail and office uses, would be an integral part of the hilltop community. Adjoining residences to the west and north would be separated from the center and its delivery areas by local streets, non-residential uses such as the park surrounding the AT&T tower, the civic facility and open space and, thus, would not be adversely affected by the proposed

retail and office uses. Design standards for the retail and commercial uses are outlined in Section 3.2.c of the Specific Plan.

The Specific Plan proposes the incorporation of one "Mom and Pop" retail store (250 to 1,000 square feet in size) for every 600 units. Preferred locations include corners of typical blocks, as well as parcels fronting onto parks. No specific sites have been selected, and flexibility would be used to locate stores when and where they can be shown to be viable. No additional parking would be necessary, as Mom and Pop stores would serve neighborhood residents. The location of the Mom and Pop stores within the high density neighborhoods is intended to promote pedestrian access. Incorporation of Village Center and Mom and Pop retail uses would be considered a less-than significant land use impact with the implementation of the design standards contained in Section 3.2.c of the Specific Plan.

g. Light Industrial

Established light industrial uses along Snell and Hillsdale Avenues would not affect (nor be adversely affected by) the proposed "Lower Hillside at Quarry" neighborhood due in part to the similar intensity of uses proposed, and also because the Hillsdale Avenue right-of-way would separate the existing industrial uses from the new multi-family neighborhood.

h. Heavy Industrial and Combined Industrial/Commercial

The most important separation of uses would occur between the upland residential community and the heavy industrial and industrial/commercial areas proposed for the lower elevation areas along the railroad tracks in the existing quarry area. Upon termination of the quarrying operation, the gradient of the northeastern slope would be considerably steepened. Although the hilltop areas themselves would remain undisturbed by the quarry operation, the steepened slope would effectively separate the hilltop from the leveled areas to the north and east. Thus the hilltop community would be effectively separated from the non-residential area at the base of the slope by the remaining open space on the slopes and by the Vistapark Drive right-of-way.

4. Loss of Mineral Resources

Communications Hill has been designated as an aggregate resource of regional significance by the Surface Mining and Reclamation Act (SMARA) of 1975. The

loss of this resource would be a significant impact. (See Section II., B. Geology and Soils, Loss of Mineral Resources.)

LAND USE MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; A. City Concept; 1. Urban Conservation; Policy:
 2. The City should encourage new development which enhances the desirable qualities of the community and existing neighborhoods.
- Goals and Policies; A. City Concept; 4. Balanced Community; Policies:
 1. The City should foster development patterns which will achieve a whole and complete community in San Jose, particularly with respect to a balance between jobs and economic development on the one hand, and housing resources and a resident work force on the other.
 2. Varied residential densities, housing types and styles should be equitably and appropriately distributed throughout the community and integrated with transportation systems.
- Goals and Policies; B. Community Development; Urban Design; Policy:
 6. Proposed structures adjacent to existing residential areas should be architecturally designed and sited to protect the privacy of the existing residents.
- Goals and Policies; F. Natural Resources; 2. Extractive Resources; Policies:
 1. When urban development is proposed on lands which have been identified as containing economically useable extractive resources, the value of such resources should be taken into consideration.
 2. The City encourages the conservation and development of SMARA-designated mineral deposits wherever feasible.

3. In making land use decisions involving areas which have a SMARA designation of regional significance at the time of consideration of such decision, the City should, in balancing mineral values against alternative land uses, consider the importance of these minerals to their market region as a whole and not just their importance to San Jose.

Specific Plan mitigation

- Distribute housing types and densities, work places and facilities to create a mixed but compatible arrangement of land uses within the Communications Hill Specific Plan area;
- Integrate existing land uses, particularly mobile-home parks and single-family homes, with new land uses, ensuring the viability and compatibility of both;
- Minimize the potential adverse impacts of the Communications Hill area development on the immediate surrounding neighborhood;
- Require a very high level of quality in site planning, architectural design and landscape design for all new projects;
- Ensure the proper transition between areas with different land uses through site development guidelines;
- Arrange housing to minimize any adverse effects from land uses and transportation facilities.

In summary, potentially significant land use impacts related to incompatibility of existing and proposed land uses and loss of privacy would be reduced to less-than-significant levels through implementation of the mitigation measures listed above. Loss of open space would be partially mitigated through incorporation of permanent open space areas, as proposed, but would remain a significant unavoidable impact of the Specific Plan. Loss of mineral resources would be a significant unavoidable impact.

Additional Recommended mitigation

- Provide solid fencing along Narvaez Avenue where it borders existing residential uses;
- Use careful site planning, setbacks and screening to avoid conflicts between the existing church and proposed multi-family areas;
- Provide careful site planning, setbacks and screening to minimize conflicts between the existing Millpond Mobile Home Park and the proposed Curtner Grove neighborhood and the limited-access extension of Millpond Drive.
- Height limitations on structures and siting of water tower to avoid interference with communication facilities.
- Prior to zoning, a study would be conducted to identify alternate aggregate resources to replace the resources on Communications Hill.

B. GEOLOGY AND SOILS

The following discussion of geologic and soils conditions is abstracted from the Preliminary Geological and Geotechnical Investigation Report, Communications Hill, San Jose, California, May 1991 by Terratech, Inc. The full text of the Terratech report is contained in Appendix B.

EXISTING GEOLOGIC CONDITIONS

1. Regional Geology

The geologic setting of the Specific Plan area is shown on Figure 7. Nearly all of the bedrock under Communications Hill consists of Franciscan complex bedrock. This geologic unit consists of serpentinite, sandstone and shale, silica-carbonate, schist, and quartzite that were sheared together in a subduction zone during the Jurassic and Cretaceous Periods, from about 65 million to 195 million years ago. Silica-carbonate rock (hydrothermally altered serpentinite) comprises a small portion of the bedrock, mainly in the existing quarry area. This unit dates from the Tertiary Period (2 million to 65 million years ago) and is a source of mercury ore.

Overlying the Franciscan Complex and silica-carbonate rock are colluvium and several minor landslide deposits from the Holocene Epoch (0-11,000 years ago). Most recently, since 1973, stockpiles of quarry products have been stored in the southwest quarter of the quarry site. Alluvial deposits consisting of gravels and clays of the Holocene Epoch underlie the flat valley floor area surrounding Communications Hill.

Regional geologic structure is characterized by northwest-southeast-trending faults and folds. Many of the faults are known to be active (latest movement during the Holocene Epoch, the last 11,000 years) or potentially active (latest movement sometime during the Quaternary Period, the last 2 million years).

2. Site Geology and Surface Soils Conditions

a. Geologic Units

The geologic units present within the Specific Plan area are discussed below in order from oldest to youngest.



Franciscan Complex. This geologic bedrock unit, which underlies nearly all of the planning area, is informally divided into subunits based on predominant rock type. Two such subunits, a serpentinite subunit and a sandstone-and-shale subunit, underlie Communications Hill. Contacts between the two units are gradational and approximate, due to mixing of sandstone and shale within serpentinite and vice versa.

Franciscan Complex serpentinite, which comprises about three-fourths of the bedrock under Communications Hill, consists primarily of serpentinite but also contains small bodies of sandstone and shale, silica-carbonate, chert, and quartzite. The serpentinite is hard and sheared, and contains varying amounts of chrysotile asbestos. This conclusion is based on studies for the adjacent Route 87 transit corridor which determined that the local serpentinite varies greatly over the hill area from less than one percent to, very rarely, over five percent. Small veins of chrysotile were found in rocks on Communications Hill and soil developed on this unit is generally very thin (about 1 foot). Potential health hazards associated with airborne chrysotile asbestos are discussed in Section II., L. Environmental Hazards.

Franciscan Complex sandstone and shale comprises about one fourth of the bedrock under Communications Hill. It consists primarily of sandstone and shale but also contains small bodies of serpentinite, schist, silica-carbonate, chert, and quartzite. It also could contain very small amounts of chrysotile asbestos, depending on the quantity of serpentinite present within the unit. Soil developed on this unit is generally on the order of a few feet thick, and can be highly plastic and highly expansive.

Silica-Carbonate Rock (Tsc). Silica-carbonate rock comprises a small portion of the bedrock, mainly in the quarry area although small bodies of this rock could be present intermingled with the other rock units outside the quarry. Silica-carbonate rock was produced by alteration of serpentinite by hot groundwater solutions during the Tertiary Period. This rock was mined for mercury at Communications Hill between 1847 and the early 1950s.

Colluvium (Oc). Quaternary colluvium is composed of soil formed by tumbling, creeping, and washing of surficial material down hillsides. It covers natural hillsides nearly everywhere, and collects in deposits several feet thick at the bases of slopes and in swales. Only deposits thicker than a few feet are shown on Figure 7. Colluvium on Communications Hill is generally moderately to highly expansive.

Alluvium (Oal). The flat, valley-floor area surrounding Communications Hill is underlain by Holocene alluvium. It consists of horizontally layered, materials that could range from gravels to clays.

Landslide Deposits (Qls). Three small Holocene landslide deposits, which appear to consist of shallow slumps and soil flows restricted to thick accumulations of colluvium within swales underlain by Franciscan Complex rock were encountered by the project geologist. A map by Cooper-Clark & Associates (1974) shows five additional small landslide deposits, which are also mapped on Figure 7.

Quarry Materials (Qm). The quarry area contains deposits of excavated products and spoils that have been combined under the label quarry materials. Some of these deposits are obvious stockpiles, and there could also be deposits that are not evident from the surface. These deposits, presumably, are expanding, shrinking, and being moved about as part of quarry operations.

b. Geologic Structure (faults and folds)

The serpentinite and sandstone-and-shale subunits of the Franciscan Complex consist of slabs and lenses of rock that were sheared together in a subduction zone during the Jurassic and Cretaceous Periods. There has also been shearing within the subunits. The slabs and lenses are estimated to be inclined between 45 percent and vertical.

The contacts between bodies of serpentinite and the sandstone-and-shale subunit, and shears within the subunits, are planes of weakness that could undergo minor displacement as a result of shaking from an earthquake on some other, nearby fault (see Seismic Hazards discussion which appears later in this chapter). There is no evidence that the fault contacts have ruptured or have accumulated strain since the Cretaceous Period. Fault contacts are discussed further in the section entitled "Faulting and Historic Seismicity" which follows below.

c. Hillsdale Mercury Mine

The former Hillsdale mercury mine, an underground mine with tunnels and shafts, is located in the present Azevedo quarry. The mine was intermittently worked from 1847 to the mid-1940s or early 1950s. Information on underground mine workings dated May 1943 has been transferred to Figure 7. The accuracy and completeness of this survey has not been verified. The 1943 mine survey indicates that mine workings then consisted essentially of two roughly horizontal networks at about elevation 200 and elevation 270. Comparison between the 1943 mine-workings survey and the 1990 topographic map suggests some workings have been removed by quarrying while others are still present. The deepest workings are currently about

100 feet below the ground surface. As quarrying continues more workings might be obliterated.

The mercury is concentrated in a limited area of silica-carbonate rock and is located along a fault contact between serpentinite on the southwest and sandstone and shale on the northeast. The silica-carbonate currently has a maximum thickness of about 50 feet on the site, and tapers out completely to the northwest and southeast.

d. Springs

Individual springs were not mapped for this preliminary study by the project geologist. However, according to previous studies, springs are present along parts of the base of Communications Hill.

3. Faulting and Historic Seismicity

a. Earthquake Faults

Active, potentially active, and inactive faults are present in the region. A map depicting earthquake faults is included in the Terratech Report (See Appendix B, Figure 4). An active fault is defined as one that has ruptured during the Holocene Epoch (the last 11,000 years). A potentially active fault is defined as one thought has ruptured sometime during the Quaternary Period (comprising the Pleistocene and Holocene Epochs, the last 2,000,000 years) but for which it cannot be determined conclusively whether or not rupture occurred during the Holocene. An inactive fault is one that has definitely not ruptured during the Holocene Epoch. The California Division of Mines and Geology (CDMG) is responsible for setting special studies zones along active faults, as mandated by the Alquist-Priolo Special Studies Zones Act (APZ Act) of 1972.

Most earthquakes are caused when built-up strain energy in rocks is suddenly released by rapid rupture along a fault or other plane of weakness within the Earth's crust. Occasionally, during sufficiently strong earthquakes, fault rupture propagates far enough upward to cause displacement of the ground surface, constituting surface fault rupture. Surface fault rupture usually occurs along the traces of known active or potentially active faults.

The San Andreas, Calaveras, and Hayward faults, all of which are known to be active, are the most significant structural geologic features in the region. The San Andreas fault is located about 10 miles southwest of the Specific Plan area. The

Calaveras fault is located about 7 miles to the east, and the Hayward fault is located about 9 miles northeast. Alquist-Priolo special studies zones have been established for all three faults.

The Alquist-Priolo Special Studies Zones Map of the San Jose East Quadrangle, shows no known active faults crossing the Specific Plan area. A City of San Jose (1983) fault hazard map shows an extension of the active Piercy fault crossing northeast of the Specific Plan area, through the Oak Hill Cemetery in a northwest-southeast direction; the basis for this mapped fault location is unknown. A map by the California Department of Water Resources (1975) shows the potentially active Edenvale fault crossing the eastern corner of the Specific Plan area (Capitol Drive-In theater) in a north-south direction; this is based on an offset of buried stream gravel deposits found by correlating well data. No other maps that show the Piercy or Edenvale faults crossing the Specific Plan area are known.

Ground Shaking. The intensity of ground shaking during an earthquake across Communications Hill would be a function of earthquake magnitude, distance to the earthquake epicenter, and local subsurface conditions. The potential causative faults are listed in Table 2 below, along with the Richter magnitude of the maximum predicted earthquake they might generate. Any of these faults could generate an earthquake with smaller Richter magnitude than those indicated.

TABLE 2
EARTHQUAKE FAULTS

FAULTS	DISTANCE TO SPECIFIC PLAN AREA (MILES)	MAXIMUM PREDICTED EARTHQUAKE (Richter magnitude)
San Andreas	10.0	8.3
Calaveras	7.0	7.7
Hayward	9.0	7.7
Silver Creek	2.0	7.3
Evergreen	4.1	7.1
Shannon	4.4	7.0
Piercy	1.5	6.9

Recurrence intervals for these maximum predictable earthquakes can only be roughly estimated. Present knowledge of regional tectonics suggests that maximum predictable earthquakes on the San Andreas, Calaveras, and Hayward faults might occur every 100 to 1000 years. Recent local studies of the San Andreas fault, however, indicate that the recurrence interval on the north coast segment of this fault is around 200 years. Recurrence intervals for maximum credible earthquake on the Evergreen, Silver Creek, Shannon, and Piercy faults would be longer.

Duration of strong shaking (defined as acceleration equal to or greater than 0.05g) is approximately related to distance from the causative fault and earthquake magnitude. Strong shaking of up to 35 seconds has the potential to occur during an 8.5 magnitude earthquake centered on a fault six miles from the site.

The epicenter of the Loma Prieta earthquake of October 17, 1989, was located in northeastern Santa Cruz County, about 16.5 miles southeast of the subject site. The earthquake occurred on the San Andreas fault and registered 7.1 on the Richter scale. A strong motion recording station near the Route 101/280/680 interchange located three miles north of the Specific Plan area recorded a peak horizontal ground acceleration of 0.18g (i.e., 0.18 times the force of gravity) and a peak vertical ground acceleration of 0.08g. A station near the Santa Teresa Hills four miles south of the site recorded a peak horizontal ground acceleration of 0.28g and a peak vertical ground acceleration of 0.22g. Peak horizontal ground acceleration at Communications Hill during the Loma Prieta earthquake is estimated to have been about 0.18g. Ground shaking intensity here measured VI on the Modified Mercalli intensity scale. There are no recorded reports of ground deformation on or in the vicinity of Communications Hill in the literature on the Loma Prieta earthquake.

b. Fault Contacts

The contacts between the two subunits in the Franciscan Complex are also faults, as are the shears within the subunits. These faults are probably ancient and not building up strain, but they are planes of weakness that can rupture as a result of strong ground shaking during an earthquake on an unrelated fault, such as the San Andreas or Hayward fault. Such an event is called sympathetic rupture, which can cause some displacement of the ground surface. This hazard is probably restricted to the straighter, better-defined fault contacts and shears, which can be distinguished by visible lineaments along the ground surface. One such lineament is present within the Specific Plan area, trending northwest-southeast about 700 feet southwest of the railroad cut in the northern portion of the site. The precise location of this lineament is unknown, so a broad band (200 feet in width) covering the lineament is shown on Figure 7.

GEOLOGIC IMPACTS

This portion of the EIR addresses known geologic and geotechnical hazards, as well as potential construction difficulties posed by on-site geologic conditions, based on what is currently known about the Specific Plan area, including those with low risk of occurrence. Potential hazards and problems should not be taken out of context without understanding their risk of occurrence and possible mitigation measures. A number of the hazards and problems discussed will require further investigation in conjunction with project-specific development proposals to be prepared subsequent to the subject General Plan Amendment.

The main geological hazards at the site are from ground shaking and mine collapse. Eleven additional moderate hazards are also present on the site. Table 3 summarizes the discussion of geologic hazards and construction difficulties in the Communications Hill Specific Plan area, and lists which hazards will require additional studies prior to project development.

1. Seismic Hazards

Seismic (earthquake) hazards to structures consist of ground deformation (surface fault rupture), ground shaking and flooding. Ground shaking usually causes most damage during earthquakes. Surface fault rupture can occur along the responsible fault itself, but most deformation is a secondary result of ground shaking (e.g., landsliding, liquefaction, seismic settlement). Flooding can also be a secondary effect of ground shaking where water sloshes within a body of water, or where a tank, dam or dike breaks.

a. Surface Fault Rupture

Strain release. The active Piercy fault trends in the direction of Communications Hill, but the location of its extension into the Specific Plan area, if any, is not known. The Edenvale fault, which the California Department of Water Resources believes crosses the drive-in theater at the southeast corner of the planning area, is not known to be sufficiently active to warrant additional investigation. The hazard posed by surface fault rupture along active or potentially active faults is a less-than-significant impact in the Communications Hill Specific Plan area, and no mitigation is indicated.

TABLE 3

SUMMARY OF GEOLOGIC HAZARDS AND DIFFICULTIES

HAZARD OR DIFFICULTY	SIGNIFICANCE ¹	MITIGATION REQUIRED	ADDITIONAL STUDY NECESSARY
Seismic Hazards:			
Ground shaking	High	Yes	No
Surface fault rupture	Medium ²	Maybe ²	Yes
Fracturing, folding	Low	No	No
Landsliding	Medium	Yes	Yes
Liquefaction	Medium ²	Maybe ²	Yes
Settlement	Medium ²	Maybe ²	Yes
Miscellaneous fissuring	Low	Yes	No
Flooding	Low	No	No
Landsliding	Medium	Yes	Yes
Subsidence and settlement:			
Fluid extraction	Low	No	No
Mine collapse	High	Maybe ²	Yes
Soil compression	Medium	Maybe ²	Yes
Soil expansion	Medium	Yes	Yes
Erosion	Medium	Yes	Yes
Loss of mineral resources	Low	No	No
High groundwater	Medium ²	Maybe ²	Yes
Excavation difficulties	Medium	Maybe ²	Yes
Hazardous natural materials ³	Medium	Yes	Yes
Footnotes: 1) Significance is judged by qualitatively considering potential damage and chance of occurrence. 2) Heavily dependent on outcome of additional study. 3) Refer to Section II., L. Environmental Hazards. Source: Terratech, Inc., 1991			

Sympathetic rupture. The risk of sympathetic rupture is low, and the maximum expected magnitude of surface displacement is probably on the order of one or two feet. Nevertheless, the area of residential development planned in the vicinity of this lineament (the northern portion of the "North of AT&T at Ridgetop" neighborhood) would be explored (by way of backhoe pits and trenches) to confirm and locate shear zones prior to site development. Upon determination of the fault contact locations, the Specific Plan layout would be modified accordingly. Streets and utility lines also have the potential to be ruptured by ground displacement. Sympathetic rupture is considered to be a potentially significant impact.

b. Ground Shaking

Seismic (earthquake) hazards to structures consist of ground shaking, ground deformation, and flooding. Ground shaking usually causes most damage during earthquakes. Ground deformation can occur along the responsible fault itself, but most deformation is a secondary effect of ground shaking resulting from landsliding, liquefaction, settlement, lateral spreading, miscellaneous fissuring or inundation. Ground shaking during a major earthquake could also be one factor in initiating landsliding on Communications Hill, as discussed in a later portion of this section entitled Slope and Foundation Instability. Earthquake-induced effects, all of which are considered potentially significant due to their potential for destroying life and property, are discussed in the following subsections.

Liquefaction. Liquefaction during earthquakes results in loss of shear strength in soil and consequent transformation in behavior from a solid to a liquid. Liquefaction most commonly occurs in saturated, loose, poorly graded, clean sands during major earthquakes. Prior studies indicate the likelihood of encountering liquefiable soils in alluvial areas surrounding Communications Hill are moderate to high. Options for mitigating the hazard posed by liquefaction are presented in the discussion of mitigation measures.

Lateral Spreading. Lateral spreading is a specific type of landslide usually caused by liquefaction adjacent to stream banks or open faces. There could be a high potential for lateral spreading adjacent to Canoas Creek which runs across the western corner of the Specific Plan area. Mitigating the hazard posed by lateral spreading is accomplished in conjunction with mitigating the hazard of liquefaction, as described subsequently in the mitigation section.

Seismic Settlement. Ground shaking during a major earthquake could result in land settlement within parts of the Specific Plan area underlain by alluvium. The hazard

posed by settlement is discussed below in a later subsection entitled Subsidence and Settlement.

Miscellaneous Fissuring. Lurch cracking in soil is possible during a strong nearby earthquake, especially where weak soil is present on or adjacent to a slope. Such conditions do not appear to be prevalent in the Specific Plan area. Bedrock cracking is locally possible anywhere on Communications Hill. While lurch cracking and bedrock cracking are potentially damaging, the extent of such miscellaneous fissuring is not likely to be great.

Inundation. Seismic impacts include the potential for rupture or failure of the 2.2 million gallon water tank proposed to be located on the hill adjacent to the AT&T facility. A catastrophic risk analysis would occur at the project-specific stage to assess this potentially significant impact.

The part of the Specific Plan area lower than approximately elevation 150 feet lies in the zone that could be flooded by failure of Anderson dam which is located about 12 miles to the southeast. The drive-in movie theater and other commercial/industrial areas located east of the SP railway tracks are lower than 150 feet in elevation, as is the developed residential area along Canoas Creek. The Specific Plan area is not in a location that could be affected by tsunamis, dike failure, seiches, or landslide splashes and thus no mitigation would be necessary for these types of hazards.

2. Slope and/or Foundation Instability

Landsliding is most likely to occur on and in the vicinity of existing landslide deposits. There appear to be only three small and five very small landslide deposits within the Communications Hill Specific Plan area. Movement appears to consist of shallow slumping and soil flow restricted to thick accumulations of colluvium. Six of the eight mapped landslide deposits are located in areas proposed to be developed, which could pose a potential hazard unless mitigated as discussed subsequently in the mitigation section.

Landsliding is also possible in other hillside areas where no such deposits have been mapped. Prior studies classify the hazard of landslides on Communications Hill as generally moderate. Significant local variations are present. Factors that increase susceptibility to landsliding include: (1) weak underlying material; (2) bedding planes, shear surfaces, or fracture surfaces with orientations similar to a natural slope or cut slope; (3) concentration of groundwater or surface water; and (4) changes in topography by loading a slope with fill or excavating steep slopes.

Material strength of the on-site geologic units are summarized in the following statements. The colluvium found on-site is generally weak. Franciscan Complex sandstone and shale are generally moderately weak to moderately strong. Silica-carbonate rock and Franciscan Complex serpentinite are generally strong. Structural fill can be susceptible to slumping if not designed and constructed correctly. Landsliding is a potentially significant impact unless mitigated as discussed subsequently in the mitigation section.

3. Land Subsidence and Ground Settlement

a. Fluid Extraction

Extraction of groundwater in Santa Clara caused significant subsidence in valley floor areas surrounding Communications Hill between 1934 and 1967. Subsidence within the Specific Plan area was minor, less than 1/2 foot. Subsidence due to water extraction was halted as of 1971 through a water-import program and has been monitored since by government agencies. No mitigation is required.

b. Mine Collapse

Mine collapse is a potential hazard in the area of the former Hillsdale mercury mine. Figure 7 identifies the extent of currently mapped tunnels. "Sinkholes" are present above mine portals in older aerial photographs. The probability of collapse above the former mine workings is high, and the potential for damage to buildings and utilities is high, and thus could pose a potential significant hazard unless mitigated as discussed subsequently.

c. Soil Compression

Subsurface materials at the site are expected to have widely varying compressibility. Bedrock materials generally have low compressibility. Colluvium and alluvium generally possesses low to moderate compressibility. Structural fill can have variable compressibility depending on its thickness and how the fill is constructed. Quarry materials will have a quite variable, and possibly very high, compressibility. Highly compressible subsurface materials have the potential to cause ground settlement with resultant damage to structures. This is considered a potential significant impact unless mitigated with the standard engineering practices, described subsequently in the mitigation discussion.

d. Soil Expansion

The colluvium which mantles Communications Hill is suspected to have moderate to high potential for shrinking and expanding with changes in water content. Alluvium surrounding Communications Hill could also contain expansive clay. Expansive soils have the potential to dislocate foundations, roads and utilities. This is considered a potential significant impact unless mitigated with the standard engineering practices, as described subsequently in the mitigation discussion.

4. Erosion

No evidence of unusual erosion was encountered and no significant unprotected watercourses are present at the site. Serpentine and silica-carbonate rock have low erosion potential, the sandstone-and-shale unit has moderate erosion potential, and colluvium has high erosion potential. Grading, alteration of runoff, and the increase of impervious surface area will increase the potential for erosion locally. This is considered a potential significant impact unless mitigated with the standard engineering practices, described subsequently in the mitigation discussion.

5. Loss of Mineral Resources

Communications Hill has been mined for mercury historically, but mining activity ceased in the early 1950s, presumably because it was economically infeasible to continue. Serpentine has been quarried as a construction material (rock and aggregate) from part of Communications Hill for over 20 years. Most of the remainder of the hill is composed of serpentine, which could be considered a potential mineral resource. Asbestos does not appear to be present in economic concentrations.

Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board has designated the entire Specific Plan area west of the railroad tracks as containing mineral deposits which are a regionally significant source of construction aggregate materials. State and City policies indicate that the local and regional value of such extractive resources must be taken into consideration when urban development is proposed upon land with economically usable mineral resources. Further, City policy "...encourages the conservation and development of SMARA-designated mineral deposits whenever feasible."

At this time, an application for a five-year extension of the 1971 Azevedo Quarry permit is under County review. An additional application, to expand the existing quarry excavation area, is being prepared but has not been submitted to the County. The grading and reclamation plan for the proposed quarry expansion would be prepared in full consideration of grading and landscape plans for the Specific Plan. The final grading for the quarry would approximate the rough grading for the school/playfield area and the terraces overlooking the quarry. As discussed in the Specific Plan (see Vistapark Terraces), the final quarry slopes would be benched and planted with trees in conjunction with the quarry reclamation.

Considering the abundance and accessibility of rock, aggregate and mercury materials throughout California, as well as the coordination between the Specific Plan and the proposed quarry extension and modification process, the development of Communications Hill as proposed would not represent a significant impact to the extraction of mineral resources (see Section I. F. PLANS, POLICIES AND REGULATIONS, concerning mineral extraction policies).

6. High Groundwater

Springs are reportedly present around parts of the base of Communications Hill, which could pose localized problems associated with high groundwater. High groundwater can decrease slope stability, decrease foundation bearing capacity, cause wet floors, basements, and crawl spaces, limit landscaping options, and hamper construction. This is considered a potentially significant hazard unless mitigated as described subsequently in the mitigation discussion.

7. Excavation Difficulties

Rippability studies with seismic-refraction surveys were performed in the northern part of Communications Hill in 1981 and 1986 (see Figure 7). ("Rippability" is the capability of rock to be broken into pieces by a tractor pulling teeth that penetrate the ground several inches to a few feet.) The two studies generally revealed rippable rock down to depths of about 30 feet, and less rippable to unrippable rock below. The conclusions regarding rippability in the northern part of Communications Hill and in the quarry area can be extrapolated to the remainder of the hill for this level of project planning.

Rippability of rock is partly a function of the rock's weathering and fracturing characteristics. Weathering, which increases rippability, decreases with depth below the ground surface. Some of the deeper proposed excavations will probably extend

into less-weathered, less-rippable bedrock, and in these areas blasting would be required. Fracturing also increases rippability; however, experience with Franciscan Complex rock in Santa Clara County has shown that fracturing is highly variable and random. Noise impacts associated with the potential blasting are discussed in Section II., J. Noise.

In summary, the risk of damage or impact to structures or individuals due to geologic hazards within the Specific Plan area include the following potentially significant impacts: earthquake related hazards (sympathetic rupture, ground shaking, liquefaction and lateral spreading, miscellaneous fissuring and inundation), landslides, mine collapse, soil compression, soil expansion, erosion, loss of mineral resources, high groundwater, and excavation difficulties.

GEOLOGIC MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; G. Hazards; 1. Soil and Geologic Conditions; Policies:
 1. The City should require soils and geologic review of development proposals to assess such hazards as potential seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, erosion and sedimentation in order to determine if these hazards can be adequately mitigated.
 2. The City should not locate public improvements and utilities in areas with identified soils and/or geologic hazards to avoid any extraordinary maintenance and operating expenses. When the location of public improvements and utilities in such areas cannot be avoided, effective mitigation measures should be implemented.
 3. In areas susceptible to erosion, appropriate control measures should be required in conjunction with proposed development.
 5. The Development Review process should consider the potential for any extraordinary expenditures of public resources to provide emergency services in the event of a manmade or natural disaster.
 6. Development in areas subject to soils and geologic hazards should incorporate adequate mitigation measures.

8. Development proposed within areas of potential geological hazards should not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties.
- Goals and Policies; G. Hazards; 2. Earthquakes; Policies:
 1. The City should require that all new buildings be designed and constructed to resist stresses produced by earthquakes.
 3. The City should only approve new development in areas of identified seismic hazard if such hazard can be appropriately mitigated.
 4. The location of public utilities and facilities, in areas where seismic activity could produce liquefaction should only be allowed if adequate mitigation measures can be incorporated into the project.
 5. The City should continue to require geotechnical studies for development proposals; such studies should determine the actual extent of seismic hazards, optimum location for structures, the advisability of special structural requirements, and the feasibility and desirability of a proposed facility in a specified location.
 6. Vital public utilities as well as communication and transportation facilities should be located and constructed in a way which maximizes their potential to remain functional during and after an earthquake.
 - Goals and Policies; F. Natural Resources; 2. Extractive Resources; Policies:
 1. When urban development is proposed on lands which have been identified as containing economically useable extractive resources, the value of such resources should be taken into consideration.
 2. The City encourages the conservation and development of SMARA-designated mineral deposits wherever feasible.
 3. In making land use decisions involving areas which have a SMARA designation of regional significance at the time of consideration of such decision, the City should, in balancing mineral values against alternative land uses, consider the importance of these minerals to their market region as a whole and not just their importance to San Jose.

Specific Plan mitigation

- None

Other Program mitigation

- In accordance with SMARA, the City may cause to be prepared an evaluation to ascertain the significance of the mineral deposits located in the planning area prior to approving uses which would prevent mineral extraction on Communications Hill. The evaluation results shall be transmitted to the State Geologist and the Board.

In summary, the risk of damage or impact to structures or individuals due to geologic hazards within the Specific Plan area would be reduced to less-than-significant levels with the application of the mitigation measures described above.

Additional Recommended mitigation

- Sympathetic Rupture. The one fault contact lineament (trending about 700 feet southwest of the railroad cut) would be explored through the use of backhoe pits and trenches to confirm and locate shear zones prior to site development. If a shear zone is located, the hazard would be mitigated by establishing a setback zone for structure for human occupancy, and modifying development plans accordingly. It would also be possible to modify or stiffen foundation and floor systems to tolerate or resist larger than normal amounts of ground movement that might occur near the lineament. Important utilities could be provided with flexible couplings across such a zone. No exploration or mitigation along other fault contacts is believed to be warranted. The hazard of sympathetic rupture across roadways cannot be mitigated; instead, localized damage to roads would be repaired.
- Ground Shaking. Ground shaking and resultant lateral and vertical loading of structures would be considered in design of proposed improvements. Embankments, fills and structures would be engineered and constructed in accordance with current Uniform Building Code and seismic design procedures.
- Liquefaction and Lateral Spreading. Potentially liquefiable soils would be densified by pile driving, vibroflotation, constructing stone columns or dynamic compaction; alternatively, areas found to have potential for liquifaction would be avoided.

- Miscellaneous Fissuring. Structures would be set back from the tops of slopes (which would also be part of mitigating the hazard from landslides).
- Inundation. A catastrophic risk assessment would be undertaken at the project-specific stage to assess risks and identify mitigations related to the proposed water tank.
- Slope and/or Foundation Instability. Landslides would be removed and repaired, or deposits would be stabilized by constructing walls, outstressing, dewatering, or otherwise modifying local conditions and topography. Mitigating the potential hazard posed by landsliding in areas not located on or near landslide deposits would consist of incorporating routine measures into grading, drainage, and foundation construction, and setting back structures from slopes. Measures would be specified in project-level foundation reports required prior to site development.
- Mine Collapse. In order to locate all of the mine tunnels of the former Hillsdale Mercury mine, a mine survey showing all the workings created through the history of the mine or special geophysical survey to locate any unknown tunnels would be undertaken prior to development in the mine vicinity. If there are tunnels or other mine works remaining in proposed development areas, special subsurface studies would be undertaken to provide determinations of safe cover thicknesses. Such geophysical work would utilize borehole seismic data, developed by drilling near the mines and setting very small charges at the bottoms of the drill holes at elevations lower than the mines, and analyzing the way sound travels from the charges to listening devices placed on the ground surface. Mitigation would consist of stabilizing, lining or filling workings which are found to be unstable. With the application of some combination of the above mitigation measures, any potential hazard would be reduced to less-than-significant levels. A mitigation plan would be developed at the project stage based on the results of the above studies.
- Soil Compression. Excavation and re-compacting of quarry stockpiles and soils distributed or loosened by quarry operations would be accomplished as a part of reclamation of the quarry site as necessary. Mitigation of potential soil compression impacts would consist of proper design and construction of fill and foundations. Preloading, densifying, replacing or modifying soil would provide mitigation in areas found to be subject to unacceptably large amounts of compression.

- Soil Expansion. Mitigation of this potential hazard would consist of routine measures for proper design and construction of building foundations.
- Erosion. Mitigation of potential erosion hazards would consist of routine measures for hillside grading and control of surface drainage through design and installation of adequate storm drain systems (see also Section II., D. WATER QUALITY).
- High Groundwater. In the event development near springs is not avoidable, mitigation would consist of installing subdrains.
- Excavation Difficulties. Construction difficulties associated with excavating hard rock could be reduced by planning shallow rather than deep excavations and trenches. Any necessary blasting would require a permit from the City of San Jose which would provide for appropriate health and safety precautions.

C. FLOODING

The following discussion was prepared by Nolte and Associates Water Resources Division in September 1991.

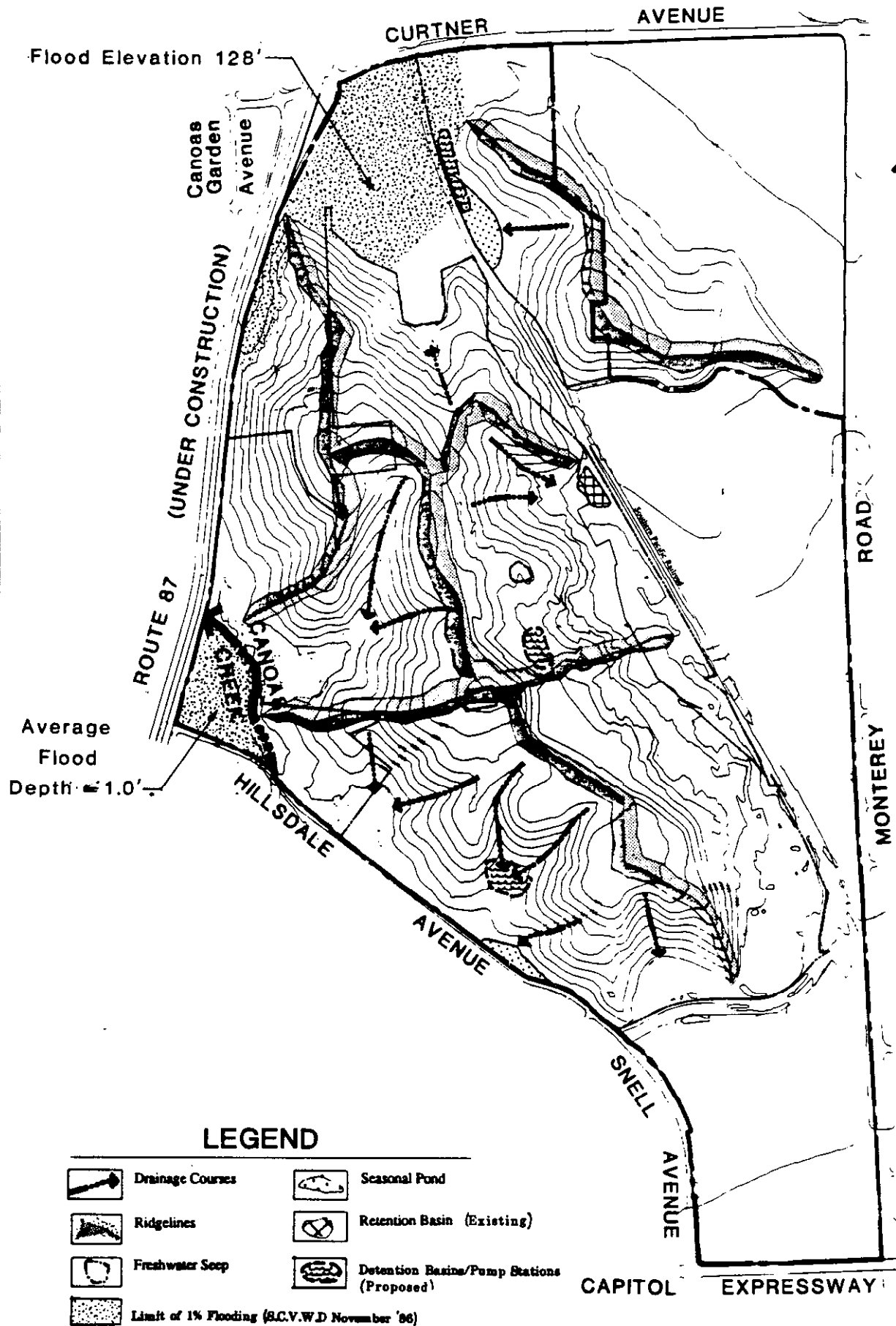
EXISTING CONDITIONS

Communications Hill is located in south-central San Jose within the watersheds of three major streams: Coyote Creek; Canoas Creek; and the Guadalupe River. The Specific Plan area drainage basin is about 716 acres, with about 172 acres draining eastward to the Coyote Creek watershed, 249 acres south-westward to Canoas Creek, and 295 acres directly to the Guadalupe River to the northwest (see Figure 8). As percentages of the respective watersheds, these figures translate to about 0.1, 2.1, and 0.5 percent of the Coyote, Canoas, and Guadalupe watersheds, at the locations where drainage from the project site enters the streams. Canoas Creek flows into the Guadalupe River near the northwestern corner of the planning area. Both Coyote Creek and the Guadalupe River drain northward to San Francisco Bay.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the City of San Jose and for Santa Clara County Unincorporated Area, both dated August 2, 1982, designate the majority of the planning area as Zone D: "areas of undetermined, but possible, flood hazard." The exception to this is adjacent to the northeast portion of the site, known as the "Curtner Grove Neighborhood," which lies partially within a Zone AH: "areas of 100-year shallow flooding where depths are between one and three feet, with a base flood elevation of 128 feet, NGVD (National Geodetic Vertical Datum)." However, it appears that most of the Specific Plan area is above this elevation.

The southwest corner of the Specific Plan area is traversed by Canoas Creek, which does not have sufficient capacity in this reach to contain the 100-year flood flows. Flood maps for this area show that under existing conditions significant flooding in the overbank area opposite Communications Hill would occur during the 100-year event.

In addition to the flooding issues outlined above, there is a local drainage problem in the general area. According to the City of San Jose Public Works Staff, the existing Millpond Mobile Home Park has been subject to flooding due to the inadequacy of the on-site storm drainage system. The system draining the site terminates with a flap gate at its outfall into the Guadalupe River. When the water surface is high enough in the River, the flap gate remains closed, thus not allowing the local drainage from the Millpond area to escape.



DRAINAGE AND FLOODING

FIGURE 8

Historical and recent flooding has occurred along portions of both Coyote Creek and the Guadalupe River downstream of the Communications Hill area. The Santa Clara Valley Water District (SCVWD) has two recent publications both titled "Report on Flooding and Flood Related Damages, Santa Clara County." One report is for the period of January 1 to April 30, 1982, and the other is for the period of January 1 to April 30, 1983. These reports describe the flooding from Coyote Creek and the Guadalupe River, downstream of the Specific Plan area.

These reports indicate that widespread flooding from Coyote Creek occurred in the North San Jose area in both 1982 and 1983. In 1982, approximately 800 acres were flooded between Coyote Creek and the Guadalupe River from Agnews State Hospital to the Leslie Salt Ponds. In 1983, approximately 4,000 acres were flooded from Montague Expressway to the Leslie Salt Ponds. The reports also state that flooding occurred from the Guadalupe River during both years in the vicinity of Alma Street. In both years, approximately 15 acres were flooded. These historical accounts indicate that significant flooding risks already exist on the streams which receive runoff from Communications Hill, for events much smaller than the 100-year event.

FLOODING IMPACTS

A portion of the "Curtner Grove" neighborhood would be subject to flooding during a 100-year flood. The City FEMA ordinance requires that all new housing be constructed such that the lowest floor elevation is at or above the 100-year base flood elevation as shown on the effective FEMA mapping, or above community established base flood elevations where no elevation is given on the effective FEMA maps. This is considered a potentially significant impact unless mitigated as described subsequently in the discussion of mitigation measures.

Further impacts to the local drainage problem in the Millpond Mobile Home Park would be avoided providing that all new development in the vicinity be designed to have its drainage conveyed away from this area. Because the use of the mobile home park on-site storm drainage system would thus not be needed for drainage of additional area runoff which would be generated by upstream development under the Specific Plan, this impact would be less-than-significant.

The development of the Specific Plan area would cover approximately 50 percent of the existing soil with impervious surfaces (roads, driveways, roofs, etc.) which would cause increases to the peak flowrate and volume of runoff, relative to existing conditions. To evaluate the impacts on peak flowrate and volume of runoff due to the proposed development, the SCVWD's rainfall/runoff model (HEC-1) for the

Guadalupe River and Canoas Creek watersheds was obtained from the District's chief hydrologist, Abdullah Saah. Modifications to the model to represent the proposed development were fully coordinated with Mr. Saah, to ensure that the results of these preliminary analyses would be credible in the judgment of the District. The preliminary analyses indicate that peak flowrate from the site would increase by about 20 cubic feet per second (cfs) to the Canoas Creek watershed, and by about 10 cfs to the Guadalupe River watershed in the immediate area of the project site for the 100-year flood event. This represents an increase of about one percent to Canoas Creek and less than 1/2 percent to the Guadalupe River. It is estimated that similar increases would be expected from the sub-basins which are tributary to the Coyote Creek watershed.

The SCVWD has stated that no increase in runoff from development of the Communications Hill site would be acceptable during the 100-year flood event, relative to existing conditions. Due to the fact that some downstream reaches of these streams are already inadequate for flood events smaller than the 100-year flood event, this same restriction would also be applied to more frequent flood events. Another reason for this restriction is that the 100-year flood design flow rates used to size existing downstream improvements, and downstream improvements currently under construction, on both Coyote Creek and the Guadalupe River, were based on the City of San Jose's 1976 General Plan. This plan did not anticipate that Communications Hill would be developed. Therefore, if cumulative flow increases due to development were allowed without mitigation, increased downstream flooding could occur in areas already thought to be protected from the 100-year flood event.

The preliminary analyses indicate that the proposed development of the Specific Plan area has the potential for increasing the 100-year peak flow rate on Canoas Creek by about 20 cubic-feet-per-second (cfs), and by about 10 cfs on the Guadalupe River. Similar increases would be expected for Coyote Creek. As stated above, widespread flooding has already occurred from downstream reaches of Coyote Creek and the Guadalupe River for events smaller than the 100-year event. Therefore, there exists the potential for increasing downstream flooding due to the proposed Specific Plan development. It should be noted that estimated increases to peak flow rates represent less than 1 percent of the total peak flow rates on the main streams. For this type of hydrologic analysis, a variation of plus or minus twenty percent is considered within the realm of accuracy. However, these impacts are considered potentially significant because the SCVWD considers any increase in peak flow of the 100-year flood event unacceptable.

One possible solution to prevent this from occurring would be to use detention basins to retain all additional peak runoff resulting from the development on-site until after the peak of hydrographs in the receiving creeks have passed. Preliminary

calculations indicate that a total storage volume of about 48 acre-feet for the Canoas watershed and 16 acre-feet for the Guadalupe watershed would be needed to provide detention of added peak runoff. A comparison of the HEC-1 model for the proposed condition including such detention facilities with the SCVWD's model conditions under the 1976 General Plan, indicates that the proposed detention facilities would provide full mitigation of the increased peak flowrates.

The exact location, capacity and dimensions of the drainage facilities would be determined by additional analyses, which would occur at the project-specific development stage. This information would be contained in a drainage plan to be submitted to the Department of Public Works for review and approval at that time. Detention facilities would also be needed to mitigate the increased flows from the sub-basins tributary to Coyote Creek. It is estimated that a 20 acre-foot detention basin would provide the needed mitigation for the Coyote Creek watershed. A preliminary investigation of site conditions within the Specific Plan area indicated that there do not appear to be any physical constraints to the creation of the required detention basins in the general locations where they would be needed (see Figure 8).

Runoff would be directed to the detention basins, to wait until the peak flow has passed on the receiving stream. Pumping facilities would be required to drain the detention basins in order for the storage volume to be available for sequential storm events. It is estimated that two 25-cfs pumps would empty the smaller basins within about 4 hours and the larger basin within about 8 hours. Outflow from the pumps would be discharged through the proposed storm drainage system to the streams. These estimates were based on the preliminary grading plan for the proposed development, and would need to be refined as the plans for project-specific developments are prepared.

In summary, the risk of flooding impact to structures due to placement of residences within existing 100-year flood areas and due to increased downstream flows is considered a potentially significant impact unless mitigated as discussed below.

FLOODING MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; G. Hazards; 3. Flooding; Policy:
 1. New development should be designed to provide protection from potential impacts of flooding during the "1%" or "100-year" flood.

Specific Plan mitigation

- Ensure that services of surrounding neighborhoods are not adversely impacted by development within the Specific Plan area.

Other Program mitigation

- Enforcement of the City's FEMA ordinance to ensure new housing is constructed such that the lowest floor elevation is at or above the 100-year base flood elevation.
- The exact location, capacity and dimensions of the drainage facilities would be determined by additional analysis which would occur at the project-specific development stage based upon drainage plans submitted to the Department of Public Works for review and approval.

In summary, the potential flooding and drainage impacts within the Specific Plan area would be reduced to less-than-significant levels with the implementation of the mitigation measures listed above.

D. WATER QUALITY

EXISTING CONDITIONS

As discussed in the preceding section on flooding, the Specific Plan area is located within three drainage basins - Coyote Creek, Guadalupe River, and Canoas Creek (which flows into the Guadalupe River), as shown on Figure 8. Water quality conditions within the reaches of these local waterways are not well documented, and little, if any quantitative water quality data have been reported.

Under current conditions, Coyote Creek, Canoas Creek (which is channelized in the vicinity of the Specific Plan area), and the Guadalupe River receive pavement runoff from the surrounding City of San Jose incorporated area via culverts and ditches which convey stormwater directly to the creek channels at numerous locations. The main pollutant constituents of this runoff are hydrocarbons (oil and grease from vehicle leaks), heavy metals such as chromium, cadmium, copper, lead, mercury, nickel and zinc (from vehicle exhaust, weathered paint and metal plating, motor oils, corrosion-control compounds, and tire compounds). Canoas Creek also receives groundwater which has been discharged from the IBM and Fairchild cleanup projects to the southeast. Runoff from unincorporated areas of Communications Hill is currently directed by swales and ditches to retention basins where water remains until it soaks into the ground or evaporates.

Due to the seasonal drought conditions typical of the local climate, "nonpoint" sources of water quality contamination normally accumulate until the first rains in the fall, and then are flushed through the tributary streams and storm drains into Coyote Creek, Canoas Creek and the Guadalupe River. The resulting high concentrations or pollutant "loadings" can exceed water quality standards and can be toxic to aquatic organisms at very high concentrations. Later in the rainy season, stormwater quality is likely to be much improved after the initial concentrations of accumulated pollutants have been washed away.

Since the mid-1980s, nonpoint source pollutants have increasingly become the focus of concern at the Federal, State and local levels. In accordance with resulting mandates from the U.S. EPA and the State Water Resources Control Board, the Santa Clara Valley Water District (SCVWD) together with the County of Santa Clara and the 13 cities in the South Bay area, have initiated the Santa Clara County Nonpoint Source (NPS) Pollution Control Program. This program currently includes an illicit connection surveillance program, public education activities and a regulation implementation study plan. The study phase of the program is still in progress. Its primary objectives are to identify and characterize sources of nonpoint pollution, develop a program to control nonpoint sources based on best available technology

and to develop an implementation program. Much of the implementation will be left to the participating cities, particularly with respect to land use controls. The runoff from roadways is just beginning to be studied by the Water District. No formal requirements for controlling nonpoint source runoff from private lands or public roadways is in place at this time (apart from construction-related activities discussed below). However, the Santa Clara NPS program is currently in the process of developing such requirements. In the meantime, the Water District is encouraging the application of "Best Management Practices" or a variety of techniques available which are published by regulatory agencies such as FHWA and ABAG. Commonly applied control measures include regular street sweeping (already required by the City of San Jose for construction projects), inclusion of detention/sediment basins with new development, and regular cleaning of storm sewers.

In November 1990, the U.S. EPA published a new rule under the Clean Water Act which requires the issuance of storm water discharge permits for industrial facilities or construction projects larger than five acres which are started or still in progress after November 18, 1991. Instead of issuing permits for individual projects, the Regional Water Quality Control Board will issue general permits prior to November 18. To comply, the owner or operator of a project must: 1) notify the municipality which operates the storm drains that receive runoff from the site (or notify the Santa Clara Valley NPS Pollution Control Program); (2) file a Notice of Intent (NOI) to comply with the permit conditions at least 90 days prior to the date of construction. As of this writing, the procedure for filing and complying are still under development by the Regional Board.

The future construction of Vistapark Drive and other local streets and parking areas may be subject to forthcoming requirements for nonpoint control to be promulgated as part of the Nonpoint Source Pollution Control Program discussed above. Future projects would be subject to nonpoint pollution regulations in effect at the time individual development projects occur. If so, those projects would incorporate such mitigation measures as appropriate to control their share of cumulative nonpoint pollutant loadings. As discussed above, the specific measures which may be required by the City and/or the Water District to control nonpoint runoff have not yet been established.

ENVIRONMENTAL IMPACTS

1. Construction Impacts

A major potential for impacts to surface water quality in Coyote Creek, Canoas Creek and the Guadalupe River would be during construction of future projects on

Communications Hill, particularly during rough grading. Although no construction activities would occur in the creek or river channels, there is the potential for soil erosion caused by sheet flow drainage across unvegetated slopes or wind erosion during earth moving which could result in short-term increases in turbidity and sedimentation.

Discharge of hydrocarbons and other toxic substances can also occur during construction if fuels, oils or wastewater from uncontrolled equipment washing or sanitary facilities are spilled at staging areas located too close to surface waters.

2. Operational Impacts

Operationally, the project would help prevent potential erosion during major flooding events by locating the Specific Plan development completely outside of floodways. Thus, the potential for scouring and erosion of adjacent exposed banks during major flooding events would be avoided. Similarly, if any storm water detention basins are to be built within the planning area, they would be located outside the creek channels, avoiding the potential for localized changes in channel velocity which can also result in minor erosion in the stream channel.

Under operational conditions, the increase in roadway surfaces within the Specific Plan area would result in additional roadway runoff entering the three affected drainage ways, including entrained hydrocarbons and trace metals. There is also the potential for increased erosion resulting from increased runoff flows from paved areas across unpaved areas; however, unpaved areas would be planted (e.g., parks, terraces and open space areas), which would minimize erosion and maximize filtering and percolation of runoff. As a result, the incremental loadings would be insignificant in terms of overall runoff entering the river and creeks, or as a percentage of total runoff being generated in the urbanized areas of San Jose. In absolute terms, the increased loadings would not represent a significant impact to aquatic life, in terms of toxicity. Since a small portion of the runoff would be conveyed along natural drainage courses (e.g., in the hillside areas to remain as open space), some portion of the pollutants would be filtered by vegetation enroute to the river and creeks, or would percolate into the ground where a filtration effect would also occur. Potential operational project impacts to water quality would be less-than-significant.

3. Cumulative Impacts

While project impacts to water quality in Coyote Creek, Canoas Creek and the Guadalupe River would not be considered significant, such incremental increases in contamination could contribute to an overall adverse cumulative impact. When considered together with other nonpoint sources, the pollutants added by the Communications Hill projects could cumulatively contribute to the gradual degradation of water quality in these urban waterways and South San Francisco Bay.

In summary, future projects within the Specific Plan area would result in potentially significant short-term impacts to surface water quality in Coyote Creek, Canoas Creek and the Guadalupe River during the construction phase unless mitigated as discussed below. Operationally, the future development of the Specific Plan area would not result in significant adverse impacts to water quality.

MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; E. Natural Resources; 3. Water Resources; Policy:
 1. The City, in cooperation with the Santa Clara Valley Water District, should restrict, or carefully regulate, public and private development in watershed areas, especially those necessary for the effective functioning of reservoirs, ponds and streams, and for the prevention of excessive siltation.

Specific Plan mitigation

- None

Other Program mitigation

- Soil erosion and siltation potential during construction of future development projects would be largely mitigated through site-specific requirements determined prior to issuance of grading permits based on grading plans submitted to the Public Works Department. Mitigation would consist of temporary erosion control measures including those to minimize hillside runoff, sedimentation and turbidity, and would include desilting basins for areas disturbed by clearing, grubbing and grading.

In summary, the future projects developed under the Specific Plan would not result in significant adverse impacts to surface water quality in Coyote Creek, Canoas Creek or the Guadalupe River, during either the construction or operational phases, with the implementation of the program mitigations identified above.

Additional Recommended mitigation

The following are examples of project-specific mitigations which would be implemented during the project construction phases in accordance with the program mitigation identified above:

- Earthwork would be scheduled during the dry season to prevent most runoff.
- Keep disturbed areas to the minimum necessary for the current phase of construction.
- Stabilize disturbed areas as quickly as possible, either by vegetative or mechanical methods.
- Trap sediment before it leaves the site with such techniques as check dams, sediment ponds, or silt fences.
- Direct flows over vegetated areas prior to discharge into drainage courses or storm drain systems. Prevent runoff from flowing over unprotected disturbed slopes.
- Temporary storage areas for fuel and other toxic substances are to be diked to provide containment in case of spills, in accordance with the City of San Jose's Hazardous Materials Storage Permit Ordinance.
- Regularly sweep and wash down public streets subject to construction activities.
- Monitor water quality prior to discharge into storm drain system.

E. BIOLOGICAL RESOURCES

The following assessment of biological resources is abstracted from a biological survey report prepared by H.T. Harvey & Associates in May 1991. The Harvey Report is attached as Appendix C. The discussion of the Bay checkerspot butterfly habitat is based on letter reports prepared by Dr. Dennis D. Murphy of Stanford University in April and May 1991. These reports are contained in Appendix D.

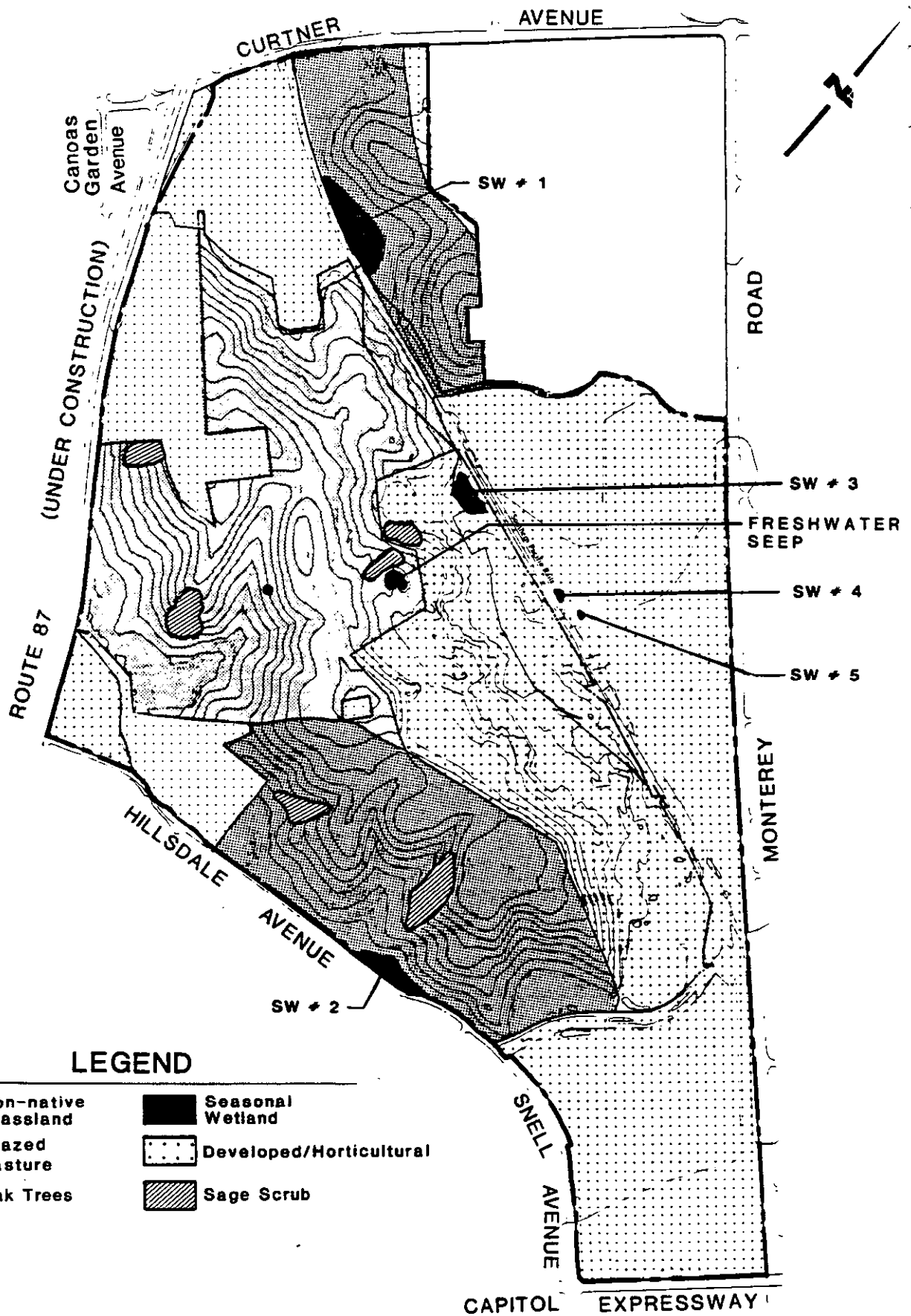
EXISTING BIOLOGICAL CONDITIONS

Five general habitat types were identified within the Communication Hill planning area during reconnaissance-level field surveys in November of 1990. These habitats include: non-native grassland found over much of the west-facing slopes of the site; two areas of grazed pasture; developed/horticultural habitat where existing residential, industrial and quarry uses are established; six small Diablan sage scrub areas, and a freshwater seep habitat. The non-native grassland and grazed pasture habitats are almost all on serpentine soils, but they are heavily degraded by grazing and erosion and do not support large populations of serpentine endemic plant species. Diablan sage scrub habitat is very limited on site and is still relatively common in this part of California. The approximate extent of the habitats is depicted in Figure 9. A discussion of wetlands and special status species follows the habitat descriptions. The biological report in Appendix C includes a list of plant and animal species observed or expected to occur on the site.

1. Vegetation

The five general habitat types that occur on Communications Hill are:

Non-native grassland. Non-native grasslands are dominated by non-native weedy species, occupies much of the west-central portion of the study area. Species growing in this disturbed habitat include soft chess, ripgut brome, farmer's foxtail, and wild oats. Red-stemmed filaree and common peppergrass are prominent and are generally indicative of previous grazing activity. Some native species common on serpentine soils were also observed on this site, including purple stipa, California plantain, melicgrass, and Setchell's dudleya (which is further discussed below under Special Status Plant species). An arroyo on the south side of the site supports about five valley oaks in scattered locations (see Figure 9). These five oak trees are the only trees noted in the reconnaissance-level biological survey as being outside of existing developed/horticultural areas.



HABITAT TYPES

FIGURE 9

Grazed Pasture. Grazed pasture generally falls under the category of non-native grassland, but two areas in the southern and northeastern portions of the site that are so heavily grazed that the plant species composition is quite different from the non-native grassland habitat areas. Grasses in this habitat are sparse and the only species which exceeds four inches in height is Russian thistle. Remains of large numbers of dwarf plantain, which hosts larvae of the Bay checkerspot butterfly, were found in certain spots, as well as numerous Setchell's dudleya (which is discussed subsequently under Special Status Plant Species).

Developed/Horticultural. Developed/horticulture habitat is found among the existing single-family housing, mobile home parks, industrial and commercial areas along Monterey Road, and the large quarry. The residential areas support generally non-native, weedy annuals similar to those found in the non-native grassland. In addition, non-native landscape plants such as lawn grasses, Lombardy poplars, Eucalyptus, and California pepper are found growing near houses and some commercial and light industrial structures. The quarry area is highly disturbed by ongoing mining activities and earth movement. A few weedy species occur in this area including Russian thistle, but most of this area supports no plants at all.

Diablan Sage Shrub. Small areas on south-facing slopes support scattered stands of Diablan sage scrub. This habitat is characterized by stands of California sage and naked-stemmed buckwheat. In other sites this habitat supports a large number of shrubby species, but the disturbance on the study site probably accounts for the low botanical diversity present.

Freshwater Seep. Freshwater seep habitat has been created in an area above the quarry where the hillside was excavated and a small pond developed. Typical species here include seep-spring monkeyflower, heliotrope, and rabbitsfoot grass.

2. Wildlife

Non-Native Grasslands. Non-native grassland habitat supports a wide variety of wildlife species. The ample seed source produced by the annual and perennial grasses provides food for numerous wintering and year-round birds observed on the site. Where the grasslands grade into small patches of sage scrub, other birds nest on the ground in clumps of grass. Small mammals, also prevalent in non-native grassland habitat, either burrow in the rocky soil or build nests and runways through the taller grasses in search of small insects and seeds.

The abundant populations of small to medium-sized mammals could be expected to attract predatory birds, reptiles and mammals including badgers. During

reconnaissance-level surveys, all bird, reptile and mammal were observed on the project site which would also be expected to be found in this type of habitat, with the exception of badgers.

The site's non-native grassland habitat is suitable for the Federally-threatened Bay checkerspot butterfly. Reconnaissance-level site visits during November 1990 indicated that the main food plant of the butterfly, *Plantago*, exists on Communications Hill, in association with the serpentine soils. On-site surveys for the Bay checkerspot butterfly conducted during April and May, 1991, are discussed below under Special Status Animal Species. Serpentine soil habitat is also suitable for other special status invertebrates such as the edgewood blind harvestman and the phalangid which were found in the Santa Teresa Hills about 2 to 3 miles southeast of the site in the mid-1960s (CNDDB 1990). In addition, creamcups, which is a food source for the Opler's longhorn moth, may exist on the site. Special status species are discussed further below.

Grazed Pastures. Heavily grazed pastures generally support a less diverse community of vertebrate wildlife; however, badgers, a special status species, may occur in this habitat. Two burrowing owls, which are also a special status species, were observed in this habitat during the site reconnaissance.

Residential/Development. A few species of birds but no mammals were observed using the residential/development areas.

Diablan Sage Shrub. The small patches of Diablan sage scrub within the non-native grasslands provide cover and breeding habitat for many resident bird, mammal and reptile species.

Freshwater Seep. Freshwater seeps provide larger birds and mammals with drinking water during the dry summer months. However, in northern California, the primary importance of these areas probably lies in their ability to support breeding and larval development of uncommon amphibian species such as the California newt and the California tiger salamander, the latter of which is a special status species discussed below. Given that seeps surrounded by more or less natural habitat are relatively rare in this area, this freshwater seep can be considered a significant biological resource from the standpoint of its value to wildlife.

3. Wetlands

Wetland habitats in the State of California are subject to federal and state agency regulation. The U.S. Army Corps of Engineers (Corps) regulates activities in

Waters of the United States and wetlands adjacent to those waters, as well as isolated wetlands, pursuant to Section 404 of the Clean Water Act. The law requires a permit for the discharge of dredged or fill material into waters of the United States or wetlands which meet the criteria for Corps jurisdiction, including isolated wetlands. Filling of wetlands under one acre usually qualifies under an existing "Nationwide" permit if the impacts are minor in nature and not cumulative, or if an isolated wetland is more than 1/4 mile from a Corps jurisdictional watercourse. It is advisable to apply to the Corps for a Preliminary Jurisdictional Determination to determine whether the project qualifies under the Nationwide permit or will require an individual permit prior to site-specific development. If the proposed filing qualifies under the Nationwide permit, an applicant does not need to demonstrate that there are no feasible alternatives, and no mitigation is required, as is the case for individual 404 permits.

The Section 404 definitions and rules for nationwide permits are currently under review and may be revised prior to commencement of development within the Specific Plan area. This EIR discussion can only consider the regulations that are currently in effect; however, future development would be subject to regulations in effect at that time.

The biological site reconnaissance by H.T. Harvey and Associates identified the existence of five seasonal wetlands and a freshwater seep which may be subject to Corps jurisdiction, as described below. With the exception of a three-acre seasonal wetland located near Curtner Avenue, all of these are less than one acre in size.

- The largest seasonal wetland within the planning area is located adjacent to the eastern side of the railroad tracks approximately 1,200 feet south of Curtner Avenue. This area, denoted as SW #1 on Figure 9, is approximately 3 acres in size. The biological survey found characteristic vegetation that occurs in wetlands including saltbush, salt grass, seaside heliotrope, and poison hemlock, and indications of hydrology that are typically associated with wetlands. The area is also highly disturbed due to extensive dumping of rubbish, concrete and waste, and many weed species were found colonizing fill areas.
- There is a seasonal wetland located adjacent to Hillsdale Avenue which is approximately 0.4 acres in size and is indicated as SW #2 on Figure 9.
- A man-made retention basin which may be another seasonal wetland (SW #3) is located adjacent to and west of the Southern Pacific railway tracks, within the property planned for the Caltrain Maintenance Facility. Most of the basin has been graded or tracked and is bare of vegetation, and only a few wetland indicator plant species are found at the margins of the area.

- Another small retention pond (SW #4) was constructed adjacent to and east of the rail line to contain storm runoff from the quarry; however, it is dry and appears no longer to be in use. This basin is over 10 feet deep, and has a mixture of wetland and upland species growing in the bottom.
- A third retention pond (SW #5), located east of the railway tracks and the retention ponds discussed above, is presently used for sediment settling operations.
- The pond described as a freshwater seep is located above the quarry excavation. This seep may also be subject to the Corps' wetland jurisdiction, but is less than one acre in size.

4. Special Status Species

a. Introduction

Four plants and three animals which are considered by resource agencies to be Species of Special Concern may be present on Communications Hill, including Setchell's dudleya and burrowing owls that have been confirmed as occurring on the site. This conclusion is based only upon reconnaissance-level surveys of Communications Hill, and more detailed surveys will be necessary to confirm the presence or absence of other species of concern prior to development (see Table 4).

Species of special concern include species listed as threatened or endangered, or as candidates for listing, by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), as well as plants listed by the California Native Plant Society (CNPS), or species with limited local distribution of concern to the agencies.

Federal status categories include threatened, endangered, or candidate categories 1, 2, or 3. Federal Candidate 1 (FC1) species are those plants and wildlife for which enough information is available to support federal listing. Federal Candidate Category 2 means that populations of the species have declined to the point that the species should be listed as endangered or threatened, but the data is insufficient to meet existing regulations for an official listing. The only species which may potentially occur on the site which is listed as threatened by the Federal Government

TABLE 4
SPECIAL STATUS BIOLOGICAL SPECIES

SPECIES	STATUS	POTENTIAL	SURVEY
<u>STATE OR FEDERALLY ENDANGERED</u>			
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	FE, SE	Unlikely, no nesting habitat or foraging value.	No action required.
<u>STATE OR FEDERALLY THREATENED</u>			
Bay Checkerspot Butterfly (<i>Ocydrys editha bayensis</i>)	FT	Unlikely, but possible resident.	Surveys completed.
<u>CALIFORNIA SPECIES OF SPECIAL CONCERN, STATE PROTECTED, OR FEDERAL CANDIDATE SPECIES</u>			
Phalarids (<i>Microcina horni</i> , <i>M. huxleyi</i>)	FC2*	Probable residents.	None.
Opler's Longhorn Moth (<i>Adela oplerella</i>)	FC2	Appropriate habitat, probable resident.	None.
California Tiger Salamander (<i>Ambystoma tigrinum calif.</i>)	FC2,S	Unlikely but possible resident, appropriate habitat.	Surveys recommended.
Western Spadefoot Toad (<i>Scaphiopus hammondi</i>)	S	Unlikely due to marginal habitat.	None.
Black-shouldered Kite (<i>Elanus caeruleus</i>)	SP	Probable transient, possible resident, appropriate foraging.	None.
Northern Harrier (<i>Circus cyaneus</i>)	S2	Observed foraging.	None.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	S3	Probable transient.	None.
Cooper's Hawk (<i>Accipiter cooperii</i>)	S3	Observed foraging.	None.
Golden Eagle (<i>Aquila chrysaetos</i>)	SP, S3	Infrequent occasional foraging, unlikely nesting.	None.
Merlin (<i>Falco columbarius</i>)	S1	Unlikely visitor.	None.
Prairie Falcon (<i>Falco mexicanus</i>)	S3	Unlikely visitor.	None.
Burrowing Owl (<i>Athene cunicularia</i>)	S2	Occurs on-site.	Surveys recommended.
Badger (<i>Taxidea taxus</i>)	S3	Unlikely resident.	None.
Metcalf Canyon jewel flower (<i>Streptanthus albidus</i>)	FC1	Potential habitat on-site, probable occurrence.	Surveys recommended.
Mount Hamilton thistle (<i>Cirsium campylon</i>)	FC2	Unlikely to occur.	None.
Fragrant fritillary (<i>Fritillaria lilacea</i>)	FC2	Potential habitat on-site, probable occurrence.	Surveys recommended.
Contra Costa goldfields (<i>Lesqueria conjugens</i>)	FC2	Unlikely to occur.	None.
Setchell's dudleys (<i>Dudleys setchellii</i>)	FC1/CNPS1B	Occurs on-site.	Surveys recommended.
Uncommon jewel flower (<i>Streptanthus albidus</i> -ssp. <i>peramoensis</i>)	CNPS1B	Potential habitat on-site, probable occurrence.	Surveys recommended.
FE = Designated as an endangered species by the federal government. SE = Designated as an endangered species by the California Fish and Game Commission. FT = Designated as a threatened species by the federal government. FC1 = Designated as a candidate species by the federal government. Species on list 1 indicates that U.S. Fish and Wildlife Service has conclusive data in possession to list as endangered or threatened. FC2 = Designated as a candidate species by the federal government. Species on list 2 indicates that U.S. Fish and Wildlife Service has information in possession that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability is not currently available to support proposed rules. S = Species of special concern, included are those species whose breeding populations in the state have declined severely or are otherwise so low that extirpation is a real possibility. There are no special legal statutes governing the protection of this group. SP = Fully protected species in the state of California. CNPS1B = Designated as rare by the California Native Plant Society, with limited or vulnerable habitat, eligible for state listing, meets Sec. 1901, Chapter 10 of California Fish and Game Code. *Soon to be listed.			

is the Bay checkerspot butterfly. This is the only sensitive species on the site subject to federal protection under the Endangered Species Act.

State categories include species of special concern or protected species in the State of California. Species of special concern are not afforded legal protection under the State Endangered Species Act but impacts to their habitats may be considered significant under CEQA. In such cases it is up to the lead agency to require appropriate mitigation.

The California Native Plant Society (CNPS) lists also contain plants eligible for state listing. CNPS List 1B plants are those plants which are rare, threatened or endangered because of habitat vulnerability or limited extent. CNPS 1B plants are eligible for state listing and meet the criteria of the Native Plant Protection Act.

Table 4 lists the special status species which occur or may occur on the site, their status, their potential for occurrence on the site, and any recommendations for further studies. Special status species that warrant further study, including detailed site surveys, are discussed below. The sources of information on the occurrence of species of special concern in the project area includes the California Natural Diversity Data Base (CNDDB) and observations made during field surveys.

b. Special Status Plant Species

Four special status species of plants have been identified as occurring or possibly occurring in the project area. Only Setchell's dudleya was observed during reconnaissance surveys.

Setchell's dudleya is an evergreen perennial which is found only on serpentine outcroppings in Santa Clara County. It has been found in scattered rocky areas in the southern and western portions of the Specific Plan area, as shown in Appendix C, Biological Survey Report (Figure 2). It is a Federal Candidate 1 (FC 1) plant and a California Native Plant Society (CNPS) List 1B plant. A population of Setchell's dudleya has been confirmed on the proposed Valley Christian School/Church site which is located off-site approximately one-fourth mile to the northwest.

Metcalf Canyon jewel flower, found on roadcuts and rocky areas of serpentine, has a range which is limited to the Santa Clara Valley. A population has been reported as occurring in the Silver Creek Hills approximately three miles southeast of Communications Hill. In addition, a population has also been reported on the Valley Christian School site to the west of the Specific Plan area. This species is also an FC 1 species, and is also on the California Native Plant Society's (CNPS) List 1B.

Uncommon jewel flower, a close relative of the Metcalf Canyon jewel flower, is found in similar habitats in geographically separated areas. This species has been found on serpentine in the Oakland Hills and in Santa Clara County west of Coyote Creek. It is a CNPS List 1B plant.

Fragrant fritillary is a bulbous plant found in widely scattered locations in central California. It often grows on serpentine, especially when it is found away from the coast. A small population of plants interpreted as belonging to this species was found in the Silver Creek Hills. Fragrant fritillary is a Federal Candidate 2 species and a CNPS List 1B plant.

c. Special Status Animal Species

Three special status animal species were observed on the site in appropriate habitats, or have favorable habitat conditions on the site which could raise an expectation of their potential presence. The following are individual discussions of those species whose status and potential for occurrence on the site warrant further study, although only burrowing owls were observed during reconnaissance surveys.

The Bay checkerspot butterfly, which is designated as a threatened species by the federal government, is a small butterfly with orange, black and cream colored spots. On-site surveys for the Bay checkerspot conducted in recent years have not found any to be in existence on Communications Hill. The larvae of the butterfly are dependent on two plant species, both of which were found on the site during reconnaissance surveys. The closest known occurrence to the Communications Hill site is in the Mount Hamilton Range three miles to the east, in an almost continuous band extending from Silver Creek Planned Residential Community to Morgan Hill. Due to specific habitat requirements, populations of this butterfly species have declined to low numbers following destruction of serpentine habitats and a succession of drought year, and are listed as threatened by the U.S. Fish and Wildlife Service (USFWS).

A survey of the on-site habitat areas which would be expected to be used by this butterfly (grassy areas or areas with its food plants) was conducted during April and May 1991 to determine the presence of this butterfly and the extent of both prime and marginal habitat. Despite substantial stands of larval host plants, the current isolation of the site and the limited availability of cool slope exposures necessary for successful breeding appears to greatly compromise the value of the serpentine soil-based grasslands on Communications Hill as potential Bay checkerspot butterfly habitat. Dr. Dennis Murphy, an expert on the Bay checkerspot butterfly, conducted this and a previous survey, and concluded that the butterfly is not a resident of

Communications Hill. (The letter reports by Dr. Murphy are contained in Appendix D.)

The California tiger salamander is black with yellow or cream colored spots. It is found in moderate numbers in riparian and wet meadow habitats, but is more common in annual and perennial grasslands. Habitat requirements include fresh water sources for juvenile development that can be temporary or permanent. The California tiger salamander, a subspecies of the more common tiger salamander, is listed as a Species of Special Concern by the California Department of Fish and Game, and is listed as a candidate category 2 species by the USFWS. Appropriate habitat is marginal for this species on Communications Hill and, while unlikely, a remnant population could possibly exist at one of the seasonal wetlands or the freshwater seep discussed above. Site-specific surveys for the salamander would need to be conducted during the breeding season to determine its presence or absence on Communications Hill.

The burrowing owl is listed as a Species of Special Concern of second priority in the State of California. This listing affords the owl no special legal protection under California law, but the California Department of Fish and Game (CDFG) requires that impacts to active nest sites or individuals carry mandatory findings of significance in CEQA documents. In addition, the owl is afforded legal protection under the Migratory Bird Treaty Act. Burrowing owl numbers have been declining steadily in California due to loss of habitat to agricultural and urban development and destruction of burrows. These birds are thought to be non-migratory in California, inhabiting fields and grasslands with few trees and sparse vegetation. They enlarge existing ground squirrel burrows for roosts and nest sites, and prey on insects, small mammals, birds and reptiles. Burrowing owls were observed during biological reconnaissance surveys in the grazed pasture habitat area in the lower-lying northeastern portion of the study area.

IMPACTS TO BIOLOGICAL RESOURCES

1. Vegetation

Approximately half of the on-site ground area of the non-native grassland, grazed pasture and the Diablan sage scrub habitats would be removed by the proposed development. The development of these habitats in themselves would not constitute a significant impact; however, any impacts to special status plant or animal species within these habitats could be considered a significant impact if not mitigated (see discussion below).

Given that the developed/horticultural portions of the Specific Plan area would not be modified, the only potentially significant impact to vegetative resources foreseen as a result of the proposed development would involve the approximately five valley oaks located in an arroyo. These trees would potentially be removed by development of the "Lower Hillside at Guadalupe" neighborhoods if they are not protected during design and grading. If the proposed development were to result in the removal of the oaks or any other trees protected by the Tree Removal Ordinance (i.e., 18 inches or greater in diameter), this would be considered a significant impact and would require approval of a tree removal permit by the City which would stipulate appropriate mitigations.

The small freshwater seep would be destroyed by development under the proposed Specific Plan. This is considered to be a significant impact due to the value of this ecological community to wildlife, as discussed in the following section.

2. Wildlife

Residential development would displace many of the small birds and mammals which inhabit the non-native grassland, grazed pasture and sage scrub areas. The loss of any natural habitat would cause a reduction in wildlife populations. Some of these animals, such as finches and sparrows, can survive in urban areas or will disperse to nearby grassland communities, where they may survive although it is not certain. Other species, such as ground squirrels, will probably not survive the development of the habitat in which they reside. These types of impacts are not considered to be significant in an ecological sense, given that these habitat types and the animals which inhabit them are extensively represented elsewhere in Santa Clara County.

The five on-site seasonal wetlands (see Figure 9) have special value to wildlife due to occasional ponding during wet periods. The three-acre seasonal wetland (SW #1) located near Curtner Avenue is located within a planned park area. Although it is not planned for development, this area may become the site of a future detention pond for flood control purposes. (This would be determined subsequently in conjunction with refinements to the Storm Drainage Master Plan.) The seasonal wetland located along Hillsdale Avenue (SW #2) would be subject to filling in conjunction with future planned development. The three small man-made retention basins located along the railway tracks (SW #3, 4 and 5) would be filled in conjunction with the planned development. The destruction of these wetlands would be considered significant impacts if not adequately mitigated (see section on wetlands below). If any special status species such as the tiger salamander are found to use wetlands #1, 2 or the seep, impacts to those species could be significant if not mitigated (see section on special status species below).

The seep located above the quarry is in an area proposed for development. Due to its ecological value to wildlife, its destruction would be considered a significant impact, unless it is mitigated.

3. Wetlands

The seasonal wetland located near Curtner Avenue (SW #1) is within an area tentatively proposed as a site for a retention basis, which would be located within an area designated park. Since it is probable that part of this approximately 3-acre area would be classified as wetlands, a formal jurisdictional determination would require additional field investigation utilizing comprehensive Corps of Engineers delineation methodology. A formal wetland delineation would be undertaken subsequently in conjunction with project-specific approval for development of this area.

In the event that the three-acre wetland area is proposed to be filled or otherwise modified, an individual permit from the Corps would be required under Section 404(b)(1) of the Clean Water Act. The first step in the permit application process would be to obtain a determination of Corps' jurisdiction, to be requested by the applicant, which would precisely determine the extent of the jurisdictional wetland involved. In making the case for filling of the wetland, the applicant must demonstrate that avoidance is not feasible. If the Corps agrees with the rationale presented, the applicant is required to provide replacement wetland on- or off-site which is of equal or greater habitat value compared with the wetland to be removed.

The four seasonal wetlands and one freshwater seep which are less than one acre in size are also located in areas of the Specific Plan area which are proposed for filling and development. The 0.4-acre wetland along Hillsdale Avenue (SW #2) would be displaced by multi-family residential development; the retention basin west of the railroad tracks (SW #3) is in the area where a Caltrain Maintenance Facility has previously been approved; the two man-made retention basins located east of the railroad tracks (SW #4 and 5) could be subject to removal by development of new heavy industrial uses in this area; and the freshwater seep would be impacted by grading for Vistapark Drive.

Although the four seasonal wetlands are all under one acre in size, loss of these wetlands could be considered a cumulative impact by the Army Corps of Engineers and may require individual Corps permits from the Corps to allow fill unless mitigated. However, since the seasonal wetlands and the seep fall within several different ownerships, the filling of these small isolated wetlands may be allowed under an existing Nationwide Section 404 permit which would not require mitigation.

4. Special Status Plant Species

The proposed development under the Specific Plan overlaps with the distribution of Setchell's dudleya, a State species of special concern, which is found extensively on the south and western facing slopes. Additional detailed surveys would be necessary to delineate more precisely the extent of the dudleya's distribution and abundance on the site. Removal of this species from portions of the site would be considered a significant impact due to its status as a FC 1 and a CNPS1B species.

Setchell's dudleya are serpentine obligates; however, Setchell's dudleya populations are fairly extensive in Santa Clara County, and the population on Communications Hill probably represents only a very small fraction of the total existing populations. However, there are numerous development projects currently proposed or approved within Santa Clara County where populations of Setchell's dudleya occur. It is possible, therefore, that the cumulative impacts of these projects may be significant with regard to the total population of Setchell's dudleya in the county. Some of other habitat areas proposed for development may find protection through other means, either through county and city policies restricting development on slopes over 15%, or through the co-occurrence of habitat for the Federally-threatened Bay checkerspot butterfly.

More detailed surveys are required to verify the presence or absence of the remaining three special status plant species (Metcalf Canyon Jewel flower, fragrant fritillary, and uncommon jewel flower). Since these plants occur throughout serpentine soil areas, it is not known how their potential areas of occurrence might overlap with the proposed Specific Plan development. If found on the site, the removal of any of those species would be considered a significant impact due to their status as FC 1, or FC 2 or CNPS 1 B species.

5. Special Status Animal Species

No significant impacts are expected to endangered, threatened, or special status animal species listed in Table 4, except the burrowing owl and potentially the California tiger salamander. The species listed on Table 4 use the site sporadically, if at all.

Potential habitat exists for the Bay checkerspot butterfly on the site; however, a detailed survey for this species determined that the butterfly does not currently occur in the Specific Plan area. Therefore, no significant impacts to the Bay checkerspot butterfly are anticipated, and no mitigation is required.

Potential breeding habitat is marginal for the California tiger salamander on-site. Site-specific surveys of the freshwater seep would be required during the breeding

season prior to development in order to verify the presence or absence of the salamander in the Specific Plan area. If the salamander is present in the Specific Plan area, its loss would be a significant impact.

Adult salamanders inhabit burrows of ground squirrels and gophers which would be found in the non-native grassland and grazed pasture habitats during the drier months. If the freshwater seep habitat and/or seasonal wetlands are found to support a significant breeding population of salamanders (a population greater than 10-15 adults), loss of non-native grasslands and grazed pastures adjacent to the breeding areas would also be considered a significant impact to this species.

Burrowing owls were observed on-site within the grazed pasture area which will be disturbed by the proposed development. More detailed site-specific surveys for burrowing owls prior to development would be required to determine the abundance and distribution of the owl within any area proposed for development. Loss of the habitat areas in which resident burrowing owls are found would be a significant impact.

In summary, potentially significant impacts to biological resources include the following: loss of approximately five oak trees; loss of a freshwater seep; the loss or modification of the 3-acre seasonal wetland area for retention basin purposes; loss of Setchell's dudleya habitat; potential loss of habitat of the Metcalf Canyon jewel flower, fragrant fritillary, uncommon jewel flower and California Tiger Salamander if these special status species are found in the Specific Plan area; and loss of burrowing owl habitat.

Potential cumulative significant impacts related to biological resources include: loss of up to seven acres seasonal wetlands and loss of Setchell's dudleya habitat.

MITIGATION MEASURES FOR BIOLOGICAL RESOURCES

General Plan mitigation

- Goals and Policies; F. Natural Resources; 5. Marine and Wildlife Resources; Policy:
 - 2. Consideration should be given to setting aside nature preserves in the Bay, marshes, streamsides, streambeds, and hillside areas to protect habitats of essential, rare and endangered species of plants and animals, and to provide areas for educational and research purposes.
- Goals and Policies; F. Natural Resources; 1. Woodlands and Grasslands; Policies:

1. The nature and amount of public access to wooded areas and grasslands, when allowed, should be consistent with the environmental characteristics of these areas.
 4. Encouragement should be given to appropriate forestation and replanting projects in hillside areas.
- Goals and Policies; E. Aesthetic, Cultural and Recreational Resources; 4. Trails and Pathway; Policies:
 1. The City should control land development along designated Trails and Pathway Corridors in order to provide sufficient trail right-of-way and to ensure that new development adjacent to the corridors does not detract from the scenic and aesthetic qualities of the corridor.
 2. When new development occurs adjacent to a designated Trails and Pathway Corridor, the City should encourage the developer to install and maintain the trail.
 3. Design, construction, and management of trails and pathways should be carefully executed in order to minimize environmental disturbance.
 4. Bridges and other public improvements within designated Trails and Pathways Corridors should be designed to provide safe and secure routes for trails, including grade separation of roadways and trails whenever feasible.

Specific Plan mitigation

- None

Other Program Mitigation

- Maintain a liaison with resource management agencies (U.S. Army Corps of Engineers, California Department of Fish and Game, and U.S. Fish and Wildlife Service). Involvement and consultation with these agencies would avoid violation of State and Federal regulations and would assure that biological issues and concerns are addressed. Project-specific mitigation would be developed in consultation with these resource agencies.
- The potential loss of trees over 18" in diameter would be mitigated through project-specific replacement ratios stipulated in the City's Tree Removal Permit ordinance.

Implementation of the above General Plan policies and other program mitigation would only partially mitigate impacts to vegetation and wildlife resources in the Specific Plan area, which are therefore considered to be significant unavoidable impacts.

Additional Recommended mitigation

Avoidance of impacts to wetland areas and habitat of rare, threatened and/or endangered species would be the preferable mitigation measure. If development of the proposed Specific Plan cannot be designed to avoid impacts, the following mitigation measures should be considered at the time of project development.

- Further intensive field studies would be conducted during project development environmental review to establish the extent of the distribution and density of Setchell's dudleya, and to develop mitigation for impact to the species.
- Site-specific species surveys would be required during the project development environmental review in order to determine the presence or absence of the Metcalf Canyon Jewel flower, the uncommon Jewel flower, the fragrant fritillary, and the California tiger salamander, and to develop mitigation for impacts if they are found to inhabit the site. Mitigation would be developed in consultation with State and Federal Resource agencies.
- Site-specific surveys for the burrowing owl would be required prior to development in order to determine abundance and distribution. A relocation plan acceptable to the CDFG and USFWS would be required as part of the approval process for a grading permit for future developments which have burrowing owls on-site.
- The filling of one acre or more of wetlands may require a standard individual permit, which is subject to public review, from the Army Corps of Engineers. Prior to submittal of an application, a request for a jurisdictional determination would be required. Generally a mitigation plan would require that wetland habitats that are filled are replaced in the immediate vicinity, on at least an acre for acre and value for value basis.
- In the event that the drainage pattern of the Specific Plan is substantially modified, then reconfiguration of the site drainage may present opportunities to mitigate wetland losses.

F. CULTURAL RESOURCES

The following discussion summarizes the findings of the cultural resources investigation undertaken for the planning area by Basin Research Associates in November 1990 and supplemented in April 1991. The Basin report is on file at the City of San Jose Planning Department.

EXISTING CONDITIONS

1. Prehistoric Resources

The Specific Plan area is situated in an archaeologically sensitive area and numerous prehistoric sites are known to exist in the project vicinity. The distribution of archaeological sites in and near the project area suggests that the lower-elevation Hillsdale Avenue area was a focus of prehistoric settlement and resource exploitation while upland portions of the San Juan Bautista Hills (Communications Hill) were used primarily for obtaining raw material (chert) rather than for intensive occupation.

Despite the general sensitivity of the area, little indication of prehistoric cultural material was observed during the field reconnaissance conducted for the Communications Hill Specific Plan. This lack of prehistoric indicators is probably due to extensive previous disturbance from residential and commercial development. Another factor may be that prehistoric use of the area was casual and sporadic rather than intensive, leaving little trace.

The archival search by Basin Research revealed records of three previously recorded prehistoric sites (CA-SCI-294, SCI-606, and SCI-640), as well as an isolate (CA-SCI-ISO-5) within or partly within the Specific Plan area. Three additional, possible prehistoric sites have also been identified, and a Native American "burial in trench" has been recorded in the vicinity of the former dairy on the south side of Curtner Avenue. These prehistoric sites are described in turn below.

CA-SCI-ISO-5: This is a site where an isolated chert fragment was located near a spring; it is not believed to contain additional resources.

CA-SCI-294: This site, described as a prehistoric Native American village site, was previously recorded in the vicinity of the intersection of Narvaez and Hillsdale Avenues. While the recorded site boundaries of CA-SCI-294 are quite expansive, it seems likely that the most significant deposits are located west of Narvaez Avenue and north of Hillsdale Avenue. This site was subject to subsurface testing in conjunction with the Guadalupe Corridor project, and no traces of prehistoric cultural

materials were observed. Construction of the new Guadalupe Freeway/Light Rail Corridor across Hillsdale at Narvaez Avenue has completely covered the previously open portions of this prehistoric site. The area situated to the northeast of this intersection, now occupied by residences in the Canoas Creek area, may include part of the site. Also, no cultural resource indicators were observed in the vicinity during a survey undertaken in March 1977 for the Mountain Springs Mobile Home Park Addition. As a result, the existence of part of CA-SCI-294 within the southwestern corner the Specific Plan area has not been confirmed by these recent investigations.

CA-SCI-606: This site, a prehistoric chipping station located near the Santa Clara County communications center, was relocated during field reconnaissance.

CA-SCI-640: Previously recorded on the north side of Curtner in the vicinity of Stone Avenue, this site has been described as having "habitation; known burials" and "inland midden with light fire-cracked rocks." It could not be relocated or confirmed during field reconnaissance, and it is possible that this site is buried under existing development and does not extend into the Specific Plan area.

Two Possible Aboriginal Quarries: These two sites, which were observed during earlier surveys but not relocated during recent field reconnaissance, may be associated with CA-SCI-606. The quarries may have been utilized by prehistoric people, however the evidence for such use is equivocal.

Sandstone Outcrop: Although this outcrop, observed during a previous reconnaissance but not relocated during surveys for the Specific Plan project, may have been used by aboriginal groups for tool making, such use is not readily evident.

Native American Burial in Trench: The presence of Native American skeletal remains (i.e., burials) on the south side of Curtner Avenue was reported some years ago, but can not be confirmed.

2. Historic Resources

Within the study area, the prehistoric hunting and gathering life of the Tamien tribelet of the Costanoan Indians was supplanted by a historic agricultural land use pattern associated with both the Hispanic and American Periods.

No significant resources of the Hispanic Period have been reported or observed in the project area with the minor exception of the Oak Hill Cemetery in use as early as 1839 during the Late Hispanic Period. The San Jose-Monterey Road which forms the eastern boundary of the Specific Plan area was first established during the Hispanic Period as El Camino Real, the designated public road between presidios,

missions, and settlements. The area may have been used for grazing cattle and cinnabar (mercury) exploration and exploitation as early as 1847 by the Chaboya family.

Development in the study area has been contingent upon the growth of regional and national agricultural markets and transportation, especially the railroad and motorized transport. Mining in the project area dates back to the 19th century. The known Late American Period resources identified include the Oak Hill Cemetery (formally established in 1858) as well as the Hillsdale Mine area, three former 1870s structures, a dairy complex along Curtner Avenue, and the former New Almaden Branch Railroad track alignment.

The Oak Hill Cemetery borders but is not a part of the Specific Plan area, and would not be modified by it. The New Almaden Branch Railroad, now abandoned, once connected New Almaden with the main Southern Pacific tracks in the current Azevedo Quarry area. The modern quarry operations are a relatively recent activity.

Residences in 1876: During the second half of the 19th century, the Specific Plan area was situated in a relatively undeveloped area subdivided into parcels ranging from 90 to 600 acres. Drawings dated 1876 illustrate only two structures within the Specific Plan area, both of which were located along Monterey Road. Mobile home park and railroad uses currently occupy the locations of the two former structures which have long since disappeared.

Hillsdale Quicksilver Mine: Mining to extract cinnabar (mercury) intermittently occurred on the central part of the Specific Plan site between approximately 1850 and 1950. The mine tunnels have largely been destroyed through subsequent gravel extraction operations. Although some remnant of the original mine workings may still exist, any historic value the mercury mines may have possessed has been long lost.

Former Dairy Complex: This complex, composed of several structures of various ages, is not considered to be of historical importance. However, several artifacts related to the dairy, including a grader dating from the early 20th century and a distinctive type of late 18th century barbed wire, may have value as type artifacts.

CULTURAL RESOURCE IMPACTS

1. Prehistoric Resources

Four previously recorded and four potential archeological sites have been noted on or adjacent to the planning area. The archaeological sensitivity of the area is high, and there is a potential for disturbance of previously undiscovered sites during grading and construction.

CA-SCI-ISO-5: Although this isolated site is located in an area which will remain as open space, road grading may affect it. However, no further resources are anticipated to exist here and no mitigation is indicated.

CA-SCI-294: No Specific Plan development is proposed in this area of the site; however, because of the high sensitivity of the area any construction activity (such as the installation of utility pipelines and creek channel improvements) could result in potential impacts.

CA-SCI-606: Located in an area proposed for single-family residential development, this site would be subject to direct impacts resulting from development or, vandalism resulting from increased use of this area.

CA-SCI-640: If subsurface resources related to this site extend under Curtner Avenue and into the Specific Plan area, proposed multi-family residential and park development could have an impact on this resource. The site may also be situated under an existing mobile home park; however, no land use changes are contemplated by the Specific Plan for the western side of the SP railway tracks.

Two Aboriginal Quarries: The upland areas where these two sites are situated would be subject to road grading for residential development.

Sandstone Outcrop: This potential resource area would be subject to impacts from the planned multi-family residential development in the vicinity.

Native American Burials in Trench: Multi-family residential, park and roadway construction would potentially impact this resource.

2. Historic Resources

Hillsdale Quicksilver Mines: The site of the former mine is planned for industrial and open space uses. No impacts related to loss of mine tunnels would occur because any historic value the mercury mines may have possessed has been lost.

Former Dairy Complex: The former dairy area is planned for multi-family residential development. Demolition of the former dairy structures may proceed without further study as the existing structures do not appear to warrant preservation, restoration or relocation. No impacts are anticipated and no mitigation is required for the demolition of the structures; however, development in this area would impact the barbed wire fence and the grader associated with the dairy. Also, since the dairy complex is in the vicinity of the Native American burials in trench, development in this area would impact the potential burial site.

Residences in 1876: No change in land use is proposed for the sites of the former residences, so no impacts would occur.

CULTURAL RESOURCES MITIGATION MEASURES

General Plan mitigations

- Goals and Policies; E. Aesthetic, Cultural and Recreational Resources;
 1. Historic, Archaeological and Cultural Resources; Policies:
 1. Because historically or archaeologically significant sites, structures and districts are irreplaceable resources, their preservation should be a key consideration in the development review process.
 8. For proposed development sites which have been identified as archaeologically sensitive, the City should require investigation during the planning process in order to determine whether valuable archaeological remains may be affected by the project and should also require that appropriate mitigation measures be incorporated into the project design.
 9. Recognizing that Native American burials may be encountered at unexpected locations, the City should impose a requirement on all development permits and tentative subdivision maps that upon discovery of such burials during construction, development activity will cease until professional archaeological examination and reburial in an appropriate manner is accomplished.

Specific Plan mitigation

- None

With the incorporation of the mitigation measures enumerated above, the potential impacts upon cultural resources of future development under the Specific Plan would be avoided or reduced to less-than-significant levels.

Additional Recommended mitigation

The Specific Plan area presents several issues with regard to cultural resource planning and management. Although it is the considered opinion of the cultural resource consultants that future development may generally proceed, a number of specific mitigation measures are recommended as listed below. These include a limited presence/absence testing program (see burial discussion below), construction monitoring of portions of the Specific Plan area, surface collection and recordation.

Prehistoric:

- Native American Burial in Trench: A qualified archaeologist would (1) monitor fill preparation activities including any demolition and discing/grubbing; (2) monitor any proposed deep construction (e.g., connections to main lines in the street); (3) implement a mechanically assisted archaeological testing program to determine the presence/absence of a buried prehistoric cultural deposit if the placement of culturally sterile fill cannot be done; and (4) develop appropriate management and mitigation recommendations based on the results of the mechanical testing.
- CA-SCI-606: Undertake a systematic surface collection of artifacts prior to development in this vicinity.
- CA-SCI-294: Any fill preparation activities, including demolition and discing/grubbing, and proposed subsurface construction (e.g., foundations, connections to main lines in the street) in the immediate vicinity of the resource area would be monitored by a qualified archaeologist.
- CA-SCI-640: Archaeological monitoring by a qualified professional archaeologist would occur during subsurface construction in this area.
- Two Aboriginal Quarries: Subsurface construction would be monitored by a qualified professional archaeological monitor. If prehistoric materials are exposed during construction, a limited data recovery program and completion of a California Archaeological Site Inventory record form may be necessary.
- Sandstone Outcrop: Subsurface construction would be monitored by a qualified professional archaeological monitor. If prehistoric materials are exposed during

construction, a limited data recovery program and completion of a California Archaeological Site Inventory record form may be necessary.

Historic:

- Hillsdale Quicksilver Mine: The unlikely event that shafts or equipment are encountered during Specific Plan constructions, mitigation would be coordinated with the San Jose Historical Museum. Should mitigation be necessary it would be the responsibility of the project developer. Mitigation is likely to consist of recordation, donation of the reports and any artifacts to the San Jose Historical Museum, and would not involve the mine remnants.
- Dairy Complex: No mitigation is necessary for demolition of the structures themselves, however, since the dairy complex is located in the vicinity of the Native Americans Burial in trench any development in the dairy area would be subject to the mitigation for the burial in trench.
- Barbed Wire Fence: Recordation (historical documentation) should be completed by developer or owner prior to development. The historic documentation and samples of the barbed wire would then be donated to the San Jose Historic Museum.
- Associated Grader: As a courtesy, the San Jose Historic Museum (through the Parks and Recreation and Community Service Department) would be consulted and offered the grader for display.
- Residences of 1876: In the event future redevelopment is proposed in the vicinity of two former residential structures (ca. 1876), subsurface construction in the vicinity should be monitored by a qualified archaeologist.

Given the general archaeological sensitivity of the remainder of the Specific Plan area, there is always the potential for additional, previously undiscovered cultural resources to be present anywhere within the Specific Plan area. If, during the construction phase, previously unknown cultural materials are encountered below the surface, construction activity would be stopped within 10 feet of the find. A qualified archaeologist would be consulted and would recommend appropriate mitigation measures.

G. VISUAL AND AESTHETIC RESOURCES

EXISTING CONDITIONS

1. Description of Specific Plan Area

The Communications Hill area is essentially an undeveloped series of ridges and knolls surrounded by developed lands. The hills rise over 300 feet from the valley floor, and are the dominant topographic feature in this otherwise level section of south-central San Jose. The terrain in the higher elevation areas consists of moderate to steep slopes on the hillsides, with broad, gently sloping ridgetops. The primary ridge runs for approximately one mile from the southeast section of the site to the northwest, where it declines in elevation to a series of lower knolls. The ridgeline also extends to the west for one mile, terminating at Canoas Creek. This ridge is bisected by a deep saddle which serves as a gap for Guadalupe Corridor freeway, which forms the western boundary of the planning area (see Figure 10).

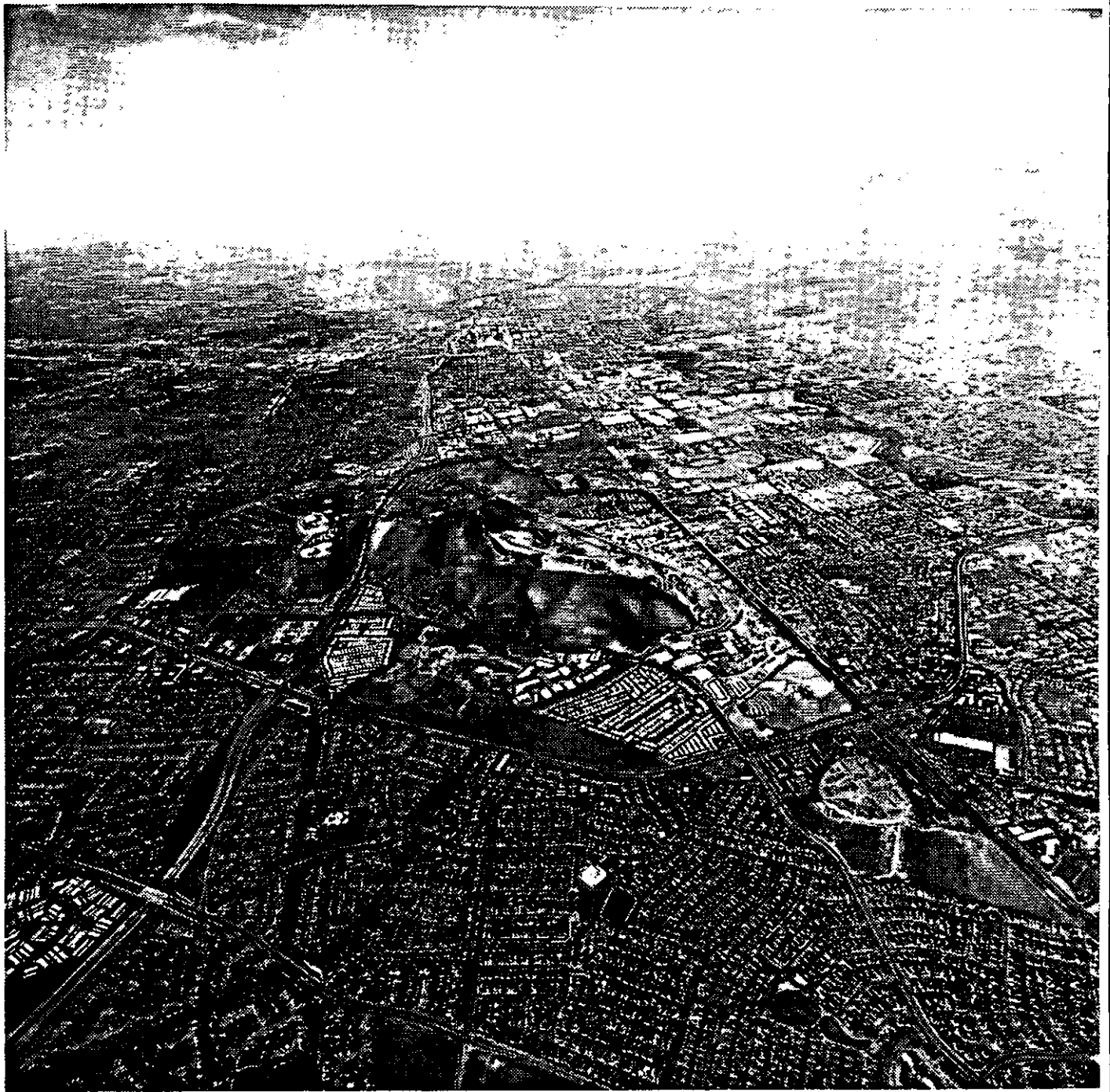
The vegetative cover of the Communications Hill ridge consists primarily of open grassland with almost no trees or shrubs. The northeast-facing slope is being continually excavated by the ongoing quarry operation, and the views of the ridge from the surrounding areas are dominated by the 115-foot tall AT&T microwave tower and the County Communications Center, which have been erected at the highest elevations of the ridge. The County Communications Center consists of a fenced area with numerous antennae, as well as a parking lot and a single-story support building.

Off-site to the northeast, the rolling lower slopes of the hillside area are occupied by the Oak Hill Cemetery mausoleum and its prominent cross. To the west, the off-site portion of the Communications Hill formation located west of the Guadalupe Corridor is occupied by two large and highly visible water tanks and three large churches. The water tanks and church structures are most visible from the Guadalupe Corridor, Curtner Avenue, Hillsdale Avenue, and from the western side of the Communications Hill Specific Plan area.

2. Existing Views to and from the Specific Plan Area

a. Views within the Specific Plan Area

Some of the most direct views of the undeveloped slopes and ridgetop of Communications Hill are available to the residents of existing residential developments within the Specific Plan Area, i.e., Chateau La Salle, the Elk Ridge



NORTHERLY VIEW OF SPECIFIC PLAN AREA

SOURCE: AIR FLIGHT SERVICE, SANTA CLARA, CA. PHOTO DATE: JANUARY 22, 1991

Estates condominium complex, the Carol Drive residential neighborhood, and the Millpond Mobile Home Park (see Figure 11). Less direct views are available to residents of the Redwood Mobile Home Park, and the Mountain Shadows Mobile Home Park which is lower in elevation than the surrounding condominium development. (See Figure 3 for locations of these neighborhoods.)

b. Views From Surrounding Roadways

As discussed in Section II., A. LAND USE, the level areas at the base of Communications Hill which surround the unbuilt ridge have been developed with a variety of uses. The visual heterogeneity of the area surrounding the Communications Hill ridgetop is most apparent along the Monterey Road corridor, where the passing motorist traveling south first observes the Oakhill Cemetery, then the auto-related uses along the commercial strip, with the ongoing quarry operation in the background to the west, and then the Capitol Drive-in theater in the south. The hill itself can only occasionally be glimpsed in the far background along this corridor.

From the south, persons looking northward at the hill from the Capitol Expressway, Snell Avenue or Hillsdale Avenue can observe large expanses of grassy slopes punctuated only by the presence of several existing residences and the hilltop AT&T tower. Similarly, observers looking east from the Guadalupe Corridor Light Rail Transit line have views of open, grassy slopes in the saddle area located between the Elk Ridge Estates condominiums and homes along Carol Drive. Persons looking south into the Specific Plan area from Curtner Avenue can view a number of existing wooden buildings along the road, an unkempt low-lying area full of motor-vehicle bodies along the east side of the Southern Pacific Railroad tracks, and the rooftops of mobile homes of the Millpond Mobile Home Park to the west of the tracks.

c. Distant Views

Long distance views of Communications Hill are available from numerous surrounding areas of the City. Motorists and light rail passengers traveling along the Almaden Expressway, the Guadalupe Corridor, the future Route 85 corridor and Capitol Expressway can easily view the higher elevation slopes and ridgetop communication facilities. The hill is also visible from more distant points, such as downtown San Jose, Route 101 and the east San Jose foothills.

d. Views from Communications Hill

From the ridgetop itself, observers can view downtown San Jose to the north, the Santa Clara Valley to the southeast, the Diablo Range to the east, the Santa Teresa Hills to the south, and the Santa Cruz Mountains to the west. As shown on Figure 11, panoramic views are available from numerous points on the hill.

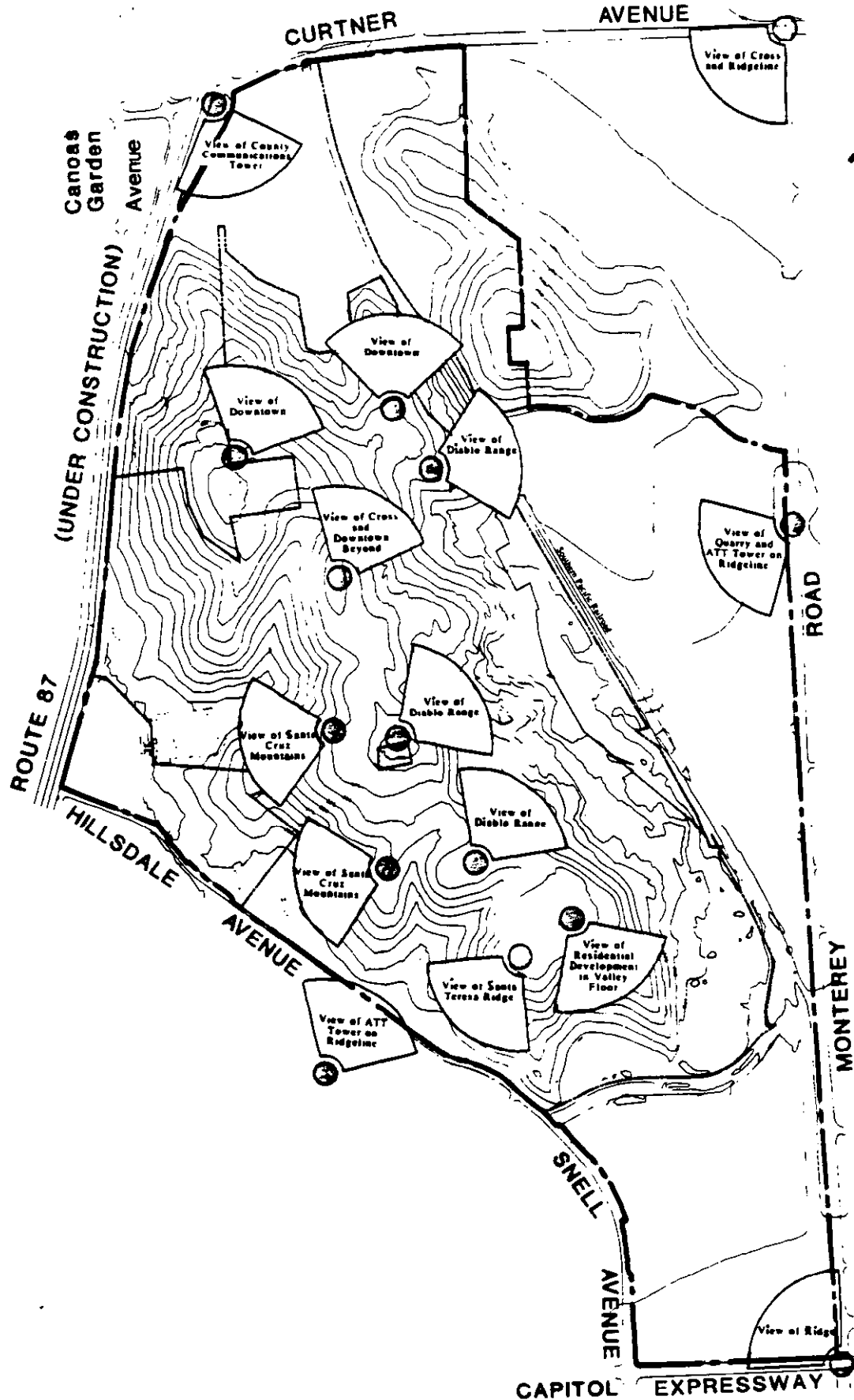
SUMMARY OF THE DEVELOPMENT CONCEPT

The development of the hilltop and slopes for high-density residential use would result in the conversion of the currently open, rural open space of these highly visible areas to a character that is essentially urban. Under the Specific Plan, development of Communications Hill would consist of multi-family residences, a neighborhood commercial center, a civic facility, parks, and a school and playfield on top of the ridge. The design for the central ridge would incorporate the existing AT&T communication tower as the central unifying element of the new hilltop community. An approximately 115-foot tall water storage tank would be located in the park adjacent to the AT&T tower. A gridiron pattern of streets, organized around the AT&T tower and its surrounding park, would extend along the ridge and run down the slopes. Landscape species known to adapt to soils derived from serpentine rock, and which are drought resistant, would be used to provide trees and vegetation along all streets, planted terraces, parks, groves and for the reclamation of the Azevedo quarry.

A band of grassy open space, bisected in part by Vistapark Drive as it traverses the planning area, would ring the dense urban neighborhoods proposed for the hilltop areas. Three smaller multi-family neighborhoods would be situated on the lower slopes of the hill (along Hillsdale Avenue and the Guadalupe Corridor), but would be visually connected to the ridgetop development by a continuation of the gridiron pattern of streets. The high-density hilltop development and surrounding band of largely natural open space would distinguish the Specific Plan development from the more conventional pattern of suburban residential development found throughout the Santa Clara Valley, and would maintain physical and visual separation from the surrounding development.

Hilltop structures would consist of townhomes, condominiums and apartments, generally three to four stories in height, built in the area around the 115-foot tall AT&T tower.

Up to nine mid-rise to high-rise multi-family structures would be built around the edge of the ridgetop. These structures, up to 100 feet or more in height, would be



SCALE: 1" = 1300'

SOURCE: SOLOMON, INC., 1991

constructed against the hill in a manner that would maintain their overall elevation at no more than 45 feet above the crest of the hill. The elevated water tank, slightly lower in height than the AT&T tower, would be located in the six-acre park adjacent to the AT&T facility. The tank, projected to hold 2.2 million gallons of water, would be set on a 90-foot base (in order to provide adequate water pressure) and would have an approximate diameter of 105 feet. The entire structure would be approximately 115 feet in height, as shown on Figure 12.

IMPACTS TO VISUAL RESOURCES

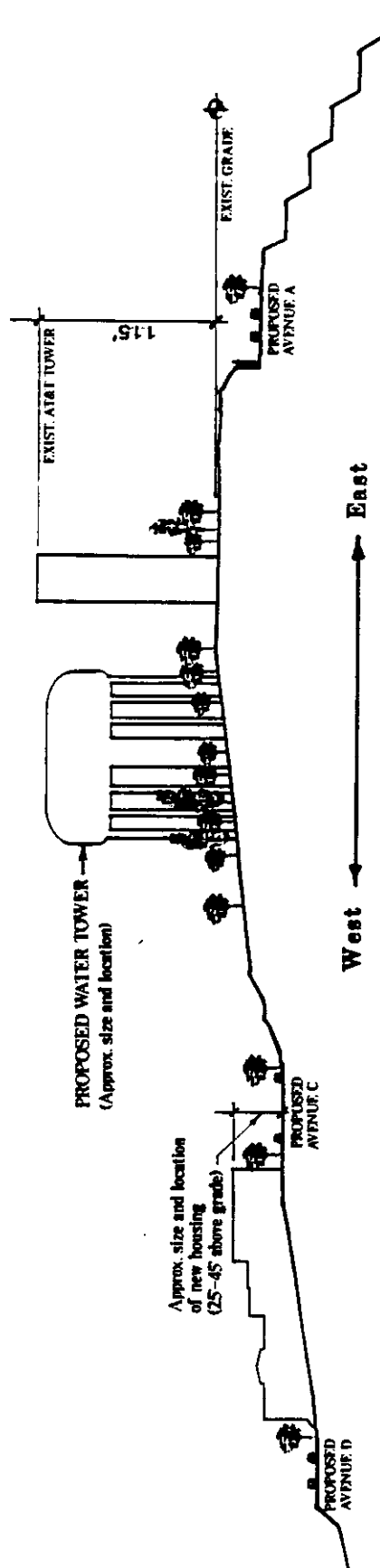
Development under the Specific Plan would significantly intensify land use and alter the existing open space character of Communications Hill. Proposed grading would alter the existing natural topography of Communications Hill, and the construction of buildings, roads and a water tank would introduce a large number of structural elements to a predominantly undeveloped hill and ridgetop.

1. Loss of Open Space/Intensification of Land Use

a. Views from within the Planning Area

Visual changes resulting from development under the Specific Plan would be most noticeable to existing residents of the planning area. In particular, residents of the Chateau La Salle Mobile Home Park, Elk Ridge Estates Condominiums, Carol Drive subdivision and the Millpond Mobile Home Park would be aware of the visual changes resulting from the adjacent development. The addition of multi-family structures on the ridgetop including up to nine mid-rise structures sited on the side of the hill, roads, terraces and a large water tank would be very visible to existing residents. To residents of the Redwood and Mountain Shadows Mobile Home Parks, whose areas are surrounded by existing development, the new development would be less noticeable.

Due to its high visibility, loss of Communications Hill open space in conjunction with intensification of land uses under the Specific Plan represents a significant impact. Measures to minimize visual and aesthetic impacts to both off-site and on-site viewers are discussed subsequently in the mitigation section.



NOT TO SCALE

CROSS-SECTION SHOWING WATER TANK

b. Views of the Planning Area

Motorists on Route 87, Capitol and Almaden Expressways, and Hillsdale and Curtner Avenues, as well as surrounding residents with long-range views of the ridgetop and upper slopes, would obtain a view of a dense urban development on and near the top of the hill with a surrounding band of open space (uncultivated grasslands) on the side slopes. The residential development situated on the lower slopes would not be as readily visible from the surrounding areas.

After buildout of the Specific Plan area, most persons viewing the hill from the east, generally along Monterey Road, would continue to be more aware of foreground features such as the Oakhill Cemetery and commercial/industrial uses, as compared with the hilltop. Future industrial uses, to be located on the generally flat terrain remaining after closure of the Azevedo Quarry, would also be obscured by these existing uses which front along Monterey Road.

From the south, views of the hill would be substantially altered as the open space of existing hillsides along Hillsdale Avenue would be largely replaced with multi-family uses. A large area of land would remain in open space, but the urban roads, structures and landscaped parks would dominate the former grass-covered hillsides. Future motorists and light rail riders along the Guadalupe Corridor as well as persons observing the hill from Curtner Avenue would also be aware of change in essential character of the hill.

2. Grading Impacts

The Communications Hill Conceptual Grading Plan is contained in the Specific Plan document itself (Specific Plan Figure 7), and larger scale maps are available for review at the City of San Jose Planning Department.

Grading for development would be the minimum required to meet engineering design standards for construction of Vistapark Drive and on-site utilities. However, it would be a significant impact. Access roads to the Specific Plan area (e.g., Vistapark Drive, Pullman Way near its future connection with Vistapark Drive, the extension of Narvaez Avenue and the transit shuttle/pedestrian/bicycle access from Millpond Drive), would follow the natural contours of the hill to the extent possible.

Although the development and the grading would occur in a manner that is largely in sympathy with the existing natural contours, there would nonetheless be a significant amount of grading on the site. Preliminary grading quantity estimates indicate that there would be 5.5 million cubic yards of cut and 3.3 million cubic yards of fill. If

the quarry is allowed to continue its operations, much of this excess material would be sold as aggregate. Any additional material would be hauled off-site. This is considered a less-than-significant impact since it would occur over an extended period of time.

At the Azevedo Quarry, massive grading and excavation has already occurred and would continue to occur on the north- and east-facing slopes. Upon termination of the quarry operation, final topographic grades would approximate rough grade elevations planned for Specific Plan development. Flat areas would be developed for industrial uses, and steep slopes revegetated under the quarry reclamation plan. The tallest and steepest finished slopes in the study area would be 1:1 slopes resulting from earth moving and excavation in the quarry area.

Grading for the residential development would result in several cut and fill slopes measuring up to 125 feet high; however, these would not be steep, exposed cuts as in the quarry area. Instead, these cuts and fills would be relatively shallow, and nearly all of these graded areas would be covered with roads, housing, parks, terraces, and replanted open space. Grading would be evident until the proposed structures were completed, road cuts were blended into the landscape by use of retaining walls or plantings, and street trees were established.

Topography and grading is discussed in Section 3.1.a of the Specific Plan, and in the Specific Plan discussion of design standards for the Southwest Playfields and Vistapark Terraces.

Grading related to construction of roads, hillside development and quarry excavation for Specific Plan development represents a significant visual impact. Measures to minimize the effects of grading are discussed subsequently under Mitigation Measures.

3. Water Tank Impacts

The approximately 115-foot high water tank structure would be incorporated into the AT&T park near the 115-foot AT&T structure. Siting of the tank near a taller structure and the planting of park landscaping would serve to soften the appearance of the massive structure. However, it would be a major visual feature readily visible from the Specific Plan area, surrounding streets and neighborhoods, and also from the many areas of the City which have long-distance views of the Hill and AT&T tower. Review and refinement of the tank size requirements would occur at the time of design and installation. However, despite buffering and design refinements, the proposed 2.2 million gallon water tank would represent a significant visual impact.

4. Soil and Planting Limitations

Development of the planning area would involve planting of native and non-native street trees and vegetation, especially in park and terrace areas. Areas to be planted include all street fronts, parks, terraces, and the quarry once it is reclaimed, as shown in the rendered plans contained in the Specific Plan (Specific Plan Figures 4, 26-30 and 45). Over time, and with proper care, these trees and shrubs would soften the built edges, and re-establish a more natural appearance.

The serpentine soil which covers Communications Hill limits the types of vegetation in the planning area due to deficiencies of many nutrients and the unusually high concentrations of magnesium. Trees and shrub types that would grow on the hilltop and slopes include black locust, California live oak, eucalyptus, toyon, knobcone/Monterey pine hybrids, and other species described on an area-by-area basis in the Specific Plan (see the Specific Plan chapters on street trees and open space, parks, terraces and slopes). Due to the inherent limitations to plant growth found in serpentine soils, a landscape feasibility study would be completed in conjunction with each project-specific approval. With mitigation, soil and planting limitations are not considered to be a constraint to landscaping as planned, and therefore would be considered a less-than-significant impact.

5. Impact Upon Views Away from Communications Hill

Opportunities to view downtown San Jose, the Santa Clara Valley, the Diablo Range and the Santa Cruz Mountains from the higher elevations of Communications Hill would be greatly increased with buildout of the Specific Plan since the new roadways and new residential, commercial and civic uses would provide greater access to the ridgetop for public enjoyment of the views.

In summary, the conversion of the existing open space on Communications Hill to predominantly urban uses, the substantial amount of grading required, and the addition of a large water tank represent a significant impact upon the visual and aesthetic resources of the surrounding area.

MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; B. Community Development; 4. Urban Design; Policies:
 1. The City should continue to apply strong architectural and site design controls on all types of development for the protection and development of neighborhood character, and for the proper transition between areas with different types of land uses.
 8. Design solutions should be considered in the development review process which address security, aesthetics and public safety.
 12. In order to preserve and enhance the scenic and aesthetic qualities of the natural terrain, development on slopes exceeding 7 percent should conform to the following guidelines:
 - Planned Development zoning is preferable for its flexible design techniques such as clustering, variable lot sizes, and varying setbacks in order to maximize residential densities.
 - Construction techniques and housing types adaptable to a variable terrain, such as cluster housing, split pads and stepped foundations, should be utilized where appropriate. Conventional, single flat pad lots should ordinarily be discouraged.
 - ✓ • Consideration should be given to the siting of homes for privacy, livability, solar and wind conditions. Siting should take advantage of scenic views but should not create significant visual impacts affecting public places and other properties.
 - ✓ • The preservation of existing trees, rock outcroppings and other significant features should be encouraged.
 - ✓ • When grading or recontouring of the terrain is proposed, it should be done in such a way as to preserve the natural character of the hills, whenever possible.

- Because street construction on slopes often requires a disruptive amount of grading, modified street sections designed for both utility and minimum grading should be encouraged.

✓ Development should be discouraged on slopes exceeding 30 percent and on ridgelines.

Specific Plan mitigation

- Minimize grading or re-contouring of Communications Hill to preserve the topography of the land wherever possible, and to avoid the creation of visible cut and fill slopes or obviously engineered or flat-surfaced slopes;
- Take advantage of the hillside setting to maximize views and vistas, both private and public; to ensure privacy; and to provide optimal ventilation;
- Encourage development on Communications Hill that displays a strong urban form, for example, is compact and cohesive with some emphasis on vertical elements and sharp distinctions between most developed areas and major open spaces;
- Place facilities such as utility distribution lines and associated equipment underground to promote neighborhood visual quality;
- Improve the aesthetic quality of the major communications facilities on the hill;
- Distribute and design public and private open space and parks for direct access and visibility for nearby residents.

Specific Plan Text and Map mitigation

- As shown on the Specific Land Use Plan, a 185-acre open-space area would ring the ridgetop development;
- Recontouring of the southern-most hill must maintain its soft profile; a simple flattening will not be permitted;
- Grading for Specific Plan terraces would occur in conjunction with reclamation of the quarry and according to Specific Plan design standard for benched and planted terraces;

- Streets would be designed as steep as traffic safety and public works standards permit;
- ✓ • Installation of street trees, park plantings, landscaped terraces and other vegetation with species known to adapt to serpentine soils in order to screen and soften the proposed buildings and streets;
- Utilize design standards established by the Specific Plan for the water tank;
- Installation of landscape plantings in accordance with the Specific Plan as soon as feasible after completion of each construction phase.

In summary, the implementation of General Plan and Specific Plan policies would partially mitigate the significant visual impacts of the project. However, development under the Specific Plan would still result in unavoidable significant visual impacts related to loss of open space, grading impacts and the installation of the proposed water tank.

Additional Recommended mitigation

- Prepare and follow landscape feasibility study recommendations concerning the type and placement of plants compatible with serpentine soil and other local conditions;
- Over-excavate existing serpentine soils and replace with non-serpentine clean soils appropriate for plant growth in areas to be landscaped, as recommended by landscape feasibility study.
- Provide for earthen, vegetated slopes instead of concrete retaining walls, where feasible, to permit landscaping with a more natural effect;
- Avoid removing existing mature vegetation and especially trees to the extent possible;
- Replace mature trees which must be removed with replacement planting at the rate prescribed by the City of San Jose;
- Hydroseed and revegetate disturbed areas soon after construction. Use native or naturalized plant materials in uncultivated open space areas to blend in with the existing hill vegetation and color patterns.

H. TRAFFIC AND TRANSPORTATION

The following discussion of traffic impacts is condensed from the Traffic Study Report prepared by TJKM Transportation Consultants in October 1991. The full traffic report is attached as Appendix E.

INTRODUCTION

The traffic study focuses on the future traffic conditions (year 2000) on the area circulation system (see Figure 13). Future year traffic forecasts were evaluated for the proposed Communications Hill Specific Plan, and all other major General Plan Amendments (GPA) under review to determine the traffic effects of these alternatives on the year 2000 General Plan transportation system (see Appendix L).

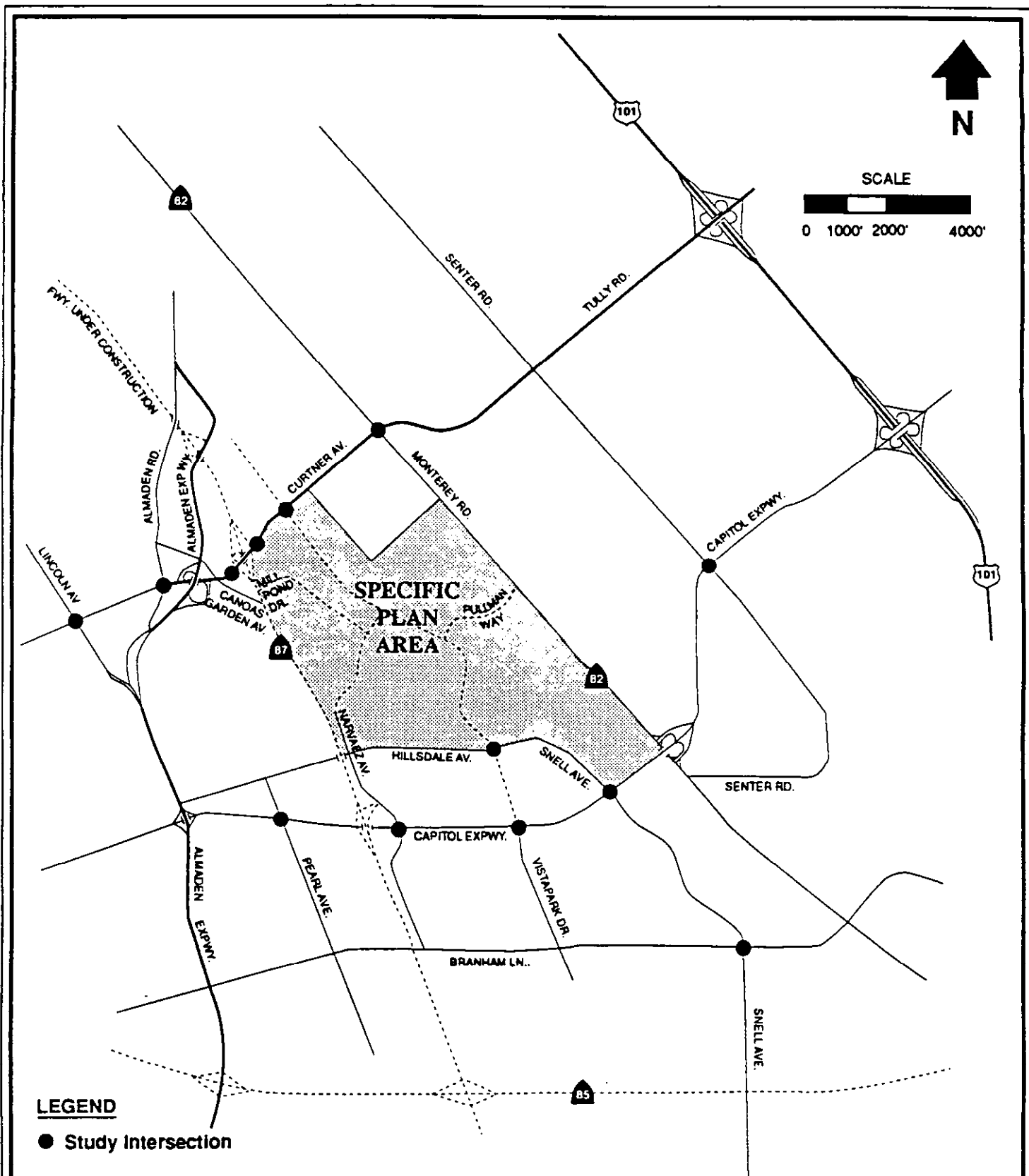
The proposed Communications Hill Specific Plan includes a mix of residential and employment uses. Significant to this transportation analysis is how the total proposed land use allocations differ from the year 2000 General Plan. The Specific Plan provides for a lower intensity of multi-family units which would decrease the current permitted total from 5,140 to 4,140 (a figure which includes 140 existing residences in addition to the maximum proposed 4,000 multi-family units) for a reduction of 1,000 units relative to the adopted General Plan. Also, the employment uses within the Specific Plan could provide for an additional 940 employees to the currently assumed 773 employees for a total of 1,713 employees under the Specific Plan.

The traffic forecasts in all cases were reported for the p.m. peak hour which is used in planning studies because it is the most critical traffic service period on Study Area and Sphere of Influence streets. A description of the City of San Jose's traffic model and key assumptions for the 1991 General Plan transportation analysis are contained in Appendix A of the Traffic Study Report.

EXISTING CONDITIONS

1. Existing Roadway System

The following is a description of major streets and highways within or adjoining the study area as shown on Figure 13.



COMMUNICATIONS HILL SPECIFIC PLAN EIR TRAFFIC STUDY

AREA CIRCULATION

TJKM

FIGURE
13

Route 101 provides regional north-south access to the study area. In the vicinity of the study area, Route 101 has three mixed flow lanes and one high occupancy vehicle (HOV) lane in each direction with interchanges at Tully Road and Capitol Expressway. South of its future interchange with Route 85, which is five miles south of its interchange with the Capitol Expressway, Route 101 has only two mixed flow lanes in each direction.

Monterey Road (Route 82) is a four- to six-lane major arterial extending in a southeast direction from Downtown San Jose to Gilroy, California.

Almaden Expressway (County Route G3) is a four- to six-lane major arterial extending in a southerly direction from Almaden Road near San Jose Avenue to Harry Road.

Curtner Avenue within the study area is a four-lane arterial which runs in an east-west direction. East of Monterey Road, Curtner Avenue becomes Tully Road.

Capitol Expressway (County Route G21) is a four- to six-lane major arterial which extends easterly from Almaden Expressway to Interstate 680.

Branham Lane is a two- to six-lane arterial which runs in an east-west direction approximately two-thirds mile south of Capitol Expressway.

2. Existing Transit Routes

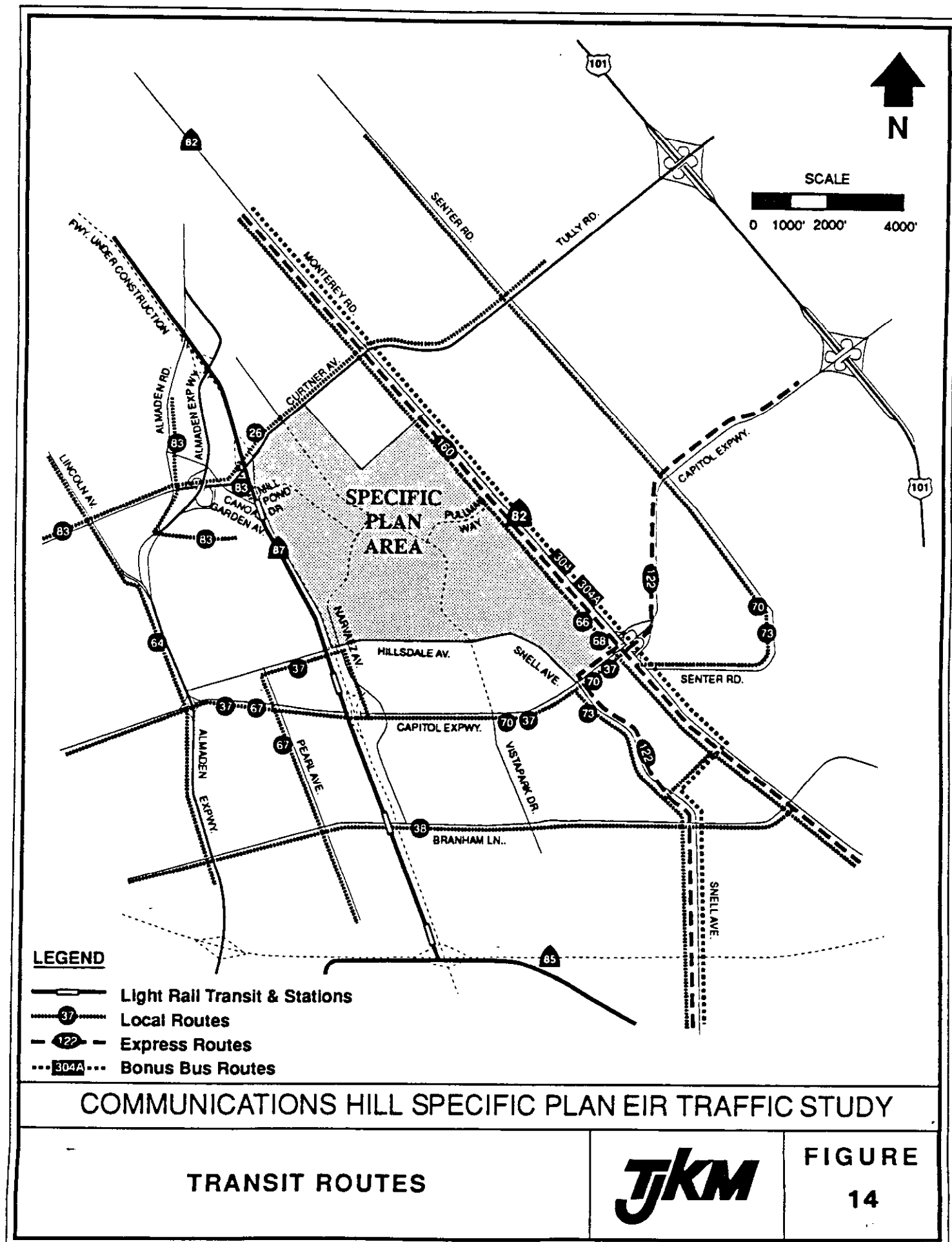
Santa Clara County Transit District operates express and local buses through the study area. Express buses operate for commute purposes. They run in one direction during the a.m. period and in the opposite direction during the p.m. period on weekdays only. This type of service has limited stops in order to decrease the travel time. Local bus service operates daily with more frequent bus stop locations. Descriptions of the various transit routes which serve the study area are presented in Table 5 and diagrammed in Figure 14.

The Guadalupe Corridor Light Rail system has been completed along the median of Route 87 in the study area (and has been open for service since April 1991) with peak hour trains at 10 minute headways during the weekdays. The two light rail transit (LRT) stations serving the project site are the Curtner Avenue Station, located south of Curtner Avenue and east of Canoas Garden Avenue, and the Capitol Station which is located north of the Capitol Expressway at Narvaez Avenue.

TABLE 5

**SANTA CLARA COUNTY TRANSIT DISTRICT BUS ROUTES
SERVING THE STUDY AREA**

Headways					
Route No.	Type of Service	Weekday Peak	Weekday Off-Peak	Sat.	Terminal Points
LRT	Light Rail	10	10	15/30	Santa Teresa/Almaden to Great America
304	Bonus Bus	10/15	--	--	S. San Jose to Lockheed/Moffett Park
304A	Bonus Bus	10/15	--	--	S. San Jose to Lockheed/Moffett Park
122	Express	30	--	--	S. San Jose to Lockheed/Moffett Park
160	Express	30	--	--	Gilroy to San Jose
26	Local	15	30	30	Eastridge to Sunnyvale
37	Local	30	30	60	Camden/Union to Eastridge
38	Local	30	30	45	Monterey/Senter to Los Gatos Comm. Hospital
64	Local	15	15	30	Alum Rock to Almaden Valley
66	Local	15	30	30	Milpitas to Santa Teresa Hospital
67	Local	30	30	30	Milpitas to Santa Teresa Hospital
68	Local	15	30	30	San Jose to Gilroy and Gavilan College
70	Local	15	15	15	Milpitas to Capitol LRT Station
73	Local	30	30	60	Downtown San Jose to Snell/Capitol
83	Local	30/60	30/60	60/120	Downtown San Jose to Good Samaritan Hospital



3. Intersection Performance

The existing traffic conditions during the P.M. peak hour were evaluated at the following 10 intersections within the study area:

- Curtner Avenue/Lincoln Avenue
- Curtner Avenue/Almaden Road
- Curtner Avenue/Monterey Road
- Capitol Expressway/Pearl Avenue
- Capitol Expressway/Narvaez Avenue
- Capitol Expressway/Vistapark Drive
- Capitol Expressway/Snell Avenue
- Capitol Expressway/Senter Road
- Branham Lane/Snell Avenue
- Hillsdale Avenue/Narvaez Avenue

a. Methodology

The existing traffic conditions in the study area are described in terms of the operating levels of the study intersections during the p.m. peak hour. The operating level of an intersection is determined by first calculating the intersection volume-to-capacity (V/C) ratio. The volume-to-capacity ratio is then related to a qualitative description known as "level of service" (LOS) using letters A through F. The City of San Jose's Level of Service Policy defines an acceptable operating level as Level of Service D or better. Descriptions of the various levels of service and their associated range of volume-to-capacity ratios are presented in Table 6. The LOS calculation worksheets for the existing conditions are contained in Appendix C of the Traffic Study Report.

b. Level of Service Results

Most of the intersections near the planning area operate at LOS C or better conditions. However, one of the intersections operates below the LOS D threshold, and that is at Capitol Expressway/Senter Road where the current volumes exceed the capacity (LOS F). The intersection of Capitol Expressway/Snell Avenue is right at the threshold (lower limit of LOS D). Should this proposed General Plan Amendment be adopted, a much more detailed and rigorous "project level" traffic analysis would be required prior to the issuance of permission to develop the site. Should this analysis find the development is not in conformance with the City intersection Level of Service policy,

TABLE 6

LEVELS OF SERVICE DESCRIPTION FOR INTERSECTIONS

Level of Service	Type of Flow	Delay	Maneuverability	V/C Ratio
A	Stable Flow	Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	Turning movements are easily made, and nearly all drivers find freedom of operation.	0.00-0.60
B	Stable Flow	Slight delay. If signalized, an occasional approach phase is fully utilized.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	0.61-0.70
C	Stable Flow	Acceptable delay. If signalized, a few drivers arriving at the end of a queue may occasionally have to wait through one signal cycle.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71-0.80
D	Approaching Unstable Flow	Tolerable delay. Delays may be substantial during short periods, but excessive back-ups do not occur.	Maneuverability is severely limited during short periods due to temporary back-ups.	0.81-0.90
E	Unstable Flow	Intolerable delay. Delay may be great - up to several signal cycles.	There are typically long queues of vehicles waiting upstream of the intersection.	0.91-1.00
F	Forced Flow	Excessive delay.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	Varies

mitigation must be provided - either by adding capacity to the transportation system or reducing demand by scaling back the development plans.

The existing intersection level of service results are summarized in Table 7 and illustrated in Figure 15. The LOS calculation worksheets are contained in Appendix C of the Traffic Study Report. In addition, an operational analysis, which is available for review at the City of San Jose planning department was performed as part of the Specific Plan planning process. This information was used for a cost analysis to generate estimates of potential infrastructure costs for the proposed Communications Hill Specific Plan. Level of Service analysis will be required for individual projects at the development stage.

c. Extension of Millpond Drive

The existing adjacent land uses, and traffic circulation conditions within the Canoas Garden Avenue area make the Millpond Drive connection the most sensitive to added traffic from the Specific Plan area. Canoas Garden Avenue currently carries approximately 5,500 vehicles (May 1991) during an average weekday south of Curtner Avenue with up to 670 in the peak hour. This area also has significant weekend traffic patterns associated with several churches in the area of Canoas Garden Avenue. The Sunday morning traffic peaks are higher than the weekday peak (up to 760 vehicles in one hour) and occasionally require assistance from City police to override the traffic signal control at Curtner Avenue in order to facilitate the heavy traffic flows to and from the churches. In addition, residents have indicated that the heavy directional traffic on Sunday mornings causes long delays for vehicles turning from the side streets or private driveways along Canoas Garden Avenue.

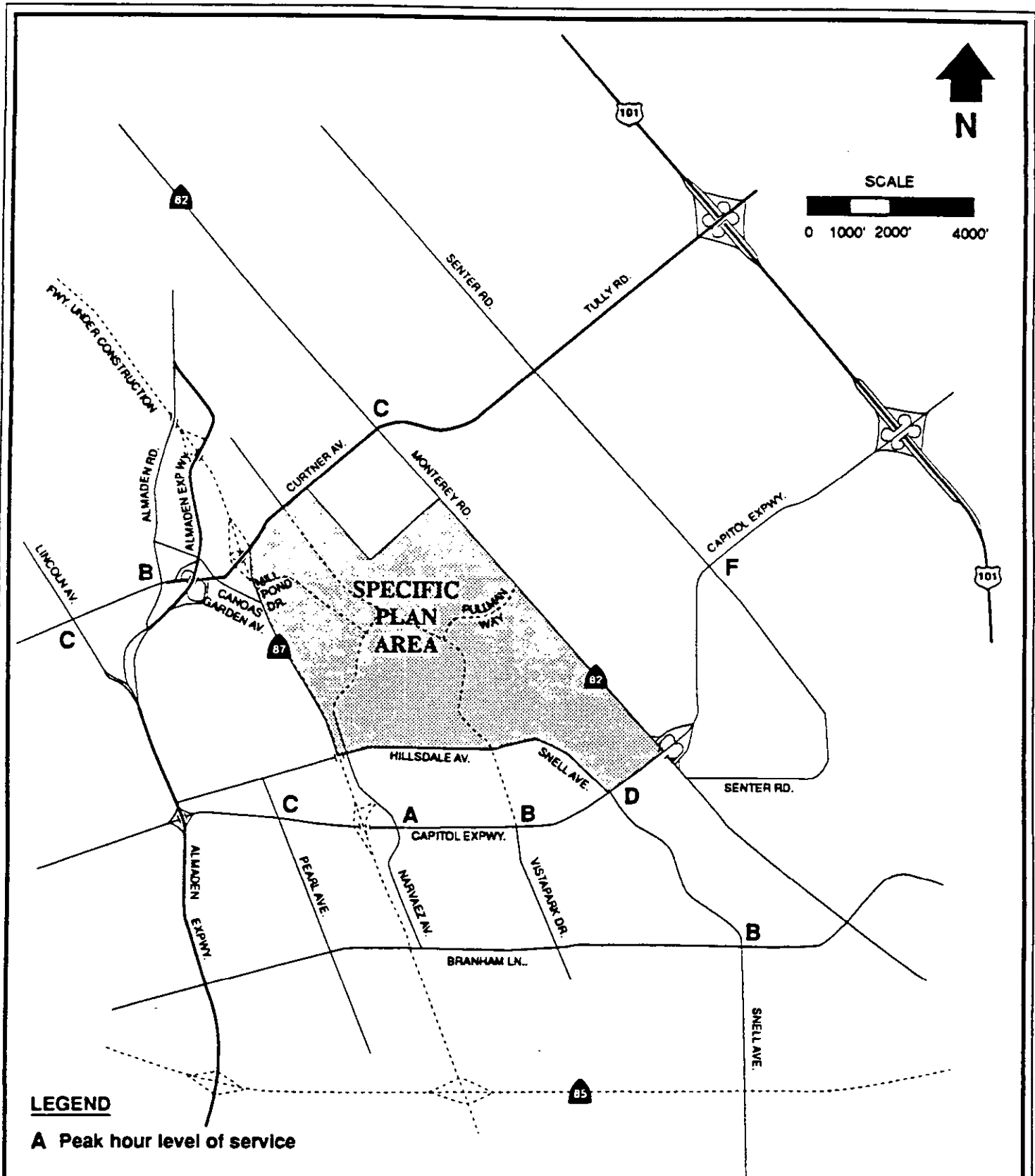
FAR TERM TRAFFIC IMPACTS

The Far Term Traffic Impacts consider the effect of the proposed General Plan amendment for the Communications Hill Specific Plan area on the year 2000 Transportation system, and compares this condition with the General Plan. The traffic analysis focuses on conditions in the year 2000 during the p.m. peak hour of travel. Refer to the Traffic Analysis Methodology section of the Traffic Study Report (Appendix E) for more detail on the analysis methodology and terms.

TABLE 7

EXISTING INTERSECTION LEVELS OF SERVICE
(P.M. Peak Hour)

LOCATION	V/C	LOS
Curtner Avenue/Lincoln Avenue	0.78	C
Curtner Avenue/Almaden Road	0.68	B
Curtner Avenue/Monterey Road	0.74	C
Capitol Expressway/Pearl Avenue	0.71	C
Capitol Expressway/Narvaez Avenue	0.57	A
Capitol Expressway/Vistapark Drive	0.64	B
Capitol Expressway/Snell Avenue	0.90	D
Capitol Expressway/Senter Road	1.08	F
Branham Lane/Snell Avenue	0.66	B



LEGEND

A Peak hour level of service

COMMUNICATIONS HILL SPECIFIC PLAN EIR TRAFFIC STUDY

**EXISTING P.M. PEAK HOUR
INTERSECTION PERFORMANCE**



**FIGURE
15**

The year 2000 traffic forecasts were made for the South Bay region using the City's TRANPLAN transportation planning model for the freeways, highways, streets and transit systems. Three sets of traffic forecasts were prepared for use in the traffic analysis:

- Base Case - Year 2000 General Plan land uses
- Far Term Case - Year 2000 General Plan land uses plus the proposed Communications Hills Specific Plan Amendment
- Cumulative Case - Year 2000 General Plan land uses plus the proposed Communications Hills Specific Plan Amendment plus other major proposed General Plan Amendments proposed for 1991 Annual Review.

The land use assumptions for the Specific Plan area listed in Table 8 were used in the year 2000 traffic model evaluation for the Far Term case. However, the land use assumptions for the Communications Hill General Plan Amendment were combined with the assumptions for the proposed Baptist Church (GP91-7-1) in the traffic model analysis (see Table III-B in Appendix E). Therefore, the following findings for the proposed Specific Plan also reflect the proposed land use changes for the Baptist Church property.

1. Planned Transportation Improvements

Several important transportation improvements are scheduled to be completed before the year 2000 and have been included in the future year transportation model forecasts. The following describes the key features of the improvements.

Route 85 (West Valley Freeway) is assumed to be a six-lane freeway with two HOV lanes that would provide service from Route 101 in Mountain View to Route 101 in South San Jose with intermediate interchanges at Route 280, Highway 17, Route 87, and Almaden Expressway. This freeway would supplement the east-west portion of the Route 280 freeway in the South Bay area and serve the communities of Mountain View, Saratoga, Cupertino, Los Gatos and South San Jose. Within the study area, Route 85 is expected to provide relief to Capitol Expressway and Branham Lane. The planned start of service is December 1994, however, the section of Route 85 between Cottle Road and Route 87 opened in April 1991.

TABLE 8

**GENERAL PLAN AMENDMENT LAND USES
COMMUNICATIONS HILL SPECIFIC PLAN**

<u>Land Use Designation</u>	<u>General Plan</u>	<u>Proposed Amendment</u>	<u>Changes</u>
Employment			
Manufacturing	108	361	253
Warehouse	148	401	253
Retail	99	149	50
Service	84	287	203
Utility and Roadway*	194	335	141
Public Facility	130	170	40
Fire	10	10	0
Total	773	1,713	940
Residential			
<u>Single Family</u>			
Low	455	455	0
Medium	168	168	0
High	89	89	0
Total	712	712	0
<u>Multi-Family</u>			
Low	200	162	(38)
Medium	2,495	2,008	(487)
High	2,445	1,970	(475)
Total	5,140	4,140	(1,000)

* Includes Caltrain Maintenance Facility

Source: Mike Flores, City Planning Department (4/22/91)

Route 87 (Guadalupe Freeway) is assumed to be a six-lane freeway with two HOV lanes that would connect Route 85 (approximately 1.5 miles south of Capitol Expressway) to Route 280 near downtown San Jose and terminate at Route 101 just north of the San Jose airport. Route 87 would supplement the north-south corridor capacity of Route 101 and Highway 17. Interchanges are planned at Almaden Expressway (to and from the north), Curtner Avenue, Capitol Expressway and Branham Lane within the study area. Route 87 is expected to provide relief to Monterey Road and Almaden Expressway and also would reduce volume demands on Capitol Expressway and Tully Road as traffic is diverted to Route 87 instead of Route 101. The planned start of service is December 1994.

Monterey Road is assumed to be widened from the existing four lanes to six lanes between Tully Road and Blossom Hill Road. The construction is planned to start in the summer of 1991 and be completed prior to 1994.

Vistapark Drive is assumed to be extended northerly as a four-lane arterial street between Capitol Expressway and Curtner Avenue. The portion between Hillsdale Avenue and Curtner Avenue would be built incrementally as the Communications Hill Specific Plan area is developed. The section between Hillsdale Avenue and Capitol Expressway is not included in the Specific Plan area. However, for the purposes of this analysis, Vistapark Drive has been assumed to be completed between Curtner Avenue and Capitol Expressway.

2. Traffic Impacts

a. Changes to Study Area and Specific Plan Vicinity Traffic

The Far Term traffic analysis considers the effect of the proposed Specific Plan in the Year 2000 p.m. peak hour. Overall, the Specific Plan would have negligible impacts to the Study Area transportation system, although there would be a variety of minor negative changes and benefits along streets and highways near the planning area (see Table 9).

The proposed changes in land use for the Specific Plan would cause a shift in year 2000 travel patterns as residential trips are reduced and employment (industrial) trips increase as permitted with the GPA. Road links along Monterey Road, Capitol Expressway, and southern portions of the Almaden Expressway would experience minor traffic deterioration. However, there would be offsetting benefits to the expected congestion on Route 87, Route 280 and northern portions of the Almaden Expressway.

TABLE 9
TRAFFIC IMPACT SUMMARY
PROPOSED ALTERNATIVE

LOCATION	<u>POSITIVE</u>		<u>NEGATIVE</u>	
	MAJOR	MINOR	MAJOR	MINOR
Route 87				
South of Route 280		X		
South of Curtner		X		
South of Route 85				X
Route 280				
West of Route 87		X		
East of Route 87		X		
Almaden Expressway				
North of Capitol		X		
Monterey Road				
South of Story Rd.				X
South of Tully Rd.		X		
Capitol Expressway				
East of Monterey Rd.				X

Refer to Methodology Section in Appendix E for explanation of Traffic Impact Categories and Figure 7 in Appendix E for map of bandwidth plots.

b. Site Access

The proposed on-site roadway system would connect to existing City streets at five locations (shown schematically in Figure 11). The central street for the Specific Plan area is Vistapark Drive which would connect to Curtner Avenue to the north, and Hillsdale Avenue to the south. Two full access minor road connections are planned to Monterey Road via Pullman Way, and to Narvaez Avenue. The fifth planned connection is to Millpond Drive which connects to Curtner Avenue via Canoas Garden Avenue. The Millpond Drive extension could be planned to provide either limited or full access for vehicle, pedestrian, and bicycle traffic to the Curtner Avenue LRT Station and other destinations. In addition, a shuttle bus service may be implemented between the hilltop area and the LRT station. The Millpond Drive connection would be made just west of the existing mobile home park and would not add traffic within that existing neighborhood.

Limited access proposed. Under the limited access provisions, as proposed in the Specific Plan, access to the hilltop areas would be limited to pedestrian, bicycle, and shuttle buses. The added traffic from the hilltop area of the site is expected to be minimal and not adversely effect existing traffic patterns in the area. The planned 15 single-family units along Carol Drive would add 145 vehicles on weekdays and 125 on weekends daily to Canoas Garden Avenue. The access limitation from Millpond Drive could be enforced by use of an electronic gate near the intersection of the roadway extension with Millpond Drive that can be activated by the shuttle buses with adequate openings on the side for cyclists and pedestrians to clear without any controls. No additional improvements are expected with the limited access alternative to Millpond Drive.

Full access alternative. If full vehicle and pedestrian access is considered at the Millpond Drive connection, an additional 945 to 1,145 per day vehicles during the week and 575 to 725 vehicles on Sunday are expected on Canoas Garden Avenue. This increment of added traffic would be quite noticeable by local residents and would increase delays in movements to and from private driveways and minor cross streets. The intersection performance at Curtner Avenue and Canoas Garden Avenue would remain acceptable during the weekday (LOS B). With full access, the heavy traffic patterns on Sundays would be exacerbated by the added traffic. If this alternative were to be considered, it is recommended that the traffic signal timing at Curtner/Canoas Garden be reviewed to determine if special consideration can be given to Sunday traffic patterns. In addition, the added traffic turning to and from Millpond Drive at Canoas Garden Avenue may eventually warrant four-way

STOP sign control. If installed, this would enable vehicles on the cross streets to safely cross heavy Sunday traffic flows on Canoas Garden Avenue. The future traffic volumes would have to be monitored to determine the timing and verify the need for the four-way STOP signs.

In summary, future development under the Specific Plan would result in negligible effects to the Study Area and local transportation system, with the exception of potentially significant impacts to the intersection of Canoas Garden and Curtner Avenues if full access is permitted on the Millpond Drive connection. If only limited access is permitted on the Millpond Drive extension, no impacts would occur.

CUMULATIVE TRAFFIC IMPACTS

The Cumulative Traffic Impact Analysis considers the Horizon 2000 General Plan plus all of the major General Plan Amendments proposed within the City of San Jose. The same future transportation system improvements identified in the previous Far Term Traffic Impact section have been assumed as part of this analysis. The traffic analysis focuses on conditions in the year 2000 during the p.m. peak hour of travel. Refer to the Traffic Analysis Methodology section of the Traffic Study Report (Appendix E) introduction for more detail on the analysis methodology and terms.

From a Sphere of Influence perspective, the cumulative effect of adopting the proposed major GPAs on the Study Area transportation system would be to increase the average travel distance, the time of an average trip, and the general degradation of the transportation system performance within the City of San Jose by small margins (usually less than 1.0 percent change). Although there would be some benefit to isolated areas (Council District 3), the aggregate effect of the cumulative case would create some significant negative changes to the system. The most significant Study Area detrimental impact overall is to the expressway facilities within each affected Council District and for the City of San Jose overall. Traffic impacts are summarized in Table 10.

Nearer to the study area, many of the roadway links under the cumulative condition are forecast to have major increases in conjection. However, due to the nature of the forecast model this only indicates a potentially significant impact. Additional screen line analysis indicate that the cumulative impacts are not significant.

Cumulative traffic impacts are considered to be a less-than-significant impact.

TABLE 10
TRAFFIC IMPACT SUMMARY
CUMULATIVE GPA CASE

LOCATION	<u>POSITIVE</u>		<u>NEGATIVE</u>	
	MAJOR	MINOR	MAJOR	MINOR
Route 87				
South of Route 280			X	
South of Curtner			X	
South of Route 85		X		
Route 280				
West of Route 87			X	
East of Route 87			X	
Almaden Expressway				
North of Capitol			X	
Monterey Road				
South of Story Rd.			X	
South of Tully Rd.			X	
Capitol Expressway				
East of Monterey Rd.				X

Refer to Methodology Section (in Appendix E) for explanation of Traffic Impact Categories.

MITIGATION MEASURES

General plan mitigation

- Goals and Policies, D. Services and Facilities; 2. Levels of Service; Policy:
 - 5. The minimum overall performance of Sphere of Influence streets during peak travel periods should be Level of Service "D".
 - Development proposals should be reviewed for their measurable impacts on the level of service and should be required to provide appropriate mitigation measures if they have the potential to reduce the level of service to "E" or worse.
- Goals and Policies, D. Services and Facilities; 1. Transportation; Policies:
 - 1. Inter-neighborhood movement of people and goods should occur on thoroughfares and is discouraged on neighborhood streets.
 - 3. Public street right-of-way dedication and improvements should be required as development occurs. Ultimate thoroughfare right-of-way should be no less than the dimensions as shown on the Land Use/Transportation Diagram except when a lesser right-of-way will avoid significant social, neighborhood or environmental impacts and perform the same traffic movement function.
 - 7. The traffic impacts on regional transportation facilities should be taken into consideration when reviewing major General Plan Land Use/Transportation Diagram amendments.
 - 15. Pedestrian travel should be encouraged as a viable mode of movement throughout the Sphere of Influence by providing safe and convenient pedestrian facilities in new and existing urban areas, particularly the Downtown Core Area and neighborhood business districts.
 - 18. The City should promote private-sector participation and implementation of appropriate Transportation System Management measures such as carpooling and vanpooling, preferential parking and staggered work hours/flextime.

Specific Plan mitigation

- Provide a multi-model transportation system for Communications Hill area which is safe, efficient and environmentally sensitive;
- Provide for vehicular, bicycle, bus and pedestrian circulation that can be safely combined in the design of the streets;
- Link vehicular, bicycle and pedestrian circulation with each public transit system serving this area;
- Plan a system of non-vehicular pedestrian routes throughout Communications Hill that connects a mix of land uses and encourages walking;
- Encourage mass transit use by residents through easy access to Light Rail and Caltrain stations.

In summary, future development under the Specific Plan would result in less-than-significant impacts to the City's transportation system in the far-term. Cumulative traffic impacts would also be less-than-significant.

I. AIR QUALITY

This section is a summary of the report Communications Hill Specific Plan Air Quality Technical Report prepared by Environmental Science Associates (ESA) in August 1991. The full text of the ESA report is attached as Appendix F.

Basic definitions useful in understanding air quality include the following:

- Criteria Air Pollutants: Ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), suspended particulate matter (PM₁₀), and lead (Pb). These six pollutants are called "criteria" air pollutants because the standards applicable to each satisfy criteria specified in the federal Clean Air Act.
- Toxic Air Contaminants (TACs): California State law (AB 1807, Tanner) defines toxic air contaminants (TACs) as air pollutants having carcinogenic effects. A total of 14 substances have been designated TACs, and an additional eight are currently under review.
- Hazardous Air Pollutants (HAPs): A total of 189 air pollutants have been designated by the EPA as HAPs because of their carcinogenic, mutagenic, teratogenic, or neurotoxic characteristics.

A full explanation of fundamental air quality terms and concepts is included in Appendix F.

Air quality is regulated through both federal and state ambient air quality standards and emissions limits for individual sources of air pollutants. California standards are generally more stringent than Federal standards. Local agencies including the California Air Resources Board (ARB), the Bay Area Air Quality Management District (BAAQMD), share responsibility for air quality regulation in the Bay area. Consistency with the federal Clean Air Act, the Clean Air Amendments of 1990, and the Bay Area Air Quality Management Plan are discussed in Section I., E. PLANS, POLICIES AND REGULATIONS.

The BAAQMD is the local agency empowered to regulate air pollutant emissions in the nine-county San Francisco Bay Area Air Basin. The BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. Currently, the BAAQMD is preparing a "Clean Air Plan" pursuant to the California Clean Air Act. This Plan is similar to a district's segment of the

State Implementation Plan (SIP), and the BAAQMD intends to submit the plan as it's portion of California's new SIP, due to the EPA in Fall 1991.

EXISTING CONDITIONS

1. Ambient Conditions for Criteria Pollutants

Ambient pollutant concentrations recorded in San Jose are among the highest in the Bay Area. The urban nature of the San Jose area, its position downwind of other Bay Area cities, and the regional climate and the local topography, which traps and concentrates pollutants, all contribute to poor air quality. Because San Jose exceeds State standards for ozone (O_3), carbon monoxide (CO) and particulate matter (PM_{10}), San Jose is considered a non-attainment area. Table 11 summarizes San Jose criteria pollutant exceedances.

a. Ozone

The most severe air quality problem in the Bay Area is high concentrations of ozone (O_3). High levels of O_3 cause eye irritation and can impair respiratory functions. Accumulations of O_3 depend heavily upon weather patterns and thus vary substantially from year to year. O_3 is produced in the atmosphere through photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_x). The numerous small sources emitting most of the HC and NO_x are spread throughout the region. The problem is most severe in Santa Clara County, where O_3 concentrations have approached the first-stage Health Advisory Level (0.2 parts per million). Between 1985 and 1989, the state O_3 standard was exceeded 69 times at the San Jose monitoring station, and 76 times at the Gilroy monitoring station.

b. Carbon Monoxide

Because carbon monoxide (CO) is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally closely follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. CO standards are occasionally exceeded in the Santa

TABLE 11

SAN JOSE AIR POLLUTANT SUMMARY
1985-1989 (120 NORTH FOURTH STREET STATION)

POLLUTANT	CALIFORNIA STANDARD	MONITORING DATA BY YEAR				
		1985	1986	1987	1988	1989
<u>Ozone</u> (O ₃) Highest 1-hr. average, ppm/a/ Standard violations (days)	0.09/b/	<u>0.14</u> 12	<u>0.14</u> 12	<u>0.14</u> 23	<u>0.12</u> 12	<u>0.13</u> 10
<u>Carbon Monoxide</u> (CO) Highest 1-hr. average, ppm Standard violations (days)	20/b/	<u>21.0</u> 1	16.0 0	13.0 0	15.0 0	18.0 0
Highest 8-hr. average, ppm Standard violations (days)	9/b/	<u>16.1</u> 17	<u>11.3</u> 5	7.4 0	<u>10.4</u> 3	<u>12.0</u> 6
<u>Nitrogen Dioxide</u> (NO ₂) Highest 1-hr. average, ppm Standard violations (days)	0.25/b/	0.19 0	0.16 0	0.17 0	0.16 0	0.15 0
<u>Particulate Matter</u> (PM ₁₀) Highest 24-hr. average, ug/m ³ /a/ Standard violations (days)/d/ Annual Geometric Mean, ug/m ³	50/b/ 30/b/	<u>181</u> 31 <u>45</u>	<u>122</u> 23 <u>43</u>	<u>112</u> 22 <u>39</u>	<u>146</u> 17 <u>34</u>	<u>150</u> 24 <u>52</u>
<u>Lead</u> (Pb) Highest 30-day average, ug/m ³ Standard violations (months)/d/	1.5/c/	0.59 0	0.27 0	0.17 0	0.26 0	0.15 0

/a/ ppm: parts per million; ug/m³: micrograms per cubic meter

/b/ Standard may be equaled but not exceeded.

/c/ Standard not to be equaled or exceeded.

/d/ Measured every six days.

NOTES: SO₂ is not monitored at this station.

Underlined values are in excess of applicable standard.

SOURCE: California Air Resources Board, Air Quality Data Summaries, 1985-1989.

Clara Valley. "Hotspot" monitoring by the BAAQMD in San Jose has revealed that CO becomes trapped under a regional inversion during winter evenings. Under those conditions, CO concentrations throughout the affected area are relatively high. The state one-hour standard was exceeded once in 1985 at the San Jose monitoring station. There were no exceedances of either the one- or eight-hour CO standard at the Gilroy monitoring station.

c. Suspended Particulate Matter

The largest sources of particulate (PM_{10}) in Santa Clara County are demolition, construction activity, and vehicular traffic. Very small particles of certain substances can cause direct lung damage, or can contain adsorbed gases that may be harmful. Particulate can also damage materials and reduce visibility. Particulate standards are regularly exceeded in San Jose. PM_{10} standards were exceeded 117 times between 1985 and 1989 at the San Jose monitoring station.

d. Nitrogen Dioxide

The major sources of nitrogen dioxide (NO_2), which is essential to the formation of photochemical smog, are vehicular, residential, and industrial fuel combustion. NO_2 is the "whiskey brown" colored gas observed during periods of heavy air pollution. NO_2 increases damage from respiratory disease and irritation, and may reduce resistance to certain infections. The standards for NO_2 are being met in the Bay Area and San Jose, and the BAAQMD does not expect the standards to be exceeded in the future.

e. Sulfur Dioxide

The major source of sulfur dioxide (SO_2) is combustion of high-sulfur fuels for electricity generation, for petroleum refining, and for shipping. In humid atmospheres, sulphur oxides can react with water vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials, and reduce visibility. The standards for SO_2 are being met in the Bay Area, and the BAAQMD does not expect the standards to be exceeded in the future.

f. Lead

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Lead can cause blood effects, such as anemia and

inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline have continued to increase. The standards for lead are being met in the Bay Area and San Jose, and the BAAQMD does not expect the standards to be exceeded in the future.

2. Non-Criteria Air Pollutants

(Toxic Air Contaminants (TACs)). State-designated TACs differ from criteria air pollutants in that there are no established ambient standards for TACs (a risk assessment approach is used instead), and TACs can cause carcinogenic effects in addition to adverse non-carcinogenic health effects. The major source of organic TACs in the Bay area are from motor vehicles (65%), including automobiles, trucks, and other vehicles. Other major sources of TACs are cooling towers (6%), chrome plating (5%); pesticides (6%); and paints, solvents, and chemicals (18%). The BAAQMD estimates that benzene constitutes the major TAC risk (55%) followed by 1,3-butadiene (26%).

The BAAQMD has estimated carcinogenic public health risk levels for the region surrounding the Specific Plan area. These estimates are based on monitoring data for selected organic TACs. The average carcinogenic health risk in the Air Basin from these TACs is estimated at 474 excess cancer cases per million lifetime exposures. The San Jose monitoring station is located at 1866 West San Carlos Street, about five miles northwest of the Specific Plan area. On the basis of air monitoring data for San Jose, the overall inhalation cancer risk in the Specific Plan area from priority organic TACs is approximately 623 excess cancer cases per million lifetime exposures.

The Azevedo Quarry has been identified as a major source of TACs in the vicinity of the Specific Plan site, because the dust generated by quarrying activities may contain asbestos fibers. Airborne asbestos, present in the atmosphere due to a combination of both natural and human activities, is discussed in Section II., L. ENVIRONMENTAL HAZARDS. Other potential sources of TACs in the vicinity include the Caltrain Maintenance Facility, because of the transport and use of diesel fuel on the site.

Hazardous Air Pollutants (HAPs). The federal Clean Air Act required the EPA to identify National Emission Standards for HAPs to protect public health and welfare. Standards have been established for benzene, vinyl chloride, inorganic arsenic, beryllium, asbestos, mercury, radionuclides, and coke oven gas. Naturally-occurring chrysotile 187 asbestos and mercury are located in the soils and rock of Communications Hill. Potential health issues associated with these two substances are discussed in Section II., L. ENVIRONMENTAL HAZARDS. Other HAPs are not an issue associated with the Specific Plan and are therefore not discussed further.

3. Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Land uses such as schools, playgrounds, child care centers, retirement homes, convalescent homes, hospitals, and clinics are considered to be relatively sensitive to poor air quality. The young, the old, and the infirm are associated with those types of land uses, and are generally more susceptible to respiratory infections and other air quality-related health problems than are other members of the general population.

Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, and the working population is, in general, the healthiest segment of the public.

Existing sensitive receptors to air pollution in and around the Specific Plan area include existing housing, a day-care center and a vocational high school. The proposed residences, parks, school, playground and other neighborhood uses would also be sensitive to air pollution.

AIR QUALITY IMPACTS

1. Construction Effects on Air Quality

Construction would generate air pollutants, especially suspended particulates, intermittently during the construction period. Particulates would be generated by excavation, earthmoving, traffic on unpaved surfaces, and wind erosion. Relatively large particulates would settle quickly; they would not be a health hazard but could be a nuisance. Smaller particulates (PM₁₀) would remain suspended for a longer period and could annoy persons with existing respiratory conditions. The state standard for smaller particulate matter (PM₁₀) would be violated at times during the course of construction in the planning area. Based on potential violations of state and federal standards for

particulate matter (PM₁₀), construction-related emissions resulting from implementation of the Specific Plan would represent a potentially significant impact.

Naturally-occurring chrysotile asbestos could be released into the air as a result of grading and excavation activity in the serpentine areas of the project site. Airborne asbestos is considered to represent a potentially significant impact. The potential impacts and appropriate mitigation measures for airborne chrysotile are discussed separately in the Section II., L. ENVIRONMENTAL HAZARDS.

Other construction emissions would include hydrocarbon emission from paints and asphalt, exhaust emissions from construction equipment, and motor vehicle emissions. These emissions would represent a potentially significant impact unless mitigated as discussed in the mitigation discussion below.

2. Operational Effects on Air Quality

a. Criteria Pollutants

The operational air quality impacts would result primarily from motor vehicle emissions resulting from new traffic generated by future development under the Specific Plan, and the operation of the new industrial uses. Emissions resulting from the multi-family neighborhoods themselves would be negligible, compared to motor vehicle and industrial emissions. In the year 2000, when Specific Plan build-out is assumed to occur, carbon monoxide (CO), nitrogen oxide (NO_x), hydrocarbon (HC), and sulfur dioxide (SO₂) emissions related to Specific Plan implementation would be similar to or less than emissions projected to result from buildout under the adopted General Plan, while particulate level (PM₁₀) would be substantially greater under the Specific Plan. Higher particulate levels would result from the increased traffic levels associated with an increased amount of industrial development under the proposed Specific Plan. Emissions for proposed industrial uses were not included in the estimates due to a lack of knowledge of specific uses and could add substantial emissions, depending on the eventual mix of uses.

Total emissions, excluding industrial emissions, related to Specific Plan implementation (see Appendix F, Table 4) would represent about 0.9 percent of the projected year 2000 transportation-related CO emissions for Santa Clara County, 0.5 percent of county-wide HC transportation emissions, 0.6 percent of county-wide SO₂ transportation emissions, 0.6 percent of county-wide NO_x transportation emissions, and 0.8 percent of county-wide PM₁₀ transportation emissions.

The Bay Area Air Quality Management District (BAAQMD) considers the effects of projects to be significant if they produce net increase in emissions (from total mobile and stationary sources) greater than one percent of existing county-wide transportation emissions, or if they generate emissions exceeding certain thresholds, or exceed state or federal standards. Furthermore, for pollutants for which the Bay Area is in non-attainment of applicable Federal air quality standards (CO, O₃ and PM₁₀), any net increase would be considered significant because it would impede the BAAQMD's plans for attainment of those air quality standards. For CO and O₃, development under the Specific Plan would not exceed the one percent county-wide emissions limit, or exceed state or Federal standards or exceed BAAQMD significance thresholds for CO or O₃. Specific Plan emissions levels would generally be lower than projected General Plan levels; however, PM₁₀ emissions would exceed BAAQMD thresholds, which is considered a significant impact.

In summary, implementation of the Specific Plan would result in an overall reduction in emission criteria air pollutants compared with General Plan development, with the exception of particulates (PM₁₀) which would exceed the threshold limit for significance. In addition, the implementation of the Specific Plan would result in an increase in NO_x, HC, and PM₁₀ to levels which would exceed BAAQMD thresholds relative to existing conditions.

b. Carbon Monoxide

Roadside CO concentrations were modeled using the CALINE-4 dispersion model developed by Caltrans. CO concentrations along seven road segments near the Specific Plan area were modeled for: existing (1991) development; existing plus approved development plus Specific Plan development for 2000; and existing General Plan (2000) which includes development under the Horizon 2000 General Plan. Maximum one-hour roadside CO concentrations were projected using peak-hour traffic volumes and worst-case meteorological assumptions. Eight-hour average concentrations were derived from the calculated one-hour values. One-hour and eight-hour roadside concentrations were then combined with background values to obtain total CO concentration estimates. Background concentrations are based on values for San Jose contained in the BAAQMD's Air Quality and Urban Development Guidelines. The modeled roadside CO concentrations are shown in Table 15 on the next page.

In 2000, baseline CO concentrations without development of the Specific Plan area would be higher than existing conditions due to the projected increase in overall traffic volumes on roadways in the vicinity of the project site. However, this increase in background traffic volumes would not result in any exceedances of state or federal CO standards. After full buildout of the Specific Plan area, there would be an overall

increase in CO concentrations over existing conditions in 2000, but neither the one- nor eight-hour state or federal CO standards would be exceeded. While traffic volumes are projected to increase with Specific Plan development, overall CO concentrations would actually diminish to less than those calculated for existing conditions in 1991 at four of the seven road segments modeled. This phenomenon is due to reduced average vehicle fleet emission factors, as well as generally improved traffic flow and circulation resulting from the construction of the Guadalupe Freeway. Compared with CO concentrations calculated for the existing General Plan in 2000, the overall levels associated with the proposed Specific Plan would generally be reduced as well.

c. Toxic Air Contaminants

State regulations (AB 3205) require an assessment of the potential air toxics risks from industrial facilities which might reasonably emit air toxics within 0.25 mile of a proposed school site. The Specific Plan proposes to locate a school within 0.25 mile of the planned Caltrans maintenance facility, which is anticipated to be completed by 1993. The siting of the school within 0.25 mile of the facility could result in potentially significant impacts upon the school. The assessment of such potential impacts, and the identification of appropriate mitigation measures, would be undertaken at a subsequent stage of development review, when the nature of the industrial uses would be better defined.

3. Cumulative Impacts

Cumulative development in the vicinity of the Specific Plan area would result in local increases in emissions of criteria air pollutants due to the projected increase in vehicle miles travelled in the area. This increase in criteria air pollutants would be significant. The implementation of General Plan policies and other mitigation measures identified below would mitigate cumulative emissions impacts, but probably not to a level of insignificance.

There would also be an increase in CO concentrations in the vicinity of the Specific Plan area, but since average travel speeds are anticipated to be similar to the projected base-case speeds, the anticipated increase in concentrations would probably not lead to exceedances of either one-or eight-hour CO standards.

In summary, air quality impacts related to construction and air toxics risks from industrial facilities near a school site would be potentially significant unless mitigated. Exceedances of BAAQMD thresholds for NO_x, HC and PM₁₀ (three criteria air pollutants) would be recognized as significant. Cumulative air quality impacts for criteria air pollutants would also be significant.

TABLE 12

PROJECTED MAXIMUM ROADSIDE CARBON MONOXIDE

CARBON MONOXIDE CONCENTRATION (PPM)/a/				
Roadway Segment	Averaging Time/b/	Existing 1991	General Plan 2000	Specific Plan 2000
1. Monterey Road at Pullman Way	1 8	10.0 6.4	10.0 6.5	10.1 6.5
2. Curtner Avenue at Canoas Garden	1 8	8.1 5.1	8.6 5.6	8.6 5.5
3. Curtner Avenue at Guadalupe Freeway/c/	1 8	9.1 5.8	8.8 5.6	8.8 5.6
4. Curtner Avenue at Vistapark Drive/d/	1 8	8.0 5.0	8.5 5.4	8.5 5.4
5. Snell Avenue at Capitol Expressway	1 8	9.5 6.0	7.7 4.8	7.8 4.9
6. Hillsdale Avenue at Narvaez Avenue	1 8	9.0 5.7	9.1 5.8	7.8 4.9
7. Capitol Expressway between Snell and Narvaez Avenues	1 8	12.1 7.8	10.3 6.7	10.3 6.7
/a/ Projected using CALINE4 dispersion model, EMFAC7D composite air pollution emission factors for motor vehicles, worst-case meteorological assumptions, and traffic data from TJKM, traffic consultants. /b/ The ambient background concentration CO is estimated on a weighted-average basis, which is based on the distance to the Specific Plan area from the Gilroy and North Fourth Street monitoring stations, since the data collected at both of these monitoring stations are not considered representative of air quality in the vicinity of Communications Hill. One-hour concentrations include a background concentration of 6.7 ppm for 1991, and 5.9 pm for 2000. Eight-hour concentrations are assumed to be 70 percent of the local contribution to the one-hour concentration, plus a background of 4.1 ppm for 1991 and 3.6 ppm for 2000. /c/ Under existing conditions, the receptor is at Curtner Avenue, adjacent to the proposed alignment of the Guadalupe Freeway (Route 87). /d/ Under existing conditions, the receptor is located at Curtner Avenue, adjacent to the proposed alignment of Vistapark Drive. <u>Note:</u> The state one-hour CO standard is 20 pm, and the federal standard is 35 pm. The state and federal eight-hour CO standard are both nine ppm. Source: Environmental Science Associates, Inc.				

AIR QUALITY MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; F. Natural Resources; 6. Air Quality; Policy:
 1. The City should take into consideration the cumulative air quality impacts from proposed developments and should establish and enforce appropriate land use and regulations to reduce air pollution.
- Goals and Policies; G. Hazards; 6. Hazardous Materials; Policy:
 1. The City should require proper storage and disposal of hazardous materials, to prevent leakage, potential explosions, fires or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances especially at the time of disposal.

Specific Plan Mitigation

- Provision of a multi-modal transportation system for Communications Hill which is safe, efficient, and environmental sensitive;
- Linking vehicular, bicycle and pedestrian circulation with each public transit system serving this area;
- Planning a system of non-vehicular pedestrian routes throughout Communications Hill that connects a mix of land uses and encourages walking;
- Encouraging mass transit use by residents through easy access to Light Rail and Caltrain stations.
- Plan and regulate ongoing and future industrial activities to minimize adverse impact on nearby land uses.

Other Program Mitigation

- Application of standard grading permit requirements for dust abatement practices during grading and excavation.
- Construction materials would comply with the BAAQMD's rules and regulations

with regard to hydrocarbon (HC) emissions.

- Implementation of transportation control measures (TMCs) contained within a future Bay Area Congestion Management Plan (CMP). It will be required by MTC that the CMP be consistent with the Regional TMCs for the Federal and State Clean Air Acts.
- Compliance with AB 3205, which will require an assessment of potential health risks related to placement of a school within 0.25 miles of the planned Caltrain maintenance facility, would be undertaken in conjunction with environmental review for subsequent projects proposed under the Specific Plan.

In summary, although the mitigation measures listed above would reduce impacts from construction activity to a less-than-significant level, the Specific Plan would still result in a significant unavoidable impact since it would cause exceedance of the BAAQMD thresholds for PM₁₀, NO_x, and HC. Cumulative air quality would also be a significant unavoidable impact of the Specific Plan.

J. NOISE

The following discussion summarizes the report Communications Hill Specific Plan, San Jose, California Environmental Noise Assessment prepared by Illingworth & Rodkin in June 1991 (revised September 1991). The full text of the noise report, including the definitions and explanation of fundamental noise measurement concepts, is contained in Appendix G.

EXISTING CONDITIONS

1. Noise Impact Criteria

The City of San Jose has adopted guidelines, contained in the Noise Element of the General Plan, for evaluating the compatibility of various land uses with the on-site noise environment. The City has identified an L_{dn} of 60 decibels (dB) for noise sources as its short-term goal for new residential developments, and an L_{dn} of 55 dB as the long-term objective. The interior goal is for an L_{dn} not in excess of 45 dB. When a site which is proposed to be developed for residential uses is exposed to an L_{dn} above 60 dB, noise mitigation measures are to be incorporated to mitigate excess noise. Commercial land uses are permitted where the L_{dn} is below 60 dB. For the same type of noise sources, industrial facilities are acceptable where the L_{dn} does not exceed 70 dB.

The Airport Environs Plan (AEP) for San Jose International Airport establishes a CNEL of 65 dB as the maximum allowable aircraft noise exposure level for the exterior of new or existing housing. (CNEL and L_{dn} are within 1 dB. L_{dn} is used in this report). Communications Hill is not within the boundary of the AEP but is subject to noise from aircraft overflights.

The indoor noise environment in all new multi-family housing in California is regulated by Title 24 of the California Administrative Code, which mandates a maximum allowable indoor L_{dn} of 45 dB in areas where the exterior noise level is an L_{dn} of 60 dB or greater. The State also has established an L_{dn} or CNEL of 65 dB as the maximum exterior noise level compatible with residential development (Title 21).

2. Existing Noise Environment

The major noise sources in the study area include traffic on Monterey Road, Hillsdale Avenue, Capitol Expressway and Curtner Avenue, as well as aircraft overflights, railroad activities, gravel extraction activity at the Azevedo Quarry, and

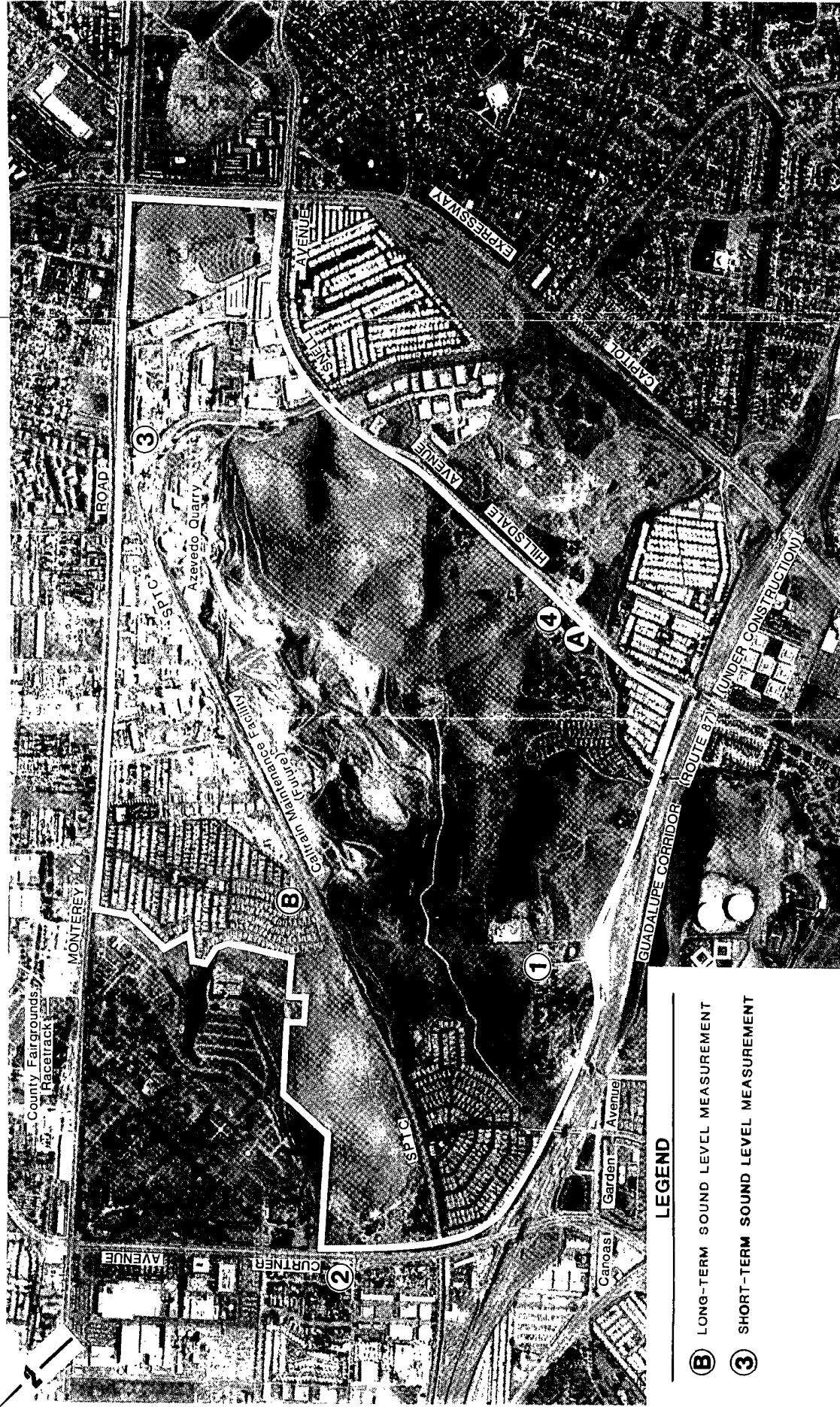
auto and motorcycle races at the Santa Clara County Fairgrounds located one-half mile to the northeast.

To quantify the existing noise environment, four short-term and six long-term noise measurements were taken at the locations shown in Figure 16. Two long-term (24-hour) measurements were conducted at Locations A and B. At Location A (Hillsdale Avenue at Canoas Creek), noise from the quarry operation was not audible with a resultant L_{dn} of 69 dB. The second 24-hour measurement (Location B) was placed 75 feet east of the Southern Pacific railway tracks in the Chateau La Salle Mobile Home Park. At this location, the major noise sources were Amtrak and freight trains traveling on the track and overflights by aircraft on their approach to the San Jose International Airport. A total of 13 trains were recorded during the measurement period. The maximum noise levels were between 85 to 98 dB, and the L_{dn} was 73 dB.

The San Jose International Airport Environs Plan shows the noise contours for the year 2000 due to aircraft activity around the San Jose International Airport. The project site is exposed to aircraft noise below 65 dB CNEL and is, therefore, outside the AEP boundary. From the data gathered at measurement Location B, the existing noise exposure due to aircraft on the site is an L_{dn} of approximately 60 dB. Based on the noise monitoring done for this project, aircraft overflights generate maximum noise levels between 60 and 80 dB, with noisier events attributed to takeoffs over the hill during unusual weather conditions.

Four short-term (5 to 15 minute) measurements were also conducted around the Specific Plan area during the afternoons of November 1 and 2, 1990 (during non-p.m. peak traffic). The first short-term measurement was conducted east of the future Guadalupe Freeway on Carol Drive, at the top of the ridge adjacent to the County Communications Center (Location 1). Noise levels here are low (the 5-minute L_{eq} was 50 dB) due to lack of any major noise sources, apart from occasional aircraft overflights. Location 2 was a distance of 57 feet from the centerline of Curtner Avenue at the northern end of the Specific Plan area. Noise levels measured here were 71 dB L_{eq} , which is reflective of heavy traffic on Curtner Avenue and several aircraft overflights. Location 3, a distance of 57 feet from the centerline of Monterey Road, had an L_{eq} of 76 dB due to traffic on Monterey Road and aircraft overflights. At location 4, near long-term monitoring Location A, the meter was placed at a distance of 35 feet from the centerline of Hillsdale Avenue. The resulting L_{eq} for the 10-minute measurement was 68 dB, with traffic on Hillsdale Avenue as the primary noise source.

The Azevedo Quarry was operating during the monitoring survey; however, noise from the quarry was not audible at any of the noise measurement locations.



SCALE: 1" = 1000'

PHOTO DATE: 10-3-90

NOISE MEASUREMENT LOCATIONS

FIGURE 16

Noise generated by race cars at the Santa Clara County Fairgrounds was recorded on Saturday, April 20, 1991 between the hours of 7:00 pm and 10:30 pm. Races at the County Fairgrounds are held on many Saturdays during the year, with most events occurring between the hours of 5:00 pm and 11:00 pm. During the monitoring period, noise levels generated by cars racing at the County Fairgrounds ranged from 50 to 55 dB as measured from the top of the on-site ridge overlooking the fairgrounds, while ambient sound levels without car race noise ranged from 40 to 45 dB. During an evening of races, qualifying rounds eventually lead to the main event, which is the noisiest event of the evening since it involves the most vehicles. The main event did not take place the night of the monitoring because the race was suspended due to weather conditions. To obtain analogous data, the consultant referred to noise levels generated by "dirt track" racing at the Petaluma Speedway on August 4, 1984. The data showed that the main event generated maximum noise levels at least 10 dB higher than preliminary races. Noise levels due to car races at the County Fairgrounds would exceed ambient noise levels at the top of the Communications Hill ridge by a minimum of 10 dBA, and possibly by as much as 20 dBA during the main events.

Based on the monitoring survey, portions of the Specific Plan area are currently exposed to noise levels above an L_{dn} of 60 dB (the City of San Jose's short-term exterior noise standard for proposed residential development) resulting from traffic on the major roadways around the site, trains traveling on the Southern Pacific railway tracks, and aircraft overflights. Race car noise emanating from the Santa Clara County Fairgrounds is also clearly audible at the proposed residential sites which are within view of the race track, mainly due to the low background noise levels on Saturday evenings.

NOISE IMPACTS

1. Projected Future Noise Environment

Projections of future traffic noise are based on existing traffic volumes, as well as future traffic projections under the year 2000 General Plan and the year 2000 General Plan Amendment plus the proposed Specific Plan, as provided by the EIR transportation consultants. Future railroad sound levels are based on the Caltrain Maintenance Facility EIR and the Caltrain Extension to Gilroy EIR. Future noise levels from aircraft are based on data from the San Jose International Airport Environs Plan.

Figure 17 shows the future 60 L_{dn} noise exposure contour for the site due to ground transportation noise sources (vehicles on the major roadways in and around the site, based on year 2000 General Plan traffic projections, and trains on the Southern Pacific tracks including trains accessing the maintenance facility). The projected sound level contour also takes into account terrain characteristics of Communications Hill. However, as discussed below, sound levels from the following noise sources were not included in developing the projected noise contours: the proposed Caltrains maintenance facility train washer, future expansion of quarry operations, race track events, aircraft overflights and noise from proposed Specific Plan industrial areas. Also, the noise projection does not include potential vibrations from trains on future residences within 1000 feet of the tracks.

2. Noise Impacts

a. Railroad Noise Impacts

No increases in the number of Amtrak and freight trains traveling on the Southern Pacific railway line are anticipated in the future. However, Caltrain is planning an extension of its service area to Gilroy, and up to 24 Caltrain operations could be added. When the existing Amtrak and freight trains are combined with the proposed Caltrain service to Gilroy, the resulting noise contour distance to an L_{dn} of 60 would be 600 feet from the tracks.

A maintenance and repair facility for Caltrain has been planned for a site adjacent to the Southern Pacific tracks. A separate EIR, prepared to evaluate the potential impacts associated with the maintenance facility, states that most activity at the facility would take place during the night. Eighteen trains per day would enter and leave the yard (36 train movements), with 24 of these train movements to occur between 10:00 pm and 7:00 am. Based on the total number of train movements projected for the planned maintenance facility, the resulting L_{dn} would be 67 dB at 50 feet from the tracks.

A separate EIR was prepared for the expanded Caltrain service to Gilroy. It discusses the noise impacts associated with the proposed service and Station at Fehren Avenue. In the Gilroy Service Extension EIR, impacts were recognized as insignificant.

Residents of the Chateau La Salle Mobile Home Park would be exposed to an L_{dn} above 60 dB within a distance of 600 feet from the center of the Southern Pacific tracks and 660 feet from the center of Monterey Road. The introduction of Caltrain service to Gilroy on the Southern Pacific railway tracks, and additional trains

accessing the proposed Caltrain maintenance facility, as well as noise generated by maintenance operations at the train facility, would elevate existing noise levels for mobile home park residences adjacent to the tracks.

Specific measures to mitigate noise emanating from the maintenance facility and associated train movements were proposed to be developed as part of that facility.

Measures planned to mitigate facility noise to City standards include construction of permanent soundwalls (11 to 12 feet high) for the Chateau La Salle and Millpond mobile home communities. The noise contours shown in Figure 17 take into account noise generated by trains accessing the facility, but do not reflect noise generated by the proposed train washer since that information was not addressed in the Caltrain EIR.

Noise levels generated at the proposed train wash could be significant at the Specific Plan housing proposed nearest the maintenance facility (the nearest proposed residences would be over 1,000 feet from the train wash), or at the school and playfield which would overlook the train yard (from approximately 800 feet uphill). An assessment of such potential impacts would be undertaken at a subsequent stage of development review, when the sound generated by the Caltrains maintenance facility can be measured. Train yard noise is considered a potentially significant impact to the Specific Plan unless mitigated, as described subsequently.

b. Impacts to Future Residents

Quarry Noise. The current operations permit for the Azevedo Quarry extends to the end of 1991, while the earliest occupancy of new residential development under the Specific Plan would not occur until 1994. The future of the quarry after the expiration of its current operating permit is not known at the present time, although there are plans to expand the quarry operation to the south, as discussed previously in Section II. B. SOILS AND GEOLOGY. The nearest housing is proposed at the top of the ridge overlooking the Guadalupe Freeway. Due to an intervening ridge west of the quarry between the quarry and the location of these nearest homes, quarry-generated noise should not be audible at these dwelling sites. However, if the quarry extends its operations past the year 1994, the issue of noise generated by the quarry should be addressed at the time of re-issuance of the operating permit, and/or in conjunction with the subsequent environmental review for the individual residential development projects under the Specific Plan. If quarry operations overlap residential development, it would be a potentially significant impact.

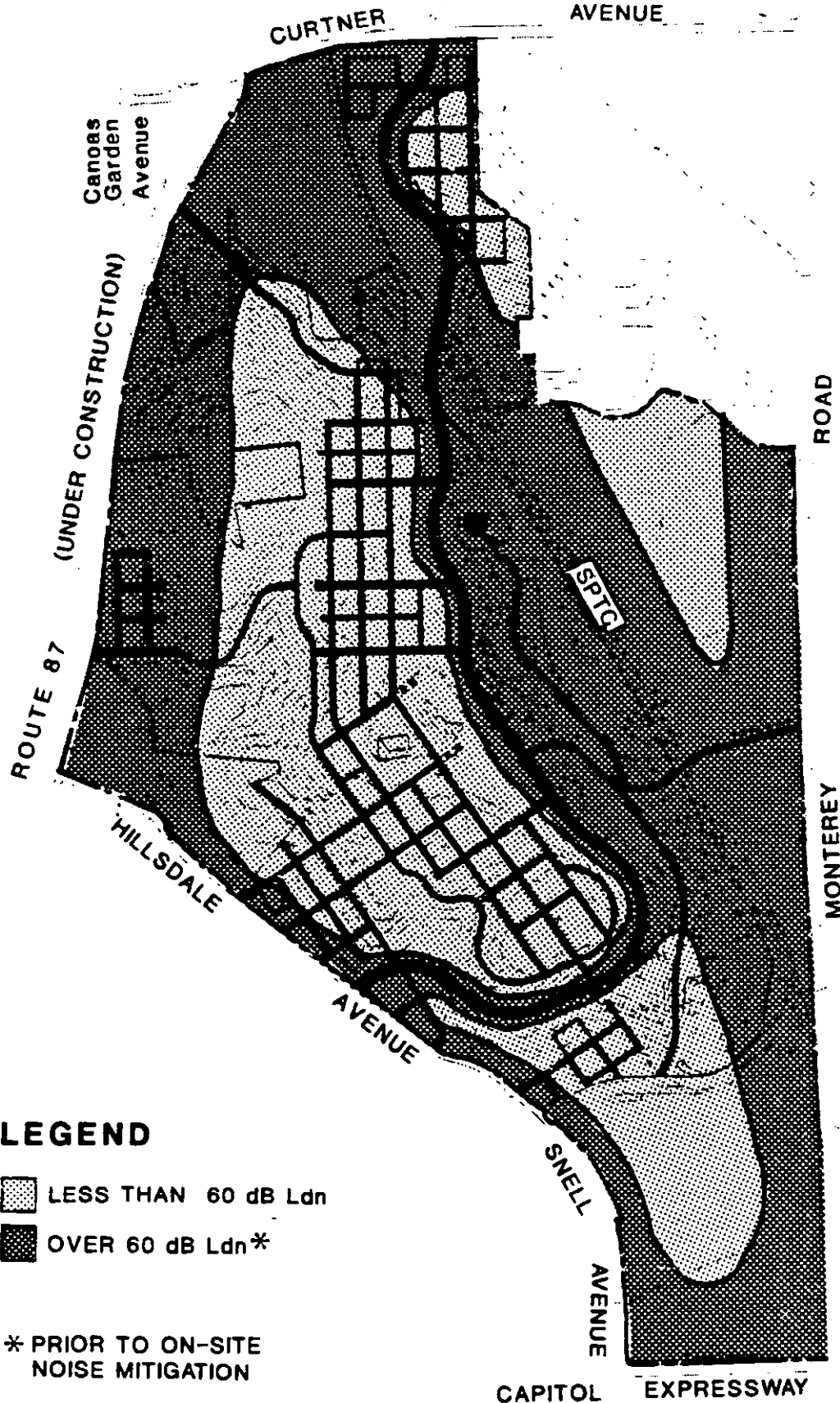
Speedway Noise. Race car noise would be clearly audible at the proposed residences nearest to the Fairgrounds along Curtner Avenue. Maximum noise levels generated by the races would range from 55 to 65 dBA near Curtner Avenue, which is up to 20 dBA above the ambient noise levels. Races would occur in late afternoon and early evening hours when residents are likely to be home. The noise associated with car races would not exceed the City's L_{dn} standards. However, due to its intrusive character, it would be highly annoying and as such would be considered a potentially significant impact if not mitigated, as described subsequently.

Traffic Noise - Impacts upon Surrounding Roadways. The noise environment under both the current General Plan and the proposed Specific Plan for the year 2000 would be similar. Noise level increases for surrounding roadways as a result of the Specific Plan would be below 1 dB. A 1 dB noise level increase is imperceptible and, therefore, insignificant. Noise level increases in the vicinity would not be a direct result of proposed development under the Specific Plan but rather would be a result of cumulative development in the greater area.

Traffic Noise - Impacts upon the Specific Plan Area. Figure 17, Future Noise Levels for the Specific Plan area, shows that portions of the Specific Plan proposed for residential would be exposed to noise levels above an L_{dn} of 60 dB, especially upon completion of the Guadalupe Freeway. The proposed Specific Plan indicates that some multi-family housing would be located adjacent to Guadalupe Freeway along the lower slopes of the western hillside. Noise levels generated by traffic on the Guadalupe Freeway would exceed an L_{dn} of 60 dB within 1,075 feet from the center of the freeway. Some single-family housing is proposed to be located east of Guadalupe Freeway and to the north of the Santa Clara County Communications Center. Portions of this future neighborhood would also be exposed to an L_{dn} above 60 dB due to traffic on Guadalupe Freeway.

Traffic noise levels within 275 feet from the centerline of Hillsdale Avenue would be above an L_{dn} of 60 dB. For proposed residential areas along Vistapark Drive near Hillsdale Avenue, noise levels would exceed an L_{dn} of 60 dB within 125 feet from the centerline of Vistapark Drive. Portions of proposed residential areas on the west side of Vistapark Drive, and also the area between Pullman Way and the Southern Pacific tracks would also be exposed to an L_{dn} above 60 dB. A small portion of the proposed residential neighborhood near Curtner Avenue and Vistapark Drive would also be exposed to an L_{dn} above 60 dB.

The proposed Specific Plan does include open space buffers and parks along Vistapark Drive which would substantially mitigate potential impacts due to traffic generated along Vistapark Drive.



LEGEND

-  LESS THAN 60 dB Ldn
-  OVER 60 dB Ldn*

* PRIOR TO ON-SITE
NOISE MITIGATION

** MAP REFLECTS ONLY GROUND
TRANSPORTATION NOISE SOURCES

SCALE: 1" = 1300'

SOURCE: ILLINGWORTH & RODKIN, INC., 1991

YEAR 2000 NOISE LEVELS**

Traffic noise would represent a significant impact upon the future residential areas described above unless mitigation measures, identified below, are implemented at the project development stage.

Aircraft Noise. The entire site is, and will continue to be, exposed to an L_{dn} of about 60 dB due to aircraft activity, based on extrapolation for the year 2000 taken from the noise contours of the Airport Environs Plan (AEP) for the San Jose International Airport. Individual flyovers observed on the site generate maximum A-weighted noise levels of up to 80 dB. The noise of individual aircraft would annoy future residents inside their homes, particularly during the evening hours. (Flights do not occur past midnight.) Aircraft noise would represent a potentially significant impact to future residents, unless mitigated.

Industrial and Utility Noise. In addition to the Caltrain Maintenance Facility, the Specific Plan would allow light industrial, heavy industrial and combined commercial/industrial uses in the eastern portion of the planning area. Specific industrial uses which would locate here are unknown at this time; however, the issue of noise generated by future uses would be addressed at the time of project-specific environmental review. This is considered a potentially significant impact unless mitigated with the measures discussed subsequently.

Booster Pump. A booster station to pump water to the ridgetop water tank would be located along Vistapark Drive near the "Lower Hillside at Hillside" neighborhood. The pumps proposed for the booster station would typically be submerged in a concrete casing below the ground or otherwise muffled in order to minimize pump noise. Although multi-family housing would be located within 200 feet of the pumps, the noise levels generated would be considered a less-than-significant impact.

c. Construction Noise

Construction activity would consist of road grading and paving, utility trenching, pouring of concrete foundations, the construction of buildings and other activities typical for a construction environment. Trucks would be required to deliver and remove materials from the site and to pump concrete. Other equipment, such as air compressors, would also be commonly used. During the various phases of construction, average noise levels would be as high as 75 to 80 dBA as measured 50 feet from the center of the construction activity. When construction activity takes place near existing residential areas with low ambient noise levels, significant short-term noise impacts would be expected. The development of Communications Hill would be phased over time, and depending on the average background levels at specific existing residential areas and the duration of each phase, construction noise

impacts could vary. Implementation of standard mitigation measures would substantially reduce construction noise impacts. It is inevitable that existing and future residents would be subject to elevated noise levels when construction activity is taking place nearby. These impacts would be highly localized and temporary in nature; however, construction noise would be a potentially significant impact unless the mitigation measures identified below are implemented.

d. Cumulative Traffic Noise Impacts

Cumulative development in the vicinity of the Specific Plan area would result in local increases in noise due to projected increases in vehicle miles traveled and vehicle speeds. This noise increase would, in all cases, be less than 0.5 dB, which would be imperceptible. Cumulative traffic noise impacts would be less-than-significant.

In summary, noise impacts related to the Caltrain Maintenance Facility operations, traffic noise, aircraft overflights, car races at the Fairgrounds, quarry operations and construction activity are considered potentially significant unless mitigated by measures identified in the following discussion. Cumulative traffic noise impacts would be less-than-significant.

NOISE MITIGATION MEASURES

General Plan mitigation

- Goals and Policies; G. Hazards; 5. Noise; Policies:
 1. The City's acceptable noise level objectives are 55 L_{dn} as the long-range exterior noise quality level, 60 L_{dn} as the short-range exterior noise quality level, 45 L_{dn} as the interior noise quality level, and 76 L_{dn} as the maximum exterior noise level necessary to avoid significant adverse health effects. These objectives are established for the City, recognizing that the attainment of exterior noise quality levels in the environs of the San Jose International Airport and in the Downtown Core Area will probably not be achieved in the time frame of this Plan. To achieve the noise objectives, the City should require appropriate site and building design, building construction and noise attenuation techniques in new residential development.

2. The City should include appropriate noise attenuation techniques in the design of all new arterial streets.
3. Construction operations should use available noise suppression devices and techniques.

Specific Plan Mitigation

- Adopt site planning and architectural guidelines and noise attenuation techniques to protect Communications Hill residents and workers from excessive noise from arterials, freeways, the fairground activities, and trains and planes traveling nearby.
- The open space buffer proposed along Vistapark Drive substantially mitigates impacts due to traffic noise along this corridor.

Other Program Mitigation

- Additional noise studies would be prepared for all proposed projects. Studies would include 24 hour noise measurements to establish the existing L_{dn} noise level from ground transportation, air craft overflights, train traffic, industrial operations, Caltrain maintenance yard, and quarry operations. In addition, the study would include 1) an analysis of impacts from peak noise sources including aircraft noise and auto races at the County Fairgrounds, and 2) a vibration analysis for residences proposed to be situated within 1000 feet of the railroad tracks.
- In accordance with Title 24 of the California Administrative Code, in areas where exterior noise exceeds 60 L_{dn} , design residences to maintain an indoor L_{dn} below 45 dB. Provide residences with mechanical ventilation or air conditioning, as necessary to provide a habitable interior environment with the windows closed. Thus windows could be closed at the discretion of the future residents to control noise intrusion without compromising ventilation. This would also mitigate for peak noise from auto races and aircraft.
- In accordance with Title 21 of the California Administrative Code, maintain 65 dB as the maximum exterior noise level compatible with residential developments.

In summary, the potential noise impacts resulting from the future development of the Specific Plan area would be reduced to less-than-significant levels with implementation of the above noise mitigation measures. Cumulative noise impacts would be less-than-significant.

Additional Recommended Mitigation

- To minimize traffic noise, provide solid fences around yards or patios, and orient outdoor use areas away from traffic noise sources. Sound barriers along the Guadalupe Freeway would also be considered.
- Construction noise impacts on existing residents during the development of the Specific Plan area would be reduced by adopting the following measures:
- Noise generating construction equipment, including truck traffic coming to and from the future development sites, would be limited to daytime, weekday, and non-holiday hours 8:00 am to 5:00 pm;
- All construction equipment powered by internal combustion engines would be properly muffled and maintained;
- All stationary noise-generating construction equipment, such as air compressors, would be located as far as possible from existing residences. Such equipment would be acoustically shielded when possible;
- Quiet construction equipment, particularly air compressors, should be selected whenever possible.

K. UTILITIES, FACILITIES AND SERVICES

EXISTING CONDITIONS

1. Storm Drainage

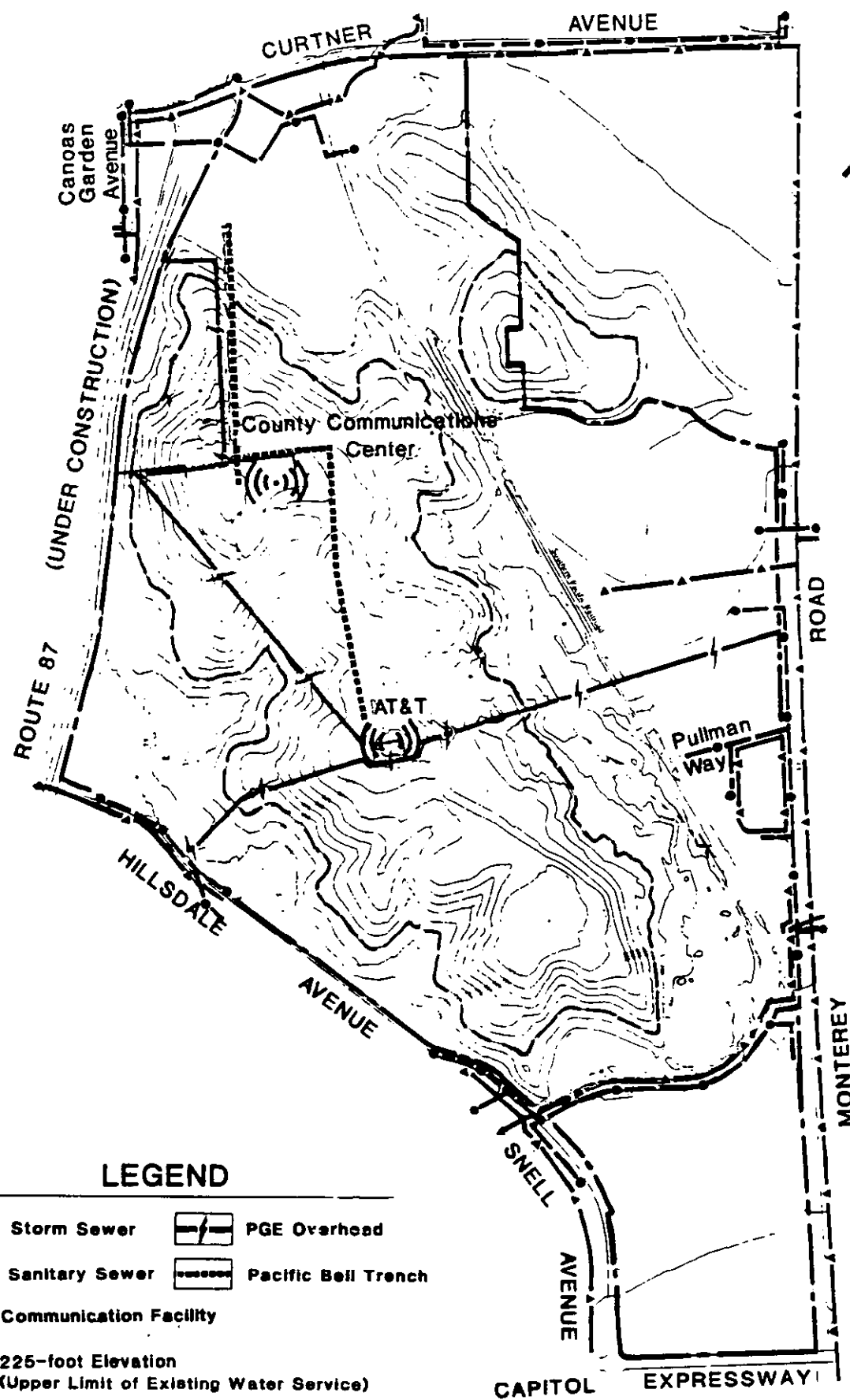
This discussion of storm drainage facilities in the planning area and their connection to municipal storm systems supplements Section II., C. Flooding and Drainage.

Existing storm drainage facilities currently convey planning area runoff from the vicinity of Communications Hill located within the City of San Jose to three major drainages: Canoas Creek, Guadalupe River, and Coyote Creek. Existing storm drainage facilities in the area (within the incorporated limits of the City of San Jose) are shown in Figure 18, and include the following: a 54-inch pipe through the Millpond Mobile Home Park which connects to a main 66-inch trunk line leading to the Guadalupe River; a 12-inch pipe in Curtner Avenue, which discharges to the same 66-inch trunk line; a 54-inch pipe in Hillsdale Avenue, which drains directly to Canoas Creek; another 54-inch pipe in Hillsdale Avenue, which continues down Monterey Road and Southside Drive toward its outfall into Coyote Creek; a 24-inch pipe in Pullman Way and a 21-inch pipe from a small trailer park, both of which lead to the same 54-inch outfall to Coyote Creek; a 42-inch pipe which connects to the line down Umbarger Road, leading to another outfall into Coyote Creek; and an 18-inch line in Curtner Avenue, which discharges to a 24-inch line on Monterey Road.

Runoff from developed portions of the Specific Plan Area which are outside of the City limits does not enter the City storm drainage system. Instead, runoff is conveyed to detention basins for evaporation and percolation into the ground.

2. Sanitary Sewer

The existing sanitary sewer system in the surrounding area is a gravity discharge system with sewer flows from the Specific Plan area ultimately discharging to either the downstream reaches of the Downer Canoas Interceptor and the Almaden 1B Interceptor to the west or the Edenvale Interceptor to the east, depending on topography. Sanitary sewer lines serving existing development in the Communications Hill Specific Plan area are shown in Figure 18, and include the following: a 30-inch interceptor in Hillsdale Avenue near Narvaez Avenue flowing southwest to the downstream reaches of the Downer Canoas Interceptor and the Almaden 1B Interceptor; an 8-inch line in Millpond Drive and an 8-inch line in Canoas Garden Avenue which connect to a 42-inch interceptor in Curtner Avenue;



EXISTING UTILITIES AND EASEMENTS

SCALE: 1" = 1300'

SOURCE: SOLOMON, INC., 1991

and an 8-inch line in Snell Avenue which connects with a 30-inch interceptor in the east end of Hillsdale Avenue, which will flow to the Edenvale, a 54-inch interceptor in Monterey Road when the Edenvale Interceptor construction is completed.

Wastewater treatment is provided by the City of San Jose at its Water Pollution Control Plant near Alviso in North San Jose which includes a primary, secondary and tertiary treatment facility. Sanitary sewer service is currently provided only to areas incorporated into the City of San Jose. The Regional Water Quality Control Board is considering imposing a flow cap on the Water Pollution Control Plant (WPCP). Should this cap be imposed, it could affect the capacity for the WPCP to provide additional wastewater treatment while the cap is in effect.

3. Water Supply

The San Jose Water Company currently provides water service in the planning area by gravity from two water tanks located on the hill west of the Guadalupe Corridor. The water company obtains its water supply from wells, SCVWD, and from surface water supplies. While the Water Company has indicated there is a sufficient water supply to service the Specific Plan area, the City of San Jose is promoting water conservation and investigation water reclamation alternatives.

The two existing tanks can supply domestic water at approximately 40 pounds per square inch (psi) pressure to most of the proposed Specific Plan development up to an elevation of 228 feet on Communications Hill. Facilities are not currently available to serve the Specific Plan area above elevation 228 feet.

Water lines currently used to supply water to existing development in the lower-lying areas of Specific Plan area are shown in Figure 18, and include the following: a 32-inch main in Hillsdale Avenue; a 10- to 12-inch line in Monterey Road connected to 6-inch lines in Curtner Avenue and Pullman Way; and a 16-inch line in Canoas Garden Avenue connected to a 12-inch line in Millpond Drive, and an 8-inch line in Carol Drive.

4. Natural Gas, Electric Power, Telephone

a. Natural Gas

Natural gas service is provided by Pacific Gas and Electric Company in the project area. There is a network of gas lines throughout the Communications Hill area, including 2-inch lines in Curtner Avenue between Monterey Road and Stone Avenue;

a multi-line system of 6- and 8-inch parallel lines along Monterey Road; 4-inch lines along most of Hillsdale Avenue; and a 2-inch line along Carol Drive. There are no high-pressure gas lines on or near the planning area.

b. Electric Power

Electric power in the area is provided by Pacific Gas and Electric Company. There are two existing 21kv overhead lines that traverse the hill generally in a northeast-southwest direction, and also an east-west direction between the AT&T facility and a residence located along the east side of the Route 87 (see Figure 18).

c. Telephone

Telephone service in the area is provided by Pacific Bell. Existing overhead facilities along the surface streets which surround Communications Hill currently provide service to the uses in the study area.

Pacific Bell has an underground utility trench which is also used by AT&T for their communications facility on the top of the Communications Hill. The trench easement extends northerly along the County Communications property and then down the hill along Carol Drive to off-site locations (see Figure 18).

5. Fire Protection

The Specific Plan area is located in the service area of the San Jose Fire Department. The fire stations responding to emergency calls within the area and their estimated response times to the higher- and lower-elevation portions of Communications Hill are as shown on Table 13.

For the lower elevation portions of the planning area which gain access via Curtner Avenue, Hillsdale Avenue, Pullman Way and Millpond Drive, the response times for the first engines are within the Fire Department's recommended service goal of 4.0 minutes, and the response times for the first trucks are within the 6.0-minute response goal for trucks. However, response times to the top of the hill and to the Narvaez Avenue area of the project would exceed the 4.0 and 6.0 minute recommended service levels. The General Plan level of service goal for fire protection is a 4-minute average response time to all calls. This goal is not currently being met. A discussion of the planning area water pressure as it relates to fire service requirements is contained in the subsequent section on Water Supply Impacts.

TABLE 13
FIRE DEPARTMENT RESPONSE TIMES*

NEAREST EXISTING STATION NO. AND EQUIPMENT	ADDRESS OF FIRE STATION	ACCESS TO SPECIFIC PLAN AREA	ESTIMATED RESPONSE TIME (in minutes)
Engine: 26	528 Tully Road	Curtner Avenue at Stone Avenue	Base of Hill 3.5 Top of Hill 7.5
Engine and Ladder Truck: 3	98 Martha Street		Base of Hill 5.0 Top of Hill 9.0
Engine and Ladder Truck: 18	4430 So. Monterey Road	Hillsdale Avenue at Vistapark Drive	Base of Hill 5.0 Top of Hill 9.5
Engine and Ladder Truck: 13	4380 Pearl Avenue		Base of Hill 4.0 Top of Hill 8.5
Engine: 26	528 Tully Road	Monterey Road at Pullman Way	SPTC Tracks 4.0
Engine and Ladder Truck: 18	4430 So. Monterey Road		SPTC Tracks 5.0
Engine: 26	528 Tully Road	Narvaez Avenue	SR 87 9.5
Engine and Ladder Truck: 3	98 Martha Street		SR 87 11.0
Engine: 26	528 Tully Road	Millpond Drive	SR 87 4.5
Engine: 6	1386 Cherry Ave.		SR 87 5.5
Truck: 13	4380 Pearl Avenue		SR 87 6.0

* This table represents estimated Fire Department response times at Specific Plan buildout assuming no new fire station would be provided within the planning area.

6. Police Protection

The project site is located within portions of Beats X-1, X-2, T-2 and L-3 of the San Jose Police Department's service area. Police patrol units are currently dispatched from the Police Administration Building at the Civic Center. However, patrol cars remain in their respective beat areas once dispatched from the Civic Center. The travel costs associated with providing police service to the project area are therefore only slightly greater than for beats closer to the Civic Center.

7. Schools

The project site is in the Franklin-McKinley School District (K-8) and the East Side Union High School District (9-12). Franklin McKinley School District currently maintains 11 elementary schools and 2 middle schools. East Side Union High School District currently operates 10 full-time schools and a continuing education school. Students would be expected to attend the schools located closest to the project area, which include the existing and planned facilities shown on Table 14.

All of the existing schools are currently operating at or over capacity, and the planned Wool Creek Middle school is intended to provide a permanent facility to replace portable classrooms.

8. Parks and Recreation

There are no existing public parks within the Specific Plan area. However, the Santa Clara County Fairgrounds is located on the eastern side of Monterey Road between Tully and Umbarger Roads, and the Coyote Creek Park Chain is situated one mile to the east. Other parks in the area, generally one acre or less in size, include: Solari Park, located approximately 0.5 miles to the east; Terrell and Thousand Oaks Parks, 0.5 miles to the south; and Canoas Park, 0.5 miles to the west. The Santa Clara County Regional Parks, Trails and Scenic Highways Element of the County General Plan indicates a planned trail along the Guadalupe Freeway/Light Rail Corridor in this vicinity.

9. Library

Communications Hill is located in the service area of the San Jose Library system. The libraries nearest the Communications Hill area are listed in Table 15.

TABLE 14

SCHOOLS IN THE VICINITY

School	Address	Location
Hillsdale Elementary School	3200 Water Street	1.4 miles east
Los Arboles Elementary School	455 Los Arboles Avenue	1.8 miles east
Sylvandale Middle School	653 Sylvandale Avenue	2.3 miles east
Wool Creek Middle School (future)	645 Wool Creek Dr.	1.9 miles east
Andrew Hill High School	3200 Senter Road	1.9 miles east
Yerba Buena High School	1855 Lucretia Ave.	2.4 miles northeast

TABLE 15

LIBRARIES IN THE VICINITY

Library	Address	Location
Main Library	180 W. San Carlos Street	3.2 miles north
Willow Glen Library	1157 Minnesota Avenue	2.2 miles northeast
Pearl Branch Library	4270 Pearl Avenue	1.6 miles south
Cambrian Branch Library	1780 Hillsdale Avenue	3.3 miles west

UTILITIES, FACILITIES AND SERVICE IMPACTS

1. Storm Drainage Impacts

The following discussion is based upon the Conceptual Plan for Storm Drainage prepared for the Specific Plan area. The storm drainage plan is shown in the Specific Plan (Figure 35), and large-scale copies are available for viewing at the City of San Jose Planning Department.

The existing 12-inch storm sewer line on Curtner Avenue and the 66-inch trunk line, both leading to the Guadalupe River, do not have sufficient capacity to convey the potential additional flow from Communications Hill. Therefore, additional flows resulting from the proposed development would have an adverse effect on these existing storm sewers, unless supplemental lines are provided. The existing 54-inch line on Hillsdale Avenue, which drains to Canoas Creek, could be subject to similar impacts for the same reason.

Similarly, the storm lines on the northeast side of the Specific Plan area, which drain to Coyote Creek, are currently at or over capacity, and increased flows due to the proposed development could result in potential impacts to these facilities. A storm drainage master plan for the Monterey Road lines draining to Coyote Creek was recently prepared by the City of San Jose. The flow rates in that plan did not assume that the Communications Hill area would be developed, and therefore the plan is currently being revised to include the proposed Specific Plan development. The results of the re-analysis are not available as of this writing; however, it is anticipated that at least one additional outfall to Coyote Creek would be needed to handle the increased flows from development under the Specific Plan. Storm drainage impacts, including the insufficient capacity of the existing storm sewer system, are considered potentially significant impacts.

The existing 54-inch line through the Millpond area would not be affected by the proposed development of Communications Hill, since none of the proposed development area is planned to drain through the Mobile Home Park.

2. Sanitary Sewer Service Impacts

The following impact analysis is based upon the Conceptual Plan of Sanitary Sewer Service prepared for the planning area. The plan is shown on Figure 36 of the Specific Plan, and large-scale copies are available for viewing at the City of San Jose Planning Department.

Upon buildout, the Specific Plan area would generate an increase of approximately .592 million gallons per day of wastewater, based on sanitary sewer capacity demand rates estimated by the City for each land use. The City of San Jose Department of Public Works has indicated that they do not anticipate capacity demand problems related to sanitary sewer lines, to the interceptors or to the Alviso treatment plant as a result of development under the proposed Specific Plan. However, sanitary sewer service to the planning area would require the provision of new sewer system infrastructure.

The reach of the Almaden 1B Interceptor system which lies within Nightingale Drive, Apple Valley Drive and Pebble Beach Drive neighborhood (west of the Specific Plan area) has been subject to a lawsuit from residents alleging that odors are being emitted from the sewers. The Lower Hillside at Hillside, Lower Hillside at Guadalupe, and small portions of the north of AT&T and south of AT&T neighborhoods, generating approximately 21 percent of projected average daily sewage flows, would be served by the Almaden 1B Interceptor. It is uncertain what effect additional sanitary sewer flows through this reach would have upon the reported odor problem.

The proposed sanitary sewer system for Communications Hill has been configured to direct as much flow as possible into the Edenvale Interceptor to the east. The planning area would connect to the 54-inch Edenvale Interceptor system at Monterey Road. An older 30-inch interceptor located in Hillside Avenue flows west to connect with the Almaden 1B Interceptor system. This line is oversized and severely corroded; most of the flow in this line has been diverted to the recently completed Downer Canoas Interceptor. This line would need to be replaced with a new smaller line. The 30-inch interceptor in Hillside Avenue which flows east to connect with the Edenvale Interceptor system is at or near capacity, and a supplemental sewer line may be required. Sanitary sewer service impacts resulting from Specific Plan implementation, including potential odor problems related to the Almaden 1B Interceptor system, are considered potentially significant impacts.

3. Water Supply Impacts

The following impact analysis is based upon Conceptual Plan for Water Service prepared by the San Jose Water Company for the planning area. The service plan is discussed in Section 3.1.g. Utilities and shown on Figure 34 of the Specific Plan. Large-scale copies of the water plan are available for viewing at the City of San Jose Planning Department.

The proposed residential units would generate a need for up to 0.96 million gallons

of water per day (MGD), based on 432 gallons per day for the 15 single-family homes and 216 gallons per day for the 4,000 multi-family units, plus water for commercial areas, a school, and parks. Emergency fire protection standards require 6,000 gallons per minute for three hours which requires an additional 1.08MG of stored water. In order to provide water service to areas of Communications Hill above the 228-foot elevation, a new pump station, water storage tank and water distribution system would need to be constructed. For this upper zone, domestic demand would need to be provided at 40 psi, with an adequate supply for fire flow demand available at 20 psi residual pressure to the highest elevation to be developed.

A pump station, to be located just north of Hillsdale Avenue along Vistapark Drive, would boost water to a 2.2 million gallon elevated water tank proposed to be located adjacent to the AT&T facility. An appropriate location for the water tank within the AT&T park was determined based on an analysis of the electromagnetic beams associated with the AT&T facility (see Section II., L. ENVIRONMENTAL HAZARDS).

The proposed 2.2 million gallon water tank would service all development above the existing 228-foot water service limit. Water service for fire protection of the "Curtner" and "Curtner Grove" neighborhoods located below the 228-foot elevation is currently unresolved because of the Fire Department requirements for 6,000 gallons per minute for water flow which cannot be provided by the existing system. This requirement is being re-examined and it may be possible to serve these lower elevation areas with the existing distribution system; however, this would need to be confirmed by further studies in conjunction with subsequent development proposals for these lower areas. It is, therefore, assumed that all residential development except the "Lower Hillside at Hillsdale" and the "Lower Hillside at Guadalupe" neighborhoods would be served by the proposed ridgetop water tank. These two neighborhoods would be served by the existing water distribution system that currently serves the Hillsdale Avenue area.

Approximately 2,800 residences would be served by the new water tank. The required capacity of the tank is dictated by projected daily consumption and fire protection requirements for the Specific Plan area. Water from the tank would gravity-feed the proposed development. To meet the minimum service pressure for the highest service location, the base of the tank would be located approximately 90 feet above existing ground elevation. The tank itself would be approximately 25 feet high and 105 feet in diameter. The visual and aesthetic aspects of the water tank are discussed in Section II., G. VISUAL AND AESTHETIC RESOURCES. Alternative water supply systems, including use of a ground-level tank, are discussed in Section VI., E. ALTERNATIVE WATER STORAGE CONCEPTS.

Water distribution lines would be located within public right-of-way and would range in size from 8- to 24-inches in diameter. Fire hydrants would be 400 feet apart along the water mains. The Curtner neighborhood would require a pressure reducing station on the main line to serve that area. Water supply impacts including provision of a new water distribution system with a 2.2 million gallon water tank and booster pump system are considered potentially significant.

4. Natural Gas, Electric Power and Telephone Service

PG&E and Pacific Bell do not anticipate any difficulty in serving the project with natural gas, electric power and telephone service since existing facilities are present on the project site or can be extended from lines in the immediate vicinity.

The Pacific Bell utility trench would require relocation in conjunction with site grading in the vicinity, as would the PG&E overhead power lines which cross the planning area. This is considered a less-than-significant impact of the Specific Plan, and no mitigation is necessary.

5. Fire Protection

Existing response times from the five responding fire stations are inadequate to serve the higher elevations of the planning area without the need for augmenting facilities, equipment and staff. In addition, roads within the Specific Plan area could potentially exceed a 15% grade which would restrict maneuverability of emergency vehicles.

To mitigate for increased demand upon the Fire Department and to meet City standard response times, an additional fire station, built to accommodate an engine company, truck company and reserve units, would be needed on the hilltop. A new fire station site has not been designated on the Specific Land Use Plan (Figure 5), although a possible location has been identified in the Village Center. A corner lot on a secondary street is preferred, and joint occupancy of land for shared compatible uses is acceptable to the Fire Department. The fire station site would need to be 1.1 to 1.5 acres, depending upon parking requirements and the geometric shape of the lot. Special traffic light controls may be required at selected intersections. The increased demand for fire protection and emergency services in addition to the need for a new fire station, adequate water supply and water pressure would be considered a potentially significant impact unless mitigated.

6. Police Protection

As development of the Specific Plan area proceeds, there would be an increased incremental demand for San Jose Police Department services. Ultimately, it is projected that a total of 40 additional sworn officers and 12 non-sworn personnel plus office space and vehicles would be necessary in order respond to calls for aid originating from the area. In comparison with the existing General Plan, a net reduction of 8 sworn officers and 2 non-sworn staff, relative to the numbers given above, would be needed to serve development levels proposed under the Specific Plan. However, the increased demand for police services is a potentially significant impact of the Specific Plan.

7. Schools

The proposed Specific Plan area (approximately 4,000 additional residences) would add additional students to primary and high schools which are already over capacity. The proposed Specific Plan would generate as many as 1,200 additional students for the primary schools within the Franklin-McKinley School District (0.3 students/du) and up to 800 additional students for East Side Union High School District (.2 students/du). In comparison, the Horizon 2000 General Plan would allow the construction of approximately 5000 dwelling units. This would potentially result in the addition of approximately 1500 primary school students and 1000 high school students. The proposed Specific Plan would, therefore, result in a reduction in the number of potential students in comparison with the current General Plan.

An elementary school in the Franklin-McKinley School District typically accommodates only 800 students. However, eight of the District's schools are on a year-round track, only 600 students are present during any one quarter. Therefore, of the projected 1,200 additional students only 900 would be attending primary school during any quarter. The East Side Union High School currently maintains 10 full-time high schools, with enrollments typically between 1,100 and 2000 students. Students from future residential development within the Specific Plan area would attend Andrew Hill High School, Yerba Buena High School or one or more of the other current full-time high schools within the District. As the District does not practice a policy of open enrollment, an adjustment(s) in current attendance boundaries would be required to allow students to attend other schools.

The school districts could employ a number of alternatives to accommodate increases in enrollment. The alternatives might include, but are not limited to, the use of portable classrooms, busing, construction of new schools, year-round operation of schools, use of open enrollment, and/or the opening of closed schools.

If the school districts choose to locate portable classrooms at existing schools, as they have in the past, transportation would be necessary for new students, due to unfavorable walking conditions and the distances between Communications Hill and the existing schools. According to the East Side Union High School District, a portable classroom can accommodate 30 students and a bus can accommodate 70 students. Based on these numbers, and assuming the schools are not on year-round tracks, approximately 27 portables would be required to accommodate the additional high school students and 40 portables would be required for new primary students. These portables could be distributed between all the schools in the district.

Approximately 13 buses would be required for high school students and approximately 18 buses would be required to transport new primary students. As indicated in Table 14, students would be bused approximately 3 to 5 miles round trip to attend elementary and secondary schools in the project vicinity. Traffic, noise and air quality impacts associated with transportation of students to and from existing schools has been included in the respective traffic, noise and air quality sections.

Additional students that would be generated by development of the proposed Specific Plan would impact the fiscal resources of the school districts. However, the increased demand on school facilities associated with future residential development would not have a significant environmental impact.

An five-acre area has been identified on the Communications Hill Specific Plan as a site for an elementary school. According to representatives of the School District, Communications Hill would generate a need for a second school site. The Specific Plan Discretionary Alternate use policy identifies a potential location for an additional school parcel in the neighborhood adjacent to Hillcap Avenue, near the existing quarry. The environmental impact of locating schools within the Communications Hill Specific Plan area has been analysed in this EIR at the same level of specificity as the other land uses proposed by the Plan. Additional environmental review would be conducted by the school district, as the Lead Agency at the time there is a specific proposal for construction of a school.

The East Side Union High School District has not requested dedication of land for a new high school. It would send new students to the two existing high schools listed in Table 14, possibly in new building additions or in portable classrooms.

Cumulative School Impacts. The proposed school's cumulative amendment along with the following other General Plan amendments proposed this year would potential generate the following additional students:

<u>Project</u>	<u>Oak Grove School District</u>	<u>No. of New Students</u>	
		<u>Franklin-McKinley School District</u>	<u>East Side Union High School District</u>
Levin Property (GP91-8-5)	298		198
Communications Hill		1,200	800
Cottle Road Prop. (GP91-2-1)	600		370
Total	898	1,200	1,368

The students generated by future residential development under cumulative conditions would require the addition of 40 portables in the Oak Grove School District, 40 portables in the Franklin-McKinley School District, and 46 portables in the East Side Union High School District. In addition, the Oak Grove School District would require eighteen buses to transport new students to and from school(s), the Franklin-McKinley School District would require thirteen buses, and the East Side Union High School District would require twenty buses. Addition of the portables to the existing school sites and required busing to transport students to and from schools site would not result in a cumulative significant environmental physical impact.

State regulations (AB 3205) require an assessment of the potential air toxics risks from industrial facilities which might reasonably be expected to emit air toxics within 0.25 mile of a proposed school site. The Specific Plan proposes to locate one and possibly two school sites within 0.25 mile of the planned Caltrans maintenance facility, which is anticipated to be completed by 1993. Siting of the school(s) within 0.25 mile of the facility could result in potentially significant impacts (see Section II., I. AIR QUALITY).

8. Parks

There are no City parks in the immediate vicinity of the Specific Plan area. The Specific Plan layout includes six public parks totalling 17.8 acres plus a 5-acre playfield next to an elementary school. As discussed in Section 3.1.3 Parks, Terraces and Slopes of the Specific Plan, there is also proposed 15 acres of terraces. Based on an estimated population of 10,800 (assuming an average of 2.7 persons per residence) and a City guideline of 3.5 acres of park for every 1,000 persons, the proposed Specific Plan parkland allocation would be 37.8 acres. This does not include 185 acres of open space with a trail system running throughout the Specific Plan area.

9. Library

The service level for San Jose libraries, as stated in the General Plan, is 10,000 square feet of library space per 36,000 population, 18.3 weekly service hours per 10,000 population, and 2.82 books per resident. The estimated 10,800 Communications Hill residents (assuming an average of 2.7 persons per resident) would, therefore, generate a need for 3,000 square feet of library space, 19.75 hours of weekly library service and approximately 30,450 additional books.

The four libraries closest to the project site are at capacity, and library administrators are in the process of preparing a City-wide assessment of branch library facilities. The Communications Hill Specific Plan includes a one-acre site which would be available for civic purposes, such as a community center and/or branch library. The somewhat remote location of the hilltop civic site may be deemed to be an inappropriate location for a branch library, but this has not yet been determined. The library administrators are also evaluating the possibility of serving Communications Hill with a storefront facility located in the hilltop commercial center.

MITIGATION MEASURES

General Plan mitigation

- Goals and Policies: D. Services and Facilities; Goal:
 1. Provide a full range of City services and other public services to the community at desired service levels.
 2. Promote the following level of service goals for City services:
 - For transportation, level of service "D".
 - For sanitary sewers, level of service "D".
 - For sewage treatment, to remain within the capacity of the Water Pollution Control Plant.
 - For police protection, a 7-minute average response time to calls for robbery, rape, aggravated assault and burglary.

- For fire protection, a 4-minute average response time to all calls.
- For parks and recreation: 3.5 acres of neighborhood and community serving recreational lands per 1,000 population, of which a minimum is 1.5 acres of neighborhood, community or locally serving regional/City-wide park lands, and up to 2 acres of school playgrounds, all of which is located within a reasonable walking distance; 7.5 acres of regional/City-wide park lands per 1,000 population; and 500 square feet of community center floor area per 1,000 population.
- For libraries, 10,000 square feet of library space per 36,000 population, 18.3 weekly service hours per 10,000 population and 2.82 books per capita.
- Goals and Policies: D. Services and Facilities; Level of Service Policies:
 2. Capital and facility needs generated by new development should be financed by new development. The existing community should not be burdened by increased taxes or by lowered service levels to accommodate the needs created by new growth. The City Council may provide a system whereby funds for capital and facility needs may be advanced and later repaid by the affected property owners.
 8. The operation of the Water Pollution Control Plant should comply with the water quality standards for the South San Francisco Bay established by the Regional Water Quality Control Board.
 9. The City should continue to encourage water conservation programs which result in reduced demand for sewage treatment capacity.
 18. The City should cooperate with school districts in identifying and evaluating the impacts of population and demographic changes which may affect the need for new schools, may lead to school closures, may require the re-opening of closed schools or may lead to the decision that existing school sites should be preserved for meeting future needs.
 19. In reviewing development proposals, the City should consider the availability of Police and Fire protection, Parks and Recreation and Library services to the proposed project as well as the potential impacts of the project on existing service levels.

- Goals and Policies: D. Services and Facilities; 3. Water Resources; Policy:
 2. Water resources should be utilized in a manner which does not deplete the supply of surface or groundwater, and efforts to conserve water supplies, both local and imported, should be encouraged.
- Goals and Policies: G. Hazards; 3. Flooding; Policy:
 1. New development should be designed to provide protection from potential impacts of flooding during the "1%" or "100-year" flood.
- Goals and Policies: G. Hazards; 4. Fire Hazards; Policy:
 2. All new development should be constructed, at a minimum, to the fire safety standards contained in the San Jose Building Code.

Specific Plan mitigation

- Plan Communications Hill roads and utilities to provide economical service and desired service levels;
- Distribute the capital public facility costs and benefits for new development of Communications Hill in an equitable and timely manner;
- Ensure that services of surrounding neighborhoods are not adversely impacted by development within the Specific Plan area;
- Meet the needs of Communications Hill residents and workers for public services by providing facilities on or near the Hill.
- Streets and avenues on Communications Hill have been located to minimize grading and meet the standards for street design established by the City of San Jose Public Works, Fire and Planning Department.
- To mitigate for odor in the reach of the Almaden 1B Interceptor System along Nightingale Drive, a technical analysis of additional flows to this reach would be conducted prior to discharging additional flows. If additional flows are determined to potentially exacerbate the reported odor problems, other discharge alternatives would be considered. These alternatives would include, but not be limited to, odor control facilities, routing of flows around this reach of the Almaden 1B Interceptor (either by gravity or force main), or routing the flows to the Edenvale Interceptor system (either by gravity or force main).

Other Program Mitigation

Storm Drainage

- Mitigation for the increased flows to the storm sewer lines on the northeast side of the planning area which lead to Coyote Creek would be determined based upon a storm drainage master plan currently under preparation for the Monterey Road area. Mitigation would include one or more additional outfalls to Coyote Creek, as appropriate.
- The final location of the detention storage facilities, described in Section II., C. FLOODING AND DRAINAGE could dictate the location of future storm drainage outfalls, upgrades, or parallel lines. These design details would be refined as the design process proceeds, and would occur prior to project-specific development approvals for the Specific Plan area.

Sanitary Sewer Service

- To ensure conformance with City standards, the planned connection of future development projects to off-site sanitary sewer facilities would be reviewed by Public Works staff.

Water Supply

- A new water distribution zone would be established to service the proposed Specific Plan development. The required pump station, water tank and distribution lines would have adequate capacity to meet maximum daily consumption and fire protection requirements.
- To ensure conformance with City and San Jose Water Company standards, the planned system would be reviewed by the San Jose Water Company staff.

Fire Protection

- Review of the site plans by the Fire Prevention Bureau would occur prior to individual project approvals.
- Each development project would be required to have noncombustible roofing

materials, sprinklered buildings, adequate fire flows, hydrants, emergency vehicle access and all streets would have grades of less than 15%.

Police Protection

- The Police Five-Year Service Plan, which establishes goals for the addition of police staffing, would be evaluated and implemented annually through the budget process.

Schools

- The financial impacts of increased numbers of school-aged children resulting from development of the Communications Hill Specific Plan area would be mitigated either by dedication of land for school facilities or by paying the mitigation fee assessed by the school districts on new residential construction. As permitted by State law (the School Facilities Act), the school districts currently levy a one-time only mitigation fee of \$1.58 per square foot of new residential construction (except for limited types of senior housing) and \$0.26 per square foot for qualifying senior housing projects. A fee of \$0.26 per square foot is also authorized for new non-residential development (commercial and industrial) when a link exists between it and the need for schools. This includes \$1.00 for the elementary and middle schools, and \$.58 for the high school, which would generate approximately \$1,900 per dwelling unit (assuming an average floor area of 1,200 square feet). Such fees would allow the provision of additional portable classrooms to augment capacity at impacted schools.
- Compliance with AB 3205, which will require an assessment of potential health risks related to placement of a school within 0.25 miles of the planned Caltrain maintenance facility, would be undertaken in conjunction with environmental review for subsequent projects proposed under the Specific Plan.

Parks

- Compliance with the City Parkland Dedication Ordinance which would require dedication of approximately 37 acres of public parks and playfields located and designed in a manner acceptable to the City.

In summary, no significant environmental impacts to utilities, facilities and services that cannot be mitigated to less-than-significant level are expected to result from the development of the Specific Plan as proposed.

Additional Recommended mitigation

Storm Drainage

- Mitigation for the increased flows to the 12-inch line on Curtner Avenue and the 66-inch trunk line to the Guadalupe River would be provided by the installation of parallel pipes. This would include a new 36-inch pipe draining westward toward the Highway 87 corridor, and a 48-inch line flowing westward on Curtner Avenue. These two lines could then be combined into a 60-inch outfall to the Guadalupe River, paralleling the existing 66-inch line.
- Since the 54-inch line in Hillsdale Avenue which drains to Canoas Creek is undersized for the planned level of development, a parallel 54-inch pipe would provide the additional capacity needed.

L. ENVIRONMENTAL HAZARDS

The Specific Plan area is potentially subject to detrimental health effects from three potential sources of environmental hazards present on the site. The first potential source is naturally-occurring chrysotile asbestos which is often found in serpentinite rock and soils such as those found on major portions of the hill. The second hazard is naturally-occurring mercury found in the limited band of silica-carbonate rock that was formerly mined for mercury. The third potential environmental hazard in the Specific Plan area is electromagnetic radiation emitted from the County Communication Center and the AT&T microwave facility. All of these hazards were evaluated for potential impacts to future development under the Specific Plan, as discussed below. In addition, the potential for future development to interfere with transmissions from the communication facilities is addressed.

1. Naturally-Occurring Chrysotile Asbestos

The Specific Plan area is partially underlain with serpentinite rock and soil material, which comprises approximately 75 percent of the bedrock under Communications Hill as shown on Figure 7 - Geology Map. Serpentine often contains a naturally-occurring asbestos material known as chrysotile which appears randomly as veins or small clumps of white fibers bound in the rock. Franciscan Complex sandstone and shale, comprising about one-fourth of the bedrock under Communications Hill, also contains very small amounts of chrysotile asbestos. Historically, chrysotile was by far the most common form of asbestos to be used commercially in the fabrication of fire-resistant fabrics and insulating materials, automobile brake and clutch linings, and asbestos-reinforced concrete pipe, among other things.

a. Health Risks

The commercial use of asbestos has declined dramatically since its demonstrated association with such life-threatening and disabling diseases as asbestosis, lung cancer and mesothelioma (cancer of the lung lining). Lung cancer accounts for over half of the mortality rate due to asbestos exposure.

Researchers have determined that there are a number of factors which determine the likelihood of disease occurring in a human being after exposure to asbestos. These factors are:

- The physical and chemical properties of the asbestos fibers
- The level of exposure

- The duration of exposure
- The route of exposure
- The biological variability among exposed individuals
- Concurrent exposure to cigarette smoke

There is no agreement on the affects of various fiber sizes; therefore, some authorities and the Occupational Safety and Health Administration (OSHA) assume all forms are potentially harmful and that human exposure to all airborne asbestos fibers should be reduced to the greatest extent practicable.

The higher the concentration of asbestos and the longer the period of exposure, the greater the chances for disease. There is no established "safe" level or "safe" period of exposure to asbestos as shown by variations in governmental regulations and the opinions of experts. Inhalation of asbestos fibers is the critical route of exposure in terms of toxicity. Exposure can also occur via ingestion, but asbestos fibers are not absorbed through the skin.

Individuals vary in their sensitivity to toxic pollutants in the environment. The reasons for this include differences in age, gender, nutritional status, and presence of disease. A person's age at the time he is exposed to asbestos is particularly important to the development of asbestos-related diseases. The majority of available data suggest an almost linear inverse relationship between the age of exposure to asbestos and the subsequent risk of development of mesothelioma for equivalent doses. Thus the earlier in childhood the exposure, the higher the probability of developing this disease. It has been shown that the combined effect of cigarette smoking and asbestos exposure significantly increases an individual's cancer risk.

It is important to note that chrysotile-bearing serpentine in an undisturbed state is not considered to be a hazardous material. However, when it is disturbed and becomes airborne, such as during grading and construction activities, the resulting dust could potentially contain levels of chrysotile requiring mitigation. This discussion, therefore, focuses on avoiding two impacts: 1) disturbance of chrysotile asbestos concentrations in the soil, and 2) the release of airborne asbestos fibers.

b. Governmental Regulations

The health risk occurs from the inhalation of asbestos fibers into the lungs where the fibers become lodged and can cause cancer after a latency period of 20 years or more. It is generally agreed that the risk of disease due to asbestos increases with the length of the exposure period and the concentration of the material; however, no safe level or safe exposure period has yet been established medically. Accordingly,

no minimum thresholds for safe exposure levels have been established by state and federal agencies responsible for air quality, such as the EPA and the state Air Resources Board (ARB). The State of California has, however, established the threshold of 0.1 percent asbestos by volume in a given quantity of soil as constituting a "positive test result" for asbestos, indicating the need for mitigation. In addition, the threshold of 1.0 percent asbestos is applied to define hazardous levels in "waste material."

It should be noted that, with the exception of the Asbestos Hazard Emergency Response Act (AHERA), all regulations are based on the measurement of asbestos by a Phase Contrast Microscope (PCM). Some measurement of asbestos under AHERA must be made by Transmission Electron Microscope (TEM). The PCM is a compound optical microscope that uses special lenses and diaphragms to alter slightly the paths of light waves from an object. This produces a diffraction pattern that allows the viewing of the object's transparent parts. The TEM focuses a beam of electrons, using an electric or magnetic field, to form an enlarged image of an object on a fluorescent screen. The TEM is much more powerful than any optical microscope.

The following is an overview of the standards and regulations as pertains to exposure to asbestos fibers.

Environmental Protection Agency (EPA). EPA regulations limit the asbestos content of numerous products including insulation and automobile products, establish procedures for the handling of asbestos in schools, and establish procedures for controlling asbestos emissions at mining and manufacturing sites. The EPA has not formally established a quantitative standard for the concentration of asbestos in the air. However, EPA has recommended that an ambient level of 0.01 asbestos fibers per cubic centimeter (CC) of air be enforced. This level is considered equivalent to the current limit of detection for air sampling.

The Asbestos Hazard Emergency Response Act (AHERA) was enacted in 1986 to implement the portion of the Toxic Substances Control Act pertaining to building materials containing asbestos in both public and private schools. AHERA spells out the requirements for the inspection, control, removal, and disposal of this material. Upon completion of a given asbestos control program--such as the removal of asbestos-containing materials from a room--the air must be sampled and analyzed using TEM (preferred) or PCM for smaller jobs. An ambient asbestos concentration in the room of 0.01 fibers per cc (or less) by PCM is required for final clearance. When TEM is used, it must be shown that the air inside the room is not statistically different than the ambient fiber concentration.

Occupational Health and Safety Administration (OSHA). The Federal government's OSHA regulates occupational exposure to asbestos through the establishment of standards for both general industry and construction. OSHA has two standards for exposure to asbestos at a job site. One is known as the "Action Level" and the other as the "Permissible Exposure Limit". Both are determined from concentration levels measured by PCM.

The Action Level is reached when the 8-hour time-weighted-average concentration of asbestos fibers in the air reaches 0.1 fibers per cc. When the Action Level is reached, an employer is required to take certain steps such as monitoring of worker exposure, employee training, and recordkeeping. Exceedance of the Action Level for 30 or more days per year triggers the implementation of a medical surveillance program for all employees.

The Permissible Exposure Limit is reached when the 8-hour time-weighted-average concentration of asbestos fibers in the air reaches 0.2 fibers per cc. An employer must assure that no employee is exposed to concentrations of asbestos exceeding the Permissible Exposure Limit. There are also limits to airborne asbestos at the perimeter of the work area during construction.

California Occupational Safety and Health Administration (CAL/OSHA).

CAL/OSHA requirements for the workplace protection of employees are similar to Federal OSHA standards relative to airborne asbestos, except that CAL/OSHA has not yet implemented a standard for airborne asbestos. However, CAL/OSHA enforces the more restrictive standard of the two agencies pending issuance of its own more restrictive standard.

National Institute for Occupational Safety and Health (NIOSH). NIOSH has developed standards applicable to the processing, manufacture, and use of asbestos-containing products, as defined under the Occupational Safety and Health Act of 1970. NIOSH recommends that the 8-hour time-weighted-average concentration of asbestos fibers greater than 5 micrometers in length not exceed 0.1 fibers per cc by PCM. NIOSH also recommends that peak concentrations of asbestos fibers not exceed 0.5 fibers per cc based on a 15-minute sample period.

California Air Resources Board. The California Air Resources Board has identified asbestos as a toxic air contaminant and is involved in several specific studies that may lead to future control measures for airborne asbestos.

Bay Area Air Quality Management District (BAAQMD). At present, the BAAQMD regulates asbestos only in manufacturing, demolition, and renovation activities. BAAQMD is not testing for general ambient air concentrations of asbestos fibers.

The BAAQMD has, however, recently decided to expand their Toxics Control Program, which includes the regulation of the quarrying of serpentine rock containing asbestos. The recently enacted Regulation 11 (Hazardous Pollutants), Rule 14 (Asbestos-Containing Serpentine) stipulates that for use as surfacing material, serpentine aggregate may have a chrysotile content no greater than 5 percent, and that shipments of serpentine aggregate containing greater than 5 percent chrysotile must be accompanied with a written warning so indicating.

California Department of Health Services (DOHS). The DOHS implements the provisions of Title 22 of the California Administrative Code, which pertains to the management of hazardous, extremely hazardous, and infectious wastes. This includes regulation of the handlers of hazardous wastes, the haulers of hazardous wastes, and the operators of hazardous wastes disposal facilities. Asbestos is included on the Title 22 list of hazardous materials, and as such is subject to state regulation for its disposal when it exceed a threshold of one percent chrysotile content.

Proposition 65: Safe Drinking Water and Toxic Enforcement Act of 1986. In November of 1986, Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was approved by California voters. Among the provisions of this Act are the following:

- Persons doing business are prohibited from knowingly and intentionally exposing individuals to a chemical known to the State to cause cancer or reproductive toxicity without first giving a clear and reasonable warning. "Persons doing business" is defined to exclude public entities.
- The State must publish (and revise as appropriate) a list of chemicals known to cause cancer or reproductive toxicity.
- The State must make determinations as to what level of exposure to these chemicals pose no significant risk.

The regulations implementing this Act took effect on February 27, 1988. The regulations define a level of no significant risk as being one excess cancer in an exposed population of 100,000. Asbestos is included on the State's list of chemicals known to cause cancer and is deemed by the Department of Health Services to create an insignificant risk at exposure rates of less than 100 fibers per day.

2. Naturally-Occurring Mercury

The following discussion of natural mercury concentrations is abstracted from Phase I Mercury Investigation Results Report, Communications Hill Specific Plan Area, San Jose, California, August 1991 by Terratech, Inc. and from a September 1991 letter responding to City of San Jose comments on the mercury investigation. The full text of the Terratech report and subsequent letter are contained in Appendix H.

An approximately 3.5-acre area of the Specific Plan area is underlain with a band of silica-carbonate (see Figure 7 - Geology Map). However, there is probably a degree of randomness in the actual distribution of the silica-carbonate in the Hillsdale Mine Area. Within the silica-carbonate rock are small, scattered, infrequent patches of cinnabar (mercury sulfide). This area was mined for cinnabar between 1842 and the early 1950s. The band of silica-carbonate identified in the Specific Plan area was exposed in cut slopes created by the Azevedo quarry operation, which has been ongoing since 1971.

The health risk at the subject property stems from a potential for human exposure to mercury in both a solid form (soil/dust ingestion) and to a lesser degree in a vapor form (inhalation). Overexposure to mercury most commonly affects the nervous system, causing weakness, fatigue and loss of appetite. It can also damage the kidneys. Mercury is not a known carcinogen. Most effects of mercury exposure develop slowly over time and only through repeated overexposure.

The state Department of Health Services (DOHS) has established (per Title 26) a toxic threshold limit concentration for classification of mercury-bearing soil as hazardous waste, which would require that any soils to be removed from the site containing 20 ppm or more of mercury would be subject to regulatory control of its disposal.

3. Electromagnetic Radiation

a. Setting

The following discussion of electromagnetic radiation summarizes the technical report prepared by Environmental Science Associates in September 1991. This report, which is included as Appendix I, focuses on the following two issues:

- The potential impacts of future buildings interfering with communication facilities transmissions; and

- Potential health-related impacts from the communications facilities on future residents.

Two communications facilities currently operate on Communication Hill. The County Communications facility at the terminus of Carol Drive provides a 360-degree radius for radio wave and microwave transmissions. Eleven microwave transmitters are maintained at the County Communications Center by the County of Santa Clara, the City of San Jose, the Federal Aviation Administration and San Jose Waterworks. AT&T operates five microwave paths from a southerly hilltop location on Communications Hill. Figure 19 shows a schematic layout of the microwave paths from the two transmission facilities on the hill. The predominant directions of the microwave paths are to the northeast and the northwest.

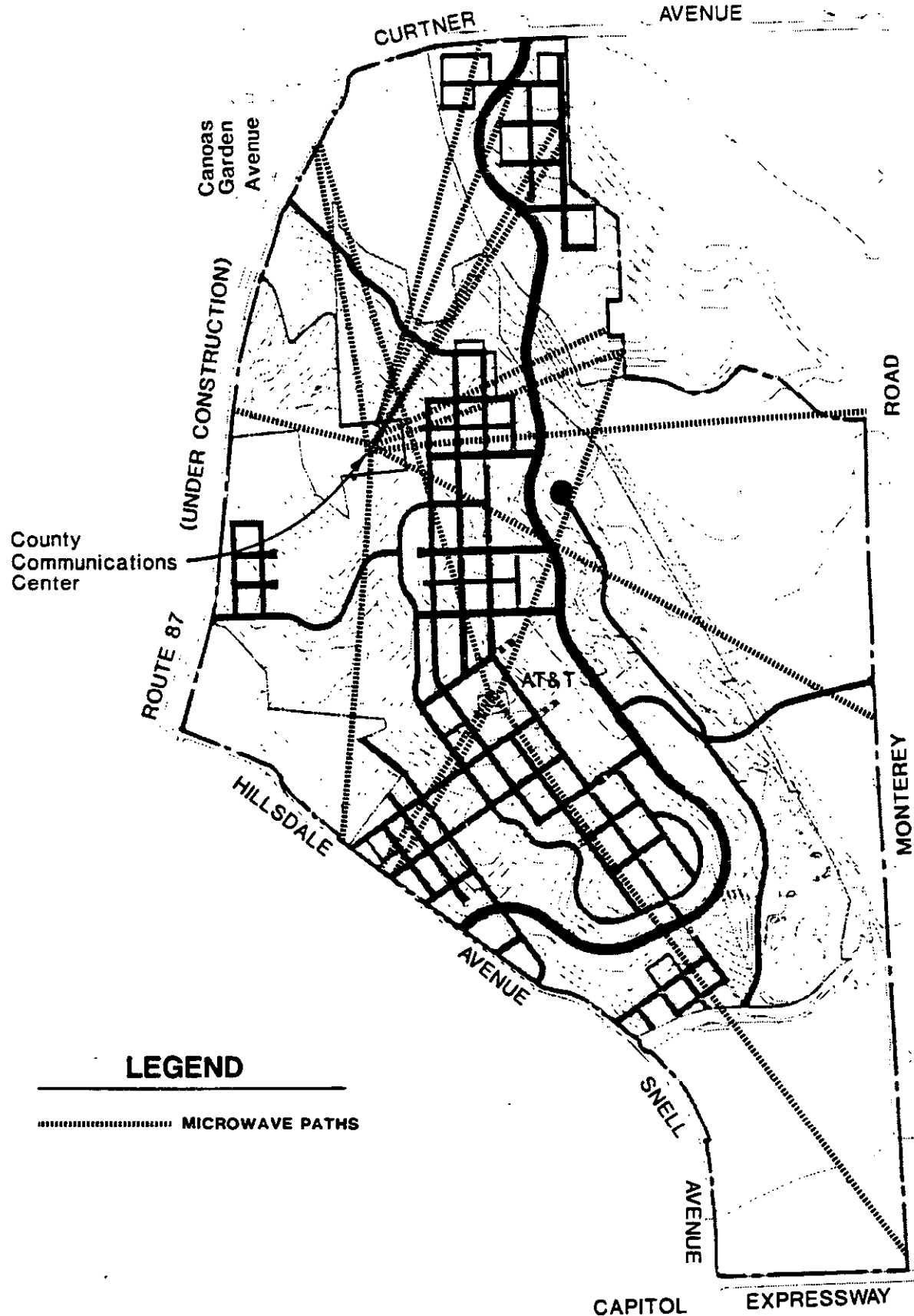
b. Communications Interference

Radio waves operate multi-directionally (360° radius), and objects or structures in the wave paths impede but do not restrict transmission. Microwaves on the other hand operate in a line-of-site mode. Therefore, any obstruction to the beam, or any object within a certain distance outward from the path of the beam, including an object at a certain elevation below the microwave path, can cause transmission problems.

There are no state or federal standards or guidelines in relation to maximum building heights to avoid interference with communication facilities. However, the City of San Jose recommends a distance of five feet from the edge of the antenna aperture (in the center of the microwave dish) in the direction perpendicular to the centerline of the beam, while AT&T recommends a distance of ten feet, and Santa Clara County advises that a minimum of ten feet is desirable to allow any building maintenance to take place without interfering with a microwave path. FAA recommends an overall clearance of 20 feet below their microwave beams to avoid interference with transmission facilities.

c. Potential Human Health Effects

Microwaves and radio waves are one form of electromagnetic radiation (EMR). Refer to Appendix I for a more detailed discussion of the full frequency range of electromagnetic radiation (EMR), the physical properties of EMR, sources of exposure to EMR, and existing standards for exposure to radio waves and microwaves. Appendix I also contains a survey of major literature reviews on EMR with an emphasis on animal and human studies pertaining to the biological and health



LEGEND

----- MICROWAVE PATHS

SCALE: 1"=1300'

SOURCE: ENVIRONMENTAL SCIENCE ASSOCIATES, INC., 1991

EXISTING MICROWAVE PATHS

effects of microwave and radio wave radiation.

The only confirmed potential health effect from high frequency radio waves (RF), which include radio and microwaves, is from the heating effects on cells. Other biological and health effects have been reported but are not considered to be conclusively correlated to human health risks by the majority of experts. The majority of experts conclude that the potential health risk to the general public from exposure to RF is low. However, controversies persist regarding the potential health risk from biological effects and research is ongoing. Researchers have identified a number of ways RF radiation can affect biological functions but it is not clear whether these biological effects translate to health effects.

The American National Standards Institute (ANSI) publishes what is considered to be the current standard for exposure to microwaves and radio waves. This 1982 standard was based on the best available interpretation of existing literature and is intended to prevent adverse effects on the functioning of the human body. ANSI standards have been a benchmark for other standard setting groups. ANSI standards are established for occupational as well as non-occupational exposure. However, a number of groups take a more conservative approach to exposure limits for the general public and use a standard of one-fifth of the ANSI Standards.

The ANSI Standards were recently reviewed by ANSI and updated Draft Standards proposed. The 1991 Draft Standards relax existing exposure limitations on exposure from electromagnetic radiation overall. For the radio wave and microwave frequency ranges, however, the 1991 Draft Standards are more stringent than the 1982 standards.

IMPACTS DUE TO ENVIRONMENTAL HAZARDS

1. Naturally-Occurring Chrysotile Asbestos

a. Health Risks

Asbestos fibers could be released into the air with development of Communications Hill, especially during earth-moving activities, which could pose a health hazard to construction workers and to nearby residents. Since chrysotile content is highly variable from one sample to another, it is likely that samples taken in conjunction with future development proposed under the Specific Plan would include some test results indicating no chrysotile content, and other results showing concentrations of 0.1 to 1.0 percent, and still other samples with over 1.0 percent asbestos (although samples exceeding 5.0 percent are unusual). In all cases, the potential exposure

hazard can be adequately minimized through implementation of the mitigation measures identified in the next section.

b. Chrysotile-Bearing Soils

No samples were taken of serpentinite within the planning area to determine chrysotile levels; however, serpentinite soils known to contain chrysotile asbestos are located in areas which would be graded and excavated for the proposed development. Any materials to be removed from a development site which exceeds 1.0 percent chrysotile content would be subject to state regulation (Title 22) for its disposal.

In summary, potential impacts related to airborne asbestos fibers and soils containing concentrations of chrysotile asbestos would be a potentially significant impact unless mitigated as identified subsequently in the mitigation section.

2. Naturally-Occurring Mercury

a. Mercury-Bearing Soils

Cold vapor absorption tests were conducted on nine samples to determine if mercury is present in concentrations which exceed the state standards for classification as a hazardous waste. Test results indicated that the amount of measured mercury varied considerably (over two orders of magnitude) in the nine analyzed samples. Two of the samples exceeded the hazardous waste classification threshold (TTLT) of 20 ppm. While in-place earth material would not be considered by the State Department of Health Services to be a "waste" (hazardous or otherwise), this designation would be triggered by excavating, such as during the construction of roads or building pads.

The band of source rock containing mercury is situated in an area where some grading for Vistapark Drive would occur prior to restoration for open space use. The proposed open space trail system would not extend into this area. The silica-carbonate band is separated from neighborhood uses by the 100-foot wide Vistapark Drive right-of-way; however, it is within 250 feet of proposed multi-family residences and approximately 300 feet from a proposed playfield. Exposure to soils which exceed hazardous waste thresholds is recognized as a potentially significant impact unless mitigated.

The distribution of silica-carbonate in the former Hillsdale mine area has a degree of randomness, and thus additional mercury-bearing rock may be exposed with future

quarrying and/or grading in this area. Therefore, detailed geologic mapping would be necessary upon termination of quarrying but prior to the development of this area, in order to find and delineate all bodies of silica-carbonate which may have been exposed.

b. Health Risk

Future residents of the Specific Plan area could be exposed to the potential health affects of mercury from outgassing of subsurface opening and/or ingestion and dust/vapor inhalation of mercury impacted soils. A three-step process to resolve the issue of potential mercury vapor hazards from the mercury gasses from subsurface openings has been identified:

1. A statistically representative number of air samples from down in the mines would be collected and analyzed for mercury vapor. If the vapor levels in the mines are below thresholds of concern, it would be firmly concluded that the mercury content of the out-gas should not be a problem and no further study would be needed. Otherwise, proceed to Step 2.
2. Review case histories of analogous situations for information on the out-gassing process, particularly with regard to mercury vapors (e.g., the Almaden Quicksilver County Park). If a proven, conservative relationship between vapor concentrations in a mine versus those in the out-gas demonstrates that the levels measured in Step 1 should not be a problem, no further study would be needed. Otherwise, proceed to Step 3.
3. Perform specific emission modeling and receptor exposure studies to determine the health implications of the mercury content in the out-gas on Communications Hill.

If, based on this three-step process, out-gassing is recognized as a potential impact, measures discussed in the mitigation section would be implemented. Mercury out-gassing is recognized as a potentially significant impact unless mitigated.

In summary, mercury-bearing soils and out-gassing from subsurface openings pose potentially significant impacts unless mitigated as described subsequently.

3. Electromagnetic Radiation Impacts

Future development under the Specific Plan has the potential to interfere with the ability of the County communication and AT&T facilities to provide uninterrupted transmissions for the City of San Jose, Santa Clara County, AT&T, and the FAA. In addition, as the existing communication facilities are updated, and the demand for police, fire, airport, and hospital-related communication services increases, and communication technology further develops, there is the potential for future land use conflicts. The existing transmission facilities could also interfere with television and radio reception in future residences to be built nearby.

The development of the areas surrounding the Communications facilities would significantly increase the population nearby that would potentially be exposed to electromagnetic radiation.

a. Communications Interference

The County and AT&T communication facilities located within the Specific Plan area are situated at elevations of 435 feet and 430, respectively, above mean sea level (MSL). The transmission facilities (i.e., radio antennae and microwave dishes) are located at a height of between 15 to 68 feet above ground on the tower structures. Estimated minimum heights of the microwave beams at the hilltop site are 445 feet above MSL. The existing grades at the transmission facilities would not be altered by grading for the future projects. Future residential and commercial development under the Specific Plan would be set back a minimum of 200 feet from the transmission facilities.

The single-family residential units proposed for the area north of the County facilities would be located at a building base elevation of approximately 380 feet above MSL, and the maximum finished height of single-family residential units would be at approximately elevation 415 feet, after grading of the site. This would allow a minimum clearance between microwave beams and project structures of 30 feet, which is sufficient to assure that the single-family residential units would not interfere with existing transmission facilities. Thus the construction of single-family residential units on the hill would not result in a significant impact with regard to communication interference at the County facility.

The Specific Plan proposes that several structures within the Specific Plan area exceed a building height of 45 feet. For nine multi-family sites located in the two neighborhoods north and south of the AT&T tower and for the commercial structures located in the Village Center, the Specific Plan proposes the building heights be

limited only by the criteria that the structures do not interfere with transmissions from the existing communications facilities.

Specific Plan development would incorporate an elevated water tank located within the four-acre park adjacent to the AT&T facilities which would have a minimum tank base elevation 490 feet. The total elevation of the tank would be approximately 515 feet (MSL). The location of the tank would be restricted by the existing AT&T microwave paths. The proposal is to locate the proposed tank in the AT&T park between the existing Loma Prieta and Hogsback microwave paths. The Specific Plan (at Appendix 5.3) contains the AT&T Park Conceptual Plan, showing the microwave paths and the location of the water tank. The final location of the water tank would be determined in consultation with AT&T to assure the tank would not interfere with communications transmissions. The construction materials for the water tank are as yet undetermined. However, in consultation and coordination with AT&T, the water tank would be constructed of materials which would avoid interference with existing communication facilities.

Radio waves, unlike microwaves, do not operate in a line-of-sight mode, but radiate multi-directionally (360° radius). The presence of building structures could cause small and isolated communication shadows, but these would not be substantial and would not interfere with the reception of transmissions. The existing transmission facilities could also interfere with television and radio reception in future buildings on the site; however, this is not a project-related impact.

In summary, the potential for development under the Specific Plan to result in interference at on-site communications facilities is considered to be less-than-significant with the incorporation of site planning constraints discussed above.

b. Potential Human Health Effects

Worst case estimates of existing maximum power densities were made for several locations on Communications Hill for both microwaves and radio waves. These estimated values were then compared to both the current ANSI Standards and the 1991 Draft Standards. The estimated power density values for both microwaves and radio waves would be well below the current ANSI Standards and would be .007% and 0.02%, respectively, of the general population recommended level of exposure. Measurements at ground level or indoors would be even lower.

While the long term effects of exposure of people to radio waves and microwaves involve uncertainties, the current ANSI standards are the basis for evaluating exposures. These standards may be revised upwards or downwards as research continues, knowledge of potential health effects expands, and the level of uncertainty decreases. However, based on the current ANSI Standards, or the more stringent 1991 Draft ANSI Standards, the effects of exposure to future residents of Communications Hill from radio wave and microwave transmissions would be a less-than significant impact.

Project occupants could be exposed to increased levels of electromagnetic radiation from additional communications facilities installed on Communications Hill in the future. While the nature and extent of future additions is unknown, electromagnetic radiation from such facilities, added to existing electromagnetic radiation on the site, could pose a health risk, if potential impacts to nearby residents are not considered in the planning of new facilities.

In summary, interference of communication facility transmissions by construction of Specific Plan residences, commercial structures or a water tank is a potentially significant impact. Exposure of future residents to potential health risks from exposure to radio waves and microwaves from existing facilities is considered a potentially significant impact.

MITIGATION MEASURES FOR ENVIRONMENTAL HAZARDS

General Plan mitigation

- Goals and Policies; G. Hazards; 1. Soil and Geologic Conditions; Policy:
 - 6. Development in areas subject to soils and geologic hazards should incorporate adequate mitigation measures.
- Goals and Policies; G. Hazards; 6. Hazardous Materials; Policy:
 - 1. The City should require proper storage and disposal of hazardous materials to prevent leakage, potential explosions, fires or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances especially at the time of disposal.

4. Development located within areas containing naturally occurring asbestos should be required to mitigate any potential impacts associated with grading or other subsurface excavation.

Specific Plan mitigation

- The overall height of buildings and other structures would be restricted to allow uninterrupted transmission of microwaves above structures.
- As shown on the Specific Land Use Plan, buildings would be set back at least 200 feet from communications facilities.

Other Program mitigation

Naturally-Occurring Chrysotile Asbestos

- Grading permits would include conditions to implementing a dust control program with stipulations involving construction equipment speed limits, cleaning, controlled loading procedures, controlled haul routes, watering, dust palliatives, and air monitoring;
- Check excavation surfaces and excavated material for chrysotile during grading to divert material with high chrysotile content for special handling;
- Equip construction workers with personal protection devices to prevent inhalation of airborne asbestos during grading;
- (• Do not use excavated material for surfacing unpaved roads;)
- Cover finished cut and fill slopes with non-serpentine soil or mulch, and serrating or benching steep slopes in order to retain the cover material.
- Monitor water quality of runoff by geologist or environmental technician.
- Adherence to State and Federal OSHA standards for asbestos monitoring and removal.
- The geologist or project engineer would be on site each work day to inspect the excavation area and identify serpentine load in haul vehicles.

- An industrial hygienist or environmental scientist would be on site daily to continuously monitor air quality in and around the site while work is being conducted with serpentine materials. Such air monitoring would include:
- Monitoring to comply with CAL/OSHA regulations; analysis by Phase-Contrast Microscopy (PCM)--highest 10 percent of samples to be analyzed by Transmission Electron Microscopy (TEM).
- Area and fenceline (up and downwind) monitoring (TEM analysis) to verify compliance with EPA emission standards and California Proposition 65 warning requirements.

Naturally-Occurring Mercury

- Off-site disposal of the mercury-bearing soil/rock.

Electromagnetic Radiation

- Prior to issuing the necessary permits for any additional communication transmission facilities in the Specific Plan area, the City should require an assessment of the potential health effects of increased electromagnetic radiation on residents of the site.

In summary, environmental hazards related to naturally-occurring asbestos and mercury, to transmission interference from Specific Plan structures and to potential health effects of electromagnetic radiation would be reduced to less-than-significant levels with incorporation of the mitigation measures identified above.

Additional Recommended mitigation

Naturally-Occurring Mercury

If mercury vapor content of mine outgassing is considered a hazard based upon the three-phase program described above, one or both of the following mitigation measures would be employed.

- Sealing of the mine openings
- Modify and/or restrict the land use in the affected areas.

There are two basic approaches to comprehensively defining the extent of the potential health hazard from mercury impacted soils or rock and determining mitigation. The first is to perform extensive mapping and testing prior to construction and based on the results develop a mitigation plan. The second approach is to make conservative assumptions about monitoring and address the problem as construction proceeds. For the second approach specific groundwork would first have to be established (see Appendix H, letter dated September 25, 1991).

A specific mitigation plan to address mercury containing soils would be developed at the project development stage. Depending on which of the two approaches discussed above is taken the plan would include, but not necessarily be limited to, one or more of the following mitigation measure:

- Detailed geologic mapping of individual project sites to determine the extent of mercury-bearing soil/rock.
- Capping the known mercury-bearing soil/rock with non-hazardous fill material and/or a synthetic membrane;
- Placing the mercury-bearing soil/rock beneath future streets and/or commercial buildings;
- Special design of residential and school building floors and yards, e.g., vapor barriers, slab-on-grades, ventilation, gas monitors, etc.
- An industrial hygienist or environmental scientist would be on site daily to monitor mercury-bearing soil/rock in and around project sites while work is being conducted with silica-carbonate materials.

Electromagnetic Radiation

- Prior to installing any satellite dishes, future residents should be required to coordinate with the City of San Jose to determine acceptable locations and orientations to avoid interference with existing communications facilities.
- AT&T will be consulted prior to finalizing the location of the water tank, and the determination of the construction materials for the water tank will be coordinated with AT&T.
- While the potential impacts related to electromagnetic radiation cannot be conclusively determined at this time, the following precautionary measures are

identified for general public health and safety purposes: Electromagnetic radiation exposure can be further minimized by siting and orienting buildings to minimize exposure to, and maximize shielding from, electromagnetic radiation, and by using construction materials and designs which will absorb electromagnetic radiation and conduct it to the ground.

M. ENERGY

This section was prepared pursuant to Public Resources Code Section 15203 (CEQA) which requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

The implementation of the proposed Specific Plan improvements would result in the consumption of three main forms of energy: 1) the fuel energy consumed by construction vehicles; 2) bound energy in construction materials such as asphalt, steel, concrete and pipes; and 3) operational use of energy by future occupants for transportation and utilities. Operational uses of energy also include pumping water to the ridgetop water tank, and operating industrial and commercial businesses.

Wasteful consumption of energy would be minimized during construction through standard engineering practices as follows. The various component projects would generally strive to balance cut and fill requirements, avoiding the need to import fill from remote locations, except for landscaping purposes, as discussed in Section II., G. Visual and Aesthetic Resources. Likewise, staging areas for construction equipment would be located in close proximity to the project sites.

The development of the site would also have an indirect influence on energy consumption, particularly the fuel energy used in automobile travel. The housing resources created at the site may shorten commute trips for San Jose employees who might otherwise commute to and from housing in more distant locations. The central project location would facilitate the use of Guadalupe Corridor light rail, Caltrain and County bus systems by future residents and employees. The inclusion of a neighborhood commercial center and mixed use areas with "Mom and Pop" convenience stores would promote internalization of non-commute trips as well as more pedestrian trips. To the extent that the residential development of Communications Hill would facilitate shorter overall commute lengths, the use of public transit, and the internalization of or elimination of vehicular shopping trips, energy resources will be conserved.

With respect to project design and use of construction materials, the emphasis on high-density configurations would achieve some energy savings through the built-in efficiencies for multiple-unit structures. Energy conservation features could include building design and orientation for passive solar heating and cooling, and selection of non-energy-intensive building materials and fixtures. The project will also be subject to the provisions of Title 24 of the California Administrative Code, which mandates energy efficient design standards for residential and non-residential buildings.

In summary, energy impacts would not be significant, therefore no mitigation measures for energy are required.

III. CUMULATIVE IMPACTS

Incremental impacts from several projects in the same area, which may not be significant for any individual project, can result in cumulatively significant impacts. Potential cumulative impacts associated with the Communications Hill Specific Plan include: traffic, noise, cumulative degradation of some biological resources, habitat and wetland areas, water quality and air quality impacts, as well as incremental demand for additional community services. Cumulative Air Quality associated with the Specific Plan is the only cumulative impact which cannot be reduced to a less-than-significant level with mitigation.

With respect to air quality, there would be a cumulative significant unavoidable impact related to exceedance of the BAAQMD significance thresholds for particulate matter (PM₁₀), NO_x and HC. The generation of pollutants would be minimized by implementation of the General Plan policies and mitigation measures identified in the air quality section, but probably not to a level of insignificance.

Community facility and service impacts are also area-wide in their effect, and therefore the affected service providers have evaluated utility and community needs related to the Communications Hill Specific Plan in the context of their current and future facilities planning needs. Services that would be cumulatively affected by all the General Plan Amendments in the City include water, sanitary sewer, storm drain, police and fire protection, gas, electric and telephone lines, schools, parks and libraries. However, it is expected that cumulative impacts to services and utilities would be mitigated to less-than-significant levels.

In summary, less-than-significant cumulative impacts would result from Specific Plan development for all the environmental topics discussed in Section II of this EIR, with the exception of cumulative air quality impacts.

IV. GROWTH-INDUCING EFFECTS OF THE PROPOSED PROJECT

The future development of the Communications Hill would not, in and of itself, induce unplanned or premature urban growth beyond the development shown on the proposed Specific Plan. The decision to approve a high-density residential community on Communications Hill took place as part of the Horizon 2000 General Plan update program of 1983-84. The General Plan program included a city-wide examination of supply and demand for residential land to provide housing for industrial employees. That analysis concluded that additional multi-family residential development would be appropriate, and that Communications Hill would be one of the most feasible areas to consider for such development.

However, future development within the Specific Plan area could hypothetically induce pressures for additional growth outside of Communication Hill, either directly or indirectly. Direct growth inducement could result from any surplus capacity which is built into the infrastructure beyond that required to serve the Specific Plan area, or from the addition of industrial and commercial use areas which would generate more new employment than housing. In assessing the growth-inducing effects of a project, it is generally understood that primary employment is growth-inducing while residential development is generally a product of growth rather than a cause of it.

Indirect growth-inducement could hypothetically occur if the future development of Communications Hill increases pressures for further high-density urban uses into adjacent and nearby areas, and generates demand for new commercial services to support the residents on Communications Hill. The potential direct and indirect growth inducing effects of the proposed Specific Plan are discussed below.

1. Growth-Inducing Effects of Excess Service Capacity

The transportation and utilities infrastructure systems proposed to support future development under the Specific Plan would be designed to accommodate only the development of the portions of the Communications Hill area which are currently undeveloped or are designated for redevelopment. These improvements would contain little, if any, surplus capacity to support additional unplanned development.

Roadways planned to serve the Specific Plan area would largely be local streets sized to handle hilltop neighborhood traffic. Likewise, on- and off-site sanitary sewer, storm drainage and water lines and related facilities (such as pump stations and detention basins) have been designed to service only development in the Communications Hill planning area.

2. Urban Expansion

Communications Hill represents the major infill site within urbanized south-central San Jose. It is completely surrounded, with minor exceptions, by existing or approved residential, commercial, industrial and public uses. Since all the surrounding valley-floor lands are already within San Jose's Urban Service Area, development of the hill cannot induce further outward urban expansion. Moreover, the development of the Specific Plan area has been planned and anticipated by the General Plan documents adopted by the City, and represents the efficient utilization of previous public investment in public transit and other infrastructure which was constructed to serve this part of San Jose, particularly the Guadalupe Corridor project.

The impacts resulting from planned growth in San Jose are mitigated by the policies of the Horizon 2000 General Plan, which ensure that future development occurs in a well-planned and environmentally sensitive fashion, and that the capacities of urban services and infrastructure will not be exceeded.

3. Economic Growth and Induced Housing Demand

The development of a portion of the Communications Hill Specific Plan area for commercial and industrial uses would generate primary employment which in turn would stimulate secondary growth in other sectors such as retail and service commercial. It is estimated that 799 primary jobs would be created with development of the new non-residential areas proposed under the Specific Plan. There are an estimated 914 existing or planned jobs in previously developed and approved portions of the Specific Plan area, for a projected total of 1,713 jobs upon build-out of the Specific Plan area. The Association of Bay Area Governments (ABAG) suggests a general ratio of 1.08 secondary jobs created for each primary job created. Using this multiplier, the estimated 799 new primary jobs which would be created by non-residential development in the planning area would generate an additional 863 secondary or spinoff jobs. Thus the total employment generation potential is the sum of the 799 primary jobs, plus the 863 spinoff secondary jobs, totalling 1,662 new jobs. The actual number of spinoff secondary jobs created would likely be somewhat less for three reasons. First, the primary jobs created may not all actually be new primary jobs in the region, particularly if the firms locating at the project have moved here from elsewhere within the region. Secondly, there may be an undetermined amount of excess capacity in the existing goods and services delivery system, which could lead to a lower actual multiplier of secondary job creation. And thirdly, the Specific Plan would contain up to 80,000 square feet of neighborhood commercial and office area which would reduce demand for off-site

retail and service commercial development.

The Horizon 2000 General Plan projects that 178,000 additional jobs would be created in San Jose under the plan. The 799 primary jobs and 863 secondary jobs resulting from Communications Hill development would account for less than one percent of that planned employment growth, assuming that the secondary jobs created were all located in San Jose.

If the 799 employees were all new residents to the region, they would generate a demand for approximately 615 new dwelling units (based on the 9-county Bay Area average of 1.3 employees per household). The actual housing demand generated by the non-residential uses of the Specific Plan area would probably be less since a portion of the jobs created may already exist (and may be filled by existing residents). A population growth of 1,660 would result from the construction of the 615 additional housing units projected (based on an average household size of 2.7 persons).

The Specific Plan proposes a maximum of 4,000 residential units, which would generate 10,800 new residents (based on an average household size of 2.7 persons). This would generate a surplus of 3,385 new units (i.e., 4,000 proposed housing units minus 615 units of housing demand generated by non-residential uses, as discussed above). (Even if indirect job creation is considered, which would generate an additional housing demand of 664 units, this would also be compensated by the proposed on-site residential development). Thus the proposed Specific Plan not only provides an internal jobs/housing balance, it also helps provide some of the additional housing units sought by San Jose to achieve its city-wide jobs/housing balance goals.

The proposed Specific Plan would decrease the number of planned multi-family units and increase the number of jobs relative to the existing General Plan. As such, it would have a somewhat negative effect on the projected jobs/housing balance of the region when compared with the existing General Plan. However, since the total number of residential units exceeds projected housing demand which could be induced under the Specific Plan, no excess residential growth would be induced by the adoption of proposed Specific Plan.

In summary, the proposed Specific Plan would not result in direct growth inducement by stimulating further urban expansion, and it would not indirectly induce growth by creating more jobs than housing. Therefore, the adoption of the Specific Plan would have result in no secondary impacts resulting from growth inducement.

V. ANY SIGNIFICANT EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

The proposed Specific Plan represents is a refinement of the General Plan land use designations for Communications Hill. Although the Specific Plan contains approximately 1,000 fewer dwelling units than the existing General Plan would allow, the ultimate development provided for under Specific Plan is of such a magnitude that it has the potential to result in significant adverse environmental impacts. Adverse cumulative impacts, discussed in Section III. CUMULATIVE IMPACTS, would also occur.

Significant unavoidable land use, visual and air quality impacts which would result from the Communications Hill Specific Plan include the following:

- Loss of open space/intensification of land use which would result in land use and visual impacts. The incorporation of 185 acres of hillside open space plus parks, as shown in the Specific Plan would partially but not fully offset the loss of this natural open area.
- The reduction in potential available mineral resources on Communications Hill is a significant land use impact.
- Visual impacts which would be caused by placement of a large water tank on the Communications Hill ridgetop.
- Visual impacts would result from the substantial amount of grading that is necessary for Specific Plan development.
- Although the proposed Specific Plan would result in an overall smaller quantity of pollutants than under the existing General Plan, air quality impacts related to exceedance of BAAQMD thresholds for particulate matter (PM₁₀), NO_x, and HC would still occur.

All of the other adverse impacts which would potentially result from the development of the Specific Plan area can be avoided, fully mitigated, or reduced to less-than-significant levels by General Plan policies, Specific Plan policies, map or text, or other program mitigations such as State laws or local regulations.

VI. ALTERNATIVES TO THE PROPOSED PROJECT

The following discussion of project alternatives is presented in conformance with section 15126(d) of the CEQA Guidelines which states:

Describe a range of reasonable alternatives to the project, or the location of the project, which could feasibly attain the basic objective of the project, and evaluate the comparative merits of the alternatives.

There are four types of alternatives applicable to the proposed Specific Plan including: 1) no project; 2) alternative urban structure; 3) alternative locations; and 4) an expanded quarry land use alternative. The No Project Alternative is further broken down into an Existing General Plan and an Existing Land Use alternative. These alternatives are evaluated below in terms of their level of environmental impact compared with the proposed Specific Plan and in terms of feasibility in attaining the basic objectives of the Communications Hill Specific Plan. Following the discussion of project alternatives, there is an evaluation of alternative water storage concepts which were considered along with the elevated tank concept proposed under the Specific Plan. In comparison with the proposed Specific Plan there is no environmentally superior alternative that has been identified.

A. NO PROJECT ALTERNATIVES

1. Existing General Plan

The "No Project" alternative in this case would consist of retaining the current General Plan designations for the Communications Hill Specific Plan area. Under the current General Plan, the Specific Plan area is designated for eight different uses (see Figure 4). Up to 5,000 new dwelling units would be allowed under the "Existing General Plan" alternative, while 4,000 units are proposed under the Specific Plan. Existing industrial and commercial areas along Monterey Road would retain their current boundaries and designations. Existing Non-Urban Hillside areas east of the railroad tracks would remain undeveloped once quarry operations are terminated instead of being developed for heavy Industrial and Combined Industrial/Commercial uses as proposed. The Horizon 2000 Land Use/Transportation diagram identifies an arterial roadway to serve the higher-elevation portions of the hill (Vistapark Drive) which currently have no road access, as does the proposed Specific Plan Land Use Plan.

From a land use standpoint, the greater number of residential units which would be built under the "Existing General Plan" alternative would be more discernible to local residents and motorists because the 1,000 additional multi-family dwellings would require taller residential structures and/or greater land coverage of unbuilt hillside areas. Under the Existing General Plan alternative, approximately 50 acres of the area west of the railroad tracks (proposed as a heavy industrial and combined Industrial/Commercial areas under the Specific Plan) would remain in the "Non-Urban Hillside" designation after reclamation of the Azevedo Quarry. The adopted General Plan would provide more open space on the northwest and northeast slopes, while the Specific Plan would have more hillside open space to the west side of the study area.

The current General Plan would provide more housing close to employment centers and, therefore, could possibly have a overall lesser traffic impact, regionally. However, the additional traffic related to the additional 1,000 dwellings allowed under the current General Plan designations residents would have a greater impact on surrounding local streets, although this would be somewhat offset by the fewer employment-generated trips associated with this alternative.

As with the proposed Specific Plan, extensive urban utilities and services would be needed to service new development on Communications Hill. Although a larger water tank or possibly two tanks would be required to serve the 1,000 additional multi-family residences, there would otherwise be little or no difference in public utility impacts between the proposed Specific Plan and the Existing General Plan alternative. However, there would be an approximately 20 percent greater need for services such as police and fire protection, parks and classroom space for students attending local schools.

This No Project alternative would be subject to a similar level of geologic hazards and geotechnical problems as the proposed Specific Plan, and similar grading impacts.

Although there would be some differences between the Specific Plan and Existing General Plan alternative with respect to the distribution of runoff and size of potential retention basins, overall effects would be similar in magnitude. The greater intensity of hilltop development under the Existing General Plan alternative would be offset development of 50 acres of additional Non-Urban Hillside area after reclamation of the Azevedo Quarry, as proposed under the Specific Plan.

Similar to the proposed Specific Plan, the Existing General Plan alternative would affect areas known to contain or potentially contain special status plant and animal species and wetlands. In either case, these impacts would be mitigated as described

in the biological resources section.

Like the proposed Specific Plan, the Existing General Plan scenario would be subject to the same potential impacts related to naturally-occurring chrysotile asbestos and mercury which is present in the bedrock on parts of the site. There is also the potential for similar impacts related to electromagnetic radiation in the vicinity of the two on-site communication facilities. The proposed Specific Plan and the existing General Plan designation would have similar impacts with respect to potential mineral (aggregate) resources.

As compared with the proposed Specific Plan, somewhat greater visual impacts are anticipated to occur as a result of site development under the Existing General Plan alternative. In the absence of Specific Plan policies, there would not be overall aesthetic standards to guide development. Properties could develop with individualized site layouts, and without a cohesive urban structure as represented in the Specific Plan. Furthermore, an additional 1,000 dwelling units could require higher densities, taller structures and/or more land coverage with resultant additional grading and terrain alteration on the highly visible ridgetop and slopes of Communications Hill. The additional 50 acres which would be designated Heavy Industrial and Combined Industrial/Commercial under the proposed Specific Plan would be located in an area along the railroad tracks that is not visible from surrounding roadways or residential neighborhoods, and therefore would not result in significant visual impacts in this area compared with the Existing General Plan alternative. Also, the larger number of planned residences under the existing General Plan might require an additional or a larger water tank to provide for the correspondingly greater capacity requirements, resulting in somewhat greater visual impacts.

Like the proposed Specific Plan, the Existing General Plan alternative would be developed in a culturally sensitive area where known cultural resources may be affected. Impacts would be similar for the project and this alternative.

There would be no significant difference in energy impacts between the Existing General Plan alternative and the proposed Specific Plan.

The existing General Plan would not meet the objectives of the Specific Plan to provide a comprehensive planning frame work for development of a high-density, pedestrian-oriented, urban community with a mix of uses on and around the hill, including the integration of commercial uses with high-density neighborhoods.

In conclusion, the Existing General Plan alternative would have generally the same levels of impacts as the proposed Specific Plan with respect to utilities, geology,

hydrology, traffic, noise, air quality, biological resources, hazardous materials, energy and cultural resources, but somewhat greater magnitude effects relative to land use, visual resources, public services. Due to the potential for increased land use intensity on the visually prominent slopes of Communications Hill, as well as greater public service impacts, the Existing General Plan alternative is not considered to be an environmentally superior alternative to the proposed Specific Plan.

2. Existing Land Use Alternative

The "Existing Land Use" alternative in this case would consist of retaining the land uses on Communications Hill with no additional development of the Specific Plan area.

As previously discussed in this EIR, the Communications Hill area has been largely bypassed by any substantial development due to its need for major infrastructure improvements, its unique terrain, the relatively high expense of hillside development, the availability of other properties with fewer development constraints, and local limitation in the transportation network. With the exception of the major transportation improvements these factors call for a more comprehensive planning approach than would be used under the Existing General Plan alternative. In the continued absence of such a comprehensive approach, it is possible that the Communications Hill area would remain largely undeveloped under the existing General Plan. The Existing Land Use Alternative discusses the impacts of such a no-development scenario.

Significant, unavoidable impacts associated with implementation of the Specific Plan as proposed, such as loss of open space, intensification of land uses, visual impacts related to construction of the water tank, and exceedance of air quality standards for criteria pollutants would not occur. This alternative would allow existing agricultural, industrial, commercial, utility, and low-to medium-density residential uses on Communications Hill to remain unaffected.

The Existing Land Use alternative would, by definition, not result in development of a unified, high-density, pedestrian-oriented urban community atop Communications Hill. As such, it would not meet the project objectives as stated in Section I., C. PROJECT OBJECTIVES. The Existing Land Use alternative would severely reduce the opportunity to provide 4000 dwelling units in an area with adjacent public transit such as light rail, Caltrain and bus routes. The insufficient availability of close-in housing would result in traffic congestion, air quality impacts, and greater energy consumption, as commuters are compelled to live in more distant locations.

Under the Existing Land Use alternative, most of the environmental impacts expected under the Specific Plan would not occur or would be substantially reduced. However, this No Project alternative would not meet the objectives of the proposed Specific Plan.

B. CURVILINEAR URBAN STRUCTURE ALTERNATIVE

Under the "Curvilinear Urban Structure" alternative, the Communications Hill Specific Plan area would be developed with a curvilinear road layout common to suburban subdivisions instead of the gridiron pattern of streets proposed. This approach would maximize the buildable area of the site by grading it relatively flat, thus creating a plateau-like area atop the Communications Hill ridge. All land use of the project with the exception of the grid street pattern would remain generally the same as those shown on the proposed Specific Plan map. However, given the inefficiencies inherent in this urban design concept, the Curvilinear Urban Structure alternative would only allow development of up to 2,500 dwelling units, less than 60 percent of the units reflected in the proposed Specific Plan. The irregularly-shaped parcels would not allow for efficient parking layout, making it difficult to maximize the number of housing units on the site.

The environmental aspects of this alternative are evaluated below, in comparison with the proposed Specific Plan.

Under the Curvilinear Urban Structure alternative, impacts upon existing land uses in the vicinity would be similar to those associated with the Specific Plan. Land use impacts would consist of loss of open space, intensification of land uses, and loss of mineral resources.

Noise impacts upon future residents within the Specific Plan area would be increased with the Curvilinear Urban Structure alternative due to the street layout which would result in siting of residential units adjacent to collector and arterial streets. Long-term energy impacts would also be greater under this alternative, because the length of commute trips would not be shortened due to close proximity to employment centers, or eliminated due to ready access to public transit.

Visual impacts of this alternative would be greater than those under the proposed Specific Plan because more extensive grading would be necessary to create a hilltop plateau, resulting in greater terrain alteration. The hill would lose its natural rounded appearance, and the AT&T facility area would remain perched on a large mound at the center of the hill if it could be maintained at all in its present form. Also, the streetscape would tend to be more auto-oriented, lined with garage doors or separated by sound walls, and the area would be less accessible to parks and open

spaces. This alternative concept would not support the objective to develop Communications Hill with pedestrian-oriented neighborhoods, with accessible parks and open space integrated throughout the community.

Development under the Curvilinear Urban Structure alternative would generally cover the same land area as would be developed under the proposed Specific Plan and would therefore have similar impacts on open space. However, the massive grading required would result in significantly greater impacts to hydrology, water quality, and biological resources than under the proposed Specific Plan. Also, the potential exposure to asbestos and mercury would be significantly increased under the alternative concept.

Because fewer housing units would be developed, some impacts would be reduced under this alternative. This includes traffic, air quality, and public service impacts which would be generally less than those anticipated under the proposed Specific Plan.

In conclusion, land use, noise, visual, geology, hydrology, water quality, biological resource and energy impacts would be increased under the curvilinear plan relative to the proposed Specific Plan. However, traffic, air quality, public service and utility effects would generally decrease, and loss of open space and loss of mineral resources would remain the same. Given the substantially greater on-site impacts associated within the Curvilinear Urban Structure alternative, it would not represent an environmentally superior alternative to the proposed Specific Plan concept. Additionally, this alternative would provide far less housing than envisioned in the General Plan, and as such would not achieve the housing goals of the City and would not support the Specific Plan objective of developing a pedestrian-oriented community.

C. ALTERNATIVE LOCATIONS

The Specific Plan area is a major residential infill site for the central area of San Jose readily accessible to arterials, freeways and light rail transit. There is no other area in the urbanized portion of the City with over 400 acres of vacant land available for development of up to 4,000 dwellings.

In conclusion, no alternative location was discussed because there are no major residential infill sites within the City of San Jose which would meet the objectives of the Specific Plan to provide close-in housing for existing/planning San Jose employment centers.

D. EXPANDED QUARRY LAND USE ALTERNATIVE

The "Expanded Quarry Land Use Alternative" in this case would consist of expanding quarrying activities to quarry all the remaining aggregate resources on Communications Hill. This alternative would be consistent with the purpose of SMARA and the Santa Clara County General Plan Mineral Resource Element Policy to encourage the protection and conservation of State-designated mineral resource areas. However, expanded quarrying would not be consistent with Santa Clara County Mineral Resource Element policy which state that new or significant expansion of quarries should be approved only if compatible with neighborhood land uses, not disruptive of the environmental and not visible for the Valley floor.

Biological, cultural resource, visual, grading, air quality (particularly for PM₁₀), and noise impacts of expanded quarrying would result in greater impacts than under the proposed Specific Plan. Visual impacts from this alternative would be greater than those under the proposed Specific Plan because quarrying activities could essentially level the hill leaving the AT&T and County Communications facilities perched on large isolated mounds. The noise, air quality and visual impacts would make the expanded quarrying alternative incompatible with nearby residential uses. Expanded quarrying would have reduced impacts from traffic, would reduce exposure of future residents to potential hazards and reduce impacts on utilities and services.

As with the Existing Use Alternative, the Expanded Quarry Alternative would remove the opportunity to develop 4000 new housing units close to jobs and near transit facilities. Increased traffic congestions and increases in criteria pollutants would result from the longer commutes.

In summary, under the Expanded Quarrying Land Use Alternative most of the environmental impacts expected to occur under the Specific Plan would occur or be intensified. Noise, and air quality impacts from expanded quarrying on the western side of the ridge would create land use impacts with nearby residential uses. The Expanded Quarrying alternative would not meet the objects of the Specific Plan nor would it be an environmentally superior alternative.

E. ALTERNATIVE WATER STORAGE CONCEPTS

Full buildout under the Specific Plan would require a 2.2-million gallon elevated tank to provide water service and fire protection for lands located higher than 228 feet above Mean Sea Level (MSL), and for the Curtner and Curtner Grove neighborhoods. The base of the elevated tank structure would be constructed so that

the bottom of the tank would be at elevation 490 feet (approximately 90 feet tall) in order to supply gravity-feed water service to the hilltop residential and commercial areas. The water tank is proposed to be located in the park area adjacent to the existing 115-foot tall AT&T communications tower.

1. At-Grade Tank adjacent to AT&T

Alternatively, the water storage reservoir could consist of an at-grade water tank situated in the same location next to the AT&T tower. Since a lower tank could not provide adequate pressure by gravity, such a water system would also require a combination booster pump system with stand-by power, as well as a hydropneumatic tank to supply minimum service pressure and reduce pump cycling.

An at-grade water tank would be less visible than an elevated tank as proposed, due to its lower profile and its greater opportunity to be fit into the terrain and to be screened with vegetation and/or fencing. The at-grade alternative could have adverse public service impacts, however, when compared with a gravity-feed system, because an electrically-powered system would require greater maintenance and therefore could be less reliable for fire protection unless a back-up power system were provided. This system would be particularly vulnerable in the event of an earthquake-induced power outage when demand for fire flows might be greatest.

2. Booster Pump with No Storage Tank

A system which would involve booster pumps with no storage tank was also considered in order to avoid visual impacts related to situating a water tank in the Specific Plan area. However, such a system would not meet fire department water storage or water pressure requirements. The booster-pump system would also rely upon electrical power and require a back-up power system, thus making it also vulnerable in case of an earthquake.

3. Two Storage Tanks

A third alternative which was considered for providing gravity-feed water to serve the ridgetop residential community involved two storage tanks: an at-grade water tank at the top of the hill (also next to the AT&T facility) and a smaller, elevated storage tank to provide gravity service to future hilltop residents above the 228-foot elevation. This alternative was discarded because the elevated storage tank would need to be nearly the same size as the tank proposed under the Specific Plan in order

to serve the upper-elevation development. Since this alternative would result in similar visual impacts as a single elevated tank, and would also require the higher maintenance booster pumps, it would provide no environmental advantage over the proposed elevated water tank, and would carry the disadvantages of an at-grade tank.

In summary, the at-grade water tank and the booster pump with no storage tank alternatives would be less visible than the proposed elevated tank alternative. However, because these alternatives would require electrically-powered booster stations, they would be less reliable under emergency conditions than a gravity-feed water supply system. A two-tank system alternative (with one tank at-grade and a second elevated tank) would have no environmental advantages over a one-tank system, because the size of the elevated tank would be nearly as large as the elevated tank proposed under the proposed Specific Plan. In conclusion, none of the three alternative water storage concepts are considered to be an environmental superior alternative when compared with the elevated tank proposed under the Specific Plan.

VII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The cumulative and long-term effects of the Communications Hill Specific Plan which would adversely affect the environment include loss of open space, increased traffic generation, incremental emission of air pollution, increases in ambient noise, removal of vegetation and wildlife habitat, visual impacts, reduction of available mineral resources, and consumption of non-renewable construction materials and energy resources.

In the short-term, the project would increase traffic, noise and air pollution in the planning area. In the long-term, to the extent that the workers employed at vicinity employment centers choose to live on Communications Hill as an alternative to more distant residential areas such as the Almaden Valley and southern Santa Clara County, these impacts would be reduced.

In the short-term, loss of open space, removal of vegetation and wildlife habitat and visual impacts would be apparent. In the long-term, the future residents would enjoy trails through grassy open space areas, landscaped terraces and parks, street trees, preserved or mitigated wetland and habitat areas, and a unique pedestrian-oriented urban community.

In the short-term, reduction in available mineral resources (due to preclusion of gravel extraction from the remaining portions of Communications Hill), and consumption of non-renewable construction materials and other energy resources would occur. In the long-term, environmental effects related to excavation of the entire hill area would be avoided. Also, energy would be conserved by locating residences along existing public transit routes (Light Rail, Caltrain and bus lines) and in close proximity to employment centers.

VIII. ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

Development under the proposed Specific Plan would result in the commitment of a major portion of Communications Hill to urban infill development for residential, commercial, industrial and other uses. Topographic features would be permanently altered due to construction grading, filling, and the introduction of roads, buildings and other structural elements. Open space would be reduced. Vegetation and wildlife habitat would be eliminated. Ambient noise and air pollution levels would increase. Energy resources would be consumed in the construction of the urban improvements and during the operational phase of the Specific Plan.

IX. DRAFT SPECIFIC PLAN GOALS AND POLICIES

GOALS & POLICIES

Overall

- Distribute housing types and densities, work places and facilities to create a mixed but compatible arrangement of land uses within the Communications Hill Specific Plan area.
- Integrate existing land uses, particularly mobile-home parks and single family homes, with new land uses, ensuring the viability and compatibility of both.
- Adopt site planning and architectural guidelines and noise attenuation techniques to protect Communications Hill residents and workers from excessive noise from arterials, freeways, the fairground activities, and trains and planes traveling nearby.
- Minimize grading or re-contouring of Communications Hill to preserve the topography of the land wherever possible, and to avoid the creation of visible cut and fill slopes or obviously engineered or flat-surfaced slopes.
- Minimize the potential adverse impacts of the Communications Hill area development on the immediate surrounding neighborhood.

Urban Design

- Require a very high level of quality in site planning, architectural design and landscape design for all new projects.
- Ensure the proper transition between areas with different land uses through site development guidelines.
- Take advantage of the hillside setting to maximize views and vistas, both private and public; to ensure privacy; and to provide optimal ventilation.
- Provide pedestrian connections between all portions of the developed hill whenever possible.
- Encourage development on Communications Hill that displays a strong urban form, for example, is compact and cohesive with some emphasis on vertical elements and sharp distinctions between most developed areas and major open spaces.

- Place facilities such as utility distribution lines and associated equipment underground to promote neighborhood visual quality.
- Utilize various housing and building construction types that are adaptable to the variable terrain on Communications Hill in order to take advantage of the opportunity for higher density infill housing.
- Improve the aesthetic quality of the major communications facility on the hill.

Neighborhood Character

- Create new development in the Communications Hill Specific Plan area which encourages neighborhood stability, enhancing and taking advantage of the existing desirable qualities of the area, particularly the Hill.
- Design residential areas to share important "Communications Hill" characteristics, for example, street patterns, compact development, urban rather than suburban character, etc. Each area should also display some distinctive elements, either public or private, designed to give it a unique identity.
- Create places for social interaction internal to the Communications Hill neighborhood, such as parks, plazas, a community center, a school, a shopping area, and/or a library and facilities for associated programs.
- Design projects, particularly large ones, to reflect a scale and texture suitable to the size of the individual blocks.
- Orient buildings directly to streets; streets should function as legitimate centers of neighborhood activity for walking, biking, visiting, etc.
- Concentrate large areas of open space and landscaping in parks, plazas, trail areas, and at schools and other public buildings.

Housing

- Provide a wide variety and mix of housing types, prices and tenure to accommodate households of all income levels and types in the Communications Hill neighborhood.
- Design residential areas with adequate adjacent public and private usable open space and access to public transit to meet resident's needs.

- Arrange housing to minimize any adverse effects from land uses and transportation facilities.
- Provide adequate parking facilities.

Commercial and Industrial Land Uses

- Provide for as great a variety of retail opportunities as the market can support in keeping with the neighborhood character.
- Locate retail commercial activities within the Communications Hill Specific Plan area so as to maximize convenience and accessibility.
- Preserve existing industrial land primarily for current and future industrial uses with supporting commercial and office uses.
- Plan and regulate on-going and future industrial activities to minimize adverse impact on nearby land uses.

Economic Development

- Encourage job opportunities near housing to facilitate ease of access between uses.
- Within the Specific Plan area, design and market development to attract and encourage the location of residents and business.
- Maintain existing jobs within the Communications Hill Specific Plan area in order to contribute to the sustenance of the City's economic base as well as the City-wide jobs-housing balance.
- Maintain the existing industrial uses and encourage their revitalization in order to retain the economic viability of these land uses.

Transportation

- Provide a multi-model transportation system for Communications Hill area which is safe, efficient and environmentally sensitive.
- Provide for vehicular, bicycle, bus and pedestrian circulation that can be safely combined in the design of the streets.

- Discourage through and unsafe speeds on residential-serving streets.
- Link vehicular, bicycle and pedestrian circulation with each public transit system serving this area.
- Plan a system of non-vehicular pedestrian routes throughout Communications Hill that connects a mix of land uses and encourages walking.
- Encourage mass transit use by residents through easy access to Light Rail and CalTrain stations.

Aesthetic, Cultural and Recreational Resources

- Provide neighborhood parks within reasonable walking distance of all Communications Hill households and concentrate community-wide open space areas on the perimeter of the new neighborhood.
- Distribute and design public and private open space and parks for direct access and visibility for nearby residents.
- Consider maintenance implication in planning for public open space and parks, right-of-way and other facilities.
- Plan parks and open space resources in a manner which will enhance the quality of residential and community uses.
- Utilize existing features, or plan facilities and services that create destination points within Communications Hill, whenever possible.

Services and Facilities

- Plan Communications Hill roads and utilities to provide economical service and desired service levels.
- Distribute the capital-public facility costs and benefits for new development of Communications Hill in an equitable and timely manner.
- Ensure that services of surrounding neighborhoods are not adversely impacted by development within the Specific Plan area.
- Meet the needs of Communications Hill residents and workers for public services by providing facilities on or near the hill.

X. REFERENCES

A. BIBLIOGRAPHY

Basin Research Associates, Inc., Cultural Resources Assessment of the Communications Hill Specific Plan Area, City of San Jose, Santa Clara County, California, April 1991.

California State Department of Education, School Site Selection and Approval Guide, 1989.

ENTRIX, Inc., Advisory Assessment of Potential Corps of Engineers Jurisdiction on Summerhill Property, June 2, 1989.

Environmental Science Associates, Inc., Communications Hill Air Quality Technical Report, August 1991.

Environmental Science Associates, Inc., Communications Hill Electromagnetic Radiation Report, September, 1991.

Federal Emergency Management Agency, United States, Flood Insurance Rate Maps for the City of San Jose, California, August 2, 1982.

Federal Emergency Management Agency, United States, Flood Insurance Rate Maps for the County of Santa Clara, California, August 2, 1982.

Harvey, H.T., and Associates, Communications Hill Specific Plan EIR-Existing Biological Conditions, Impacts and Mitigation, San Jose, California, May 24, 1991.

Illingworth & Rodkin, Inc., Environmental Noise Assessment, Communications Hill Specific Plan, San Jose, California, June 14, 1991 and revised September 4, 1991.

Mollin, Charles F., Manager of Facilities/Construction, Letter to Solomon, Inc. Re: School Site Requirements, Communications Hill Area, January 23, 1991.

Murphy, Dennis D., Ph.D., Letter Report to Nolte and Associates, April 18, 1991.

Murphy, Dennis D., Ph.D., Letter to Nolte and Associates, Re: Bay Checkerspot Butterfly on Communications Hill (San Jose, California), May 28, 1991.

San Jose Department of City Planning, Noise Element of the General Plan, September 1984.

Schrender, Jack & Associates, East Side Union High School District, Development Impact Analysis of the Communications Hill Area, February 1991.

Schrender, Jack & Associates, Franklin-McKinley Elementary School District, Development Impact Analysis of the Communications Hill Area, December 1990.

State of California, Office of Planning and Research, CEQA: The California Environmental Quality Act, Law and Guidelines, January 1984, as amended.

Santa Clara County Transit District, Final Environmental Impact Report, San Jose to Gilroy Caltrain Extension, August 1989.

Santa Clara County Transit District, Revised Draft Supplemental Impact Report Guadalupe Corridor Transportation Facility, March 1988.

Santa Clara Valley Water District, Maps of Flood Control Facilities and Limits of 1% Flooding, November 1986.

San Jose Department of City Planning, Draft Environmental Impact Report: Horizon 2000 General Plan, June 1984.

San Jose Department of City Planning, Horizon 2000 General Plan, November 1984, as amended.

San Jose Department of City Planning, Monterey Corridor Revitalization and Development Strategy, March 1987.

Terratech, Inc., Letter Response to City of San Jose Comments on Natural Mercury Issues, September 25, 1991.

Terratech, Inc., Phase I Mercury Investigation Results, Communications Hill Specific Plan Area, San Jose, California, August 29, 1991.

Terratech, Inc., Preliminary Geologic and Geotechnical Evaluation, Communications Hill Specific Plan Area, San Jose, California, May 30, 1991.

TJKM Transportation Consultants, A Traffic Study Report, Communications Hill Specific Plan, General Plan Amendment in the City of San Jose, Final Report, October 9, 1991.

U.S. Department of Agriculture, Soil Conservation Service, Soils of Santa Clara County, June 1968.

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XI. VIEWS OF LOCAL GROUPS

In addition to the formation of the Communications Hill Specific Plan Task Force, the Department of City Planning requested comments from local groups and interested citizens in response to the Notice of Preparation (NOP) for this EIR. The NOP was issued in May 1991. No comments from neighborhood groups or individual citizens were received in response to the NOP.

Eight public agencies responded to the NOP. Comments concerned visual impacts of the water tank (San Jose Water Company); integration of Communications Hill with a planned County trail along the Guadalupe Corridor (Santa Clara County Parks), biological resources (Department of Fish and Game and U.S. Department of the Interior), roadway traffic (Caltrans and Santa Clara County Transportation Agency), drainage and flooding (Santa Clara Valley Water District), environmental impacts upon schools (Eastside Union High School District). These concerns have all been addressed in this EIR. See Appendix K for a copy of the NOP and letters received in response.

A community meeting was held on June 17, 1991, to introduce the Communications Hill Specific Plan to interested citizens, and to obtain preliminary comments on the Plan. Questions were raised and answered with regard to neighborhood traffic, the type of proposed housing, water supply, sanitary sewer flows, drainage and construction impacts.

APPENDICES

APPENDIX A

ENVIRONMENTAL CLEARANCE COVER SHEET



CITY OF SAN JOSE, CALIFORNIA

DEPARTMENT OF CITY PLANNING
801 NORTH FIRST STREET
SAN JOSE, CA 95110-1795

GARY J. SCHOENNAUER
DIRECTOR OF PLANNING

DATE: October 15, 1991

Dear Madam/Sir:

SUBJECT: Communications Hill Specific Plan EIR

The enclosed Draft Environmental Impact Report will have a public hearing before the Planning Commission to determine the environmental significance of the project described below. Any comments or suggestions you can make to assist us in adequately addressing all anticipated environmental effects of this project will be greatly appreciated.

If you wish to have your comments or suggestions regarding this Environmental Impact Report considered by the Planning Commission, please have them on file in the Department of City Planning by November 28, 1991. IF YOUR COMMENTS ARE MADE THROUGH A STATE OR REGIONAL CLEARINGHOUSE, PLEASE SEND A COPY TO THE PLANNING DEPARTMENT TO INSURE PROMPT CONSIDERATION.

Project Description and Location: DRAFT ENVIRONMENTAL IMPACT REPORT for a General Plan amendment for the area bounded by Curtner Avenue, Monterey Highway, Hillsdale Avenue/Capitol Expressway and S.R. 87, to change the Land Use/Transportation Diagram from its current designations of Estate Residential (1.0 DU/AC), Medium Density Residential (8 DU/AC), Medium High Density Residential (8-16 DU/AC), High Density Residential (12-25 DU/AC), Very High Density Residential (25-40 DU/AC), Non-Urban Hillside, Light and Heavy Industrial, General Commercial and Public/Quasi-Public to Communications Hill Planned Community on approximately 900 acres and to adopt associated text amendments. The EIR also addresses the adoption of the Communications Hill Specific Plan.

Tentative Hearing Date: December 11, 1991

Contact Person: Lee Quintana
Department of City Planning
801 North First Street
San Jose, CA 95110

GARY J. SCHOENNAUER
Director of Planning

Stanley Tetlow
Deputy

Attachment
8252L(5):0362L



CITY OF SAN JOSE, CALIFORNIA

DEPARTMENT OF CITY PLANNING
801 NORTH FIRST STREET
SAN JOSE, CA 95110-1795

GARY J. SCHOENNAUER
DIRECTOR OF PLANNING

ENVIRONMENTAL IMPACT REPORT SUMMARY

Tentative Hearing Date: December 11, 1991

File Number: Communications Hill Specific Plan

Project Description and Location: DRAFT ENVIRONMENTAL IMPACT REPORT for a General Plan amendment for the area bounded by Curtner Avenue, Monterey Highway, Hillsdale Avenue/Capitol Expressway and S.R. 87, to change the Land Use/Transportation Diagram from its current designations of Estate Residential (1.0 DU/AC), Medium Density Residential (8 DU/AC), Medium High Density Residential (8-16 DU/AC), High Density Residential (12-25 DU/AC), Very High Density Residential (25-40 DU/AC), Non-Urban Hillside, Light and Heavy Industrial, General Commercial and Public/Quasi-Public to Communications Hill Planned Community on approximately 900 acres and to adopt associated text amendments. The EIR also addresses the adoption of the Communications Hill Specific Plan.

Environmental Impacts

Following are the principal environmental impacts discussed in the attached Environmental Impact Report:

- Aesthetic/Visual
- Air Quality
- Archaeological/Historical
- Drainage and Flooding
- Geologic/Seismic
- Minerals
- Noise
- Public Services/Facilities
- Water Quality/Water Supply
- Biotics
- Land Use
- Cumulative Effects

Attachment
8252L(6):0362L



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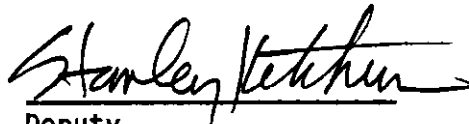
GARY J. SCHOENNAUER
DIRECTOR OF PLANNING

FILE NUMBER: Communications Hill Specific Plan EIR

The Director of the Planning Department of the City of San Jose hereby certifies that, to the best of his knowledge, the information contained in this Environmental Impact Report is complete as required by Subsections (a) through (g) of Section 21100, of Division 13 of the State of California Public Resources Code.

DATE: October 15, 1991

Gary J. Schoennauer
Director of Planning


Deputy

8252L(7):0362L

APPENDIX B
GEOLOGY REPORT

Prepared by

Terratech, Inc.
May 1991

PRELIMINARY GEOLOGIC AND GEOTECHNICAL EVALUATION
COMMUNICATIONS HILL SPECIFIC PLAN AREA
SAN JOSE, CALIFORNIA

Project 4844

for

Nolte and Associates
60 South Market Street, Suite 600
San Jose, California 95113

by

Terratech, Inc.
1365 Vander Way
San Jose, California 95112

May 30, 1991



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PRELIMINARY GEOLOGIC AND GEOTECHNICAL EVALUATION
COMMUNICATIONS HILL SPECIFIC PLAN AREA
SAN JOSE, CALIFORNIA

INTRODUCTION

Site Location and Description

The Communications Hill Specific Plan area is a 1-mile by 2-mile, irregularly shaped area in central San Jose bounded by Curtner Avenue, Oak Hill Cemetery, Monterey Highway, Capitol Expressway, Snell Avenue, Hillsdale Avenue, and the Route 87 transit corridor. The site is shown on Figure 1, the Vicinity Map. About half of the Specific Plan area (generally the higher elevations) is undeveloped. Communications facilities occupy both of the two highest hilltops; the one on the northern hilltop is operated by the County of Santa Clara, and the one on the southern hilltop is operated by AT&T. Other existing land uses, encircling the summit at lower elevations, include single-family housing, mobile-home parks, light industry and warehouses, the Raisch quarry, a drive-in movie theater, a church, and a condominium development. Southern Pacific railroad tracks cross the central portion of the site in a northwest-southeast direction. The land is owned by numerous property owners. Communications Hill was called *Oak Hill* until about the 1970s.

Project Description

Proposed development of the area is shown on an illustration entitled *Proposed Land Use*, dated February 21, 1991, prepared by Solomon, Inc., at a scale of about 1 inch equals 900 feet. We understand from this drawing and from discussions with Nolte and Associates that the undeveloped part of the site will be used for multi-family residences, single-family residences, a school, parks and playfields, open space, and commercial developments. Two water tanks will be situated near the County's communications facility. A Caltrain maintenance yard is planned for an area adjacent to the railroad tracks. Existing land uses along the base of the hill are unlikely to change in the near future, except the drive-in movie theater site might be redeveloped. Access to the site will be from Curtner Avenue (on the northwest), Monterey Highway (on the northeast), and Hillsdale Avenue (on the south). Proposed grading is shown on a drawing entitled *Conceptual Grading Plan*, dated March 18, 1991, prepared by Solomon, Inc. The *Conceptual Grading Plan* shows that cuts up to about 40 feet deep are proposed.

Purpose and Scope of Work

The purpose of our work was to evaluate general geologic and geotechnical considerations for use in the Environmental Impact Report on the Communications Hill specific plan. (The necessary geologic and geotechnical investigations for specific development projects will be performed later.) Our scope of work for this preliminary geologic and geotechnical evaluation consisted of the following.

- 1) Researching pertinent published and unpublished reports in our files and provided by Nolte and Associates.



- 2) Acquiring and studying stereoscopic aerial photographs of the Specific Plan area.
- 3) Performing a brief (about 1 day) geologic reconnaissance of areas proposed for new development (except the quarry area) to check previous geologic mapping of the bedrock and to map any new geologic features such as recent landslides.
- 4) Preparing this report describing our findings, conclusions, and general recommendations for mitigating significant geologic hazards and geotechnical problems.

Previous Work

The two geologic maps by Crittenden (1951) and Dibblee (1972) represent the only known original mapping of the entire Communications Hill area. This mapping was regional in scope. A map of late-Cenozoic (younger than about 5 million years) deposits in Santa Clara Valley by Helley and Brabb (1971) shows the various types of alluvium surrounding Communications Hill. Geologic reports on specific parts of the Specific Plan area include consultants' reports by Gribaldo, Jacobs, Jones and Associates (1964), Terratech (1971), Terrasearch (1976), Berlogar, Long & Associates (1981), Louke and Associates (1981), and Geoconsultants (1986, 1988).

SITE CONDITIONS AND GEOLOGY

Surface Conditions

Elevations range from about 150 to 430 feet above sea level. Canoas Creek, the only significant watercourse in the Specific Plan area, runs northwesterly through the southwestern corner of the site.

The undeveloped part of the site, which comprises most of the Specific Plan area, consists of rounded hills separated by wide swales and v-shaped watercourses. The typical natural slope gradient is about 2½:1 (horizontal:vertical); steeper gradients of about 2:1 are present along the sides of some watercourses. No significant watercourses are present on the undeveloped part of the site. No evidence of significant unusual erosion is present. Few significant surface features associated with landsliding are present. Vegetation consists mainly of low grass with a few trees and scattered patches of brush. At least one small mineral prospect is present (see Figure 2). Parts of the area are used for grazing. Barbed-wire fences cross the area. A cut through a topographic saddle has been created for the railroad.

The Raisch quarry covers a large area in the central part of the site. The quarry is characterized by highly modified, continually changing topography, dominated by steep cut slopes and piles of quarried material. Roads, stationary quarry machinery, and small buildings are present in the quarry area.



Parts of the Specific Plan area, mainly along the base of Communications Hill, are presently developed and are unlikely to change in the near future. Such areas are shown by buildings and roads on Figure 2.

Geologic Units

The geology of the site is shown on Figures 2 and 3, the Geologic Map and Geologic Cross Section. Our interpretation of the distribution of geologic units is similar to Dibblee's (1972). Both Dibblee's (1972) and our interpretation are highly generalized: the distribution of geologic units on Communications Hill is somewhat random, and is not possible to fully detail and map from reconnaissance-level mapping only. More-detailed mapping and subsurface exploration, which will follow this investigation, will result in a more detailed understanding of the geology of Communications Hill.

The seven geologic units present on the site are discussed below in order from oldest to youngest.

Franciscan Complex

The Franciscan Complex consists of various types of rock that were tectonically¹ mixed together next to a subduction zone mainly during the Jurassic and Cretaceous Periods. The Franciscan Complex is informally divided into subunits based on predominant rock type. Two such subunits underlie Communications Hill, a serpentinite subunit and a sandstone-and-shale subunit. Contacts between the two units are gradational, subjective, and approximate, due to mixing of sandstone and shale within serpentinite and vice versa.

Serpentinite. Franciscan Complex serpentinite comprises about three fourths of the bedrock under Communications Hill. The unit consists primarily of serpentinite but also contains small bodies of sandstone and shale (Terratech, 1971), and silica carbonate, chert, and quartzite. The serpentinite is hard and sheared. It contains small amounts of chrysotile asbestos; this conclusion is based on the fact that serpentinite in the adjacent Route 87 transit corridor contains 1.2% chrysotile (California Department of Transportation and others, 1988), and the fact that we found small veins of chrysotile in rocks on Communications Hill. Soil developed on this unit is generally very thin (about 1 foot).

Sandstone and shale. Franciscan Complex sandstone and shale comprises about one fourth of the bedrock under Communications Hill. It consists primarily of sandstone and shale but also contains small bodies of serpentinite, schist (Crittenden, 1951), silica carbonate, chert, and quartzite. It also could contain very small amounts of chrysotile asbestos, depending on the quantity of serpentinite present within the unit. Soil developed on this unit is generally on the order of a few feet thick, and can be highly plastic and highly expansive.

¹ Terms shown in bold are defined in the glossary.



Silica-Carbonate Rock

Silica-carbonate rock originally comprised a small portion of the bedrock, mainly in the quarry area. Mining and quarrying could have altered the original volume and exposed area of this rock. Small bodies of this rock could be present intermingled with the other rock units outside the quarry. Silica-carbonate rock was produced by alteration of serpentinite by hot ground water solutions during the Tertiary Period. This rock was mined for mercury at Communications Hill many years ago. According to Terratech (1971), "it forms a prominent part of the landscape because it tends to resist erosion."

Colluvium

Quaternary colluvium is composed of soil formed by tumbling, creeping, and washing of surficial material down hillsides. It covers natural hillsides nearly everywhere, and collects in deposits several feet thick at the bases of slopes and in swales. Only thick deposits (greater than a few feet) are shown on Figure 2. Colluvium on Communications Hill is generally moderately to highly expansive.

Alluvium

The flat, valley-floor area surrounding Communications Hill is underlain by Holocene (Helley and Brabb, 1971) alluvium. It consists of horizontally layered, unlithified soil that could range from gravels to clays.

Landslide Deposits

Eight small Holocene landslide deposits are shown on Figure 2. We encountered three landslide deposits, which appear to consist of shallow slumps and soil flows restricted to thick accumulations of colluvium within swales underlain by Franciscan Complex rock. A map by Cooper-Clark & Associates (1974) shows five additional small landslide deposits.

Quarry Materials

The quarry area contains deposits of quarry products and waste that we have combined under the label *quarry materials*. Some of these deposits are obvious stockpiles, and there could also be deposits that are not evident from the surface. Some deposits, presumably, are expanding, shrinking, and being moved about as part of quarry operations.

Geologic Structure

The serpentinite and sandstone-and-shale subunits of the Franciscan Complex consist of slabs and lenses of rock that were sheared together in a subduction zone during the Jurassic and Cretaceous Periods. There has also been shearing within the subunits. The slabs and lenses are probably inclined between about 45° and vertical; this preliminary conclusion is based on the outcrop pattern of the contacts between the rock bodies, attitudes (orientations) of shears



shown in a 1943 survey of the Hillsdale mercury mine (see next section), and statements by Crittenden (1951). The contacts between bodies of serpentinite and the sandstone-and-shale subunit, and shears within the subunits, are faults. There is no evidence that the fault contacts have ruptured or have accumulated strain since the Cretaceous Period. However, they are planes of weakness that could undergo minor displacement as a result of shaking from an earthquake on some other, nearby fault (see section entitled *Hazards and Mitigations*).

The Alquist-Priolo Special Studies Zones Map of the San Jose East Quadrangle, by the California Division of Mines and Geology (1982), shows no known active faults crossing the Specific Plan area. A City of San Jose (1983) fault hazard map shows a possible extension of the active Piercy fault crossing Oak Hill Cemetery, about 2000 feet northeast of the Specific Plan Area; we do not know the basis for this mapped fault location. A map by the California Department of Water Resources (1975) shows the potentially active Edenvale fault crossing the eastern corner of the Specific Plan area (the drive-in theater) in a north-south direction; this is based on an offset of buried stream gravel deposits found by correlating well data. We know of no other maps showing the Piercy or Edenvale faults in these locations.

Hillsdale Mercury Mine

The former Hillsdale mercury mine, an underground mine, is located in the present Raisch quarry. The mine was worked from 1847 to 1874, from 1892 to 1907, in 1915, and during World War 2 (Crittenden, 1951). Aerial photographs appear to show that activity at the mine ended in the mid 1940s to early 1950s.

Open underground mine workings as identified in early 1943 are shown on a survey drawing by Robert Thom, dated May 1943, drawn at a scale of 1 inch equals 40 feet. This information has been transferred to Figure 2, the Geologic Map. To our knowledge, the accuracy and completeness of this survey has not been verified. The 1943 mine survey indicates that mine workings in May 1943 consisted essentially of two roughly horizontal networks at about elevation 200 and elevation 270. Comparison between the 1943 mine-workings survey and the 1990 topographic map suggests some workings have been removed by quarrying while others are still present; our discussions with Bob Beatty, of the Raisch Company, confirmed these conclusions. The deepest workings are currently about 100 feet below the ground surface. As quarrying continues until Communications Hill is developed, more workings might be removed.

According to Crittenden (1951), the mercury is concentrated in silica-carbonate rock developed from serpentinite. The silica-carbonate rock is concentrated along a fault contact between serpentinite on the southwest and sandstone and shale on the northeast. The fault contact has an attitude of about N50°W, 45°-60°SW. The silica-carbonate has a maximum thickness of about 50 feet, and tapers out completely to the northwest and southeast.



Springs

Springs are present along parts of the base of Communications Hill, according to Gribaldo, Jacobs, Jones and Associates (1964). We did not attempt to map individual springs for this preliminary study.

Effects of Loma Prieta Earthquake

The 7.1-Richter-magnitude Loma Prieta earthquake occurred on October 17, 1989, on the southern Santa Cruz Mountains segment of the San Andreas fault (see Figure 4). Its epicenter was located about 16½ miles southeast of Communications Hill. We found no reports of ground deformation on or in the vicinity of Communications Hill in the literature on the Loma Prieta earthquake. Peak horizontal ground acceleration at Communications Hill during the Loma Prieta earthquake would have been estimated at about 0.18 g using the method developed by Idriss (1985). Communications Hill is located within a zone that experienced ground shaking intensity of 6 on the Modified Mercalli scale (appended), according to a drawing by Stover and others (1990). Peak ground acceleration and Modified Mercalli Intensity measured at nearby recording stations are summarized in Table 1.

TABLE 1 -- GROUND SHAKING INTENSITY NEARBY DURING LOMA PRIETA EARTHQUAKE

RECORDING STATION	LOCATION RELATIVE TO COMMUNICATIONS HILL	PEAK GROUND ACCELERATION		MODIFIED MERCALLI INTENSITY
		HORIZONTAL	VERTICAL	
101-280-680 INT, SAN JOSE	3.1 MILES NORTH	.18 G ^A	.08 G ^A	6 ^B
SANTA TERESA HILLS, SAN JOSE	4 MILES SOUTH	.28 G ^C	.22 G ^C	6 ^B
ALOHA AVENUE, SARATOGA	9.4 MILES SOUTHWEST	.53 G ^C	.41 G ^C	6 ^B
FOOTNOTES: A) Maley and others (1989). B) According to drawing by Stover and others (1990). C) Shakal and others (1989).				

HAZARDS AND MITIGATIONS

Summary

Table 2 summarizes geologic and geotechnical hazards and construction difficulties in the Communications Hill Specific Plan area.

This section of this report addresses known geologic and geotechnical hazards and construction difficulties and their possible mitigation, based on what is presently known about the site, including those with low risk of occurrence. Potential hazards and problems should not be taken out of context without



TABLE 2 -- SUMMARY OF HAZARDS AND DIFFICULTIES

HAZARD OR DIFFICULTY		SIGNIFICANCE ¹	MITIGATION RECOMMENDED?	ADDITIONAL STUDY NECESSARY?
SEISMIC HAZARDS	GROUND SHAKING	HIGH	YES	NO
	SURFACE FAULT RUPTURE	MEDIUM ²	MAYBE ²	YES
	FRACTURING, FOLDING	LOW	NO	NO
	LANDSLIDING	MEDIUM	YES	YES
	LIQUEFACTION	MEDIUM ²	MAYBE ²	YES
	SETTLEMENT	MEDIUM ²	MAYBE ²	YES
	MISCELLANEOUS FISSURING	LOW	YES	NO
	FLOODING	LOW	NO	NO
	LANDSLIDING	MEDIUM	YES	YES
SUBSIDENCE AND SETTLEMENT	FLUID EXTRACTION	LOW	NO	NO
	MINE COLLAPSE	HIGH	MAYBE ²	YES
	HYDROCOMPACTION	LOW	NO	NO
	PEAT OXIDATION	LOW	NO	NO
	SOIL COMPRESSION	MEDIUM	MAYBE ²	YES
	SOIL EXPANSION	MEDIUM	YES	YES
	EROSION	MEDIUM	YES	YES
	FLOODING AND SEDIMENTATION	? ³	? ³	YES ³
	VOLCANIC HAZARDS	LOW	NO	NO
	LOSS OF MINERAL RESOURCES	LOW	NO	NO
	WASTE-DISPOSAL PROBLEMS	LOW ⁴	NO ⁴	NO ⁴
	HIGH GROUND WATER	MEDIUM ²	MAYBE ²	YES
	DIFFICULT EXCAVATION	MEDIUM	MAYBE ²	YES
	HAZARDOUS NATURAL MATERIALS	MEDIUM ⁵	YES	YES

FOOTNOTES:

1) SIGNIFICANCE IS JUDGED BY QUALITATIVELY CONSIDERING POTENTIAL DAMAGE AND CHANCE OF OCCURRENCE.

2) HEAVILY DEPENDENT ON OUTCOME OF ADDITIONAL STUDY.

3) FLOODING AND SEDIMENTATION ARE BEING STUDIED BY PROJECT CIVIL ENGINEER.

4) DEVELOPMENT WILL BE TIED INTO MUNICIPAL SEWAGE SYSTEM.

5) HEAVILY DEPENDENT ON OUTCOME OF MERCURY STUDIES, WHICH HAVE BEEN BEGUN BY TERRATECH.

understanding their risk of occurrence and possible mitigation measures.

A number of the hazards and problems discussed need to be more fully addressed by additional, detailed investigation, which should be performed as project planning proceeds. Mitigation measures presented with each impact are only a tentative list of common possible mitigation measures that will need to be carefully evaluated and selected later, based on detailed study.



Some measures listed might already be incorporated in project plans, or might be judged by others to be undesirable or unacceptable for economic, environmental, or political reasons. We leave it to others to point out such distinctions. We have tried to present mitigation options that are practical and reasonable from a geotechnical engineering standpoint.

Seismic Hazards

Seismic (earthquake) hazards to structures consist of ground shaking, ground deformation, and flooding. Ground shaking usually causes most damage during earthquakes. Ground deformation can occur along the responsible fault itself, but most deformation is a secondary result of ground shaking (e.g., landsliding, liquefaction, settlement). Flooding can also be a secondary effect of ground shaking where water sloshes within a body of water or where a dam or dike breaks.

Ground Shaking

Ground shaking is a significant hazard in most of California: it has a high risk of occurrence and could cause high levels of damage.

Table 3 provides an overview of the ground-shaking hazard within the Specific Plan area by listing levels of ground shaking that can be expected from the largest potential earthquakes on known nearby faults, and the probabilities of those earthquakes. For each fault we have listed generally accepted fault activity level, fault length, distance from the site, magnitude of the characteristic large earthquake or maximum credible earthquake the fault is capable of generating, estimated average recurrence interval for such an earthquake, the probability that such an earthquake will occur in the 30 years between 1990 and 2020, the estimated mean (50th percentile) horizontal peak ground acceleration in rock at the site from such an earthquake, estimated horizontal peak ground acceleration one standard deviation above the mean (84th percentile), estimated duration of strong shaking (for acceleration greater than 0.05 g), and estimated Modified Mercalli Intensity. The faults and fault segments of concern are shown in Figure 4. "50th percentile PGA" means there is a 50% probability that the peak ground acceleration will not exceed the stated value (similarly for 84th percentile PGA). The Modified Mercalli Intensity scale, which is appended, is a crude but easily understood measure of shaking intensity.

In addition to these rare, high levels of shaking, the Specific Plan area will be shaken by more frequent, lower levels of shaking, both from smaller earthquakes on the faults listed and from earthquakes on other faults.

Predicting earthquakes is in a primitive state, and estimating ground shaking is not exact. Actual peak ground acceleration and duration of shaking for a given earthquake will undoubtedly vary from the values given in the Table 3 due to (1) discrepancies between measured distances to faults and actual distances to earthquake epicenters, (2) differences in earthquake magnitude, and (3) the influence of site effects. Site effects include the ways that





TABLE 3 -- OVERVIEW OF GROUND-SHAKING HAZARD

FAULT	ACT LEV ^A	LENGTH (MI) ^B	LOCATION (MI) ^B	RICHTER MAG	REC INT (YEARS)	30-YR PROB	PGA (50TH XILE) ^C	PGA (84TH XILE) ^C	DURATION ^D (SECS)	MM ^E
BERRICAL	PA	39	9 SW	7.6 ^F	?	<1% ^G	.34 g	.45 g	31	7-8
BUTANO	PA	23	12 SW	7.4 ^F	?	<1% ^G	.26 g	.35 g	30	6-8
CALAVERAS, ALUM ROCK SEGMENT	A	16	7 NE	5.8 ^H	80 ±40 ^I	59% ^J	.22 g	.31 g	10	6-7
CALAVERAS, SAN FELIPE SEGMENT	A	14	8 NE	6.1 ^H	80 ±24 ^I	3% ^J	.22 g	.32 g	13	6-7
CALAVERAS, COYOTE RESERVOIR SEGMENT	A	26	18 SE	5.9 ^H	80 ±24 ^I	5% ^J	.09 g	.13 g	8	5-7
COYOTE CREEK	PA	14	7.4 SE	7.3 ^H	?	<1% ^G	.35 g	.47 g	28	7-8
EVERGREEN	A	9	4.1 NE	7.1 ^H	?	?	.44 g	.60 g	27	7-8
HAYWARD, SOUTH EAST BAY SEGMENT	A	31	9 NW	7 ^K	167 ±67 ^L	23% ^L	.28 g	.38 g	26	6-8
MONTA VISTA-SHANNON	PA	39	4.4 SW	7.6 ^F	?	<1% ^G	.47 g	.63 g	31	7-8
PIERCY	A	4	1.5 E	6.9 ^F	?	?	.56 g	.76 g	25	7-8
SAN ANDREAS, NORTH COAST SEGMENT	A	191	34 NW	8 ^K	228 ±82 ^L	2% ^L	.15 g	.21 g	26	6-7
SAN ANDREAS, SAN FRANCISCO PENINSULA SEGMENT	A	36	10 SW	7 ^K	136 ±48 ^L	23% ^L	.26 g	.36 g	25	6-7
SAN ANDREAS, SOUTH SANTA CRUZ MOUNTAINS SEGMENT	A	24	10 SW	7 ^K	91 ±28 ^L	<1% ^L	.26 g	.36 g	25	6-7
SAN GREGORIO	A	84	26 SW	7.5 ^F	1600 ^M	?	.14 g	.19 g	27	6-7
SARGENT	A	34	11 SW	7.0 ^F	1000 ^M	?	.24 g	.33 g	25	6-7
SILVER CREEK	A	14	2 NE	7.3 ^F	?	?	.56 g	.75 g	28	7-8
ZAYANTE-VERGELES	A	82	14 SW	7.4 ^F	6500 ^N	?	.23 g	.31 g	28	6-8

FOOTNOTES:

- A) "A" = active. "PA" = potentially active.
 B) Measured from fault locations shown on various geologic maps.
 C) Estimated using methods developed by Idriss (1985).
 D) Accel. > 0.05 g, estimated using matrix developed by Bolt (1973).
 E) Estimated from PGA and duration.
 F) Maximum credible earthquake, estimated using method by Slemmons (1977).
 G) Estimated at less than 1% because fault generally considered to be potentially active rather than active.
 H) Characteristic large earthquake, calculated by Lindh (1987).
 I) Calculated by Lindh (1987).
 J) Estimated using a Gaussian model with basic data by Lindh (1987).
 K) Characteristic large earthquake, calculated by WGCEP (1990).
 L) Calculated by WGCEP (1990).
 M) Estimated using method developed by Shedlock and others (1980).
 N) Calculated by Coppersmith (1979).

local soil conditions, surface topography, bedrock topography, and geologic structure affect transmission and focusing of seismic waves. Duration of shaking could also be influenced by the mechanics of fault rupture and by regional geologic conditions. For example, the duration of shaking during the Loma Prieta earthquake was about 15 seconds, whereas 27 seconds would have been predicted based on previous correlations. Actual Modified Mercalli Intensities will also vary from the estimated values given in Table 3, since the values are only roughly correlated with peak ground acceleration and duration, and intensities are based entirely on individual subjective interpretation.

Characteristic site period is a parameter of ground shaking that influences the way in which structures are affected by the shaking. The characteristic site period of portions of Communications Hill underlain by bedrock at shallow depth is probably less than 1 second (Cooper-Clark & Associates, 1974), probably about 0.3 to 0.5 seconds. The characteristic period at the ground surface in alluvial areas surrounding the hill will vary as a function of soil stiffness, depth to bedrock, and other factors. In alluvial areas, periods ranging between about 0.5 and 2 seconds can be anticipated.

Mitigating the hazard of seismic ground shaking should consist of designing and constructing structures in accordance with at least the minimum provisions of the seismic sections of applicable building codes.

Ground Deformation

Surface Fault Rupture

Most earthquakes are caused when built-up strain energy in rocks is suddenly released by rapid rupture along a fault or other plane of weakness within the Earth's crust. Occasionally, during sufficiently strong earthquakes, this fault rupture propagates far enough upward to cause displacement of the ground surface. This constitutes surface fault rupture. Surface fault rupture usually occurs along the traces of known active or potentially active faults. The active Piercy fault trends in the direction of Communications Hill, but the location of its extension into the Specific Plan area, if any, is not known. The Edenvale fault, which the California Department of Water Resources (1975) believes crosses the drive-in theater, is not known to be sufficiently active to warrant additional investigation. The hazard posed by surface fault rupture along active or potentially active faults is low in the Communications Hill Specific Plan area, and no mitigation is recommended.

The contacts between the two subunits in the Franciscan Complex, along with shears within the subunits, are also faults. These fault contacts are probably ancient and not building up strain, but they are planes of weakness that can rupture because of strong ground shaking during an earthquake on an unrelated fault, such as the San Andreas or Hayward faults. Such an event is called sympathetic rupture, which can cause displacement of the ground surface. This hazard is probably restricted to the straighter, better-defined fault contacts and shears, which can be distinguished by visible lineaments



along the ground surface.

One such lineament is present, trending northwest-southeast about 700 feet southwest of the railroad cut. A sympathetic-rupture hazard zone, roughly 200 feet wide, is shown surrounding this lineament on Figure 2. This potential hazard zone is for general planning purposes only. It might be possible to make the zone narrower, or to eliminate the zone altogether, depending on the findings from future subsurface exploration. Even within the potential hazard zone, the risk of sympathetic rupture is low, and the maximum expected magnitude of surface displacement is probably on the order of a foot or two.

Residential development is planned in the vicinity of this lineament, and the lineament should be explored (by way of backhoe trenches) to confirm and locate significant shear zones. If a significant shear zone is located, the hazard should be mitigated by establishing a setback zone for structures for human occupancy. Depending on the findings from exploration, it might be possible to locate structures close to the lineament. It will also be possible to modify or stiffen foundation and floor systems to tolerate or resist larger than normal amounts of ground movement that might occur near the lineament. Important utilities could be provided with flexible couplings across such a zone. No exploration or mitigation along other fault contacts is believed to be warranted. The hazard of sympathetic rupture across roadways cannot be mitigated; instead, localized damage to roads can be repaired.

Fracturing and Folding

Ground fracturing and folding are possible effects of strain release near faults during earthquakes. The risk of this hazard is low since no active faults have been mapped in the Specific Plan area. No mitigation appears to be warranted.

Landsliding

Ground shaking during a major earthquake could be one factor in initiating landsliding on Communications Hill. The hazard posed by landsliding is discussed in a later section of this report entitled *Landsliding*.

- Liquefaction

Liquefaction during earthquakes results in loss of shear strength in soil and consequent transformation in behavior from a solid to a liquid. Liquefaction most commonly occurs in saturated, loose, poorly graded, clean sands during major earthquakes. Maps by Cooper-Clark & Associates (1974) and Rogers and Williams (1974) indicate the likelihood of encountering liquefiable soils in alluvial areas surrounding Communications Hill are moderate to high. Options for mitigating the hazard posed by liquefaction include the following:

- ▶ Avoiding areas found to have the potential for liquefaction.



- Densifying liquefiable soils by methods such as: displacement pile driving, vibroflotation, constructing stone columns, and dynamic compaction.

Settlement

Ground shaking during a major earthquake could be one factor in densifying soil, resulting in settlement within parts of the Specific Plan area underlain by alluvium. The hazard posed by settlement is discussed in a later section of this report entitled *Subsidence and Settlement*.

Miscellaneous Fissuring

Lurch cracking in soil is possible during a strong nearby earthquake, especially where weak soil is present on or adjacent to a slope; such conditions do not appear to be prevalent in the Specific Plan area. Bedrock cracking is locally possible anywhere on Communications Hill. While lurch cracking and bedrock cracking are potentially damaging, the extent of such miscellaneous fissuring is not likely to be great, judging by lack of reports of such effects at the site from the Loma Prieta earthquake. Reliable prediction and mitigation of this hazard is beyond the present state of the practice. Mitigating the risk of lurch cracking would consist of setting back structures from the tops of slopes (which would also be part of mitigating the hazard from landslides).

Flooding

The part of the Specific Plan area lower than about elevation 150 lies in the zone that could be flooded by failure of Anderson dam (Gill, 1973), located about 12 miles to the southeast. Mitigation of this hazard would consist of preventing dam failure, which is beyond the scope of the Communications Hill project. The Specific Plan area is not in a location that could be affected by tsunamis (CDMG, 1972), dike failure, seiches, or landslide splashes.

Landsliding

Areas of Existing Landslide Deposits

Landsliding is most likely to occur on and in the vicinity of existing landslide deposits. There appear to be only about eight small landslide deposits in the Communications Hill Specific Plan area. Movement appears to consist of shallow slumping and soil flow restricted to thick accumulations of colluvium.

Some of the mapped small landslide deposits are located in areas to be developed. Typical options for mitigating the potential hazard posed by landslide deposits include the following:

- Avoiding landslide deposits.
- Removing and repairing landslide deposits.



- Stabilizing the deposits by constructing walls, buttressing, dewatering, or otherwise modifying local conditions and topography.

It appears the proposed grading scheme might remove or stabilize some of these deposits. If not, removal and repair appears to be the most likely mitigation measure, due to the small size of the landslide deposits present.

Presently Intact Areas

Landsliding is also possible in other hillside areas where no such deposits have been mapped. Cooper-Clark & Associates (1974) and Rogers and Williams (1974) classify the hazard of landslides on Communications Hill as generally moderate. Significant local variations are present. Factors that increase susceptibility to landsliding include: (1) weak underlying material; (2) bedding planes, shear surfaces, or fracture surfaces with orientations similar to a natural slope or cut slope; (3) concentration of ground water or surface water; and (4) significant changes in topography by loading a slope with fill or excavating steep slopes.

Material strength can be summarized as follows. Colluvium is generally weak. Franciscan Complex sandstone and shale are generally moderately weak to moderately strong. Silica-carbonate rock and Franciscan Complex serpentinite are generally strong. Structural fill can be susceptible to slumping if not designed and constructed correctly.

Mitigating the potential hazard posed by landsliding in areas not presently on or near landslide deposits will most likely consist of incorporating routine measures into grading, drainage, and foundation construction, and setting back structures from slopes.

Lateral Spreading

Lateral spreading is a specific type of landsliding usually caused by liquefaction adjacent to stream banks or open faces. There could be a high potential for lateral spreading adjacent to Canoas Creek (Cooper-Clark & Associates, 1974), which runs across the southwestern corner of the Specific Plan area. Mitigating the hazard posed by lateral spreading is accomplished in conjunction with mitigating the hazard of liquefaction.

Subsidence and Settlement

Subsidence and settlement can cause structural damage, changes in surface drainage, and well damage. Land can subside and settle due to various causes, as described in the following sections.

Fluid Extraction

Gas, oil, geothermal energy. The Specific Plan area is not located in an area where gas, oil, or geothermal energy are extracted or are likely to be extracted. No mitigation is warranted.



Ground water. Extraction of ground water in Santa Clara Valley caused $\frac{1}{2}$ foot or less of subsidence in valley-floor parts of the Specific Plan Area between 1934 and 1967, according to maps by Poland (1971) and Cooper-Clark & Associates (1974). (Bedrock areas are not susceptible to such subsidence.) Subsidence due to water extraction was halted as of 1971 through a water-import program, and has been monitored since by government agencies. Mitigation of the potential hazard posed by further subsidence would consist of preventing substantial ground water extraction in Santa Clara Valley, which would be beyond the scope of the Communications Hill project.

Mine Collapse

Mine collapse is a potential hazard in the area of the former Hillsdale mercury mine, which occupies a localized part of Communications Hill (see Figure 2) measuring about 20 acres. The probability of collapse above the former mine workings, particularly above shallower "caverns," is high, and the potential for damage is high. In general, the probability of collapse of deeper, smaller tunnels is low.

Identifying the locations, configuration, and conditions of remaining underground mine workings at the Hillsdale mine site is a critical first step in addressing the mine-collapse hazard. If plans for the final topographic configuration of the Raisch quarry area are known, then the locations of some of the remaining mine workings (if any then remain) could be predicted by comparing the grading plan with Robert Thom's 1943 mine survey. Two factors could prevent locating all underground workings by this method. (1) The 1943 survey shows three caved tunnel portals; some unknown network of workings could have extended from these portals. (2) Additional underground workings could have been constructed between when the survey was performed (May 1943) and when the mine closed (in the mid 1940s to early 1950s?). To locate all the tunnels, it would be necessary to either obtain a mine survey showing all workings created throughout the history of the mine, or perform special geophysical surveys. Such geophysical work could utilize borehole seismic data, developed by drilling near the mines, setting very small charges at the bottoms of the drill holes at elevations lower than the mines, and analyzing the way sound travels from the charges to listening devices placed on the ground surface.

Pre-quarry aerial photos show "sinkholes" along the ground in areas where tunnels are shallower than about 30 feet. These sinkholes probably formed in the zone of more-weathered material just beneath the ground surface. This suggests that the risk of land subsidence above mine workings is high where the cover consists of thinner, more-weathered rock, and decreases where the cover consists of thicker, less-weathered rock. Our experience with serpentinite in Santa Clara County has shown that its quality varies greatly, depending on the extent of shearing and weathering. Therefore, special subsurface studies would be necessary to provide determinations of safe cover thicknesses. Safe cover thickness will probably vary with location, material properties around and above the openings, and with the size and geometry of the openings.



Options for mitigating the mine-collapse hazard include the following:

- ▶ Avoiding areas found to be underlain by workings, perhaps by dedicating such areas as open space.
- ▶ Performing studies to determine which parts of the underground workings, if any, are unstable.
- ▶ Stabilizing, lining, or filling workings found to be unstable.

Stabilizing, lining, or filling mine workings is a suitable way to reduce or eliminate the potential hazard of mine collapse. These techniques have been used successfully in abandoned mines to control surface effects. We are confident that after further investigation, and after some combination of the above mitigation measures is carried out, this issue will not constrain implementation of the Specific Plan.

Hydrocompaction

The Specific Plan area is not located in an area known to be susceptible to hydrocompaction of collapsible soils. No mitigation appears to be warranted.

Peat Oxidation

The Specific Plan area is not located in an area known to contain peat deposits. No mitigation appears to be warranted.

Soil Compression

Subsurface materials at the site are expected to have widely varying compressibility. Bedrock materials generally have low compressibility. Colluvium generally possesses low to moderate compressibility. A map by Cooper-Clark and Associates (1974) indicates there is a low to moderate potential for encountering compressible soil within alluvium surrounding Communications Hill. Structural fill can have variable compressibility depending on its thickness and how the fill is constructed. Quarry materials will have a quite variable, and possibly very high, compressibility. Mitigation options include the following:

- ▶ Avoiding soils found to be prone to significant compression.
- ▶ Excavating and recompacting quarry stockpiles and soils disturbed or loosened by quarry operations.
- ▶ Controlling fill compaction and constructing properly designed foundations compatible with ground conditions and specific structure requirements. We anticipate that unusual foundations will not be required for the majority of the structures.
- ▶ Preloading, densifying, replacing, or modifying native soil found to be subject to unacceptably large amounts of compression.



Soil Expansion

Colluvium mantling Communications Hill is suspected to have moderate to high potential for shrinking and expanding with changes in water content. Alluvium surrounding Communications Hill could also contain expansive clay (Cooper-Clark & Associates [1974] classify this possibility there as high). Mitigating this potential hazard will probably consist of routine measures for proper design and construction of earthwork, drainage, and building foundations.

Erosion

No evidence of unusual erosion was encountered at the site. No significant unprotected watercourses are present in the undeveloped part of the site. Cooper-Clark & Associates (1974) classify the potential for erosion on Communications Hill as generally high, although materials underlying the hillsides have various erosion potential. Serpentinite and silica-carbonate rock have low erosion potential, the sandstone-and-shale unit has moderate erosion potential, and colluvium has high erosion potential. Grading, alteration of runoff, and the increase of impervious surface area will increase the potential for erosion locally. Mitigating this hazard on the undeveloped part of the site will probably consist of routine measures for hillside grading and control of surface drainage.

Canoas Creek crosses the southwestern corner of the Specific Plan area, which is presently developed. The creek channel does not appear to have highly erodible banks. Some routine maintenance should be expected, especially after unusually high peak flows. Past maintenance in the channel has included placing concrete debris on the bank slopes. The project civil engineer should consider evaluating the suitability of the present bank protection.

Flooding and Sedimentation

The potential for flooding and sedimentation, and possible mitigation measures, are being studied by the project civil engineers, Nolte and Associates.

Volcanic Hazards

The Specific Plan area is in a low-risk zone with respect to volcanism. The area is subject to ashfall from a very large eruption, such as the Crater Lake, Oregon, eruption of about 6,600 years ago (Mullineaux, 1976). No mitigation is warranted.

Loss of Mineral Resources

Mercury was formerly mined from Communications Hill. Mining apparently ceased in the mid 1940s to early 1950s, presumably because it was economically or politically unfeasible to continue. Mining could resume if it becomes economically and politically feasible. The possibility of mining becoming



feasible again is not known. Serpentinite has been quarried as a construction material from part of Communications Hill for many years. Most of the remainder of the hill is composed of serpentinite, which could be considered a potential mineral resource. The presence of these two potential resources is known, and economic and political factors have already been considered in proposing to develop Communications Hill for residential use rather than use it for extracting mercury and construction materials. Moreover, the preclusion of mineral extraction by the proposed Communications Hill development would not represent a significant impact to mineral resources, given the abundance and accessibility of these resources in California. Mitigation measures are not warranted.

Asbestos does not appear to be present in economic concentrations.

Waste-Disposal Problems

The development will be required to be connected to the municipal sewer system, and therefore waste water will not present a local disposal problem.

Disposal of excavated material as part of this project will include factors related to excavation and handling of naturally occurring asbestos and mercury. These environmental problems are discussed in a later section of this report entitled *Hazardous Natural Materials*.

High Ground Water

Springs are reportedly present around parts of the base of Communications Hill (Gribaldo, Jacobs, Jones & Associates, 1964), which could pose localized problems associated with high ground water. High ground water can decrease slope stability, decrease foundation bearing capacity, cause wet floors, basements, and crawl spaces, limit landscaping options, and hamper construction. Options for mitigating the potential for such problems include the following:

- ▶ Avoiding springs.
- ▶ Installing subdrains.

Difficult Excavation

Rippability studies have been performed in the northern part of Communications Hill by Louke and Associates (1981) and by Geoconsultants (1986) (see Figure 2). Seismic-refraction surveys performed in both studies generally revealed rippable rock down to depths of about 30 feet, and less rippable to unrippable rock below. A letter by Berlogar, Long & Associates (1981), summarizing Louke and Associates' (1981) work, states that they

"agree with their basic findings...[but] blasting may be required where bedrock is hardest in well-indurated lenses or relatively unweathered areas...and that trenching may be extremely difficult and will likely require blasting along with the use of very heavy trenching equipment."



Discussions with Raisch company personnel involved in quarry operations appear to confirm the conclusions from the rippability studies. The quarry has successfully used D9s with two ripper teeth for most excavating, except on about four or five occasions in the quarry's 20-year history when blasting was necessary.

These conclusions regarding rippability in the northern part of Communications Hill and in the quarry area can probably be extrapolated to the remainder of the hill at this level of project planning.

Rippability of rock is partly a function of the rock's weathering and fracturing characteristics. Weathering increases rippability. Weathering decreases with depth below the ground surface. Some of the deeper proposed excavations shown on the *Conceptual Grading Plan*, dated March 18, 1991, by Solomon, Inc., probably extend into less-weathered, less-rippable bedrock. Fracturing also increases rippability. Our experience with Franciscan Complex rock in Santa Clara County has shown that fracturing is highly variable and random within this rock.

Construction difficulties associated with excavating hard rock can be reduced by planning shallow rather than deep excavations and trenches.

Hazardous Natural Materials

Mercury. The silica-carbonate rock at Communications Hill evidently contains economic to near-economic concentrations of mercury. The potential hazard posed by the presence of mercury at the site is presently being studied by Terratech's Environmental Division. In general, mercury found in its natural state in Santa Clara County is much less of a hazard than refined mercury.

Asbestos. Serpentinite contains traces of chrysotile, a fibrous mineral that is one source of asbestos. Serpentinite in excavations for the adjacent Guadalupe Corridor transit project contained a weighted average of 1.2% chrysotile (California Department of Transportation and others, 1988). It is likely that chrysotile is present in similar amounts at Communications Hill. Asbestos fibers could be released into the air with development of Communications Hill, especially during earth-moving activities, which could pose a hazard to construction workers and to nearby residents. This risk was studied in great detail for the Guadalupe Corridor project. Options for mitigating the asbestos hazard on the Communications Hill project include the following:

- ▶ Implementing a strict dust-control program during grading, involving construction equipment speed limits, cleaning, controlled loading procedures, controlled haul routes, watering, dust palliatives, and air monitoring.
- ▶ Checking excavation surfaces and excavated material for chrysotile during grading to divert material with high chrysotile content for special handling.
- ▶ Equipping construction workers with personal protection devices to



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- prevent inhalation of airborne asbestos during grading.
- ▶ Not using excavated material for surfacing unpaved roads.
- ▶ Covering finished cut and fill slopes with non-serpentinitic soil or mulch or synthetic agents, and serrating or benching steep slopes in order to retain the cover material.

LIMITATIONS

Our investigation has been conducted and this report has been prepared in accordance with the practices and standard of care generally employed by the local engineering geologic and geotechnical engineering professions. This warranty is in lieu of all others, express or implied.

This study is preliminary only. It is based primarily on review of existing information and on a brief, one-day reconnaissance. Additional geologic and geotechnical investigation needs to be performed as project planning proceeds. Our preliminary conclusions will probably need to be modified and refined on the basis of additional, detailed exploration, testing, and analysis.

Report prepared by:

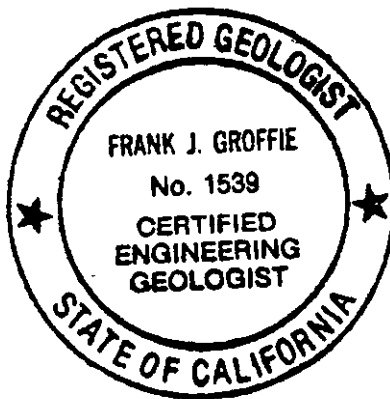
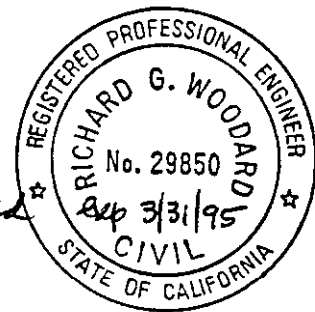
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REFERENCES

- Berlogar, Long & Associates, 1981, Rock rippability and trenchability, lands of Bettencourt, San Jose, California: unpublished letter written to Ponderosa Homes, San Ramon, California, 1 p.
- Bolt, B.A., 1973, Duration of strong ground motion: Fifth World Conference on Earthquake Engineering Paper 292, Rome, Italy.
- California Department of Transportation, Engineering-Science, Inc., and Woodward-Clyde Consultants, 1988, Guadalupe Corridor asbestos study, Communication Hill excavation, San Jose, California, geologic evaluation: unpublished California Department of Transportation materials report.
- California Department of Water Resources, 1983, Evaluation of ground water resources: south San Francisco Bay--volume III: northern Santa Clara County area: California Department of Water Resources Bulletin 118-1, 133 p.
- California Division of Mines and Geology, 1972, Tsunami hazards [of California]: California Division of Mines and Geology Seismic Safety Information map 72-5.
- California Division of Mines and Geology, 1982, Special studies zones map, San Jose East Quadrangle: California Division of Mines and Geology, scale 1:24,000.
- City of San Jose, 1983, Fault hazard maps [San Jose East Quadrangle, California]: City of San Jose, California, scale 1:24,000.
- Cooper-Clark & Associates, 1974, Geotechnical investigation, City of San Jose's sphere of influence: unpublished consultant's report prepared for the City of San Jose, California, map scale 1:48,000.
- Coppersmith, K.J., 1979, Activity assessment of the Zayante-Vergeles fault, central San Andreas fault system, California: PhD dissertation, University of California, Santa Cruz, 216 p.
- Crittenden, M.D., Jr., 1951, Geology of the San Jose-Mount Hamilton area, California: California Division of Mines Bulletin 157, 74 p., map scale 1:62,500.
- Geoconsultants, Inc., 1986, Geotechnical feasibility study, proposed residential development, Curtner and Stone Avenues, San Jose, California: unpublished consultant's report prepared for Nolte and Associates, San Jose, California, 12 p.



Geoconsultants, Inc., 1988, Geologic conditions, Azevedo quarry, Communications Hill, Santa Clara County, California: unpublished consultant's report prepared for Nolte and Associates, San Jose, California, 5 p.

Gill, D.K., 1973, Inundation map of Anderson Dam: Santa Clara County Flood Control and Water District, scale 1:24,000.

Gribaldo, Jacobs, Jones and Associates, 1964, Geologic investigation of Azevedo property, southern Oak Hills, San Jose, California: unpublished consultant's report prepared for estate of M.T. Azevedo, San Jose, California, 13 p.

Helley, E.J., and Brabb, E.E., 1971, Geologic map of late Cenozoic deposits, Santa Clara County, California: U.S. Geological Survey Open-File Map, scale 1:62,500.

Idriss, I.M., 1985, Evaluating seismic risk in engineering practice, *in* Publications Committee of XI ICSMFE, ed., Proceedings of the eleventh international conference on soil mechanics and foundation engineering, San Francisco, 12-16 August, 1985: Rotterdam, The Netherlands, and Boston, Massachusetts, USA, A.A. Balkema, v. 1, p. 255-320.

Jennings, C.W., 1975, Fault map of California, with locations of volcanoes, thermal springs and thermal wells: California Division of Mines and Geology California Geologic Data Map Series Map No. 1, scale 1:750,000.

Lindh, A.G., 1987, Estimates of long-term probabilities for large earthquakes along selected fault segments of the San Andreas fault system in California: submittal to unspecified earthquake prediction symposium of August 13, 1987, 21 p.

Maley, R., Acosta, A., Ellis, F., Etheredge, E., Foote, L., Johnson, D., Porcella, R., Salsman, M., and Switzer, J., 1989, U.S. Geological Survey strong-motion records from the northern California (Loma Prieta) earthquake of October 17, 1989: U.S. Geological Survey Open-File Report 89-568, 85 p.

Mullineaux, D.R., 1976, Preliminary overview map of volcanic hazards in the 48 conterminous United States: U.S. Geological Survey Miscellaneous Field Studies Map MF-786, scale 1:7,500,000.

Poland, J.F., 1971, Land subsidence in the Santa Clara Valley, Alameda, San Mateo, and Santa Clara Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-336, scale 1:125,000.

Rogers, T.H., and Williams, J.W., 1974, Potential seismic hazards in Santa Clara County, California: California Division of Mines and Geology Special Report 107, 39 p., map scale 1:62,500.



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Project 4844

- Seed, H.B., and Idriss, I.M., 1982, Ground motion and soil liquefaction during earthquakes: Earthquake Engineering Research Institute Monograph Series, Berkeley, California.
- Shakal, A., Huang, M., Reichle, M., Ventura, C., Cao, T., Sherburne, R., Savage, M., Darragh, R., and Petersen, C., 1989, CSMIP strong-motion records from the Santa Cruz Mountains (Loma Prieta), California, earthquake of 17 October 1989: California Division of Mines Report OSMS 89-06, 195 p.
- Shedlock, K.M., McGuire, R.K., and Herd, D.G., 1980, Earthquake recurrence in the San Francisco Bay region, California, from fault slip and seismic moment: U.S. Geological Survey Open-File Report 80-999, 16 p.
- Slemmons, D.B., 1977, State of the art for assessing earthquake hazards in the United States: U.S. Army Corps of Engineers Waterways Experiment Station Miscellaneous Paper S-73-1.
- Sorg, D.H., and McLaughlin, R.J., 1975, Geologic map of the Sargent-Berrocal fault zone between Los Gatos and Los Altos Hills, Santa Clara County, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-643, scale 1:24,000.
- Stover, C.W., Reagor, B.G., Baldwin, F.W., and Brewer, L.R., 1990, Preliminary isoseismal map for the Santa Cruz (Loma Prieta), California, earthquake of October 18, 1989 UTC: U.S. Geological Survey Open-File Report 90-18, 24 p.
- Terrasearch, Inc., 1976, Geologic and soil evaluation, proposed mobilehome community, lands of Bettencourt et al., San Jose, California: unpublished consultant's report prepared for Brandenburg, Staedler & Moore, San Jose, California, 8 p.
- Terratech, Inc., 1971, Engineering geologic investigation, proposed quarry, lands of Azevedo, San Jose, California: unpublished consultant's report prepared for A.J. Raisch Construction Company, San Jose, California, 6 p.
- WGCEP (Working Group on California Earthquake Probabilities), 1990, Probabilities of large earthquakes in the San Francisco Bay region, California: U.S. Geological Survey Circular 1053, 51 p.
- Yanev, P., 1974, *Peace of Mind in Earthquake Country*: Chronicle Books, San Francisco, California, 304 p.



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AERIAL PHOTOGRAPHS

Date	Source	Type of Image	Number	Scale
09-26-48	U.S. Geological Survey	black & white	GS-HR-1-188,189	1:26,600
03-02-54	Pacific Aerial Surveys	black & white	AV-129-12-27,28 29	1:10,000
08-23-60	U.S. Geological Survey	black & white	GS-VACY-2-195, 196,197	1:23,600
07-23-63	Pacific Aerial Surveys	black & white	AV-550-16-40,41	1:36,000
04-25-66	Pacific Aerial Surveys	black & white	AV-710-43,44	1:36,000
05-18-68	U.S. Geological Survey	black & white	GS-VBZK-2-11,12	1:32,000
10-12-71	Pacific Aerial Surveys	black & white	AV-1006-15-19,20, 21	1:15,000
04-28-74	Pacific Aerial Surveys	black & white	AV-1138-15-24,25	1:12,000
07-12-74	U.S. Geological Survey	color	1-SFB-12-169,170	1:20,000
10-13-76	Pacific Aerial Surveys	black & white	AV-1277-15-24,25, 26	1:12,000
07-23-80	Pacific Aerial Surveys	black & white	AV-1905-15-24,25, 26	1:12,000
04-30-82	Pacific Aerial Surveys	black & white	AV-2135-15-21,22, 23	1:12,000
07-01-84	Pacific Aerial Surveys	black & white	AV-2485-15-23,24, 25	1:12,000
06-28-88	Pacific Aerial Surveys	black & white	AV-3324-15-28,29, 30	1:12,000



GLOSSARY

active The Alquist-Priolo Special Studies Zones Act of 1972 defines an active fault as one that has ruptured the ground surface during the Holocene Epoch (the last 11,000 years).

chert Sedimentary rock composed predominantly of interlocking quartz crystals less than 30 microns in diameter.

contact A surface between two different rock units.

chrysotile The fibrous form of serpentine, which is a mineral created by alteration of magnesium-rich silicate minerals.

lineament A linear topographic or tonal feature of regional extent that is believed to reflect crustal structure.

period The time interval necessary for a complete cycle of a regularly recurring motion. Characteristic site period is the time interval between oscillations of the ground if it is allowed to vibrate at its natural frequency.

potentially active The Alquist-Priolo Special Studies Zones Act of 1972 defines a potentially active fault as one that has ruptured the ground surface during the Quaternary Period (the last 2,000,000 years).

quartzite Rock consisting predominantly of quartz, formed by recrystallization of sandstone or chert.

rippability The quality of being rippable, which is said of rock that can be broken into pieces by a tractor pulling teeth that penetrate the ground several inches to a few feet.

schist Strongly foliated crystalline rock that can be split into thin flakes due to well-developed parallelism of its crystals.

serpentinite Rock composed of serpentine, which is a mineral created by alteration of magnesium-rich silicate minerals.

silica carbonate Rock derived by hydrothermal alteration of serpentinite and composed predominantly of silica (quartz, chalcedony, or opal) and a carbonate mineral (generally ferroan magnesite).

subduction zone A zone where one geotectonic plate descends beneath another plate. The two plates involved here are the North American plate, which underlies the North American continent, and the Farallon plate, which used to underlie part of the Pacific Ocean.

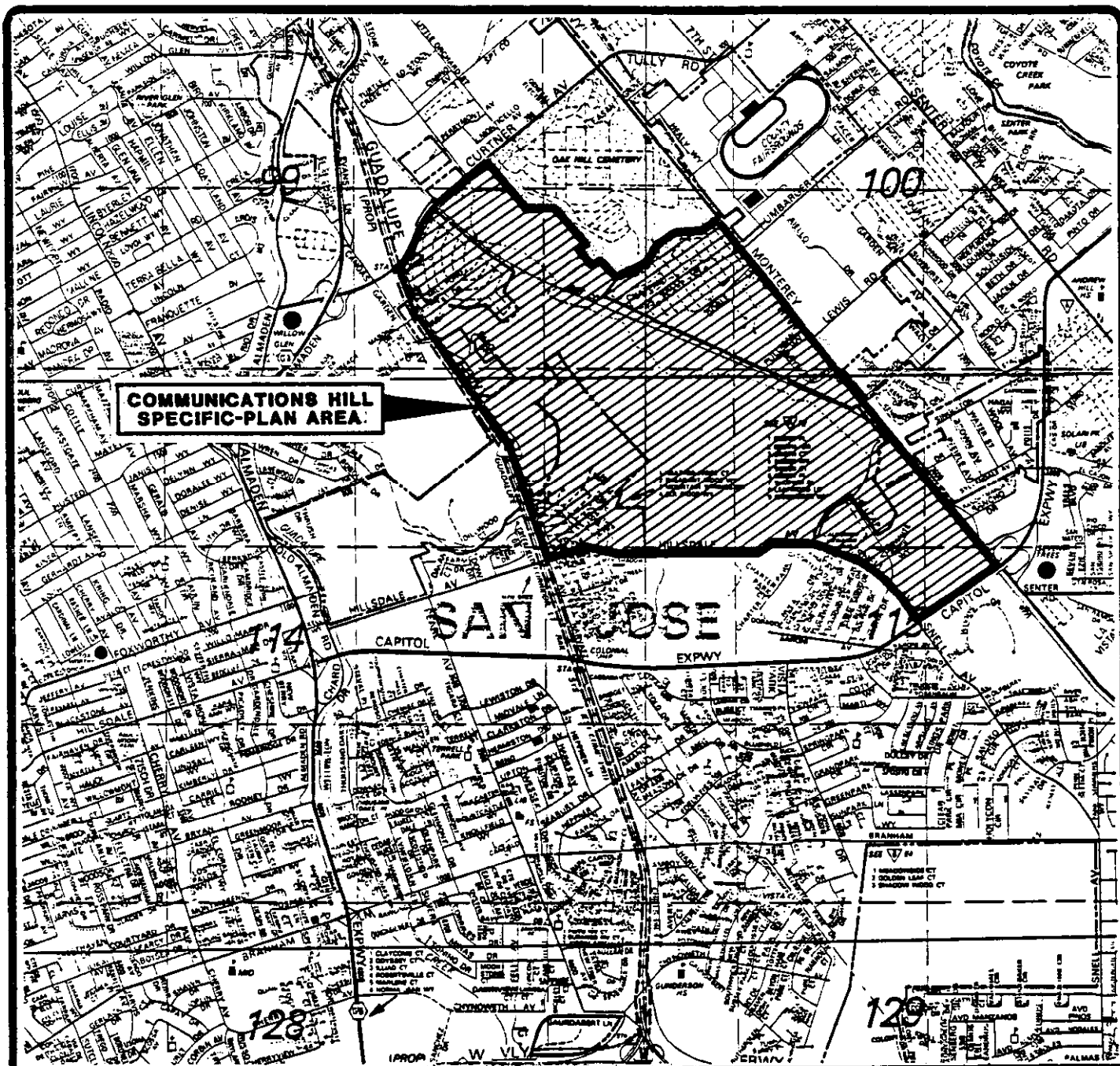
tectonically By way of the forces involved in the deformation of the Earth.



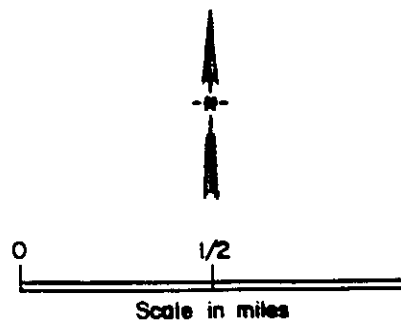
MODIFIED MERCALLI SCALE
Version by Yanev (1974)

- I) Not felt by people, except under especially favorable circumstances.
- II) Felt only by persons at rest on the upper floors of buildings. Some suspended objects may swing.
- III) Felt by some people who are indoors, but it may not be recognized as an earthquake. The vibration is similar to that caused by the passing of light trucks. Hanging objects swing.
- IV) Felt by many people who are indoors, by a few outdoors. At night some people are awakened. Dishes, windows and doors are disturbed; walls make creaking sounds; stationary cars rock noticeably. The sensation is like a heavy object striking a building; the vibration is similar to that caused by the passing of heavy trucks.
- V) Felt indoors by practically everyone, outdoors by most people. The direction and duration of the shock can be estimated by people outdoors. At night, sleepers are awakened and some run out of buildings. Liquids are disturbed and sometimes spilled. Small, unstable objects and some furnishings are shifted or upset. Doors close or open.
- VI) Felt by everyone, and many people are frightened and run outdoors. Walking is difficult. Small church and school bells ring. Windows, dishes and glassware are broken; liquids spill; books and other standing objects fall; pictures are knocked from walls; furniture is moved or overturned. Poorly built buildings may be damaged, and weak plaster will crack.
- VII) Causes general alarm. Standing upright is very difficult. Persons driving cars also notice the shaking. Damage is negligible in buildings of very good design and construction, slight to moderate in well-built ordinary structures, considerable in poorly built or designed structures. Some chimneys are broken; interiors and furnishings experience considerable damage; architectural ornaments fall. Small slides occur along sand or gravel banks of water channels; concrete irrigation ditches are damaged. Waves form in the water and it becomes muddied.
- VIII) General fright and near panic. The steering of cars is difficult. Damage is slight in specially designed earthquake-resistant structures, considerable in well-built ordinary buildings. Poorly built or designed buildings experience partial collapses. Numerous chimneys fall; the walls of frame buildings are damaged; interiors experience heavy damage. Frame houses that are not properly bolted down may move on their foundations. Decayed pilings are broken off. Trees are damaged. Cracks appear in wet ground and on steep slopes. Changes in the flow or temperature of springs and wells are noted.
- IX) Panic is general. Interior damage is considerable in specially designed earthquake-resistant structures. Well-built ordinary buildings suffer severe damage, with partial collapses; frame structures thrown out of plumb or shifted off of their foundations. Unreinforced masonry buildings collapse. The ground cracks conspicuously and some underground pipes are broken. Reservoirs are damaged seriously.
- X) Most masonry and many frame structures are destroyed. Specially designed earthquake-resistant structures may suffer serious damage. Some well-built bridges are destroyed and dams, dikes and embankments are seriously damaged. Large landslides are triggered by the shock. Water is thrown onto the banks of canals, rivers and lakes. Sand and mud are shifted horizontally on beaches and flat land. Rails are bent slightly. Many buried pipes and conduits are broken.
- XI) Few, if any, masonry structures remain standing. Other structures are severely damaged. Broad fissures, slumps and slides develop in soft or wet soils. Underground pipe lines and conduits are put completely out of service. Rails are severely bent.
- XII) Damage is total, with practically all works of construction severely damaged or destroyed. Waves are observed on ground surfaces, and all soft or wet soils are greatly disturbed. Heavy objects are thrown into the air, and large rock masses are displaced.





BASE MAP: Thomas Brothers Maps, Santa Clara County
1990 edition, p.67



May 1991
TERRATECH

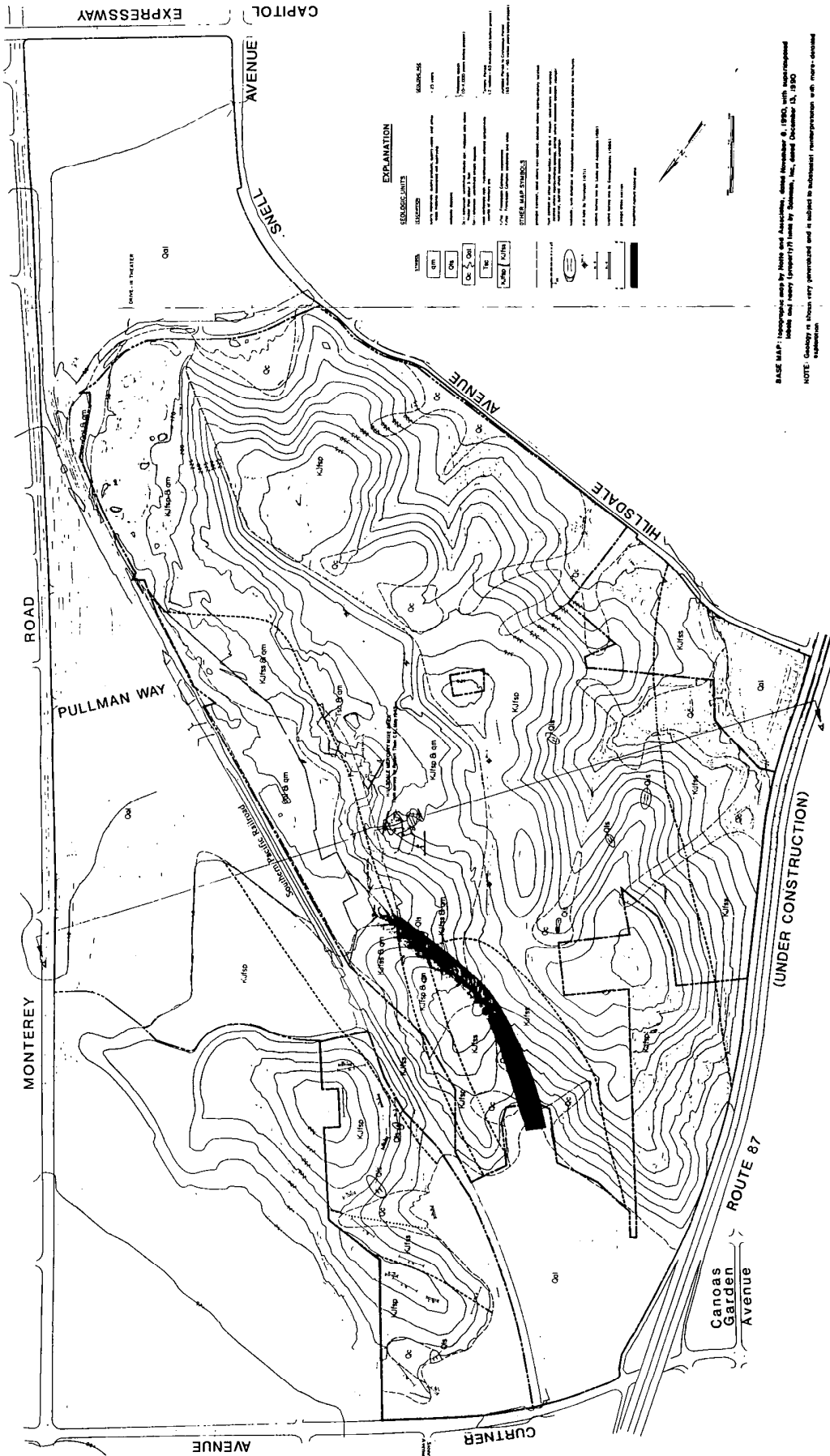
COMMUNICATIONS HILL SPECIFIC PLAN AREA
SAN JOSE, CALIFORNIA

VICINITY MAP

FIGURE

1

PROJECT
4844



DATE: 02/28/2000

BY: J. L. L. L.

PROJECT: 1844

FIGURE 2

PROJECT 1844

COMMUNICATIONS HILL SPECIFIC PLAN AREA

SAN JOSE, CALIFORNIA

GEOLOGIC MAP

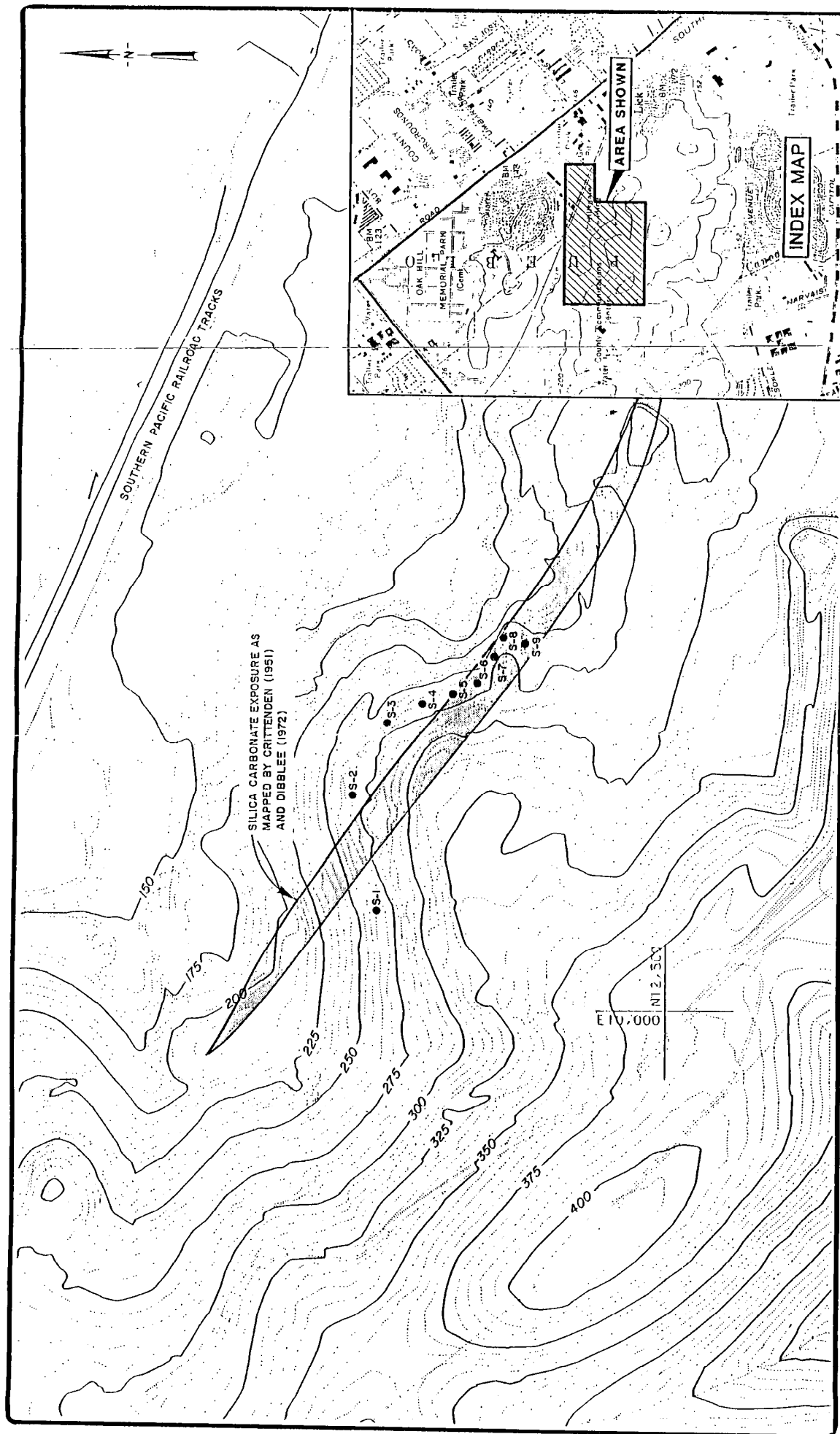
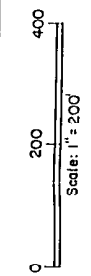


FIGURE
1
PROJECT
4844/1

COMMUNICATIONS HILL SPECIFIC PLAN AREA
SAN JOSE, CALIFORNIA
SAMPLE LOCATION PLAN

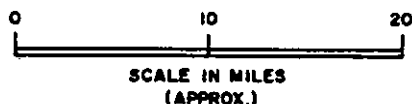
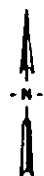
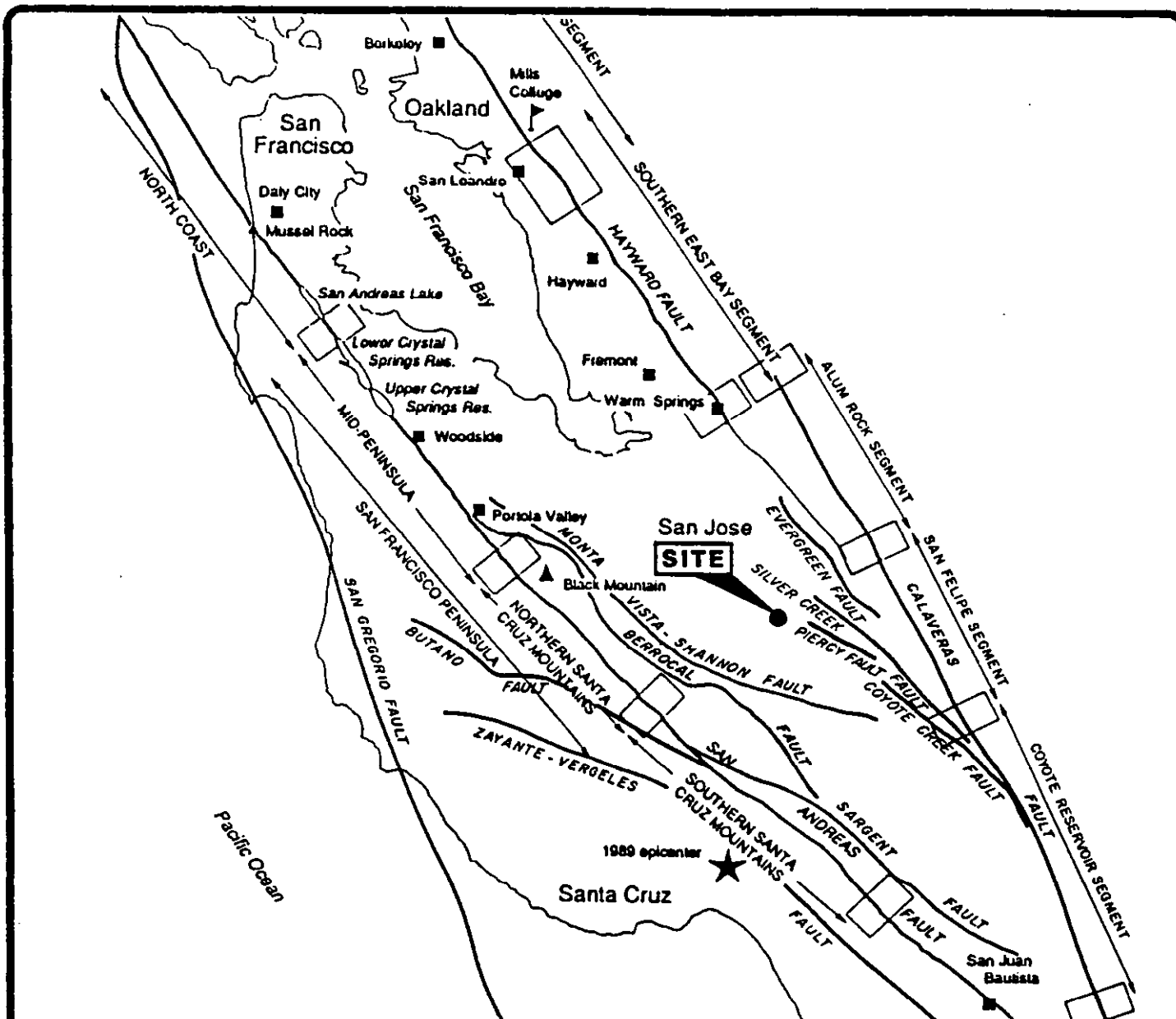


BASE MAP: Topographic map by Nolte and Associates,
11-8-90?

May 1991

TERRATECH

SAN JOSE BLUEPRINT CO
PRINTED ON JR 300



Boxes represent ends of segments of major faults

Base map, including locations of Hayward and San Andreas faults and their segments and location of 1989 earthquake epicenter, is by WCEP (1990). Locations of Berrocal and Monta Vista-Shannon faults are from Sorg and McLaughlin (1975). Locations of Butano, Calaveras, San Gregorio, Sargent, and Zayante-Vergeles faults are from Jennings (1975). Locations of Coyote Creek, Evergreen, Piercy, and Silver Creek faults are from Rogers and Williams (1974). Segmentation of Calaveras fault is Lindh's (1987).



May 1991

TERRATECH

COMMUNICATIONS HILL SPECIFIC PLAN AREA
SAN JOSE, CALIFORNIA

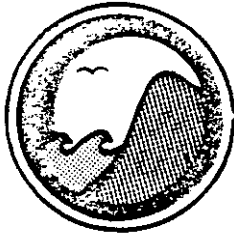
FAULTS OF CONCERN

FIGURE
4

PROJECT
4844

APPENDIX C
BIOLOGICAL SURVEY REPORT

Prepared by
H. T. Harvey & Associates
May 1991



H.T. HARVEY & ASSOCIATES

ECOLOGICAL CONSULTANTS

**COMMUNICATIONS HILL
SPECIFIC PLAN EIR
EXISTING BIOLOGICAL CONDITIONS,
IMPACTS AND MITIGATION**

Prepared for:

Nolte and Associates

Prepared by:

Ronald R. Duke, Principal
Dan Stephens, Project Manager
Janet Ebaugh, Plant Ecologist
Rick Hopkins, Wildlife Biologist

May 24, 1991

617-01

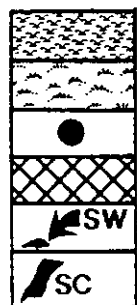
EXISTING CONDITIONS

The Communications Hill site is located on the Santa Clara Valley floor entirely within the City of San Jose. The site is bordered on the east by the Monterey Highway, on the south by Tully Road, and on the north by Curtner Road.

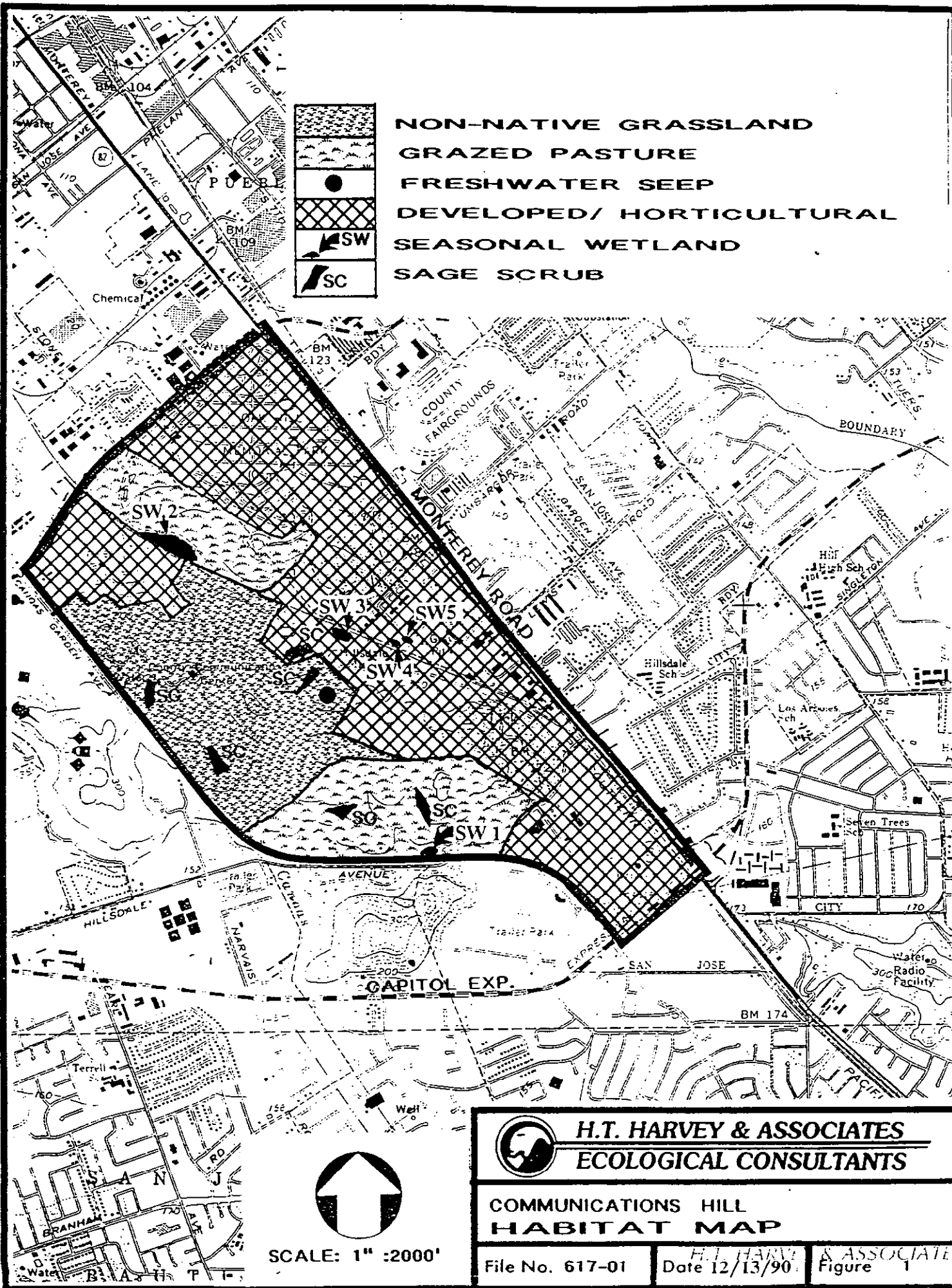
The topography of the project site is characterized by hills with some deeply eroded swales. Slopes are moderate to steep. Elevations range from a low of less than 100 feet on the boundaries of the site to a high of nearly 450 feet on the top of Communications Hill.

Several general soil types have been identified within the project area by the Soil Conservation Service (SCS 1968). The parent material of the soil type on the slopes is serpentine rock. The soil of this area is shallow, surface runoff is medium to rapid, and the erosion hazard is medium to high. Serpentine soils are noted for their low fertility due to high levels of exchangeable magnesium and relatively low levels of calcium, nitrogen, potassium, phosphorus, and molybdenum. The soil chemistry of serpentine-derived soils has selected for a unique native flora, which, in most serpentine areas of California has been modified by heavy grazing.

Five general habitat types were identified on the study area during reconnaissance level field surveys in November of 1990. These include Non-native Grassland found over much of the site, Grazed Pasture, Developed/Horticultural areas, Diablan Sage Scrub, and Freshwater Seep Habitat. The approximate extent of these habitats is depicted in Figure 1. The following discussions of the plant and animal species existing or potentially existing on the site are presented according to the habitat in which the species is, or may be, found. A discussion of species of special concern follows the habitat descriptions. Appendix A contains a list of those plant and animal species observed or expected to occur on the site.



NON-NATIVE GRASSLAND
 GRAZED PASTURE
 FRESHWATER SEEP
 DEVELOPED/ HORTICULTURAL
 SEASONAL WETLAND
 SAGE SCRUB



H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

COMMUNICATIONS HILL
 HABITAT MAP

File No. 617-01

H.T. HARVEY & ASSOCIATES
 Date 12/13/90 Figure 1

NON-NATIVE GRASSLAND

Vegetation

Non-native Grassland occupies the largest portion of the study area. These areas are disturbed and are dominated by non-native weedy species. Species growing here include soft chess (*Bromus mollis*), ripgut brome (*Bromus diandrus*), farmer's foxtail (*Hordeum leporinum*) and wild oats (*Avena fatua*). Red-stemmed filaree (*Erodium cicutarium*) and common peppergrass (*Lepidium nitidum*) are prominent and are generally indicative of previous grazing activity. Other weedy species include prickly lettuce (*Lactuca serriola*), Italian thistle (*Carduus pycnocephalus*), and smallpod mustard (*Brassica geniculata*).

Some native species common on serpentine soils were also observed on this site. Such species included purple stipa (*Stipa pulchra*), California plantain (*Plantago erecta*), and melicgrass (*Melica torreyana*). Several of these species are more common on serpentine than on other soil types where competition from non-native species is greater.

An arroyo on the south side of the site supports about five valley oaks (*Quercus lobata*) in scattered locations. The association of valley oaks and grasses might be termed Oak Savannah, but this occurrence is not extensive enough to warrant its recognition as a separate habitat from Non-native Grassland.

Wildlife

Non-native Grassland habitat supports a wide variety of wildlife species. The ample seed source produced by the annual and perennial grasses provides food for wintering sparrows observed on the site such as the Golden-crowned (*Zonotrichia atricapilla*) and White-crowned Sparrows (*Zonotrichia leucophrys*) as well as year round residents such as the California Towhee (*Pipilio fuscus*). Where the grasslands grade into small patches of sage scrub, Horned Larks (*Eremophila alpestris*) and Western Meadowlarks (*Sturnella neglecta*) nest on the ground in clumps of grass.

Small mammals are also prevalent in Non-native Grassland habitat. Such species as the California vole (*Microtus californicus*) and western harvest mouse (*Reithrodontomys megalotis*) either burrow in the rocky soil and build nests and runways through the taller grasses in search of small insects and seeds. California ground squirrels (*Spermophilus beechyi*) are abundant on the project site.

The abundant populations of small to medium sized mammals also attract predatory birds and mammals such as Red-tailed Hawks (*Buteo jamaincensis*), Great Horned Owls (*Bubo virginianus*), red fox (*Vulpes vulpes*), and badgers (*Taxidea taxus*). During reconnaissance level surveys all of these species were observed on the project site, with the exception of badgers.

Reptile species expected to occur in this habitat and which would probably be observed during warmer months include western fence lizards (*Sceloporus occidentalis*), southern alligator lizards (*Gerrhonotus multicarinatus*), gopher snakes (*Pituophis melanoleucus*), and common garter snake (*Thamnophis sirtalis*).

This habitat is suitable for the Federally threatened Bay checkerspot butterfly (*Euphydryas editha bayensis*). Reconnaissance level site visits this fall indicated that the main food plant of the butterfly, *Plantago*, exists on the Communications Hill area. Substantial Bay checkerspot butterfly populations are known to exist between Silver Creek and Kirby Canyon. This population is broadly dispersed over a wide expanse of available habitat with adults occurring mainly on ridgetops and north and east-facing slopes similar to those of the site. (See discussion in section on Special Status Species).

This habitat is also suitable for the edgewood blind harvestman (*Sitalcina minor*) and the phalangid (*Sitalcina serpentina*) which have been found in the Santa Teresa Hills about 2-3 miles southeast of the site in the mid-1960's (CNDDB 1990). These insects tend to be found exclusively under moist rocks in regions of open grasslands. In addition, creamcups (*Platystemon californicum*) which is a food source for the Opler's longhorn moth may exist on the site.

GRAZED PASTURE

Vegetation

Grazed pasture would generally fall under the category of Non-native Grassland, but the study site contains areas in the southern and northeastern portions that are so heavily grazed that plant species composition is quite different from the Non-native Grassland habitat areas. The only species which exceeds four inches in height in this habitat is Russian thistle. Grasses are sparse and low. Remains of large numbers of dwarf plantain are found in certain spots.

Wildlife

Heavily grazed pastures generally support a less diverse community of vertebrate wildlife. Mourning doves (*Zenaida macroura*), ground squirrels, and black-tailed hares (*Lepus californicus*) were common in the grazed pasture areas. In addition, badgers, which are a special status wildlife species, may occur in this habitat. Two burrowing owls, a special status species, were seen in this habitat. (See discussion in section on Special Status Species).

DEVELOPED/HORTICULTURAL AREAS

Vegetation

This human-induced habitat includes housing developments, two communications centers, and a large quarry.

The immediate vicinity of the residential areas supported generally non-native, weedy annuals similar to those found in the Non-native Grassland. In addition, non-native landscape plants such as lawn grasses, Lombardy poplars (*Populus nigra* var. *italica*), blue gum (*Eucalyptus globulus*), and California pepper tree (*Schinus molle*) are found growing near houses.

The quarry operation area was highly disturbed by ongoing mining activities and earth movement. A few weedy species occur in this area, including Russian thistle (*Salsola kali*), but the bulk of this area supports no plants at all.

Wildlife

A few birds were observed using the residential/development areas. These included American Kestrel, Black Phoebe (*Sayornis nigricans*), Mourning Dove, European Starling (*Sturnus vulgaris*), House Finch (*Carpodacus mexicanus*) and House Sparrow (*Passer domesticus*).

DIABLAN SAGE SCRUB

Vegetation

Small areas of south facing slopes supported scattered stands of Diablan Sage Scrub. This habitat is characterized by stands of California sage (*Artemisia californica*), and naked-stemmed buckwheat (*Eriogonum nudum*). In many other sites this habitat supports a larger number of shrubby species, but the disturbance on the study site probably accounts for the low botanical diversity present.

Wildlife

The small patches of Diablan Sage Scrub within the non-native grasslands provides cover and breeding habitat for many resident wildlife species. Birds that may use this area include Anna's Hummingbird (*Calypte anna*), Say's Phoebe (*Sayornis saya*), Scrub Jay (*Aphelocoma coerulescens*), Rock Wren (*Salpinctes obsoletus*), Loggerhead Shrike (*Lanius ludovicianus*), California Towhee, Savannah Sparrow (*Passerculus sandwichensis*), Sage Sparrow (*Amphispiza belli*), and Lesser Goldfinch (*Carduelis psaltria*).

Small mammals such as the California vole, western harvest mouse, and deer mouse (*Peromyscus maniculatus*) are also found in these scrub habitats. California ground squirrels (*Spermophilus beechyi*) are abundant and observed on the project site in this habitat as well. This habitat supports a group of reptiles similar to those found in the Non-native Grassland habitat.

FRESHWATER SEEP

Vegetation

A small pond has been created in an area above the quarry where the hillside was excavated. Typical species here include seep-spring monkeyflower (*Mimulus guttatus*), heliotrope (*Heliotropium curassavicum*), and rabbitsfoot grass (*Polypogon monspeliensis*).

Wildlife

Freshwater seeps provide larger birds and mammals with drinking water during the dry summer months. However, in northern California, the primary importance of these areas probably lies in their ability to support breeding and larval development of uncommon amphibian species such as the tiger salamander (*Amblystoma tigrinum californiense*) and the California newt (*Taricha tarosa*). These animals spend the summer under rocks, in moist leaf litter, under bark, in decayed logs, and in the burrows of other animals. They are most active during the winter months when water is readily available, moving to deeper ponds and quiet pools during the late winter and spring to breed and lay eggs.

Mammals such as raccoons and striped skunks (*Mephitis mephitis*) feed on invertebrates and other small mammals which are attracted to the moisture and available cover. None, however, were observed during site visits.

Amphibians such as the Pacific tree frog (*Hyla regilla*) and several species of salamanders use the emergent vegetation as cover and, during the wetter winter and spring months, use the still ponded water to breed. Only the western toad (*Bufo boreas*) was observed during site visits.

WETLANDS

Wetland habitats are subject to federal and state agency regulation in the state of California. The U.S. Army Corps of Engineers regulates activities in Waters of the United States and wetlands adjacent to those Waters. The Corps has derived its authority to regulate the kind of wetlands observed on the study site from Section 404 of the Clean Water Act of 1987. This law requires a permit for the discharge of dredged or fill material into waters of the United States or wetlands which meet the criteria for Corps jurisdiction, including isolated wetlands. Generally the filling of wetlands of less than one acre in extent is covered by a nationwide permit that is automatically granted.

A reconnaissance survey by Entrix on May 25, 1989 located a seasonal wetland (denoted as wetland #1) along Hillsdale Avenue which contained such species as poison hemlock (*Conium maculatum*), heliotrope, and curly dock (*Rumex crispus*). The soils were considered hydric but there was little evidence of wetland hydrology. This wetland covers an area of about 0.4 acres and would possibly be subject to regulation by the U.S. Army Corps of Engineers.

An additional area of approximately 3 acres (denoted as wetland #2) that may qualify as jurisdictional wetland is located adjacent to the Southern Pacific rail line, to the southwest of Oak Hill Memorial Park. A brief reconnaissance survey conducted by H. T. Harvey and Associates found vegetation and indications of hydrology that are typically associated with wetlands. Characteristic species that occur in wetlands included saltbush (*Atriplex patula*), salt grass (*Distichlis spicata*) seaside heliotrope (*Heliotropium curassavicum*) and poison hemlock (*Conium maculatum*). However, the area is also highly disturbed; extensive dumping of rubbish, concrete and waste characterize much of the site, and many ruderal species are found colonizing fill areas; characteristic species included mallow (*Malva parviflora*), Russian thistle (*Salsola kali*) and wild radish (*Raphanus sativa*). While it is probable that part of this area would be classified as wetlands, a formal jurisdictional determination would require additional field investigation utilizing comprehensive Corps of Engineers delineation methodology.

A man-made retention basin which may be another seasonal wetland (#3), is located adjacent to and west of the Southern Pacific rail, within the lowest elevation area of the quarry. At present, most of the area has been graded or tracked, and is bare of vegetation; only a few wetland indicator plant species are found at the margins of the area, including rabbit-foot grass (*Polypogon monspeliensis*) and prickly grass (*Crypsis niliaca*). Mud cracks and other signs of wetland hydrology are evident in the center of the area. Further field-work would be required for evaluation of Corps jurisdiction; it appears that the area is recently disturbed, and wetland indications may only be the result of occasional sediment ponding utilization.

Two additional smaller ponds (#4 and #5) have been constructed south of the above-mentioned area, adjacent to and east of the rail line. These ponds have been used for storm runoff from the quarry. The pond closest to the rail line appears to no longer be in use; this pond is over 10 feet deep, and has a mixture of wetland and upland species growing in the bottom. The pond to the west is partially filled with water, and is presently used for sediment settling operations. Both of these ponds have many wetland species growing around their margins, including willow (*Salix* spp) and cottonwood (*Populus fremontii*). All of these ponds may come under Corps jurisdiction.

The pond described in the freshwater seep habitat description section is also a wetland which would possibly fall under the jurisdiction of the U.S. Army Corps of Engineers. Its total area is probably less than one acre.

All of the seasonal wetlands on the site, with the exception of wetland #2, are under one acre in size. They occur on separate properties, thereby possibly allowing any fill which might occur to qualify under the existing Corps nationwide permit. A nationwide permit is automatically granted to jurisdictional wetlands of 1 acre or less. The discharge of fill or dredged material can proceed unhindered on such wetlands. As a precautionary measure it is wise to notify the Corps prior to developing such wetlands to confirm the approval of a Nationwide Permit. The wetland which is approximately 3 acres in size would not, however, qualify for a Corps nationwide permit if it were to be filled. Filling of that wetland would require a Corps 404 permit and would probably require mitigation, however filling of this wetland is proposed to be avoided by the Specific Plan therefore no impact would result.

SPECIAL STATUS SPECIES

Table 1 lists the special status species which occur or may occur on the site, their status, their potential for occurrence on the site and any recommendations for further studies. Following Table 1 are individual discussions of those special status species that warrant further study given their status and their potential for occurrence on the site. The following sections discuss the legal status of the various listings.

State and Federal Endangered/Threatened Species

A species or subspecies is considered "endangered" when it is in serious danger of becoming extinct throughout all, or a significant portion of, its range due to one or more causes, including loss of habitat, change of habitat, over-exploitation, predation, competition or disease (Federal Endangered Species Act 1983, and Section 2062 of the Fish and Game Code). Both the state and federal lists contain this designation.

A species or subspecies is considered to be "threatened" when, although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts. This designation includes any species listed as "rare" before January 1, 1985. Both the state and federal lists contain this designation.

The Federal Endangered Species Act protects species listed as endangered or threatened. This Act prohibits the "take" of any of the listed species or the disturbance of their habitat. The Endangered Species Office of the U.S. Fish and Wildlife Service has the legal authority to levy penalties for non-compliance with the Act.

The Federal Endangered Species Act prevents a federal agency from participating in a project that entails the destruction of any listed species or its habitat without first consulting with the U.S. Fish and Wildlife Service (U.S.F.W.S.). If a Federal Endangered or Threatened species occurs on a site then a Section 7 or 10 consultation with the U.S.F.W.S. must be initiated. A Section 7 consultation is employed for inter-federal agency project reviews and a Section 10 consultation (and permit application) is employed for private project reviews by the U.S.F.W.S. The U.S.F.W.S. would then issue an opinion as to

whether the project threatens the continued existence of the species, and would review any plans for avoidance of impacts to the species and its habitat to determine whether a permit would be issued to allow the project to proceed. The U.S.F.W.S. would typically become involved in a project during the review of the EIR and the preparation of various permits (Corps of Engineers 404 permits, etc.).

The State Endangered Species Act does not provide a legal basis for levying penalties as does the Federal Act. However, the State Act does provide the legal basis on which the California Department of Fish and Game would recommend mitigation for a project which would threaten the continued existence of an endangered or threatened species. Such a recommendation would be made to the lead agency (in this case the City of San Jose) which would ultimately decide what action, if any, would be taken with regard to the species in question. The C.D.F.G. would typically become involved in a project during the review of the EIR and the preparation of various permits (1603 and 1604 Streambed Alteration Agreements, etc.).

Federal Candidate Species

Many petitions have been filed proposing new species for federal listing. Pending a final recommendation by the U.S.F.W.S. these species are regarded as candidates for listing. Candidates are given further designation based on the scientific information on the actual vulnerability of the species. Federal candidate 1 (FC1) species are potentially to be listed due to the availability of conclusive data that the species is endangered or threatened. Federal candidate 2 (FC2) species may be listed when conclusive data on biological vulnerability are available. Candidate species are not protected under the Endangered Species Act, but U.S.F.W.S. has a written policy that candidate species should be considered with the same weight as endangered/threatened species because the candidate species' status may be upgraded before the project is completed. The U.S.F.W.S. does not have, however, any legal authority to enforce their recommendations on Federal Candidate species. Action on their recommendations would be ultimately decided upon by the lead agency for the EIR. It should be noted that there is currently a lawsuit underway in federal court to force the U.S.F.W.S. to immediately upgrade the status of all FC1 species to threatened status.

CEQA Guidelines for Special Status Species

The California Environmental Quality Act (CEQA) requires that a project not have a significant impact on the environment without adequate mitigation or compensation. Under CEQA, issues related to biotic resources are dealt with by the California Department of Fish and Game (CDFG). Other agencies, including the U.S.F.W.S. and National Marine Fisheries, can also become involved via the EIR review process. CEQA seeks to protect all endangered/threatened species, including those on the California Native Plant Society (CNPS) listings, and whether or not the species is listed by state or federal agencies, however there are no mandatory mitigations under CEQA, except those specified by the lead agency.

If, for a given project, any of the following project-related impacts are expected, then under CEQA there would be a mandatory finding of significance:

- substantial reduction in the habitat of a fish or wildlife species,
- cause a fish or wildlife species to drop below self-sustaining levels,
- threaten to eliminate a plant or animal community,
- reduce the number or restrict the range of rare or endangered plant or animal.

The CNPS lists contain plants eligible for state listing. At this time the C.D.F.G. recognizes all federal candidate species, and CNPS list 1A, 1B, and 2 species as deserving protection, and would recommend that impacts to those species would be considered significant.

If impacts were determined to be significant then the C.D.F.G., in its advisory capacity under CEQA, would recommend avoidance or mitigation for those impacts.

Table 1. Special Status Species

SPECIES	STATUS	POTENTIAL FOR OCCURRENCE ON SITE	RECOMMENDATIONS
<u>State or Federally Endangered</u>			
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	FE,SE	Unlikely, no nesting habitat or foraging value.	No action required.
<u>State or Federally Threatened</u>			
Bay Checkerspot Butterfly (<i>Oecodryas editha bayensis</i>)	FT	Unlikely, but possible resident.	Surveys recommended.
<u>California Species of Special Concern, State Protected, or Federal Candidate Species</u>			
Phalangids (<i>Microcina homi</i> , <i>M. junqi</i>)	FC2*	Probable residents	None.
Opler's Longhorn Moth (<i>Adela oplerella</i>)	FC2	Appropriate habitat, probable resident.	None.
Cal Tiger Salamander (<i>Ambystoma tigrinum calif.</i>)	FC2,S	Unlikely but possible resident, appropriate habitat.	Surveys recommended.
Western Spadefoot Toad (<i>Scaphiopus hammondi</i>)	S	Unlikely due to marginal habitat	None.
Black-shouldered Kite (<i>Elanus caeruleus</i>)	SP	Probable transient, possible resident, appropriate foraging.	None.
Northern Harrier (<i>Circus cyaneus</i>)	S2	Observed foraging.	None.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	S3	Probable transient.	None.
Cooper's Hawk (<i>Accipiter cooperii</i>)	S3	Observed foraging.	None.
Golden Eagle (<i>Aquila chrysaetos</i>)	SP,S3	Infrequent occasional foraging, unlikely nesting.	None.
Merlin (<i>Falco columbarius</i>)	S1	Unlikely visitor.	None.
Prairie Falcon (<i>Falco mexicanus</i>)	S3	Unlikely visitor.	None.
Burrowing Owl (<i>Athene cunicularia</i>)	S2	Appropriate habitat on site, likely resident.	Surveys recommended.
Badger (<i>Taxidea taxus</i>)	S3	Unlikely resident.	None.
Metcalf Canyon jewel flower (<i>Streptanthus albidus</i>)	FC1	Potential habitat on site, probable occurrence.	Surveys recommended.
Mount Hamilton thistle (<i>Cirsium campyon</i>)	FC2	Unlikely to occur.	None.
Fragrant fritillary (<i>Fritillaria lilacea</i>)	FC2	Potential habitat on site, probable occurrence.	Surveys recommended.
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	FC2	Unlikely to occur.	None.
Setchell's dudleya (<i>Dudleya setchellii</i>)	FC1/CNPS1B	Occurs on site.	Surveys recommended.
Uncommon jewel flower (<i>Streptanthus albidus</i> - ssp. <i>peramoenus</i>)	CNPS1B	Potential habitat on site, probable occurrence.	Surveys recommended.

* Soon to be listed.

- FE = Designated as an endangered species by the federal government.
SE = Designated as an endangered species by the California Fish and Game Commission.
FT = Designated as a threatened species by the federal government.
FC1 = Designated as a candidate species by the federal government. Species on list 1 indicates that US Fish and Wildlife Service has conclusive data in possession to list as endangered or threatened.
FC2 = Designated as a candidate species by the federal government. Species on list 2 indicates that US Fish and Wildlife Service has information in possession that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat are not currently available to support proposed rules.
S = Species of special concern, included are those species whose breeding populations in the state have declined severely or are otherwise so low that extirpation is a real possibility. There are no special legal statutes governing the protection of this group.
SP = Fully protected species in the state of California.
CNPS1B = Designated as rare by the California Native Plant Society, with limited or vulnerable habitat, eligible for state listing, meets Sec. 1901, Chapter 10 of California Fish and Game Code.

Special Status Plant Species

Setchell's dudleya was the only special status plant confirmed as occurring on the site. A survey should be conducted to determine the extent of this species on the site.

Given the status of the other species listed below and the fact that potential habitat for them exists on the site, it is recommended that a survey, starting in April, should be conducted prior to development approval to confirm their absence or presence. A special status plants survey which would cover all of the species listed below would concentrate on the specific habitats described below in which the species are known to occur and would take approximately 3-4 person/days to conduct.

Metcalf Canyon jewelflower, *Streptanthus albidus* ssp. *albidus* This plant is found on road-cuts and rocky areas of serpentine. Its range is limited to the Santa Clara Valley. A population has been reported as occurring in the Silver Creek Hills approximately three miles southeast of the study site. This species is a Federal Candidate 1 species (those species for which enough information is available to support listing). This species is also on the California Native Plant Society's (CNPS) List 1B (those plants rare or endangered). This species was not observed during reconnaissance level surveys.

Fragrant fritillary, *Fritillaria liliacea* This bulbous plant is found in widely scattered locations in Central California. It often grows on serpentine, especially when it is found away from the coast. Fragrant fritillary is a Federal Candidate 2 species and a CNPS List 1B plant. A small population of plants interpreted as belonging to this species was found in the Silver Creek Hills. This species was not observed during reconnaissance level surveys.

Setchell's dudleya, *Dudleya setchellii* This plant is found only on serpentine outcroppings within Santa Clara County. As it is an evergreen perennial it can be found throughout the year. It is a Federal Candidate 1 and CNPS List 1B plant. It was found on the study site scattered in rocky areas in the southern and western portions of the site.

Uncommon jewelflower, *Streptanthus albidus* ssp. *peramoenus* This close relative of the Metcalf Canyon jewelflower is found in similar habitats in geographically separated areas. This species has been found on serpentine in the Oakland Hills and in Santa Clara County West of Coyote Creek. It is a CNPS List 1B plant. This species was not observed during reconnaissance level surveys.

Special Status Plant Species Constraints Discussion

If further surveys were conducted which determined that one or both of the above-mentioned CNPS listed plants occur on the site and if the proposed development would impact the areas in which the plant(s) occur then the C.D.F.G. would probably recommend that mitigation be implemented if the impacts could not be avoided by adjusting the development plans. Likewise, if one or more of the Federal Candidate species were found on the site and would receive impacts from development then the U.S.F.W.S. would probably recommend mitigation.

The extent of mitigation recommended would be directly related to the extent and quality of habitat impacted. Such mitigation would probably take the form of purchasing and protecting similar habitat as close to the impact site as possible. Some enhancement of the mitigation site could also be recommended, such as relocating the species or otherwise facilitating propagation of the impacted species at the mitigation site which could be located within a portion of the specific plan area to be designated as permanent open space.

Action on the recommendations of the U.S.F.W.S. and C.D.F.G. would ultimately be decided by the lead agency for the project.

Special Status Animal Species

A number of State of California listed species of special concern are known to occur near the site or were observed on the site in appropriate habitats. State categories include protected species or species of special concern in the State of California. Species of special concern are not afforded legal protection under the State Endangered Species Act but they may be considered significant under CEQA. The populations of these species have declined to the point that their populations should be monitored. Federal status categories include threatened and endangered (which do carry legal protection), or candidate categories 1, 2, or 3 (which do not carry legal protection). The following are individual discussions of those species whose status and potential for occurrence on the site warrant further study, although they were not observed during reconnaissance surveys.

Bay checkerspot butterfly, *Occidryas editha bayensis* A small butterfly with orange, black, and cream colored spots. Larvae are host specific on two plant species (*Plantago erecta*, and *Orthocarpus densiflorus*) that are found only on serpentine soils. The plantago was found on the site during reconnaissance surveys. Due to specific habitat requirements, populations of this butterfly species have declined to low numbers following destruction of

serpentine habitats. As such, the Bay checkerspot butterfly is listed as threatened by the USFWS. The closest known occurrence to the Communication Hill site is in 1989 in the Kirby Canyon to Silver Creek area of southern Santa Clara County. A survey of the habitat areas typically used by this butterfly (grassy areas or areas with its food plants) has been conducted (Spring 1991) to determine the presence of this butterfly and the extent of both prime and marginal habitat. This study determined that the butterfly does not occur on the site.

California tiger salamander, *Ambystoma tigrinum californiense* Adult California tiger salamanders are black with yellow or cream colored spots. They are found in moderate numbers in riparian and wet meadow habitats, but are more common in annual and perennial grasslands. Habitat requirements for juvenile development include fresh water sources for juvenile development that can be temporary or permanent. The California tiger salamander, a subspecies of the more common tiger salamander, is listed as a species of special concern by the California Dept. of Fish and Game, and is listed as a candidate category 2 species by the U. S. Fish and Wildlife Service. Category 2 means that populations of the species have declined to the point that the species should be listed as endangered or threatened, but the data are insufficient to meet existing regulations for an official listing. Appropriate habitat is marginal for this species on the site and, while unlikely, a remnant population could possibly exist. Site specific surveys would need to be conducted during the breeding season to determine its status on the Communication Hill site. Such a survey would be conducted in and around the site's ponded areas in the winter (January and/or February) and would require 2-3 person/days. This survey would involve seining the pond water for salamander larvae and searching for adults in and around the pond.

Burrowing Owl, *Athene cunicularia* The Burrowing Owl is listed as a species of special concern of second priority in the state of California. The C.D.F.G. considers impacts to Burrowing Owl active nest sites or individuals to require mandatory findings of significance. Burrowing Owl numbers have been declining steadily in California due to loss of habitat to agricultural and urban development and destruction of burrows. Burrowing Owls are thought to be non-migratory in California, inhabiting fields and grasslands with few trees and sparse vegetation. They enlarge existing ground squirrel burrows for roosts and nest sites, and prey on insects, small mammals, birds and reptiles. Burrowing Owls are most active between dusk and dawn, but are often seen standing next to their burrows during the day. Two Burrowing Owls were observed during our reconnaissance surveys in the Grazed pasture habitat area. Specific surveys would need to be conducted to determine the extent of the owl's residence and use of the Communication Hill site. Such a survey would be conducted in the period between February and August and would require 5-8 person/days.

Special Status Animal Species Constraints Discussion

Bay Checkerspot Butterfly. The Bay checkerspot butterfly is listed as Federal Threatened and therefore is afforded a high degree of protection by the U.S.F.W.S under the Endangered Species Act. If a survey shows that the butterfly occurs on a site then a Section 10 permit from the U.S.F.W.S. would be required prior to a "take" of any habitat and mitigation would be required.

The extent of mitigation would depend upon the quality and areal coverage of habitat to be impacted. Several alternatives exist for mitigation. One would be to enhance a suitable habitat onsite, ideally in combination with the protection of as much onsite prime habitat as possible. Another alternative would be to purchase a suitable site in south Santa Clara County and enhance it to provide habitat for the butterfly. Offsite mitigation via habitat enhancement should be considered a last resort as it may not be acceptable to the U.S.F.W.S. Any site to be enhanced must exhibit the specific soil characteristics required by the butterfly's host plants to be considered feasible. Such an enhancement site would also have to be degraded such that under current management and conditions the species would not thrive. An enhancement program would entail adjusting management practices, such as grazing, and possibly seeding the host plants.

The biology of the species is such that it requires large contiguous blocks of suitable habitat to survive. Small "islands" surrounded by development or altered habitat would not be adequate. The latter would be an important consideration when developing adjusted development plans and mitigation plans. Detailed site surveys have determined, however, that the Bay checkerspot does not occur on the site.

California Tiger Salamander. This salamander is afforded no special legal protection by its status as a Federal Candidate 2 species, nor by its status as a State species of special concern, nor by its status within Santa Clara County as a locally unique species. Nevertheless, impacts to this amphibian have been the subject of litigation by private individuals and conservation groups and therefore it is worthy of special attention. Additionally, if the salamander was found to occur on the site then impacts to its habitat would be considered significant under CEQA guidelines and C.D.F.G. would probably recommend mitigation. The amount of mitigation recommended would depend upon the number of individuals found. Mitigation would entail enhancing habitat for the salamander, preferably onsite but possibly offsite in south Santa Clara County. Mitigation habitat would have to contain a ponded area, grasslands, and burrows to be considered suitable.

Burrowing Owl. The Burrowing Owl is afforded no special legal protection by its listing as a State species of special concern, but they are protected by the Migratory Bird Treaty Act, (16 U.S.C. 703-711). This Act prohibits the "taking" of active nests, eggs, or young or adult birds. "Taking" under the provisions of this act generally refers to any harmful activity (including destruction of active burrows, disturbance or harm to nests, eggs, young or adults). In addition, C.D.F.G. has a policy that recommends that impacts to Burrowing Owl active nest sites should be cited as significant in the project's EIR. As with the Tiger Salamander, the Burrowing Owl is the subject of litigation by private groups/individuals and would therefore be considered worthy of special attention by resource agencies.

C.D.F.G. generally recommends offsite mitigation via relocation to compensate for any impacts. Special permits are required to perform such relocation. Several sites are known to exist where owls can be relocated. If such sites were to be used, the developer would not be required to purchase the land but would be required to support all costs associated with the relocation and monitoring of the owls.

IMPACTS

INTRODUCTION

The following discussions of impacts to biological resources on the site are organized into four sections: vegetation, wildlife, wetlands and special status species. Since the latter two topics are covered in their own separate sections, the vegetation and wildlife sections do not deal with either wetlands or special status species issues.

VEGETATION

Non-Native Grassland and Grazed Pasture

The grassland and pasture habitats are almost all on serpentine soils, but they are heavily degraded by grazing and erosion and do not support large populations of serpentine endemic plant species. Approximately half of the non-native grassland and grazed pasture habitats on the site would be removed by the proposed development. This would not be considered a significant impact because these areas are dominated by non-native weedy species and there are extensive areas of these habitats remaining in the county. However, any impacts to special status plant or animal species within this habitat could be considered a significant impact, if not mitigated. See discussion below.

Two degraded seasonal wetlands exist within the grazed pasture habitat and one is in an area of proposed development. The significance of these wetlands is further discussed in a separate section on wetlands and in the wildlife section.

Developed/Horticultural Areas

Given that these areas are already developed no significant impacts to biological resources are foreseen as a result of the proposed development. However, if the proposed development were to result in the removal of any trees protected by the Tree Removal Ordinance (i.e. trees with a diameter at breast height of 18 inches or greater) or designated as a heritage tree this would be considered a significant impact and would require mitigation and approval by the City prior to construction.

The City of San Jose maintains a Tree Removal Ordinance, as provided in sections 13.28-13.32 of the San Jose City Code. The ordinance serves to protect all trees having a trunk that measures 24 inches or more in circumference (18 inches in diameter, as measured 24 inches above the natural slope). The ordinance protects both native and non-native species. Additionally, any tree found by the city council to have special significance can be designated as a heritage tree, regardless of size or species. A detailed survey of the site would be undertaken, at the time of development proposals, to determine whether any trees to be removed meet the above criteria.

Three degraded seasonal wetlands exist within areas of this habitat type for which development is proposed. They are further discussed in the separate sections on wildlife and on wetlands.

Diablan Sage Scrub

The majority of sage scrub habitat on the site will be removed by the proposed development. Given the very limited extent of sage scrub habitat extant on-site and the fact that sage scrub habitat is still relatively common in this part of California its removal from this site is not considered a significant impact. The exception to this would be if any special status plant or animal species are found to exist within areas of this habitat which are to be disturbed or removed, in which case impacts to such species could be significant if not mitigated.

Freshwater Seep

The small (less than one acre) seep which ponds just above the quarry would be removed by the proposed development. Given that this habitat may meet the technical criteria of a jurisdictional wetland, grading or filling this seep may be subject to the regulatory authority of the U.S. Army Corps of Engineers and a permit could be required. However, given its small size, it would be covered under the existing nationwide permit. Even if the seep is not a jurisdictional wetland, Hollands (1986) lists the Freshwater Seep plant community as a "highest inventory priority" for the California Natural Diversity Data Base. This is indicative of the ecological significance of this plant community and the California Department of Fish and Game and the U.S. Fish and Wildlife Service would therefore consider this to be a biologically significant habitat. The status of "highest inventory priority" carries no tacit legal protection for the habitat but it will motivate the resource agencies to consider impacts to the habitat as significant under CEQA.

WILDLIFE

Non-native Grassland and Grazed Pasture

Residential development would displace many of the small birds and mammals which inhabit these open grassland areas. The loss of any natural habitat will cause a reduction in wildlife populations. Some of these animals, such as finches and sparrows, can survive in urban areas or will disperse to nearby grassland communities, where they may survive although it is not certain. Other species, such as ground squirrels, will probably not survive the development of the habitat in which they reside. In general, no significant impact to wildlife resources in these two habitat types is anticipated, given that these habitat types and the animals which inhabit them are extensively represented elsewhere in Santa Clara County.

The two seasonal wetlands which exist within this habitat have special value to wildlife due to occasional ponding during wet periods but are so degraded that their habitat value is minimal. One of those wetlands, located along Hillsdale Avenue, will be impacted by the proposed development. Impacts to those wetlands is not considered significant from the standpoint of habitat values because of their highly degraded state (see also section on wetlands).

If any special status species are found in those habitats, impacts to those species could be significant if not mitigated (see section on special status species).

Developed/Horticultural Areas

No significant impacts to the wildlife resources would be anticipated as a result of development or alteration of this habitat type. Some animal populations may be reduced during construction but their populations are currently very limited. Species currently using landscape plants for nesting or foraging would probably adapt to any landscaping which might be installed as a developmental feature.

The three seasonal wetlands which exist within this habitat have special value to wildlife due to occasional ponding during wet periods but are so degraded that their habitat value is minimal. Those wetlands will be impacted by the proposed development. This will be considered a significant impact if it is not adequately mitigated (see also section on wetlands).

Diablan Sage Scrub

Most wildlife species utilizing this habitat do so on a periodic basis or are commonly found in other habitats. This is especially true on the Communication Hill site, where sage scrub habitats are limited in distribution. Normally occurring wildlife species displaced by development of this small area of scrub habitat will likely find suitable habitat on or near the project site, although some individuals or populations may be permanently lost. In general however, loss of this habitat type due to development would not be considered a significant impact on the wildlife resources.

Fresh Water Seep

Many species of wildlife use seeps for drinking during spring and summer months. The pond above the quarry could also serve as a breeding pool for amphibians, such as the California tiger salamander (see discussion below in Special Status Species section). Given that seeps surrounded by more or less natural habitat are relatively rare in this area, this freshwater seep can be considered a significant biological resource from the standpoint of its value to wildlife. The seep appears to be in an area proposed for development and this will be considered a significant impact unless it is adequately mitigated.

WETLANDS

Seasonal wetland #2 (SW2 on Figure 1) will not be disturbed by development, although it is within the park/playfield area. However, seasonal wetland #1 is in an area proposed for multi-family use, seasonal wetland #3 is in a heavy industrial area which is planned to become a Caltrain maintenance facility, and seasonal wetlands #4 and #5 are in a heavy industrial area.

The seasonal wetlands on the site are degraded by overgrazing and erosion and therefore have low habitat value. The freshwater seep however does have significant habitat value. Impacts to the seasonal wetlands are considered insignificant unless they are determined to be jurisdictional wetlands.

The wetlands which are in areas proposed for development are located on separate properties and are probably all under 1 acre in size. If any of these wetlands are jurisdictional wetlands it is probably feasible to proceed with developing them because they could qualify for Corps nationwide permits. Nationwide permits are automatically granted for filling or disturbance of jurisdictional wetlands under 1 acre. If a wetland qualifies for a nationwide permit the Corps requires no mitigation for its loss.

SPECIAL STATUS SPECIES

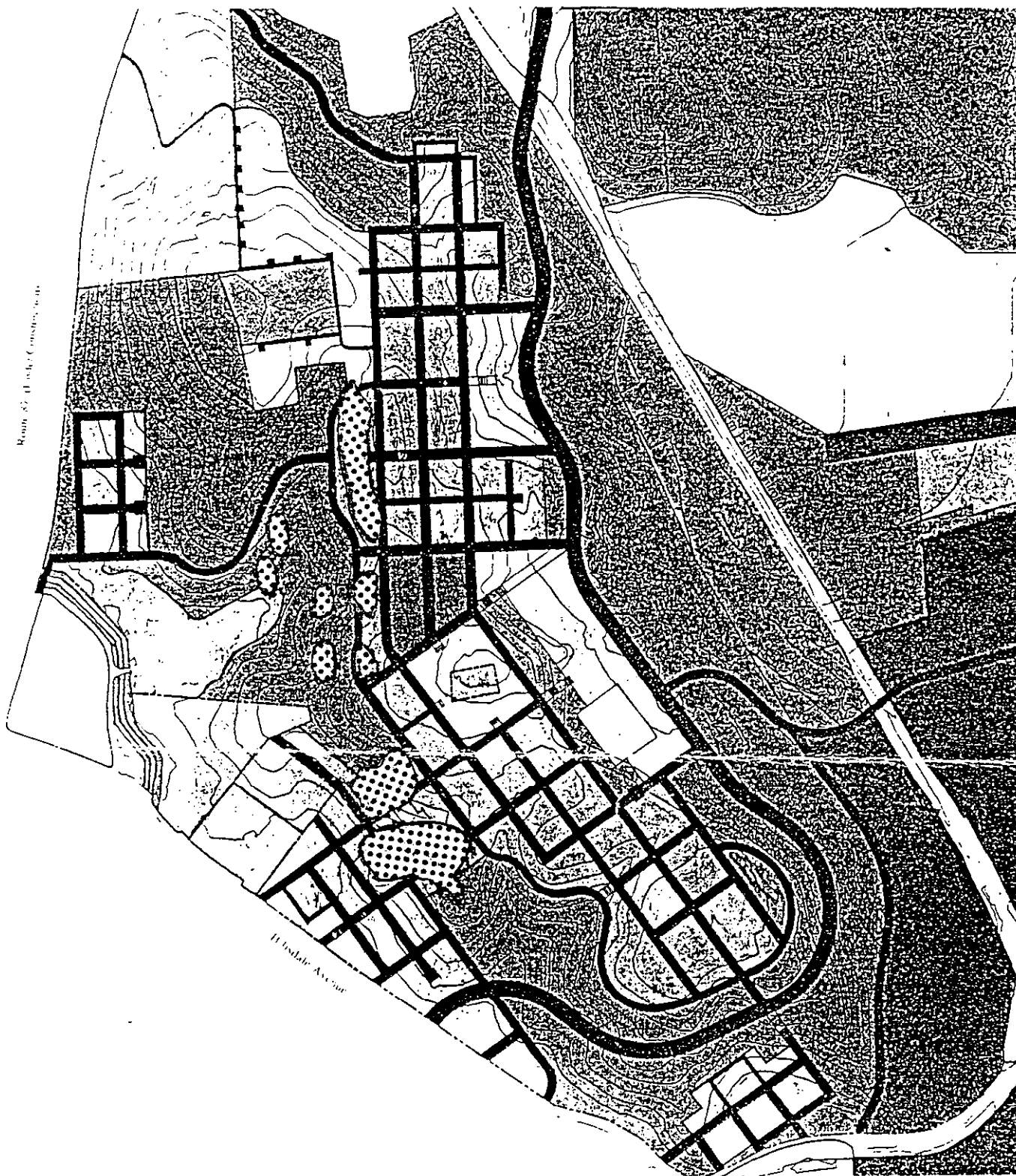
Plants

Of the four special status plant species likely to occur on the site, only the Setchell's dudleya has been verified as occurring. It is found extensively on the south and western facing slopes, and its distribution overlaps considerably with areas proposed for development (see Figure 2). Approximately 10 acres would be eliminated under the proposed development plan, which represents 70 percent of the population on the site.

As a Federal Candidate 1 and CNPS 1B status species the Setchell's dudleya is not afforded tacit legal protection. However, the U.S.F.W.S. treats FC1 species as having the same status as Federally Threatened species, and is likely to consider impacts to the dudleya as significant. In addition, the California Department of Fish and Game considers CNPS 1B species as equal in significance to State threatened or endangered species when they review impacts to CNPS 1B species under CEQA. Fish and Game is therefore likely to express concern over impacts to the Setchell's dudleya.

Setchell's dudleya populations are fairly extensive in Santa Clara County, and the population on Communications Hill probably represents only a very small fraction of the total existing populations. Evaluated on that basis, the destruction of this species on the project site does not constitute a significant impact. However, there are numerous development projects currently proposed within Santa Clara County which are also proposed or approved where populations of Setchell's dudleya occur. It is possible therefore, that the cumulative impacts of these projects may be significant with regard to the total population of Setchell's dudleya in the county. Some of these other areas may find protection through other means, either through county and city policies covering buildouts on slopes over 15%, or through the co-occurrence of habitat for the endangered Bay Checkerspot Butterfly. In the event that the responsible resource agencies determine that the cumulative impacts to the dudleya are significant, measures to protect or relocate portions of the dudleya are identified in the mitigation section.

More detailed surveys are required to verify the presence or absence of the remaining three special status plant species (Metcalf Canyon jewelflower, fragrant fritillary, and uncommon jewelflower). If found on the site, then the destruction of large populations of the Metcalf Canyon jewelflower and the fragrant fritillary could be considered a significant impact since they are Federal Candidate species. Impacts to the uncommon jewelflower would not be considered significant unless, as with the Setchell's dudleya, further studies show that there are significant cumulative impacts to the species.



Setchell's dudleya
populations



H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

COMMUNICATIONS HILL SETCHELL'S
DUDLEYA POPULATIONS

File No. 617-01

Date 5/3/81

Figure 2
H.T. HARVEY & ASSOCIATES

Wildlife

No significant impacts are expected to endangered, threatened, or special status animal species listed in Table 1 (except possibly for the Bay checkerspot butterfly, California tiger salamander, and Burrowing Owl). These species use the site sporadically if at all.

A detailed survey by Dennis Murphy determined that the Bay checkerspot butterfly does not occur on-site.

Breeding habitat is marginal for the California tiger salamander on site. However, site specific surveys are recommended during the breeding season prior to development to verify the presence or absence of the salamander on site. It is likely that if a small remnant population of less than 10-15 adults were found on site that it would eventually become extinct after a decade or so due to random environmental factors (e.g. drought and predation). The extreme isolation of this site from any tiger salamander population eliminates the possibility of recolonization. Therefore, if the existing population is found to be small, the loss of this pond due to development would most likely be considered an insignificant impact. However, if a population of greater than 10-15 adults utilized this pond for breeding then loss of this breeding habitat would be considered a significant impact.

Adult salamanders inhabit burrows of ground squirrels and gophers, which would be found in the non-native grassland and grazed pasture habitats, during the drier months. Therefore, if the Fresh Water Seep habitat is found to support a significant breeding population of salamanders, development of the non-native grasslands and grazed pastures adjacent to the breeding areas would also be considered a significant impact to this species.

Two Burrowing Owls were observed on site within these habitat types in areas which will be disturbed by the proposed development. More detailed site-specific surveys for Burrowing Owls would be required to determine the abundance and distribution of the owl within the project area. Loss of nest sites for Burrowing Owls is considered a significant impact, if not adequately mitigated.

MITIGATION

VEGETATION

Non-Native Grassland/Grazed Pasture

With the exception of any impacts to wetlands or special status species (see specific sections below) no significant impacts are foreseen in these habitats, therefore no mitigation is required.

Developed/Horticultural Areas

With the exception of any impacts to wetlands or special status species (see specific sections below) no significant impacts are foreseen in these habitats, therefore no mitigation is required. It would be necessary to inventory any heritage or ordinance trees however, and if they are located in areas slated for development it would be necessary to replace them at a ratio approved by the city.

Diablan Sage Scrub

With the exception of any impacts to special status species (see specific sections below) no significant impacts are foreseen in these habitats, therefore no mitigation is required.

Freshwater Seep

Due to its classification as a habitat of the "highest inventory priority", impacts to the freshwater seep are considered significant. Refer to the Wildlife section below for a discussion of mitigating impacts to the freshwater seep.

WILDLIFE

Non-Native Grassland/Grazed Pasture

The loss of non-native grassland from residential development will not result in significant impacts to wildlife resources. Therefore, no mitigation for such losses is required. However, see discussion in the Special Status Species section below for California tiger salamander and Burrowing Owl.

Developed/Horticultural Areas

The loss of current buildings and accompanying exotic vegetation from proposed residential development would not result in significant impacts on wildlife. Therefore, no mitigation for such loss is proposed.

Diablan Sage Scrub

The loss of Diablan Sage Scrub from residential development will not result in significant impacts to wildlife resources. Therefore, no mitigation for such losses is required.

Freshwater Seep

Given that this habitat type is considered a significant biological resource, any impacts to it should be mitigated if it is not feasible to avoid impacts altogether (see also section on wetlands). Mitigation would consist of recreating a similar wetland habitat with equal or greater value and acreage compared to the original seep habitat. Mitigation must provide suitable hydrology, topography and vegetation and must ensure the maintenance and long-term protection of the new habitat. This mitigation site would ideally be located as closely as possible to the impact site. One potential location for on-site mitigation would be seasonal wetland #2, which is located below the seep and could be enhanced.

WETLANDS

Since the wetlands located in areas proposed for development are located on separate properties and are under 1 acre in size it is assumed that they will qualify for nationwide permits, therefore no mitigation would be required. Seasonal wetland #2 is approximately 3 acres, but it is not proposed for development therefore no impacts or mitigation is anticipated.

SPECIAL STATUS SPECIES

Plants

Those special status species occurring or potentially occurring on the site are the Setchell's dudleya, Metcalf Canyon jewelflower, uncommon jewelflower, and the fragrant fritillary. No site specific significant impacts are anticipated for the Setchell's dudleya and the uncommon jewelflower. If the resource agencies determine that there are significant cumulative impacts to those species, a mitigation program is recommended and described. However, the status of these plant species affords them no firm legal protection.

As site specific plans are developed, care should be taken to avoid the major populations where possible. Management of remaining open space should compensate for any additional losses. Large areas of the site are designed to be preserved as open space/trails. A management plan should be developed which preserves and/or enhances the values of these open space lands. This management plan should include at a minimum: 1) removing grazing, 2) a management program for fire which does not require cutting or discing on an annual basis, 3) protection within the open space areas of the major special status plant populations by selective routing of any trails, 4) experimental plantings of the special status species in appropriate areas.

Animals

Bay Checkerspot Butterfly. A detailed survey by Dennis Murphy determined that this butterfly does not occur on-site, therefore no impacts are anticipated and no mitigation is required.

Burrowing Owl. Site specific surveys for the Burrowing Owl would be required to determine abundance and distribution. Mitigation for the loss of nesting habitat would be required, if these owls are found, since this is a State Species of Special concern. Typically, relocation to suitable location is considered appropriate mitigation.

The following steps would be required: 1) a relocation plan would have to be developed for the Burrowing Owl, 2) the relocation plan would have to be submitted to the USFWS along with an application to take under the Migratory Bird Treaty Act, 3) a relocation permit from CDFG would have to be applied for, which is part of the special scientific collecting permit process, 4) detailed surveys of the site to locate all Burrowing Owl burrows would have to be conducted just prior to the relocation process, and 5) relocation would take place prior to the onset of breeding. Relocation timing should be flexible enough to allow

for relocation at the best possible time, considering the site development plans and the likely success of the relocation effort. This mitigation should be made part of the approval process for a grading permit.

California Tiger Salamander. Site specific surveys for the California tiger salamander would be required prior to development to determine presence in the vicinity of the freshwater seep. Mitigation for the loss of breeding and summer habitat would be necessary, if a population greater than about 10-15 adults use the site.

The following steps would be required: 1) avoiding development of the freshwater seep and adjacent non-native grassland and grazed pasture would be the preferred alternative, 2) if avoidance is not possible, then development of a pond adjacent to the summer habitat (non-native grassland and grazed pasture) would be required; removal of the original pond and construction of the new pond should be done during the non-breeding season to minimize effects to breeding salamanders, 3) provide an adequate buffer strip of 50-100 feet around pond and migration corridor, 4) prohibit poisoning of ground squirrels and pocket gophers, and 5) eradicate populations of bullfrogs (*Rana catesbeiana*) to enhance the survivorship of larvae in the new pond.

APPENDIX A

PLANT AND ANIMAL SPECIES LISTS

VASCULAR PLANT SPECIES LIST

The following list, arranged alphabetically by family, contains all plant species observed on the Communications Hill site during a survey conducted in November 1990. Most of the plants have been identified to species, but a few could only be identified to genus.

FERNS AND FERN ALLIES

SINOPTERIDACEAE - Maidenhair Family

Pellaea andromedaefolia

Coffee Fern

FLOWERING PLANTS

AMARANTHACEAE - Amaranth Family

Amaranthus blitoides

Prostrate Pigweed

Amaranthus retroflexus

Pigweed

ANACARDIACEAE- Sumac Family

Schinus molle

California Pepper Tree

Toxicodendron diversilobum

Poison Oak

BORAGINACEAE - Borage Family

Amsinckia intermedia

Fiddleneck

Cryptantha rostellata

Beaked Cryptantha

Heliotropium curassavicum

ssp. *oculatum*

Seaside Heliotrope

Myosotis latifolia

Forget-Me-Not

CAPRIFOLIACEAE- Honeysuckle Family

Sambucus mexicana

Mexican Elder

CHENOPODIACEAE - Goosefoot Family

COMPOSITAE - Sunflower Family

<i>Achillea borealis</i>	Yarrow
<i>Artemisia californica</i>	California Sagebrush
<i>Baccharis pilularis</i>	
ssp. <i>consanguinea</i>	Coyote Brush
<i>Carduus pycnocephalus</i>	Italian Thistle
<i>Centaurea solstitialis</i>	Yellow Star-Thistle
<i>Cirsium vulgare</i>	Bull Thistle
<i>Gnaphalium californicum</i>	California Everlasting
<i>Hemizonia luzulaefolia</i>	Rush-leaved Tarweed
<i>Lactuca serriola</i>	Prickly Lettuce
<i>Picris echioides</i>	Bristly Ox-Tongue
<i>Xanthium spinosum</i>	Spiny cocklebur

CONVOLVULACEAE - Morning-Glory Family

<i>Convolvulus arvensis</i>	Field Bindweed

CRASSULACEAE - Stonecrop Family

<i>Dudleya setchellii</i>	Setchell's Dudleya

CRUCIFERAE (BRASSICACEAE) - Mustard Family

<i>Brassica</i> sp.	Mustard
<i>Lepidium nitidum</i>	Shining Peppergrass
<i>Sisymbrium altissimum</i>	Tumbling Mustard

CUCURBITACEAE- Cucumber Family

<i>Cucurbita foetidissima</i>	Calabazilla

EUPHORBIACEAE - Spurge Family

<i>Eremocarpus setigerus</i>	Turkey Mullein

FAGACEAE- Beech Family

<i>Quercus agrifolia</i>	Coast Live Oak

Quercus lobata

Valley Oak

GERANIACEAE - Geranium Family

Erodium cicutarium

Red-Leaf Filaree

POACEAE (GRAMINEAE) - Grass Family

Avena fatua

Wild Oat

Bromus mollis

Soft Chess

Bromus diandrus

Ripgut Grass

Bromus rubens

Foxtail Brome Grass

Elymus glaucus

Glaucus Wild Rye

Elymus triticoides

Creeping Wild Rye

Hordeum leporinum

Farmer's Foxtail

Lolium perenne

Perennial Ryegrass

Melica torreyana

Torrey's Melic Grass

Oryzopsis miliacea

Smilo Grass

Phalaris paradoxa

Paradox Canary-Grass

Polypogon monspeliensis

Rabbitfoot Grass

Sitanion jubatum

Squirreltail

Stipa pulchra

Purple Needlegrass

IRIDACEAE - Iris Family

Sisyrinchium bellum

Blue-Eyed Grass

LABIATAE - Mint Family

Marrubium vulgare

Horehound Mint

Trichostemma lanceolatum

Camphor Weed

LEGUMINOSAE - Pea Family

Lotus angustissimus

Common Trefoil

Lotus purshianus

Spanish Clover

LILIACEAE - Lily Family

Chlorogalum pomeridianum

Soaproot

MALVACEAE - Mallow Family

Malvella leprosa

Alkali Mallow

Malva nicaeensis

Bull-Mallow

Malva neglecta

Cheese-Weed

MYRTACEAE - Myrtle Family

Eucalyptus globulus

Blue Gum

ONAGRACEAE - Evening-Primrose Family

Epilobium paniculatum

Panicked Willow-Herb

PAPAVERACEAE - Poppy Family

Eschscholzia californica

California Poppy

PLANTAGINACEAE - Plantain Family

Plantago erecta

Dwarf Plantain

POLEMONIACEAE - Phlox Family

Gilia sp.

Gilia

POLYGONACEAE- Buckwheat Family

Eriogonum nudum

Nude Buckwheat

Rumex crispus

Curly Dock

PORTULACACEAE- Purslane Family

Portulaca oleracea

Purslane

RHAMNACEAE - Buckthorn Family

Rhamnus californica

Coffeeberry

ROSACEAE- Rose Family

Heteromeles arbutifolia

Toyon

Rubus procerus

Himalayan Blackberry

SCROPHULARIACEAE- Figwort Family

Mimulus guttatus

Seep-Spring Monkeyflower

Scrophularia californica

California Figwort

SOLANACEAE - Nightshade Family

Datura meteloides

Jimson Weed

UMBELLIFERAE - Carrot Family

Foeniculum vulgare

Sweet Fennel