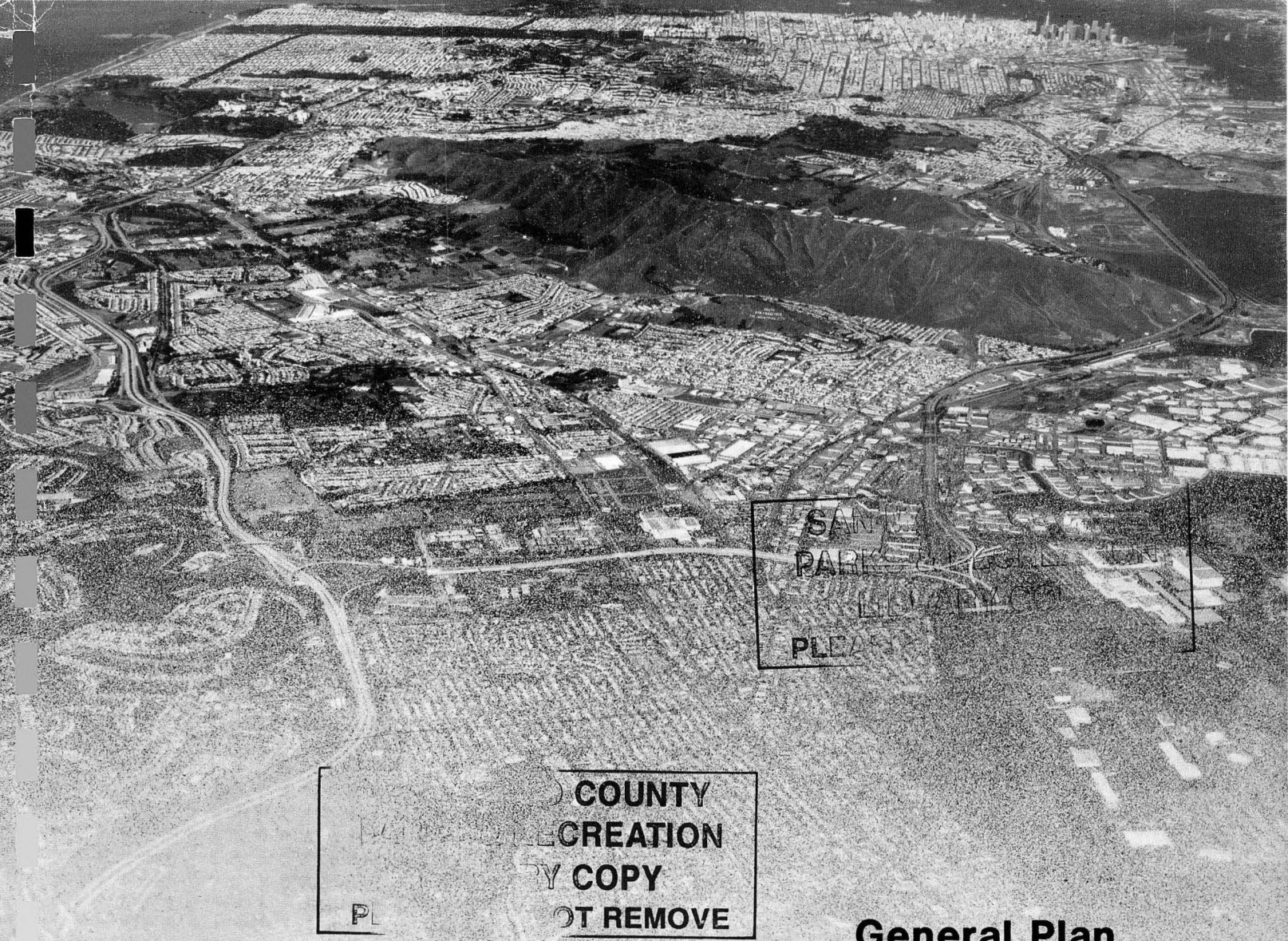

General Plan

San Bruno Mountain State and County Park

General Plan

SAN BRUNO MOUNTAIN STATE AND COUNTY PARK

San Mateo County California

May 1982

San Mateo County Division of Parks and Recreation
State of California Department of Parks and Recreation

Prepared by Inouye/Dillingham Landscape Architectes
Berkeley, California

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Summary

San Bruno Mountain State and County Park is located in northern San Mateo County adjacent to the southern boundary of San Francisco. The site, San Bruno Mountain, is a landmark of local and regional significance and a unique open-space island surrounded by adjacent urbanization. The Park is composed of lands owned both by the State of California and the County of San Mateo, with the State and County lands contiguous, separated by only a four-lane road. The State area covers 297 acres of gently rolling topography, while the County area, comprising 1766 acres, covers the bulk of the Mountain including the summit ridge and south-east ridge. A unique operating agreement sets the responsibility for planning, developing and managing both parks with San Mateo County Division of Parks and Recreation. For this reason, although the Park is composed of two separate ownerships, it has been conceived in this report as one park.

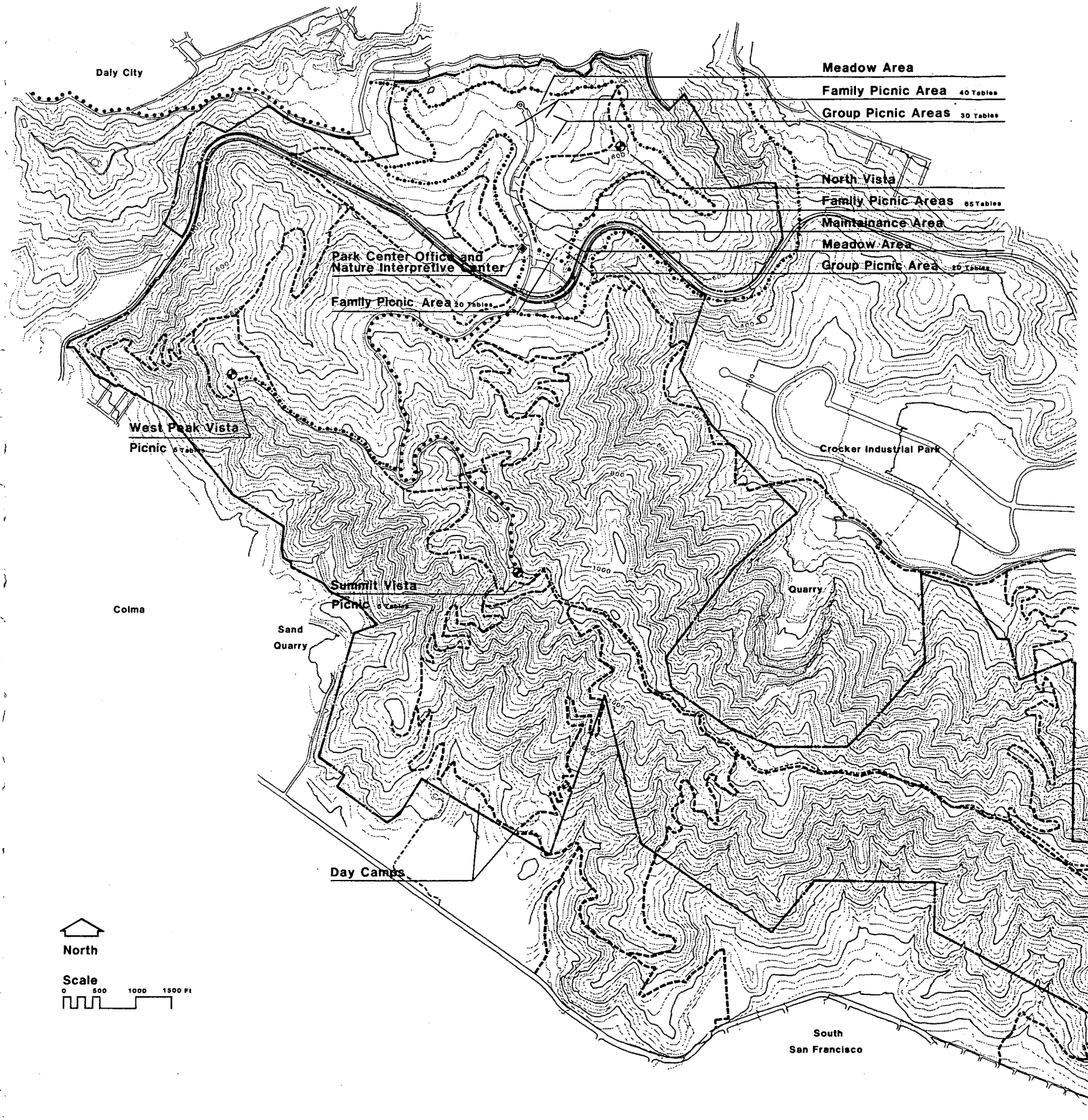
The Park's principal resources include seven species of rare and endangered plant life as well as two species of rare and endangered butterflies. In addition, the rugged landscape offers excellent hiking areas and outstanding views of San Francisco and the central Bay Area. An upland, fresh-water bog is also found on the site.

The basic goal of this General Plan is the preservation of the majority of park areas in open space and enhancement of the Park's principal resources. Visitor use areas have been concentrated at a few locations - in a park center, and at several vista points. A network of trails for hiking, equestrian and bicycle use is proposed to cover the mountain as well as provide open space connections to surrounding communities. Besides trails, the proposed visitor facilities include a nature interpretive center, family

and group picnic areas, parking, day camp, and a shuttle-bus to carry visitors to the summit on high use days. Operating facilities include park office and a maintenance center. Significant utility connections including water, electric and telephone will be required for development of the park center and the day camp. Resource management policies for the park are outlined and specific recommendations made in the areas of soils, hydrology, rare plant and butterfly protection, exotic plant control and visual resources.

A three-phased development program and cost estimate summarize and quantify the size and cost of the park's development.

An Environment Impact Element, compiled as a separate document in the form of an Expanded Initial Study, summarizes the environmental setting of the Park and potential impacts.



LEGEND

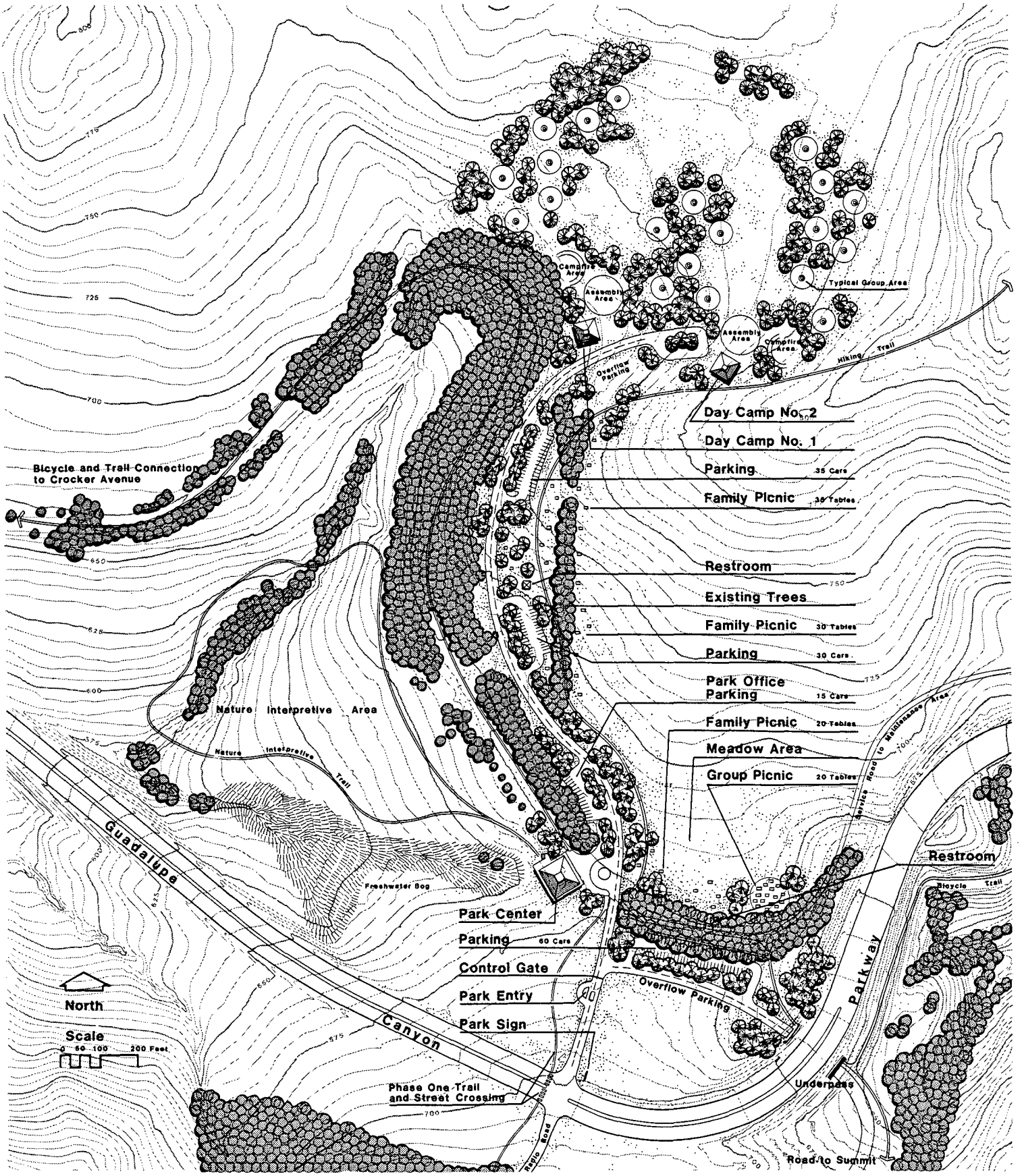
- Bicycle only
- Hiking only
- Bicycle and Hiking

LAND USE & FACILITIES

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants



PARK CENTER

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

Introduction

PURPOSE OF PLAN

San Bruno Mountain State and County Park is a combination of State and County lands that will be operated under San Mateo County management. Because of this unique combination of State and County property, and the agreement between State and County for joint management, a combined General Plan (or Master Plan) for both units has been prepared. The basic purpose of this plan is to assess the specific natural character and resources of the park site and to propose compatible development and management policies which will best allow the public to appreciate the parks and their special resources. This General Plan will define some of the special needs and restrictions of the park, and the degree of development and uses that will be allowed. future specific plans will be a further step in the process of plan implementation.

This General Plan consists of the following elements:

The Resource Element is a summary of the natural and cultural resources of the area, and sets the management policies for protection and use of these resources.

The Land Use and Facilities Element describes current and proposed land uses and relevant planning issues, and describes proposed facilities and programs.

The Operations Element describes specific operational requirements of the parks.

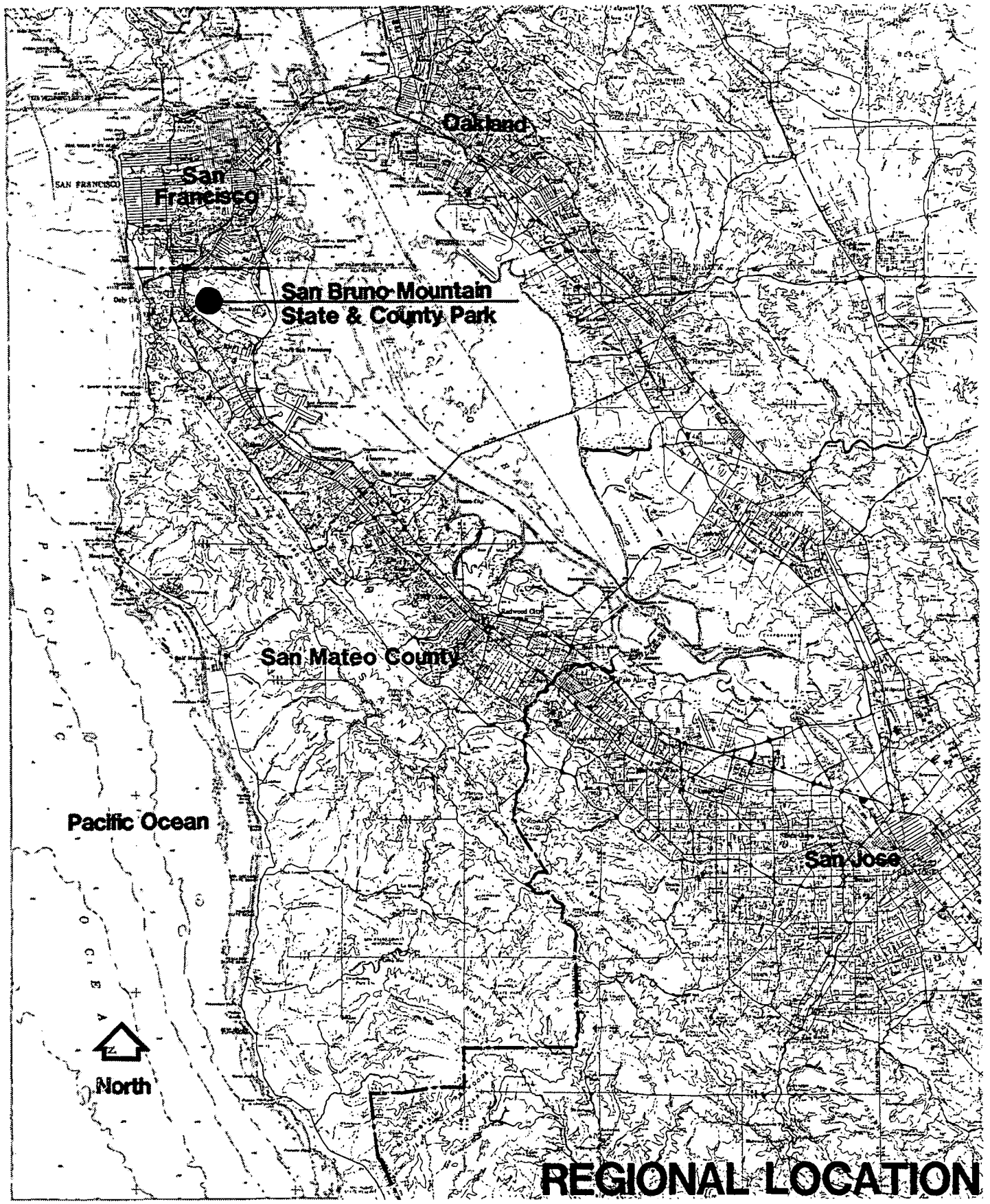
Detailed environmental impact information is presented in the Environmental Impact Element. Further environmental assessment may be performed when specific construction funding is proposed, if significant environmental impacts differing from those specified in this General Plan are found.

In preparing the plan, several initial goals and objectives have been established to serve as a general guide. Goals and objectives will be to:

1. Identify the park's cultural and natural resources.
2. Identify the site's environmental and use problems, and provide solutions.
3. Determine land use, park development and visitor activities that are compatible with the purpose of the park and the surrounding area.
4. Determine the potential environmental impacts of the land uses and visitor activities.
5. Establish policies for maintenance and operation, protection and preservation, development, and interpretation of the resources.
6. Establish a sequence of park development.
7. Provide an information document for the public, park commissions, State and County personnel, and other government agencies.

PROJECT DESCRIPTION

San Bruno Mountain State and County Park is located in San Mateo County on San Bruno Mountain near the northern end of the San Francisco Peninsula. To the north lies the City of San Franciso and Daly City; to the west the continuation of Daly City and the Pacific Ocean; to the south the cities of Colma and South San Francisco; to the east the city of Brisbane and San Francisco Bay.



REGIONAL LOCATION

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

State land includes 120.5 hectares (297.6 acres) in the gently rolling saddle area north of the summit ridge of the mountain. Elevations range from 500 feet above sea level to approximately 840. State land is currently being managed by San Mateo County Division of Parks and Recreation. San Mateo County land, to the south of the State's holdings, consists of 715 hectares (1766 acres) of steeply sloping land including areas along both sides of the summit ridge of San Bruno Mountain. Elevations range from 250 feet above sea level to 1314 at the Summit. A major property holding for broadcast antennae of 8.5 hectares (21 acres) surrounding the summit is not included within the Park however pedestrian easement rights have been granted to the County. The State land to the north and County land to the south are separated by Guadalupe Canyon Parkway, a four-lane collector road which provides major access to both parks. Freeway access to the Park is available from Interstate 280, to the west in Daly City and from U.S. 101 near Brisbane to the east. Additional vehicular access to the Park is available near its north-west boundary along Crocker Avenue (Daly City). Minor additional vehicular access is also available near the Park's western-most edge at Royce Way, Marshall Way and Hoffman Street in Daly City and at Trinity Road in Brisbane. No direct vehicular access is available along the Park's southern boundary in Colma or South San Francisco.

The project area of the Park is generally undeveloped with the exception of several minor elements:

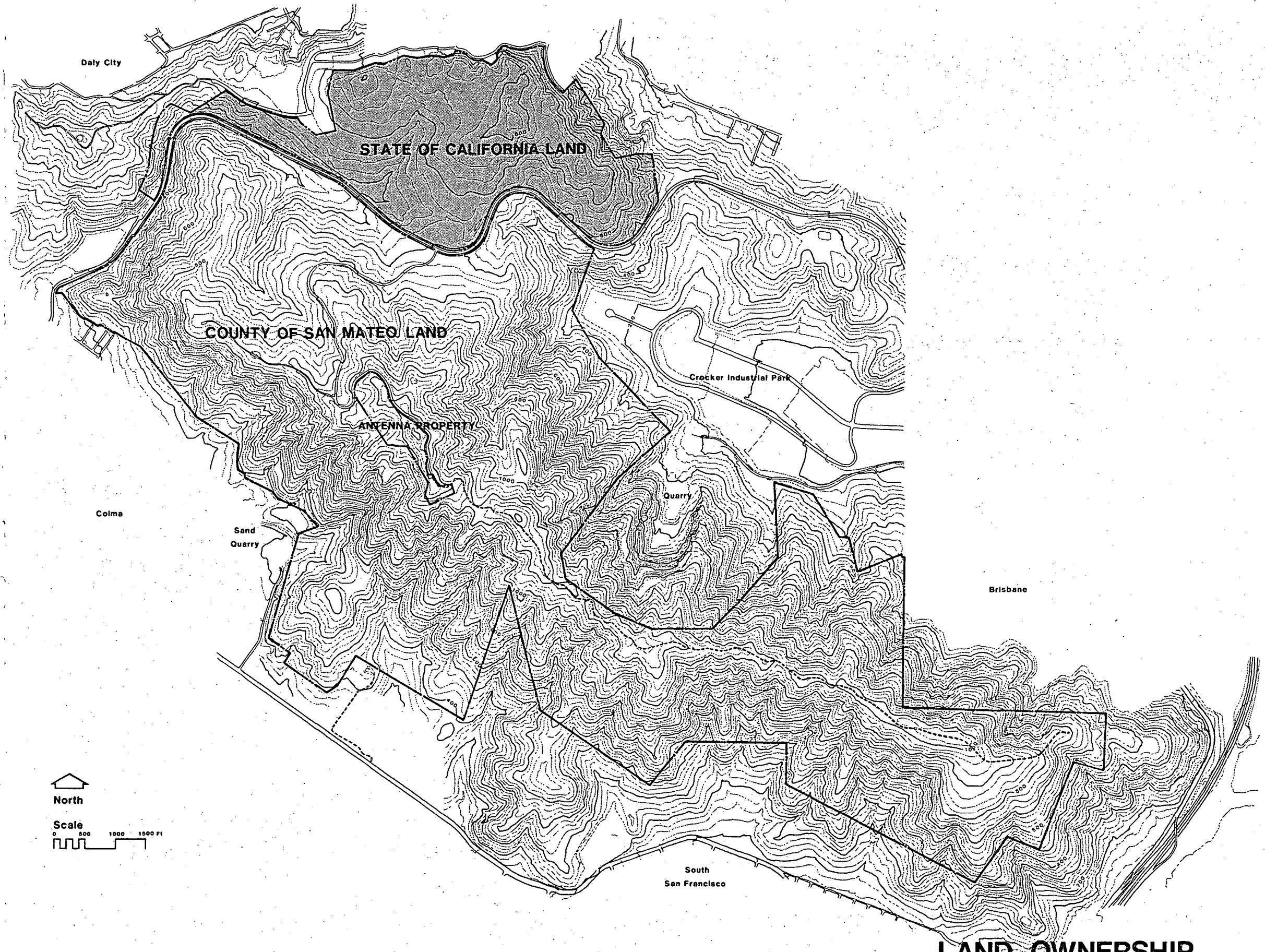
There are a series of radio-TV broadcast towers and transmitter buildings in the property area near the mountain's summit; several buildings at the mountain's west peak that were originally a Nike Missile Launch Site

and temporarily house Park Ranger personnel and two other minor leases; Radio Road, a two-lane paved road connecting Guadalupe Canyon Parkway with the summit ridge; and two high-power electric transmission lines, which traverse the Mountain from north to south. On State land, there is no development, except the remains of Old Guadalupe Road (the main connector between Daly City, Brisbane, and Radio Road prior to the construction of Guadalupe Canyon Parkway). In contrast to the undeveloped character of the Park, the surrounding lands are covered with dense urban/suburban development including residential, industrial and quarry uses.

PROJECT HISTORY

The history of Parks on San Bruno Mountain is complex and the actions leading directly to the current General Plan cover a period of ten years.

In November of 1972, a Charter Amendment was passed by the electorate of San Mateo County to provide funds for the acquisition and development of County park lands over a ten-year period, beginning with the fiscal year 1973-74. This resulted in a Charter for Parks Program in which the Parks and Recreation Commission and the Board of Supervisors of the County of San Mateo selected a number of locations of highest priority for purchase and acquisition. One of these sites is San Bruno Mountain. The selection of park sites was made primarily on the basis of Parks and Open Space, A Program for San Mateo County, the recreation sub element of the Open Space and Conservation Element of the County General Plan. The criteria behind the selection of San Bruno Mountain for acquisition and development, as outlined in the Charter for Parks of July 1972 was as follows:



LAND OWNERSHIP

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

> "Since the Crocker Land Company made public a development plan for San Bruno Mountain, there has been a great deal of study of the regional park concept as currently expressed in the General Plan. This study by both the Parks and Recreation Department and the staff of the Regional Planning Committe, resulted in a recommendation to the Board of Supervisors by both bodies, that the park be located south of Guadalupe Canyon Parkway...
>
> In view of the development plans of the Crocker Land Company and the considerations that are forthcoming from the Local Agency Formation Commission (since completed), and due to its scope in both acquisition and development, we feel that this project deserves high priority consideration."

In December of 1973 the Department of Parks and Recreation issued the San Bruno Mountain Concept Plan, outlining the proposed parkland acquisition and development on the Mountain, and providing preliminary financial estimates and design concepts.

As that Plan constituted a proposal by the County of San Mateo which could have significant environmental effects, an environmental impact report was required. Further, as the Concept Plan is a tentative proposal and not a finalized plan, the environmental analysis was proposed to be prepared in conjunction with a Master Plan for the park.

The original Environmental Impact Assessment and Master Plan process for the county park, lasting from June 1974 until September 1976, covered 1250 acres of land south of Guadalupe Canyon Parkway including the summit area and reaching to Hillside Boulevard in South San Francisco. The south-east ridge, now part of the park, was not included. During this process substantial comment and direction were received by the County and the consultants from a number of Citizen groups including the Save San Bruno Mountain Committee, the Sierra Club, and the city governments of Brisbane, Daly City and South San Francisco. Much of the interest in the

project was caused by major development proposals from Visitacion Associates (Crocker Land) for the construction of approximately 10,000 new residential dwelling units, and new commercial or office complexes in several areas around the mountain including the saddle area, site of the present State Park.

In March of 1978, the San Mateo County Board of Supervisors voted to limit the private development of the saddle area on San Bruno Mountain (see figure 11). The owner sued the County for higher density and lost the suit. This opened the way in 1979 for an appropriation of 5.2 million dollars by the State Legislature to purchase the saddle area for development as a part of the State Park System. The State Land was acquired in July 1980. In 1978, San Mateo County was deeded 221 hectares (546 acres) of land along the south-east ridge of the mountain by Visitacion Associates. In addition, several smaller gifts of land have been made to the County to augment Park holdings. thus the total land area in both State and County ownership is currently 832 hectares (2064 acres).

In 1979, Inouye/Dillingham Landscape Architects and Del Davis Associates Environmental Consultants were hired as master plan/environmental assessment consultants to amend the original (1976) Master Plan and Environmental Impact documents. In September of 1981 An Inventory of Features for the State-owned saddle area was prepared as the first step in the site classification process required of all State Park system land holdings by Division 5 of the Public Resources Code. This process was concluded in December of 1981 by classification of the State-owned saddle area as a State Park by a State Park and Recreation Commission Hearing in San Francisco.

PLANNING PROCESS

As discussed above, the Planning Process for both the San Bruno Mountain State and County Park began in 1973 and has been the subject of a large number of public meetings. The planning process for the original 1976 Master Plan, as described in that document, began with an analysis of the possible "demand", i.e., the kinds of activities and facilities desired - and the "supply" - the site and its physical character. After understanding these two elements as thoroughly as possible, "demand" was matched to "supply", thus making a diagrammatic plan. The diagram was refined and developed into explicit master plan alternatives which were presented at a series of public meetings. Because of the strong natural character of the Mountain and its limitations on any kind of development, the alternative concepts varied in program or use intensity rather than in use of the site. A final selection of the approporiate diagrammatic alternative or combination of alternatives was made at the conclusion of the public meetings. The approved diagrammatic plan was refined and developed into a master plan. The current planning effort has been organized as an amendment of the original master plan -- an amendment to review and update the master plan to incorporate the acquisition of the south-east ridge by San Mateo County and the acquisition of the saddle area by the State. Some consideration was given to the development of two separate plan documents -- A General Plan for San Bruno Mountain State Park and A Master Plan for San Bruno Mountain County Park - but after some discussion with representatives of both the State and San Mateo County Park staffs a combined plan document was deemed most suitable. The reasons for the combined document are:

a) the two park sites are adjacent and contiguous.

b) they have similar resource assets and restrictions.

c) They will be developed and managed as a single unit.

d) their respective topographies and other environmental characteristics strongly suggest that their development complement rather than duplicate one another and, thus, to be clearly understood, must be reviewed as a single unit in one plan.

Resource Element

The purpose of the Resource Element for San Bruno Mountain State and County Park is to establish the long-range resource management objectives and policies necessary to protect and perpetuate the resources for which the park was established. This element identifies significant resource features and establishes guidelines for acceptable levels of development and use. The specific application of these resource management guidelines will require further study, testing and field application. In the long-run a successful program of resource monitoring will help to confirm the specific methods of management to achieve the objectives outlined here.

This resource element is divided into two parts. The first is an Inventory Summary abstracted from the Environmental Impact Element (expanded initial study). The second part of the Resource Element is the policy portion of the document which begins with unit classification of San Bruno Mountain State Park and then extends through specific resource management policies to find the allowable use intensity for various areas of the park.

The following Inventory Summary has been abstracted from the Environmental Impact Element.

NATURAL RESOURCES

Climate

Wind:

Summertime winds at the site, as well as in most of the coastal Bay Area, are dominated by low level westerly winds from the Pacific Ocean. A general diurnal cycle is evident with winds building to a peak in the afternoon and decreasing by nighttime. Although winds are most constant during the summer, the average summer wind speed is lowest.

The wintertime wind speed is more variable in direction but generally blows from the south at the advent of a storm and shifts to west and northwest during the passing of the storm. Winds are generally higher than for the rest of the year although they are more variable. Springtime is transitional to the summer diurnal cycle and fall is the calmest period of the year.

Wind speeds on the mountain have been monitored to some degree with the general finding that the top of the mountain is windier than the surrounding area. Observations indicate that most of the mountain is exposed to strong winds except for a few leeward ravines in the Eucalyptus groves.

Temperatures:

The overall temperature of the mountain is directly affected by its exposure to the Pacific Ocean and to some degree by the Bay. Diurnal

variations are less here than the surrounding area. Temperatures in the 50 degree to 60 degree F. range are most common for the mountain.

Precipitation:

Average annual rainfall on San Bruno Mountain has been estimated at about 56 centimeters (22 inches). Rainfall records indicate a slight precipitation decrease from north to south on the mountain, with the south slope receiving less than the north slope. the overall difference amounts to about 10 centimeters (4 inches) per year.

Fog drip also adds to the total precipitation. As much as 0.75 centimeters (0.3 inches) per year may be expected during the fog-prevalent months although it is probably quickly evaporated and adds little to the soil moisture.

Fog - Local Conditions:

San Bruno Mountain is subject to relatively heavy fog but not as heavy as the coastal area. A quantification of fog occurrence for different areas of the site is difficult to accurately define; however, the southwest and west portions usually receive more fog than the leeward side of the ridgeline. Fog will also commonly penetrate inland further through Guadalupe Canyon. The ceiling height of Bay Area fog is often less than the 396-meter (1,300-foot) summit of the mountain, and the upper elevations often receive sunshine while the lower reaches are enveloped in fog.

Geology and Pedology

Regional:

The formation of the landscape dates back about 130 million years to the

Cretaceous Period (Neil Fahy, from A Flora of the San Bruno Mountains, San Mateo County, California, by McClintock and Knight). At that time, the area was submerged under a sea which has since receded westerly. During this period, there occurred a great deal of deposition of sediment, much of which is evidenced in the landscape today.

Fracture zones resulted from the buckling of the earth's crust and, from this, the movement of earth blocks relative to one another. San Bruno Mountain is one of these elevated fault blocks. There are three active faults in the project vicinity: the San Andreas, the Hayward, and the Calaveras. The San Andreas Fault lies approximately 5 kilometers (3 miles) to the southwest of the Saddle Area. The maximum credible earthquake magnitude along this fault is predicted to be 8.25 (Richter)[1]. Therefore, the maximum groundshaking (bedrock acceleration) on the site is anticipated to be approximately 0.68 g's.[2] The Hayward Fault is approximately 27 kilometers (17 miles) to the east of the site. The maximum credible earthquake along this fault is estimated to be magnitude 7.5[3], and the maximum groundshaking on the site is predicted to be 0.33 g's.[4] The third active fault in the vicinity of the site is the Calaveras Fault, located approximately 42 kilometers (26 miles) to the east. The maximum credible earthquake along this fault is predicted to be magnitude 7.5.[5] The maximum bedrock acceleration would therefore be approximately 0.23 g's.[6]

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[1] Greensfelder, Roger W., 1974, Maximum Credible Rock Acceleration from Earthquakes in California, Division of Mines and Geology, Map Sheet 23.

[2] Schnabel, P.D. and Seed, H.B., 1972, Accelerations in Rock for Earthquakes in the Western United States, University of California College of Engineering, Berkeley, Report #EERC-72-2.

[3] Loc. cit., Greensfelder

[4] Loc. cit., Schnabel and Seed.

[5] Loc. cit., Greensfelder.

[6] Loc. cit., Schnabel and Seed.

DEFINITIONS OF GEOLOGIC TERMS USED IN REPORT

Alluvium	Sediment deposited by running water.
Colluvium	Rock detritus and soil accumulated at foot of a slope.
Dip	The angle of inclination which the bedding plane of rocks makes with a real or imaginary horizontal plane.
Franciscan	Period of geologic time considered to be within the early Cretaceous period 90-100 million years ago.
Greenstone	Any of numerous usually altered dark green compact rocks.
Greywacke	An unsorted sandstone.
Hydrothermal	Formation of minerals by hot solutions rising from a cooling magma.
Metamorphic	Extensive changing of rocks or minerals.
K-Feldspar	Potassium-rich feldspar.
Sedimentary	Rocks formed by the accumulation of sediment.
Serpentine	Mineral or rock consisting essentially of a hydrous magnesium silicate usually having a dull green color and mottled appearance.
Shale	Thinly layered sedimentary rock composed of consolidated mud, clay, or silt.
Shear Zone	Area of fractured rock along a fault plane.
Strike	The direction of a real or imaginary line that is formed by the intersection of a bed or stratum with a horizontal plane; strike is perpendicular to the dip.
Vugs	Small unfilled cavities in a lode or a rock.
Lithologic	The character of a rock formation

Local:

The project site is underlain by relatively well-bedded, steeply dipping, fine to medium-grained greywacke interbedded with shale. The sandstone and shale units have been estimated to be equally abundant[1] to sandstone comprising 80 or 90 percent of the bedrock.[2] The sandstone is more resistant and has formed numerous outcrops throughout the project area. The beds are from several centimeters (a few inches) to six meters (twenty feet) in thickness and tend to fracture and part easily. The general attitude of the beds strike northwest and dip steeply to the northeast.

Hypothermal depostition was noted in several areas on the Mountain and is probably much more extensive than surface depositions indicate. Quartz has lined many of the old fractures in the greywacke, and quartz veins several feet wide were noted in some places. Along the ridge directly above Fern Rock, the quartz is partially composed of amethyst with some vugs rarely displaying crystals. Clear quart crystals are abundant throughout the mountain, and free crystals to 3.2 centimeters (1.25 inches) were noted. Although no minerals of economic importance were noted, serveral small stringers of quartz were prospected for gold in the past.[3]

Local Seismic Conditions:

The San Bruno Mountain block is flanked to the north and south by

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[1] Ellen, S., Wentworth, Carl et al, Description of Geologic Units, San Mateo County, California, U.S. Geological Survey, Miscellaneous Field Studies Map MF-328.

[2] Cooper-Clark & Associates, Consideration of Seismic and Other Geologic Hazards, Visitacion Ranch, San Mateo County.

[3] Huguenin, E. and Castello, W.O., California Mining Bureau Report 17, San Mateo County, 1920, pages 167-179.

northwest-trending faults which appear to be more significant in lithologic structure than seismic risk. Flanking the southern slope of the mountain and crossing a portion of the County Park site located between the golf course and the flower farm is a shear zone associated with gouge materials, serpentine, and metamorphic rock which has been termed the Hillside Fault.

The Hillside Fault does not show evidence of recent displacement, and is generally regarded as inactive; however, no positive statement may be made confirming its activity status.

To the north of the Mountain, passing through Visitacion Valley is the City College Fault. A zone of sheared rock, a maximum of 0.8 kilometers (0.5 miles) wide and 7.2 kilometers (4.5 miles) long, marks the fault location.

Slope Stability:

The San Bruno Mountain greywacke and shale commonly hold slopes of thirty degrees or more with relative competency if undisturbed. Bedrock failure was not observed under natural slope conditions where the material was not highly weathered or sheared. The gouge material along the Hillside Fault is much less stable,[1] and several small landslide deposition areas have been mapped. The Hillside Fault zone appears to be the least competent material within the project area.

A change in the natural slope has triggered slope failure in two places in the road cut along Guadalupe Canyon Parkway and may be indicative of

[1] Brabb, E.E., and Pampeyan, E.H., Preliminary Map of Landslide Deposits in San Mateo County, California, U.S. Geological Survey, Miscellaneous Field Studies Map MF-344, 1972.

lack of competency under certain conditions. One slide occurred in moderately weathered greywacke while the other occurred in the sedimentary sand (Qu) which had apparently been weakened by the seepage common to this deposit. In addition, a portion of the easterlymost travel lane near Reservoir Hill was washed out during a recent storm.

Susceptibility to Erosion:

The erosive process of water runoff does not appear unusual for San Bruno Mountain sandstone. The relatively thin soil mantle on the slopes may have resulted through many years of annual removal by fire of soil-binding vegetation. Entrenched gullies or other indicators of recently-increased erosion were not observed.

The sedimentary sand deposit, which extends across Guadalupe Creek and includes approximately one-third of the State Park area, is loosely consolidated and susceptible to rapid erosion. The introduction of Eucalyptus trees in this area has greatly reduced erosion potential. The Sedimentation study[1] in the Colma Creek Basin indicated relative sedimentation discharge levels for four land use types: (1) Open Space, (2) Urban, (3) Agricultural, and (4) Construction. Guadalupe Canyon was used as a basis for deriving open space sedimentation yields since about 95 percent of this area is open.

Topography

San Bruno Mountain is a northwest-trending promentory approximately 5.6 kilometers (3.5 miles) long and 0.6 kilometers (1 mile) wide.

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[1] Knott, J.M., Effects of Urbanization on Sedimentation and Flood-flows in Colma Creek, California, U.S. Geological Survey Open-File Report, 1973.

Elevations range from sea level to 400 meters (1,314 feet). It is isolated from the Santa Cruz Mountains to the south and Twin Peaks to the north by flat, urbanized terrain. Its isolated nature gives the mountain regional visual prominence. The Park site lies within the Coast Range Geomorphic Province.

The mountain is characterized by two main ridges, bisected on the southeasterly half by Guadalupe Valley. The two ridges join near the Saddle Area. Elevations within the Saddle Area range from 122 meters (400 feet) to 258 meters (845 feet) above sea level, with the majority lying between 200 meters (650 feet) and 240 meters (775 feet). Most of the 120-hectare (297.6-acre) site is gently rolling; approximately 75 percent has slopes of less than 30 percent. A series of knolls situated on the northerly portion of the project site form the rim of a shallow bowl. Within this bowl, the vast majority of slopes are less than 20 percent. Slopes in excess of 40 percent are found on the northeasterly boundary of the Saddle Area and along the filled banks adjacent to Guadalupe Canyon Parkway.

A low-lying depression in the terrain exists in the southerly portion of the site between Old Guadalupe Road and Guadalupe Canyon Parkway. This area tends to retain surface runoff waters, forming a freshwater wetland.

The main ridge of San Bruno Mountain extends from Sierra Point on the southeast side to the urbanized area of Daly City on the northwestern side. Elevations within the County Park range from

approximately 40 meters (130 feet) near the bottom of Buckeye Canyon near the Crocker Industrial Park to approximately 400 meters (1,314 feet) at the top of the ridge. Over half of the County Park contains steep slopes in excess of 50 percent. The steepest areas are generally located on sides of ravines or around the mountain's periphery. Approximately 3 percent of the County Park contains slopes less than or equal to 10 percent. The majority of this slightly sloped area occurs just south of Guadalupe Canyon Parkway near the intersection with Radio Road.

The State and County Park site contain five major drainage units. Because the topography influences the micro-climate zones, precipitation rates, and drainage patterns on the mountain, it has also resulted in the unique ecological systems found within the Park site and immediately adjacent areas.

Hydrology

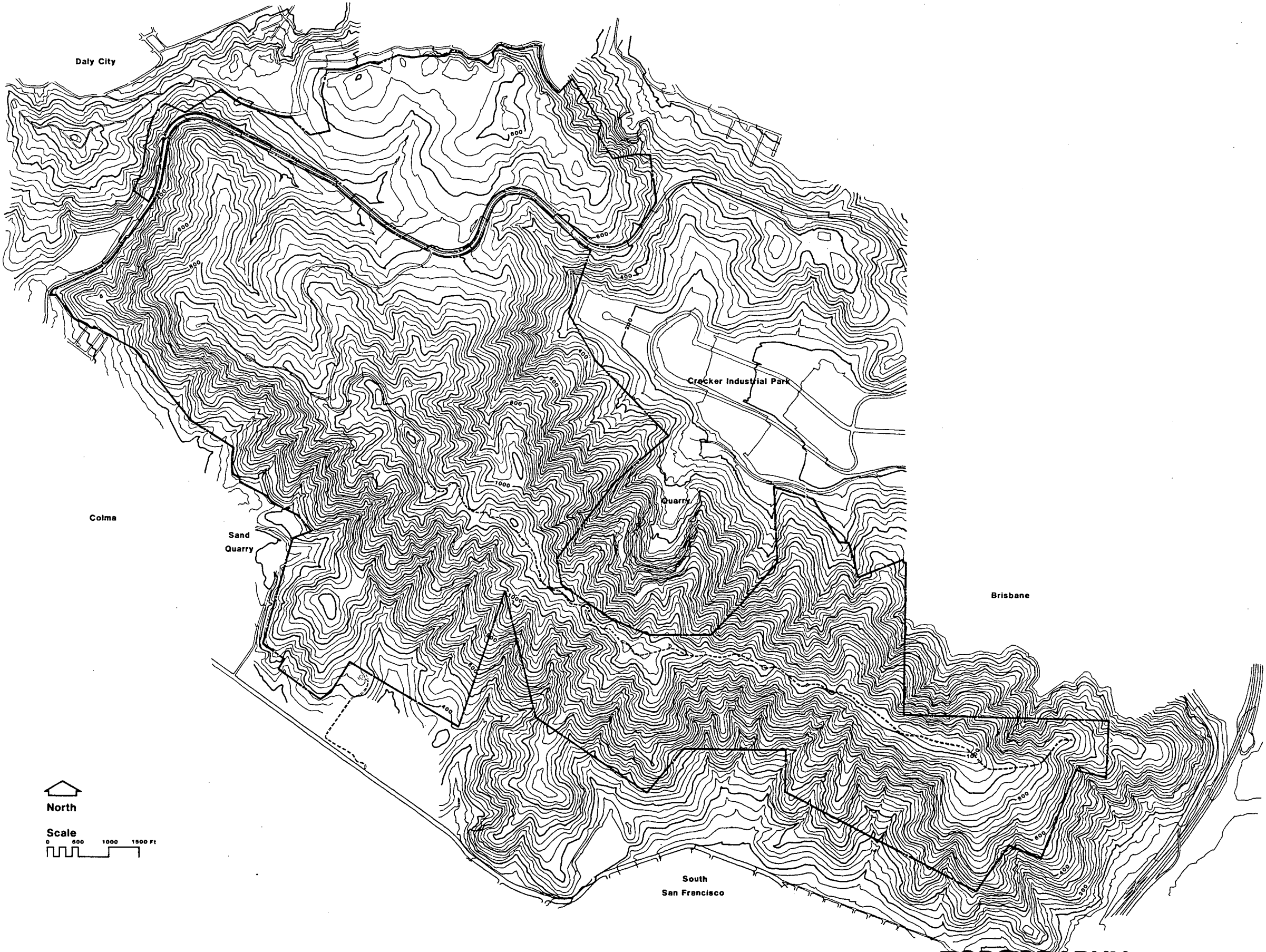
The Park site contains portions of five distinct watershed areas: Visitacion Valley, Guadalupe Valley, Paradise Valley, Sierra Point, and Colma Creek. Development surrounding the mountain has altered drainage pattern in off-site areas to a significant degree.

Extensive studies have been conducted for the local and sub-regional watersheds in the area.[1] These include detailed analysis of potential

[1] Final Environmental Impact Report: San Bruno Mountain County Park, San Mateo County, California, August 1976, Appendix A.

U.S. Army Corps of Engineers, Colma Creek Basin: Report on Standard Project Flood Determination, November 1970.

Knott, J.M., Effects of Urbanization on Sedimentation and Flood Flows in Colma Creek Basin, California, USGS Open-File Report, February 1973.



TOPOGRAPHY

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

peak flows during 100-year storms and projected flooding. These documents are incorporated by reference. Copies are available for review in the Planning Department, San Mateo County.

A summary of the size of the on-site watershed basins is presented below:

Watershed	Total
Visitacion Valley	15.4 ha. (38.0 ac.)
Guadalupe Valley	284.3 ha. (702.6 ac.)
Paradise Valley	108.0 ha. (267.0 ac.)
Colma Creek	403.0 ac. (996.0 ac.)
Sierra Point	24.3 ha. (60.0 ac.)
Total	835.1 ha. (2063.6 ac.)

Plant Life

San Bruno Mountain represents a unique ecosystem which is believed to be resultant of special environmental factors and influences combined with isolation from other natural areas. The net result is the partial preservation of various plants and animals which in all probability once enjoyed a wide distribution over much larger portions of the Bay Area and possibly Northern California. Loss of habitat due to urban development, intensified agricultural activities, micro and macro-environmental changes, and other factors has on a regional level resulted in the expiration of many plant and animal species. San Bruno Mountain, because of its isolation, has become an island or "refuge" preserving a portion of the past.

The biotic conditions existing on San Bruno Mountain have, over the last three decades, been subjected to extensive inventory and analysis. The flora has been the subject of at least five formal inventories plus numerous other incidental inventories by academic institutions and individuals. There has been ongoing research pertaining to rare and endangered insects residing on the mountain and periodic inventories which attempt to verify the existence of a rare and endangered snake. This environmental review presents in summary form the primary findings of those past studies. A partial bibliography is provided. Most prior reports are available for public review in the offices of the San Mateo Office of Environmental Management, Planning and Parks and Recreation Divisions.

San Bruno Mountain is part of the Santa Cruz Mountains which are within the Coast Range Floral Region of the California Floral Province. Thomas describes the Santa Cruz Mountains generally as lying within two life zones: the Upper Sonoran and the Transition.[1] Plant communities, as described by Munz and Keck,[2] which fall into these two life zones include Chaparral, Grassland, and Oak Woodland in the Upper Sonoran; Coastal Strand, Coastal Scrub, Redwood Forest, Mixed Evergreen Forest, and some Grassland in the Transition. The two life zones apparently merge at San Bruno Mountain, with neither designation appropriate for the mountain, since its climatic conditions and plant associations vary from the basic descriptions for the two zones. Of all the plant communities common to the Santa Cruz Mountains, only the Coastal Scrub is sufficiently represented on San Bruno Mountain to be technically termed a "community".

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[1] Thomas, J.H., Flora of the Santa Cruz Mountains of California, Stanford University Press, Stanford, 1961.

[2] Munz, Philip A. & Keck, David D., A California Flora, University of California Press, Berkeley, 1975 ed.

Species of this community are widespread throughout the Park site, north of the main ridge of the mountain. The other plant communities: Grassland, Riparian, and Oak Woodland are partially represented on the mountain. The southerly slopes of the East Ridge area approach a Grassland community. However, due to the absence of various factors inherent to these communities, and the transitional nature of the partial communities with the Coastal Scrub, plant communities more closely describing the associations have been devised for purposes of this plan. In addition, the contiguous nature of the Blueblossom to the Manzanita areas, and the occurrence of other broad-leaf plants, such as Coffeeberry, leads to the conclusion that, as of now, the great expanse of Blueblossom should be considered Chaparral.

The mountain contains a wide diversity of flora. A comprehensive survey conducted in 1968 revealed a total of 564 taxa.[1] Review of that survey indicates that of that 564 taxa 377 are California natives, 14 of which are endemic to the region. Two species, the *Arctostaphylos imbricata* and , are endemic to the mountain. The existence of ten of the plants on the mountain represents a north or south range limit for the species. One specie, *Vaccinium arbuscula* (Huckleberry), is only unique in that its normal southerly limit is in northern Mendocino County.

The following plants have been found on the mountain and are classified

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[1] McClintock, Elizabeth, et al., A Flora of San Bruno Mountains, San Mateo County California, Proceedings of the California Academy of Sciences, IV Series, Volume XXXII, No. 20. November 1978.

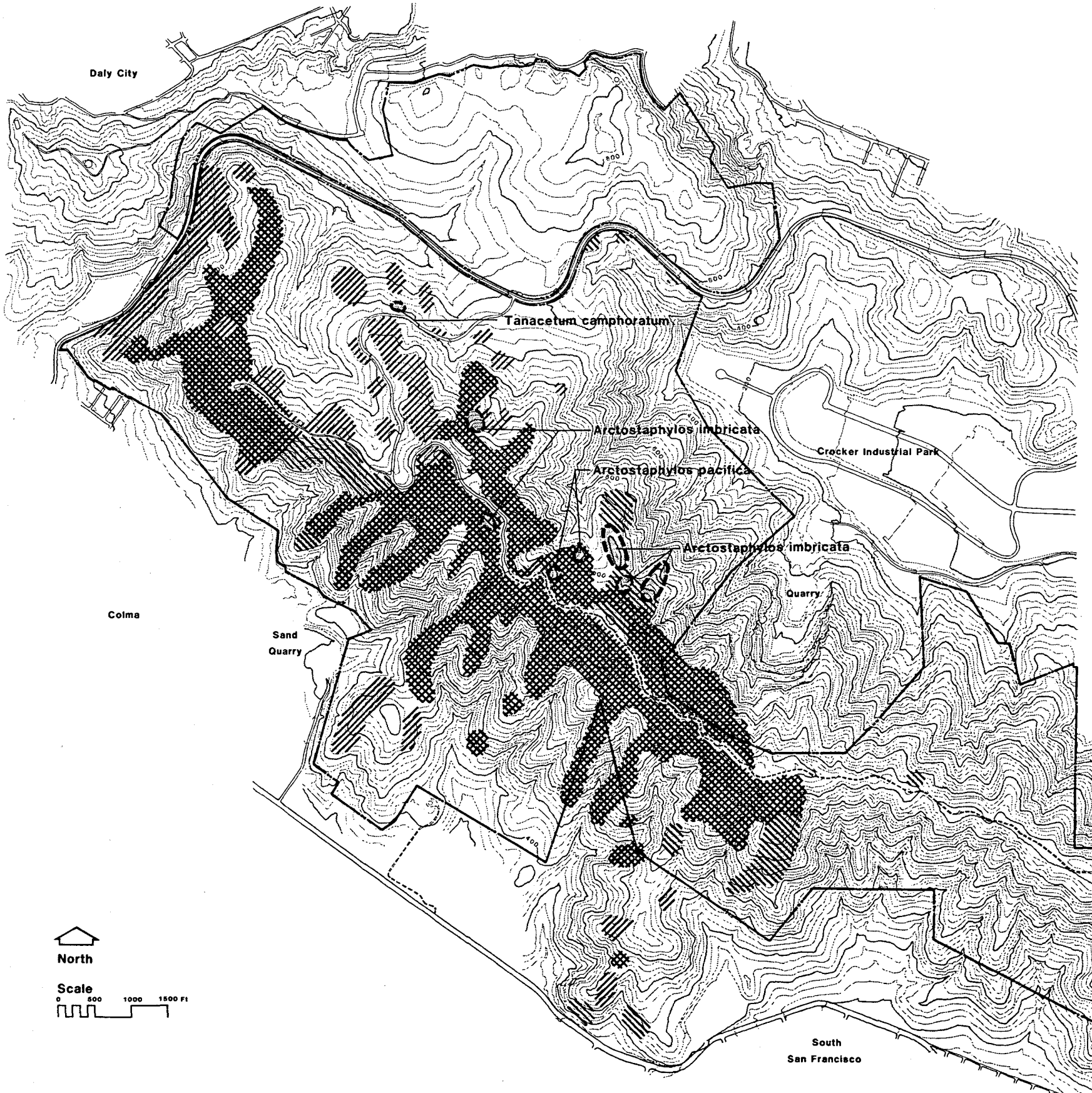
as "rare and endangered" by the California Native Plant Society:[1]

Species Name	Common Name	Habitat
Grindelia maritima	Coast Tarweed	N. Coastal Scrub
Helianthella castanea	Diablo Rock Rose	Grassland
Pentechaeta bellidiflora	White-rayed Pentechaeta	Grassland
Tanacetum camphoratum	Dune Tansy	Coastal Stand
Arctostaphylos montaraensis	Montara Manzanita	Chaparral
Arctostaphylos pacifica	Pacific Manzanita	Chaparral
Arctostaphylos uva-ursi	Bear-berry	Chaparral

In addition, the following plants are classified as "rare" by the California Native Plant Society:

Species Name	Common Name	Habitat
Silene verecunda	Campion	Grassland
Collinsia franciscana	San Francisco Collinsia	Grassland
Arabis blepharophylla	Coast Rock Cress	Grassy slopes and rocky outcroppings
Erysimum franciscanum	Franciscan Wallflower	Open, rocky, or grassy slopes
Clarkia rubicunda	Farewell-to-Spring	Grassland
Chorizanthe pungens	Spine-flower	Sandy areas
Orthocarpus floribundus	Owl Clover	Moist grassland

[1] Note: The classifications "rare and endangered" and "rare" refer to determinations by the California Native Plant Society. "Rare and Endangered" plants are found in List 2 of the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California, Special Publication No. 1 (2nd Edition), April 1980. "Rare" plants are from List 3 of the same publication. It is to be noted that conditions change and some plants are occasionally reclassified as new information becomes available.



LEGEND

- Erysimum franciscanum (San Francisco Wallflower)
- Arabis blepharophylla (Coast Rock-cress)
- Mixture of A. blepharophylla E. franciscanum

RARE & ENDANGERED PLANT SPECIES

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

In the 1981 season, attempts were made to confirm the present status of the *Helianthella castanea, Orthocarpus floribundus, and Silene verecunda.*[1]

None of the three plants was found on the mountain leading to the assumption that they may be expired in that area. The *Silene* was located in an area disturbed by off-road vehicles and the *Orthocarpus* may have died during the drought of 1976-77.[2] The is limited to a single plant and the three *Arctostaphylos* are generally restricted to disjunct locations along the central portions of the Main Ridge.

The mountain, comprising the State and County Park area, as previously stated, is divided into various zones (or loosely, communities) created through a variety of environmental *Tanacetum* the following statements provide a general description of the characteristics of each zone and their distribution.[3] These descriptions provede a general foundation for subsequent environmental planning and analysis.

Grassland

The largest zone of Grassland on the mountain is a mixture of native and introduced grasses, and lies from Tank Ravine easterly, and from the Summit Ridge southerly, so that the entire south-facing ridge is comprised of grasses, or grasses in association with Coastal Scrub. Other pockets of grasses exist at the extreme western end of the park, on the ridge above Hoffman Street, and the knoll adjacent to the access road to the Colma dump, and below the main summit, where the Crocker Communications Center is located. Other smaller pockets exist but seem to be in transition

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[1] Thomas Reid Associates, Endangered Species Study - San Bruno Mountain, Biological Study - 1981, Palo Alto, 1981.

[2] Ibid, p v-s.

[3] The descriptions are abstracted from San Mateo County, The Natural Resources Management Plan for San Bruno Mountain Park, May 1979, pages 1-4.

to Coastal Scrub, indicating the larger areas of Grassland probably existed on the mountain during the many years of cattle grazing and frequent fires. The Grassland areas in the westerly portion of the Park seem to be succeeding to Coastal Scrub. Those along the easterly ridge and the southerly base, above South San Francisco, seem to be fairly stable, although they are predominantly annual grasses which have been introduced. Of the 50 grass species identified to exist on the mountain, 26 are native grasses, while 24 have been introduced. Of the 67 common Grassland species common in the Santa Cruz Mountains, 44 are known to be present on San Bruno Mountain.

Grassland-Coastal Scrub

This zone is composed of recently invaded Grassland. It is by far the most extensive plant zone on the mountain, and can be found in almost every area of the mountain. It consists primarily of Baccharis associated with grasses and herbs, and seems to be in transition to Coastal Scrub. The Baccharis and other Coastal Scrub associated species will probably dominate in not too many years, and the zone could eventually become pure Coastal Scrub. This seems to be most evident on the east ridge and its south-facing slope where, in the drainages, the zone seems to be most dominant, although the Grasslands of the east ridge are probably more stable than those of the westerly portion of the Park.

Coastal Scrub

The predominant Coastal Scrub areas are the April Brook drainage, Wax Myrtle Ravine, and the area westerly and southerly of the quarry. The Coastal Scrub area is dominated by Baccharis, with some California Sage, Blackberries, Poison Oak, and Coffeeberry. The zone appears to be stable

and expanding into the Grassland areas, particularly in the westerly portion of the Park. The main drainages of the southerly slope, easterly to Juncus Ravine, are also dominated by Coastal Scrub.

Chaparral - Ceanothus Dominant

Extensive areas of *Ceanothus thyrsiflorus* (Blueblossom) exist around Devil's Arroyo and Blueblossom Hill on the north slope facing the upper portion of Crocker Industrial Park. Normally Ceanothus is a transitional species for a Mixed Evergreen Forest Zone. However, the species associated with that zone, such as Madrone, Bigleaf Maple,Douglas Fir, and Oaks are not evident. As a result, the Ceanothus ranges from 1 to 3 meters (3 to 10 feet) high, and is very dense, often nearly impenetrable. Small pockets occur along the ridge near the summit, and on the easterly slope of Owl Canyon, indicating that further expansion of this zone could be possible.

Oak Woodland

This is a very limited and restricted zone located in Buckeye Canyon in the east portion of the Park on the northerly slope next to Brisbane. This is the only area of the Park where a significant number of native trees are evident. California Laurel, Buckeye, Oak, and Holly Leaf Cherry, in association with Blackberry, Ceanothus and Coyote Brush, are the primary species in the zone. It appears that protection from high winds, warmer temperatures , some moisture, and the lack of periodic fires may be the reason for the survival of this plant zone as the only one on the mountain.

Riparian

A limited Riparian zone exists within the Park, an indicator of the lack of moisture on the mountain. The largest Riparian zone is Colma Creek, which is fed by springs from adjacent property north of Guadalupe Canyon Parkway, and from an area known as "Summer Seep" or "freshwater bog" as used herein, on the northerly slope of the Park facing Guadalupe Canyon Parkway. The zone is dominated by Willows and other moisture-loving shrubs and herbs, and extends in a very thin band adjacent to Guadalupe Canyon Parkway.

There are two other small but fairly significant Riparian zones. One occurs in Dairy Ravine on the north slope above Crocker Industrial Park, and the other in Sage Ravine on the south slope above the southerly Eucalyptus Grove. Both areas are spring fed. Another minor Riparian zone exists in the most easterly tributary of Poison Oak Ravine.

Disturbed

While this category is not actually a plant zone, a considerable area of the Park has been disturbed or otherwise altered by man. The largest area of disturbance lies adjacent to Guadalupe Canyon Parkway, and easterly of Radio Road. The area is dominated by plantings of Eucalyptus globulus, some Monterey Cypress, and an invasion of Gorse. Another major disturbed area is on the summit, where communications towers exist on a private parcel.

Another major disturbed area is the Southern Eucalyptus Grove, located above the flower-growing areas adjacent to Hillside Boulevard. This grove runs along the southerly boundary and embraces the confluence of Sage

and Poison Oak Ravines. the Eucalyptus Grove was planted many years ago, and the trees are of considerable size. The area also includes a more recent plantation of Silver Dollar Eucalyptus by flower growers in the area.

Other minor disturbed areas include the Eucalyptus plantations at the mouth of April Brook, adjacent to Guadalupe Canyon Parkway, and along the southerly boundary. A small disturbed area at the extreme western end of the main ridge was formerly a Nike Missile Site. This area contains the only structures on Park property, and is currently used as a maintenance center. A major grading effort was required to accommodate this facility. Most of what might have been considered the west peak of the mountain has been graded, and none of the original plant zones are evident, particularly within the fenced area containing the buildings.

Animal Life

Mammals

Extensive inventories of mammals were conducted in conjunction with the preparation of the 1976 EIR. A total of 16 different species of mammals was actually observed with a listing of an additional 18 species which were expected to exist on the mountain because of habitat conditions and historical observations. All mammals observed were common to Bay Area suburban locations and no rare or endangered species were noted or expected to occur on the site. Correspondingly, there is no special breeding or living habitat for mammals existing on the mountain.

Avian Species

San Bruno Mountain has a diversified resident and transient bird population.

The 1976 EIR study, which was conducted in the summer months, reported the observation of 38 different species. An additional 22 species were listed as using the mountain on an annual or seasonal basis. It was noted that the mountain is located within the Pacific Flyway and provides an important stopover for birds in transit. No rare or endangered species were observed or expected to exist on site. The mountain provides nesting sites and food source for the avian population. Extensive nesting sites exist in the scrub, chaparral, and grassland areas. In addition, the Eucalyptus and Cypress provide nesting sites for the resident raptors.

Reptiles and Amphibians

The 1976 survey observed 13 reptile species and 5 amphibians. The reptiles included 5 different lizards and 8 different snakes. All reptiles and amphibians actually observed were of species common to the San Mateo-San Francisco peninsula.

Invertebrates

There are six different butterfly species existing in California which are listed as endangered by the U.S. Fish and Wildlife Service. Two of those California species, the San Bruno Elfin *(Callophrys mossii bayensis)* and Mission Blue *(Plebigus icarioides missionensis)* are located on San Bruno Mountain. In addition, the threatened butterfly species of Callippe Silverspot *(Speyeria callippe callippe)* and Bay Checkerspot *(Euphydryas editha bayensis)* are also found on the mountain. A third threatened species, the San Francisco Tree Lupine Moth *(Grapholitha edwardsiana)* was known to inhabit the sandy dune areas near Reservoir Hill. This latter population was destroyed by urban development occurring within Daly City.

Extensive study of the several butterflies has occurred in recent history. Arnold has been conducting ongoing research and has published status reports for the Mission Blue and San Bruno Elfin.[1] Subsequently, Reid, as technical support to a proposed Habitat Conservation Plan, has conducted extensive studies of the Mission Blue and Callippe Silverspot.[2] This latter study also included the review of the Solitary Bee *(Dufourea stagei)* subsequently discussed herein. Reviewers are referred to the Reid reports for specific details of the scientific studies.[3]

Mission Blue

The Mission Blue population on San Bruno Mountain is concentrated primarily on the southeast ridge with secondary concentrations on the southerly side of the West Ridge area and Reservoir Hill. A major population is also located on the northeast ridge which is outside of the Park and north of the Crocker Industrial Park. The only other known populations are small groups on Twin Peaks in San Francisco and at Fort Baker, Marin County. The butterfly is located on a low density basis in grasslands. The adults are considered to be weak flyers and dispersal is significantly affected by wind. In addition, the butterflies are subject to restriction of migration by barriers such as wide road, brush, tree zones and structures. The bugs were observed to turn away or attempt to go around rather than fly over or through a barrer.

San Bruno Elfin

The San Bruno Elfin butterfly population existing on the mountain is

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[1] Arnold, Richard A., Status of Six Endangered California Butterflies, Ca. Resources Agency, Department of Fish and Game, Sacramento, 1977.

[2] Reid, loc. cit.

[3] Copies of the reports are available for review in the Office of Resource Management, San Mateo County.

located in about five small disjunct areas extending along the main ridge. The westerlymost concentration is located on the ridge near the KQED radio tower. A second habitat area is in the canyon on the westerly slope below the KRON television tower. Other areas are located on the northerly slope near Manzanita Dike, above the quarry, and at the head of Buckeye Canyon. Several colonies also exist off San Bruno Mountain at locations near Montara Mountain.

Callippe Silverspot

The Callippe Silverspot was extensively studied as part of the proposed Habitat Conservation Plan.[1] The subject butterfly is restricted to San Bruno Mountain with approximately 75 percent of the total population concentrated on the southeast ridge. The remaining 25 percent is generally located on the northeast ridge outside of the Park area. The studies disclosed that the Callippe is a strong flyer with migration not uncommon between the two primary habitat areas. They were observed to fly over and through barriers. The male butterflies tend to congregate on the ridge tops with females flying upslope to mate. After mating, the females would return to the lower slopes in search of the larval host plants. Because of these described characteristics, there are areas of high butterfly density or "hot spots" along the ridges and in the vicinity of the larval host plants.

Bay Checkerspot Butterfly

The rare Bay Checkerspot butterfly *(Euphydryas editha bayensis)*, thought to be extinct on San Bruno Mountain, was recently found along the

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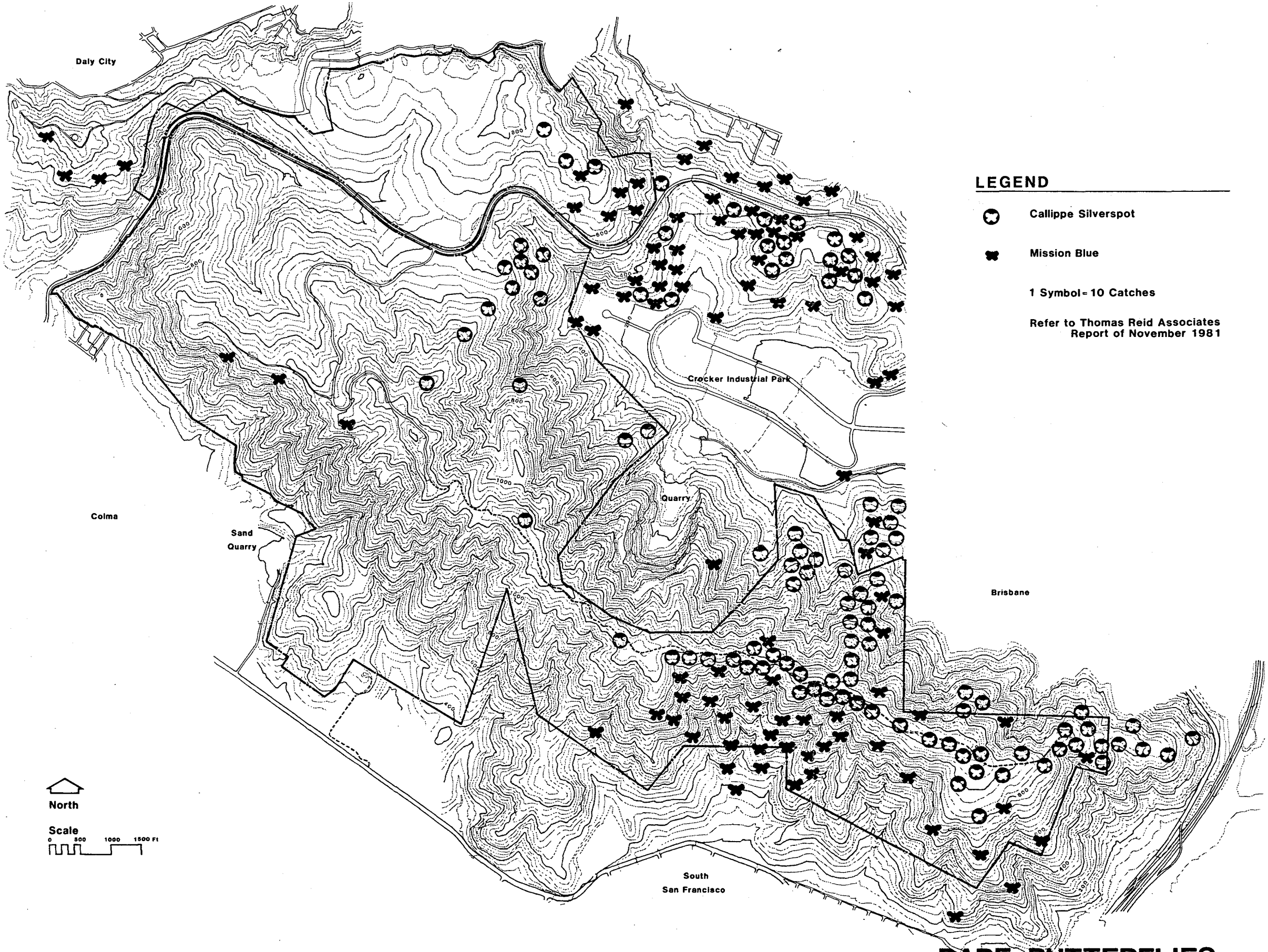
[1] Reid, loc. cit.



LEGEND

Callippe Silverspot

Mission Blue

1 Symbol = 10 Catches

Refer to Thomas Reid Associates Report of November 1981

RARE BUTTERFLIES

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

ridgetop of the main ridge of the mountain about 0.5 kilometers (0.31 miles) west of the eastern transmission line. The only other known colonies of this species exist on Jasper Ridge and at Edgewood. Both areas are in San Mateo County.

San Francisco Tree Lupine Moth

The San Francisco Tree Lupine Moth *(Grapholitha edwardsiana)* is endemic to the San Francisco Bay region. It inhabits the dune areas along the coastline where the Tree Lupine *(Lupinus arboreus)* is found. Historically, on San Bruno Mountain, the San Francisco Tree Lupine Moth was found in the dune area on Reservoir Hill. Recently, however, this population has been destroyed through increased urbanization and degradation of its habitat.

Solitary Bee

The Solitary Bee *(Dufourea stagei)* is a non-colonial bee first collected on San Bruno Mountain by H. Powell in May 1961 and by G.E. Stage in April 1962. Very little is known about the bee's distribution, life cycle, habitat needs, or status as a species, but it is apparently not endemic to San Bruno Mountain, since a specimen has been collected from the hills above Santa Cruz.

CULTURAL RESOURCES

Native American Resources

San Bruno Mountain is located within the ethnographic confines of the area formerly occupied by the Costanoan dialect group, a sub-unit of the Penutian linguistic group. The Costanoan occupied the area generally located south of the intersection of the Sacramento and San Joaquin Rivers with the San Francisco Bay,

west of the Mount Diablo Coastal Range, and north of Point Sur. This area included the southern section of the San Francisco Bay. The Costanoan practiced a hunting, fishing, and gathering economy and traded primarily with the Plains Miwoks, Sierra Miwoks, and Yukuts.

Limited information is available regarding the Costanoans and their culture due to the fact that they were dominated and integrated with other regional Native American cultures in a relatively short period of time by the Spanish/Mexican Mission System. The available information regarding this culture has been derived from a combination of ethnographic records and Mission records and excavation and interpretation of the shell mounds surrounding the San Francisco Bay. The Mission period generally existed from 1770 to 1835. Most Costanoans were recruited to work in the Missions and were sent to either Mission Dolores in San Francisco, Mission San Jose in Fremont, or Mission Santa Clara in San Jose. By the time of the secularization of the Missions, the aboriginal populations were amalgamated into a uniform culture. This process was completed by the westward movement of the Anglo population and the Costanoans were considered exinct as a distinct population group by the late 1920's.

The total Park site has, as part of previous environmental studies, been subjected to archaeological surveys. The original Park site was surveyed in 1974 as a part of the environmental impact studies.[1]

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[1] Wilson, Steven & Deitz, Steven, Report of the Archaeological Reconnaissance of the Proposed San Bruno Mountain County Park, Archaeological Consulting and Research Services, Mill Valley, Ca., June 1974.

The remainder of the current Park area was surveyed as a part of environmental review of the Visitacion Associates' project.[1] The several surveys disclosed that there is one prehistoric Native American habitation site existing within the County Park area. The site consists of a shell midden of approximately 60 x 85 meters (200 x 300 feet).[2] A second previously recorded site existing a short distance outside of the County Park boundary was reconfirmed. There were no other features of prehistoric significance noted within or of influence to the County and State Park areas.

Euro-American Resources

San Bruno Mountain, in the initial historic period, came under the rule of the Spanish Mission System and was used as cattle and sheep grazing rangeland for Mission Dolores de San Francisco de Assisi. In 1821, Mexico declared independence from Spain. In 1824, the new country adopted the Federal Constitution of the United Mexican State. In conjunction with the new Constitution was the secularization of the Pueblo (church) lands and the adoption of the Colonization Act of 1824. This latter act provided for the grant of Ranchos and certain properties to Mexican citizens. Conditions of the grant included the necessity of physically occupying the land including the construction of buildings and the stocking of the area with cattle or other livestock.

[1] Holman, Miley P. & Chavez, David, Archaeological Reconnaissance of San Bruno Mountain, Phase I and II, Adam E. Treganza, Anthropology Museum, San Francisco State University, San Francisco, May 1974.

[2] Locations of the several archaeological sites have been held confidential to prevent possible vandalism. Information pertaining to actual location is on file in the San Mateo County Department of Environmental Management and would be available for review by qualified archaeologists.

In 1839, Jacob Leese, the Brother-in-law of Mariano Vallejo, petitioned for a two league[1] Rancho grant which encompassed Visitacion Valley and San Bruno Mountain. In 1841, the Mexican Governor, Manuel Jimeno Micheltorena, granted the request which was known as Rancho Canada de Guadalupe la Visitacion y Rodeo Viejo. Leese constructed a house which was located in an area which would now be within the City of Brisbane just west of Visitacion Street near Alvarado Street.[2] The Rancho was utilized for raising cattle. Leese soon disposed of the Rancho, which passed to the ownership of others. After accession of Alta California by the United States in 1847 and its subsequent statehood in 1850, the Surveyor General executed land surveys of the ranchos that survived the governmental transition and which were seeking Federal patent. This first attempt at accurately surveying Rancho Canada de Guadalupe la Visitacion y Rodeo Viejo was completed in 1864 when the San Mateo County portion of the Rancho was confirmed to Henry Payson.[3] Cultural features were still non existent on the mountain at this date. A U.S. Coast Survey map of San Francisco Peninsula (1869) indicates that while civilization completely surrounded its flanks, no attempts had been made to settle within the project boundaries. The nearest farms were on the north side of the Saddle Area and in Guadalupe Canyon, the two most viable farming areas on the mountain.

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[1] A league is 1,796.4 hectares (4,439 acres)

[2] Hover, Mildred B., et al, Historic Spots in California, Stanford University Press, Palo Alto, 1966, 3rd ed.

[3] U.S. Surveyor General, 1864. Plat of the Part of the Rancho Canada de Guadalupe las Visitacion y Rodeo Viejo Finally Confirmed to Henry R. Payson.

Charles Crocker acquired the property in the 1870's. After his death, the land passed to the Crocker Estate Company and finally to the Crocker Land Company. During a majority of the early period of Crocker ownership, the property was used for grazing in conjunction with a dairy located within the Visitacion Valley. In recent times, portions of San Bruno Mountain have been developed for light industrial land uses and mineral resources recovery. The Guadalupe Valley area has been developed as a light industrial park providing heavy commercial and manufacturing support services to the urbanized portions of the Bay Area. The old quarry area, located on the north base of the main ridge, has been utilized for gravel and related mineral extraction.

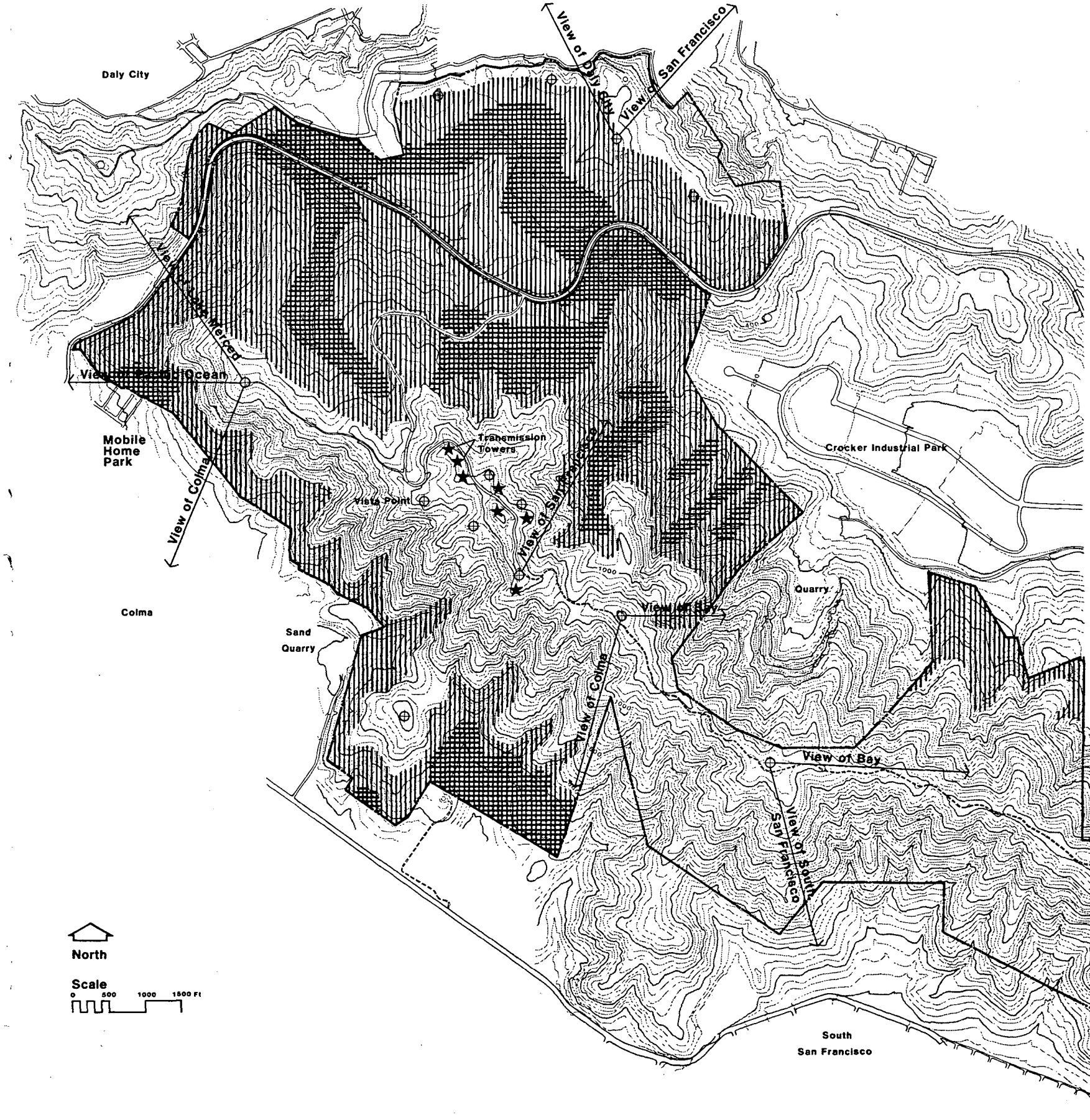
Esthetic Resources

San Bruno Mountain is a significant visual element on the northern portion of the San Francisco-San Mateo County peninsula. Its undeveloped nature contrasted with the totally urbanized area surrounding it provides for strong visual contrast. The mountain itself is characterized as a large green or brown (depending on season) treeless mountain. The interpretation of the form intensifies in relationship to the distance of the observer from the mountain. The long views to the site are disrupted only by the radio transmission towers on the ridgeline when viewed from the north or the south. The southerly view from Visitacion Valley is disrupted in the lower elevations by the Southern Hills Subdivision within Daly City. Correspondingly, the base level views to the southerly side of the mountain are disrupted by Sign Hill within South San Francisco.

Short views are available from Guadalupe Canyon Parkway on the north and Hillside Boulevard to the south. At these close-in locations, the ruggedness and variation in vegetation becomes apparent to the observer. Entering the realm of the mountain from the west on Guadalupe Canyon Parkway, it becomes readily apparent that the north-side slopes are not all grass-covered but a heterogeneous mixture of low-growing shrubs. Continuing up the Parkway, one enters the Saddle Area which is a relatively flat expanse of meadow and trees. The surrounding urban areas are screened, resulting in the perception of a rural setting. As one continues east, the road traverses the grass-covered Guadalupe Hills through Colma Canyon and eventually out of the view of the mountain.

The view of the northern side of the mountain from Crocker Industrial Park is nearly as impressive except for the gaping cavity of the Quarry Products, Inc. quarry. The main ridge is dominant in this viewshed due to its height [approximately 400 meters (1,314 feet) in the uppermost elevation], its scale, and because it projects into air space with only the horizon visible behind. It is to be noted that the view of the main ridge, though impressive, is somewhat degraded due to the existence of several radio towers.

In terms of views from the Saddle Area, the most significant features are the vistas available from knolls in the northerly portion of the site. From these vista points, one can see to the City of San Francisco, Marin County, the San Francisco Bay, Contra Costa County, Alameda County and the East Bay, and the Pacific Ocean. Shorter range views available from the knolls include the Daly City urbanized



LEGEND

- Regionally Visible
- Locally Visible
- Visually Screened

VISUAL ANALYSIS

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

area to the north, northwest and northeast. Candlestick Park, a sports arena, is also visible to the northeast. The foreground includes the Cow Palace, a regional sports and entertainment complex. One pleasing resource in the northerly short-range viewshed is McLaren Park. Situated within the southerlymost portion of the City of San Francisco, this park is developed for recreational purposes and compliments the Saddle Area.

The route from Guadalupe Canyon Parkway to the ridge proceeds through the dense Eucalyptus forest up Radio Road to where the landscape again abruptly become shrubby, and the first sense of altitude is given with a glimpse of San Francisco to the north. At the ridgeline the radio and television transmission structures become strong visual elements. The ridge area projects a stark image of rocky soil and sparse shrubbery. The wind, often fog-laden, is usually blowing with considerable briskness. Views from this vantage point are impressive with much of the urbanized peninsula in sight. The steep nature of the mountain slopes is fully realized from the ridgeline.

A significant focal feature within the internal viewshed in the abundant wildflower display. This colorful mosaic is most vivid in the spring and most color hues are represented. Another on-site focal feature of significance is the abundant avian life. While various species described within the animal section reside on-site year round, both spring and fall afford views of migrant species.

The short view visual characteristic found on the southerly side of the mountain is in significant contrast with the northerly side. Basic vegetated character consists of grasslands interspersed with occasional shrubs. In the immediate foreground the dominant visual elements are Eucalyptus groves, the cemetery, and the flower gardens. The scale of the mountain is a very dominant feature with the ridgeline projecting beyond the cone vision of normal individuals. To become aware of the total height of the mountain, an individual must physically look up. The lack of significant visual points of interest on the south side of the Mountain results in a psychological wall as one proceeds along Hillside Avenue.

Recreation Resources

San Bruno Mountain is surrounded by a large urban population that has one of the greatest per capita demands for outdoor recreational facilities of any in the state. Most of this recreational activity occurs during the summer and weekends.

It is anticipated that most of the active recreation will occur on the saddle area of the mountain because of its level terrain and its sheltered wind location. Additional recreation will occur on the loop trails that have been planned to reach various areas of the Park.

Typical recreation activities that occur on the trails will be: bicyling (where allowed), kite flying, vista viewing, picnicking at specific vista points, and nature interpretive hiking. In addition to these activities, the saddle area can accommodate larger groups of people for picnicking and day camping.

To overcome the limitations of topography and climate, major visitor use areas have been located in the relatively level saddle area of the park. In addition, existing wind rows of trees have been used to shelter many of the outdoor use areas such as picnicking. Additional tree planting will help to protect some new areas such as the day camps.

State Classification:

All lands owned and/or managed by the State Department of Parks and Recreation are classified by the State Parks and Recreation Commission into one of the following categories: State wilderness; State Reserve; State Park; or one of several types of State Recreation units. This is done for the purpose of insuring development compatible with the scenic, historical or environmental character of the site as well as regional recreation needs. The saddle area of San Bruno Mountain was purchased by the State in January of 1979 and was classified by the State Parks and Recreation Commission as a State Park on December 11, 1981. The County portion of San Bruno Mountain does not require State Classification, not being a part of the State Park System. Development in the County area, however, will be generally consistent with State Park Standards.

The Public Resources Code, Section 5001.5 (c) defines a State Park as follows:

> "State parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archeological, ecological, geological, or other such values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of the...ecological regions of California...
>
> Each state park shall be managed as a composite whole in order to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established.
>
> Improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural and ecological values for present and future generations. Improvements may be undertaken to provide for such recreational activities including

but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as such improvements involve no major modification of lands, forests, or waters. Improvements which do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves, or which are otherwise available to the public within a reasonable distance outside the park, shall not be undertaken within state parks.

Declaration of Purpose:

The purpose of both San Bruno Mountain State and County Park is to provide to the public a large, relatively undeveloped open space in the midst of the urban areas of north San Mateo County and southern San Francisco. The Park's benefits to the public are for the enjoyment, preservation and enhancement of scenic, biotic and recreation resources. Approximately 800 hectares (2000 acres) of undeveloped landscape provide a setting for hiking, picnicking, nature and scenic interpretation, rare plant and butterfly preservation.

The function of San Mateo County is to develop and manage the State and County Park in a manner consistent with the Park purposes as well as State and County standards. The function of the State Department of Parks and Recreation is to oversee county use of State lands and insure that such use is consistent with plan purposes and State standards.

San Bruno Mountain State and County Park will be managed by San Mateo County Division of Parks and Recreation. Its management will be generally guided by the goals and objectives outlined in this General Plan and within the broad requirements of preservation and enhancement of the natural features of the parks. In addition, specific policies for management of resources in the Park are given below by resource subject.

Soils Resources

Soils Susceptible to Erosion:

Two areas of unstable, sandy soils have been identified. See Constraint Map, figure 9. With present lack of management activity and indiscriminate traffic by foot and off-road vehicle, some of these soil areas are unstable and not conducive to growth. With the introduction of greater numbers of persons into these areas after park development, unstable soils may be subject to even greater erosion.

Policy:

Existing areas of bare, loose, sandy or wind-blown soil shall be protected from indiscriminate traffic. Any activities by visitors or park staff shall avoid these areas.

Revegetation of these areas shall be made using native or other grass and vegetation species; in particularly difficult areas, other erosion control devices such as netting or hydromulch shall be used.

Erosion from Off-Road Vehicle Use:

The long history of unrestricted access and lack of supervision on San Bruno Mountain have permitted much off-road vehicle use. Vehicular traffic in many areas with thin or no soil has worn away all covering vegetation. This, in turn, has accelerated erosion of downslope areas by increasing the run-off rate of surface water.

Policy:

Areas with erosion from off-road vehicles or other causes shall be returned to pre-existing conditions by: a) limiting the use and traffic of these areas; b) ripping soil, where feasible, to help support plant growth; c) reseeding, hydromulching or other revegetation; d) using other methods as appropriate.

Riparian Erosion:

Some erosion is evident in riparian zones of the park, particularly the April Brook area and Sage Ravine near the south side Eucalyptus area.

Policy:

Check dams, settling ponds and other actions shall be taken to minimize erosion and siltation of riparian zones.

Hydrologic Resources

Fresh Water Bog:

A fresh-water bog has been identified in the saddle area in a zone near the Park Center and Guadalupe Canyon Parkway. While not including any rare or endangered biotic species, a fresh-water bog is somewhat unique and not often found in the Bay Area.

Policy:

The zone around and including the bog shall be protected from uncontrolled circulation by foot or vehicular traffic so that natural features and the ecosystem are protected. Special care shall be taken to identify and protect the spring or other water source that feeds the bog from destruction or pollution. Surface or other run-off from park development areas, particularly roadways, parking lots and leach fields, shall be channeled to other areas and dissipated in a manner that will minimize erosion, and pollution while recharging ground water.

Plant Resources

Rare and Endangered Plants:

The most significant natural features on the mountain are perhaps the rare and endangered plant and insect species. Seven plant species are listed in the California Native Plant Society's listing of rare and endangered vascular plants. These are: Arabis blepharophylla (Coast Rock Cress);

Arctostaphyllos Montarensis (Montara Manzanita); Arctostaphyllos pacifica (Pacific Manzanita); Arctostaphyllos imbricata (San Bruno Mountain Manzanita); Erysimum franciscanum (Franciscan Wallflower); Orthocarpus floribundus (San Francisco Orthocarpus); Tanacetum camphoratum (Dune Tansy). Although Coast Rock Cress and the Franciscan Wallflower are considered rare and endangered, they are prevalent all over the mountain. The Coast Rock Cress is the host plant for the larva of a butterfly known as the San Bruno Elfin, also on the endangered species list.

Policy:

Impacts of development and human use shall be minimized upon examples or areas of known rare and endangered plants. Trails and other circulation shall be routed so that they minimize intrusion of these areas. No signing or other indication shall call-out the location of the rare and endangered plant life.

A program of monitoring the rare and endangered plants shall be undertaken by the Park Naturalist or other staff in order to note changes of either a positive or negative character. A record of the monitoring shall be kept in written and/or photographic form.

Exotic Eradication

Because of San Bruno Mountain's proximity to urban areas and its history as an occasional dumping ground, a number of exotic plant species are growing and activively invading a number of areas on the mountain in the Park.

Eucalyptus and Monterey Cypress:

Old stands of Eucalyptus (Eucalyptus globulus) and Monterey Cypress (Cupressus macrocarpa) are growing in various areas of the park. Monterey Cypress has been only slightly invasive but the Eucalyptus trees are rapidly spreading in the area.

Policy:

Measures shall be taken to limit the growth of Eucalyptus and Cypress groves. Existing mature trees shall be allowed to remain but new seedlings within the groves as well as at edges and open areas shall be permanently removed. Over the years, existing groves shall be thinned to permit better growth of individual trees and allow more light at ground level for understory growth. Care shall be taken to preserve hedgerow tree patterns for wind shelter in the areas of the park center, picnic areas and day camps.

Ivy and German Ivy:

Areas under existing Eucalyptus groves have been filled and over-run by the growth of English Ivy (Hedera helix) and German Ivy (Senecio mikanoides). Although plant growth under Eucalyptus is often very limited, Ivy and German Ivy have eliminated all potential for other plant life.

Policy:

English and German Ivy shall be removed and eliminated from all areas within the park. A program of elimination shall proceed area by area in order to restrict reintroduction of these plants.

Gorse, Broom and Pampas Grass:

Gorse (Ulex europaea) is the most invasive,active and toughest of the exotic plants on San Bruno Mountain. Its prolific nature, its thorny foliage and its hardy root-stock make it difficult to eradicate. Experiments by the State Agriculture Extension Service and the County Park staff have found few ways to permanently halt growth. Application of commercial herbicides such as "Round-up" have been only marginally successful. The most effective methods of eradication found to date are multiple burnings and digging-out of root stocks. The California Department of Forestry maintains a chapparal control program through burning and has indicated a willingness to assist in the control of Gorse on San Bruno Mountain.

Broom (Cytisus scoparius) and Pampas Grass (Cortaderia selloana) have also been extremely invasive but not to the same extent as Gorse. One of the reasons for this difference is that Broom and Pampas Grass are only beginning to invade. It is, therefore, critical to undertake eradication and control measures as quickly as possible.

Policy:

Gorse, Broom and Pampas Grass plants and communities shall be controlled and removed as quickly as feasible. Highest priority for removal shall be given to areas where rare and endangered plants or butterfly habitat are threatened. Human use areas and water courses shall also be given high priority. In order to minimize reintroduction of areas where Gorse has been previously removed, adjacent and contiguous areas shall be treated as a unit whenever possible.

Riparian Vegetation:

Some existing riparian zones and vegetation have been damaged and invaded by exotic plant species.

Policy:

Riparian zones shall have existing exotic vegetaion, as discussed above, removed and replaced with native riparian vegetation such as Arroyo Willow, Sword Ferns, California Bay and others.

Animal Resources

Rare and Endangered Butterflies:

2 rare and endangered butterflies are known to fly in various areas of San Bruno Mountain.

Policy:

All efforts shall be made to encourage and protect the rare and endangered butterfly populations on San Bruno Mountain. Known habitat areas shall be protected from indiscriminate circulation and host plants shall be protected and encouraged. Habitat areas and butterfly colonies shall be monitored for positive or negative changes.

Natural Water Sources:

Because the majority of San Bruno Mountain is dry and has limited water, riparian zones with available water year-long have an important role in protecting and encouraging animal life, as well as maintaining important plant communities.

Policy:

Year-round moist areas shall be protected from uncontrolled circulation. Future park development shall be restricted from riparian zones whenever possible in order to leave these zones available for wildlife. Development of ground and surface water resources for park uses shall be discouraged.

Feral and Domestic Animals:

Because of the close proximity of urban development to the park, feral and domestic animals, especially cats, are frequently found in the park. Feral animals hunt and disturb native wildlife.

Policy:

Feral and domestic animals shall be controlled and removed from the park.

VISUAL RESOURCES

Preservation of San Bruno Mountain's 'Natural' Appearance:

The generally open, natural character of San Bruno Mountain is one of its great resources to the surrounding zones of development.

Policy:

In the planning and construction of future park facilities, great care shall be taken to minimize their appearance and visual impact on surrounding areas. Whenever practical, facilities shall be located in zones screened from surrounding development. Native plantings and design shall be used to hide or soften exposed visual impacts.

ALLOWABLE USE INTENSITY

Allowable use intensity is an estimation of the carrying capacity of a piece of land and is a means, required by law for State Park planning, to formulating a land use plan. Allowable use intensity is determined by analysis of three elements: management objectives; visitor perceptions; and potential environmental impact of development.

The management objectives for San Bruno Mountain State and County Parks are detailed under the "Resource Policy Formation" section of this report but generally include protection of the existing natural environment while permitting light use by the public for enjoyment of the site's resouces.

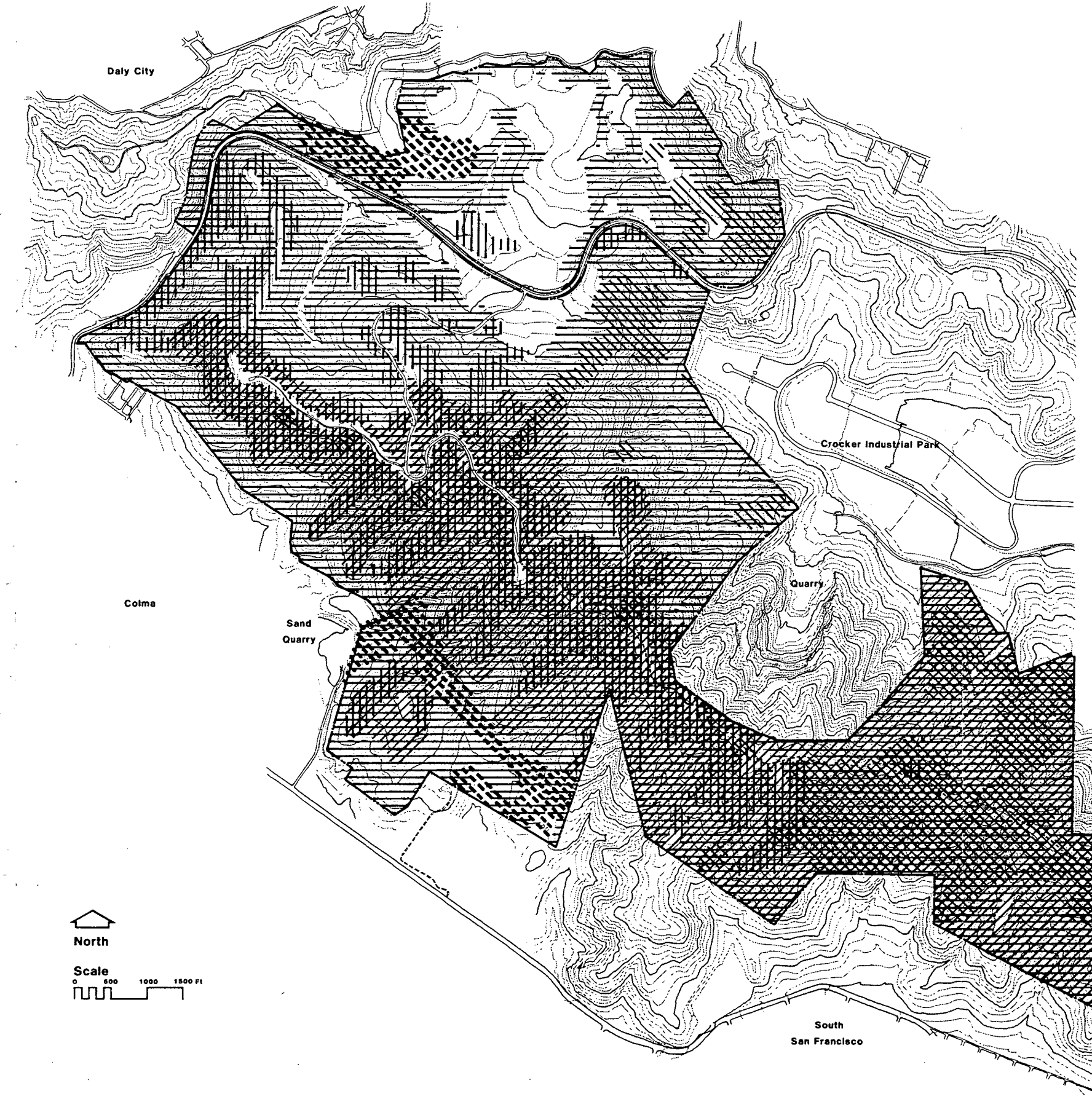
The second component, visitor perceptions and attitudes, involves assessing the social objectives of the State and County agencies, what park visitors perceive as an acceptable recreation environment, what degree of isolation or crowding is acceptable and other perceptions and attitudes pertaining to the quality of the visitors' recreation experience.

The third and most important component in determining allowable use intensity involves an analysis of the natural, cultural and esthetic resource to determine the area's physical limitations for development of facilities and the ability of the ecosystem to withstand human impact (ecological sensitivity). This analysis is based on a number of considerations, including: cultural and esthetic resources' sensitivity; soils and their erodability and compaction potential; geologic factors such as slope stability and relief; hydrologic considerations including the potential for pollution of surface waters,

flooding, and depleting surface and ground water through water use; vegetation characteristics such as durability, fragility, wildfire hazard, and regeneration rates; and wildlife considerations such as tolerance to human activity, wildlife population levels, and stability. Additional considerations in determining ecological sensitivity are: rare and endangered plants and animals; unique biotic features or ecosystems; and examples of ecosystems of regional or statewide significance.

Based upon the 'Inventory Summary' and other environmental investigations, a Constraint Map for San Bruno Mountain State and County Park has been compiled. This Constraint Map, Figure 9, summarizes the various environmental elements which would limit or constrain potential recreation development of any great magnitude such as roads, parking, larger picnic facilities, etc. As shown on the Constraint Map, major limitations to development are: steep topography - slopes in excess of 15%; rare and endangered plant life; rare and endangered butterfly habitat; sandy soils susceptible to rapid erosion and destabilization; and high visibility from surrounding regional or local areas. From a compilation of these various constraints, only one major area, in the saddle adjacent to Guadalupe Canyon Parkway, is suitable for park center development. Other minor areas along the mountain's ridge are also suitable for limited development such as picnicking or vista points.

From the Constraint Map and the environmental inventory, allowable use intensities for San Bruno Mountain were detemined and are shown on the Allowable Use Intensity Map, Figure 10. Four classes are shown, ranging from low to high.



LEGEND

- **Plant Constraints**
  Freshwater Bog
  Rare & Endangered Plant Species
- **Wildlife Constraints**
  Habitat Area of Mission Blue and Callippe Silverspot
- **Topographic Constraints**
  Slope Areas above 15%
- **Visual Constraints**
  Areas exposed to Regional Visibility
- **Geological/Soil Constraints**
  Fault zone and unstable soil area

CONSTRAINTS

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

LEGEND

1 No formal trails, roads or site facilities.

2 Trails for hiking, equestrian or bicycle use.

3 Trails for hiking, equestrian or bicycle use. Light use roads and small parking facilities. Small picnic areas.

4 Trails for hiking, equestrian or bicycle use. Light to moderate use roads. Moderate-sized parking areas. Picnic areas, park center, nature interpretive center, maintenance area.

ALLOWABLE USE INTENSITY

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

Land Use and Facilities Element

The following discussion has been abstracted from the Environmental Impact Element.

As shown on the Surrounding Area map, the San Bruno Mountain State and County Park is bordered by the cities of South San Francisco, Colma, Brisbane, and Daly City. For purposes of analysis, only land uses within proximity to the park site are reviewed here. The approximate area of interest may be defined as the area located within the following boundaries: beginning at a point located just east of the Bayshore Freeway (U.S. 101 Freeway) at the San Francisco County/San Mateo County border, proceeding clockwise along the shoreline of the San Francisco Bay, around Sierra Point, Oyster Point, and Point San Bruno, along Colma Creek to Mission Road, to El Camino Real and Mission Street, to the San Mateo/ San Francisco County line, and eastward along that line to the point of beginning. This entire area is located within San Mateo County.

South San Francisco

South San Francisco is nearly evenly balanced between industrially-zoned land and residential land. Oyster Point and Point San Bruno are major industrial centers of the City. Point San Bruno also includes the California National Guard facilities. Land use west of the Bayshore Freeway (U.S. 101 Freeway) consists primarily of residential development. Exceptions include the central business district and Sign Hill, which is under development as a city park area. The southern slope of Sign Hill contains the large inscription "South San Francisco, The Industrial City" which is seen from the north-bound lanes of U.S. 101.

A large amount of office, visitor commercial, and light industrial development is proposed, approved, or occurring within the Sierra Point area and the Oyster Point area. In addition, a small (227-berth) marina is in the process of final review by the San Francisco Bay Conservation and Development Commission. While these projects will not significantly affect the environment of the Park, the additional population induced into the area will increase Park usage. There is a potential for a future open space trail link connecting the Sign Hill Park with San Bruno Mountain. This trail connection will be dependent upon final private development plans for the South Shore area.

Colma

Colma has a relatively small population of 395 persons (1980 Census), residing primarily around the periphery of the City. Land use consists of residential, cemeteries, and some mixed agriculture. There are no development proposals within the City which would exert a significant effect upon the Park or vicinity.

Brisbane

Brisbane is a small incorporated city of 590 hectares (1,460 acres) and has a current population of approximately 3,970 persons (1980 Census). Located on the northeasterly fooothills of San Bruno Mountain, Brisbane is characterized by a high percentage of industrial uses and vacant land in comparison to residential development. Residential use within the City is primarily of the single family type and there are large undeveloped holdings within the Visitacion Point area and the Sierra Point area.

The Sierra Point Office Park has been approved for development of 7

buildings totaling approximately 92,910 square meters (1 million square feet). Construction has started and will be completed in 6 to 8 years. In addition, the City is constructing a marina on Sierra Point. It is not expected that these projects will result in significant direct effects upon the Park although Park usage may be slightly increased.

Daly City

Visitacion Valley Area

Daly City extends around much of the northerly and westerly sides of San Bruno Mountain. North of the Park, land use consists of mixed residential and commercial development. Included within this area is the Cow Palace, an exposition and entertainment facility which encompasses approximately 33.8 hectares (83.5 acres). Within the Visitacion Valley area, the Midway Village project, formerly utilized for housing Naval personnel, has been redeveloped to provide 150 low and moderate income housing units.

Central Daly City

The portion of Daly City located west of San Bruno Mountain is composed primarily of residential neighborhoods and represents a continuation of land use patterns found within the southerly portion of the City of San Francisco. Along Mission Street, the major arterial, there are anumber of commercial developments. Residential use is predominantly single family although there are recent trends towards development of two and three-story multi-family residential structures.

San Francisco

Although not directly contiguous to the Park site, the City of San Francisco

is located within approximately 460 meters (1,500 feet) of the northerly border of the Park. Population concentrations as well as the intensity of residential, commercial, and industrial land use within San Francisco will exert a significant recreational demand upon the Park.

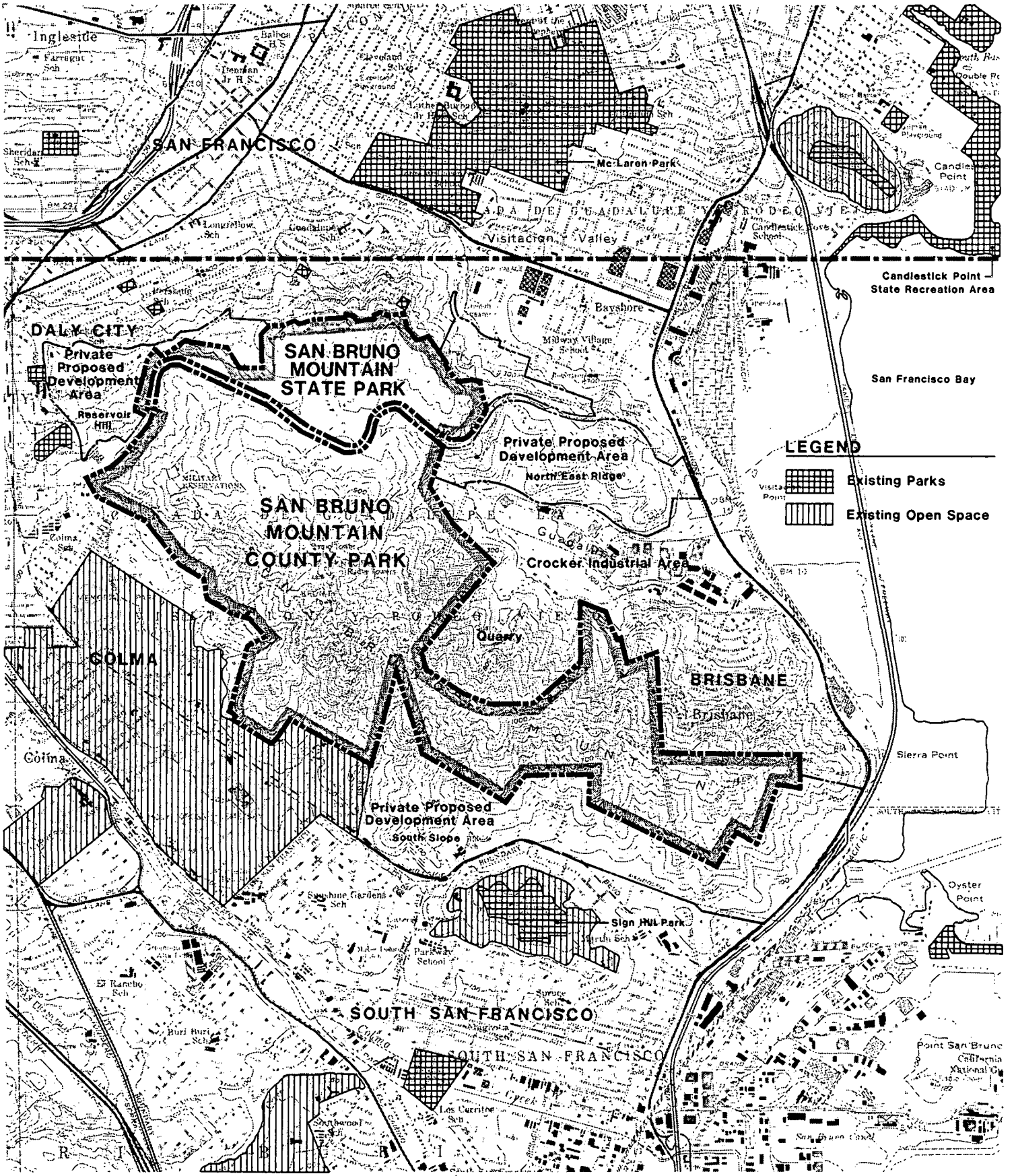
Immediate Park Area

San Bruno Mountain consists of approximately 1,455 hectares (3,600 acres). Slightly less than 60 percent of this area is included within the San Bruno Mountain State and County Park site; the remainder is held in private ownership.

The Crocker Industrial Park is located in Guadalupe Valley on the north-eastern side of San Bruno Mountain. The 136-hectare (335-acre) industrial park is located in unincorporated territory. The Guadalupe Valley Municipal Improvement District was formed for the provision of essential services; the District contracts with outside agencies for both police and fire protection.

South of the industrial park is a 32.4-hectare (80-acre) rock quarry operated by Quarry Products, Inc. The lease for this use is reviewed for renewal each year; review for renewal of the County Use Permit is also conducted at that time. There have been ongoing discussions with the operator regarding reclamation of the quarry and eventual phasing out. At present, no definitive time schedule for the phase-out has been established.

On the lower southerly slopes of the mountain in the area north of Hillside Boulevard and north of Lincoln Street is Hillside School. Farther to the west, there is a flower farm located south of a large stand of eucalyptus trees near Poison Oak and Sage Ravines. West of the flower farm



SURROUNDING AREA

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

lies a sand quarry. Within the next year sand quarry operations are scheduled to expand into the flower farm area. Operations there are expected to last two or three years. Eventual use of the flower farm is proposed for expansion of Holy Cross Cemetary. Adjacent and to the south of the present sand quarry is Cypress Hills golf course. A mobile home park is situated northwest of the sand quarry and forms a portion of the northwesterly park boundary.

Farther to the north in the area west of Guadalupe Canyon Parkway and west of the Park boundary, located on Reservoir Hill, is a large reservoir owned by the City of Daly City. In the area south of this reservoir lies the Kennedy School.

The area north of the Park site contains a significant amount of vacant land whose jurisdiction is divided between San Mateo County and the City of Daly City. As described in the subsequent section, much of this vacant land is proposed for future development.

Proposed Development

San Bruno Mountain and its immediate vicinity represent some of the last remaining undeveloped land in the north San Francisco peninsula area. Within that vacant area, there are a significant number of development projects which are either proposed, approved, under consturction, or in various stages of environmental review. The following description highlights only those developments which will be located on the mountain itself or in the immediately adjacent area and which will exert an influence upon the habitat of San Bruno Mountain and the use of the Park. It is to be noted that there are other projects within the jurisdictions of South

San Francisco, Daly City, and Brisbane which, while not expected to exert an influence upon the San Bruno Mountain habitat area, will indirectly influence usage of the Park through the inducement of additional population into the surrounding area. For specific informatin regarding projects not listed blow, reviewers are referred to the Planning or Community Development Departments of these respective cities.

The following information provides an understanding of potential development which is likely to occur on San Bruno Mountain within the near future. This listing of projects begins in the northerly area near the Cow Palace and should be reviewed in conjunction with the Surrounding Area Map, Figure 11.

1. Carter-Martin Extension - The City of Daly City has current plans to extend a single roadway from Carter and Martin Streets near the Cow Palace to an intersection with Guadalupe Canyon Parkway near the northeast ridge. It is estimated that the roadway and associated grading would involve approximately 6.9 hectares (17 acres).

2. Rio Verde Estates - It is proposed to develop 424 residential units on 13.4 hectares (33 acres) of land surrounding the Carter-Martin extension described above. As yet, the mix between dwelling unit types is indeterminate. The agency of Jurisdiction is Daly City.

3. Rio Verde Heights - The developer of Rio Verde Estates also proposes to construct a residential project containing 208 townhouses on 6.9 hectares (17 acres) of land in the area east of the Carter-Martin extension and the Rio Verdes Estates project. Daly City is the agency of jurisdiction.

4. Vacant Land (Within City of Brisbane) - Within this portion of the City, there are approximately 20 hectares (50 acres) of land located north of Guadalupe Canyon Parkway, east of the Daly City city limits, south of Main Street, and west of Bayshore Boulevard. At present, no proposals for development have been received by the City. Although this area does contain significant constraints to development such as steep slopes and an above-ground water aqueduct, there is potential for some light industrial or commercial development which would serve as support for the Southern Pacific holdings to the east.

5. Northeast Ridge - One hundred and twenty five hectares (310 acres) north of the Crocker Industrial Park and south of Guadalupe Canyon Parkway are proposed for development of approximately 1,250 dwelling units. This area, while located within the Brisbane Planning Area, is under the jurisdiction of San Mateo County.

6. Buckeye Canyon - Approximately 12 hectares (30 acres) of private land in the lower reaches of Buckeye Canyon between the rock quarry and the City of Bisbane are proposed for development of a light industrial park. A schematic land use plan calling for development of offices and warehouses has been submitted to the County for consideration. These private holdings are within the Bisbane Planning Area but are under the jurisdiction of San Mateo County.

7. Brisbane Acres - Approximately 47 hectares (115 acres) located on the mountain above the City proper and within the Brisbane city limits have been subdivided into large lots. Ownership of these properties is scattered and there are no current significant development proposals.

8. South Slope - A private developer has proposed that 134 hectares (330 acres) on the south slope of San Bruno Mountain in the area north of Randolph Avenue and east of the Bayshore Freeway be developed for residential/commercial purposes. The proposal calls for development of a residential area containing 93 hectares (230 acres) of which 42.5 hectares (105 acres) are proposed for development and 50.5 hectares (125 acres) are proposed for open space. Within the residential area, there would be a total of 745 dwelling units consisting of 381 townhouses, and 102 condominiums. within the non-residential area 30.4 hectares (75 acres) are proposed for open space while 10.0 hectares (25 acres) are proposed for development. The conceptual development plan calls for a total of 19,511 square meters (210,000 square feet) of office space and one eight-story hotel containing 200 rooms. At present, the City of South San Francisco and San Mateo County are in the process of developing a Specific Plan for the area. An EIR is also in the process of preparation for the project.

9. Hillside Boulevard Extension - In order to provide vehicular circulation within the proposed South Slope development area, a project concurrent with the development described in #8 above would consist of extending Hillside Boulevard or a new roadway eastward from the intersection of existing Hillside Boulevard and Randolph Avenue. The new roadway would be parallel to Randolph Avenue and would consist of four travel lanes.

10. Reservoir Hill - A total of 322 residential dwelling units have been approved in the hill area west of the Park site. These units would consist of 304 townhouses and 18 single family units. The

majority of this land is located within Daly City but a portion is located within the County.

11. Crocker Avenue-Guadalupe Canyon Parkway Connection - Although there are no substantive public works proposals, a representative of the City of Daly City has indicated that there have been on-going planning discussions regarding the eventual connection of Crocker Avenue and Guadalupe Canyon Parkway. Due to the preliminary nature of planning for this project, no precise connection points have been established although it would be reasonable to assume that the connection point would be in the area east of Reservoir Hill.

12. Visitacion Residential Project - Although no specific development proposals have been submitted, County plans would permit development of approximately 47 single family lots on 1.6 hectares (4 acres) located east of South Hill Boulevard. Annexation to the City of Daly City is pending and it is likely that specific development proposals will be forthcoming.

13. Brisbane School District Property - Seven and a half hectares (19 acres) located north of Crocker Avenue, east of South Hill Boulevard, and west of the Park site are proposed for development of 210 residential units. Annexation to the City of Daly City will be forthcoming in the near future.

EXISTING LAND USE WITHIN PARK AREA

Generally, the San Bruno Mountain State and County Park site is undeveloped with the exception of several minor elements. Within the Park site, manmade features are restricted to the remnants of old Guadalupe Road which was the main connector between Daly City, Brisbane, and Radio Road prior to the construction of Guadalupe Canyon Parkway. Where remnant pavement still exists, it is in poor repair. There are several stretches which are either graded dirt or which have been graveled. Generally, this roadway is inaccessible to conventional automobiles but it can be negotiated with four-wheel drive vehicles. Old Guadalupe Road intersects with Guadalupe Canyon Parkway opposite the point of the Radio Road intersection.

Historical usage of lands within the County area of the Park has been more extensive than that of the State area (Saddle Area). Radio Road proceeds southward from its intersection with Guadalupe Canyon Parkway as a two-lane paved road. Access to Radio Road from Guadalupe Canyon Parkway is controlled by a gate which is locked at night. Radio Road then proceeds along a circuitous alignment to Summit Ridge. At the Summit Ridge there is a series of nine radio and television broadcat towers. Leases for the transmission towers were initially issued in the 1950's; the renewal dates and length of renewals vary. There are five structures in this summit area which are related to the transmission towers. Near the easterlymost tower the paved road terminates at a locked gate. A dirt road extends from this gate along the southeast ridge.

At a point approcimately 210 meters (700 feet) west of the transmission towers, a single-lane paved roadway extends westward from Radio Road to

a former Nike base currently used as a park center. Access from Radio Road to this service road is secured by a locked gate. At the westerly terminus of this roadway there are three structures, temporarily housing Park Ranger personnel and two small lessees providing short-wave radio relay.

There are three power line easements which traverse the Park site. One of these easements extends from the general vicinity of the intersection of Holly Avenue and Hillside Boulevard in a north/northeasterly direction to the vicinity of the Cow Palace. Another power line easement traverses the site in a southeasterly direction from the westerly most portion of the Park site (near Royce Avenue) to an intersection with the power lines described above. The third power line easement crosses the most easterly portion of the Park site and extends northward through the Crocker Industrial Park and beyond to the Geneva Avenue/Bayshore Highway vicinity.

EXISTING CONDITIONS

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

Region:

San Bruno Mountain State and County Park is located in northern San Mateo County within an hour and a half travel time from most Bay Area residents. San Bruno Mountain is located in State Recreation Planning District 4, which includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties. These counties contain 22.62% of the State's popoulation. This area has the largest per capita demand (current and projected) for outdoor recreational facilities of any in the state. Demand is greatest within a driving time of less than one hour. Currently there are more than 1,200 public and private recreation areas in the Bay Area, comprising more than 450,000 acres. The number of existing picnic facilities in District 4 in 1970 totaled 14,017; 1990 demand is calculated at approximately 24,000 units. The number of miles of hiking trails existing in 1970 totaled 885; 1990 demand is calculated at approximately 4,500 miles.

Local:

During both the original master planning for San Bruno Mountain County Park (1976) and the current study, a careful review of local recreation needs has been made. Information and program suggestions came from a variety of sources. The first of these was the Concept Plan issued by the San Mateo County Department (now Division) of Parks and Recreation (1973). A second and continuing source has been a number of public meetings soliciting planning/program ideas and reviewing proposed plans. In addition to these sources, both the original master plan and current general plan teams interviewed representatives of park departments from adjacent cities (San

Francisco, Daly City, Colma, South San Francisco, and Brisbane) to determine existing local recreation facilities and possible recreation needs. During the original 1976 study, local schools were also querried.

The following table summarizes the findings of the program study outlined above.

Possible Recreation Activities

Activity	Activity Located Nearby	Activity Could Take Advantage of Location on San Bruno Mountain	Recommended by Concept Plan or Public Meetings	Facility Easy to Accomodate on San Bruno Mountain	Possible Facility
Archery	No	No	No	Yes	Archery Range/Trail
Attending Outdoor Concerts & Plays	No	No	No	Yes*	Outdoor Amphitheater
Bicycling	Yes	Yes	Yes	Yes	Bike Trails & Roads
Bird Watching	No	Yes	Yes	Yes	None
Camping	No	Yes	Yes	Yes*	Campgound(s)
Court Games	Yes	No	No	Yes*	Game Courts
Day Camping	No	Yes	Yes	Yes	Day Camp Area
Field Sports	Yes	No	No	No	Sports Fields
Golf	Yes(p)	No	Yes	No	Golf Course
Hang Gliding	No	No	No	Yes	None
Hiking	No	Yes	Yes	Yes	Trail System
Horseback Riding	Yes(p)	Yes	Yes	Yes*	Equestrian Center
Interpretive Walks	No	Yes	Yes	Yes	Interpretive Trails
Kite Flying	Yes	Yes	No	Yes	None
Motorcycle Riding	No	Yes	No	No	Motorcycle Course
Nature Study	Yes	Yes	Yes	Yes	Nature Interp. Center
Picnicking	Yes	Yes	Yes	Yes	Picnic Areas
Rifle Range	No	No	No	Yes*	Rifle Range

* Facility or activity could be accomodated but with some difficulty
(p) private facility

The program of activities finally included in the park has been selected to permit best appreciation of the mountain's rexources while minimizing environmental impacts. The following visitor recreation activities have been included in this General Plan: Bicycling, Day Camping, Hiking/Walking, Horseback Riding (with some restriction), Interpretive Walks and Programs, and Picnicking.

PLAN OBJECTIVES

Plan objectives for the State and County Park are:

1. To protect and preserve the significant and unique natural resources of the park including the fresh-water bog as well as the rare and endangered plants and butterflies with their supporting habitat.
2. To preserve the outstanding scenic quality and open space character of San Bruno Mountain.
3. To minimize environmental damage in the park caused by either the recreational development of the park or urban development in surrounding areas.
4. To provide opportunities for a variety of recreational activities consistent with the character of the park sites and the protection of their resources.
5. To interpret the natural and cultural features of the park consistent with their long term preservation.
6. To preserve the natural, undeveloped character of San Bruno Mountain as a landmark of local and regional prominence.

PROPOSED LAND USE

The proposed land use in the park has been developed from the Regional Recreation Needs Analysis and from the data developed for the Resource Element, specifically the inventory of various environmental elements, the Constraint Map (Figure 9) and the Allowable Land Use Intensity (Figure 10). As discussed under those sections, much of the park's area cannot support intense recreation development in a manner consistent with the Plan Objectives, i.e., consistent with the need for preservation of the existing natural landscape. The Constraint Map indicated five major limitations to any park

development consistent with the Plan Objectives: excessively steep topography, rare and endangered plant habitat, rare and endangered butterfly habitat, high local or regional visibility, and soils easily susceptible to erosion. Intensive land use activities have been located in the relatively small zone free from the constraints. Extensive activities such as trail hiking have been located, as appropriate, through the larger areas of the park.

Intensive Recreation Zone

Major park facilities such as Park Office, Nature Interpretive Center, Family and Group Picnic, Parking, Maintenance Facility, have been located in a zone free from the constraints mentioned above. In addition, this zone is also sheltered from prevailing westerly winds by the existing Cypress windbreak and is largely screened from motorists in Guadalupe Canyon Parkway. See Figure 17.

Fresh Water Bog Area

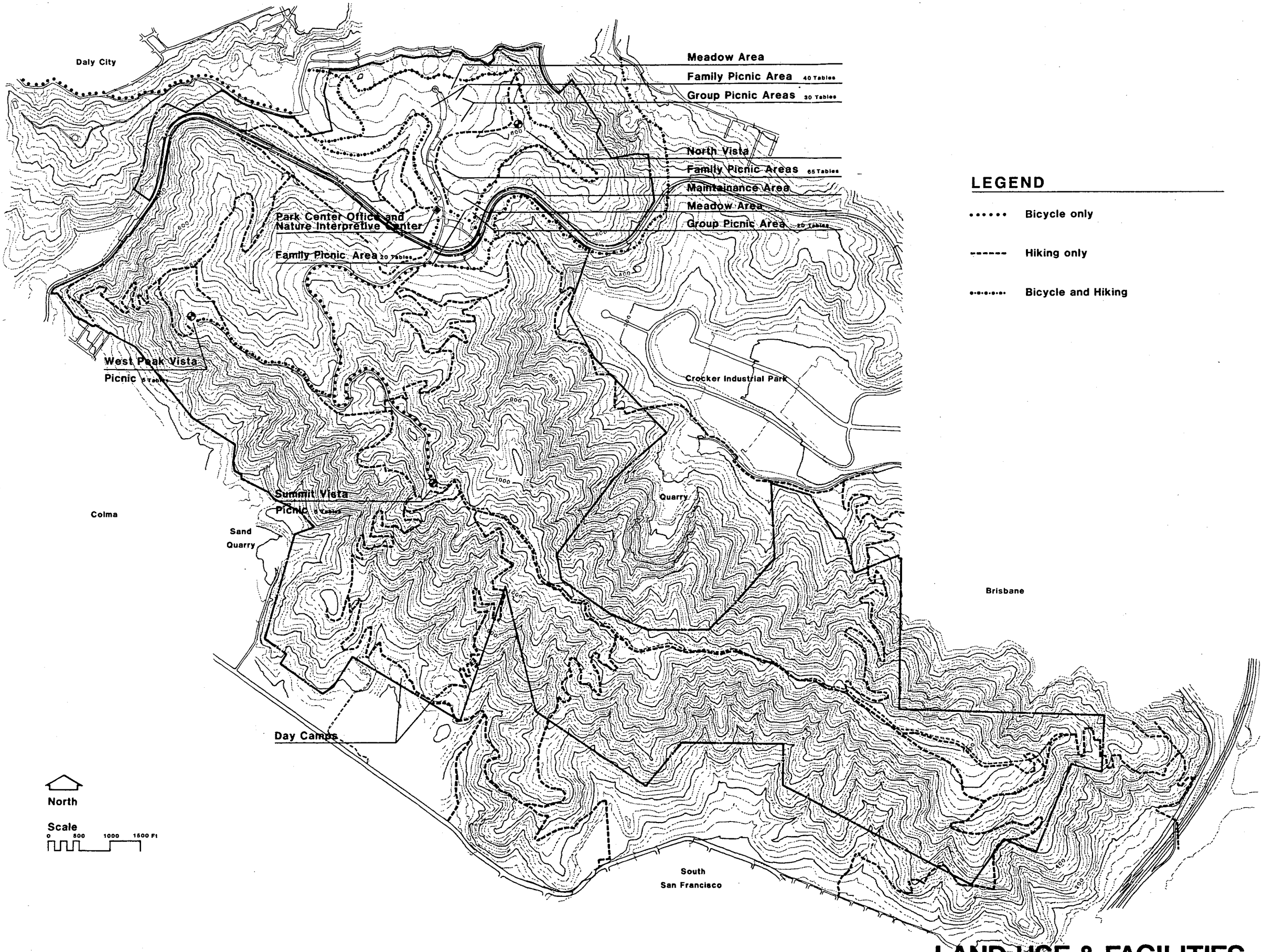
The Fresh Water Bog Area is adjacent to but separate from the existing intensive recreation zone. Controlled interpretive walks and general surveillance can be managed from the Nature Interpretive Center/Park Office.

Rare Plant and Butterfly Habitat Areas

These areas in the Park will be managed to protect their unique resources. Trail access will be available but carefully controlled.

Other Park Lands

This term refers to all other lands that have not been specifically designated above. Permitted uses of these lands are in accordance with the State Park classification as well as land use designations previously approved for areas of the County Park. Use facilities include: hiking



LEGEND

- Bicycle only
- Hiking only
- Bicycle and Hiking

LAND USE & FACILITIES

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

trails, bicycle trails, shuttle bus route, vista point, and day camp.

PROPOSED VISITOR FACILITIES

Visitor facilities at San Bruno Mountain will be designed and located in a manner to enhance the basic plan objectives as outlined above. Of primary importance therefore, are the interpretive elements: Nature Interpretive Center, trails and vista points. Other visitor facilities are to support these basic park functions and provide a more balanced recreation experience. These facilities include parking, picnic and open meadow (informal play) areas, and day camp.

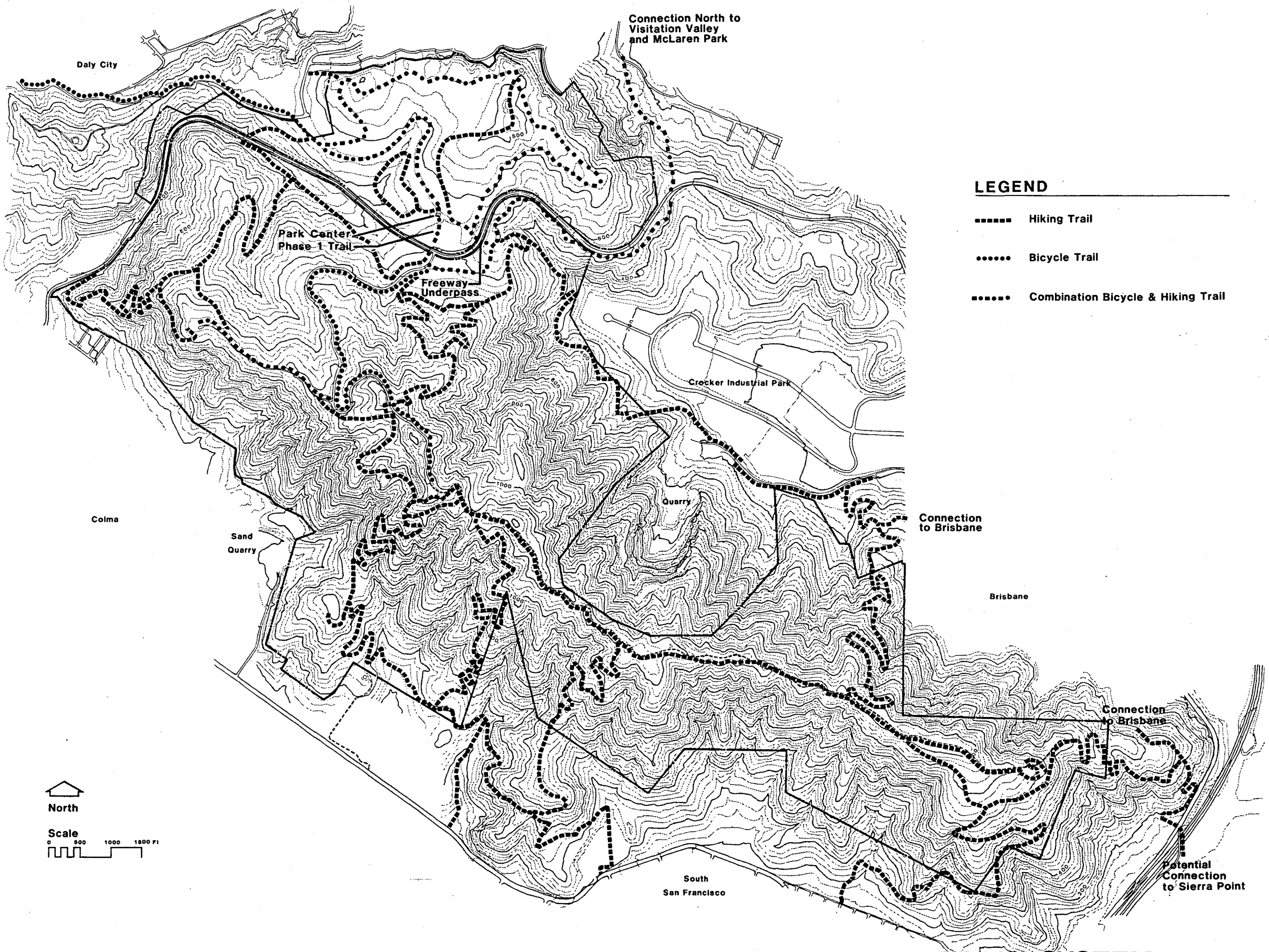
Nature Interpretive Center:

Because of the unique natural features existing on the Mountain, a well-designed and permanently staffed interpretive center is of particular benefit to school groups and the public in general. The staff should be capable of conducting year-round nature interpretation programs reflecting the annual variation in natural conditions. In addition, the staff would be available for a continuing monitoring process which would be necessary to insure that the natural assets of the Mountain are preserved while maintaining the optimum public usage. The center would include a small exhibit area (1,200 square feet) which could display natural scenes or artifacts in order to explain the park's natural environment. In addition, a large workroom (1,200 square feet) to be used by school groups for staff-led nature projects would be available. The Center's remaining area would be devoted to staff office, work space, and storage. See Figure 18. The Nature Interpretive Center would be located in the Park Center Building.

Trails:

The design concept for development of trails in the park is based on the premises that automobile use will be limited and that trails will provide both the major means of access to various park areas as well as a means of enjoying many of the parks visual and biotic resources. Additionally, because of San Bruno Mountain's central location on the north peninsula it can serve as a connecting open space trail link between the Pacific Ocean and San Francisco Bay and between the communities of Daly City, Colma, South San Francisco and Brisbane. Most park trails are designed in loop systems which would enable hikers to return to their place of origin without retracing their steps. This general plan envisions 35.3 kilometers (21.9) miles) of trails on the mountain. Many of these trails are located along existing fire/service roads or have been recently constructed (on the County land according to the previously prepared 1976 County Master Plan). Of the 35.3 km (21.9 miles) of proposed trails in the Park 27.2 km (16.9 miles) are new, and 8.0 km (5.0 miles) are existing. Approximately 2.3 km (1.4 miles) of trail would be for the use of bicyclists. In addition 7.1 km (4.4 miles) of trail would be for use by both bicyclists and hikers. These mixed use trails are proposed in two areas: a) along a 4.3 km (2.7 miles) loop trail from the Park Center around to the North edge of the saddle area overlooking to San Francisco and back again b) along trail links connecting the Park to surrounding communities. These trails are indicated on the accompanying trail map (Figure 15).

At the time that the original County Park Master Plan was written (1976) and in earlier years, San Bruno Mountain was frequently used by equestrian groups and single riders. In the last few years, encroaching development has eliminated many areas that were formerly used for stables, and the demand



LEGEND

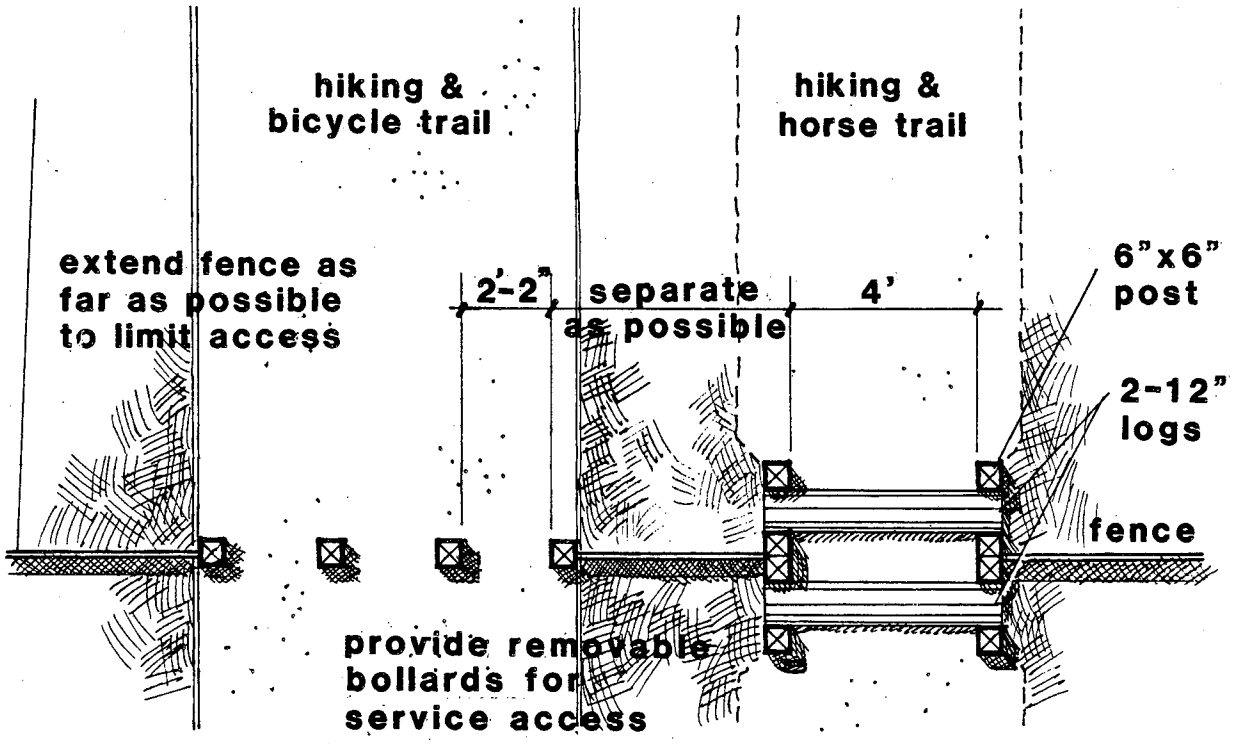
- Hiking Trail
- Bicycle Trail
- Combination Bicycle & Hiking Trail

TRAIL SYSTEM

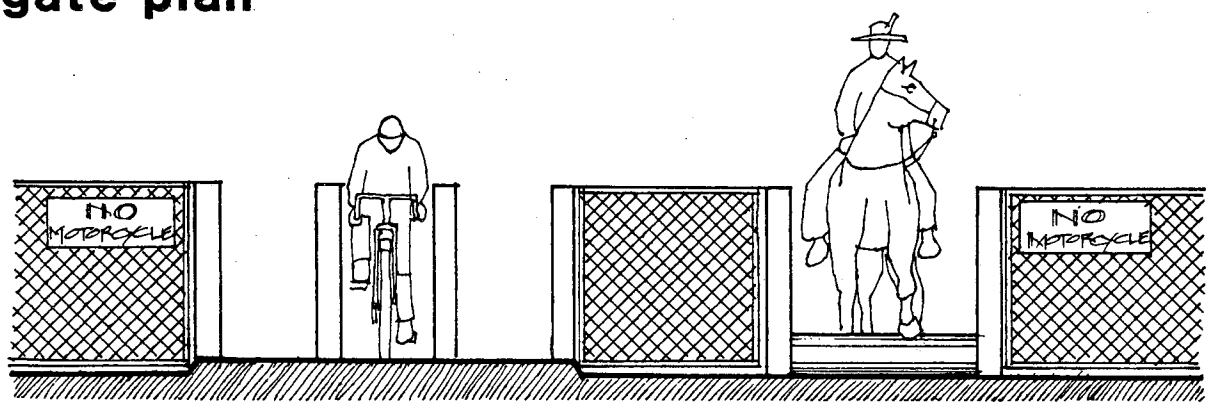
San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

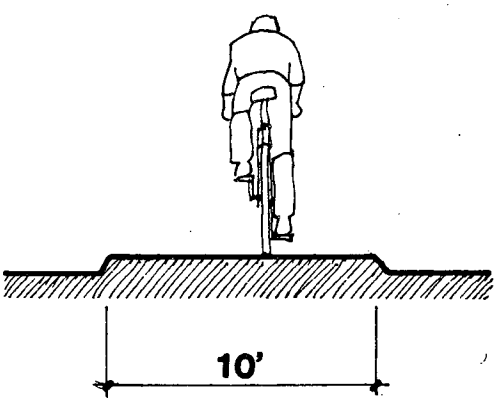
Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

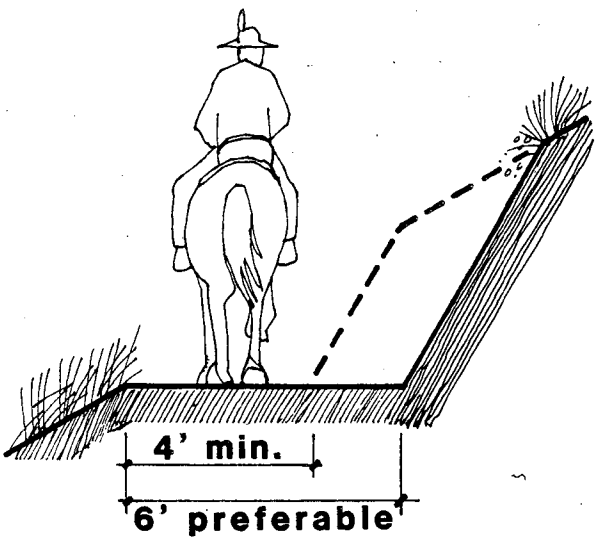


gate plan



gate section





trail section

TRAILS

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

for and use of equestrian trails on the Mountain has diminished. It is likely that this trend will continue and that equestrian use on the Mountain will be quite infrequent. For these reasons, this General Plan does not designate special equestrian trails but rather permits equestrian use of all unpaved (i.e. non-bicycle) trails except in areas near picnic facilities for sanitary reasons. If heavy equestrian use and negative maintenance or safety situations develop, some or all trails could be closed to equestrians.

Several trails leaving the park pass through proposed private development areas. The developers, Visitacion Associates, have indicated a willingness to public dedication of these trail connections as a condition of development plan approval.

Shuttle Bus and Vehicular Circulation

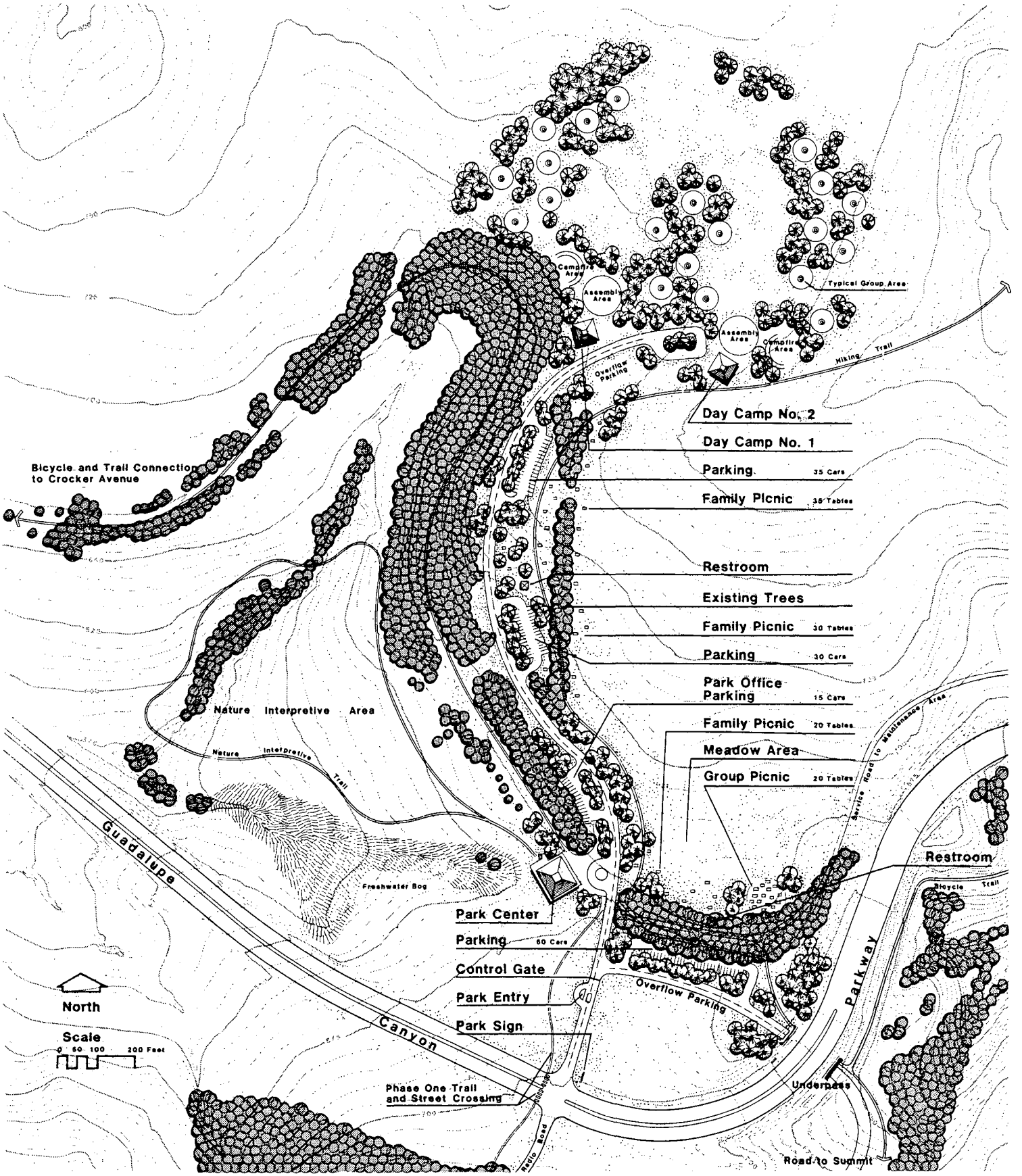
Access to the ridge top and West Peak is currently provided by Radio Road. It is recommended that future vehicular circulation be restricted by closing Radio Road to public access on weekends, holidays, or other periods of intensive public use. A public shuttle bus system would be provided to convey park visitors to the ridgeline from the turnaround at the Park Center Building. The shuttle bus system would use one or more automobile-sized mini-buses such as a Volkswagen Microbus or Plymouth Voyager Window-van. The principal purpose of recommending a transit system includes the provision of public safety, the reduction of indiscriminate off-trail hiking from the road, and a reduction in the amount of public parking which would potentially be required at the limited and sensitive ridgetop locations. The present condition of Radio Road will require some improvement and resurfacing for long-term park use.

In addition to the shuttle bus route which uses existing roads in the Park, approximately 1,680 meters (5,000 feet) of new roadway will be developed. The principal function of this roadway will be entrance and access to visitor parking areas. In addition, these roadways will serve emergency and service vehicles. Parking areas in the Park Center Area will accomodate 140 cars, and be organized into small units so that their visual and environmental impact is minimized.

The entrance point into the Park Center Area from Guadalupe Canyon Parkway has been set at the intersection of Radio Road by the limitations of sight-line distances. Entrance into the County area from Guadalupe Canyon Parkway will continue to be on Radio Road during first phase development. In the phase three plan, however, entrance to the County area will be through the controlled entrance to the Park Center and then by underpass under Guadalupe Canyon Parkway. The underpass will be located at the natural low point below the existing Parkway and will serve both controlled vehicular traffic as well as pedestrians and bicycles. While the underpass is the optimum long-term solution to a circulation link between the County and State areas, a signalized intersection and cross-walk at Radio Road and Guadalupe Canyon Parkway will be more economical and used for phase one.

Park Entrance:

As mentioned above, the vehicular entrance to the major visitor facilities or Park Center area will be from Guadalupe Canyon Parkway at the Intersection of Radio Road. Entrance will be controlled by an entrance kiosk that can be staffed on heavy-use, summer or weekend days. On low-use days, surveillance from the Park Office will substitute. Signs indicating "San Bruno State and County Park" will be placed close to the entrance road where visible from both directions of traffic.

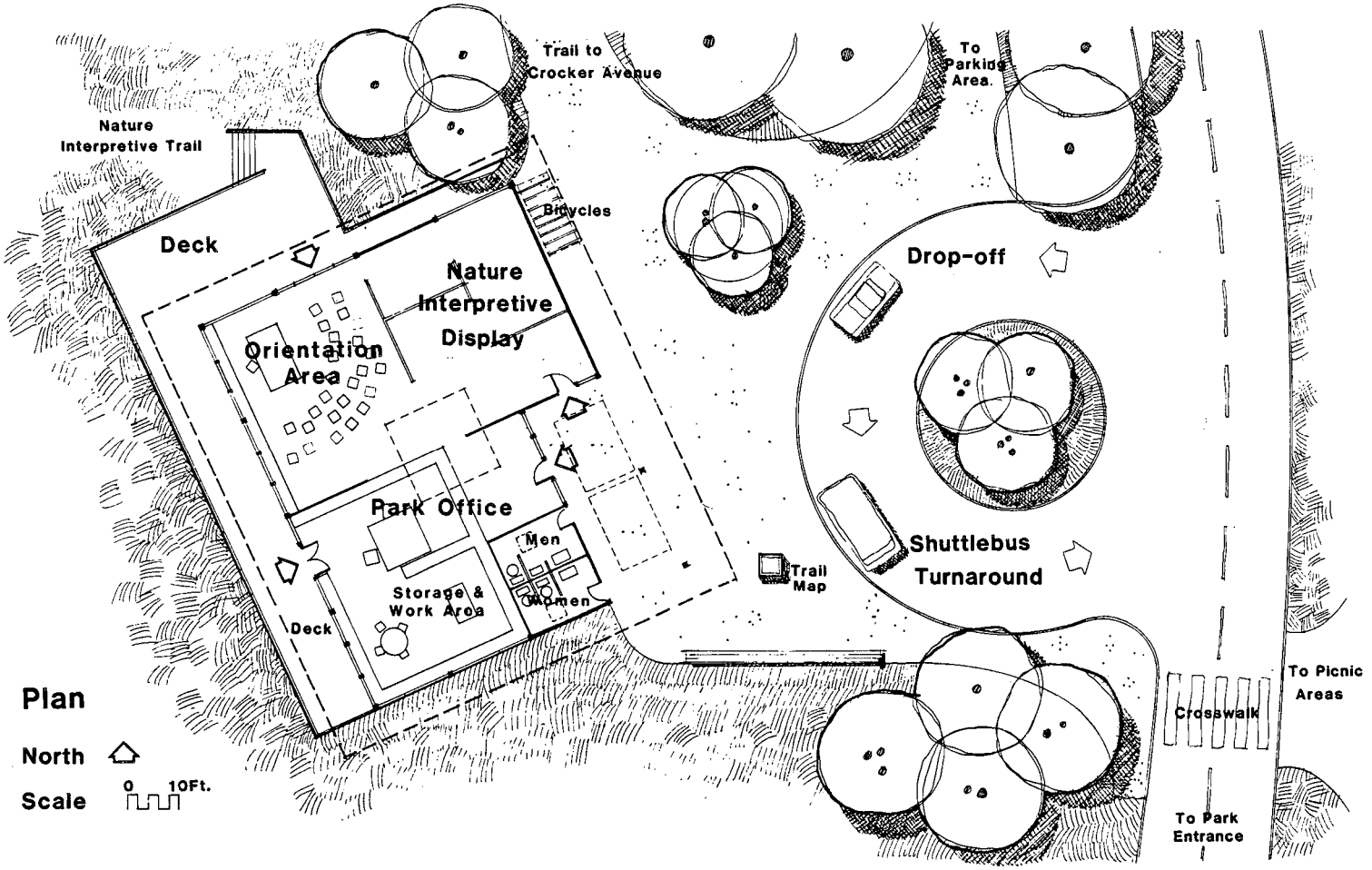


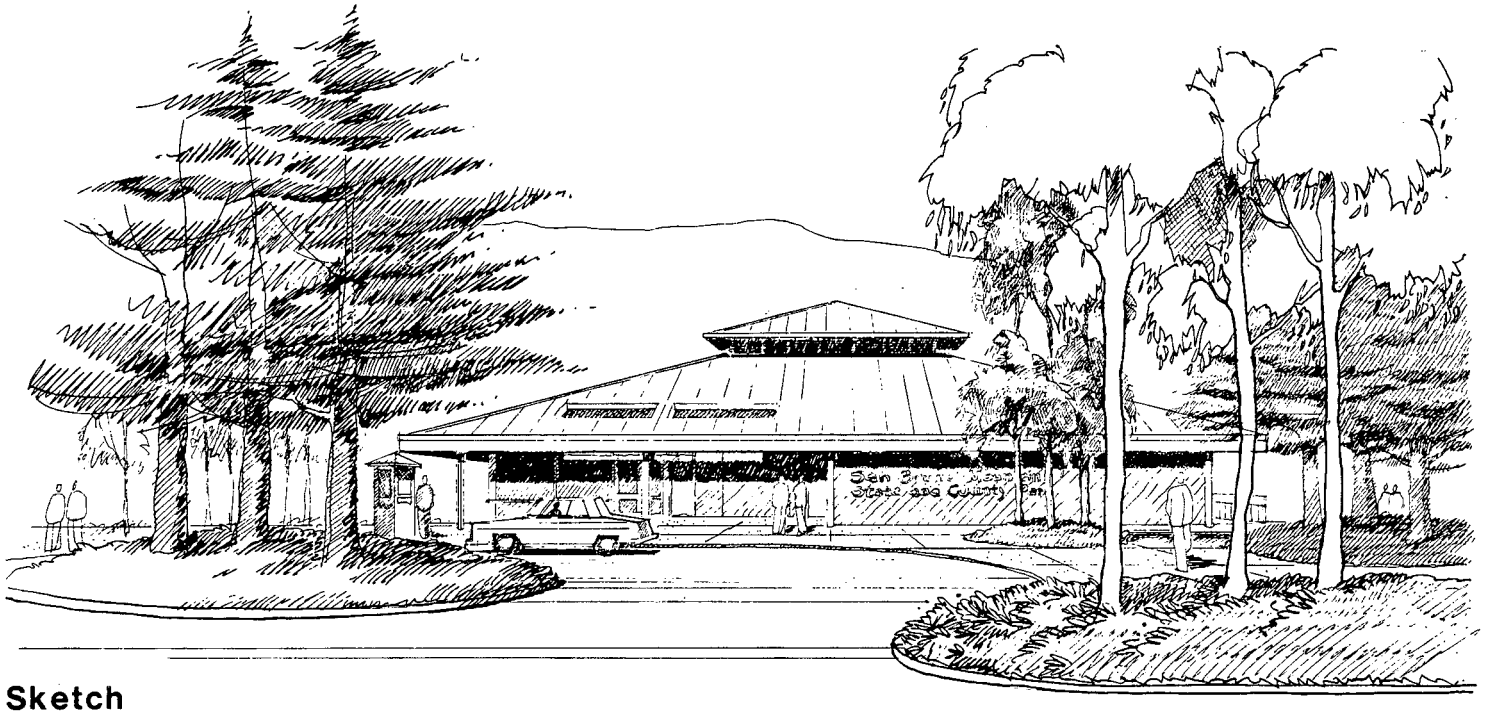
PARK CENTER

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants





Sketch

PARK CENTER BUILDING

San Bruno Mountain
State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

Picnic:

Level space for active recreational uses is limited on the Mountain. Those areas that are available are frequently further restricted by adverse climatic conditions and/or difficulty in accessibility. It is feasible to provide a multi-purpose meadow area of approximately three acres within the Park Center area. This area would be surrounded by picnic tables for both individuals and group purposes. Two restrooms also would be provided in conjunction with the picnic area. Development of these restroom facilities will be built in two phases. The first restroom, located closest to the Park headquarters, will be built in Phase One and the restroom adjacent to the road and parking lot will be constructed in Phase Two.

In addition to picnic facilities in the Park Center area several other small picnic areas (three to five tables) will be located in other areas in the County Park. See Land Use and Facilities, Figure 14.

Day Camp:

To fulfill some of the overwhelming demand for day camping in north San Mateo County, two day camp sites will be located in the bowl area north of the Park Center area. The site for the proposed day camps offers the convenience of an area close to the Park Center with the sense of an area removed from urbanization and development. Other potential sites within the park were considered either too exposed, too steep, too difficult to access, or too environmentally sensitive.

The plan for each of the two day camp sites indicates a central area including assembly/play area, camp fire area, craft and nature study areas, general storage, and restrooms. See Figure 19. A small staff use area and limited staff parking is also available. Surrounding the central areas is a series

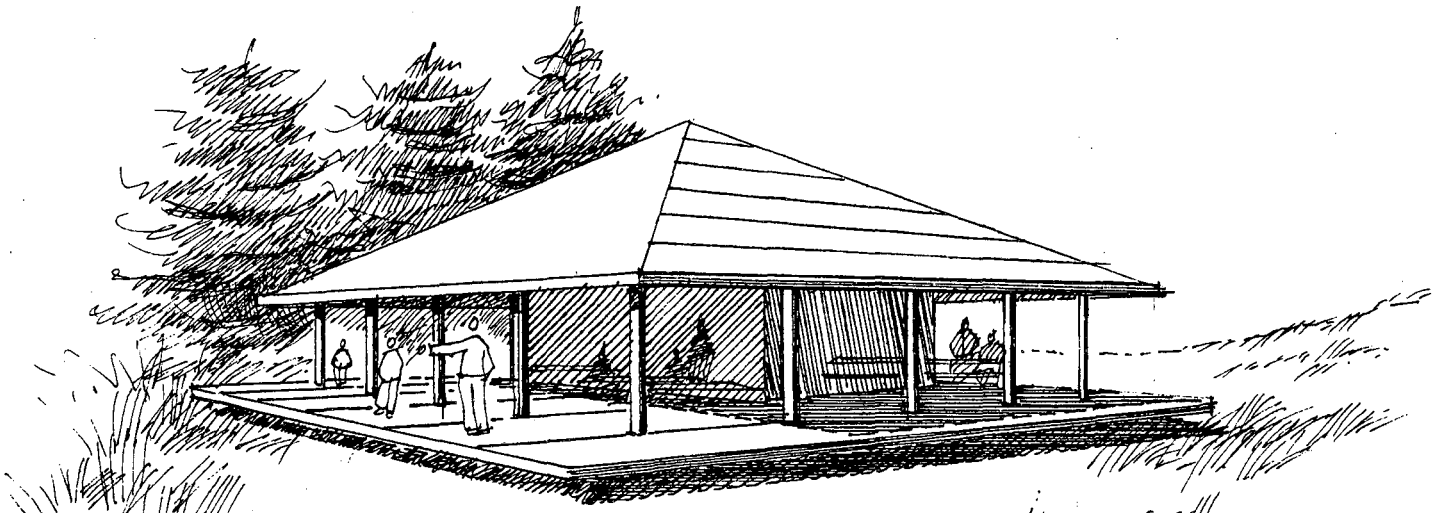
of small, individual group areas, each one accommodating ten to fifteen children around a table and stove area. It is anticipated that each day camp could accommodate 100 to 150 children. At times of non-use for day camp purposes the area could function as a group picnic area or family picnic. The accompanying design plan for the Park Center gives move specific information. See Figure 17. A discussion of utility requirements for the day camps is included in the utilities section.

Scenic Overlooks:

Visual assets of the Mountain will be emphasized by the construction of two scenic overlooks located along the upper ridgeline. The recommended locations include the old "Nike Base" or west peak on the west and at the existing parking lot at the summit on the east. The summit overlook could be developed with display areas which may be sheltered from the winds by means of plexiglass screens or other "see-through" windbreaks. The overlook contains a limited number of picnic tables, water, and public restrooms. Because of distance, cost, and potential environmental impact of utility connections, it is recommended that water be brought in by truck and the restrooms be serviced by a sanitary pump truck. See Figures 20 and 21.

A third scenic overlook will be constructed in the State area at the high point along the north ridge with outstanding views north to San Francisco. This overlook will be located along the short, scenic loop trail beginning and ending at the Park Center. Development will be limited to benches and interpretive displays of view. One interesting aspect to consider for public interpretation might be the historical growth of southern San Francisco and changes in the land use of areas seen from the overlook. This theme might also be suitable for overlooks along the summit ridge, e.g., the founding and growth of cemetaries in Colma, industry in San Francisco, and San

Francisco International Airport. The scenic overlook near the summit, at the end of Radio Road, might also offer information regarding the communications antennae.



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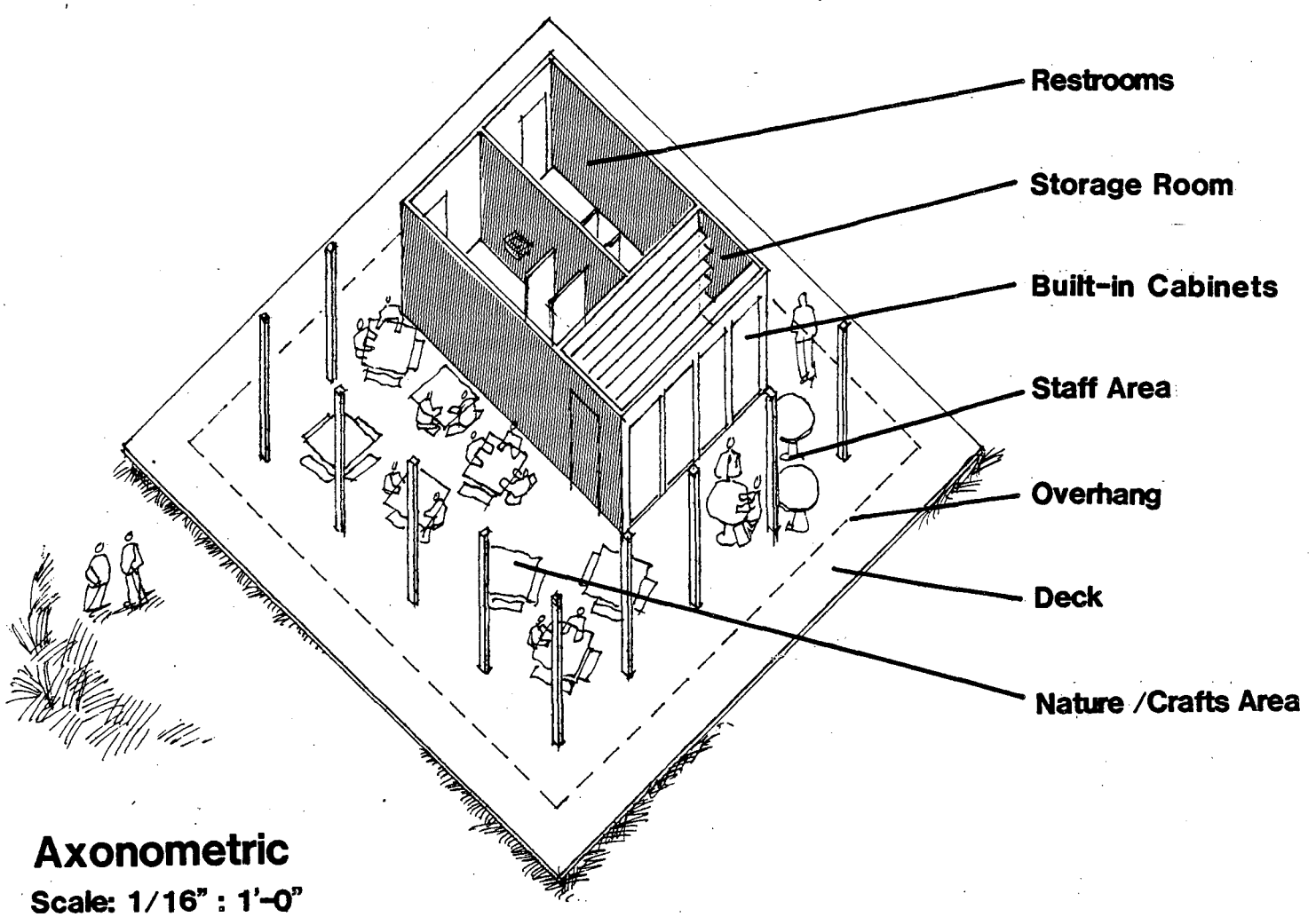

Axonometric

Scale: 1/16" : 1'-0"

DAY CAMP SHELTER

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
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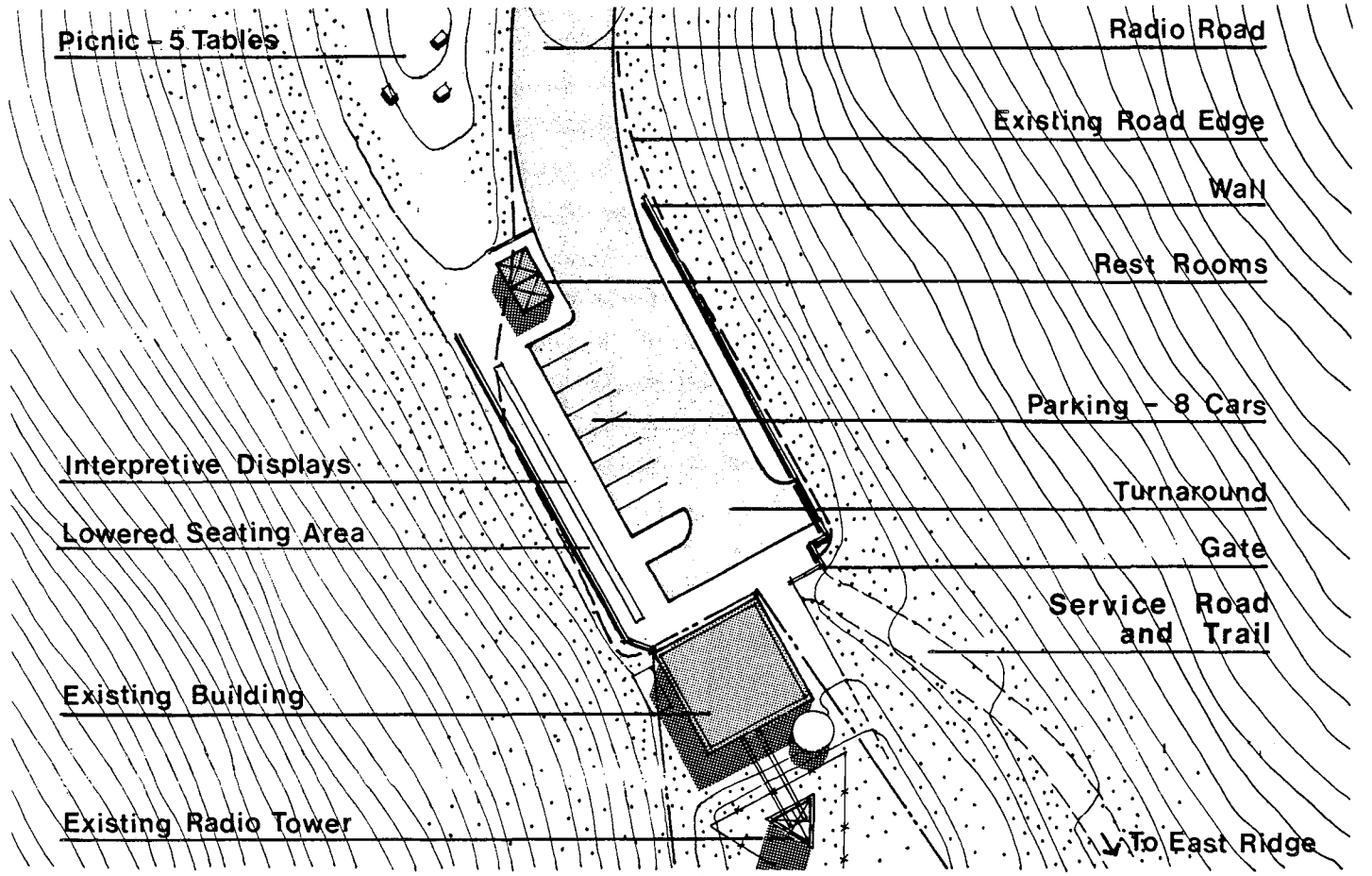
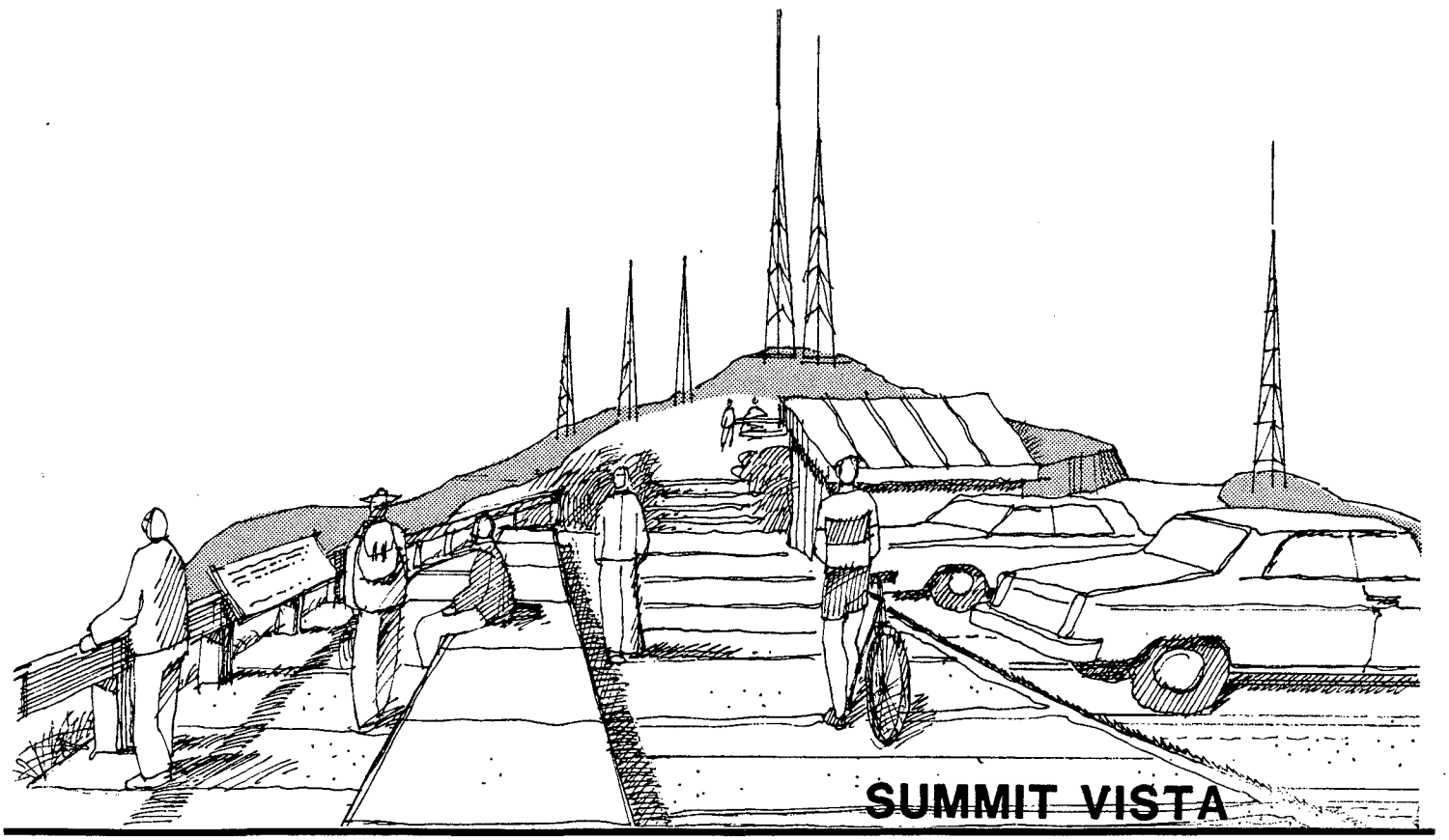
Del Davis Associates Environmental Consultants





SUMMIT VISTA

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
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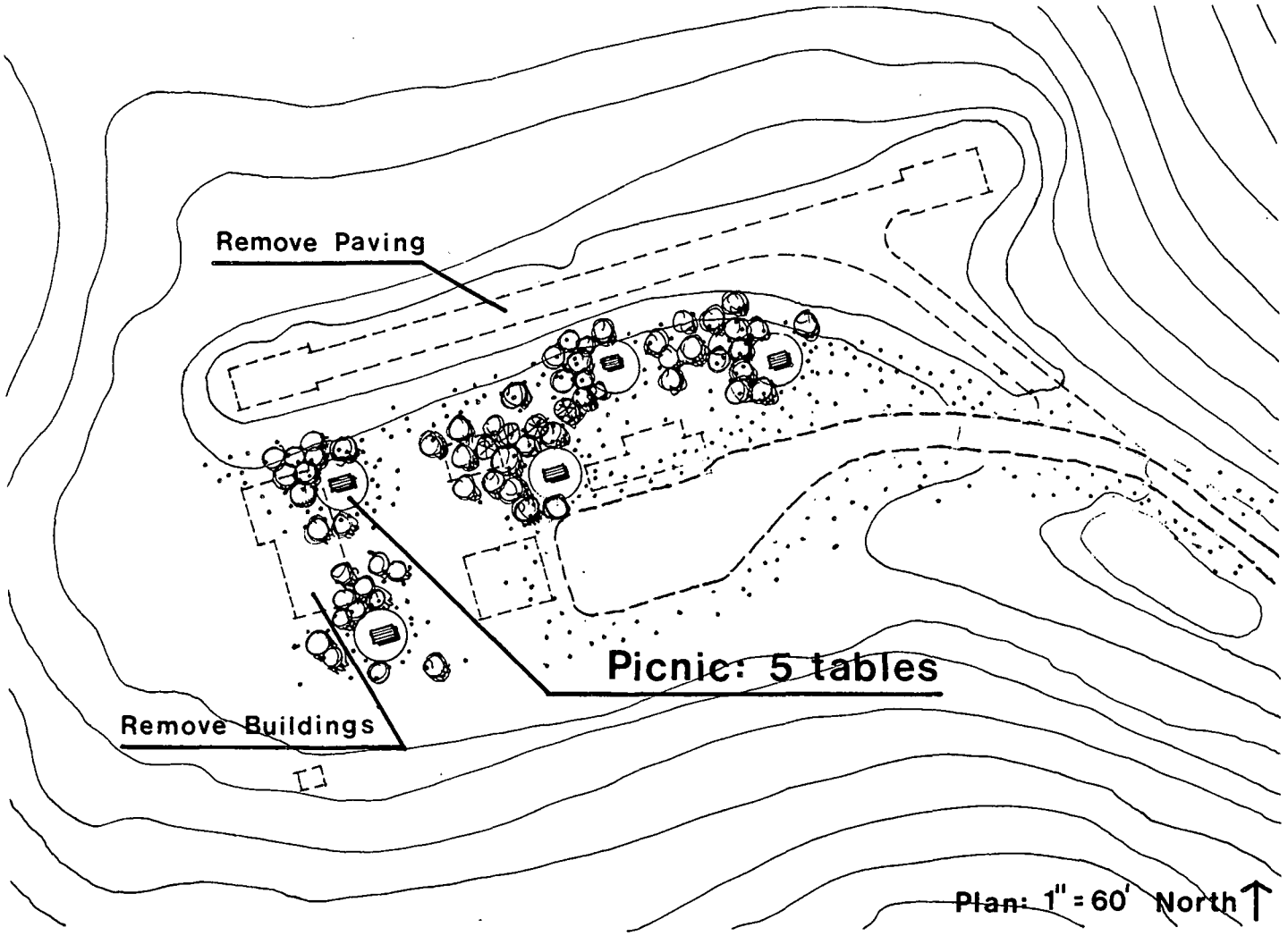
Del Davis Associates Environmental Consultants



WEST PEAK VISTA

San Bruno Mountain State and County Park

Parks & Recreation
State of California and County of San Mateo

Consultants:
Inouye/Dillingham Landscape Architects
Del Davis Associates Environmental Consultants

OPERATIONAL AND ADMINISTRATIVE FACILITIES

Park Office:

The Park's Administrative headquarters will be located with the Nature Interpretive Center in the Park Center area. This location affords the best access to the saddle area as well as the Mountain's north side and ridge for emergency, or routine maintenance and surveillance. It also offers direct supervision of the Park Center Area and the Park entrance for night and day surveillance. See Figure 18.

Maintenance Area:

A full-service maintenance facility will be located in a low area east of the Park Center area and adjacent to Guadalupe Canyon Parkway. This location has several advantages: it is inconspicuous and largely hidden from view; it is immediately accessible to the Park Center area by a short sevice road; it is directly adjacent to Guadalupe Canyon Parkway permitting a quick access to other parts of the park.

A 2000 square foot building will house a workshop, office, vehicle garage, restrooms and storage. A locked maintenance yard adjacent to the building can accomodate additional vehicles, material storage bins and gasoline pump.

UTILITIES

Major utility connections are required for the Park Center area.

Park Center Area:

Water:

An extensive study of water supply to the Park Center has been made by Leeds/Hill and Jewett, Consulting Engineers, San Francisco. They considered two alternative sources: first, ground water pumping to a holding tank and gravity-fed to the facility; second, using the existing Daly City water supply through extension of a 6"-water line from Crocker Avenue (north-west of the Park) to the Park Center area and facilities. On a strictly economic basis, the extension of Daly City water into the Park is less costly and more desirable. In addition, there are several other benefits: a) Daly City Water is fed by gravity to the Park facilities and is not vulnerable to power outages; b) the long-term ground water supply is unknown and levels could drop eventually, requiring additional wells or connection to the Daly City supply; c) ground water wells may reduce existing surface water flows from springs and in Colma Creek thus adversely affecting riparian habitat.

Beyond water needs for visitors, park staff and irrigation, adequate water capacity and pressure must be available for fire flows. A 6"-line should be capable of supplying the 500 gallons per minute that is required for fire protection.

The proposed route for the water and other utility lines will follow the existing old Guadalupe Road from the Crocker Avenue/South Hill Boulevard intersection to the Park Center building. Branch lines can be made to the day camp area and the other restrooms. Booster pumps may be necessary to supply adequate pressure for irrigation and restrooms above elevation 725.

Electricity:

Electricity will be supplied by PG&E from their existing lines adjacent to the Park's north-west corner at Crocker Avenue. PG&E will require that lines

be located underground (rather than on poles) and this will also minimize their visual intrusion. Lines could be located in a common trench with the telephone and the water main discussed above. PG&E will require the County to pay for all required electric connections. Some study has been given to the possibility of using wind power to generate electricity for use in the Park Center area. Wind studies in the saddle area show that mean wind speed in unsheltered areas is 12 MPH.

A comparable windmill producing system at a nearby location produces the following:

Wind at 10 MPH - 700 Watts/hour
" 20 " 5,800 "
" 25 " 10,000 "

Windspeeds below 9 MPH or above 60 MPH are not usable. At the saddle area on San Bruno Mountain, with perhaps 12 MPH, 50% of the time, 3 million watt hours might be generated in a year.

The negative aspect of wind generated electricity is the cost and the appearance of the windmill. The windmill discussed above requires a 70-foot tower and a 25-foot rotor. Such a fixture would be ideally located at a high point to capture maximum wind. The result would be a large, very visible and incongrous element in a natural resource park. No windmill is proposed as a part of this General Plan, but as the plan is finalized in the development phase, consideration of wind generation should be made.

Telephone:

A telephone connection will be made from the same source area on Crocker Avenue following the same route as water and electric to the Park Center area. This line will also be buried in a common trench with electric and water.

Sanitary Sewer:

Because of the great distance from the Park Center area to existing sanitary lines, a separate septic tank/leaching field system is planned to accomodate the needs of the five restroom facilities located in the Park Center area. Restrooms located at the Summit Vista (end of Radio Road) will require a holding tank and pump truck system because distances to existing sanitary connections are too great, while soil is thin, rocky and unsuitable for leaching fields.

Storm Drainage:

Storm drainage or surface run-off from most of the site will continue to run-off in the existing natural patterns. However, in paved areas such as parking and roads, run-off will be collected and concentrated. This run-off will also be carrying small amounts of motor oil,asbestos and other undesirable elements for sensitive natural environments such as the fresh-water bog area. It is proposed, therefore, to collect this run-off and disperse it through sumps and/or leaching fields in site areas that will not drain toward the fresh-water bog.

PHASING AND DEVELOPMENT COST ESTIMATE

Contained within the following cost estimate is a proposal for phasing the construction and development of the park. The purpose for phasing development is to provide a development strategy that will respond to a schedule of funding and that will answer the most important recreation needs first. The rationale behind the phasing is to give first priority to items which will ease conversion of the present site to park use and which will permit basic park uses such as hiking, picnicking and day camp to occur.

The phasing suggested in the cost estimate may be followed as flexibly as time and money allow. For example, picnic development to the north of the Park Center Building as well as ancillary roadway, parking and utilities (indicated for Phase Two and Three) can be added when and if there is sufficient demand to warrant construction.

The cost estimate is based upon the generalized design data developed in the Master Plant and does not reflect the relative precision of cost information that would be available with construction documents such as working drawings and specifications. This cost estimate was written in March 1982. No account has been made of cost escalation from inflation or other factors.

COST ESTIMATE SUMMARY

PHASE ONE	$1,021,000
PHASE TWO	1,547,000
PHASE THREE	1,371,000
TOTAL ALL PHASES	$3,939,000

PHASE ONE

PARK CENTER AREA

Family Picnic Areas Clearing and fine grading for 2 acres: 30 units each including a table and stove; 3 drinking fountains with hose bibbs; 2 trash bins, 900 feet of AC path/service road; restroom building, 500 square feet, with electricity, running water and septic tank/leach field.	$100,000
Meadow Area Clearing, grading, soil preparation, irrigation and seeding for 2 acres.	$40,000
Park Center Entrance Entrance Station, signs, gate, road turn-out, miscellaneous site work.	$70,000
Roadways Entrance road AC paving with concrete curbs, 24 feet wide, 660 feet long.	$32,000
Service Road to day camp area, gravel surface, no curbs. 12 feet wide, 1300 long.	$18,000
Parking South picnic area lot, 60 cars, AC paving with concrete curbs.	$32,000
Utilities Storm drainage for road and parking areas.	$20,000
Water connection to Park Center Building Electric connection to Park Center Building Telephone connection to ParkCenter Building 5250 feet from Crocker Ave. and South Hill Blvd. in Daly City.	$315,000

DAY CAMP

Restrooms, septic tank/leach field	$50,000
Group Areas - 10 areas with 2 tables and stoves each	$20,000
Water and electric connection from lines at old road, 250 feet.	$12,000
Miscellaneous Construction including minor trails, camp fire and assembly areas; planting with drip irrigation.	$40,000

GENERAL PARK AREA

Fencing	
Guadalupe Canyon Parkway Areas: Steel Channel and wood barrier; 600 feet.	$15,000
North Boundary of Saddle Area: 4 strand barbed wire; 2,000 feet	$8,000
Crossing at Guadalupe Canyon Parkway	
Signalized intersection at Radio Road for pedestrians crossing, left turn lanes.	$50,000
Subtotal	$822,000
Construction Contingency and Miscellaneous @15%	$123,300
Subtotal	$945,300
Architectural and Engineering Design Inspection, Supervision @8%	$75,700
PHASE ONE TOTAL	$1,021,000

PHASE TWO

PARK CENTER AREA

Park Center Building 3,000 square foot building including park office, restrooms with septic tank/leaching field, nature interpretive center with exhibits, miscellaneous site work.	$500,000
Family Picnic Area Clearing and fine grading 2 acres: 20 units each including a table and stove; 2 drinking fountains; 2 trash bins; 300 feet AC path/service road	$27,000
Group Picnic Area Clearing and fine grading for 1 acre: 20 tables and large stoves; 2 drinking fountains with hose bibbs; 1 trash bin.	$30,000
Roadway Connection to middle picnic area lot; AC paving with concrete curbs; 24 feet wide, 450 feet long.	$25,000
Parking Middle picnic area lot, 30 cars, AC paving, concrete curbs.	$18,000
Park Center Building lot, 15 cars, AC paving, concrete curbs.	$13,000
Maintenance Yard Garage, workshop, office building, 2500 square feet; Maintenance yard, fenced, 7000 square feet; septic tank/leach field.	$225,000
Service Road to maintenance area, 1800' long, 12' wide	18,000

DAY CAMP

Day Camp shelter, 2500 square feet with exterior decking and storage area.	$100,000
Meadow Area - Clearing, grading, soil preparation, irrigation and seeding for 2 acres.	$40,000

GENERAL PARK AREA

Trails

New bicycle/hiking trails: grading, AC paving, signing, bollards and protective barriers; 16,500 feet, 10 feet wide, north vista point: benches and interpretive displays. $250,000

Subtotal	$1,246,000
Construction Contingency and Miscellaneous @15%	$187,000
Subtotal	$433,000
Architectural and Engineering Design, Inspection @ 8%	$114,000
PHASE TWO TOTAL	$1,547,000

PHASE THREE

PARK CENTER AREA

Family Picnic Areas Clearing and fine grading for 2 acres; 35 units, each including a table and stove; 3 drinking fountains with hose bibbs; 3 trash bins; 500 feet of AC path/service road; one restroom building, 500 square feet each with electricity, running water and septic tank/leach field.	$100,000
Roadway Roadway providing access to north picnic area and day camps; AC paving with concrete curbs; 1200 feet long, 24 feet wide.	$80,000
Parking Parking at north picnic area, 35 cars, AC paving with concrete curbs, miscellaneous site work.	$40,000
Underpass Vehicular, pedestrian and bicycle underpass under Guadalupe Canyon Parkway; two 12 foot travel lanes and one 10 foot bicycle/ pedestrian path.	$400,000

DAY CAMP

Day Camp shelter, 2500 square feet with exterior decking, storage area, restrooms.	$150,000
Group Areas - 10 areas with 2 tables and stoves each.	$20,000
Meadow Area - Clearings, grading, soil preparation, irrigation and seeding for 3 acres.	$60,000
Miscellaneous construction including minor trails, camp fire and assembly areas; tree planting for wind breaks.	$40,000

GENERAL PARK AREA

Trails Bicycle/Hiking Trail. Connecting underpass to east park boundary at Guadalupe Canyon Parkway; 3,250 feet, 8.5 feet wide.	$45,000

Summit Vista Parking area renovation, concrete curbs, pedestrian paving, seat walls, picnic tables, restrooms with holding tank for pump truck.		$50,000
West Peak Vista Demolition of existing buildings, fence, etc.; reconditioning of site area; 5 picnic tables.		$15,000
North Vista Seating and interpretive display.		$5,000
Renovation of Radio Road Resurfacing of roadway; 8000 feet.		$100,000
	Subtotal	$1,105,000
	Construction Contingency and Miscellaneous @ 15%	$166,000
	Subtotal	$1,271,000
	Architectural and Engineering Design, Inspection and Supervision @ 8%	$100,000
	PHASE THREE TOTAL	$1,371,000

Operations Element

Present Operation:

At the present time San Bruno Mountain State and County Park is being managed by the Division of Parks & Recreation, San Mateo County. In January 1979, prior to the completion of the State land purchase, an Operating Agreement was signed between the State Department of Parks & Recreation and the County Division of Parks & Recreation whereby the County assumes all responsibility for planning, design, construction and management of the State Park.

Management has concentrated on a few activities. Security patrol and control of unauthorized, off-road vehicle use has required much time but gradually motorcycle and four-wheel-drive use has diminished. When not needed for routine maintenance, the existing staff of two or three has performed cleanup of previous refuse dumping,trail construction, informal parking area construction, and exotic plan elimination.

Visitor use of the park has been light but steady. Most popular activities include hiking, nature study, and sight seeing.

Future Operation

With the gradual development of the Park, staff size is expected to increase to an eventual total of eight to ten persons. Major staff functions are expected to be public information, nature interpretation, public safety, routine facility and trail maintenance. Special resource mangement situations may require much continuing committment of staff time. Control and removal of exotic plants may be one of the most difficult and time consuming activities. Monitoring of rare and endangered butterfly and plant areas will no doubt take less time but be equally important.

Summarized below is an estimate of staff and equipment requirements for eventual operation of the State and County Park.

		First Year Expenditures	Annual Cost
FIRST PHASE			
A.	Personnel		$156,200
	1 Park Ranger IV		25,000
	1 Park Naturalist		22,500
	1 Park Ranger III		22,500
	2 Park Ranger II		38,400
	3 Seasonals (4 months each)		12,000
	Permanent Fringe @ 33%		35,800
B.	Operating Supplies		$34,000
	Equipment Maintenance		
	Materials and Supplies		
	Transportaion and Travel		
	Communications Maintenance		
	Utilities		
C.	Equipment	$50,000	
	Pick-up w/Radio	15,000	
	Dump Truck, 2-ton (1)	20,000	
	Shop Tools - Mower, Sprayer, etc.	10,000	
	Communication Radios (2)	3,500	
	Motor Bike	1,500	

SECOND PHASE

A. Personnel - Add 1 or 2 Park Rangers and 1 to 3 Seasonal
B. Equipment - Additions to and Replacement of First Phase Equipment and Supplies

Interpretive Element

The primary interpretive potential inherent in San Bruno Mountain State and County Park is the native flora and fauna of the Mountain. Secondary interpretive themes may involve: a) the role of climate in plant ecology; b) geological formation of San Bruno Mountain; c) historical growth of surrounding urban areas seen from the Mountain. Because there are no sites of Native American culture presently explored or easily accessible on the Mountain, this interpretive resource should be considered at a later time. There are no apparent artifacts of Euro-American historical interest.

As discussed in the Inventory section of this report, San Bruno Mountain has become an open space and biotic "island" surrounded by urban development. It is believed that this "island" represents some of the natural preexisting biotic conditions prevalent on the northern San Francisco Peninsula prior to urban development. Rare and endangered plants and butterflies are believed to be species that may have once had much wider distribution. Interpretation of the general biotic condition is, thus, quite interesting and appropriate. Care should be taken, however, to provide protection for rare and endangered species while explaining their uniqueness and significance.

As noted above, the role of climate in the Park's plant ecology may be an interpretive theme of secondary significance. Many of the plant species are stunted by wind. Also certain plant species receive most of the moisture requirements through fog drip, such as the epiphytic ferns living in mature trees in the saddle area.

A second subtheme that may have interpretive significance is the geological formation of San Bruno Mountain as an isolated, elevated fault block.

Additionally, the Park contains one minor fault on the Mountain's south side as well as an old mine shaft and a deposit of amethyst crystals.

A final subtheme that may be worth some public interpretation is the historical growth of surrounding urban areas and land uses as seen from the vista points along the Mountain. Residential and industrial land uses in South San Francisco and southern San Francisco, including the railroad switching yards, show one type of land use pattern. The development and growth of large cemetary areas in Colma exhibits a different pattern.

Several media or methods are available for interpretive exposition. First, a nature interpretive center is proposed as part of the Park Center Building. Such a center would house graphic displays showing aspects of biotic or geological interest. Second, self-guiding 'nature' trails could be set up on a loop pattern starting from the nature interpretive center. The trails could be used independently or in conjunction with a visit to the center. A third interpretive vehicle could be display panels exhibited at vista points or along trails. This medium would be most appropriate for discussion of on-site artifacts or vistas of surrounding areas.

Specific interpretive programs and facilities will be detailed as part of the various phased development outlined in the cost estimate.

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TO THE

SAN BRUNO MOUNTAIN STATE AND COUNTY PARK

GENERAL PLAN

Prepared By

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Department of Environmental Management
Parks and Recreation Division

July 20, 1982

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Page 36 - first paragraph, delete:

In 1839, Jacob...

and add, at the end of the paragraph:

The mountain influenced the routes of roads and railroads into

San Francisco, and a major part of it was owned by the Crockers. In 1908, there was a proposal to build a city, Vista Grande, on its slopes. The mountain was the site of a major quarry, and reported "mines." The use of the summit for radio and television transmission over the years has been, and continues to be, important. In the 1960's, development proposals to sculpt a major portion of the east ridge for Bay fill aroused a major campaign by Citizens to Save San Bruno Mountain. Their efforts resulted in the defeat of the proposal.

Page 51 - last paragraph under "Policy," add:
Structures unrelated to the natural environment, such as Peace Towers, or other monumental edifices, shall be expressly prohibited.

Page 75 - add to paragraph 1:
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Page 76 - add additional section entitled "Landscaping:"
Landscaping around buildings and other park facilities, as well as windbreaks, will utilize native-plant species where possible and practicable.

Page 76 - add section entitled "Equestrian Facilities:"
Provision has been made for equestrian use of unpaved trails in the park. Although no definite location is specified in the plan, it may be desirable at some future date to provide an equestrian center. This facility possibly could be constructed by a concessionaire on park property.

Page 79 - last paragraph under "Electricity," add:
Experimental and public education projects involving wind-generated electricity will be a part of the interpretive exhibit at the Nature Interpretive Center.

Page 81 - add to first paragraph:
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features and the need for additional facilities have been determined. This approach also applies to subsequent phases.

Page 91 - third paragraph, add:

There is also opportunity to develop experimental and public education projects involving wind-generated electricity.

Trail System Map - Change "Hiking Trail" legend to "Hiking and Equestrian Trail."

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