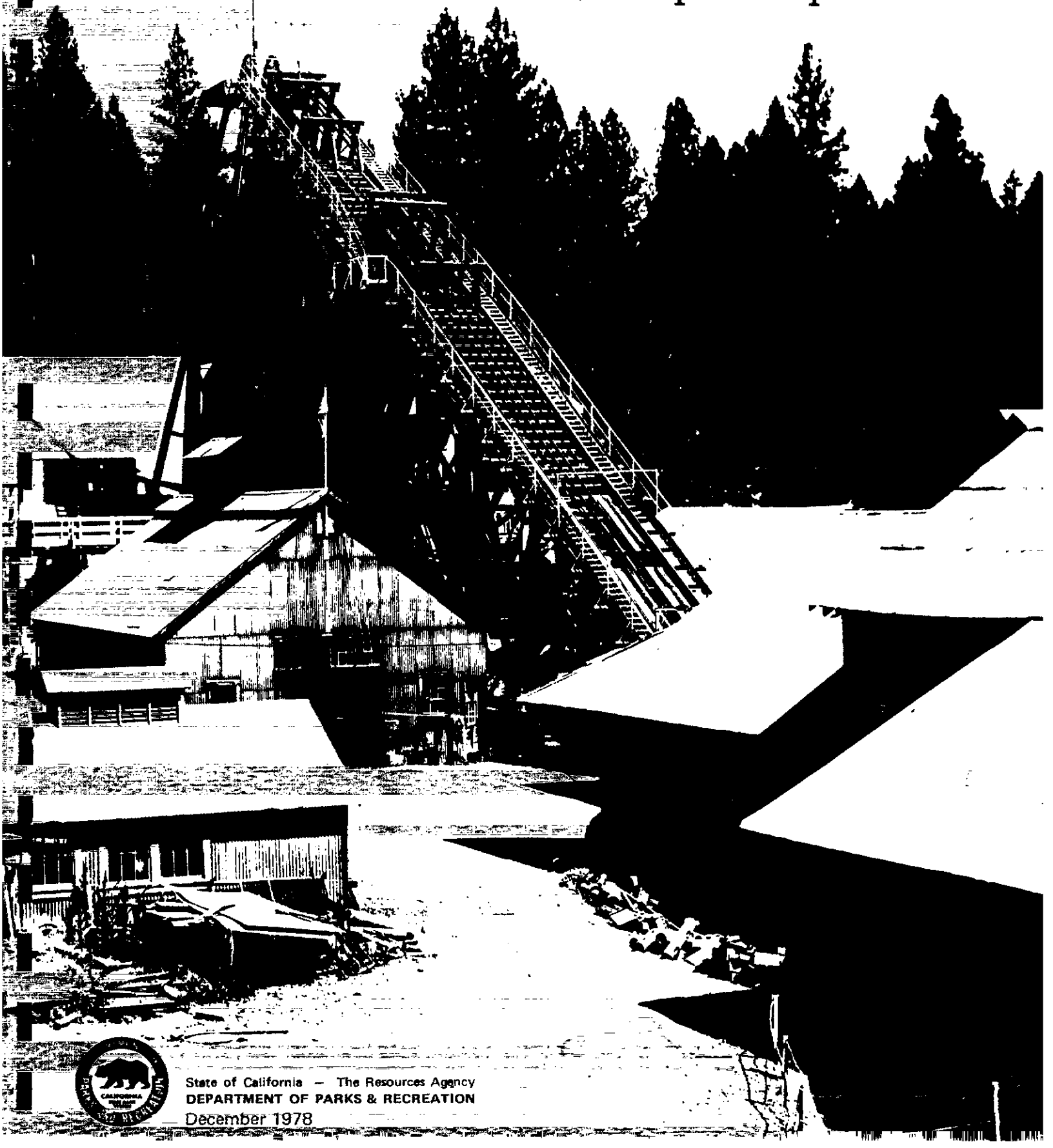
# EMPIRE MINE STATE HISTORIC PARK

## Resource Management Plan, General Development Plan, and Environmental Impact Report



State of California — The Resources Agency
DEPARTMENT OF PARKS & RECREATION
December 1978

STATE OF CALIFORNIA—RESOURCES AGENCY Edmund G. Brown Jr., Governor

DEPARTMENT OF PARKS AND RECREATION
STATE PARK AND RECREATION COMMISSION
P. O. BOX 2390, SACRAMENTO 95811

Resolution 61-77

Resolution adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Sacramento
November 18, 1977

WHEREAS the Director of the Department of Parks and Recreation has presented to this Commission for approval the proposed Resource Management Plan, General Development Plan and Environmental Impact Report for Empire Mine State Historic Park; and

WHEREAS this reflects the long-range development plan as to provide for the optimum use and enjoyment of the unit as well as the protection of its quality;

NOW, THEREFORE, BE IT RESOLVED that the State Park and Recreation Commission approves the Department of Parks and Recreation's "Empire Mine State Historic Park Resource Management Plan, General Development Plan, and Environmental Impact Report, Preliminary" dated May 1977, subject to such environmental changes as the Director of Parks and Recreation shall determine advisable and necessary to implement carrying out the provisions and objectives of said plan.

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## Resource Management Plan,
## General Development Plan,
## and
## Environmental Impact Report

December 1978


**Edmund G. Brown Jr.**
*Governor*
*State of California*

**Huey D. Johnson**
*Secretary for Resources*

**Russell W. Cahill**
*Director*
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State of California – The Resources Agency
Department of Parks and Recreation
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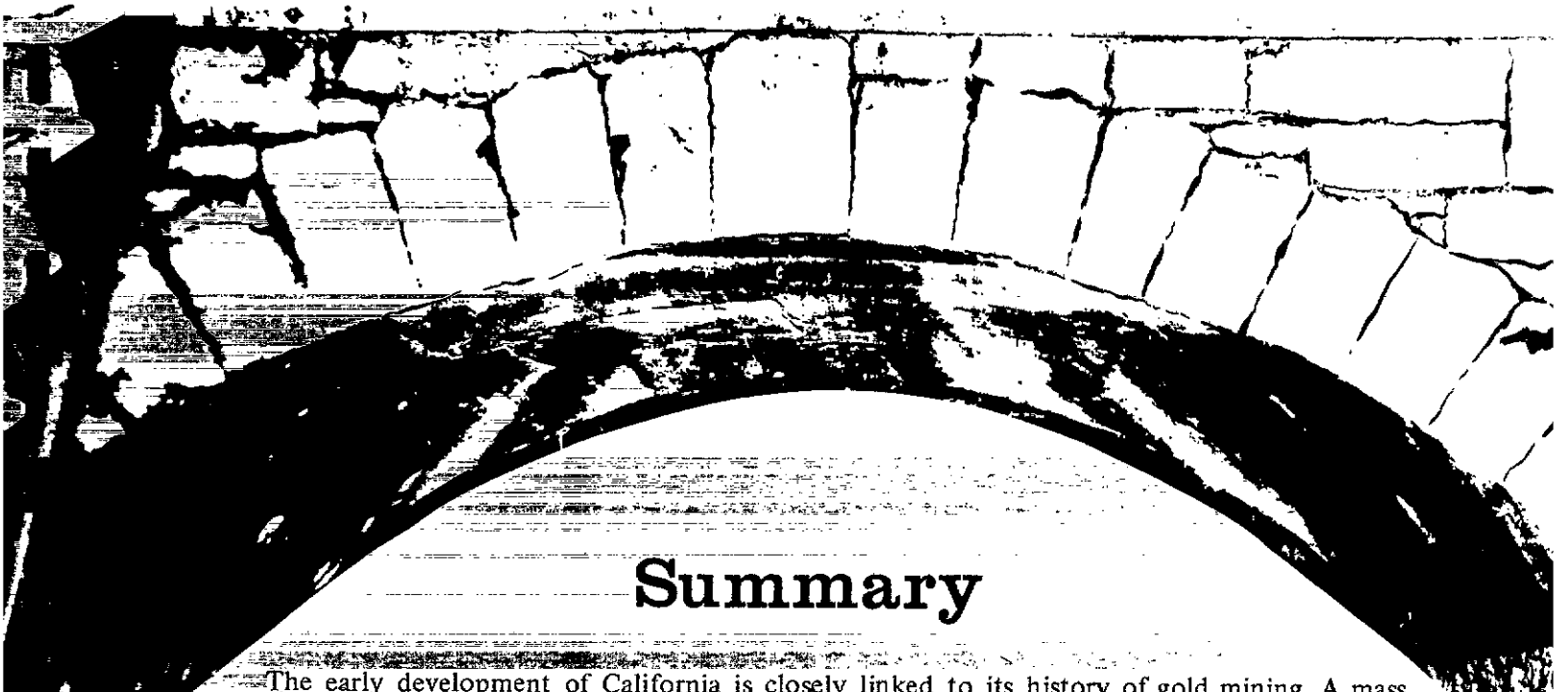
All other photos were taken by staff members of the State Department of Parks and Recreation.



# Summary


The early development of California is closely linked to its history of gold mining. A mass migration of Americans sparked by the great gold rush in the late 1840s led to the eventual development of Empire Mine in Grass Valley. It became known worldwide as one of the most productive and longest operating gold mines in the West. Empire Mine State Historic Park, which contains approximately 777 acres, was established primarily on the basis of this historic significance. An example of the hard-rock type of mining technology, it is complemented by Marshall Gold Discovery State Historic Park and Malakoff Diggins State Historic Park, which represent the placer and hydraulic methods, respectively.

The Resource Management Plan is based on a thorough inventory of the natural and cultural resources of the Empire Mine State Historic Park. It presents the department's policies for ensuring the protection and management of all these resources for the long term enjoyment of the general public.

The emphasis of this document is on the preservation, management, and interpretation of Empire Mine's historic resources. Public participation was an integral part of the development of these policies. The recommendations of the General Development Plan are to:

1. Retain and restore, wherever possible, the historical authenticity of Empire Mine
2. Preserve and protect the natural park features
3. Develop the following facilities in harmony with the proposed development guidelines:

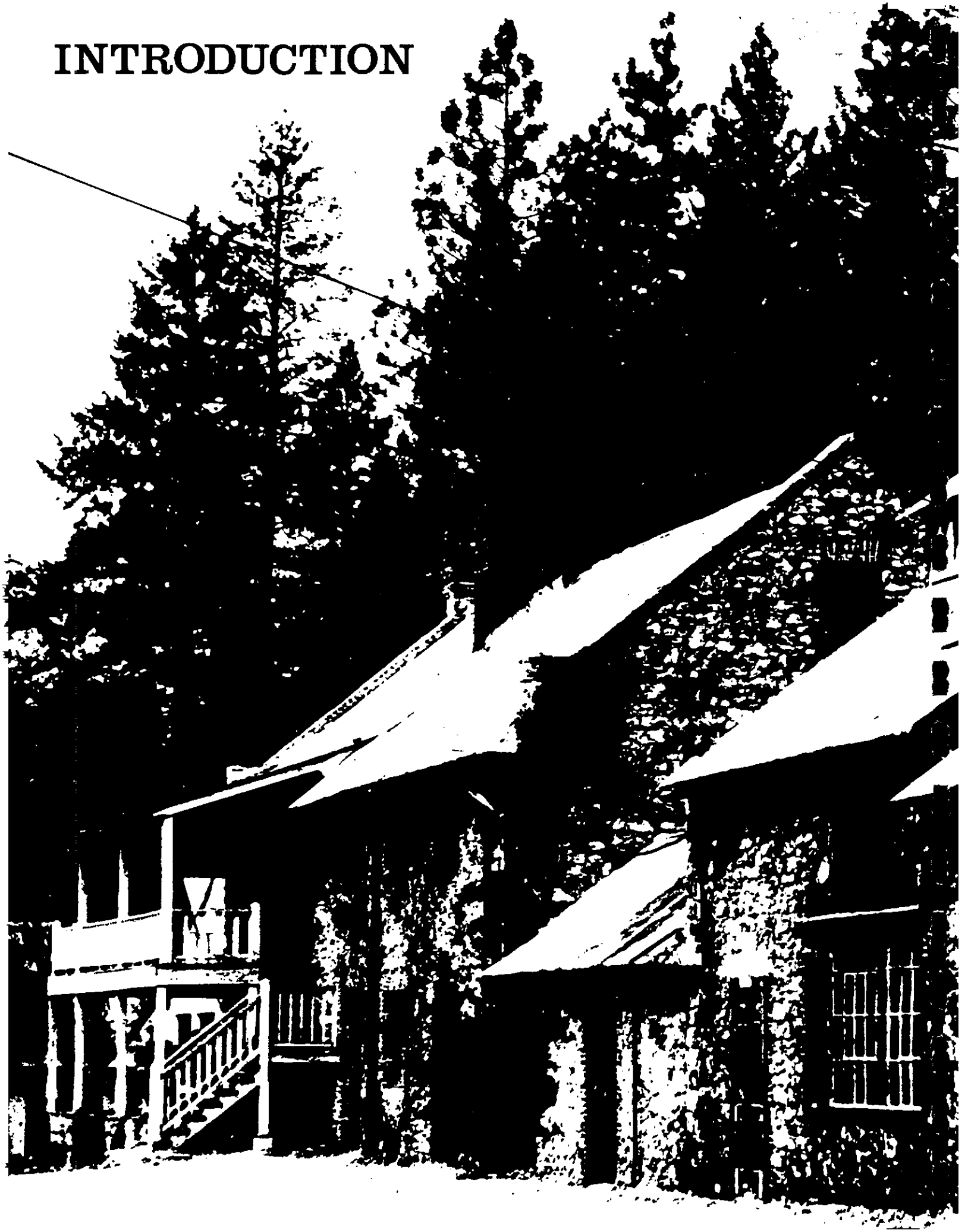
| | | |
|---|---|---|
| a. | Restoration of Historic Features | 16 structures |
| b. | Reconstruction of Historic Features | Approximately 25 structures |
| c. | Main Parking Area | 75-125 spaces |
| d. | Picnic Areas | 4 areas |
| e. | Rest Area | 1 area |
| f. | Scenic Overlook | 1 area |
| g. | Entrance Station | 1 area |
| h. | Equestrian Staging Area | 1 area |
| i. | Hiking Trails | 4 miles |
| j. | Hiking and Equestrian Trails | 10 miles |
| k. | Hiking and Bicycle Trails | 2 miles |
| l. | Trail Overlooks | 6 areas |

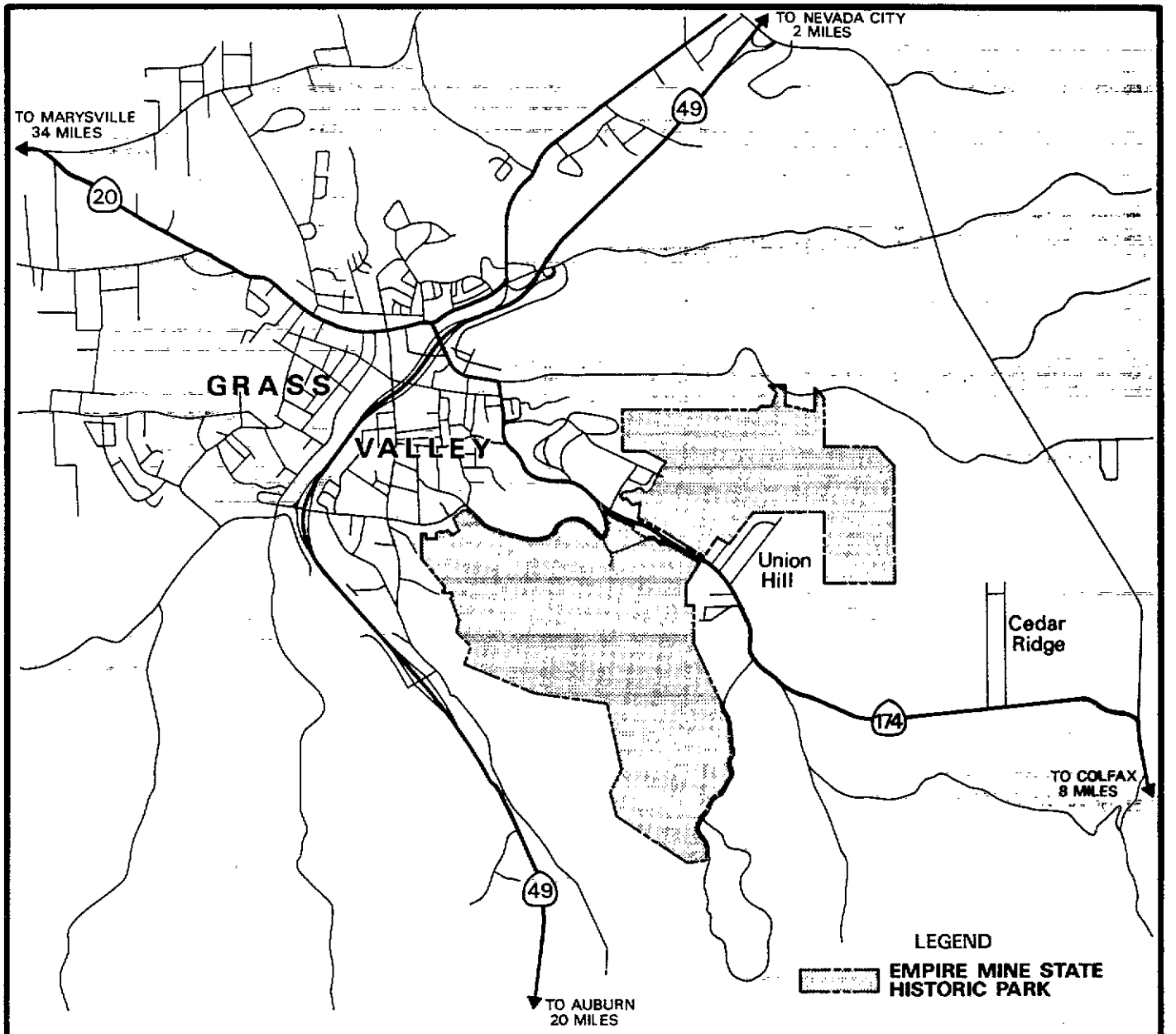
4. Identify and reserve areas in which the following developments could be made should the need arise:

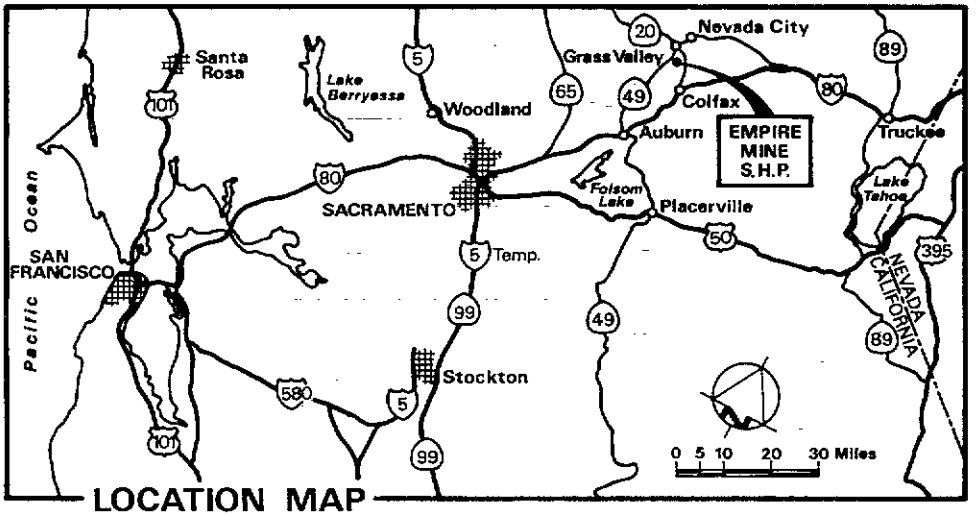
| | | |
|---|---|---|
| a. | Camping area | 25-75 campsites |
| b. | Service area | 1 area |

The Environmental Impact Report discusses the anticipated impacts the proposed development will have on the area, and what mitigation measures should be taken to minimize any adverse effects such development might have.

# INTRODUCTION





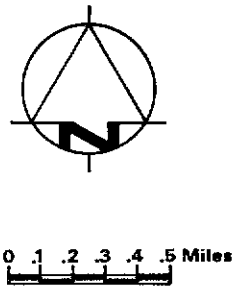




FIGURE 1

# VICINITY MAP

# INTRODUCTION

## Purpose of Plans

In the spring of 1975 Empire Mine became a unit of the California State Park System. In September 1976 the California State Park and Recreation Commission classified this unit as a state historic park. The purpose of the Resource Management and General Development plans is to provide general guidelines for all park development in accordance with this classification. The emphasis of the development of this park will be related to its historic values.

The policies presented in this plan are intended to be flexible and can be modified if deemed advisable. A time period of twenty years is used as a basis for all projections of visitation and development in the park. Projections beyond this time cannot be accurately determined.

The specific goals and objectives of the plan are to:

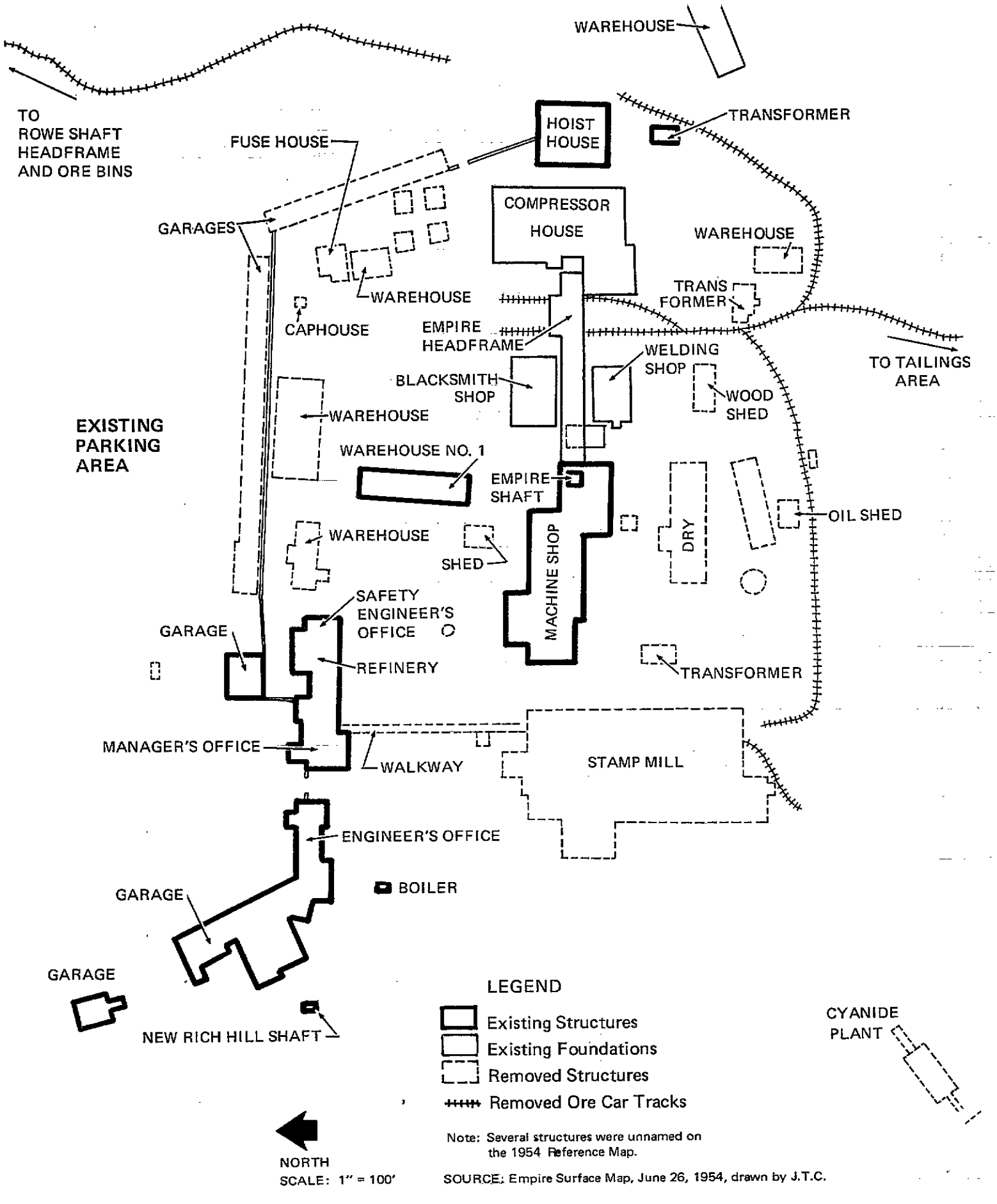
1. Identify the cultural, natural, and recreational resources of the park;
2. Establish policies for the management, protection, and interpretation of these resources;
3. Determine visitor activities and land uses that are compatible with the purpose of the park, the available resources, and the surrounding area;
4. Determine the potential environmental impact of these visitor activities and land uses;
5. Establish guidelines for the sequence of park developments;
6. Identify lands outside the existing park boundary that would be valuable additions to the unit;
7. Make recommendations for additional studies beyond the scope of this document;
8. Provide an informational document for the public, the legislature, park personnel, and other government agencies.

## Project Description

Empire Mine State Historic Park is located in Nevada County on the western slope of the north-central Sierra Nevada. It is approximately 80 kilometers (50 miles) northeast of Sacramento, adjacent to the south edge of the town of Grass Valley. The unit is reached by driving east on Interstate 80 and turning north at Auburn onto State Highway 49. At the outskirts of Grass Valley, East Empire Street leads southeast to the unit. The unit is approximately three hours' drive from the San Francisco Bay metropolitan area. It is approximately 24 kilometers (15 miles) southwest of Malakoff Diggins State Historic Park and 64.5 kilometers (40 miles) north of Marshall Gold Discovery State Historic Park.

The Empire Mine property consists of two large, nearly contiguous, irregularly shaped parcels and one small outlying plot. The larger, 507-acre parcel, south of Highway 174 is comprised of the primary historic area and the open space known as the Osborn Hill Area. North of the highway lies the smaller, 270-acre portion of the park called the Union Hill Area. The part of the park south of Highway 174 is bounded on the north by East Empire Street, the eastern 500 yards of which traverses park property to join Highway 174 near the Rowe shaft structure. The existing main park entrance is off East Empire Street where it crosses park property. The outlying half-acre plot lies about one kilometer northwest of the unit boundary. It is the location of the drainage outlet for the mine tunnels. Together, these pieces total 314.32 hectares (776.68 acres). (See Vicinity Map.)

The resources of Empire Mine State Historic Park are numerous, varied, and significant. Cultural resources range from dilapidated late nineteenth century mining equipment and sites to mine owner William Bourn's stone cottage and associated mining facilities that remain in good condition. Rich and diverse biotic communities create a natural setting which is compatible with the historic scene and will greatly enhance the visitor's experience. A sensitivity to the importance and interrelationships of cultural and natural resources is prerequisite to developing the visitor use potential of this unit.




Note: Several structures were unnamed on the 1954 Reference Map.

SOURCE: Empire Surface Map, June 26, 1954, drawn by J.T.C.

**FIGURE 2**
**MAIN MINE OPERATION AREA**

The major visitor attraction is the collection of historic buildings and foundations near the main entrance to the park. This core historic area contains the structures (or their remains) of the gold mining operation and the residential buildings once used by mine owners and employees.

Only a trace of the former mining activity remains. Gone is the massive headframe that dropped the miners deep into the darkness of the mine tunnels and pulled them back again. Gone is the stamp mill which crushed the rock and extracted the precious yellow ore. Gone are the cyanide plant, blacksmith shop, welding shop, compressor house, and miscellaneous structures of vital importance to the most successful gold mine in California history.

However, several of the most significant mine buildings still stand. These include the mine manager's office (now used as a visitor orientation center), engineer's office, machine shop, the Rowe shaft headframe and ore bins, refinery, safety engineer's office, hoist house, and other miscellaneous buildings. The utilitarian character of most of these remaining structures is in strong contrast to the charm of the nearby gardens and grounds of the Empire Cottage. This area, comprising some 13 acres, was designed by the famous California architect, Willis Polk, and built in the 1890s. It served as the Grass Valley home of the Empire Mine's principal owner, William Bourn, Jr.

Also within the setting of native ponderosa pines and numerous exotic plant species is the distinctive Empire Clubhouse, once used as an entertainment center for the guests of Mr. Bourn. Cascading fountains, reflecting pools, formal garden areas, a greenhouse, several residences, tennis courts, and ornate brickwork are all a part of this historic setting.

In addition to the complex of historic structures near the park entrance, numerous building foundations, mining sites, one-car track alignments, and historic roads are found throughout the park. Many of these features are shown on old maps, but are no longer visible today.

The interest of Empire Mine State Historic Park is enhanced by the variety of its natural features. Ponderosa pines dominate the vegetation, as they do throughout the lower regions of the Sierra Nevada. Groves of black oak, unusually fine specimens of madrone trees, and innumerable introduced plant species, however, lend a charm not commonly found in this area of California. This plant diversity is particularly evident in the riparian growth along the primary water feature of the park, Little Wolf Creek. It has taken only a few short years for nature to heal many of the scars that decades of mining activity near this stream had created. Willows, cottonwoods, oaks, maples, alders, and Douglas-firs are thriving in the tailings pond area that contains the gravel and sand by-products of the mining operation.

*Rowe shaft ore bins*

*Mine manager's office*

This natural beauty may be enjoyed throughout the park, but certain areas provide particularly good scenic overlooks. The gentle slopes of Osborn and Union hills rise to elevations of about 2800 feet, approximately 300 feet above the flat terrain of the tailings area. From these hilltops it is possible to view the areas surrounding the park – pristine open space in some places and low density urban development in others. Empire Mine State Historic Park shares its western boundary with the steadily growing town of Grass Valley (pop. 5,650), and further residential development is to be anticipated around the park on all sides.

## Historical Background

The fall of 1850 was a memorable one for the newly settled town of Grass Valley. Gold had been discovered in California just two years earlier and the great gold rush was still in progress. George D. Roberts, who had come to Grass Valley intending to sell lumber, found a piece of the precious yellow ore and staked a 30 by 40-foot claim, which he named the Ophir Hill Ledge. This plot of land formed the nucleus of what would become known to the world as the Empire Mine.

Gold mining at the Empire Mine was an early example of hard-rock mining, a system that differed drastically from the placer method used by early prospectors. Hard-rock mining involved a highly sophisticated technology – experienced manpower, complex machinery, and a large-scale operation. The Empire Mine successfully met these qualifications and was able to realize significant profits under its good management. As one of the largest producing gold mines in California and one of the longest operating, the Empire Mine achieved world renown. It was particularly noted for being among the first to employ the newer techniques and machines as they were developed.

For two decades following the original Roberts' discovery, ownership of his claim was transferred frequently. In 1851, Woodbury, Park and Company purchased this property and began consolidating adjacent claims into what was called the Ophir Hill Mine. By 1854, a group of local miners had acquired the mine, incorporated, and called themselves the Empire Mining Company. This trend of merging mining and milling operations under one management was a major advance in hard-rock mining technology because it permitted the most efficient use of the necessarily large capital investment that this type of mining required. Eventually such mergers became a trademark of success for the Empire Mine.

The success of the Empire Mine in its early years was helped considerably by a mass immigration of tin miners from Cornwall, England. These Cornishmen, later called "Cousin Jacks," brought the hard-rock mining skills and knowledge that the placer miners did not have. Their innovative water pumps and tunneling techniques were essential to the mine's prosperity and the influence of these Cornish people on the culture of Nevada County still remains.

*Miner and ore car at the base of the Empire headframe*

*Old-time hard-rock miner setting dynamite charges in the mine*

This early prosperity was not uninterrupted, however. Indeed, a trend of several profitable years followed by several unsuccessful ones was characteristic of the Empire Mine throughout its history. After a general slump in the gold industry, a series of labor disputes, and a disastrous fire, the future of Empire Mine seemed grim. But William B. Bourn, who gained control of the company in 1869, kept the business going and the operation entered a new period of prosperity in 1874.

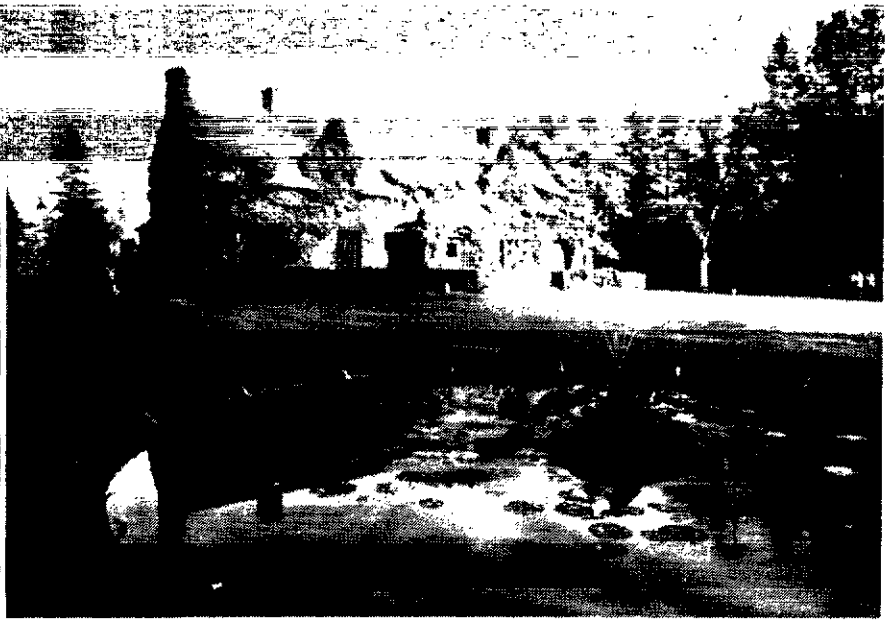
By the fall of 1878 the mine's fortunes were once again at a low point. Against the advice of expert engineers, Bourn's son, William B. Bourn, Jr., began further underground explorations. By 1886 water-powered Pelton wheels were installed to replace steam as a source of power, a new rich vein had been struck, and the shaft was 1600 feet deep on the incline. The mine's fortunes were again rising.

A return to impoverished times in the early 1890s was followed by a new era of prosperity. George W. Starr, a cousin of William Bourn, Jr., became superintendent of the company and immediately introduced daring innovations. Electrical power was installed; a new headframe, stamp mill, and water system were constructed; and systematic underground development was pursued.

This was the beginning of the golden years for the Empire Mine. Willis Polk, a well-known architect, was commissioned to design Bourn's new home (called the Empire Cottage), a mine manager's office, and a clubhouse, complete with bowling alley, tennis court, and ballroom. These buildings were constructed in the style of a British country estate, using such rustic elements as stone, brick, and redwood, and were evidence of an opulent life-style that was typical of a relatively small group of big businessmen in California at the turn of the century. These architectural attractions were surrounded by thirteen acres of lawn, gardens, pools, fountains, and terraces; a greenhouse and several employee residences were built as well. It was indeed a beautiful setting.

These golden years of the Empire Mine came to an end in 1929 when William Bourn, Jr., faced with diminishing profits and deteriorating health, sold his controlling interest in the mine to the Newmont Corporation of New York for $250,000. A merger between the Empire and nearby North Star Mine resulted in the creation of the Empire-Star Mines Company, Ltd. The new organization operated at a healthy profit for the next twelve years in spite of the Great Depression of the 1930s and by 1939 the company had over 400 employees. This prosperity came to a sudden end during World War II when the federal government ordered the Empire to limit operations as an emergency measure to conserve manpower and equipment.

The Empire Mine never recovered and for the next ten years operated at a loss until it closed in 1956. An incline depth of 11,000 feet had been reached and the earth underneath Grass Valley was honeycombed with over 350 miles of tunnel. The 106-year history of the Empire Mine as an operating gold mine had ended.



*Empire Cottage*

# RESOURCE MANAGEMENT PLAN

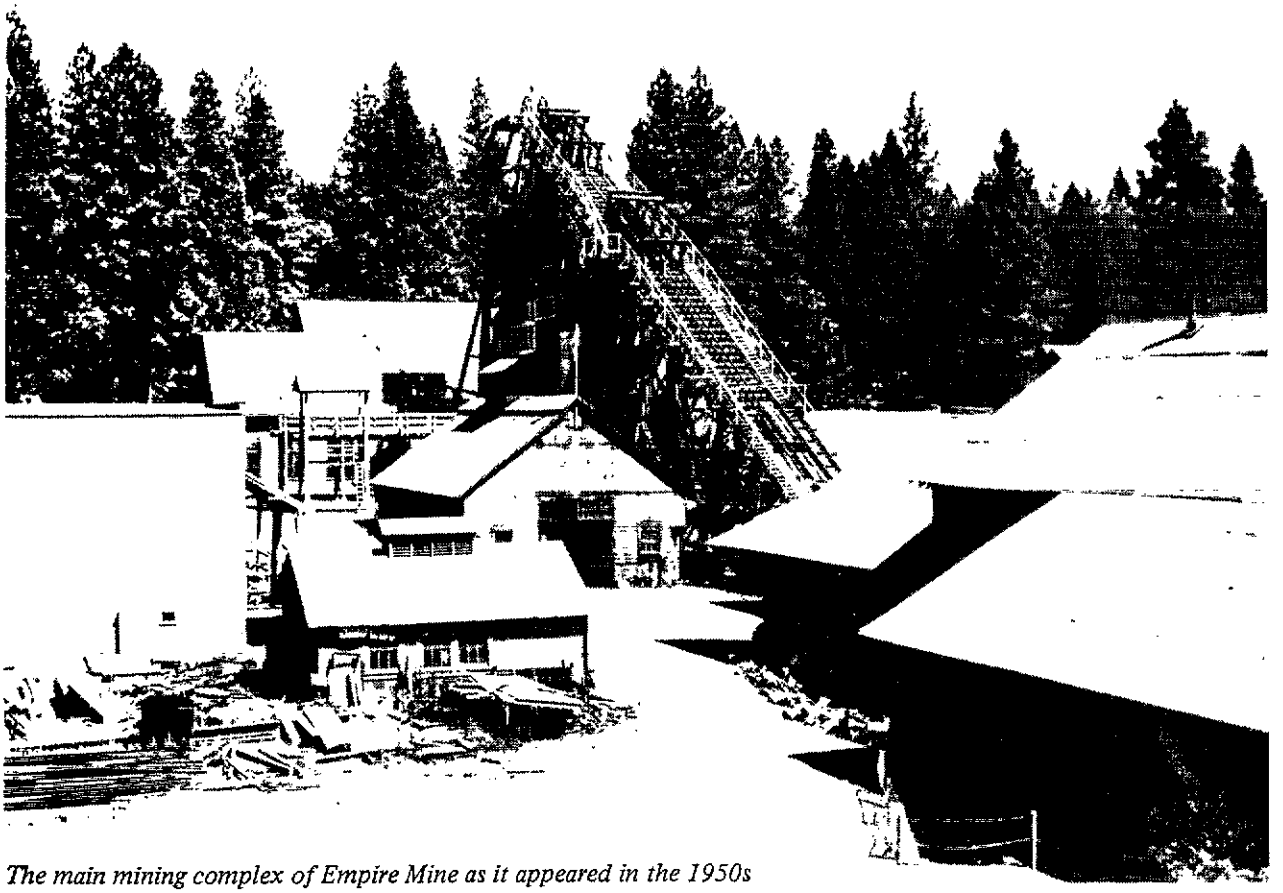
*The Rowe shaft headframe today*

## STATUTORY OBJECTIVES

The Empire Mine property was classified as a State Historic Park on October 8, 1976, by the State Park and Recreation Commission in conformity with the Public Resources Code [Section 5001.5(e)]. The fundamental goal of an historic park is the preservation of resources of prehistoric or historic value. The interpretation and presentation of these resources should help the visitor to appreciate, understand, and enjoy learning about the aspect of California's heritage for which the historic park was established. The educational benefits that visitors may derive are an important part of their experience in an historical unit.

The use and management of resources at Empire Mine State Historic Park will emphasize the unit's historic and natural values, subordinating its recreational potential where historic integrity may be violated. A Zone of Primary Cultural Interest has been identified in which activities will be carefully planned and regulated. The zone contains most of the unit's prime resources and is located near the main entrance of the unit. Within this zone, complete historical integrity will be sought. Activities within the zone may include passive recreation or social functions such as plays or recitals, if the activities are deemed compatible with the primary purpose of the unit. Outside the zone, certain agricultural, mercantile, and other commercial activities that do not violate historical authenticity may be permitted. Upon the approval of the State Park and Recreation Commission, lands may also be selected outside the zone for camping facilities.

The department's Resource Management Directives dealing with historical units and cultural resources in the State Park System will be followed. The Public Resources Code regarding historic units calls for facilities "required for the safety, comfort, and enjoyment of the visitors." The Code prohibits the development of facilities that do not relate to "the history of the individual unit" or that do not "retain or restore historical authenticity." The philosophy on which this legislation and the Directives are based guides specific policies for Empire Mine State Historic Park.



*The main mining complex of Empire Mine as it appeared in the 1950s*

## RESOURCE INVENTORY AND ANALYSIS

### Introduction

The purpose of the Resource Inventory and Analysis is to investigate the cultural and natural resources of Empire Mine State Historic Park in order to protect high-value resources from being endangered by park visitation and development. The Resource Analysis predicts this potential impact by identifying areas of high environmental sensitivity. Those areas that are highly vulnerable to damage are shown as shaded portions of the Resource Maps.

### Cultural Resources

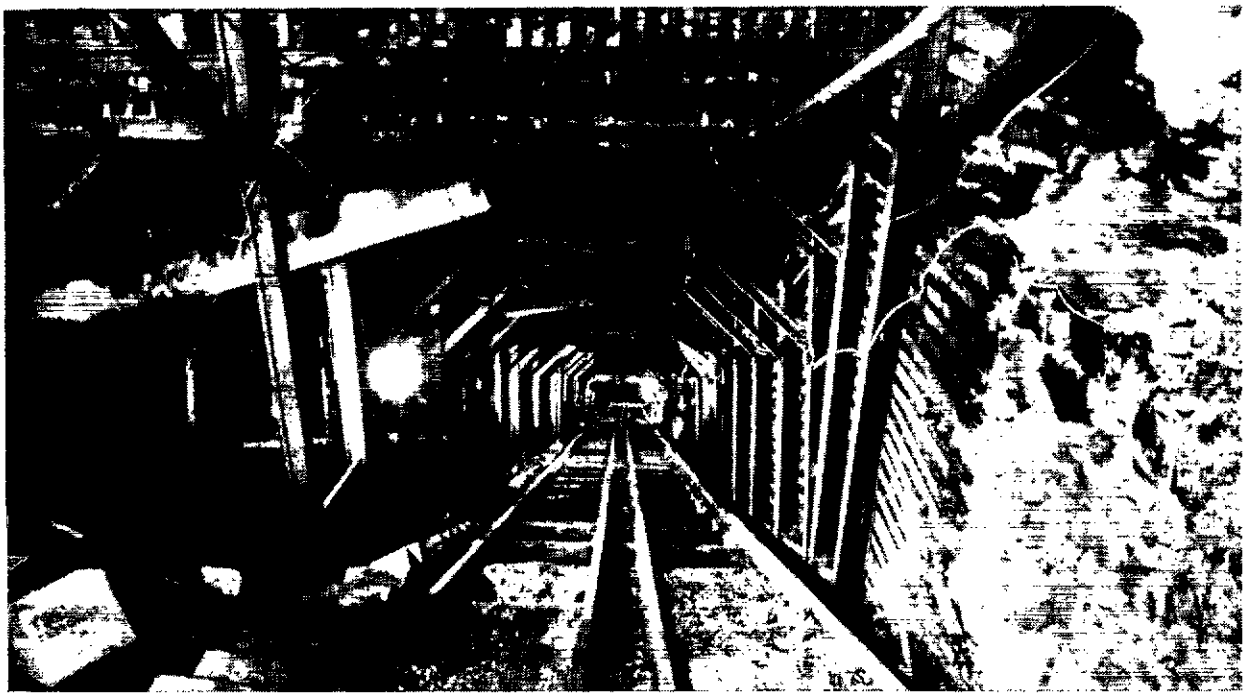
Constant change and creative thinking kept the Empire Mine in operation for 106 years, a rather remarkable achievement. Throughout its history mine sites were discovered, then deserted; buildings were constructed, then demolished; and roads were built, then abandoned. The park property today only vaguely resembles the scene encountered by the gold seekers of the 1850s (see Cultural Resources Map).

The historic resources found at the unit today relate principally to the period from the late nineteenth century through the first half of the twentieth. These historic resources are of widely varying condition and significance and consist of buildings, structures, objects, and sites related to mining activities. Many are of high quality and make a notable contribution to the historic scene.

The principal historic resources are located near the main entrance of the unit, within the Zone of Primary Cultural Interest. The zone contains the Empire Mine complex and Ophir Hill, including the Rowe Shaft headframe, shops, a warehouse, hoist house, ore bins, offices, garages, and other evidence of mining such as foundations and tailings ponds.

The principal mine shaft, which slopes at approximately 39 degrees from the ground level, is a main visitor attraction. It is now filled with ground water to within 180 vertical feet of the surface. Decaying remnants of ore car tracks, utility lines, and structural cribbing can still be seen within this austere passageway.

The rustic mine manager's office, made of native stone and redwood, was the center of activities involving the supervision and management of the mine. Under the same roof were the safety engineer's office and ore refinery, both of which were well-protected during the mining days for security reasons.



*The Empire Shaft today*

*Machine shop*

Adjacent to the mine shaft stands the two-story machine shop, utilitarian in appearance and over seventy years old. Inside this building was where much of the everyday repair work was done with the modern machinery that enabled Empire Mine to become the showplace of the gold mining industry. The nearby hoist house, which once contained giant hoisting motors for the shaft, has experienced little deterioration over the years.

An engineer's office is a significant part of this historical scene. It was used for the preparation of mine maps and models, and contains a room addition built in the 1930s. The adjacent diamond drill core building served as a storage unit for the core samples of the newly dug tunnels. Miscellaneous other mining structures, such as transformer houses and garages, still remain in this area and other portions of the park.

Despite the presence of these impressive structures, less than half of the early twentieth century operation remains today. The awesome headframe was destroyed in 1969 as a safety precaution because of its state of deterioration, and only its foundation can be seen today. Foundations of the blacksmith shop, welding shop, compressor house, cyanide plant, warehouses, and garages help us to visualize the massive scale of this gold mining operation. Little can be seen of the stamp mill, which crushed the ore and whose foundation is now covered by rock; or the dry house, which gave the miners shelter for changing into their work outfits. Gone too is the elevated walkway from the manager's office to the stamp mill, which provided the management a convenient means of inspecting the operation.

Immediately northwest of this mining complex lie the charming gardens and grounds area and former residences of the wealthy mine owners and managers. The close juxtaposition of the elaborate residential complex with the industrial facilities may be unique to California mining history, and certainly lends itself to interpretation. The Empire Cottage, or Bourn Mansion as it is often referred to, stands at the crest of gently sloping lawns covered with native ponderosa pines and numerous exotic plantings. This two-story former home of William Bourn, Jr., styled after the noble estates of nineteenth century Scotland, was built in the late 1890s and is distinguished by a remarkable redwood interior and leaded glass windows.

A somewhat similar design is reflected by the Empire Clubhouse, a three-story building built in the early 1900s to entertain the guests of the mine owners. It was comfortably equipped with such luxuries as a bowling alley, ballroom, tennis courts, and croquet court. Only a foundation, some brick paving, and dense shrubbery remain of the home of the prominent mine Manager, George W. Starr.

Fountains, reflecting pools, formal gardens, ornate brickwork, a greenhouse, and several residences are also found within the thirteen acres surrounding the Empire Cottage. The vast majority of buildings in this area, unlike those of the mining operation, are still standing. Early photographs reveal, however, that drastic changes have occurred in the landscape over the last seventy years. Seedling pines have matured, views have been obstructed, a water storage pond has been drained, and the untended gardens have grown wild, intruded upon by native plants. A program of maintenance has begun and restoration efforts will return the grounds to the splendor they once displayed.

## KEY TO CULTURAL RESOURCES

**A. Mining Structures, 1964[2]**

a. Existing structures visible[2]
1. Empire Shaft
2. Hoist House
3. Manager's Office
4. Refinery
5. Safety Engineer's Office
6. Engineer's Office
7. Rowe Shaft Headframe
8. Rowe Shaft Ore Bins
9. Warehouse No. 1
10. Diamond Drill Core Building
11. Transformers (2)
12. Boiler
13. Hoist Cable Structure
14. Machine Shop
15. Garages (3)
16. New Rich Hill Shaft

b. Existing, Foundations visible only[2]
20. Headframe
21. Compressor House
22. Cyanide Plant
23. Blacksmith Shop
24. Welding Shop
25. Warehouse No. 7
26. Stamp Mill (Foundation Buried by Rock)
27. Scale
28. Unnamed

c. Removed[2]
30. Rowe Shaft Conveyor
31. Rowe Shaft Hoist House
32. Walkway from Manager's Office
33. Transformers (2)
34. Warehouses (4)
35. Garages
36. Fuse House
37. Cap House
38. Sheds (3)
39. Scale
40. Dry
41. Unknown
42. Unknown
43. Unknown
44. Unknown
45. Unknown
46. Unknown
47. Unknown
48. Unknown
49. Unknown
50. Unknown
51. Unknown

**B. Residential Buildings, 1954**

a. Existing, Structure visible
55. Bourn Mansion (including grounds area)
56. Empire Clubhouse[2]
57. Gardener's House[2]
58. Greenhouse[2]
59. George Starr House Ruins[2]
60. Sing Residence[2]

b. Presently inhabited by park employees
65. Cassidy Mine House (Spruce Cottage)[2]
66. Mill Man House[2]
67. Manzanita Cottage[2]
68. Kendell House
69. Cedar Cottage

**C. Empire Mine, 1896**

a. Existing, Structure visible
Several existing structures indicated on the 1954 Empire Surface Map appear to be shown on the 1896 map by Waldemar Lindgren. These structures are not clearly defined on this 1896 map, however, and are not listed here.

b. Existing, Foundation visible only[1]
76. W.Y.O.D. Mine Structure
77. W.Y.O.D. Mine Structure
78. W.Y.O.D. Mine Structure
79. W.Y.O.D. Mine Structure
80. Orleans Mine Structure
81. Unknown
82. Unknown
83. Unknown

c. Removed[1]
86. Unknown
87. Unknown
88. Unknown
89. Unknown
90. Unknown
91. Unknown
92. Unknown
93. Unknown
94. Golden Treasure Mine Structure
95. Unknown
96. Unknown
97. Unknown
98. Unknown
99. Unknown
100. Unknown
101. Daisy Hill Mine Structure
102. Unknown

**D. Field Survey, 1976[4]**

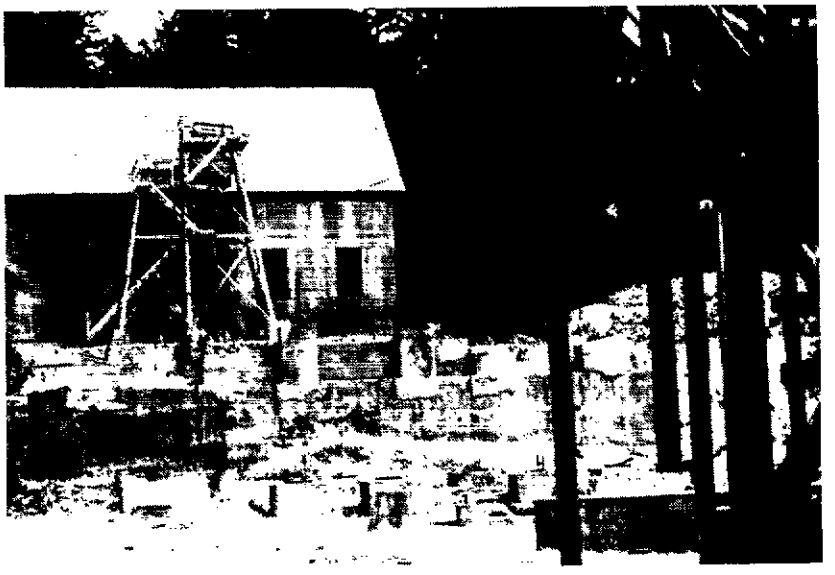
The following structures do not appear on either the 1896 or 1954 map.

a. Existing, Structure Visible
106. Pennsylvania Mine Structure
107. Pennsylvania Mine Structure

b. Exisiting, Foundation visible only
111. Pennsylvania Mine Shaft
112. Pennsylvania Mine Headframe
113. Pennsylvania Mine Hoist House
114. Unknown
115. Unknown
116. Unknown

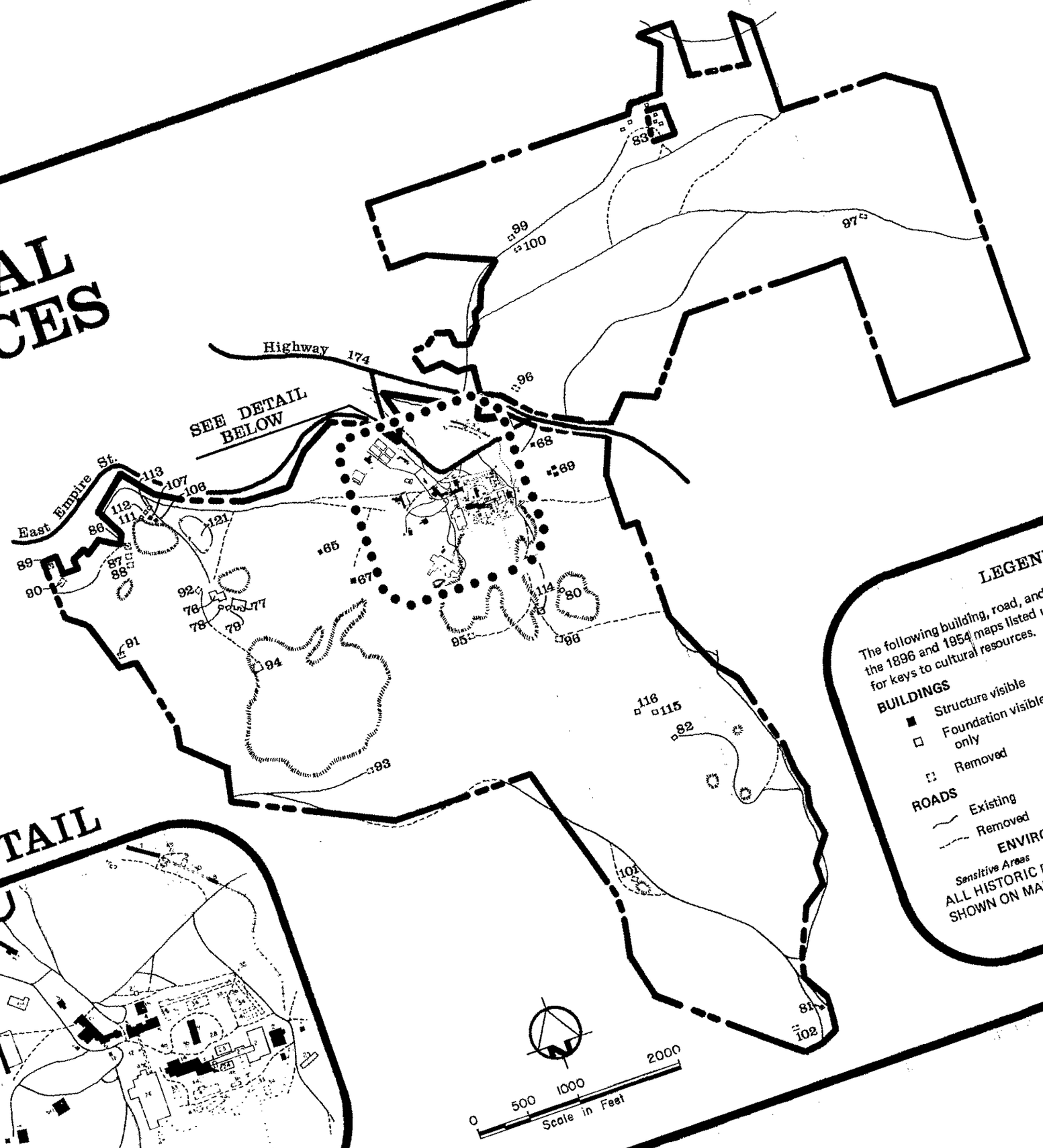
c. Removed
121. Mule Corral


**References**
1. Nevada City Special Folio, by Waldemar Lindgren, March 1896
2. Empire Surface Map, drawn by J.T.C. June 26, 1954
3. Aerial Photograph, by Cartwright Aerial Surveys, Inc., June 21, 1971
4. Field Survey, June 16-19, 1976

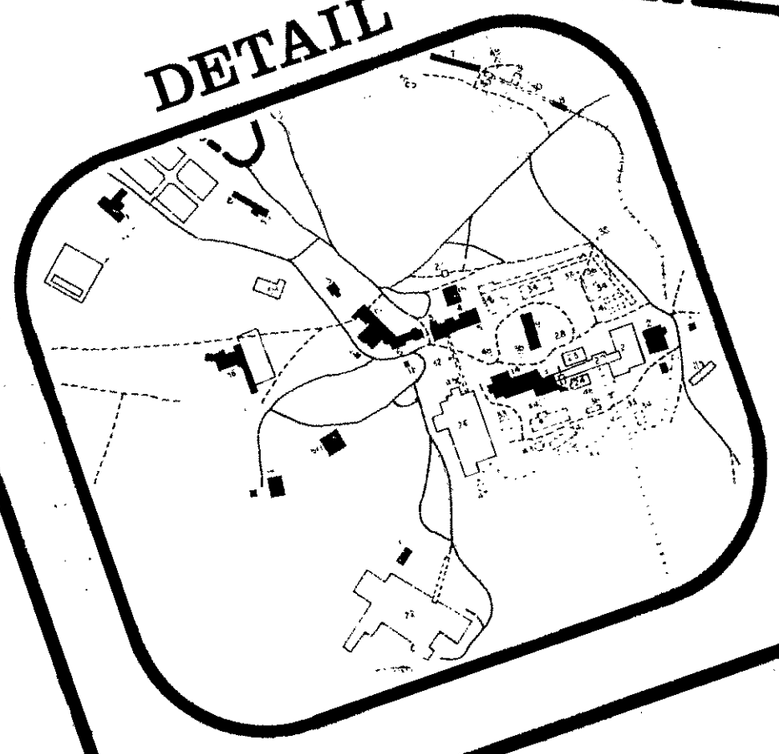



*Hoist house and Empire headframe foundations*

# CULTURAL RESOURCES




## DETAIL



## LEGEND

The following building, road, and dump locations are shown on the 1896 and 1954 maps listed under references. See Table for keys to cultural resources.

**BUILDINGS**
- Structure visible
- Foundation visible only
- Removed

**ROADS**
- Existing
- Removed

**DUMPS AND TAILINGS**
- Existing

**RAILROAD TRACKS**
- Removed

**ENVIRONMENTAL SENSITIVITY AREAS**

*Sensitive Areas*
ALL HISTORIC FEATURES SHOWN ON MAP

*Potential Environmental Impact*
ENCROACHMENT ON HISTORIC SITE

FIGURE 3

DESIGNED
DRAWN APR 1977
CHECKED

DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED DATE

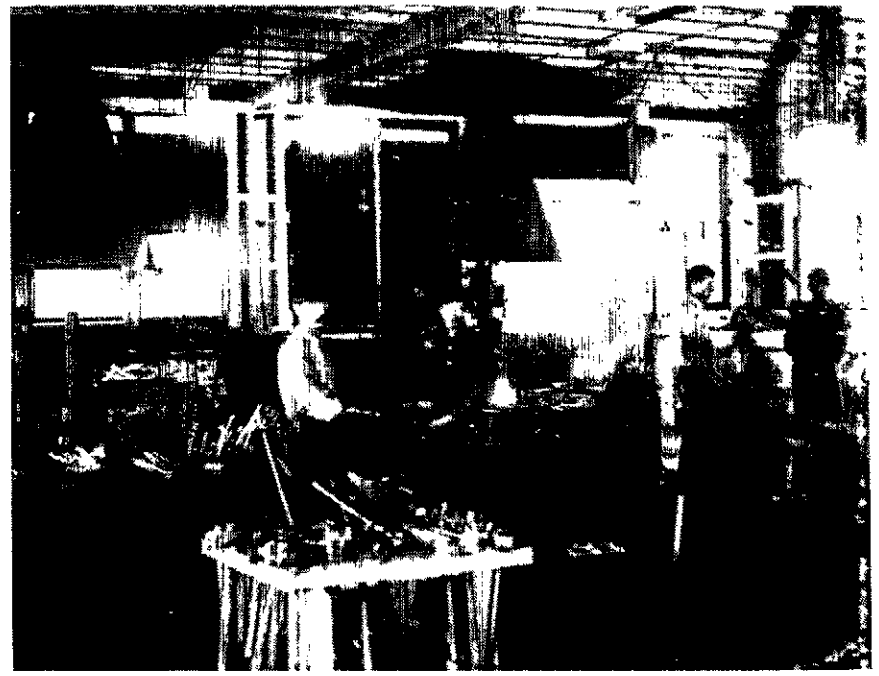
EMPIRE MINE STATE HISTORIC PARK

CULTURAL RESOURCES

DRAWING NO.

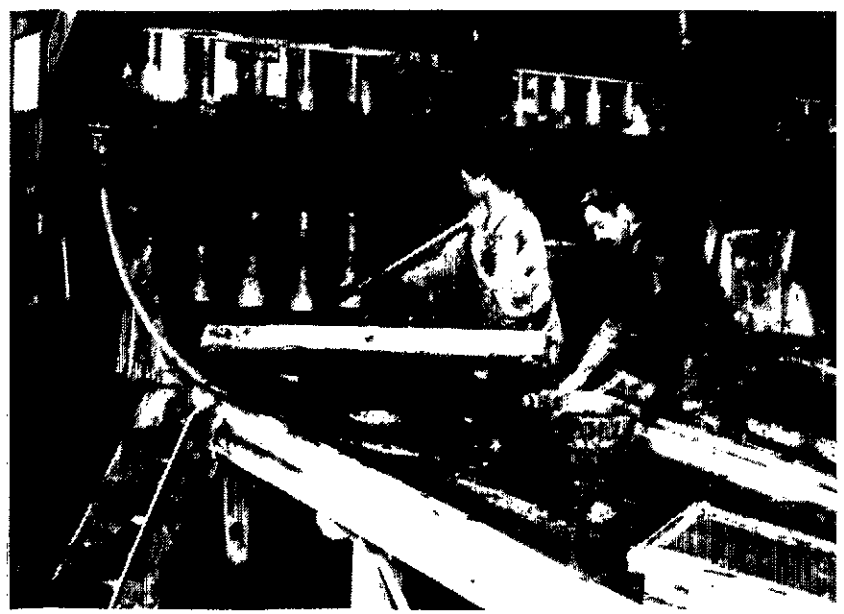
SHEET NO.
OF

In the Mine

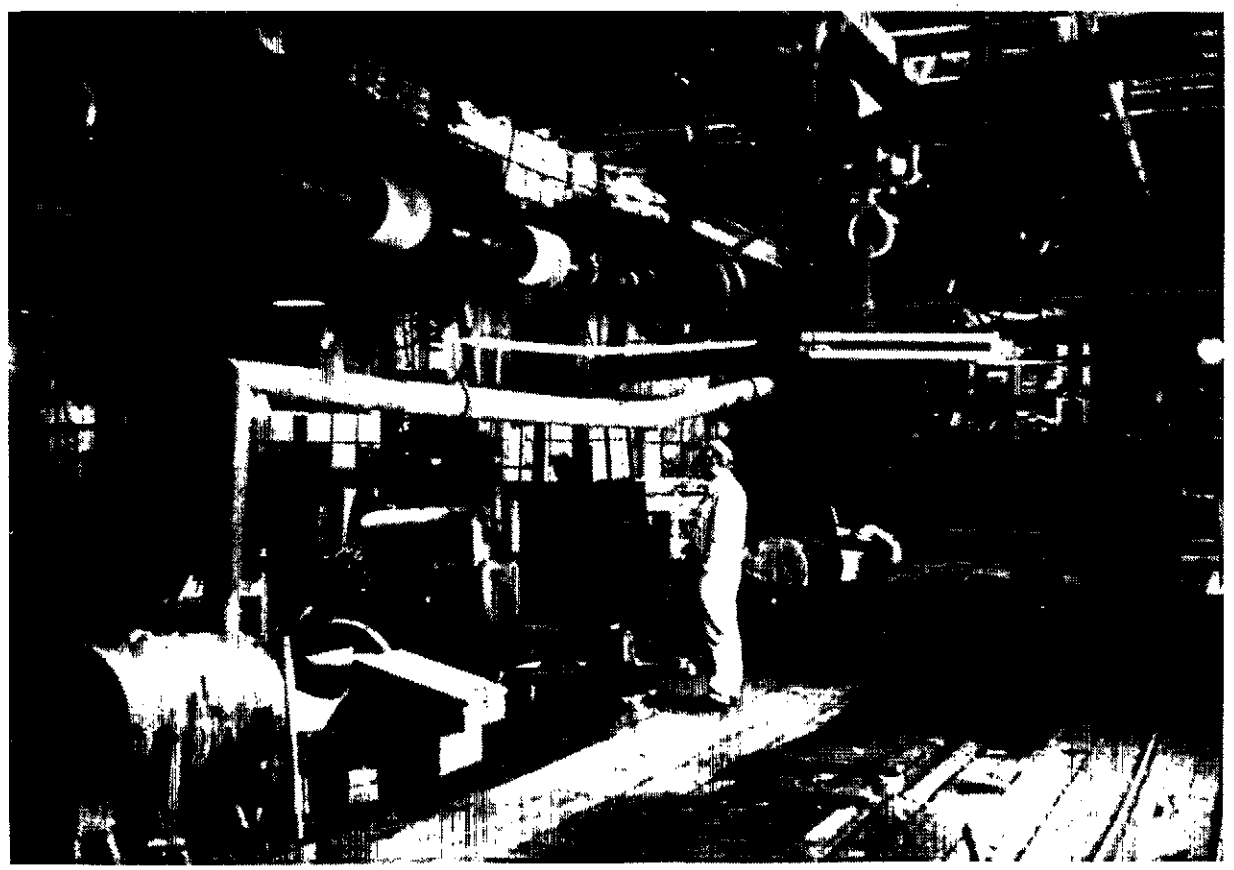


The blacksmith shop





Inside the stamp mill



The machine shop

The history of Empire Mine reaches far beyond this most popular portion of the park. A systematic consolidation of surrounding claims enabled the Empire Mine to acquire such mines as the Pennsylvania, Rowe, Orleans, Daisy Hill, Conlan, Golden Treasure, and W.Y.O.D. (Work Your Own Diggings). The Rowe headframe and nearby ore bins are the most impressive remaining structures of these mines. Small structures, foundations, and tailings mark the sites of the others.

The mine tailings found throughout the park provide the best indication of the immense scale of the mining process. The excavation of over 350 miles of tunnels resulted in the creation of three basic types of tailings: (1) the rock and gravel waste, with little or no gold content, lies in the vicinity of the main mining area and various other claims; (2) sand tailings, a product of the operation, cover approximately 30 acres near Little Wolf Creek. This area is bordered on the west by an enormous rock dam and is an impressive display of mining's effect on the environment; (3) sulphide tailings, a small barren mass near the cyanide plant.

Although the unit has tremendous potential for interpretation and development, there are deficiencies in historic resources relative to the themes and period to be portrayed. First, there are few resources related to mid-nineteenth century mining. Second, some resources that could be used to depict the hard-rock mining story of the late 1800s and early 1900s are in a state of deterioration. The worst example of this deterioration is the machine shop, a portion of which is collapsing into the main shaft of the mine. Third, some of the significant artifacts still on the property are not owned by the state. They include some mining machinery and furniture from the Empire Cottage. Fourth, prior to the state's purchase of the property much of the equipment was removed and buildings were torn down.

The state, in order to overcome these problems, will have to undertake the following:

1) Conduct further research
2) Stabilize, restore, and reconstruct appropriately
3) Equip the mine and related resources
4) Provide adequate protection and maintenance of the property.

Themes and eras of California history have been identified in the California History Plan. Empire Mine State Historic Park is related generally to the Economic/Industrial theme during the American era (1849-present). The cultural resources of the unit will be used to interpret people and events relative to this theme and era. Specifically, the emphasis of the unit will be on the hard-rock phase of gold mining in California and on its role in California's development.

The California History Plan does not indicate deficiencies in the interpretation of the gold rush and mining in California. However, public interest is high in units related to these aspects of the state's history. Other State Park System units that interpret gold mining do not deal specifically with the hard-rock mining phase, which has strongly influenced local and state history. An awareness of the economic and industrial developments and changing life-styles of owners, managers, and miners associated with Empire Mine over its long period of operation will help people today to understand the significance of the mines and the nature of life there.

Empire Mine State Historic Park has been surveyed for archeological values. No prehistoric resources, including paleontological features, were found in the unit. This does not, however, preclude their existence here. The Nisenan Indians are known to have inhabited the area of Grass Valley prior to the discovery of gold there in 1850. Over one hundred years of mining activity have made the recognition of archeological sites difficult because of the disturbance of most areas and the continual changes in the landscape. If discovered, all archeological resources will be protected or professionally studied to preserve and fulfill their values. When found to be significant as judged by criteria adopted by the department, these archeological resources will be included in applicable programs for preservation, investigation, and interpretation. All significant cultural resources will be protected from damaging or degrading influences and from careless destruction or loss. State law and the department's Resource Management Directives will be followed in the treatment of all significant cultural resources. For a detailed listing of cultural resources, see the Cultural Resources Map, p. 15.

## Geology

Millions of years of complex geologic formation resulted in the deposition of gold-bearing veins in the Empire Mine Area. This geologic history can be traced to the early Mesozoic era, approximately 200 million years ago, when reptiles dominated the earth and seas covered the area now occupied by the Sierra Nevada. A slow steady accumulation of immense quantities of sediments from eroding adjacent land areas and intermittent deposits of igneous rock by volcanoes was followed by intense mountain-building forces.

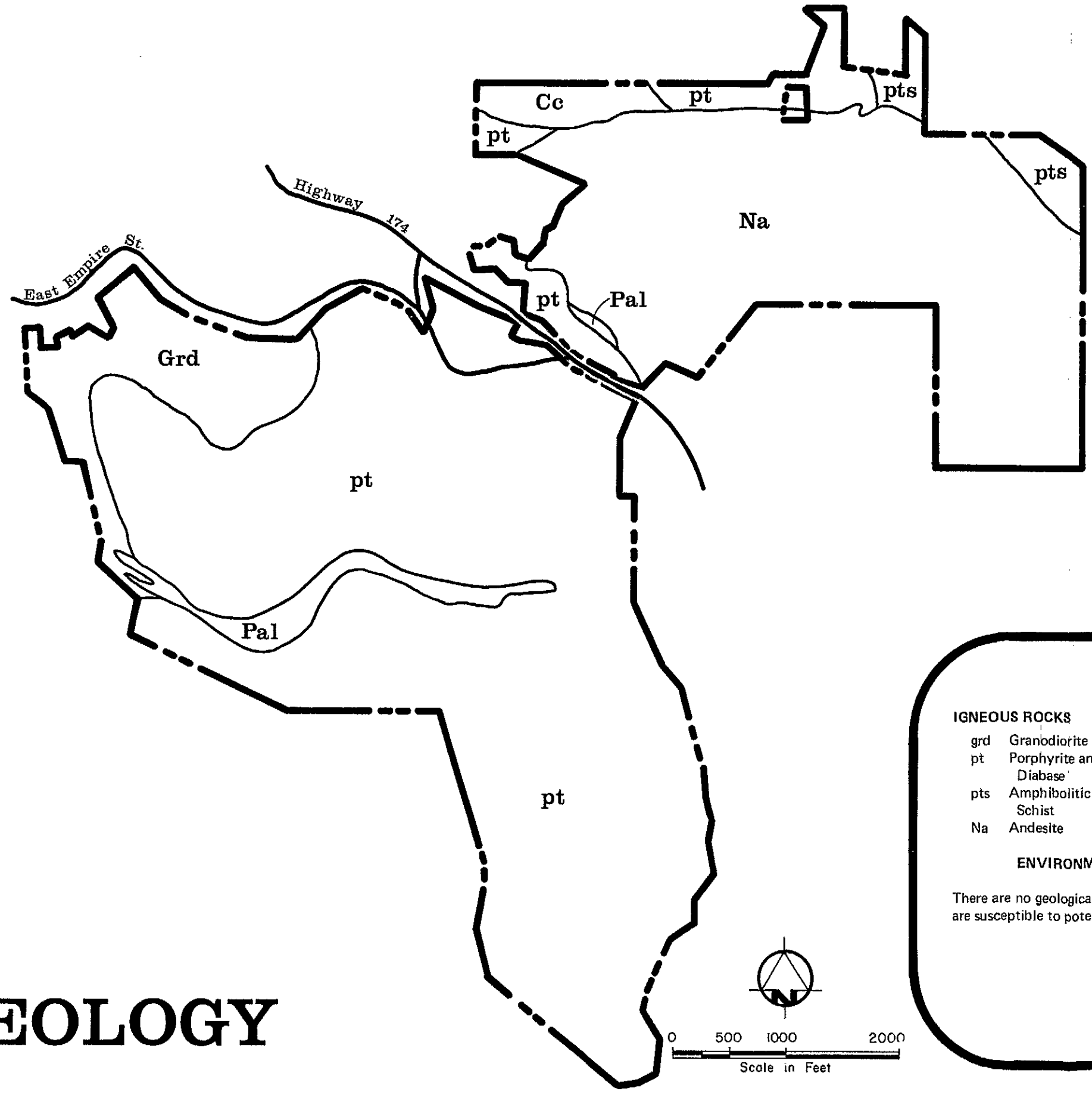
These compressed and crushed masses contained enormous amounts of granodiorite and batholiths of granite underneath thousands of feet of rocks. This rock covering has since eroded away exposing the granite and granodiorite, the most recent bedrock type of the Grass Valley area. A series of intense dynamic forces then produced a system of cracks or fissures within the Sierra, enabling thermal waters to gradually ascend. It was these waters that brought the precious gold.

At the beginning of the Cretaceous period, 136 million years ago, when dinosaurs were becoming extinct and flowering plants were appearing, the Sierra Nevada were rising from periodic uplifts and the Pacific Ocean was moving westward over the Sacramento Valley. Upper portions of the gold veins were removed by erosion, causing a concentration of gold in stream and river beds. Towards the end of the Tertiary period, several million years ago before the great ice age, the rivers were inundated by hundreds of feet of volcanic mud and lava. As the Sierra Nevada were subjected to a tilting uplift, a new drainage system cut rapidly through the volcanic material, excavating deep canyons and reaching the igneous and metamorphic bedrock. The concentration of gold in the ancient rivers was modified by this new arrangement of waterways. Much of the gold remained buried under hardened volcanic mud, waiting to be discovered by hard-rock miners less than a million years later. It was during the Tertiary period that the great ridge of Osborn Hill rose to its present height.

As the glaciers gradually disappeared and soil accumulation covered the barren ground, a milder, more arid climate prevailed. In a comparatively short period of several thousand years, the underground gold deposits of Empire Mine had become covered by the native vegetation we see today. By the 1890s, gold seekers had explored the surface of every ravine and creek in the Grass Valley area. Evidence of their placer diggings still remain at Empire Mine in the form of such claims as the Mother Neal and remnants of old sluice boxes, mine dumps, and scarred landscapes.

It was the geologic system of gold-bearing veins, however, that was responsible for the erratic success of The Empire's hard-rock mining over the years. Since most of the gold at the Empire mine was obtained primarily from veins which varied in width from several feet to a fraction of a foot, a considerable amount of exploratory work was required. At each mine near Grass Valley, the main gold-bearing vein would, at various levels, close down to a mere seam for several hundred feet before opening into a side branch or "pay shoot." At greater depths, a seam might intersect other veins and become a large, rich ore body several hundred feet in length. This fact explains why the boom periods were followed by long periods of searching for profitable veins, during which the fortunes of the mine fell to low levels.

*Hard-rock mining*




# GEOLOGY

## LEGEND

**IGNEOUS ROCKS**

- grd Granodiorite
- pt Porphyrite and Diabase
- pts Amphibolitic Schist
- Na Andesite

**SEDIMENTARY ROCKS**

- Cc Calaveras Formation

**SURFICIAL ROCKS**

- Pal Alluvium

**ENVIRONMENTAL SENSITIVITY AREAS**

There are no geologically sensitive areas in the park vicinity which are susceptible to potential environmental impact.

FIGURE 4

DESIGNED
DRAWN APR. 1977
CHECKED

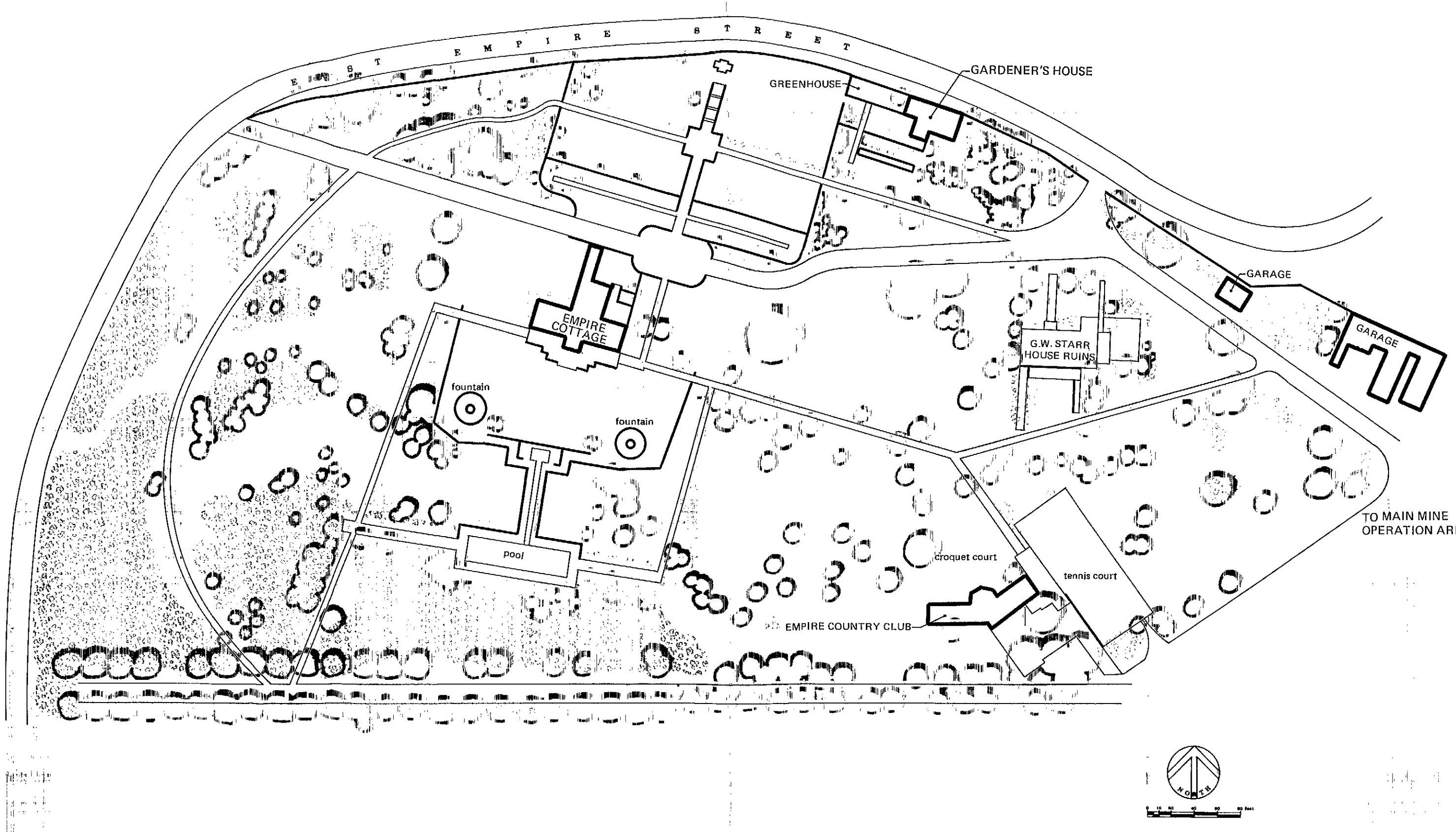
REVISIONS
DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED ____ DATE ____

EMPIRE MINE STATE HISTORIC PARK
GEOLOGY

DRAWING NO

SHEET NO.
OF




# EMPIRE MINE GARDENS AND GROUNDS

FIGURE 5

The Geology Map shows the location of the previously described rock types. Grayish-green granodiorite is found in the western extremities of the primary historic area and contains black hornblende, red and green feldspar, and quartz. Porphyrite and diabase, or "greenstones," occupy the greatest portion of park property, and they make a sharp contact on the west against granodiorite. These rock types, which sometimes contain abundant iron pyrites, are the product of an earlier volcanic eruption than the eruption that deposited the granodiorite.

Andesite, gray to reddish brown in color, is predominant on Union Hill. It is an igneous rock originating from the Tertiary period. Calaveras formation, a sedimentary rock consisting primarily of black clay slate and hard black sandstone, is of a later time period and is found in a small isolated area on Union Hill. Alluvium deposits of clay and sand occur in the streambeds and banks of Little Wolf Creek.

There appear to be no geologically sensitive areas that are susceptible to potential environmental damage within the park boundary. The nearest earthquake fault to Empire Mine lies approximately 2 miles west of Grass Valley and extends north and south some 50 miles. It is recognized as a Pre-Quarternary fault (older than 2 million years) with no recognized history of displacement. Evidence of movement, however, may have been destroyed by works of man, erosion, or growth of vegetation, and the fault should not necessarily be considered inactive.

### Vegetation

Empire Mine State Historic Park is located in the northern portion of the Sierra Nevada Landscape Province, 750-870 meters (2500-2900 feet) above sea level. The natural setting of ponderosa pine, characteristic of the lower Sierra Nevada, has been greatly changed since the start of mining in the area.

There are many evidences of the tremendous impact that man has had on the environment. The miners and early settlers cut down most of the trees in the area, but today we see many portions that are heavily forested. The exotic plants that were introduced is another interesting feature. The ecological relationships found in the tailings pond area illustrate the devastation that humans can impose on the environment and nature's reaction to it. All of these factors, viewed in their historical context, can contribute greatly to the visitor's experience at the unit.

The native vegetation is dominated by ponderosa pine mixed with incense-cedar and black oak. They form a tree cover throughout the park that varies from low to high density. A high degree of diversity is present partly because of the devastating effect of mining and the introduction of new non-native plant species. Twenty-five tree cover areas and twenty-three shrub and groundcover areas have been identified according to plant types, diversity, and density (see Tables 1 and 2).

The Zone of Primary Cultural Interest, described on page 11, contains the greatest modifications of the native vegetation. Thirteen acres of picturesque gardens and grounds surrounding the Empire Cottage include over 200 introduced species in a setting of native pines. An extensive inventory of this area has been made to aid in the determination of what plants existed during the prime interpretive period and to facilitate the establishment of a comprehensive resource management and interpretation program. (See Gardens and Grounds Map.) Some of these introduced plants, such as tree-of-heaven and cherry trees, have propagated themselves throughout the park, particularly in the vicinity of mining sites and ranger residences where the native cover has been disturbed.

Approximately 20 acres of the sand tailings area form a vast, austere expanse, but along two sides, by the "sand dam" and Little Wolf Creek, there has been a relatively rapid revegetation process dominated by riparian growth. Willows, cottonwoods, locusts, alders, horsetails, and grasses thrive in this moist soil, creating a habitat rich in wildlife. Rock and gravel tailings in the vicinity of various mining sites, on the other hand, are substantially barren of vegetation. No plant growth is found on the sulphide tailings near the cyanide plant foundation.

Native plant growth on Union Hill is a further illustration of the natural evolutionary process interrupted by the activities of man. Periodic fires caused by natural forces had kept understory vegetation to a low density, and the relatively open tree cover permitted the survival of picturesque black oak groves. Since forest fires have been controlled by man and the ponderosa pines have multiplied in number, the continued survival of these black oak groves is in jeopardy. The oak seedlings cannot develop in the shade of the pines. In several spots on Union Hill, the more

Note: The vegetation mapping is divided into Trees, Shrubs, and Groundcover. These maps are keyed to Tables 1 and 2. Areas of high environmental sensitivity are shown as shaded areas on the map and include such vegetation as black oak groves, riparian growth along Little Wolf Creek, madrone groves, grass meadows, the gardens and grounds area, and tailings areas. They should be preserved in order to retain their character and prevent potential damage to the resource.

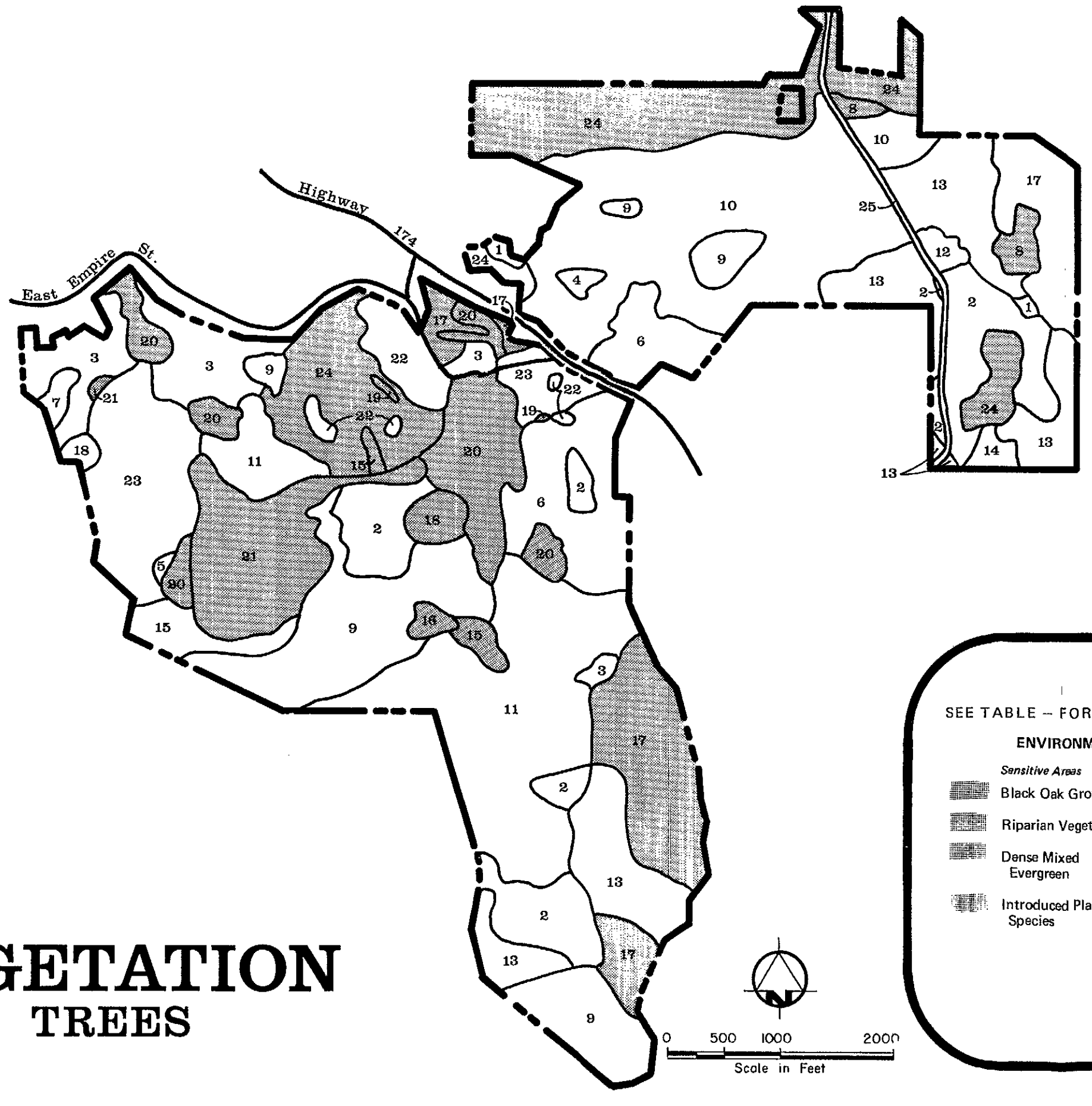
## TABLE 1
## TREES

### NATIVE LANDSCAPES

| Cover Area | Tree Diversity | Ponderosa | Incense | Black | Other(s) | Tree Cover Density | Environmental Sensitivity | Potential Environmental Impact |
|---|---|---|---|---|---|---|---|---|
| 1 | Low | – | – | – | – | Low | – | – |
| 2 | Low | X | – | – | – | Low | | |
| 3 | Low | XXX | – | – | – | Low to Moderate | | |
| 4 | Low | – | XXX | – | – | Moderate | | |
| 5 | Low to Moderate | XXX | – | X | – | Low to Moderate | | |
| 6 | Moderate | XXX | X | – | – | Low to Moderate | | |
| 7 | Moderate | XXX | X | – | – | Moderate to High | | |
| 8 | Moderate | X | – | XXX | – | Moderate | High | Loss of Valuable Vegetation |
| 9 | Moderate | XX | XX | XX | – | Low to Moderate | | |
| 10 | Moderate | XX | XX | – | – | Moderate | | |
| 11 | Moderate | XX | XX | – | Cherry X<br>Douglas-fir X<br>Sugar Pine X | Moderate | | |
| 12 | Moderate | – | X | XX | – | Moderate | | |
| 13 | Moderate | X | X | XX | – | Moderate | | |
| 14 | Moderate | X | X | X | – | High | | |
| 15 | High | – | – | – | Alder X<br>Cottonwood X<br>Willow X | High | High | Loss of Valuable Vegetation |
| 16 | High | XX | X | XX | Big-leaf Maple X<br>Douglas-fir X | High | High | Loss of Valuable Vegetation |
| 17 | High | XX | XX | XX | Douglas-fir X<br>Madrone X | Moderate to High | High | Loss of Valuable Vegetation |

### LANDSCAPES ALTERED BY MAN

| Tree Cover Area | General Description | Tree Diversity | Ponderosa Pine | Incense Cedar | Black Oak | Other(s) | Tree Density | Environmental Sensitivity | Potential Environmental Impact |
|---|---|---|---|---|---|---|---|---|---|
| 18 | Sulphide Tailings | No Tree Growth | – | – | – | – | No Tree Growth | High | Alteration of Historic Site |
| 19 | Burned and Logged Area | Low | – | – | – | – | Low | | |
| 20 | Rock and Gravel Tailings | Low | X | – | – | Variable | Low | High | Alteration of Historic Site |
| 21 | Sand Tailings | Moderate | – | – | – | Black Locust<br>Cottonwood<br>Willow | Low | High | Alteration of Historic Site |
| 22 | Considerable Numbers of Introduced Tree Species | High | X | X | X | Residential Landscaping | Low to High | | |
| 23 | Scattered Specimens of Introduced Tree Species | High | XX | X | – | Cherry X<br>Tree of HeavenX | Moderate | | |
| 24 | Scattered Specimens of Introduced Tree Species | High | XX | XX | X | Mixed Evergreen | Moderate to High | High | Visual Scar |
| 25 | Powerline Right-of-Way | High | X | X | X | Variable | Low | | |




# VEGETATION
## TREES

**LEGEND**

SEE TABLE – FOR KEY TO TREE AREAS

**ENVIRONMENTAL SENSITIVITY AREAS**

| *Sensitive Areas* | *Potential Environmental Impact* |
|---|---|
| Black Oak Groves | Loss of Unique Vegetation |
| Riparian Vegetation | Loss of Unique Vegetation |
| Dense Mixed Evergreen | Loss of Unique Vegetation |
| Introduced Plant Species | Alteration of Historic Site |

FIGURE 6

DESIGNED
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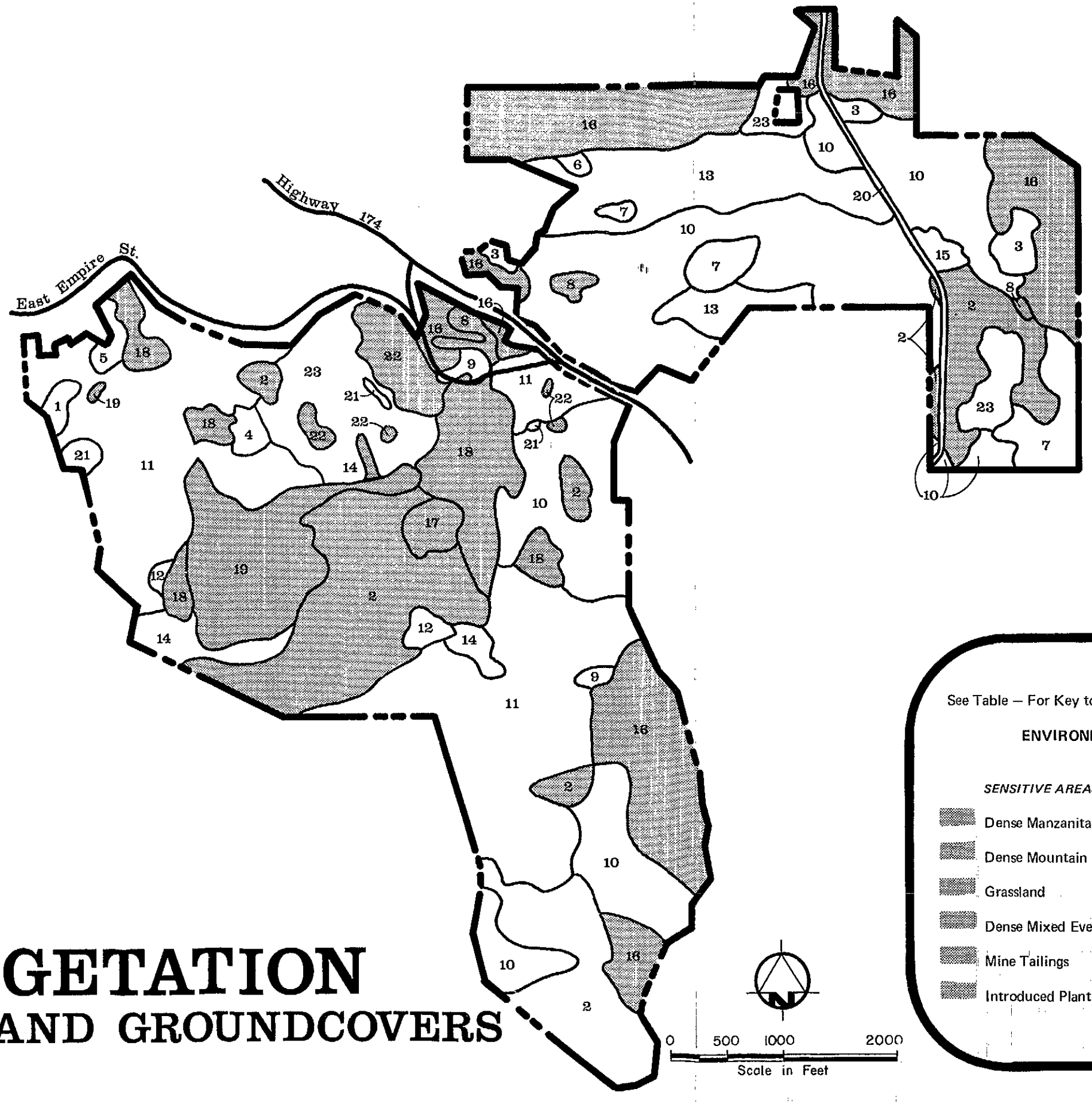
APPROVED ... DATE

EMPIRE MINE STATE HISTORIC PARK
VEGETATION
Trees

DRAWING No.

SHEET No.
OF




# VEGETATION
## SHRUBS AND GROUNDCOVERS

**LEGEND**

See Table – For Key to Shrub and Groundcover Areas.

**ENVIRONMENTAL SENSITIVITY AREAS**

| *SENSITIVE AREAS* | *POTENTIAL ENVIRONMENTAL IMPACT* |
|---|---|
| Dense Manzanita | Fire Hazard |
| Dense Mountain Misery | Visual Scar |
| Grassland | Loss of Unique Vegetation |
| Dense Mixed Evergreen | Visual Scar |
| Mine Tailings | Alteration of Historic Site |
| Introduced Plant Species | Alteration of Historic Site |

FIGURE 7

DESIGNED
DRAWN APR. 1977
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK
VEGETATION
Shrubs and Groundcovers

DRAWING No.

SHEET No.
OF

# TABLE 2

## SHRUBS AND GROUNDCOVERS

### NATIVE LANDSCAPES

| Shrub and Groundcover Area | Shrub Diversity | Shrub and Groundcover Species | Shrub Density | Environmental Sensitivity | Potential Environmental Impact |
|---|---|---|---|---|---|
| 1 | Low | Few or None | Low | | |
| 2 | Low | Manzanita predominates, considerable ceanothus | Moderate to High | High | Potential Fire Hazard |
| 3 | Low | Ceanothus predominates, considerable mountain misery | Moderate to High | | |
| 4 | Low | Grasses predominate | Moderate | | |
| 5 | Low | Blackberry predominates | High | | |
| 6 | Low | Scotch broom predominates | High | | |
| 7 | Low to Moderate | Manzanita predominates, considerable mountain misery | Low to Moderate | | |
| 8 | Low to Moderate | Mountain misery predominates | Low to Moderate | High | Visual Scar |
| 9 | Moderate | Grasses predominate, considerable ceanothus and mountain misery | Low | | |
| 10 | Moderate | Manzanita predominates, considerable ceanothus and mountain misery | Low to Moderate | | |
| 11 | Moderate | Considerable blackberry, ceanothus, manzanita, and sweet peas | Low to Moderate | | |
| 12 | Moderate | Considerable ceanothus, coffeeberry, and manzanita | Moderate to High | | |
| 13 | Moderate | Considerable honeysuckle and poison oak | Moderate to High | | |
| 14 | Moderate to High | Grasses predominate, considerable horsetails | Moderate to High | High | Loss of Valuable Vegetation |
| 15 | High | Considerable ceanothus, coffeeberry, and manzanita | Moderate | | |
| 16 | High | Considerable blackberry, coffeeberry, hazelnut and poison oak | Moderate to High | High | Visual Scar |

### LANDSCAPES ALTERED BY MAN

| Shrub and Ground-cover area | General Description | Shrub Diversity | Shrub and Groundcover Species | Shrub Density | Environmental Sensitivity | Potential Environmental Impact |
|---|---|---|---|---|---|---|
| 17 | Sulphide Tailings | Low | Few or None | Low | High | Alteration of Historic Site |
| 18 | Rock and Gravel Tailings | Low | Variable | Low | High | Alteration of Historic Site |
| 19 | Sand Tailings | High | Considerable grasses manzanita, lupine, and mustard | Low | High | Alteration of Historic Site |
| 20 | Powerline Right-of-Way | High | Variable | Low to Moderate | | |
| 21 | Burned and Logged Area | High | Considerable blackberry, grasses, manzanita, oak seedlings, and Scotch broom | Moderate | | |
| 22 | Considerable Numbers of Introduced Species | High | Residential Landscaping | Moderate to High | High | Alteration of Historic Site |
| 23 | Scattered Specimens of Introduced Species | High | Considerable periwinkle and roses | Moderate to High | | |

shade-tolerant incense-cedars are rapidly encroaching upon scenic areas dominated by oaks. A possible means of preserving these valuable groves is described in the Declaration of Management Policy.

On Union Hill enormous madrone trees stand among many Douglas-firs, big-leaf maples, dogwoods, *Ceanothus*, coffeeberry, hazelnut, mountain misery, and many others. Honeysuckle is everywhere, having been introduced along with various fruit trees by early settlers.

The understory vegetation on Union Hill is characterized by several large masses of manzanita that have grown to heights of 8 to 12 feet, far beyond the normal occurrence if the natural process of periodic forest fires had not been interrupted by man. These thickets have limited the plant diversity that one would commonly expect to find in the mixed evergreen vegetation on the northern portion of Union Hill.

The Osborn Hill area also offers a delightful variety of vegetation. Generally quite dense, this landscape is enhanced by occasional understory openings containing the attractive mountain misery groundcover. A list of native plants observed in Empire Mine State Historic Park is located in Appendix A. No rare and endangered plants have been discovered.

**Wildlife**

The early gold seekers of Grass Valley undoubtedly saw a much wider variety of wildlife at Empire Mine than can be seen today. Most of the large mammals have migrated to more remote areas due to the decades of mining activity and expanding urbanization. The California mule deer, coyote, grey fox, opossum, raccoon, striped skunk, ring-tailed cat, and flying squirrel, however, can sometimes be seen.

More common are the western grey squirrel, Beechey ground squirrel, black-tailed jackrabbit, brush rabbit, and a variety of field mice and rats. The latter rodents have played an interesting role in Empire Mine's history. At the time of the mine's closure in 1956, the pumping of ground water was stopped, and the over 350 miles of tunnels gradually filled, forcing thousands of rats to the surface. This mass exodus served as evidence to the old miners' stories about rats. The rodents were commonly seen underground; the miners fed them and gave a few of them pet names; and the men looked on the absence of rats as their most reliable signal that the mine air contained dangerous gases.

Birds common to the ponderosa pine forest habitats are found in the unit in numbers that vary with environmental features and with the seasons. In some places, the density of the forest cover is not conducive to much birdlife, but in areas of mixed vegetation, birds are found in greater numbers. In the areas of riparian growth, birdlife is abundant. They are especially evident around the tailings ponds, where during times of normal rainfall a marshy habitat exists. The western thrasher, robin, woodpecker, California quail, Steller jay, and others may be seen.

To date, no rare and endangered wildlife has been noted in this unit. A partial list of wildlife that has either been sighted or is known to occupy the general Grass Valley area is in Appendix B.

*California quail*

## Soils

The soils of Nevada County have been classified by the United States Soil Conservation Service in terms of soil series and phases. A soil series consists of soils that are similar in basic profile characteristics and are named after a town or other geographic feature near the site where the series was first observed. Each series is comprised of soil phases based on variations in the surface layer, slope, stoniness, or other characteristics.

Soils within Empire Mine State Historic Park consist of 8 different soil series broken down into 13 soil phases. They may be summarized as follows:

*Aiken Series (AfE)*
Fewer than 20 acres of this deep, well-drained soil is found at the northeastern corner of the Union Hill area. The subsurface is rich in decomposed forest litter such as pine needles, and reaches a depth of 5 feet or more.

*Alluvial Land, Clayer (Ao)*
This series is also limited to a very small area near the northernmost park boundary on a steep slope. It consists of poorly drained, fine-textured, alluvial material deposited along the South Fork of Little Wolf Creek.

*Boomer Series (BoD, BrE)*
Only a small portion of the mixed evergreen vegetation on Union Hill contains this well-drained soil. Although plant roots may penetrate up to 5 feet or more, a weathered rock base exists about 4 feet below the ground surface.

*Cohasset Series (CmB)*
Most of the soils on Union Hill fall under this category. This moderately deep soil has a mineral surface layer containing 15 inches of brown cobbly loam. Drainage to the 8-foot-deep weathered rock base is good.

*Musick Series (MrC, MrE)*
This soil is found on the western portion of the park near the Pennsylvania Mine site and along East Empire Street. It has a well-drained, reddish-brown surface layer, 2 feet thick, and is underlain by weathered granodiorite.

*Sites Series (SlB, SlC, SlD, SmE)*
More than half the area of Empire Mine, including all of Osborn Hill, contains this soil series. The surface layer is a brown and yellowish-red, heavy loam about one foot deep. It is well-drained and has a weathered metasedimentary rock base at about a 6-foot depth.

*Sierra Series (SfD)*
A narrow strip of less than 100 acres on Union Hill consists of this soil series. A typical profile reveals a surface layer, 9 inches thick, of brown or dark-brown sandy loam underlain by well-weathered granodiorite at a depth of about 4 feet.

*Tailings (Ta)*
Tailings are found in a large area south and southwest of the main mining operation and in the vicinity of abandoned mine sites. They consist of waste material from underground mineshafts and the by-products of the gold ore processing. The three categories of tailings include: (1) rock and gravel, (2) sand, and (3) sulphide.

## TABLE 3
## SOILS CHARACTERISTICS

| SOIL SERIES | DEPTH TO BEDROCK (feet) | DEPTH FROM SURFACE (inches) | TEXTURE | PERMEABILITY (inches per hr.) | pH | WATER HOLDING CAPACITY (inches per inch of soil) |
|---|---|---|---|---|---|---|
| Aiken (AfE) | 4–5 | 0–29<br>29–64<br>64 | Loam<br>Heavy clay loam<br>Andesitic tuff and conglomerate | 0.6–2.0<br>0.2–0.6 | 5.6–6.5<br>4.5–6.0 | 0.15–0.17<br>0.17–0.19 |
| Alluvial land, clayey (Ao) Too variable for valid estimates | | | | | | |
| Boomer (BoD, BrE) | 3½–5+ | 0–47<br>47 | Loam and clay loam diabase | 0.2–0.6 | 5.6–6.5 | 0.15–0.17 |
| Cohasset (CmB) | 3½–5+ | 0–96<br>96 | Cobbly loam and cobbly clay loam<br>Andesitic conglomerate | 0.2–0.6 | 5.1–6.5 | 0.11–0.17 |
| Musick (MrC, MrE) | 3½–5+ | 0–25<br>25–80 | Sandy loam and loam<br>Clay loam and heavy clay loam | 0.6–2.0<br>0.2–0.6 | 5.6–6.5<br>5.1–6.0 | 0.13–0.15<br>0.19–0.21 |
| Sites (SIB, SIC, SID) | 3½–5+ | 0–23<br>23–68<br>68 | Heavy loam and clay loam<br>Clay<br>Metasedimentary rock | 0.6–2.0<br>0.2–0.6 | 5.6–6.5<br>4.5–6.0 | 0.16-0.18<br>0.15–0.17 |
| Sierra (SfD) | 3½–5+ | 0–16<br>16–45<br>45 | Sandy loam<br>Sandy clay loam<br>Granodiorite | 0.5–2.0<br>0.2–0.6 | 6.1–6.5<br>5.6–6.5 | 0.11–0.13<br>0.14–0.16 |
| Tailings (Ta) Too variable for valid estimates | | | | | | |

Each soil type contains certain properties and qualities that to some extent affect development of park facilities. These soil characteristics are summarized in Table 3 and their suitability for development is described in Appendix D. The major developmental considerations are permeability rate, depth to bedrock, leaching capacity, shrink-swell potential, erodibility, and ease of grading.

Considering these factors, the soils of Empire Mine have been ranked according to their potential damage due to excavations, structural development, and installation of septic tank filter fields. A summary of this ranking appears in Table 4. Soils with "high sensitivity" ratings are potentially poor for park development and are shown by the shaded portions of the Soils Map. These soil phases are members of the Aiken, Boomer, Musick, and Sites series (on hilly terrain) and are located in the vicinity of Little Wolf Creek, beside East Empire Street, on the northern portion of Union Hill, and parts of Osborn Hill.

Soils which have the lowest potential damage due to development are members of the Cohasset and Sites (on flat terrain) series. These are found throughout the park and dominate the Osborn and Union hill areas.

## TABLE 4
## ENVIRONMENTAL SENSITIVITY – SOILS

| SENSITIVITY | STRUCTURES | EXCAVATIONS | SEPTIC TANK FILTER FIELDS |
|---|---|---|---|
| LOW<br>– good for development of structures, excavations, and septic tank filter fields | – excessively drained to moderately drained<br>– 0 to 8 percent slopes<br>– low shrink-swell potential<br>– no stones or rock outcrops<br>– bedrock depth more than 40 inches<br>CmB, SIB | – less than 2 percent rock outcrop exposures<br>– less than 3 percent stones by volume<br>or<br>bedrock depth greater than 60 inches<br>CmB, SfB, SIC | – excessively drained to well drained<br>– bedrock depth greater than 72 inches<br>– 0 to 5 percent slopes |
| MODERATE<br>– fair for development of structures, excavations, and septic tank filter fields | – somewhat poorly drained<br>– 8 to 15 percent slopes<br>moderate shrink swell potential<br>– 2 to 10 percent of surface covered by rock outcrops<br>– bedrock depth 20 to 40 inches in places<br>MrC, SIC | – 2 to 10 percent rock outcrop exposures<br>3 to 15 percent stones by volume<br>or<br>bedrock depth 40 to 60 inches deep<br>BoD, MrC, MrE, SfD, SID | – 5 to 9 percent slopes<br>– good drainage<br>– bedrock depth greater than 48 inches<br>CmB, SIB |
| HIGH<br>– Poor for development of structures, excavations, and septic tank filter fields | – poorly drained to very poorly drained<br>– high shrink-swell potential<br>– greater than 15 percent slopes<br>or<br>greater than 10 percent of surface area covered by rock outcrops<br>– bedrock depth less than 20 inches in places<br>AfE, BoD, BrE, MrE, SfD, SID, SmE | – greater than 10 percent rock outcrop exposures<br>– greater than 15 percent stones by volume<br>or<br>– bedrock depth less than 40 inches<br>BrE, SmE, AfE | – greater than 9 percent slopes<br>or<br>bedrock depth less than 48 inches<br>AfE, BoD, BrE, MrC, MrE, SfD, SIC, SID, SmE |
| Too variable for valid estimates | Ao, Ta | Ao, Ta | Ao, Ta |

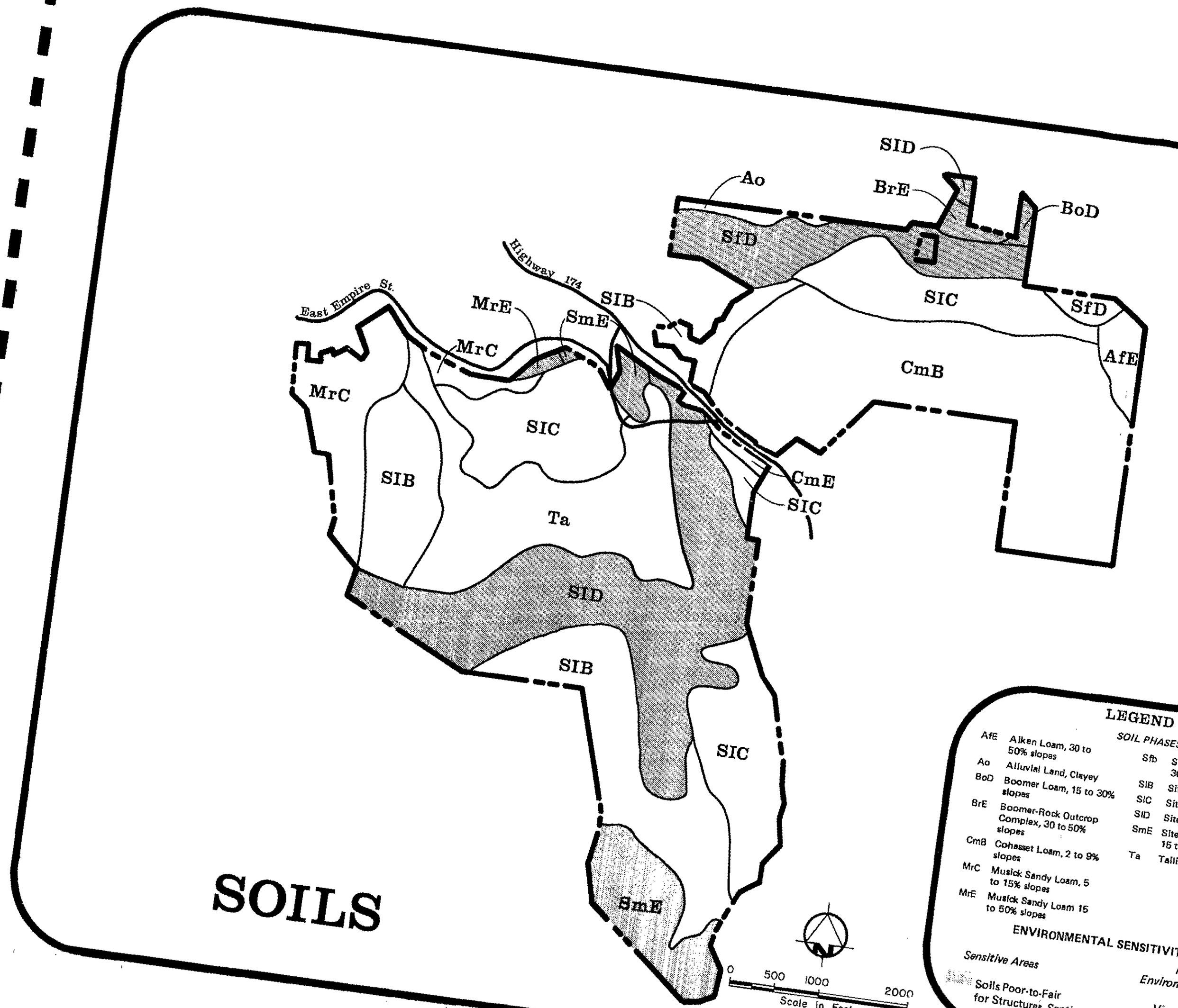



FIGURE 8

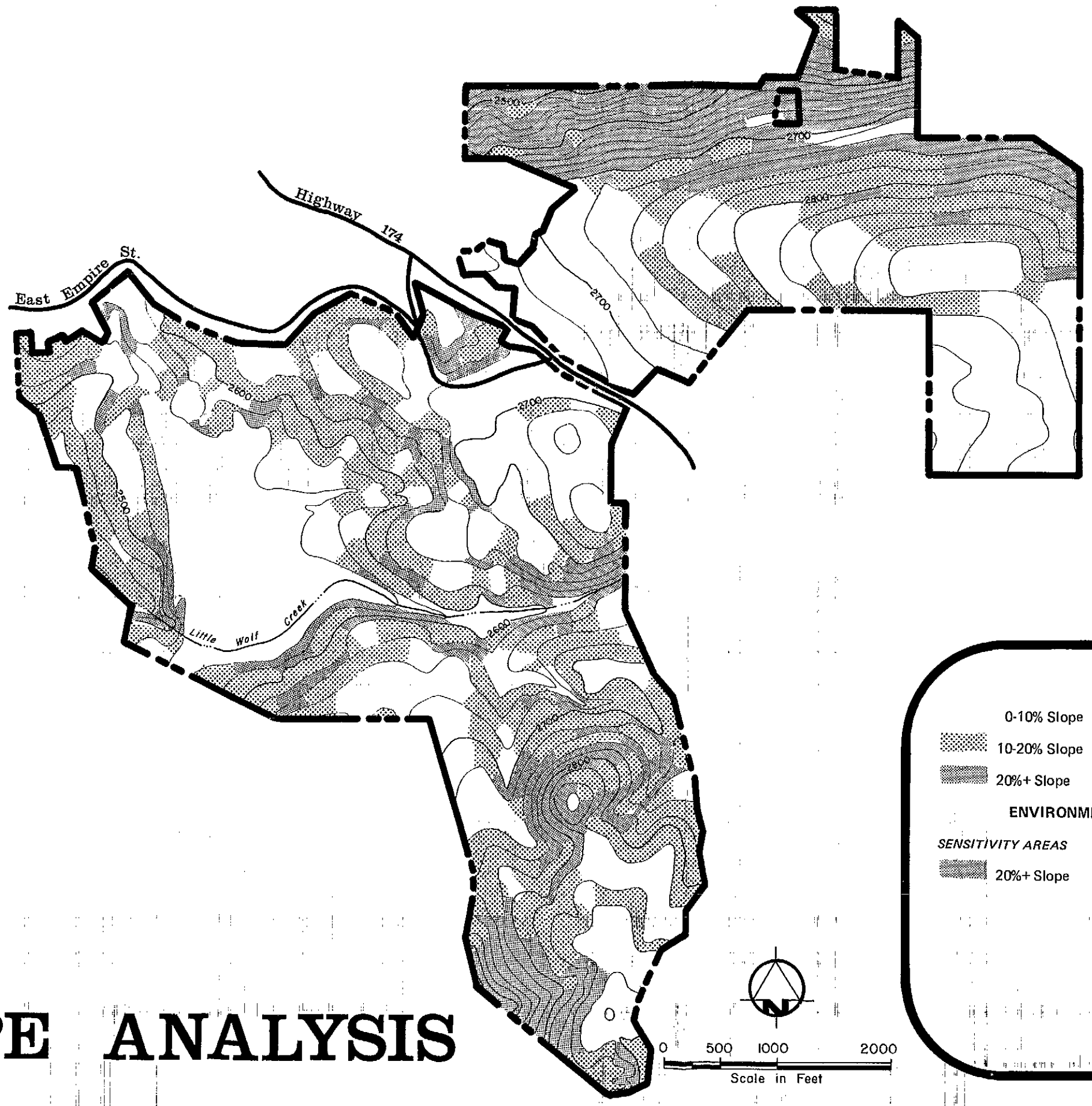
DESIGNED
DRAWN APR 1977
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK
SOILS

DRAWING NO.

SHEET NO.
OF




# SLOPE ANALYSIS

**LEGEND**

| | |
|---|---|
| 0-10% Slope | High Development Potential |
| 10-20% Slope | Moderate Development Potential |
| 20%+ Slope | Low Development Potential |

**ENVIRONMENTAL SENSITIVITY AREAS**

| *SENSITIVITY AREAS* | *POTENTIAL ENVIRONMENTAL IMPACT* |
|---|---|
| 20%+ Slope | Visual Scar |

FIGURE 9

DESIGNED
DRAWN APR. 1977
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK
SLOPE ANALYSIS

DRAWING No.

SHEET No.
OF

## Slope

The main entrance to Empire Mine State Historic Park lies approximately 2,680 feet above sea level. Gentle to moderate slopes are characteristic of the primary historic area that now attracts the vast majority of park visitors. The main mine operation area rests upon generally flat terrain that gracefully rises in the gardens and grounds area, reaching a peak at the Empire Cottage. Willis Polk, the well known architect who designed an early site plan for Empire Mine, understood the lay of the land intimately. Walkways were located to take advantage of some views, barriers were constructed to eliminate others. Buildings were sited to obtain symmetry of design while retaining a rustic quality suitable to the environment.

Moderate and steep slopes surround the immense sand tailings area. Filled with mounds of sand resulting from the mining process, this area appears to have an endless supply of undulating dunes. The later removal of some of this sand for land-filling purposes has left crater-like holes in the area. Man's effect on the natural terrain has truly been devastating.

Steeper slopes are encountered in the Osborn Hill area, which rises to an elevation of about 2,800 feet and then levels off. A series of small, steep ravines occupies this area, draining into Little Wolf Creek. Union Hill is characterized primarily by gentle to moderate slopes reaching an elevation of nearly 2,900 feet. The northernmost section of this area contains steep slopes (a result of hydraulic mining) with a northern sun exposure. This area slopes downward at about the 2,700-foot elevation until it reaches the Manion Ranch meadow, immediately outside the park boundary, 200 feet below.

The Slope Map identifies those broad areas that are generally unsuitable for park development. The shaded areas indicate slopes of 20 percent or greater. Park development on these "high sensitivity" areas of steep slope would be generally more destructive to the environment than development on other areas. It should be emphasized that the above are general assessments and a more detailed survey of a particular site for a proposed project would be necessary.

## Surface Hydrology

The primary water feature of Empire Mine State Historic Park is Little Wolf Creek. Traversing the park from east to west, this narrow stream leads into the sand tailings area and passes through an opening in the massive sand dam. With the winter rains, the stream overflows in the flat terrain of the tailings area to form a rather large marsh. In the drier summers, this marshy habitat is generally reduced to several acres.

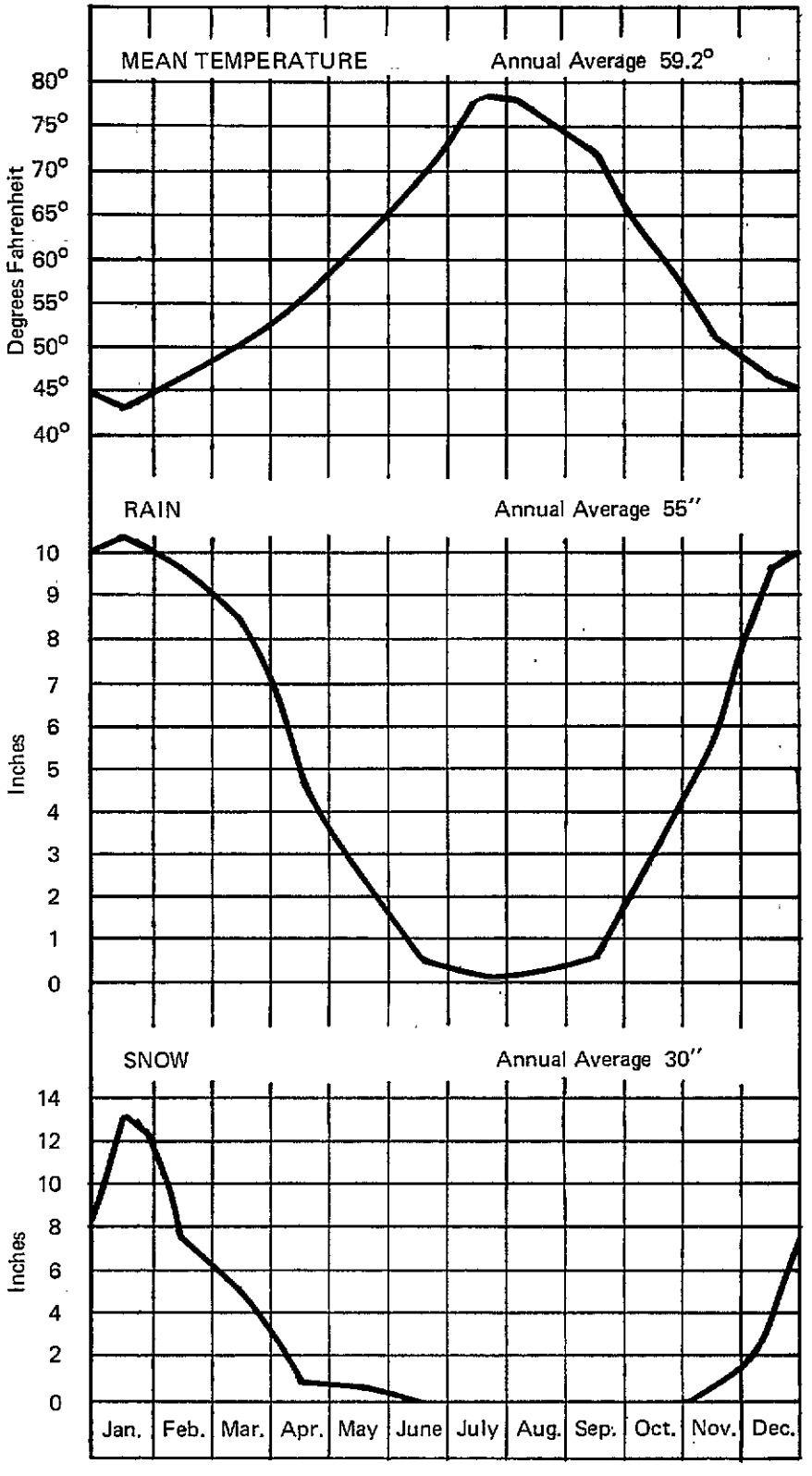
Numerous gullies and ravines comprise the surface drainage system on Osborn and Union hills. These features are part of a larger natural drainage pattern that includes all property surrounding the park. Most of these ravines have been somewhat altered over the years by placer mining.

Evidence of several historic man-made water features still remain today. Old photographs show a water reservoir immediately south of the Empire Clubhouse; it was probably used for irrigation and fire protection. This feature and an abandoned reservoir, east of the hoist house, are overgrown with native vegetation today.

## Climate

Empire Mine enjoys a semi-Mediterranean climate typical of the Sierra Nevada foothills. Summers are generally most appealing for the park visitor, with blue skies only occasionally interrupted by thundershowers emanating from the south. A wide variety of microclimates create opportunities for experiencing milder temperatures than the average summer temperatures, with days in the 80s and low 90s, and nights in the 60s. Refreshing thickets of riparian vegetation along Little Wolf Creek, groves of mixed evergreen trees on Union and Osborn hills, and the shade of ponderosa pines near the Empire Cottage lower daytime temperatures considerably and often screen prevailing winds, which are generally from the southwest and less than 10 mph. Winds from the north and east occasionally blow over the western slopes of the Sierra Nevada in the spring and summer. These warm, dry winds remove moisture from the vegetation and soil surface, thereby increasing the fire hazard.

**FIGURE 10**
**CLIMATE**



Winters are generally mild and wet. Air temperatures range between the 40s and low 50s during the day, dropping to the 30s in the evening. Rainfall is usually accompanied by a southwest wind and averages 55 inches per year. An occasional snowfall will cover the area, enhancing the charm of the historic features, as well as the beauty of the native landscape. Averaging about 30 inches per year, the snow depth rarely reaches more than 8 inches at any one time. On rare occasions when the winter air is moist and the temperature is below the dew point, the Sacramento Valley tule fog finds its way to Empire Mine.

Although the climate in recent history at Empire Mine has been considered comfortable, an increase in potential air pollution is anticipated as the population in western Nevada County increases. A natural phenomenon known as a thermal inversion sometimes occurs in the Empire Mine vicinity because of the fact that the area is surrounded by mountains. As air moves down off the mountains, it is heated by compression. If a layer of cool air exists in the Grass Valley area, the warmer, lighter air will lie on top of the body of heavier, cooler air. The cool layer then acts like a lid, preventing air circulation upward and trapping air pollutants at ground level.

**TABLE 5**

| TEMPERATURE | DATES FOR GIVEN PROBABILITY AND TEMPERATURES | | | | | |
|---|---|---|---|---|---|---|
| | SPRING | | | FALL | | |
| | 1 Year in 10 Later Than | 2 Years in 10 Later Than | 5 Years in 10 Later Than | 1 Year in 10 Earlier Than | 2 Years in 10 Earlier Than | 5 Years in 10 Earlier Than |
| 28° F. or lower | April 13 | April 1 | March 13 | Nov. 14 | Nov. 20 | Dec. 2 |
| 32° F. or lower | May 7 | April 27 | April 8 | Oct. 24 | Oct. 31 | Nov. 17 |

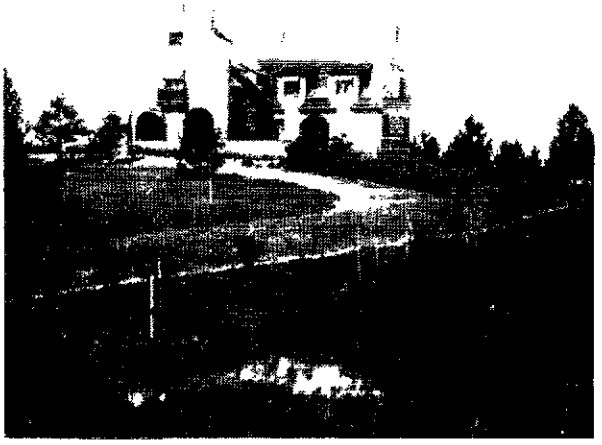
PROBABILITIES OF LAST FREEZING TEMPERATURES
IN SPRING AND FIRST IN FALL

**TABLE 6**

| AVERAGE NUMBER OF DAYS IN WHICH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Temperature, °F, is Less Than | | | | | Maximum Temperature, °F, is More Than | | | | | | |
| 16° | 20° | 24° | 28° | 32° | 80° | 85° | 90° | 95° | 100° | 105° | 110° |
| 0.46 | 2.4 | 6.2 | 15 | 39 | 129 | 97 | 64 | 29 | 9 | 1 | 0 |

ANNUAL TEMPERATURE EXTREMES

NOTE: The weather data was compiled by the Grass Valley Station of the U.S. Weather Bureau.



*Empire Cottage at the turn of the century*

*. . . . .and today*

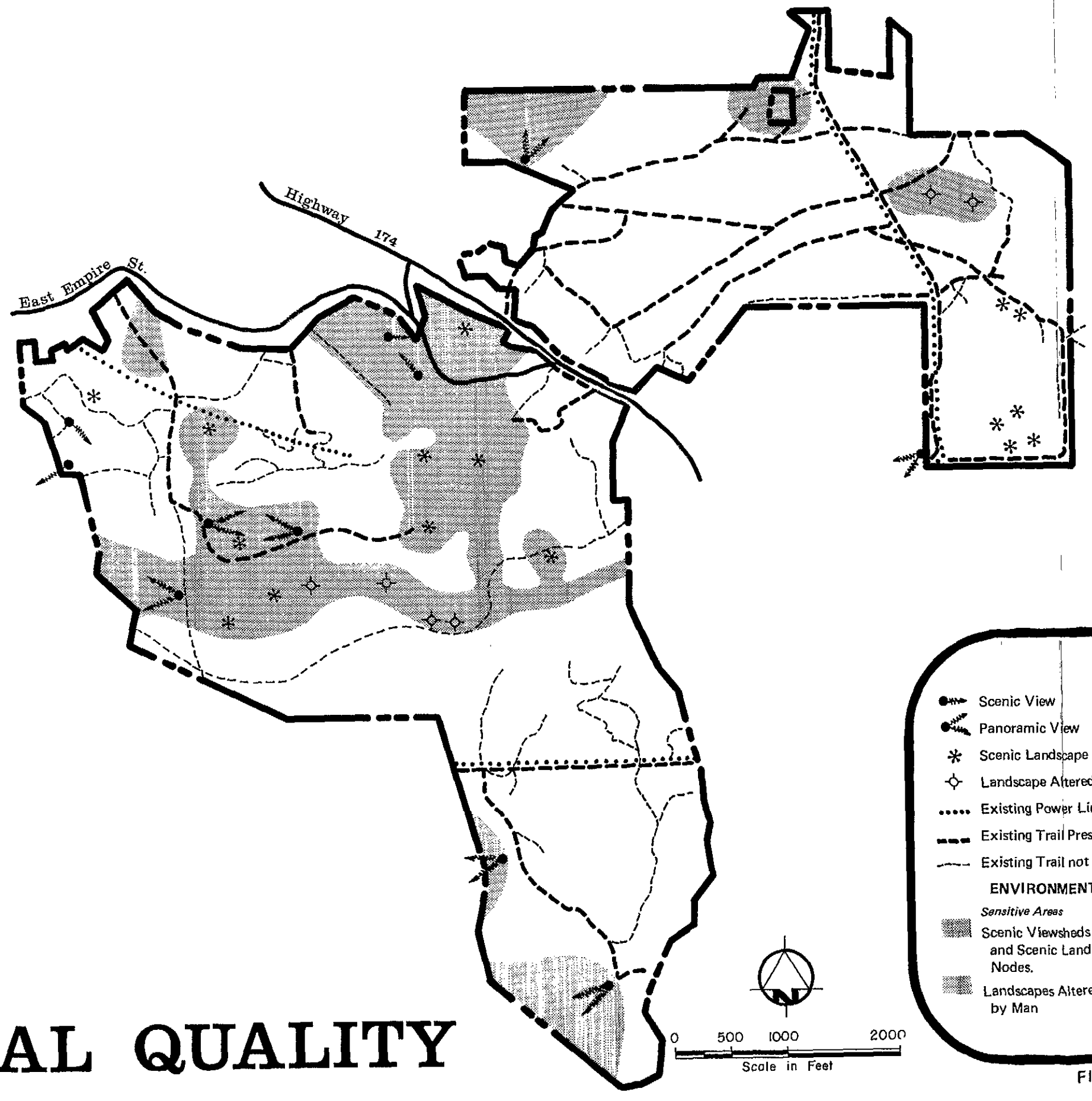
**Visual Quality**

Early gold seekers at Empire Mine had a clear view of the Sacramento Valley to the south and the majestic Sierra Nevada to the east. An apparent attempt was made to preserve these spectacular views from the gardens and grounds area, according to the original 1905 architectural drawings by Willis Polk. The gradual growth of native pines has obstructed much of these panoramic vistas, although several impressive scenic overlooks remain.

The Visual Quality Map identifies those natural and man-made features that affect the quality of the visitors' visual experience. The features, shown by the shaded portions of the map, should be preserved for their aesthetic values. Included in this category are the black oak and madrone groves on Union Hill, portions of Little Wolf Creek, and the attractive mixed evergreen vegetation. Other features are visually obtrusive, such as the high voltage power lines, fences, roads, and surrounding development.

Perhaps the most debatable scenic resource is the enormous sand tailings area. To one viewer this landscape represents the beauty of nature gracefully returning the earth that had been disrupted by man back to its original form. To another, it appears only as a mere wasteland.

*Sand tailings*




# VISUAL QUALITY

**LEGEND**

- Scenic View
- Panoramic View
- Scenic Landscape Node
- Landscape Altered by Man
- Existing Power Lines
- Existing Trail Presently Suitable for Park Patrol
- Existing Trail not Presently Suitable for Park Patrol

**ENVIRONMENTAL SENSITIVITY AREAS**

| *Sensitive Areas* | *Potential Environmental Impact* |
|---|---|
| Scenic Viewsheds and Scenic Landscape Nodes. | Visual Scar |
| Landscapes Altered by Man | Encroachment on Historic Site |

FIGURE 11

DESIGNED
DRAWN APR.1977
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

EMPIRE MINE STATE HISTORIC PARK
VISUAL QUALITY

DRAWING No

SHEET No.
OF

*Empire Clubhouse*

## Recreational Resources

Outdoor recreational activity has changed dramatically in Nevada County since the early gold discovery era of the mid-nineteenth century. Expanding urbanization has created an increasing demand for recreational opportunities, while diminishing the locally available open space for such popular activities as picnicking, camping, swimming, fishing, boating, horseback riding, hiking, and bicycle riding. Empire Mine State Historic Park was established for its statewide historical significance; therefore, any proposed recreational development must be compatible with this primary purpose. Moreover, this development should not duplicate recreational activities provided by nearby facilities.

### Existing Regional Facilities

The following public recreational facilities are located within 10 miles of Empire Mine State Historic Park:

1. Condon Park
   City of Grass Valley
2. Memorial Park
   City of Grass Valley
3. Golden Gateway Park
   Golden Gateway Park and Recreation District
4. County Fairgrounds
   Nevada County
5. Tahoe National Forest
   United States Forest Service

These facilities provide a wide variety of recreational facilities, including those previously mentioned. In addition, there are several local, privately owned campgrounds, which contain hook-ups for recreational vehicles. Although no countywide trail system now exists, there are opportunities for hikers, bicyclists, and equestrians on certain county roads, utility easements, and private property.

### Existing Park Facilities

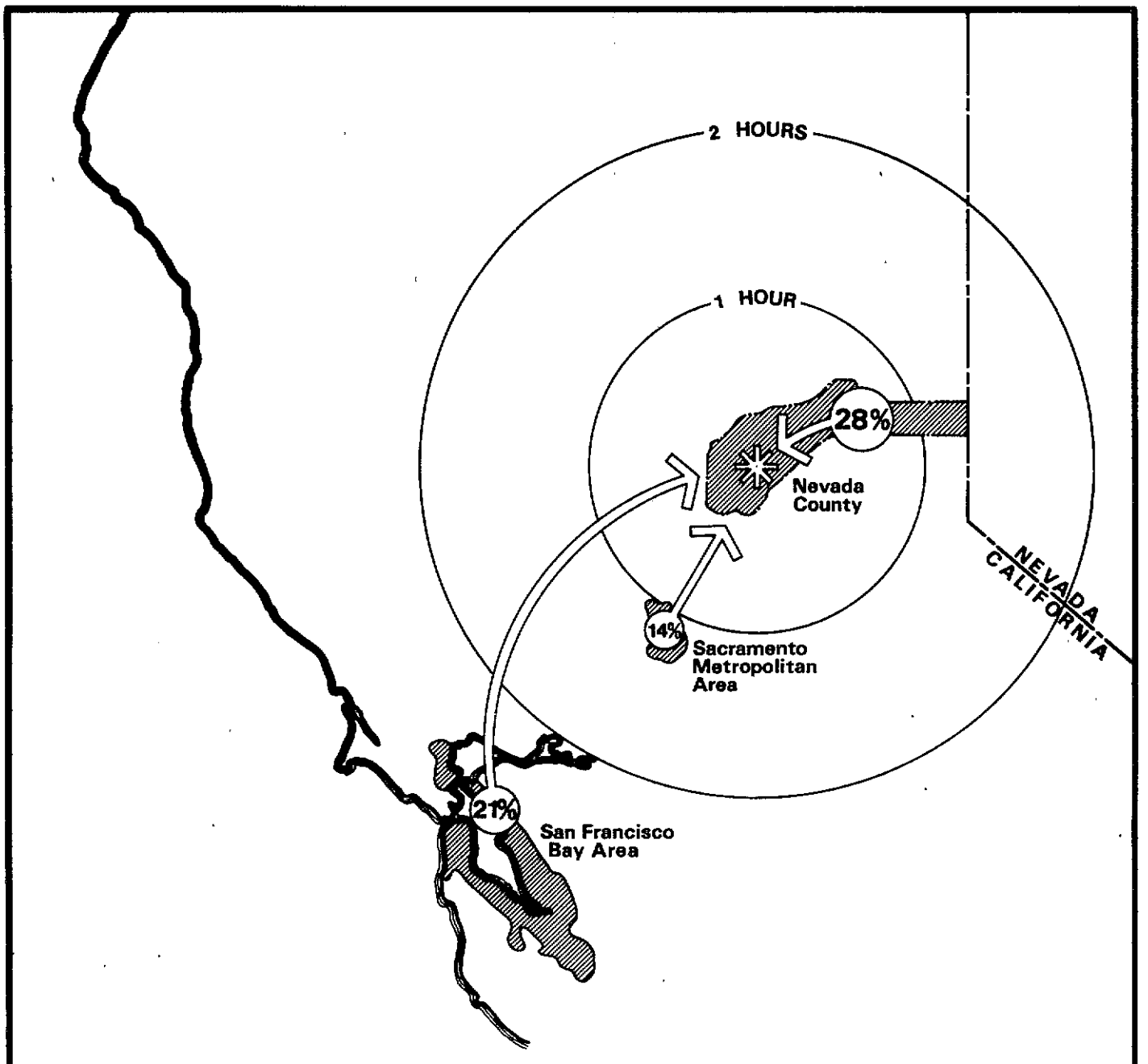
Since Empire Mine has been a unit of the State Park System less than two years, there has been little development of park facilities. The following facilities and utilities exist:

#### Day Use Areas

*Parking* – An unpaved parking area, which accommodates approximately 100 cars, is located near the former mine manager's office.
*Visitor Orientation Center* – The former mine manager's office is currently being used as a visitor orientation center.
*Historic Area* – Although no historic buildings except the mine manager's office are currently open for general visitation, tours are frequently offered of selected buildings.
*Trails* – There are approximately 11 miles of unsigned trails, many of which were mining roads.
*Restrooms* – Two portable units are available in the gardens and grounds area. These facilities are inadequate and will be replaced by restroom facilities within restored historic buildings.

#### Overnight Use Areas

There are no developed overnight use facilities.




## EMPIRE MINE S. H. P. VISITOR ORIGIN

| AREA | PERCENT |
|---|---|
| Nevada County | 28 |
| San Francisco Bay Area | 21 |
| Sacramento | 14 |
| Los Angeles | 14 |
| Out-Of-State | 13 |
| Other (In State) | 9 |
| San Diego | 1 |

FIGURE 12

# EMPIRE MINE STATE HISTORIC PARK

## PROXIMITY TO MAJOR POPULATION CENTERS

### Administrative Areas

*Park Office* – This office is located at present in the former mine manager's office. It consists of two small rooms with access to a restroom.
*Area Headquarters* – This office space consists of three rooms and a restroom within the historic engineer's office. The Gold Mines Area of the park system consists of Empire Mine State Historic Park and Malakoff Diggins State Historic Park.
*Ranger's Residences* – Five historic buildings, shown on the Cultural Resources Map, and one mobile home are currently used as ranger residences.
*Maintenance Buildings* – Several historic buildings are at present used for repair work and storage, including warehouse No. 1, the machine shop, and various garages. These are shown on the Cultural Resources Map.

### Existing Utilities

*Water* – The existing water supply, used for domestic and irrigation needs, is from an 8-inch Nevada Irrigation District pipeline adjacent to the nearby Colfax highway and the underground reservoir that has filled the mine shafts. The former water source, abandoned in July 1977, was piped through two parallel, 2-mile long, 22-inch-diameter, riveted metal pipes (about 80 years old).
*Electricity* – P.G.&E. provides electrical lines to most historic buildings, the park offices, and the ranger residences. These lines are located along the Colfax highway, near the Pennsylvania Mine site, and near East Empire Street. A high voltage power line crosses Union Hill and power poles transect Osborn Hill.
*Gas* – There are no gas lines outside Grass Valley city limits. Propane tanks and oil spray boilers are currently used by the park.
*Telephone* – Pacific Telephone lines now serve the park offices and ranger residences.
*Sewage Disposal* – All sewage within the park is disposed through septic tanks and leach fields.

## Visitor Demand

To date, Empire Mine State Historic Park has made little attempt to advertise its existence, because of the limitation of available park facilities. The park's popularity, however, is evidenced by visitation figures compiled in its first year of operation. Approximately 33,000 people visited Empire Mine in 1975, with a peak of 5,000 in August. These figures are based on signatures received at the visitor orientation center. It is anticipated that these figures will rise dramatically as more park facilities are developed.

An analysis of the visitation data indicates that Empire Mine visitors originate from a wide variety of locations. The greatest number, approximately 28 percent, are from the local Nevada County Area; another 14 percent are from the Sacramento metropolitan area, which is within one hour's travel time. Approximately 14 percent originate from Los Angeles and 13 percent from out-of-state, demonstrating that Empire Mine is a major tourist attraction to people outside the local area. Figure 12 summarizes this visitation data.

The State Park and Recreation Information System (PARIS) identifies statewide recreation facility supply and demand. This system considers the following factors in making demand projections:

1. The official state population projections of the Department of Finance
2. The socio-economic characteristics of the populace
3. The geographic location of the population distribution
4. Current travel patterns identified by the Department of Transportation
5. The usability of all portions of the state for specific activities based upon topography, vehicular access, surface water, and vegetation cover
6. The location of existing recreation facilities

For Nevada County, in which Empire Mine is located, PARIS provides the following data:

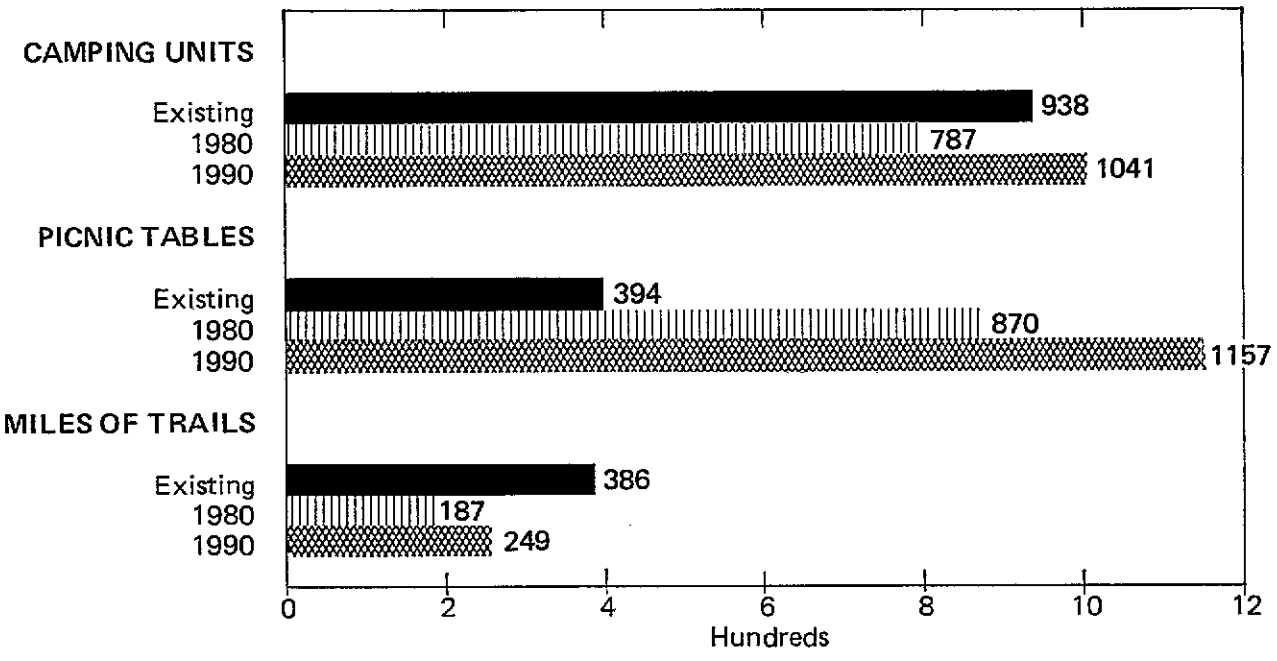
| Existing Facilities | | |
|---|---|---|
| Camping Units | 938 | |
| Picnic Tables | 394 | |
| Miles of Trail | 386 | |
| | | |
| **Facilities Needed** | **1980** | **1990** |
| Camping Units | 787 | 1041 |
| Picnic Tables | 870 | 1157 |
| Miles of Trail | 187 | 249 |

The PARIS System presently reports a severe shortage of picnic tables in Nevada County. A sufficient supply of camping units and miles of trail, however, currently exists. Although the total trail mileage appears adequate, there is no unified trail system within the county.

FIGURE 13

ANALYSIS OF FACILITIES NEEDED

Nevada County




*Greenhouse and gardener's residence*

*The pergola behind the Empire Cottage*

## DECLARATION OF PURPOSE

The purpose of Empire Mine State Historic Park is to preserve, interpret, and manage resources significant to its historic and natural environments in order that this and future generations can appreciate and enjoy their heritage as it is exemplified at the Empire Mine complex. Empire Mine State Historic Park will provide an historic environment that is representative of hard-rock gold mining in the Mother Lode and at the same time will provide an appropriate natural setting. Interpretation will emphasize the primary themes for the unit, and will be carried out in accordance with the policies outlined in the Interpretive Prospectus which is summarized in the General Development Plan. Necessary services and compatible facilities will be provided for the safety, convenience, and enjoyment of visitors.

The primary themes for this unit are the industrial history of gold mining in California and the contemporaneous social and cultural aspects of life, especially as they relate to the Grass Valley area and the Empire Mine. Secondary themes are the mining industry's contribution to the economic development of California, and the natural history of the area, particularly as it relates to mining.

The flow of history will extend from 1850, when gold was discovered on Ophir Hill by George E. Roberts, until 1956, when the mine finally shut down, a span of 106 years. The entire flow of history must be considered in order to tell the complete story of hard-rock gold mining at Empire Mine. However, a prime period will be emphasized.

The prime period will be from 1877, the approximate date of William Bourn, Jr.'s interest in the mine, until 1942, when gold mining was halted for the duration as non-essential to the war effort.

A Zone of Primary Cultural Interest has been identified that is associated with resources of prime significance. The Zone of Primary Cultural Interest is an area in which complete historical integrity and authenticity are sought. At Empire Mine State Historic Park, this zone encompasses the portion of the south parcel that lies between East Empire Street and the section line that runs east to west across Osborn Hill, as well as the immediate area of the Rowe headframe and ore bins. (See Proposed Land Use Map.) It contains the Empire Mine industrial complex and the Empire Cottage residential complex.

## DECLARATION OF MANAGEMENT POLICY

The resource management goals of the department regarding Empire Mine State Historic Park are organized along the following priorities.

1) Preservation/Stabilization – All buildings and structures at Empire Mine State Historic Park shall be stabilized and preserved. The following structures have been budgeted for stabilization in 1977-78: mine manager's office, Rowe shaft headframe and ore bins, the greenhouse, and Empire Cottage (including gardens and grounds). If stabilization is required to prevent loss or deterioration, it will be undertaken only in ways that will not threaten archeological, historical, or related environmental values.

2) Restoration – It is important to restore the resources located in the Zone of Primary Cultural Interest, especially those related most closely to the primary themes and period. Resources that should be considered for restoration are the four listed above under Preservation/Stabilization as well as shops, offices, and other structures and buildings.

3) Reconstruction – Resources in need of stabilization and restoration should be given consideration before reconstruction of former buildings and structures is undertaken. However, reconstruction of some features at Empire Mine is necessary for a complete presentation of activities. Features located in the core historical area will be given primary consideration. These are the blacksmith shop, welding shop, stamp mill (partial), cyanide plant (partial), walkway, and the Empire headframe. Miscellaneous buildings in the Zone of Primary Cultural Interest such as warehouses, garages, sheds, fuse and cap houses, the dry house, the scale, and other features will be considered for reconstruction.

Archeological investigation will be performed before stabilization, restoration, and reconstruction whenever necessary to develop a comprehensive data base for the work, or whenever the integrity of the resource may be endangered by the work.

These resource management goals and the order of their priority have been established to ensure the historic integrity of the unit and to facilitate maximum public benefit. An annotated list stating proposed plans for each resource appears in the Interpretive Prospectus.

The interrelationships between resources of historic, natural, scenic, and recreational value at Empire Mine State Historic Park make sensitive planning and management for these resources imperative. The following policies will be observed to help implement the resource management goals at the unit.

1) Historic Foundations – Vegetation encroaching upon historic foundations within the Zone of Primary Cultural Interest shall be controlled or removed. Foundations presently buried shall be uncovered in a manner compatible with the historic and natural values of the unit. Vegetation encroaching upon structural foundations outside the zone shall be restricted from damaging the historic features. Selective vegetation removal may be required in these areas.

2) Tailings Areas – The slow, steady process of the reestablishment of vegetation in the mine tailings areas is an aspect of the natural environment in the unit that should be studied, interpreted, and monitored. Vegetation encroaching upon rock, sand, and sulphide tailings in the Zone of Primary Cultural Interest shall be controlled or removed wherever necessary. Selective seedling removal or other methods of protecting tailings both inside and outside the zone shall be implemented.

3) Other Historic Features – Historic features such as ore car track beds and roads shall be protected from the overgrowth of vegetation by selectively removing plants from these areas.

4) Natural Setting – Scenic values at the Empire Mine State Historic Park are pleasant and typical of Sierra Nevada coniferous forests and hills. The coniferous forest provides an attractive backdrop for the mine facilities. Features such as the mine tailings and gardens add color to the landscape. From the western portion of the property there are good views of the nearby city of Grass Valley. Some of the surroundings that are visible from elevated areas of the unit are spectacular.

The natural vegetation at Empire Mine State Historic Park has been strongly modified by many decades of human use and other impacts, from which it is now vigorously recovering. To return the forest lands to their decimated appearance during the historical prime period, even if physically reasonable, would almost certainly be esthetically unacceptable. The objective of the department with respect to natural vegetation is to maintain and perpetuate a healthy and attractive forest environment for the historic resources, keeping this environmental element subordinate to the historic scene at all times. Vistas for enjoyment or interpretation of the prime resources of the unit shall be kept open where appropriate and not allowed to be lost through overgrowth. The department shall prepare and adopt a detailed Resource Management Program, which shall provide for the management of the vegetation and related natural features designed to attain this objective.

5) Other Scenic Areas/Succession – Scenic areas containing vegetation such as black oaks and riparian growth are found throughout the historic park. These areas are presently in the midst of successional changes in plant material type. Large numbers of incense-cedar, for instance, are endangering the survival of the black oak species. Dense blackberry shrubs are spreading throughout the unit and manzanita growth is no longer controlled by the natural system of periodic fires which once existed. Procedures for the preservation of these areas include selective vegetation removal and controlled burning.

6) Gardens and Grounds – The Empire Mine gardens and grounds shall be restored, wherever possible, to the prime interpretive period. Native vegetation shall be controlled or removed where it is encroaching upon historic areas containing exotic plant material. Exotic plantings shall be restored.

7) Other Areas of Exotic Vegetation – Several areas of the historic park contain plants introduced by man, such as tree-of-heaven, cherry, and plum trees. This vegetation shall be preserved and protected for its historical value, but shall not be permitted to overcome native vegetation. Management methods such as selective removal may be implemented.

8) Facilities and Trails – The use of all facilities, including trails, shall be monitored periodically to assess the level of damage to the cultural and natural resources. If the use of these facilities is found to have an adverse effect on cultural and natural resources, use will be halted until proper mitigating procedures can be implemented.

9) Fire Protection – A fuel reduction zone is presently located near portions of the unit boundary for fire protection. This zone shall be maintained in order to retain its effectiveness. High concentrations of dead plant material shall be removed wherever they present a fire hazard. This will help protect both cultural and natural resources. All fuel reduction measures shall be carried out in accordance with the Wildland Fuel Management Guidelines of the State Park System.

10) Intrusions – There are no buildings located within the current unit boundaries that violate the primary themes or period to such an extent as to require their removal.

There are, however, several undesirable and potentially damaging intrusions located in and around the unit. Sets of high voltage power lines transect both Union and Osborn

hills. Several privately owned houses are located near the main entrance. These are inconsistent with the visual environment of the historic park. Historically and aesthetically incongruous private development borders other areas of the unit, and it is projected that within two or three decades the entire unit may be surrounded by development. The department should work with Nevada County to limit development around the unit. Nevada County Airpark is nearby and the noise and sight of low flying aircraft detract from the feeling of the historic park. A policy will be pursued seeking to mitigate the adverse effects of all of these intrusive elements.

11) Recreational Potential – The recreational uses of the mine property since the closing of the mine in 1956 have included sightseeing, hiking, nature and history studies, and picnicking. Unfortunately, illegal and damaging activities also have taken place. These include off-road vehicle riding, hunting, and timber cutting as well as camping and horseback riding. Activities that may have an adverse effect on the historic and natural environments will be eliminated.

    All activities not consistent with the historic environment, including camping, must occur outside the Zone of Primary Cultural Interest. Special use trails necessary for viewing the area will be maintained. Union Hill and Osborn Hill are currently areas where compatible recreational development may occur. Although the Public Resources Code permits picnicking within the zone, facilities for this activity must be placed where they cannot be seen from prime historic areas.

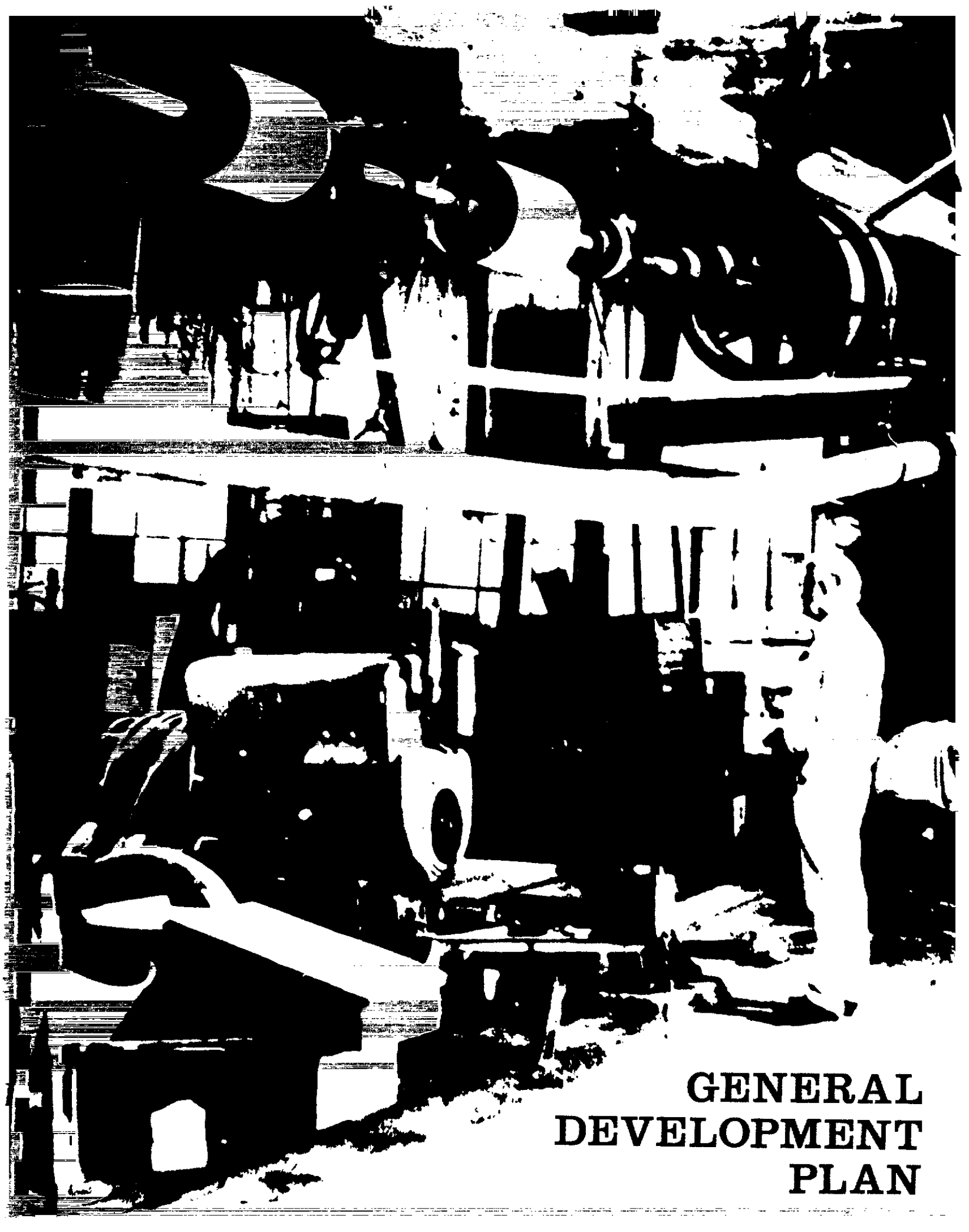
    An area of recreational potential is the gardens and grounds. The public could benefit from the use of this area for lectures, plays, small recitals, and other social functions. Material evidence indicates that passive recreation of this nature occurred within the Zone of Primary Cultural Interest during the period of the mine's operation. Public involvement programs such as gardening, and other forms of compatible passive recreation such as environmental living programs and sightseeing, may be permitted. Water features such as lakes and rivers, which are especially conducive to special recreational activities, do not exist in this unit.

    Recreation at this unit shall be secondary to and compatible with the attainment of the primary objectives. When permitted, non-historic recreation shall occur on land outside the Zone of Primary Cultural Interest. Non-intensive recreational activities, such as hiking and picnicking, are generally compatible with the objectives of the historic park. Bicycling and horseback riding are possible recreational activities only if kept to areas strictly outside the historic core. The unit is large enough to accommodate these activities, which may help achieve the unit's full potential for public benefit, but they must be carefully planned and monitored.

12) Interpretation – Interpretive objectives are to be harmonious with the declared purpose of the unit. All resources preserved, restored, or reconstructed shall be effectively interpreted. The visitor should be made aware of the nature of hard-rock gold mining and associated life-styles in the Mother Lode during the time considered in the flow of history, 1850-1956. The Empire Mine story will be emphasized, with attention to the prime period, 1877-1942. If additional resources are discovered, they will be considered for interpretation. The Interpretive Prospectus presents guidelines for achieving these objectives.

13) Operation – Operational parameters regarding areas such as methods, schedules, and systems are discussed in the General Development Plan.

All interpretation, development, and operation of the historic park and its cultural and natural resources will be in conformity with the Department of Parks and Recreation Resource Management Directives.



# GENERAL DEVELOPMENT PLAN

TABLE 7

## EMPIRE MINE STATE HISTORIC PARK
## PUBLIC INVOLVEMENT PROGRAM

| STAGE | OBJECTIVES | RESPONSIBILITY | IMPLEMENTATIONS |
|---|---|---|---|
| I. INITIATE STUDY | To establish goals and work plan for public involvement program.<br>To identify probable publics | Public Involvement Steering Committee<br>General Public | Personal contact,<br>Cooperative Association Meetings |
| II. COLLECT DATA | To gather resource information from public<br>To identify public needs, desires, and values<br>To identify implications of proposals | Public Involvement, Steering Committee<br>General Public | Personal contact, Cooperative Association meetings<br>Questionnaires<br>Nevada County Fair<br>Workshops<br>Newsletters<br>Newspaper Announcements<br>Radio Announcements |
| III. DEVELOP ALTERNATIVES | To develop alternatives for land and facility uses representing the public values<br>To identify implications for each alternative<br>to filter appropriate alternatives | Public Involvement, Steering Committee | Workshop(s) |
| IV. PRESENT ALTERNATIVES | To obtain public reaction to the alternatives | General Public | Persona contact<br>Cooperative Association Meetings<br>Follow-up Questionnaires<br>Workshop(s)<br>Newsletters<br>Newspaper Announcements<br>Radio Announcements |
| V. CONSENSUS SHAPING | To identify areas of common agreement among the alternatives<br>To obtain consensus on alternatives | Public Involvement Steering Committee | Workshop(s) |
| VI. PRESENT RECOM-MENDATIONS | To present the preliminary General Development Plan to the general public | General Public | Personal Contact<br>Cooperative Association Meetings<br>Workshop<br>Newsletters<br>Newspaper Announcements<br>Radio Announcements |
| VII. PRESENT FINAL PLAN | To present the preliminary General Development Plan to the Park and Recreation Commission | Park and Recreation Commission<br>General Public | Public Hearing |

## GENERAL DEVELOPMENT PLAN

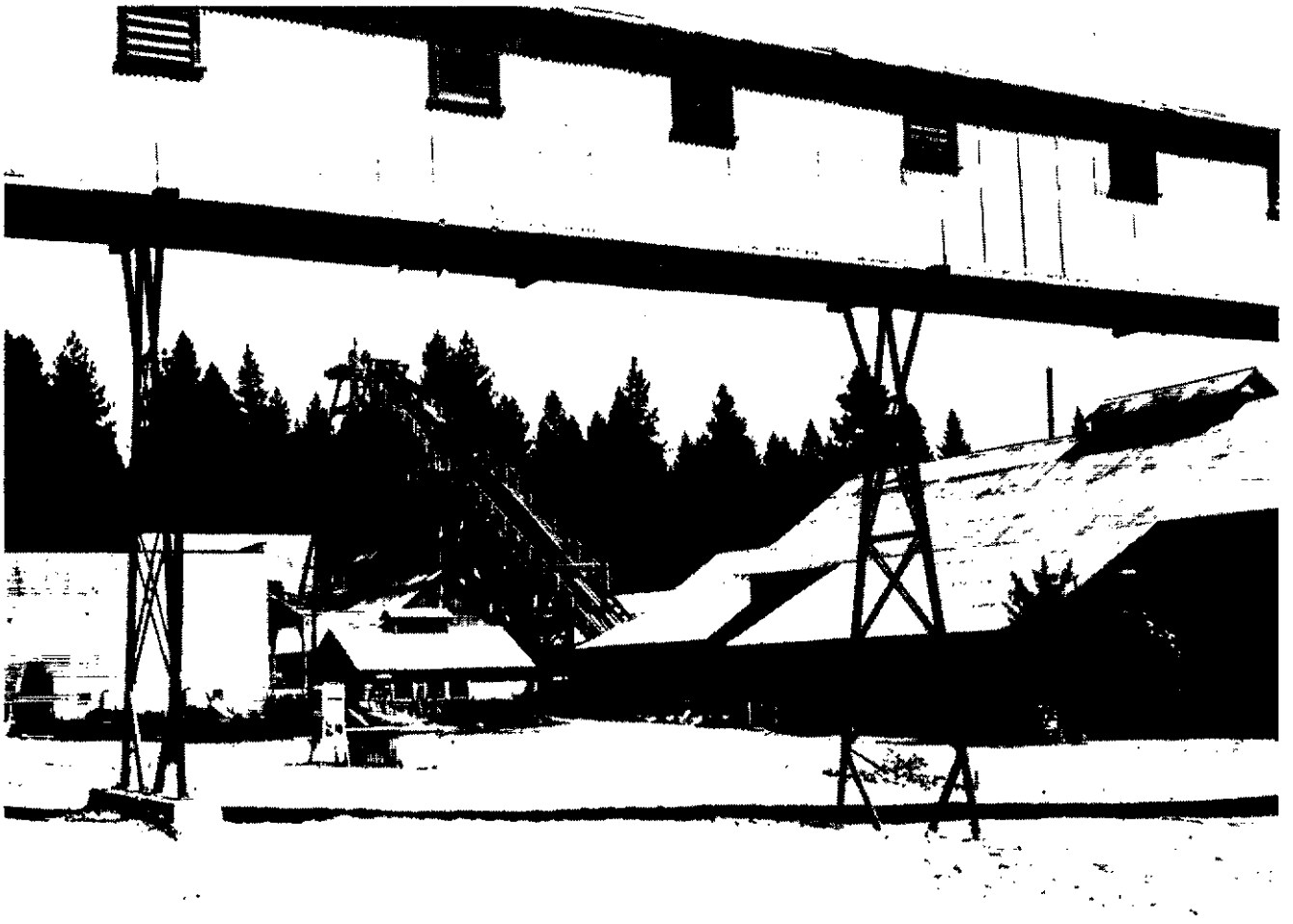
### Introduction

The purpose of the General Development Plan is to determine suitable areas for interpretation and recreation facilities compatible with the policies of the Resource Management Plan. It is intended to be a long-range, flexible plan to serve as a guideline for all proposed park development. Since the primary purpose of Empire Mine State Historic Park is the interpretation of its gold mining story, the development plan emphasizes historic resources rather than recreational ones.

### Public Involvement Program

It was a small group of local citizens and people interested in California history that stimulated the state of California to acquire Empire Mine as a park unit in 1975. As the general public became aware of this endeavor, public participation in the park planning process steadily increased. A Cooperative Association was established, regular monthly meetings were held, and special events were planned. Public participants were instrumental in the gathering of resource information described in the inventory portion of this document.

The successful formulation of this General Development Plan owes much to the contributions of the members of the Public Involvement Program, and we are very grateful to them. As the summary of the program's activities (see Table 7) indicates, the cooperation of the interested citizens with the park planning team was and is a continuing process. Details of this approach may be found in Appendix C.



*Main mine operation area with walkway which no longer stands*

## Land Use Analysis

### Existing Land Use

The primary use of Empire Mine State Historic Park is the interpretation of the gold mining history of this area. Although the Zone of Primary Cultural Interest covers about three-fourths of the south section of the park, the chief historic structures that will be preserved, restored, and/or reconstructed are located in a 25 to 30-acre area in the northeastern part of this southern park section (see Existing Land Use Map).

The remaining park area is mostly undeveloped except for unpaved roads and trails. Recreational use has been minimal, since a unified trail system has not yet been developed. Although overnight or formal day-use facilities, such as picnic areas, nature study areas, and scenic overlooks, are not at present available, hiking and horseback riding are permitted on certain existing trails. Park boundary fencing exists in several areas in order to restrict the entry of off-road vehicles – a recreational use that is incompatible with the primary purpose of the park and is particularly damaging to the natural resources.

### Proposed Land Use

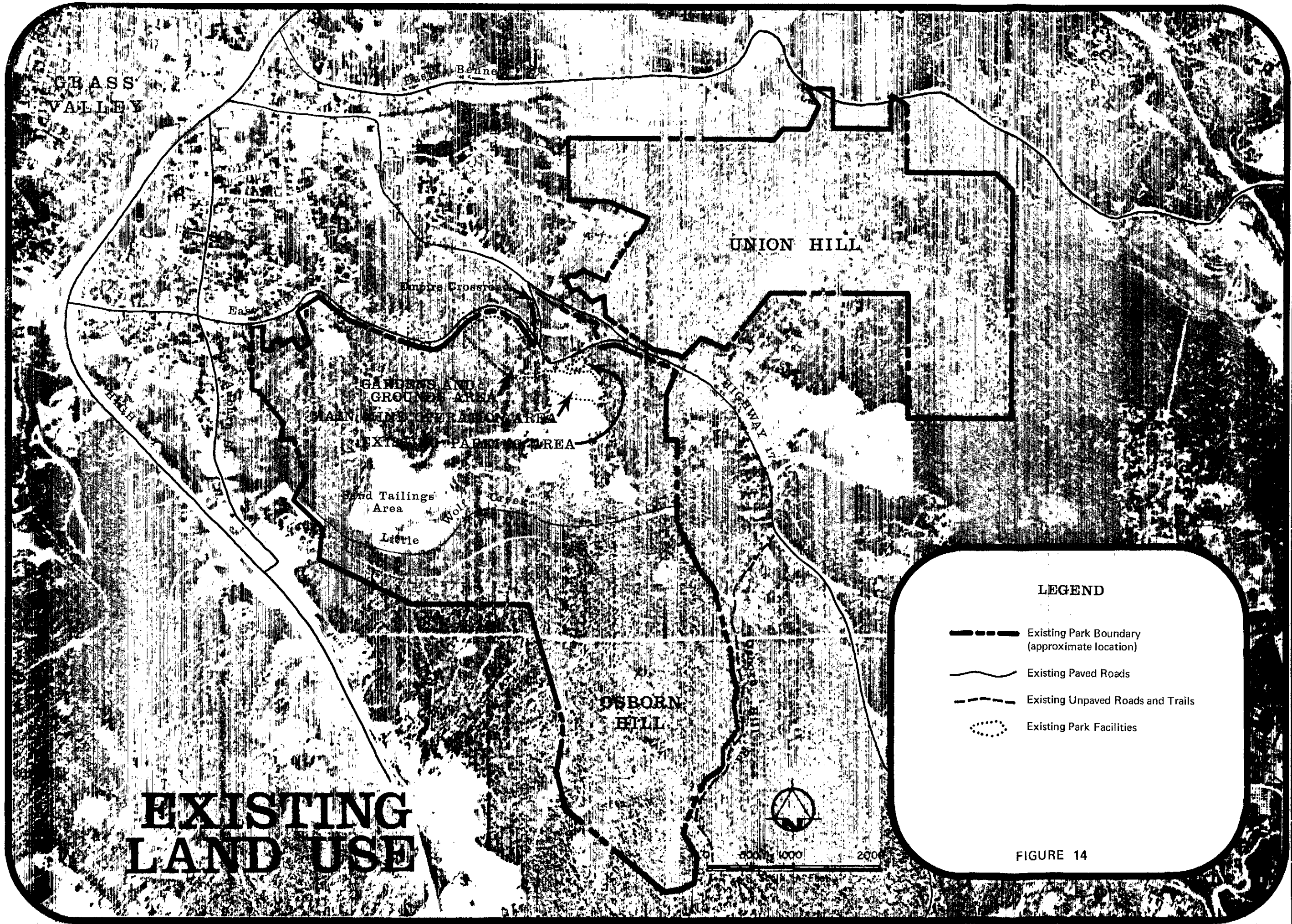
The proposed land use plan is based on a careful analysis of all natural and cultural resources of the park and a thorough study of what recreational needs this particular unit of the State Park System can and should fill.

In order to decide what areas would be suitable for specific pursuits, the locations of the most environmentally sensitive areas were determined. These areas contain fragile resources that are highly susceptible to damage from indiscriminate use. Table 8 lists these sensitive areas and the potential damage irresponsible development might cause.

**TABLE 8**

**ENVIRONMENTALLY SENSITIVE AREAS**

| RESOURCE | SENSITIVE AREA | NATURE OF POTENTIAL DAMAGE TO RESOURCE |
|---|---|---|
| Cultural Resources | Zone of Primary Cultural Interest | Encroachment on Historic Site |
| | Historic Buildings, Foundations, and Sites | Encroachment on Historic Site |
| | Open Mine Shaft | Safety hazard |
| | Tailings | Alteration of Historic Site |
| Vegetation | Dense Mixed Evergreen | Loss of Valuable Vegetation |
| | Riparian | Loss of Valuable Vegetation |
| | Open Grassland or Mountain Misery Groundcover | Visual Scar |
| | Black Oak Groves | Loss of Valuable Vegeation |
| | Dense Manzanita | Potential Fire Hazard |
| Visual Quality | Scenic Viewsheds | Visual Scar |
| | Scenic Landscapes | Visual Scar |
| Topography | Slopes of 20% and Above | Erosion Potential |
| Soils | Poor Drainage | Visual Scar |




RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

DESIGNED
DRAWN APR 1977
CHECKED

REVISIONS | DATE

APPROVED ____ DATE ____

EMPIRE MINE STATE HISTORIC PARK

EXISTING LAND USE

DRAWING No.

SHEET No.
OF

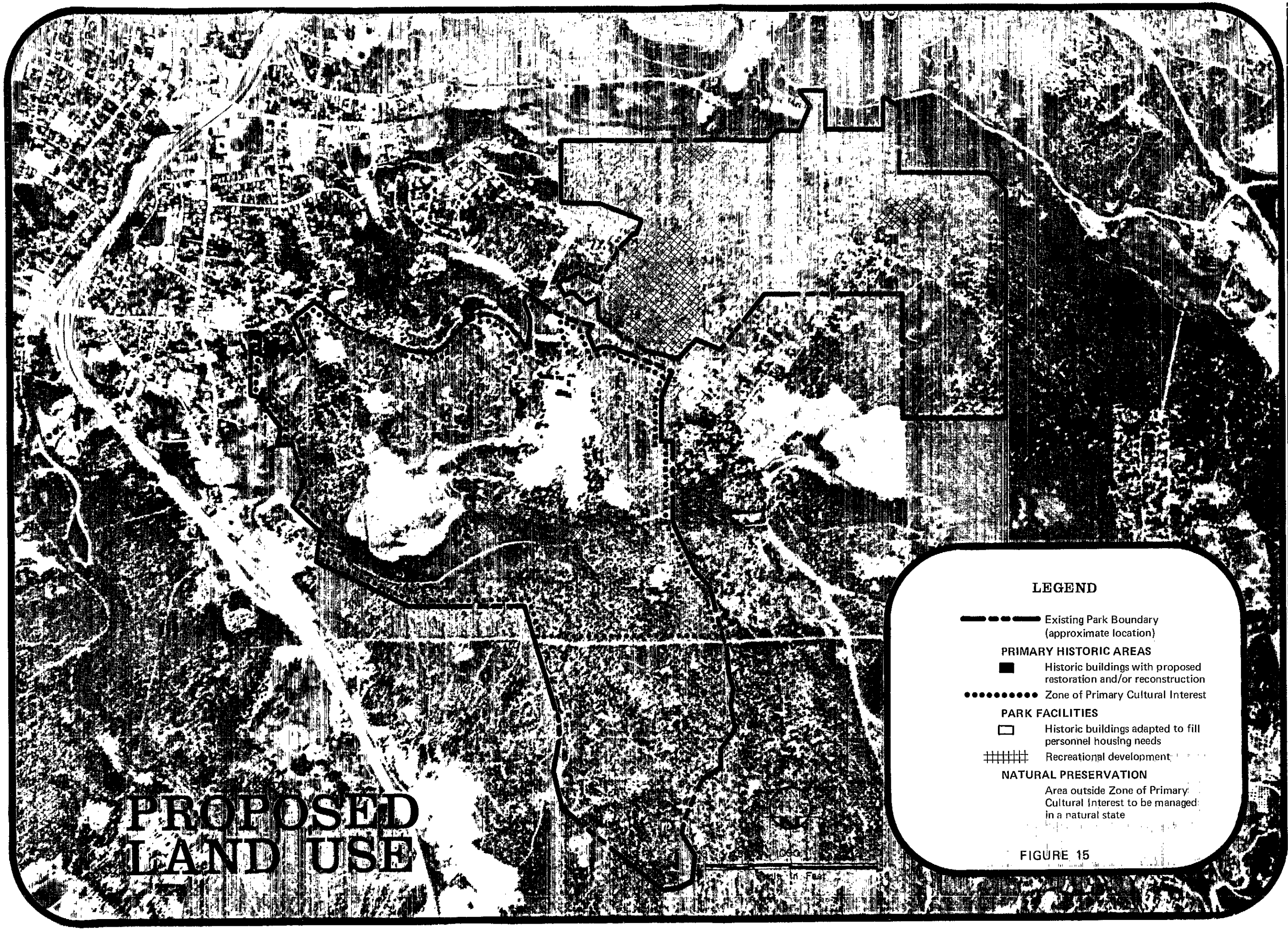



FIGURE 15

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK

PROPOSED LAND USE

| REVISIONS | DATE |
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DESIGNED

DRAWN APR. 1977

CHECKED

DRAWING NO.

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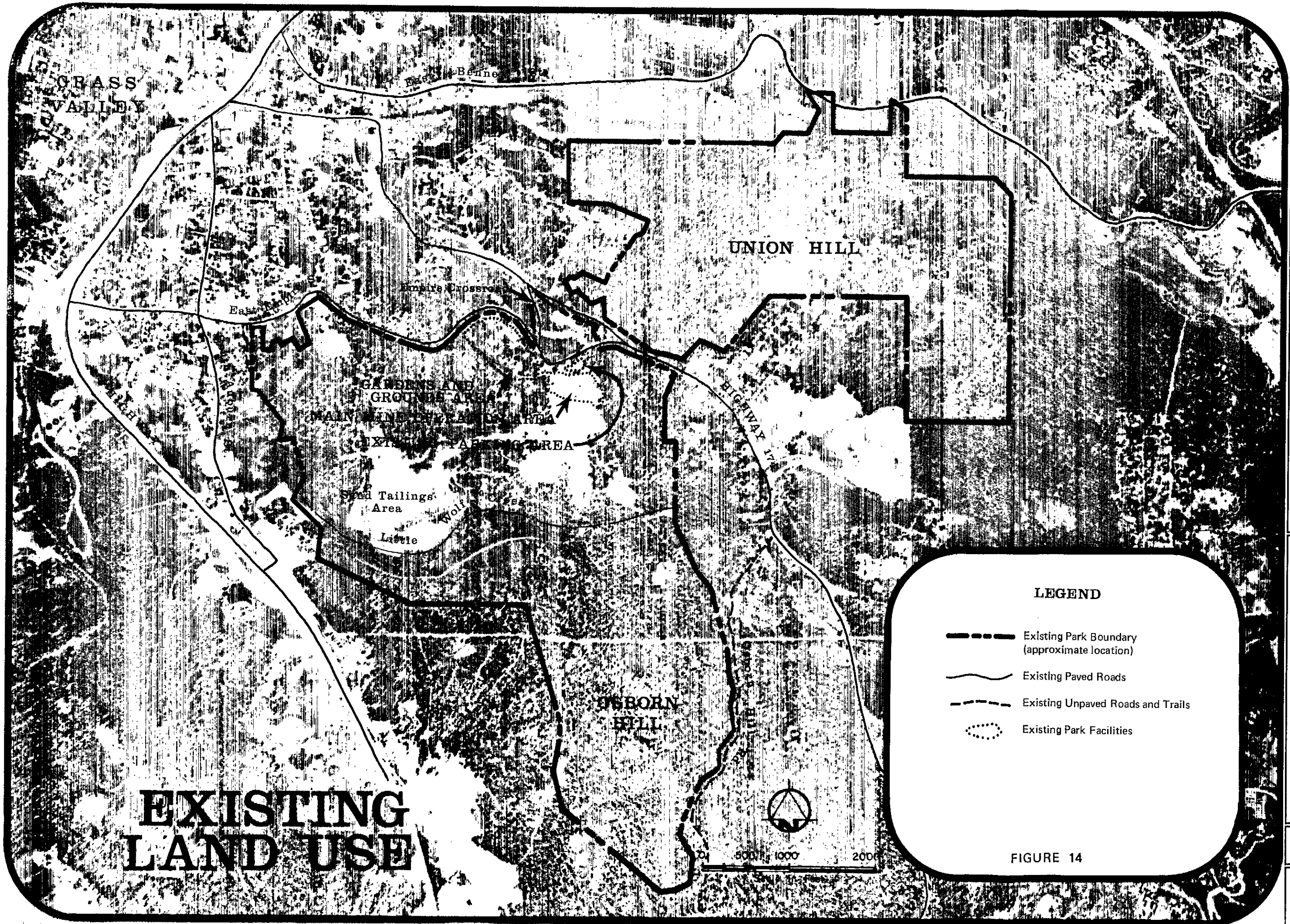


FIGURE 14

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK

# EXISTING LAND USE

DESIGNED
DRAWN APR 1977
CHECKED

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DRAWING No.

SHEET No.
OF

# PROPOSED LAND USE

## LEGEND

Existing Park Boundary (approximate location)

**PRIMARY HISTORIC AREAS**

Historic buildings with proposed restoration and/or reconstruction

Zone of Primary Cultural Interest

**PARK FACILITIES**

Historic buildings adapted to fill personnel housing needs

Recreational development

**NATURAL PRESERVATION**

Area outside Zone of Primary Cultural Interest to be managed in a natural state

FIGURE 15

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

DESIGNED
DRAWN APR. 1977
CHECKED

REVISIONS | DATE

APPROVED _____ DATE _____

EMPIRE MINE STATE HISTORIC PARK

PROPOSED LAND USE

DRAWING No.

SHEET No.
OF

The recommendations of this General Development Plan represent an effort to achieve a harmonious blending of facilities with resources. Our overriding concern is to preserve the natural and cultural resources while making them available to the public for the educational and recreational benefits these valuable resources can provide.

**Zone of Primary Cultural Interest**

In accordance with the primary purpose of the unit, approximately half of the park will continue to be designated a Zone of Primary Cultural Interest. The area containing the complex of Empire Mine structures and associated residences in the northeastern section of this zone will be used for interpretation (including special events) and for compatible administrative and personnel housing facilities. Those existing historic buildings or reconstructions that are deemed of secondary interpretive potential will be adapted to fill the administrative and housing needs, instead of meeting these needs with new construction. The remaining acreage within the zone contains remnants of other significant mining sites acquired by the Empire Company over the years – chiefly massive tailings and decaying foundations. The proposed land use of this area is intended to retain the historical authenticity and provide a setting in which the visitor may enjoy hiking trails, picnic areas, rest areas, and scenic overlooks. Visitor parking facilities will also be provided near this area.

**Park Property To Be Managed in a Natural State**

The park property not included in the Zone of Primarly Cultural Interest – the southern quarter of the section lying southwest of Highway 174 and all of the Union Hill area northeast of that highway – contains relatively few significant historic features. The primary use of this area will be as scenic open space and low intensity visitor use of hiking and equestrian trails. An area has been designated as suitable for development of campsites, should the need arise in the future. The development of a small equestrian staging area is proposed near Highway 174 in the Union Hill portion. The Proposed Land Use Map, p. 50, shows these two recreational areas as one; the scattered small recreational areas represent primitive picnic sites, rest areas, and scenic overlooks.

*Empire Cottage and grounds*

## Proposed Developments

This section will discuss in detail the proposed development at Empire Mine State Historic Park. For convenience the development is divided into three categories: (1) Historic Interpretation; (2) Administrative and Personnel Housing Facilities; and (3) Recreation Use. Since Empire Mine is a large unit with diverse characteristics, there is considerable overlap within these three categories; for example, many of the restored mining operation buildings can and should be used as administrative offices. The accurate and enjoyable presentation of the Empire Mine story is paramount among the park's purposes and will receive the greatest emphasis.

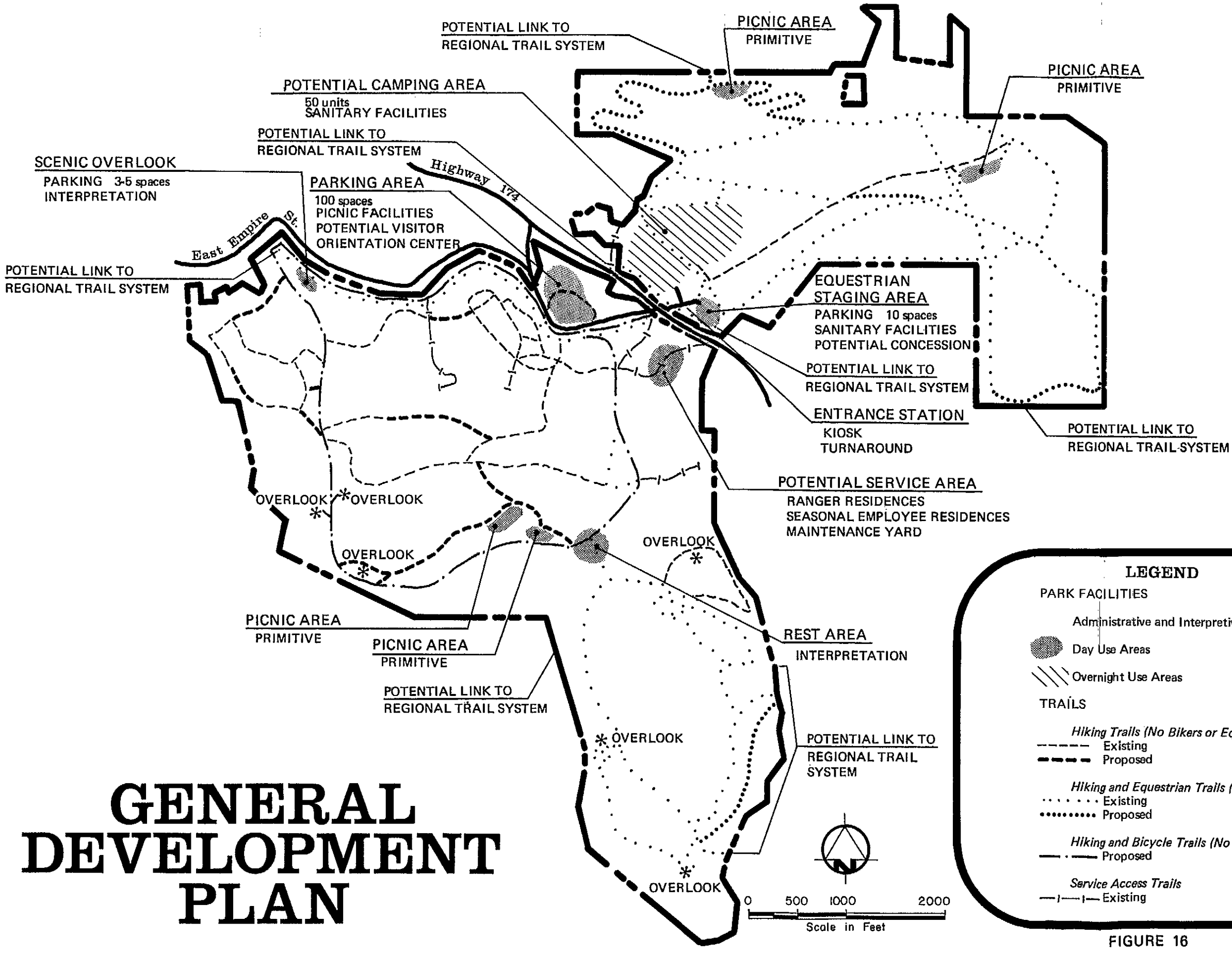
### Historic Interpretation

Empire Mine has played a significant role in the history and development of California. The basic goal in the interpretation of this story will be to provide a historic environment that is representative of hard-rock gold mining in the Mother Lode. Details of this interpretive program are described in the Department of Parks and Recreation's Empire Mine State Historic Park Interpretive Prospectus (in the files of the Resource Preservation and Interpretation Division) and are summarized in this chapter.

#### Interpretive Period

The period to be interpreted at Empire Mine shall range from 1850, when gold was discovered on Ophir Hill by George E. Roberts, until the mine finally shut down in 1956, a span of 106 years. The prime period, however, shall be from 1877, the approximate date of William Bourn, Jr.'s interest in the mine, to 1942, when Federal Order L-208 closed down gold mining as nonessential to the war effort during World War II. Most of the existing mine structures and other buildings were erected in this period. Because periods of boom and failure characterized the mine's history, it is difficult to pinpoint a narrow time period most representative of the "real" Empire Mine.

*Man-cars in use at the mine and their remnants today*




# GENERAL DEVELOPMENT PLAN

FIGURE 16

DESIGNED | DRAWN APR 1977 | CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED [signature] DATE 3/11/1978

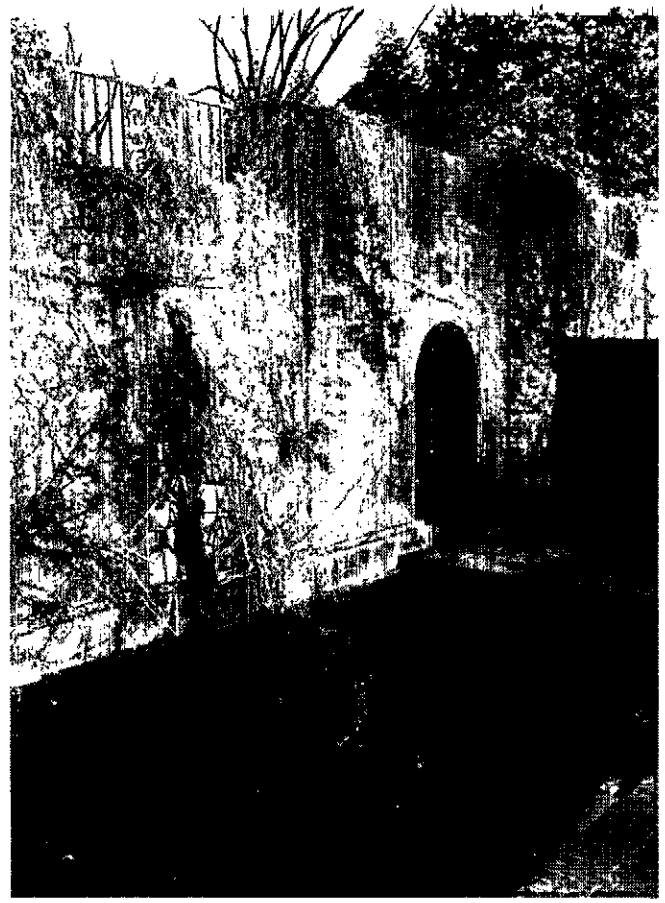
EMPIRE MINE STATE HISTORIC PARK

GENERAL DEVELOPMENT PLAN

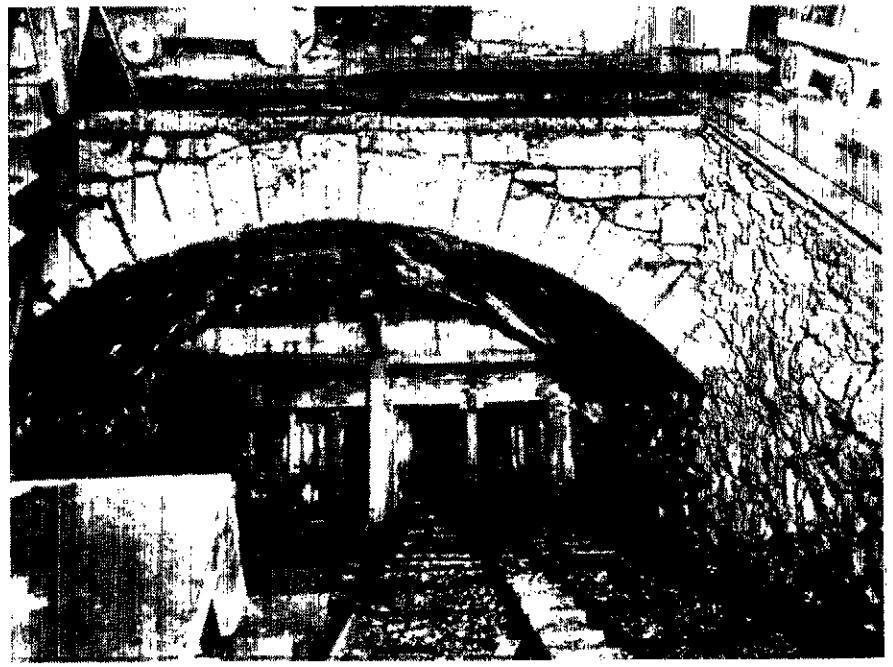
DRAWING No.

SHEET No. OF

The miners



The gardens



The mine shaft

COLLAGE OF INTERPRETIVE ITEMS

Ore car in main shaft

Hoisthouse and foundations

**Interpretive Themes**

The interpretive themes of Empire Mine State Historic Park shall be harmonious with the declared purpose of the unit expressed in the Resource Management Plan. These themes are listed below in order of decreasing priority:

**Primary Theme:**

Representation of the history of hard-rock mining.

*Sub-Themes:*

1. *The geology of gold quartz deposits:* The concentration of rich gold-bearing veins is very high in the Grass Valley area. Visitors need a familiarity with the area's geologic history in order to understand this phenomenon. How quartz veins are formed, how gold is deposited, and why rich quartz alternates with barren zones, need to be explained to the visitor to account for the boom and bust periods at Empire Mine.

2. *The evolution of mining technology:* The unique problems of hard-rock mining at Empire Mine led to technological innovations. In its heyday, Empire Mine possessed the best and the newest machinery the United States had to offer. The technological advances at Empire Mine thus portray the growing technological expertise of the United States. The story of the evolution of machines to better accomplish different mining stages, e.g., tunneling, pumping, ore transport, and amalgamation, should be presented to the visitor. Non-mechanical devices used at the mines, such as the use of mules to haul ore in the mine, provide an interesting contrast in mining methods.

3. *The economic importance of gold mining:* How much did the Empire Mine produce in gold? How did gold prices affect or reflect the fortunes of the mine owners during the Great Depression, World War II, and post-World War II? These questions highlight the boom and bust periods of Empire's history and explain gold's importance at both local and national levels.

4. *The working life of the gold miners:* How long did the miners work a day? How much were they paid? What were their duties; what were the dangers and the rewards of working in the mines? The answers to such questions will depict the working environment and mining conditions at Empire Mine.

5. *Contrasts in life-styles and traditions:* In William Bourn, Jr.'s personality, interests, and life-style can be seen many of the social aspirations and comforts enjoyed by the successful early twentieth century capitalist. What social customs and amusements typified the Cornish mining community and the mine management under Bourn, Starr, and the Newmont Corporation? How did the way of life enjoyed at the Empire Cottage and Clubhouse compare with the living conditions of the Cornish miners?

**Secondary Theme:**

*The natural history of Empire Mine State Historic Park:* Many of the biological features at Empire Mine are a result of man's alteration of the natural landscape. For example, heavily logged or burned over areas have encouraged the growth of the sun-loving manzanita; one border of the sand tailings area offers a habitat for many riparian species. The diversity of vegetation, wildlife, and rock types at Empire Mine is a testimony to the effects of geologic and human history on the area.

*Mine manager's office interior in the early 20th century*

*. . . . and exterior today*

**Interpretive Methods and Facilities**

The diverse cultural and natural resources at Empire Mine State Historic Park lend themselves to a variety of interpretive methods. The development of these methods shall include:

1. *Visitor "Mini-Centers":* The mine manager's office near the main parking area now serves as a visitor contact point. This building, however, will not be able to accommodate the anticipated increase in visitors, particularly on summer weekends. A series of contact points, or mini-centers, throughout the park would ease the impact of this traffic. The potential uses and interpretive methods within these mini-centers are endless. Each facility could concentrate on a different theme of the mine's history. The following locations for visitor mini-centers are proposed:

    a. Mine Manager's Office
    b. Machine Shop/Empire Main Shaft
    c. Empire Cottage
    d. Hoist House
    e. Engineer's Office
    f. Empire Clubhouse*

    The primary visitor contact point shall remain at the mine manager's office because the office is conveniently located near the proposed main parking area. This facility should eventually be enhanced by the reconstruction of the elevated walkway from this building to the machine shop. Channeling of visitors through this contact point would then be facilitated and visitors would have a broad panoramic view of mine buildings and landscape from this walkway.

    If drastic increases in visitation require the construction of a contemporary visitor center, the location of this facility shall be adjacent to the proposed main parking area.

2. *Personal Services:* The general public may have little previous knowledge of the technological developments of gold mining, the process of extracting and breaking down the ore, refining the gold, and the geologic conditions of a gold ledge. The guided tour is an appropriate method to interpret these topics to the public. Although these subjects are somewhat technical, some familiarity with them is crucial to a basic understanding of hard-rock gold mining and its relationship to other mining techniques. Volunteer guides, or docents, should be used to lead tours and staff the visitor "mini-centers."

*The California Department of General Services currently leases the Empire Clubhouse to the Empire Country Club, a private social organization in Grass Valley. The Department of Parks and Recreation expects to acquire control when the lease expires in 1980.

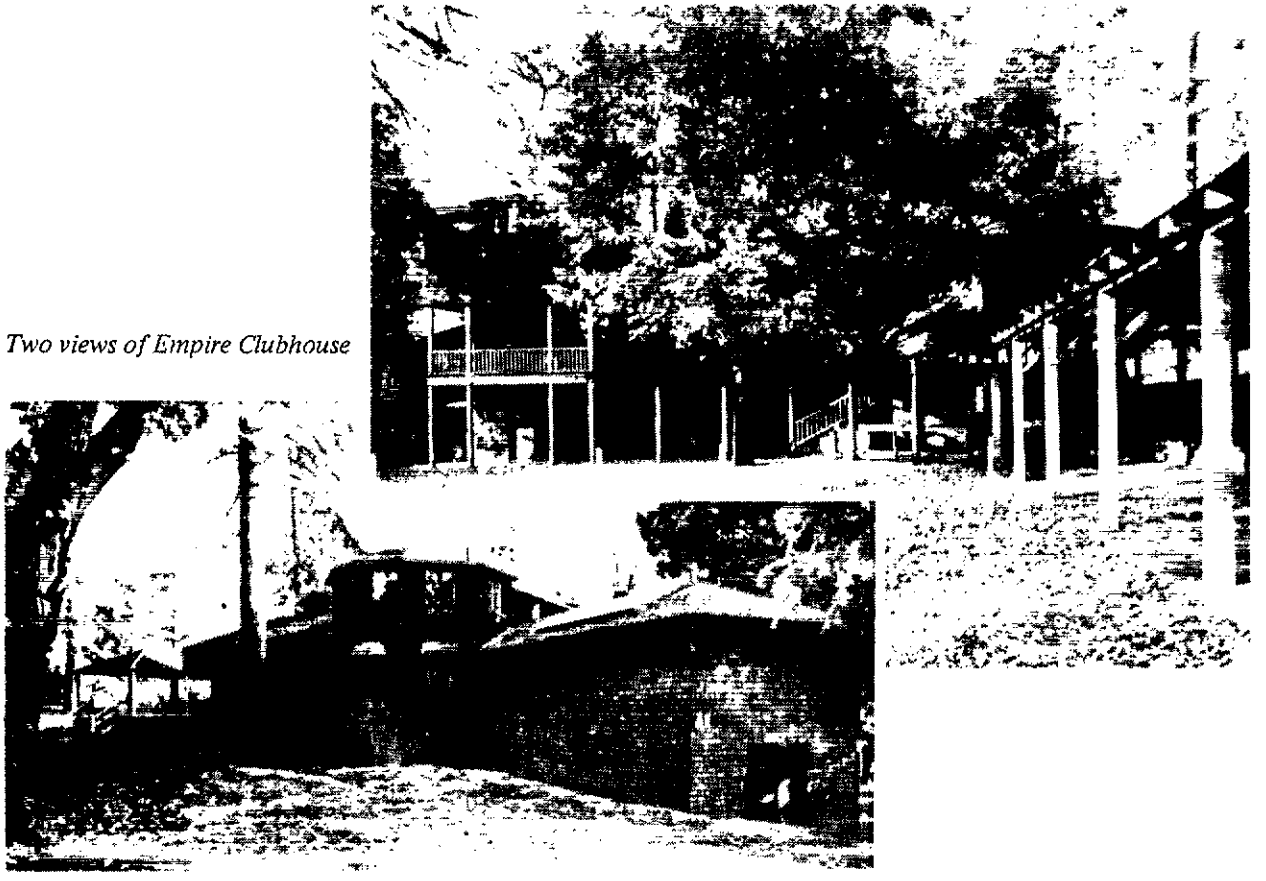
3. *Self-Guided Services:* Because of the impracticality of providing all park visitors with a guided tour, self-guided tours shall be developed at Empire Mine. Brochures, signing, exhibits, and displays in the historic area and along nature trails shall be developed.

4. *Exhibits:* Outdoor panels, unobtrusively placed, shall be installed to interpret historic resources and points of biological and geological interest. Indoor panels and displays using photographs, text, models, and artifacts shall correspond to the previously mentioned themes.

5. *House Museums:* The buildings, ruins, and foundations are the most important interpretive resources at Empire Mine State Historic Park. Since few artifacts are now available, the physical structures themselves must convey to visitors the scale of the past mining operation. Many of these structures shall be developed as "house museums," complete with as much of the machinery, hardware, and furnishings typical of the primary interpretive period as it is possible for the state to acquire.

6. *Audio-Visual Techniques:* Historic information can often be most effectively conveyed to the visitor by audio-visual means. These facilities will be placed in ways that do not diminish the historic character of the building interiors.

7. *Demonstrations:* There are endless possibilities for the demonstration of mining processes and techniques to the park visitor. Working models and operating machinery should be displayed. Environmental living programs, whereby visitors are allowed to experience certain mining activities, shall be developed.



*Two views of Empire Clubhouse*

In order to successfully implement the previously mentioned interpretive methods, a comprehensive development program is necessary. The following list describes proposed interpretive development in order of decreasing priority:

1. *Stabilization:* All historic structures shall be preserved and the following structures are planned for stabilization in 1977-78:

    a. Mine Manager's Office
    b. Rowe Shaft Headframe and Ore Bins
    c. Greenhouse
    d. Empire Cottage
    e. Gardens and Grounds Area

2. *Restoration:*

    a. Mine Manager's Office
    b. Machine Shop – Empire Shaft
    c. Empire Cottage
    d. Gardens and Grounds Area
    e. Engineer's Office
    f. Magenta Drain Tunnel
    g. Refinery
    h. Safety Engineer's Office
    i. Gardener's Residence
    j. Hoist House
    k. Empire Clubhouse
    l. Garages
    m. Hoist Cable Structure
    n. Diamond Drill Core Building
    o. Warehouse No. 1
    p. Transformers

3. *Reconstruction*

    a. Blacksmith Shop
    b. Welding Shop
    c. Stamp Mill (partial)
    d. Cyanide Plant (partial)
    e. Walkway from Mine Manager's Office to Machine Shop
    f. Empire Headframe
    g. Compressor House
    h. Other miscellaneous structures in the vicinity of the main mine operation, such as Warehouses, Sheds, Fuse House, Cap House, Scale, Dry House, and unnamed structures

The preceding discussion of interpretive facilities, methods, and themes is summarized by the matrix in Figure 17, which relates the types of interpretive method and theme that are appropriate for each historic building. The boxes marked with a dark circle describe a method or theme that is compatible with the interpretive facility. Boxes marked with an open circle indicate incompatibility. The purpose of this process is to investigate all possible uses of the available park facilities. Since the General Development Plan is intended to be a flexible document, the use of these buildings is also variable, within the parameters indicated in the matrix.

**FIGURE 17a**

| INTERPRETIVE FACILITIES, METHODS, AND THEMES (PART 1) | INTERPRETIVE METHODS | | | | | | | | INTERPRETIVE THEMES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERPRETIVE FACILITIES | Visitor Mini-Center | Personal Services | Self-guided Services | Exhibits | House Museums | Audio/Visual | Demonstrations | Concessions | Geology and Gold Deposits | Evolution of Mining Technology | Economic Importance of Gold Mining | Working Life of Miners | Miners vs. Management | Natural History |
| MINING STRUCTURES | | | | | | | | | | | | | | |
| 1. Empire Shaft | ● | ● | ○ | ● | ● | ● | ● | ○ | ● | ● | ○ | ● | ○ | ○ |
| 2. Hoist House | ● | ● | ● | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ○ | ○ |
| 3. Manager's Office | ● | ● | ○ | ● | ● | ○ | ○ | ● | ● | ● | ● | ● | ● | ○ |
| 4. Refinery | ○ | ● | ○ | ● | ● | ○ | ● | ○ | ● | ● | ● | ● | ○ | ○ |
| 5. Safety Engineer's Office | ○ | ● | ○ | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ● | ● | ○ |
| 6. Engineer's Office | ● | ● | ○ | ● | ● | ● | ● | | ● | ● | ● | ● | ● | ○ |
| 7. Rowe Shaft Head frame | ○ | ● | ● | ● | | ○ | ○ | ○ | ○ | ● | ○ | ● | ○ | ○ |
| 8. Rowe Ore Bins | ○ | ● | ● | ● | | ○ | ○ | ○ | ○ | ● | ● | ○ | ○ | ○ |
| 9. Warehouse No. 1 | ○ | ● | ● | ● | ● | ● | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 10. Diamond Drill Core Building | | ● | ● | ● | ● | ○ | ○ | ○ | ● | ● | ○ | ● | ○ | ○ |
| 11. Transformers (2) | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 12. Boiler | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 13. Hoist Cable Structure | ○ | ● | ● | ● | | ○ | ○ | ○ | ○ | ● | ○ | ● | ○ | ○ |
| 14. Machine Shop | ● | ● | ● | ● | ● | ● | ● | ○ | ● | ● | ○ | ● | ○ | ○ |
| 15. Garages (3) | ○ | ● | ● | ● | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ | ● | ○ |
| 16. New Rich Hill Shaft | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ● | ● | ○ | ● | ○ | ○ |
| 106-107 Pennsylvania Mine | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ○ | ● | ○ | ○ |
| MINING FOUNDATIONS | | | | | | | | | | | | | | |
| 20. Empire Headframe | ○ | ● | ● | ● | | ● | ○ | ○ | ● | ● | ○ | ● | ○ | ○ |
| 21. Compressor House | ○ | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ |
| 22. Cyanide Plant | ○ | ● | ● | ● | | ○ | ○ | ○ | ● | ● | ● | ● | ○ | ○ |
| 23. Blacksmith Shop | ○ | ● | ● | ○ | ● | ● | ● | ● | ○ | ● | ○ | ● | ○ | ○ |
| 24. Welding Shop | ○ | ● | ● | ○ | ● | ● | ● | ● | ○ | ● | ○ | ● | ○ | ○ |
| 26. Stamp Mill | ○ | ● | ● | ● | | ○ | ● | ○ | ● | ● | ● | ● | ○ | ○ |
| 27. Scale | ○ | ● | ● | ● | | ○ | ● | ○ | ○ | ● | ● | ○ | ○ | ○ |
| 25, 28, 76-83 W.Y.O.D. Mine and Others | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ● | ● | ○ | ○ |
| 111-116 Pennsylvania Mine and Others | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ● | ● | ○ | ○ |

LEGEND

● Method or Theme is compatible with the interpretive facility.

○ Method or Theme is incompatible with the interpretive facility.

▭ Not applicable.

Note: Building numbers are keyed to the Cultural Resource Map.

**FIGURE 17b**

| INTERPRETIVE FACILITIES, METHODS, AND THEMES (PART 2) | INTERPRETIVE METHODS | | | | | | | | INTERPRETIVE THEMES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERPRETIVE FACILITIES | Visitor Mini-Center | Personal Services | Self-Guided Services | Exhibits | House Museums | Audio/Visual | Demonstrations | Concessions | Geology and Gold Deposits | Evolution of Mining Technology | Economic Importance of Gold Mining | Working Life of Miners | Miners vs. Management | Natural History |
| REMOVED MINING STRUCTURES | | | | | | | | | | | | | | |
| 30. Rowe Shaft Conveyor | ○ | ● | ● | ● | ○ | ○ | ● | ○ | ○ | ● | ○ | ● | ○ | ○ |
| 31. Rowe Shaft Hoist House | ○ | ● | ● | ● | ○ | ● | ● | ○ | ○ | ● | ○ | ● | ○ | ○ |
| 32. Walkway from Manager's Office | ○ | ● | ● | ● | ○ | ● | ○ | ○ | ○ | ○ | ● | ● | ● | ○ |
| 33. Transformers (2) | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 34. Warehouses (4) | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 35. Garages | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ |
| 36. Fuse House | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 37. Cap House | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 38. Sheds (3) | ○ | ● | ● | ● | ○ | ○ | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ |
| 39. Scale | ○ | ● | ● | ● | ○ | ○ | ● | ○ | ○ | ● | ● | ○ | ○ | ○ |
| 40. Dry | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ |
| 41-51, 86-93 Unknown Structures | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ○ | ○ |
| 94. Golden Treasure Mine Structure | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 95-100 Unknown Structures | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ○ | ○ |
| 101. Daisy Hill Mine Structure | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 102. Unknown Structure | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 121. Mule Corral | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ● | ○ | ○ |
| RESIDENTIAL BUILDINGS | | | | | | | | | | | | | | |
| 55. Empire Cottage | ● | ● | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ● | ○ |
| 56. Empire Clubhouse | ● | ● | ● | ● | ● | ● | ○ | ● | ○ | ○ | ● | ○ | ● | ● |
| 57. Gardener's Residence | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ● |
| 58. Greenhouse | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ● |
| 59. Starr House Ruins | ○ | ● | ● | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 60. Sing Residence | ○ | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 65. Cassidy Mine House | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 66. Mill Man House | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 67. Manzanita Cottage | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 68. Kendell House | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 69. Cedar Cottage | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| PROPOSED ACQUISITION | | | | | | | | | | | | | | |
| East Empire Street | ○ | ● | ● | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| Manlon Ranch Meadow | ○ | ○ | ● | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ● |
| Pneumonia Gulch | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| AREAS OUTSIDE HISTORIC ZONE | | | | | | | | | | | | | | |
| Osborn Hill | ○ | ● | ● | ● | ○ | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ● |
| Union Hill | ○ | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |

LEGEND

● Method or theme is compatible with the interpretive facility.
○ Method or theme is incompatible with the interpretive facility.
▭ Not applicable.
Note: Building numbers are keyed to the Cultural Resource Map.

**Research Program**

Because of the complex nature of Empire Mine's history, extensive research will be required to obtain general and specific information for individual development projects. A wealth of local expertise is available for this data. As historic buildings are restored and reconstructed, research on the history and technology of Empire Mine will be necessary. The biographies of the former mine owners, particularly the Bourn family, are at present incomplete. Much more biographical material on George W. Starr, the innovative mine superintendent, also needs to be developed. Taped interviews of longtime Grass Valley residents will provide insight about the working life of the miners and the organized labor movements. More research on the horticultural history of the gardens and grounds area must be pursued.

The key to accurate interpretation at Empire Mine lies with the understanding and preservation of artifacts. Unfortunately, the Newmont Corporation auctioned most of the mining equipment before Empire Mine was acquired as a unit of the State Park System. A thorough investigation of the possibility of purchasing these and other similar artifacts will be a top interpretive priority.

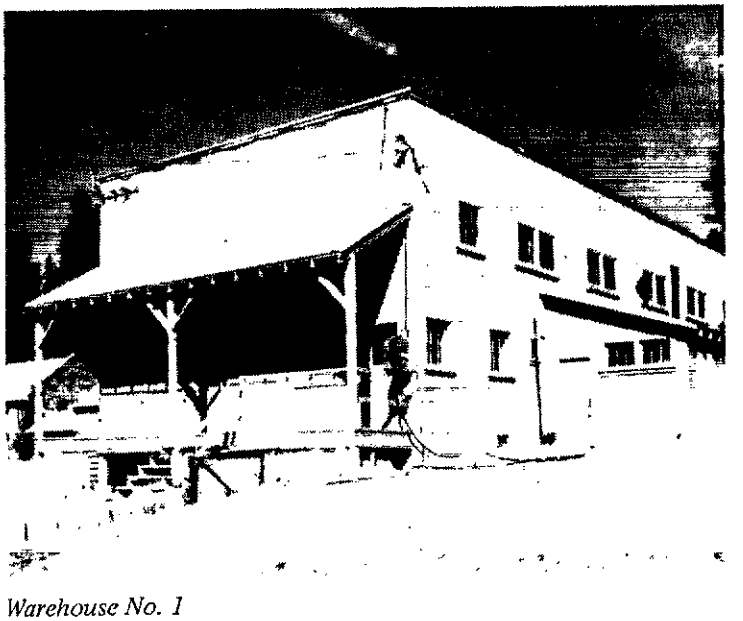
## Administrative and Personnel Housing Facilities

The administrative and personnel housing needs include park staff offices, maintenance facilities, and employee residences. Numerous historic buildings are suitable for these functions and are currently being used for this purpose. Several historic structures yet to be restored could also be adapted for this use.

Mining structures such as the manager's office, the safety engineer's office, or the engineer's office could be used for an area manager's office or the park office. The machine shop, the greenhouse, or the refinery could be adapted for maintenance facilities. Parts of Empire Cottage or the clubhouse would be suitable for office use as well, and the various smaller residences could be readily adapted as employee residences. However, the portions of the resources usually accessible to the public will be maintained with an historic appearance.

In addition to the housing opportunities offered by existing historic buildings, a potential service area is proposed. This area is in the vicinity of an existing employee residence and includes adequate space for the development of a maintenance yard as well as additional residences that might include housing facilities for seasonal employees.

*Engineer's office*



*Warehouse No. 1*

## Recreation Use

The need for recreational development has been discussed in the Resource Inventory and Analysis section. Since the primary purpose of Empire Mine State Historic Park is interpretation of its gold mining story, most park development will concentrate on the restoration of historic features. Proposed recreational development will be secondary in importance, and must be compatible with the historic character of the park.

A Recreational Suitability Matrix has been developed that identifies the compatibility of potential recreational activities with the significant resource characteristics (see Fig.18). Opportunities for development are indicated by the boxes with an open circle. Locating the particular recreational activity in a restricted area might result in damage to the resource. Development of park facilities is not necessarily prohibited in these environmentally sensitive areas. The potential for resource damage, however, is greater here, and development should be executed carefully with provisions for a lower intensity of use.

Details of the proposed developments for Day-Use Areas and for an Overnight-Use Area are outlined below. All of these elements are indicated on the General Development Plan Map.

### Day-Use Areas

There are seven different types of day-use facilities proposed by this plan.

*Main Parking Area*

1. The main parking area will be off East Empire Street, which intersects Highways 49 and 174. The parking area will be near the main historic area and will accommodate approximately 100 vehicles. Its precise location will be determined when funding for the project becomes available. The possibility of realigning a portion of East Empire Street in order to facilitate vehicular and pedestrian circulation will be investigated at that time.

2. The proposed parking area is bisected by a pile of rock tailings. A parking lot could be located on either side. The area on the north side is preferable since it is screened from the historic core, has a potential for multiple access, and will accommodate a greater number of cars. A large area of rock tailings, however, may create engineering problems. A parking lot on the south side of the pile of rock tailings would be closer to the historic core, but would intrude on the historic scene, and therefore might require considerable screening. The ultimate location cannot be determined until engineering and traffic studies are completed.

3. A picnic area will be located adjacent to the parking area. It will be separated from the main historic area and will be large enough to accommodate groups.

4. Should the need arise, a visitor orientation center will be located adjacent to the parking area.

*Picnic Areas*

1. Four picnic areas will be provided in addition to the one adjacent to the main parking area. They will be located in the general vicinity of unusual vegetation and will have access by trail only.

2. These picnic areas will be primitive in character in order to minimize visitor impact on the environment. They will contain few developed facilities and will accommodate small groups.

**FIGURE 18**

| RECREATIONAL SUITABILITY<br>RESOURCE CHARACTERISTICS | RECREATIONAL ACTIVITIES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hiking Trails | Bicycle Trails | Equestrian Trails | Service Access Trails | Picnic Areas | Camping/Primitive | Camping/Tent | Camping/Trailer | Parking Areas | Nature Study Areas | Rest Areas | Equestrian Staging Areas | Scenic Overlooks |
| Cultural Resources | | | | | | | | | | | | | |
| o Zone of Primary Cultural Interest | ● | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ● | ● |
| o Historic Buildings, Foundations and Sites | ● | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ● | ● |
| Vegetation | | | | | | | | | | | | | |
| o Ponderosa Pine Forest | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| o Dense Mixed Evergreen | ● | ● | ● | ● | ● | ● | ○ | ○ | ● | ● | ● | ○ | ● |
| o Riparian | ● | ○ | ○ | ○ | ● | ● | ○ | ○ | ○ | ● | ● | ● | ● |
| o Open Grassland Meadow | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ● | ● |
| o Mountain Misery Groundcover | ● | ● | ● | ○ | ● | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| o Black Oak Groves | ● | ● | ● | ○ | ● | ● | ○ | ○ | ○ | ● | ● | ○ | ● |
| o Dense Manzanita | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● | ○ | ● |
| o Dense Blackberry | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ○ | ○ | ○ |
| Visual Quality | | | | | | | | | | | | | |
| o Scenic Viewsheds | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ○ | ● |
| o Scenic Landscapes | ● | ● | ● | ○ | ● | ○ | ○ | ○ | ○ | ● | ● | ● | ● |
| Topography | | | | | | | | | | | | | |
| o 0 – 10% Slope | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| o 10 – 20% Slope | ● | ○ | ● | ● | ● | ● | ○ | ○ | ○ | ● | ○ | ○ | ● |
| o 20% and Above Slope | ● | ○ | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Soils | | | | | | | | | | | | | |
| o Good Drainage | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| o Poor Drainage | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| o Tailings Areas | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ● | ○ | ● |
| o High Erosion Potential | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

LEGEND

● These recreational activities and resource characteristics are compatible

○ These recreational activities and resource characteristics are incompatible

*Rest Area*

A rest area will be located in the small tree-enclosed open space at the junction of several trails in the Osborn Hill Area. It is suitable for interpretation of the natural features to be seen here. Outdoor exhibits, informal seating, and sanitary facilities are potential developments.

*Scenic Overlook*

1. A scenic overlook will be installed adjacent to the Pennsylvania Mine structures off East Empire Street. It will accommodate several cars.

2. Since this site is a considerable distance from the main parking area, facilities to interpret the nearby historic features (Pennsylvania mine operations) should be provided at this overlook.

*Entrance Station*

1. An entrance station for the equestrian staging area and potential camping area will be constructed off Highway 174. The road will extend far enough into the park to allow space for an adequate vehicular backup area. A safe sight distance will be part of the entrance's design.

2. A turnaround will be provided for persons who decide not to enter the park. The planting of native trees and shrubs may be necessary to mitigate the impact of construction.

*Equestrian Staging Area*

1. The equestrian staging area will accommodate parking for approximately 10 vehicles with horse trailers. Some overflow parking for additional vehicles and access to equestrian and hiking trails will also be provided.

2. The staging area will be separated from the Zone of Primary Cultural Interest and will be located near Highway 174 in order to retain as much park open space as possible.

3. Sanitary facilities, including one small comfort station and a water source, will be located adjacent to the staging area.

4. A horse rental concession is potentially feasible for this location. Its development will depend primarily upon the success of proposed equestrian use and visitor demand. The operation of such a concession would be by a private concessionnaire.

*Trails*

The trails are part of a self-contained park trail system with potential links to a regional trail system. There is currently no legally recognized developed trail system outside the unit.

The primary access to the park trail system is at the main park entrance. Boundary fencing, needed to keep off-road vehicles from entering the park, restricts access in certain areas along the park's perimeter. Gates will allow hikers and equestrians to enter the park in these areas when agreements are reached with adjacent landowners. These potential links to any regional trail system that may be developed in the future are noted on the General Development Plan Map.

1. *Hiking Trails:* Approximately 4 miles of trails strictly for hiking use will be provided. These trails will be located primarily in the Zone of Primary Cultural Interest in a wide variety of locations and will be designed to serve two functions: (1) to link the historic

features with the other day-use areas; and (2) to allow park visitors to experience all the cultural and natural resources without damaging these resources.

2. *Hiking and Equestrian Trails:* Approximately 10 miles of combination hiking and equestrian trails will provide access to several day-use areas. The use of these trails will be periodically monitored to assess the level of damage caused by equestrian and hiking use. Modifications in the intensity or type of use may be necessary on certain trails if the environmental impact is significant.

3. *Hiking and Bicycling Trail:* A 2-mile combination hiking and bicycle trail will be provided as a low priority development. It will be a paved loop trail adjacent to a proposed unpaved hiking trail. Access to a potential regional trail system will be provided along East Empire Street.

4. *Trail Overlooks:* Six overlooks with interpretive materials will be provided for hikers, equestrians, and bikers. Existing trees and shrubs will be thinned as necessary in these areas to open views. These overlooks will be located in the vicinity of historic features and scenic natural areas.

5. *Service Access Trails:* Approximately 1/2 mile of service access trails will be provided linking the ranger residences and potential service area with the main historic area.

**Overnight Use Area**

The following overnight use area is proposed by this plan:

*Potential Camping Area:*

1. The potential camping area will be constructed if visitor demand requires such development. There is presently no immediate need for the installation of this campground; however, if a future need is identified, the camping area will be located at the designated site.

2. The potential camping area is separated from the Zone of Primary Cultural Interest and will be designed in a manner that will permit retention of as much park open space as possible.

3. Approximately 50 campsites with space for recreational vehicles such as campers or trailers will be developed. Tables, food lockers, and stoves will be provided at these campsites.

4. Sanitary facilities, including showers and wash basins, will be provided.

5. The campground will be designed in harmony with the native landscape. Significant existing vegetation will be retained and the planting of native trees and shrubs may be necessary.

## Program for Development

Existing departmental funding for the development of Empire Mine has originated from several sources. The State Beach, Park, Recreational, and Historical Facilities Bond Act of 1974 appropriated $250,000 for stabilization and restoration purposes. This funding becomes available in fiscal years 1977-78 and 1978-79. In addition, $1,000,000 has been allocated from the Nejedly-Hart State, Urban and Coastal Park Bond Act of 1976. It becomes available in fiscal years 1978-79 and 1979-80.

The following program for development is intended to list the general sequence of plan implementation.

*Phase 1*

Development in Phase 1 includes all work that is funded by the 1974 Park Bond Act. This development will occur in fiscal year 1977-78.

—Stabilize existing historic features

—Restore existing historic features

—Develop methods of interpretation such as exhibits, models, displays, signs, audio-visual techniques, and furnishings

—Install boundary fencing where necessary in order to preserve and protect the cultural and natural resources

—Conduct archeological surveys wherever necessary

—Develop trail system for hiking and equestrian use

—Develop overlooks in connection with trail system

—Develop rest area, including possible interpretive displays, seating, and sanitary facilities

*Phase 2*

Development in Phase 2 includes all work that is expected to be accomplished under the 1976 Park Bond Act funding. Additional funding, however, may be necessary.

—Install a new water system, replacing the existing one; this project will supply water for domestic use, irrigation purposes, and fire protection

—Stabilize historic structures not stabilized in Phase 1

—Restore historic structures not included in Phase 1

—Reconstruct historic structures

—Install restroom facilities

—Develop further methods of interpretation such as exhibits, models, displays, signs, audio-visual techniques, and furnishings

—Construct main visitor parking area and equestrian staging area

—Develop scenic overlook, including parking area and interpretive displays

—Develop primitive picnic areas

—Conduct archeological surveys

*Phase 3*

Development in Phase 3 consists of those park facilities that will be developed only if the need should arise.

—Construct camping area and entrance station should the need arise

—Develop potential service area should the need arise

—Develop combination hiking and bicycle trail should the need arise

—Construct visitor orientation center should the need arise

## Proposed Bypass Road and Appropriate Future Additions

### Bypass Road

The historical growth pattern of Nevada County's population has been an interesting one. A peak of about 20,000 people was reached in the mining boom, of the 1880s, followed by a gradual dip to a low of 10,600 in the 1930s, then a steady post-war increase, culminating with a sharp increase after 1960. In the five-year period between 1970 and 1975 Nevada County experienced a growth of nearly 29 percent, second highest in the state. Present population estimates are 35,000 for the county, with the majority residing in the Grass Valley area. If the present growth rate continues, over 200,000 people will be living in the county by the year 2000.

This population increase has created considerable traffic problems along East Empire Street, the main park entrance road. It is a frequently used Grass Valley thoroughfare that connects Highways 49 and 174 (see map, p. 69). This traffic includes logging and other trucks that create safety hazards and diminish the quality of the park entry experience. The Nevada County Transportation Commission recognized this problem in its Regional Transportation Plan adopted March 31, 1975. The commission recommended that a bypass road passing through the Osborn Hill area of Empire Mine State Historic Park be built as a possible means of alleviating the anticipated increase in congestion along East Empire Street.

Since this proposal by the Transportation Commission was made before Empire Mine became a state historic park, its potential impact on park development and visitation was not studied in detail. The Department of Parks and Recreation has considered other possible locations for a park entrance road and other park facilities. The Transportation Commission proposal is incompatible with this General Development Plan for several reasons. First, it would impede interior park circulation by completely bisecting the Osborn Hill area. Second, it would scar one of the most scenic areas of Empire Mine and possibly adversely affect the abundant birdlife in the tailings pond area.

The proposal shown on the map on p.69 is a more suitable routing for the bypass road. This recommendation is for a road between Highway 49, near the South Auburn Street exit, and Highway 174, near the Empire Crossroad. It would cross East Empire Street, in itself an historic feature, about 200 yards east of Pine Street. Beginning at this point East Empire Street could then be converted into a park interior road.

This proposal serves two functions: (1) It would eliminate the problems created by a mixture of traffic entering the park and through traffic. (2) It would enhance the quality of the park entry experience.

Since this road would either be a state or county route, efforts for its construction must be coordinated with the California Department of Transportation, Regional Transportation Commission, Nevada County, Grass Valley, and other related public agencies.

**Appropriate Future Additions**

Several appropriate future additions are proposed for lands contiguous to existing park property. The proposals are shown on the Appropriate Future Additions and Bypass Road Proposals Map and include property near (1) The Rowe Shaft, (2) East Empire Street, and (3) Manion Ranch Meadow.

*Priority 1*

This property lies adjacent to the Rowe shaft headframe and ore bins. It contains several residential buildings that visually intrude upon the historic integrity of these mine structures. For this reason, and in order to extend the park boundary to the more definitive nearby Colfax Highway, this property should be added to Empire Mine State Historic Park. It also completes park holdings on both sides of East Empire Street down to Colfax Highway, helping to facilitate the conversion of East Empire Street to an interior park road.

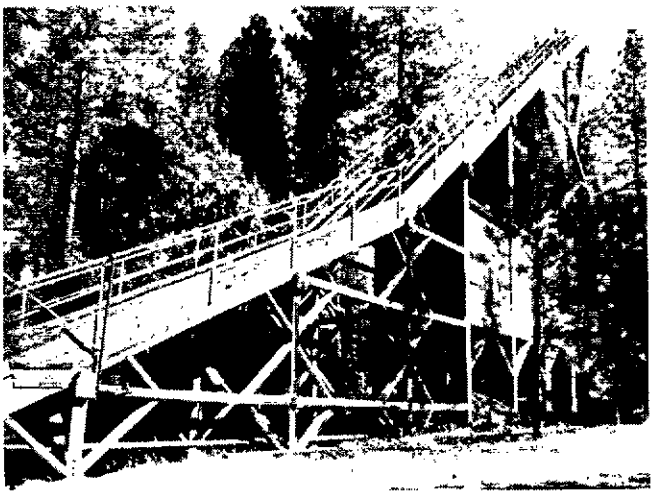
*Priority 2*

This property is immediately north of East Empire Street, the main access road to the park. It covers approximately 25 acres and consists of gentle slopes dominated by ponderosa pines and manzanita. Historic features relating to the Empire Mine include the Telegraph Mine site, the Pine Porches Cottage moved from the Empire Mine grounds and lived in by former mine manager, George Starr, and a railroad track alignment for the ore cars used to transport gold ore from the Pennsylvania Mine shaft to the Empire Mine stamp mill. There are immediate and long-range needs for adding this property to the park. The historic residence on this property, known as Mrs. Nobs' House, could serve any one of several functions in the operation of the park, such as an area manager's office, ranger residence, or house museum. The long-range recommendation of this plan is for the previously mentioned bypass road on the land north of the former ore-car track alignment.

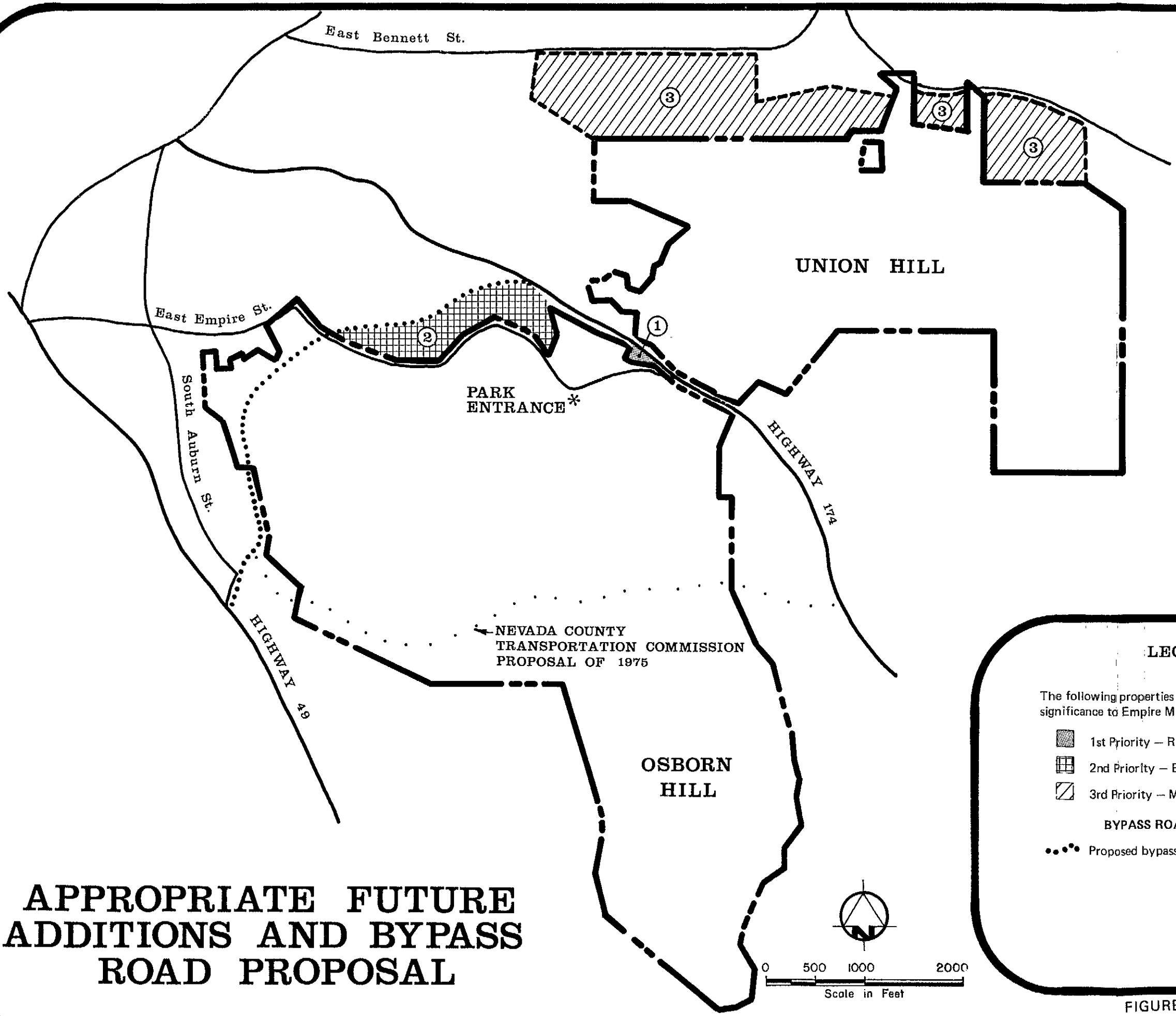
*Priority 3*

This proposal consists of the land between the northernmost park boundary and East Bennett Street, a main Grass Valley thoroughfare. It includes two large open meadows separated by dense riparian vegetation along another branch of Wolf Creek. Madrone, maple and black oak trees enhance a wide variety of scenic views here. The need for adding this property to the park is twofold. First, it would extend the present boundary to East Bennett Street, a more adequate buffer to urban development than currently exists. Second, this property would provide for such land uses as picnicking, horseback riding, hiking, camping, and open space preservation.

Inclusion of this land in the original acquisition of Empire Mine was investigated in 1974. Limitations on fundings, however, prevented its purchase by the State Park System at that time.



*Rowe shaft headframe*




# APPROPRIATE FUTURE ADDITIONS AND BYPASS ROAD PROPOSAL

**LEGEND**

The following properties are listed in order of their significance to Empire Mine State Historic Park.

- 1st Priority — Rowe Shaft Vicinity
- 2nd Priority — Empire St. Property
- 3rd Priority — Manion Ranch Meadow Area

**BYPASS ROAD PROPOSAL**

- Proposed bypass route

FIGURE 19

DESIGNED
DRAWN APR. 1977
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED ... DATE ...

EMPIRE MINE STATE HISTORIC PARK
APPROPRIATE FUTURE ADDITIONS AND BYPASS ROAD PROPOSAL

DRAWING NO.

SHEET NO.
OF

# ENVIRONMENTAL IMPACT REPORT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## ENVIRONMENTAL IMPACT REPORT

The Environmental Impact Report (EIR) is divided into three major sections: (1) Description of Project; (2) Description of Environmental Setting; and (3) Environmental Impact. The degree of specificity of the latter two chapters is not in detail due to the general, broad nature of the project description. The General Development Plan for Empire Mine State Historic Park is broad in scope; therefore, the EIR is also a broad assessment of the potential impacts. Whenever a specific phase of the overall plan is budgeted and proposed for implementation, a more detailed and specific environmental assessment will be prepared for that particular project as a part of the budget package.

### Description of Project

Location: See Project Description, page **3**.

Objectives: See Purpose of Plan, page **3**.

Project Description: See General Development Plan, page **45**.

### Description of Environmental Setting

Existing Environment: See Resource Inventory and Analysis, page **12**.

Regional Considerations: See General Development Plan, page **45**.

### Environmental Impact

**Significant Environmental Effects of the Proposed Action**

The greatest adverse environmental impacts of the proposed project would be caused by construction activity, physical alterations of the land, and the increased concentration of people and activities within certain areas of the project.

*Short-term Impacts:* The stabilization and restoration of historic buildings and construction of facilities such as parking areas, roads, trails, restrooms, day-use areas, camping areas, administrative facilities, and a water supply system, would cause short-term environmental impacts such as dust, noise, and increased vehicular traffic.

*Long-term Impacts:* After completion of the construction phase, long-term impacts caused by the construction of physical features, such as historic buildings, roads, and parking areas, may be expected. Long-term impacts could also result from the concentration of people, vehicles, and activities within certain areas of the project. Following is a summary of possible long-range impacts on the existing natural environment, private and public services, and community health and safety.

1. *Effects on Air* – It is expected that the proposed concentration of vehicles in the main visitor parking area, the equestrian staging area, potential camping area, and along the by-pass road would result in increased levels of vehicle-related air pollutants and noise in those particular areas.

2. *Effects on Geology and/or Soils* – The cuts and fills likely to occur in grading the main parking area, equestrian staging area, potential by-pass road, potential camping area, rest areas, overlooks, primitive picnic areas, trails, and potential service areas, as well as normal recreational use could cause some soil erosion. The most significant action would probably be the construction of the proposed by-pass road to connect State Highways 49 and 174. A section of this road would traverse the northwest corner of the park.

*Old-style gasoline pump located near the mine manager's office*

Soil compaction and soil erosion may result from a high intensity use of trails by hikers and equestrians.

3. *Effects on Hydrology* – The soil erosion mentioned above could cause siltation and subsequent sedimentation of the primary water feature of the park, Little Wolf Creek. Flow patterns of other natural drainage channels could also be altered by grading or man-made drainage devices, such as ditches or culverts.

4. *Effects on Vegetation* – The implementation of the proposed plan would probably require some planting and the removal of some existing trees, shrubs, and groundcover. In addition, soil compaction resulting from concentrating park visitors in specific areas could eventually affect the existing vegetation in those areas. No rare and endangered plant species have been identified in the park.

5. *Effects on Wildlife* – The development of park facilities, such as parking areas, trails, roads, picnic areas, overlooks, rest areas, and camping areas, may affect the established habitats of some animals. No rare and endangered animal species have been identified in the park.

6. *Effects on Scenic or Visual Quality* – The intrusion of park visitors into some previously undisturbed natural areas, the anticipated increase in visitation, the probable planting and removal of vegetation, and the restoration and construction of facilities would have an impact on the visual quality of the park.

7. *Effects on Cultural Resources* – Historical sites would be modified by the restoration and reconstruction of historic features and the addition of non-historic elements such as protective fencing and contemporary interpretive devices.

   A portion of the proposed bypass road is located in the vicinity of the Pennsylvania Mine structures and will have a visual effect on this historic site.

8. *Effects on Neighboring Local Owners* – A considerable increase of vehicle traffic on State Highway 49, Highway 174, and East Empire Street is possible, particularly on special event days. The trails in the park may be linked with a regional trail system sometime in the future. In addition, some park users may trespass onto private property.

9. *Effects on Fire Fighting Services* – Increased visitor use will increase the possibility of fires and add to the responsibilities of park staff, the California Department of Forestry in Nevada City, and the nearby Ophir Hill Volunteer Fire Department.

10. *Effects on Water and Sanitation* – The development proposes adequate sanitary facilities, and no significant impact on community health and safety is expected. Increased visitation and restoration of the gardens and grounds will increase the need for water. Existing historic buildings are expected to be used for the development of sanitary facilities.

11. *Effects on Private and Public Services Demands* – It is anticipated that several public and private service demands would result from the proposed development. These demands would include the following:

    - The development of a new main parking area will require appropriate additional signing along county roads and State Highways 49 and 174.
    - Increased fuel demands by park visitors could decrease local supplies.
    - Additional park personnel would require the full range of public and private services.

- Local labor might be used for maintenance of campgrounds and day-use areas.

- On-site construction could require local labor supplies and could temporarily increase local employment.

- Although many visitors bring most of their food supplies with them, the sale of incidentals and beverages at local grocery stores could increase. The economy in this area of the Mother Lode country should benefit from this project.

**Significant Environmental Effects That Cannot Be Avoided If the Proposal Is Implemented**

All of the adverse impacts outlined in the above section are considered to be environmental effects that cannot be avoided if the project is implemented as proposed. There is a possibility that most of these impacts could be reduced to an insignificant level through mitigation, but it is highly unlikely that any of the impacts could be totally eliminated.

However, having inventoried and analyzed the existing resources, and determined present and future recreational needs in the preceding chapters of the General Development Plan and Resource Management Plan, and having studied various alternatives, the department feels that the benefits to be gained from the proposed project outweigh the minor environmental impacts that would result from the implementation of the proposed plan for development.

**Mitigation Measures Proposed to Minimize the Significant Effects**

1. Historically compatible landscaping will be used to restore the gardens and grounds, minimize soil erosion, and screen proposed development in some cases. Native plants will be selected to harmonize with the natural areas of the park.

   All attempts will be made to "work around" and retain significant existing vegetation, and cut and fill grading will be minimized.

2. A main parking area, equestrian staging area, and designated trails will be provided so that motor vehicle users may park their automobiles and walk or ride horses or bicycles to their destinations. This will reduce automobile-related impacts and conserve petroleum.

3. Because only a small percent of the natural area is being proposed for development, ample space will remain for wildlife to relocate naturally.

4. Enforcement of park rules by a staff committed to the protection of cultural and natural resources will decrease the potential for misuse of these resources by park visitors.

5. Adequate fencing, signing, and surveillance by park staff will discourage park visitors from disturbing neighboring landowners.

6. Trails will be constructed to minimize the effects of increased park visitation and potential erosion. These trails will be maintained by the operations staff.

7. It is anticipated that the proposed by-pass route from State Highway 49 to State Highway 174 would reduce traffic along Empire Street.

8. An investigation of suspected cultural sites will be conducted prior to any development occurring in the area of the sites. This investigation will determine if action should be taken to preserve artifacts and if interpretive facilities will be necessary.

   As outlined in the General Development Plan and Resource Management Plan, several historical buildings and structures will be stabilized, restored, or reconstructed. The mine

tailings areas will be preserved. Vegetation encroaching on historic sites or structures will be removed or controlled in order to retain the historic character of the park.

9. The entrance to the potential camping area from Highway 174 would be designed for safety and appropriately signed.

10. Fire mitigation measures will include a clearing of vegetation around the perimeter of the property, training park personnel, and providing adequate equipment. A California Department of Forestry station is located in Nevada City and the nearby Ophir Hill Volunteer Fire Department is available to fight fires.

11. The mine shafts are filled to the 180-foot vertical level with water from underground sources, which is a good alternative water source for irrigating the extensive gardens and grounds area. Domestic water would not be necessary for irrigation if the mine source is used. This mine water might also be available for fire fightings.

12. Effluent will be disposed of in accordance with public health standards. A determination of the disposal system design will be made when the particular project is budgeted.

13. Detailed energy conservation measures relating to building construction and design will be included when a more specific EIR is prepared for the implementation of a particular budgeted phase of the overall plan.

**Alternatives to the Proposed Action**

No Development: This alternative would mean that the present situation would continue. The historic buildings would deteriorate, Empire Street would become more congested, and most of the area north of Highway 174 (Union Hill) and south of the historic area (Osborn Hill) would be unused. Interpretive facilities would be virtually nonexistent. Public facilities would continue to be inadequate.

Intensity of Development: The General Development Plan recommends the degree of development deemed suitable for this environment. Actual development in the future will occur in phases that correspond with increases or decreases in public demand and with the availability of development funds. Development less than or greater than that recommended might occur if some limiting factor is discovered or removed. The recommended level of development was determined through public input at public hearings and by an estimation of the environmental constraints.

Location of Facilities: The arrangement of day-use and overnight facilities could be varied from the proposed plan. All potential sites, however, have been considered for each proposed land use. Site selection was based on maximizing benefits to the park visitor and minimizing the impact or effect on the environment. For example, the General Development Plan locates the camping area outside the Zone of Primary Cultural Interest in an area where it will not adversely affect the historic environment.

**The Relationship between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

The present short-term use of the park is for limited interpretation of historic buildings, open-space enjoyment, and low-intensity recreational use. Additional short-term uses, if the land were not a unit of the State Park System, might include timber harvesting, renewal of mining activities, or subdivision for commercial, industrial, or residential use. Present county zoning surrounding the park includes light industrial, commercial, urban high density, urban low density, and rural environment.

The long-term productivity of the project would include an interpretation of the hard-rock gold mining in California; stabilization, restoration, and reconstruction of historic structures; preservation of open space; and low-intensity recreational use.

This long-term productivity would be more beneficial to the state of California and the local community than the long-term productivity of alternative land uses.

**Any Significant Irreversible Environmental Changes That Would Be Involved in the Proposed Action Should It Be Implemented**

The following irreversible environmental changes are anticipated:

1. The conversion of some formerly undeveloped land into land sustaining recreational facilities and, potentially, a by-pass road.

2. The loss of vegetation and the possible displacement of wildlife due to development and increases in park visitation.

3. The commitment of non-renewable resources such as oil, gasoline, and gravel to construct roads, parking areas, and other park facilities.

**The Growth-Inducing Impact of the Proposed Action**

There will be some indirect growth-inducing impacts. It is possible that the local economy in the vicinity of the park might be somewhat stimulated by the influx of park visitors and by the initial construction activities involved in building the proposed new park facilities. Residential development in Grass Valley is anticipated to steadily increase in the near future and the desirability of sites in the vicinity of the park is expected to stimulate this development. No other growth-inducing impacts, however, are anticipated.

**Organizations and Persons Consulted**

For a list of organizations and persons consulted in preparing the "Empire Mine State Historic Park" – General Development Plan, Resource Management Plan and Environmental Impact Report, see the Acknowledgments.

## COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Preliminary Empire Mine State Historic Resource Management Plan, General Development Plan, and Environmental Impact Report was submitted to the following agencies for review.

1. Sierra Planning Organization (1 copy).

2. City of Nevada City (1 copy).

3. County of Nevada (1 copy).

4. Dr. Robert Mark, State Park Task Force, Sierra Club (1 copy).

5. State Clearinghouse (15 copies).

No comments were received from the above agencies.

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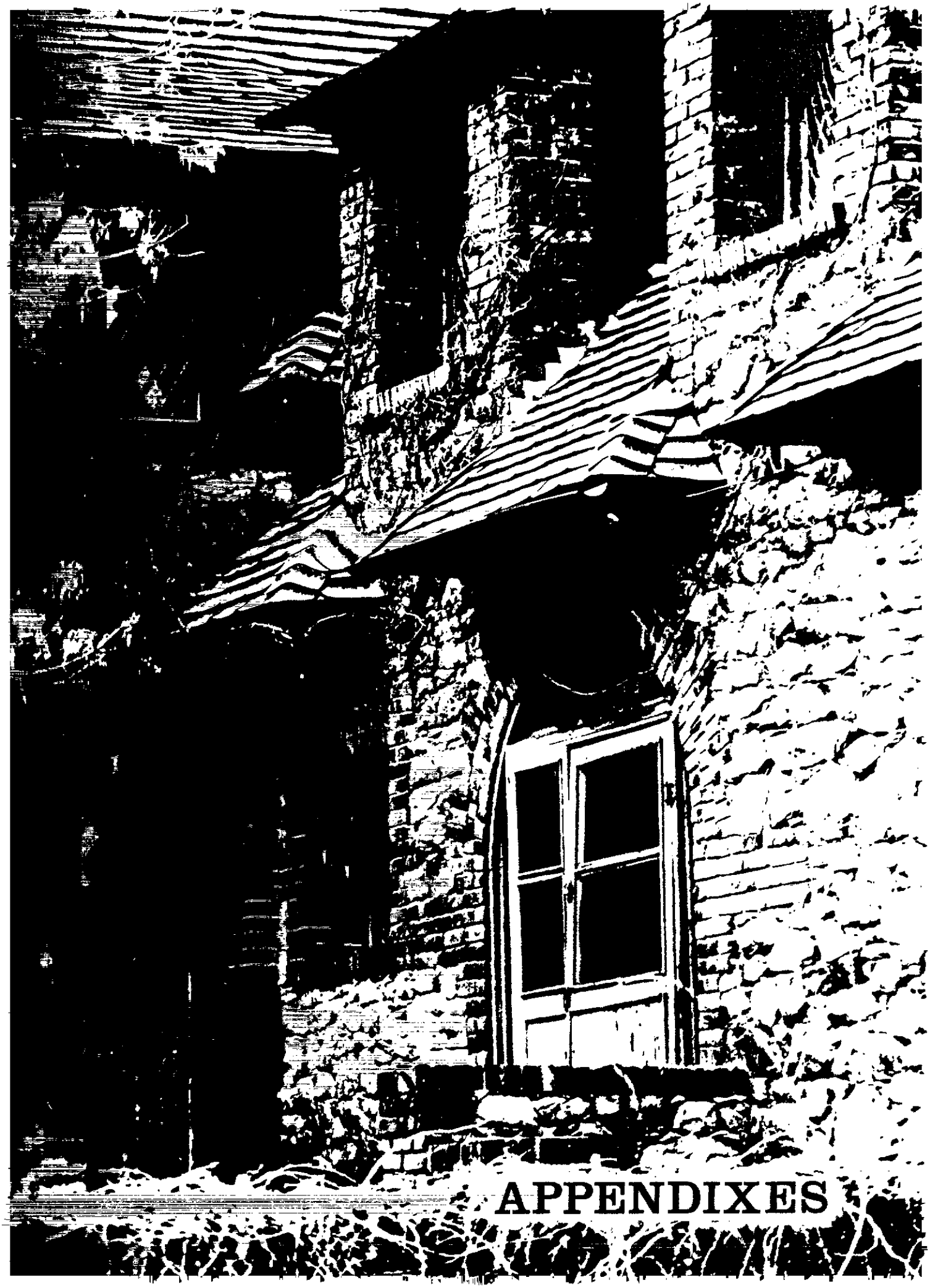

# APPENDIXES

## APPENDIX A

**A List of Native Plants Observed at Empire Mine State Historic Park**

| *Family* | *Botanical Name* | *Common Name* |
|---|---|---|
| TREES | | |
| Aceraceae (Maple) | *Acer macrophyllum* | Big-leaf maple |
| Betulaceae (Birch) | *Alnus rhombifolia* | White alder |
| Cornaceae (Dogwood) | *Cornus nuttallii* | Mountain dogwood |
| Cupressaceae (Cypress) | *Calocedros decurrens* | Incense-cedar |
| Ericaceae (Heath) | *Arbutus menziesii* | Madrone |
| Fagaceae (Beech) | *Quercus kelloggii* | California black oak |
| | *Quercus lobata* | Valley oak |
| | *Quercus chrysolepis* | Canyon live oak |
| Pinaceae (Pine) | *Pinus lambertiana* | Sugar pine |
| | *Pinus ponderosa* | Western yellow pine |
| | *Pseudotsuga menziesii* | Douglas-fir |
| Salicaceae (Willow) | *Populus fremontii* | Fremont cottonwood |
| | *Salix* spp. | Willow |
| Simarubaceae (Quassia) | *Ailanthus altissima* | Tree-of-heaven |
| SHRUBS | | |
| Caprifoliaceae (Honeysuckle) | *Symphoricarpus albus* var. *laevigatus* | Snowberry |
| Compositae (Sunflower) | *Baccharis viminea* | Mule fat |
| Ericaceae (Heath) | *Rhododendron occidentale* | Western azalea |
| | *Arctostaphylos patula* | Greenleaf manzanita |
| | *Arctostaphylos viscida* | Whiteleaf manzanita |
| Leguminosae (Pea) | *Cystisus monospessulanus* | French broom |
| | *Cystisus scoparius* | Scotch broom |
| Malvaceae (Mallow) | *Sidalcea malvaeflora* var. *asprella* | Checkerbloom |
| Rhamnaceae (Buckthorn) | *Ceanothus cuneatus* | Buck brush |
| | *Ceanothus integerrimus* | Deer brush |
| | *Rhamnus californica* | Coffeeberry |
| | *Rhamnus crocea* var. *ilicifolia* | Buckthorn, Redberry |
| Rosaceae (Rose) | *Rosa gymnocarpa* | Wood rose |
| GROUNDCOVER | | |
| Amaryllidaceae (Amaryllis) | *Brodiaea capitata* | Blue dicks |
| | *Brodiaea lutea* | Pretty face, Golden brodiaea |
| | *Brodiaea multiflora* | |
| Apocynaceae (Dogbane) | *Apocynum pumilum* | Dogbane, Indian-hemp |
| Aristolochiaceae (Birthwort) | *Asarum hartwegii* | Wild ginger |
| Asclepiadaceae (Milkweed) | *Asclepias cordifolia* | Purple milkweed |
| | *Asclepias eriocarpa* | Indian milkweed |
| Boraginaceae (Borage) | *Cynoglossum grande* | Hound's tongue |
| | *Lithospermum californicum* | Gromwell, Puccoon |
| Campanulaceae (Bellflower) | *Campanula prenanthoides*, *Asyneuma prenanthoides* | California harebell |
| Caprifoliaceae (Honeysuckle) | *Lonicera hispidula* var. *vacillans* | Wild honeysuckle |
| Caryophyllaceae (Pink) | *Silene californica* | Indian pink |

*Ornamental lion's head located in gardens and grounds*

| *Family* | *Botanical Name* | *Common Name* |
|---|---|---|
| Compositae (Sunflower) | *Achillea borealis* | Yarrow |
| | *Agoseris grandiflora* | Large-flowered agoseris |
| | *Centaurea solstitialis* | Barnaby's thistle |
| | *Eriophyllum lanatum* | Wooly sunflower |
| | *Hieracium* spp. | Mockweed |
| | *Rafinesquia californica* | Chickory |
| | *Tragopogon porrifolius* | Goat's beard |
| Fumaricaceae (Fumitory) | *Dicentra formosa* | Bleeding heart |
| Hydrophyllaceae (Waterleaf) | *Eriodictyon californicum* | Yerba santa |
| Hypericaceae (St. John's Wort) | *Hypericum perforatum* | Klamath weed |
| Iridaceae (Iris) | *Iris macrosiphon* | Sierra iris |
| Labiatae (Mint) | *Prunella vulgaris* | Salfheal, Wild ajuga |
| | *Salvia pratensis* | Meadow sage |
| | *Salvia sonomensis* | Creeping sage |
| Leguminosae (Pea) | *Lathyrus latifolius* | Everlasting pea |
| | *Lathyrus nevadensis* | Sierra pea |
| | *Lathyrus sulphureus* | Sulfur pea |
| | *Lotus grandiflora, Hosackia grandiflora* | Large-flowered hosackia |
| Liliaceae (Lily) | *Calochortus monophyllus* | Yellow star-tulip, Mouse ears |
| | *Chlorogalum pomeridianum* | Soap plant |
| | *Fritillaria micrantha* | Brown bells |
| | *Fritillaria recurva* | Scarlet fritillaria, Red bells |
| | *Lilium humboldtii* | Humboldt lilly, Tiger lilly |
| | *Lilium pardalinum* | Leopard lilly, Panther lilly |
| | *Trillium chloropetalum* | Wake robin |
| Orchidaceae (Orchid) | *Corallorhiza maculata* | |
| | *Corallorhiza bigelovii, C. striata* | Coral root orchid |
| | *Goodyera oblongifolia* | Rattlesnake – Plantain |
| Papaveraceae (Poppy) | *Eschscholzia californica* | California poppy |
| Polygalacae (Milkwort) | *Polygala cornuta* | Sierra milkwort |
| Portulacaceae (Purslane) | *Montia perfoliata* | Miner's lettuce |
| Primulaceae (Primrose) | *Trientalis latifolia* | Star-flower |
| Pyrolaceae (Wintergreen) | *Chimaphila menziesii* | Little prince's pine, Pipsissewa |
| | *Chimaphila umbellata* var. *occidentalis* | Prince's pine |
| | *Pyrola picta* | White-veined wintergreen |
| Ranunculaceae (Crowfoot) | *Aquilegia formosa* var. *truncata* | Columbine |
| | *Ranunculus occidentalis* | Buttercup |
| Rhamnaceae (Buckthorn) | *Ceanothus prostratus* | Squaw carpet, Mahala mats |
| Rosaceae (Rose) | *Chamaebatia foliolosa* | Mountain misery |
| | *Fragaria platypetala* | Wild strawberry |
| | *Horkelia tridentata* | |
| | *Rubus leucodermis* | Western raspberry |
| Rubiaceae (Madder) | *Galium* spp. | Bedstraw |
| Saxifragaceae (Saxifrage) | *Heuchera micrantha* | Alum-root |
| | *Ribes roezlii* | Sierra gooseberry |
| Scrophulariaceae (Figwort) | *Mimulus guttatus* | Common monkeyflower |
| | *Penstemon heterophyllus* | Foothill penstemon |
| | *Verbasecum thapsus* | Common mullein |
| Umbelliferae (Carrot) | *Sanicula* spp. | Sanicle, Snakeroot |
| Violaceae (Violet) | *Viola purpurea* | Mountain violet, Goosefoot violet |
| | *Viola lobata* | Wood violet, Pine violet |

This plant list was prepared by Lillian Mott and Gretchen Bartlett of the Empire Mine Park Association.

## APPENDIX B

### A Partial List of Wildlife at Empire Mine State Historic Park

**MAMMALS**

California mule deer *(Odocoileus hemionus californicus)*
Bobcat *(Lynx rufus)*
Coyote *(Canus latrans)*
Grey fox *(Urocyon cinereorgenteus)*
Opossum *(Didelphis marsupialis)*
Raccoon *(Procyon lotor)*
Striped skunk *(Mephitis mephitis)*
Western grey squirrel *(Sciurus griseus griseus)*
Brush rabbit *(Sylvilagus bachmani tehamae)*
Beechey ground squirrel *(Otospermophilus beecheyi)*
Black-tailed jackrabbit *(Lepus californicus californicus)*
Ringed-tailed cat *(Bassariscus astutus)*
Douglas squirrel *(Taniasciurus douglasii)*
Flying squirrel *(Glaucomys sabrinus)*
Porcupine *(Erethizon dorsatum)*
California meadow mouse *(Microtus californicus)*
Deer mouse *(Peromyscus maniculatus)*
Pinyon mouse *(Permoyscus truei)*
Brush mouse *(Permoyscus boylii)*
Botta pocket gopher *(Thomomys bottae)*
Norway rat *(Rattus norvegicus)*
Hoary bat *(Lasiurus cinereus)*
Big brown bat *(Eptesicus fuscus)*

**REPTILES**

Alligator lizard *(Gerrhonotus multicarinatus)*
Western fence lizard *(Sceloporus occidentalis)*
California horned lizard *(Phrynosoma couonatum)*
Western diamondback rattlesnake *(Crotalus atrox)*
Gopher snake *(Pituophis catenifer)*
Western garter snake *(Thamnophis elegans)*
King snake *(Lampropeltis zonata)*
Western whiptail *(Cnemidophonus tigris)*
Western pond turtle *(Clemmys marmorata)*

**FISH**

Rainbow trout *(Salmo gairdnerii)*
Bluegill *(Lepomis macrochirus)*
Goldfish *(Carassius auratus)*

**AMPHIBIANS**

Bull frog *(Rana catesbeina)*
Pacific tree frog (*Hyla regilla*)
California newt *(Taricha torosa)*
Western toad *(Bufo boreas)*

**BIRDS**

**Blackbirds**

Red Winged *(Agelaius phocniceus)*
Brewer's *(Euphagus cyanocephalus)*

**Brown Creeper** (Certhia familiaris)

**Bushtit**

Common *(Psaltriparus minimus)*

**Cedar Waxwing** (*Bombycilla cedrorum*)

**Chickadee**

Mountain *(Parus gambeli)*

**Cowbird**

Bronzed *(Tangarius aeneus)*

**Fly Catchers**

Ash-throated *(Myiarchus cinerascens)*
Olive-sized *(Nuttallornis borealis)*
Western *(Empidonax difficilis)*
Gray *(Empidonax wrightii)*

**Goldfinch**

Lesser *(Spinus psaltria)*
American *(Spinus tristic)*

**Grosbeak**

Black-headed *(Pheucticus melanocephalus)*
Evening *(Hesperiphona vespertina)*

**Hawk**

Red tailed *(Buteo jamaicensis)*
Sharp-shinned *(Accipiter straitus)*
Goshawk *(Accipiter gentilis)*

**Housefinch** (Linnet) *(Carpodacus mexicanus)*

**Hummingbirds**

Anna's *(Colypte anna)*
Rufous *(Selasphorus rufus)*
Allen's *(Selasphorus)*

**Jay**

Steller *(Cyanocitta stelleri)*
Scrub *(Aphelocoma coerulescens)*

**Junco**

Oregon *(Junco oreganus)*

**Killdeer** *(Charadrius vociferus)*

**Mourning Dove** *(Zeniadura macroura)*

**Nighthawk**

Common *(Chordeiles minor)*

**Nuthatch**

White-breasted *(Sitta carrolinensis)*
Red-breasted *(Sitta canadensis)*

**Oriole**

Bullock's *(Icterus bullockii)*

**Owls**

Screech owl *(Otus trichopsis)*
Great Horned owl *(Bubo virginianus)*

**Pigeons**

Rock Dove *(Columba livia)*
Band-tailed *(Columba fasciata)*

**Quail**

California *(Lophortyx californicus)*
Mountain quail *(Oreortyx pictus)*

**Robin** *(Turdus migratorius)*

**Sparrow**

House *(Passer domesticus)*
Fox *(Passerella iliaca)*

**Starling** *(Sturnus vulgaris)*

**Tanager**

Western *(Piranga ludoriciana)*

**Thrasher**

California *(Toxostoma redivivum)*

**Thrush**

Varied *(Ixoreus naevius)*

**Titmouse**

Plain *(Parus inornatus)*

**Towhee**

Brown *(Pipilo fuscus)*
Rufous-sided *(Pipilo erythophthalmus)*

**Townsend's Solitaire** *(Myadestes townsendi)*

**Vultures**

Turkey Vulture *(Cathartes aura)*

**Wilson's Warbler** *(Wilsonia pusilla)*

**Woodpeckers**

Red-shafted flicker *(Colaptes cafer)*
Acorn (California) *(Melanerpes formicivorus)*
Downy *(Dendrocopos pubescens)*
Hairy *(Dendrocopos villosus)*

**Wren**

House *(Troglodytes aedon)*

**Wrentit** *(Chamaea fasciata)*

**Yellow Warbler** *(Dendroica petechia)*

## APPENDIX C

### Empire Mine Public Involvement Program

The Empire Mine Public Involvement Program, summarized in Table 7, on page 46, consists of seven basic steps. The highlights of these steps are described below:

1. Study Initiation

   In the spring of 1976 a wide variety of public interest groups, individuals, and public agencies were informed of the general development planning effort. A Public Involvement Steering Committee was subsequently formed, consisting of the planning team and six members of the Empire Mine Cooperative Association. This committee planned the Public Involvement Program.

2. Data Collection

   Several techniques were used to gather resource information and to identify the public's needs, desires, and values. Local expertise was sought for contributions on the Empire Mine's history, mining technology, native plants, wildlife, and existing land use. Approximately 3,000 questionnaires were distributed to clubs, organizations, and key locations in Nevada County such as the park office, County Fairgrounds, libraries, supermarkets, and various other business establishments; 276 questionnaires were returned, a response rate of 9 percent. This rate is within the 8 to 12 percent range projected by the National Park Service as a typical response for this type of questionnaire.

   The planning staff was represented at each Cooperative Association meeting to receive periodic public input. Newspaper announcements, before and after each meeting, were printed in the local newspaper, soliciting citizen participation. Several radio announcements were broadcast and two public workshops were held.

3. Development of Alternatives

   The resource information and public values compiled from the previous step were then synthesized into several alternative plans. These alternatives were subsequently shaped into a recommended preliminary general development plan by the Public Involvement Steering Committee.

4. Presentation of Alternatives

   A presentation in Grass Valley of the recommended plan occurred in January, 1977, in order to obtain public reaction to the alternatives. Attendance at this meeting was primarily by local citizens. Areas of common agreement were identified and points of disagreement were discussed.

5. Consensus Shaping

   This part of the public involvement process was primarily accomplished by the park planning team. Several modifications in the preliminary plan were made but the basic concepts as agreed upon by the Public Involvement Steering Committee remained the same. The historic features were emphasized and supplemented by compatible recreational development outside the main historic area.

6. Presentation of Recommendations

   The purpose of this step is to present the preliminary General Development Plan to the general public in an informal meeting prior to the public hearing of the Park and Recreation Commission. This is done in order to identify any further areas of disagreement. Recommendations concerning public support or areas of conflict could then be presented at the public hearing.

7. Presentation of Final Plan

   The culmination of the Public Involvement Program for the General Development Plan occurs at the public hearing of the Park and Recreation Commission. This Commission is responsible for approval of the

plan. The public involvement process for Empire Mine State Historic Park, however, is not expected to cease at this point. Public input in the planning process was vital to the production of this plan and citizen participation in its implementation is equally important.

## APPENDIX D

| SOIL | SOIL LIMITATIONS FOR— | | | RATINGS FOR— | |
|---|---|---|---|---|---|
| | DWELLINGS | EXCAVATIONS | SEPTIC TANK FILTER FIELDS | CORROSIVITY OF UNCOATED STEEL | SHRINK–SWELL POTENTIAL |
| Aiken loam, 30 to 50 percent slopes (AfE) | Severe: Slope | Severe: Slope | Severe: moderately slow permeability; slope | Moderate: total acidity 8 to 12 | Moderate: more than 35 percent Kaolinitic clay |
| Alluvial land, clayey (Ao) | Variable | Variable | Variable | Variable | Variable |
| Boomer loam, 15 to 30 percent slopes (BoD) | Severe: slope | Slight to moderate: 0 to 10 percent rock outcrops | Severe: moderately slow permeability; slope | Moderate: moderately fine texture | Moderate: 18 to 35 percent mixed clays. |
| Boomer Rock outcrop complex, 30 to 50 percent slopes (BrE) | Severe: 10 to 25 percent rock outcrops | Severe: 10 to 25 percent rock outcrops | Severe: moderately slow permeability | Moderate: moderately fine texture | Moderate: 18 to 35 percent mixed clays. |
| Cohasset loam, 2 to 9 percent slopes (CmB) | Slight | Slight | Severe: moderately slow permeability | Moderate: moderately fine texture | Moderate: 18 to 35 percent mixed clays. |
| Musick sandy loam 5 to 15 percent slopes (MrC) | Moderate: 2 to 10 percent rock outcrops; slope | Moderate: 2 to 10 percent rock outcrops | Severe: moderately slow permeability; slope | Moderate: moderately fine texture; total acidity 8 to 12 | Moderate: 18 to 35 percent mixed clays |
| Musick sandy loam, 15 to 50 percent slopes (MrE) | Severe: slope | Moderate: 2 to 10 percent rock outcrops | Severe: moderately slow permeability, slope | Moderate: moderately fine texture; total acidity 8 to 12 | Moderate: 18 to 35 percent mixed clays |
| Sierra sandy loam, 15 to 30 percent slopes (SfD) | Severe: slope | Slight to Moderate: 0 to 10 percent rock outcrops | Severe: moderately slow permeability; slope | Moderate: moderately fine texture | Moderate: 18 to 35 percent mixed clays |
| Sites loam, 2 to 9 percent slopes (SIB) | Slight | Slight | Severe: moderately slow permeability | High: fine texture; total acidity greater than 12 | Moderate: more than 35 percent Kaolinitic clays |
| Sites loam, 9 to 15 percent slopes (SIC) | Moderate: slope | Slight | Severe: moderately slow permeability; slope | High: fine texture; total acidity greater than 12 | Moderate: more than 35 percent Kaolinitic clays |
| Sites loam, 15 to 30 percent slopes (SID) | Severe: slope | Slight to Moderate slope | Severe: moderately slow permeability; slope | High: fine texture; total acidity greater than 12 | Moderate: more than 35 percent Kaolinitic clays |
| Sites very stoney loam, 15 to 50 percent slopes (SmE) | Severe: 10 to 25 percent stones and cobblestones; slope | Severe: 10 to 25 percent stones and cobblestones | Severe: moderately slow permeability; slope | High: fine texture; total acidity greater than 12 | Moderate: more than 35 percent Kaolinitic clay |
| Tailings (Ta) | Variable | Variable | Variable | Variable | Variable |