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GENERAL PLAN FOR THE NORTH COAST BEACHES

DRAFT ENVIRONMENTAL IMPACT REPORT

Prepared for the
County of Santa Cruz

April 1989

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General Plan for the North Coast Beaches EIR

1.0 INTRODUCTION

This is a Draft Environmental Impact Report (DEIR) which has been prepared to assess the probable impacts associated with the adoption of a master plan for six beaches along the North Coast of Santa Cruz County. The project proponent is the County of Santa Cruz.

This EIR has been prepared pursuant to the California Environmental Quality Act of 1969 (CEQA), as amended, together with State and County guidelines which describe how to comply with this Act.

This a a Program EIR, as defined by the State CEQA Guidelines. According to Section 15168 of the Guidelines, a Program EIR is an EIR prepared on a series of actions which constitute one large project and are related geographically as a logical part in the chain of contemplated actions; in connection with the issuance of rules, regulations, plans, or other criteria; or as individual activities carried out under the same authorizing statutory or regulatory authority. Furthermore, Section 15168 of the Guidelines states that the use of a Program EIR allows the lead agency (the County of Santa Cruz) "to characterize the overall program environmental effects that can be identified. A Program EIR should identify those probable environmental effects that can be identified. For those impacts that cannot be predicted without undue speculation, the lead agency can defer specific analysis until later points in the program approval or implementation program".[1]

The Program evaluated in this EIR is the General Plan for the North Coast Beaches. It is intended that the Program EIR will serve as the environmental documentation for subsequent plan implementation at each beach.

This EIR has been prepared to cover the following legal and administrative actions related to the General Plan:

- Adoption of the General Plan for the North Coast Beaches by the County of Santa Cruz.
- Approval of Coastal Development permits for General Plan implementation.

1.1 SCOPE OF THE EIR

In September 1988 the County of Santa Cruz prepared an Initial Study for the proposed program (see Appendix C). Based on the findings of the Initial Study it was determined that the proposed program may have a significant effect on the environment and that an environmental impact report must be prepared.

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1 Guide to the California Environmental Quality Act (CEQA), Sharon Duggan, James G. Moose and Tina Thomas, 1988 (Second) Edition, page 257.

As part of the process to determine the scope of this EIR, the County of Santa Cruz circulated a Notice of Preparation in November1988 to all Responsible Agencies and to other interested persons.

On the basis of the issues raised in the Initial Study and the comments received on the Notice of Preparation, the County identified the following topics to be analyzed in this EIR:

- Geology and Soils
- Vegetation and Wildlife
- Land Use
- Archaeology and Cultural Resources
- Visual and Aesthetic Considerations
- Traffic and Circulation

1.2 REPORT ORGANIZATION

Immediately following this Introduction is a Summary of Principal Findings. The report then is organized as follows:

- Part 3.0 Description of the Proposed Project -- describes the program area and existing uses, the improvements proposed at each of the six beaches being considered in the General Plan, and the program's relationship to public planning policies.

- Part 4.0 Environmental Considerations -- provides a description of the environmental setting and analyses the impacts expected to result from implementation of the proposed program.

- Part 5.0 Impact Overview -- provides a summary of the probable adverse effects which cannot be avoided, the growth inducting impacts, alternatives to the proposed program, cumulative impacts, unavoidable adverse effects, and environmental effects of no significant impact.

The Appendix includes background material supporting the EIR text, lists the people responsible for the report's preparation, and provides references.

1.3 PUBLIC REVIEW

This EIR is being circulated widely for review and comment by County staff members and officials, other government agencies, and the public. Members of the public are invited to comment on the adequacy of the EIR -- whether it addresses environmental concerns adequately to enable decisions to be made about improvements at each of the six North Coast beaches.

Following the formal public review period, all comments on the Draft EIR received in writing will be reviewed, and responses will be prepared. The comments and responses will be published and circulated for public review. The Final EIR will consist of the Draft EIR together with a separate Comments and Responses document. Prior to certification of the Final EIR the

Board of Supervisors will hold a public hearing on the Final EIR. This hearing will be held to determine that the Final EIR has responded adequately to the comments on the Draft EIR.

2.0 SUMMARY OF PRINCIPAL FINDINGS

2.1 PROJECT DESCRIPTION

This is a Program EIR, as defined by the State CEQA Guidelines. The Program evaluated in this EIR is the adoption of a master plan for six beaches along the North Coast of Santa Cruz County. The General Plan for the North Coast Beaches (the General Plan) has been prepared to guide the future development and management of six beaches along the North Coast.

The North Cost beaches program area is located in Santa Cruz County along a 13-mile stretch of coastline between the northern city limits of Santa Cruz to the southern boundary of San Mateo County. The six beaches addressed in the General Plan are Scott Creek, Davenport Landing, Panther, Bonny Doon, Yellowbank, and Laguna Creek.

The General Plan contains resource management recommendations for restoring and protecting native coastal plant communities; enhancing and preserving important wildlife habitat, particularly wetlands; preventing further degradation of the coast line's other natural, cultural, aesthetic, and recreation resources and improving and expanding recreation opportunities and experiences, specifically parking and public access. The General Plan proposes to minimize private property damage; reduce public hazards; clarify liability responsibilities and provide sanitary facilities and garbage collection services. Development proposals are prioritized by beach for expected incremental funding. It is proposed that the beaches be managed at least in the short-term by the private sector; that vehicular access into the parking lots be controlled and fees charged to maintain a financially self-supporting operation. The General Plan also envisions that the California Department of Parks and Recreation may ultimately assume development and/or management responsibility for the beaches.

The General Plan includes a resource element, a land use and facilities element, an interpretive element, an operations element, and a cost/revenue analysis.

2.2 IMPACTS AND MITIGATION MEASURES

The table beginning on page 6 presents a summary of the environmental impacts of the General Plan, identifies the level of significance of those impacts, and lists mitigation measures for adverse impacts identified. For detailed discussions of these impacts and mitigation measures, refer to the appropriate sections of the text following this section.

Summary of Environmental Impacts and Mitigation Measures

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
GEOLOGY AND SOILS		
Impact The proposed 30-vehicle parking lot at Scott Creek beach and associated trail contain the greatest potential for damage to any of the proposed structures, parking areas, or trails associated with this project due to erosion and seacliff retreat.	Significant	Significant
Mitigation Set the edge of the parking lot back 30 feet from the present edge of the terrace surface along the coastal side, and construct a fence around the parking lot.		
Impact An extensive amount of grading would be required to widen the proposed location of the 110-vehicle parking lot at Scott Creek to accommodate the proposed design.	Less than significant	Less than significant
Mitigation The proposed cutslope on the east side of the 110-vehicle parking lot should be reclined to a 1:1 gradient.		

	LEVEL OF SIGNIFICANCE	
	Without Mitigation	With Mitigation
Impact The cutslope above the proposed 70 parking spaces on both sides of Davenport Landing Road north of Davenport Landing beach would be a potential source for large boulders of mudstone to roll down onto the roadway.	Significant	Less than Significant
Mitigation Mitigation of the falling rock hazard can be accomplished by establishing parking on the inland side of Davenport Landing Road only.		
Impact Installation of the proposed staircase at Panther Beach would greatly reduce erosion along the existing path. Base of stairway could be subject to damage of ocean wave runup.	Less than Significant	Less than Significant
Mitigation The base of the stairway should be founded into mudstone bedrock below sand level to mitigate the hazards of ocean wave runup damaging the stairs.		

	LEVEL OF SIGNIFICANCE	
	Without Mitigation	With Mitigation
Impact The structural stairway at Bonny Doon beach would be founded on Santa Cruz Mudstone bedrock and located adjacent to a natural drainage path. If the ponding water in this area is not eliminated it could generate a landslide of the soil and colluvium that overlies the bedrock.	Less than Significant	Less than Significant
Mitigation Minor grading along the railroad alignment would create a gravity flow to the southeast and mitigate the problems caused by the ponding water.		
Impact Construction of the parking lot at Laguna Creek beach would involve cutting the hillside behind the lot back further.	Less than Significant	Less than Significant
Mitigation The proposed cutslope of the hillside should be laid back at a gradient of about 1-1/2:1 to mitigate ravelling of mudstone boulders.		

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
VEGETATION AND WILDLIFE		
Impact Construction of the 110-vehicle parking lot at Scott Creek would result in the removal of coastal scrub and rare plant habitat.	Significant	Significant
Mitigation All cut slopes should be revegetated with native coastal scrub species.		
Impact The potential future parking expansion area shown between Panther and Bonny Doon beaches would result in a significant loss of coastal scrub habitat.	Significant	Significant
Mitigation No mitigation available other than elimination of parking area.		
Impact Proposed staircase route at Yellowbank is presently acting as a surface runoff conduit, if runoff is not controlled there would be continued erosion and potential damage to the staircase.	Less than Significant	Less than Significant
Mitigation Construct a wooden stairway supported with piles that would allow runoff to flow under the stairway.		

	LEVEL OF SIGNIFICANCE	
	Without Mitigation	With Mitigation
Impact Proposed habitat enhancements and modifications to the marsh areas at Laguna Creek and Scott Creek could result in an observable shift in the vegetation structure and composition due to increased flooding, changes in the salinity regime, and soil-water table modifications. Improper modifications of these marsh areas could have significant impacts on the distribution of numerous sensitive plant and animal species.	Significant	Less than Significant
Mitigation Detailed studies should be conducted before any hydrological modifications are undertaken. The study should address all sensitive fish and wildlife species possibly occurring at these areas.		
Impact There are two gaps in the seasonal fencing proposed for the snowy plovers nesting area. These gaps could allow humans to enter the area and continue to disturb the nesting birds.	Less than Significant	Less than Significant

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
Mitigation The proposed seasonal fencing should be made contiguous.		
LAND USE		
Impact Removal of flashboard dams on Scott Creek, Laguna Creek, and Liddell Creek would adversely effect the farmers who use water from these impoundments to irrigate their crops.	Significant	Significant
Mitigation A detailed analysis of the impacts of removal of flashboard dams and similar diversions should be undertaken to analyze impacts on farmers' water supply and agricultural capability. Only way to reduce environmental impacts to a less than significant level would be to eliminate policy to remove flashboard dams and similar diversion structures from General Plan.		
Impact The access trail at Laguna Creek and the connecting trail between Bonny Doon and Panther beaches pose potential trespass and vandalism problems to the adjacent agricultural fields.	Significant	Less than Significant

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
Mitigation Establish a 50-foot buffer setback with fencing or vegetative screening, as appropriate.		
Impact Farmers and recreationists alike are skeptical about the effectiveness of the proposed policy on pesticide use. Measures proposed or used elsewhere have not satisfied both constituencies and are unlikely to fully mitigate the concerns of one without adversely affecting the other.	Less than significant	
Mitigation No additional mitigation recommended.		
ARCHAEOLOGY AND CULTURAL RESOURCES		
Impact No direct adverse impacts to archaeological or historical resources are anticipated as a result of the project.	Less than Significant	Less than Significant
Mitigation If cultural resources are discovered, land alteration work in the vicinity of the find should be halted and a qualified archaeologist should be consulted.		

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
VISUAL AND AESTHETIC CONSIDERATIONS		
Impact Implementation of some of the parking improvements would result in the removal of existing vegetation and require significant cuts in existing slopes. Most prominent cuts would be at the 110-vehicle lot at Scott Creek, along the westside of Davenport Landing Road, for the future parking area at Bonny Doon, and at Laguna Creek. It may be difficult to revegetate the new cut slopes.	Less than Significant	Less than Significant
Mitigation Vegetation mitigation measures recommend the establishment of test plots in those area designated for revegetation to define the planting techniques most likely to give positive, long-term results.		
Impact The 30-vehicle parking lot at the north end of Scott Creek beach would be highly visible to motorists on Highway 1.	Significant	Significant
Mitigation Earth mounds and landscaping would be used to screen this parking lot.		

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
TRAFFIC AND CIRCULATION		
Impact Although the Plan identifies bus stops at each beach there are no programs to increase the use of transit services by beach patrons.	Less than Significant	Less than Significant
Mitigation Programs should be implemented to increase the use of transit service.		
Impact The Highway 1 shoulder at Scott Creek, where existing parking occurs, will be closer to the beach and, hence, more attractive to visitors than the proposed beach parking areas.	Less than Significant	Less than Significant
Mitigation Shoulder parking restrictions must be diligently enforced.		
Impact There may be some problems at the northern Davenport Landing Road/Highway 1 intersection due to existing limited sight distances.	Less than Significant	Less than Significant
Mitigation This intersection should be improved.		

	LEVEL OF SIGNIFICANCE Without Mitigation	With Mitigation
Impact Parking demand at Bonny Doon may exceed supply on days of peak usage. Parking would likely continue on the shoulders of Bonny Doon Road causing visitors to cross Highway 1.	Less than Significant	Less than Significant
Mitigation If parking is permitted on Bonny Doon Road there should be provisions for increasing pedestrian safety for crossing Highway 1.		
Impact Persons using the Laguna Creek beach parking area would need to cross Highway 1 to reach the beach, an inherently dangerous situation.	Less than Significant	Less than Significant
Mitigation Consideration should be given to providing a safer means of crossing Highway 1. An overpass or underpass should be considered.		

3.0 DESCRIPTION OF THE PROPOSED PROJECT

This part of the EIR describes the location of the program area, the overall intent of the General Plan for the North Coast Beaches (the General Plan) and the improvements proposed, the General Plan's conformance with applicable public plans and policies, and administrative actions which would be required before the General Plan could be implemented.

3.1 PROGRAM AREA LOCATION AND EXISTING LAND USE

3.1.1 PROGRAM AREA LOCATION

The North Coast beaches program area is located in Santa Cruz County along a 13-mile stretch of coastline between the northern city limits of Santa Cruz to the southern boundary of San Mateo County (see Exhibit 1). The program area is generally traversed by Highway 1 which provides north-south regional access throughout Santa Cruz County and to adjacent counties.

Six North Coast beaches are addressed in the General Plan. The six beaches are Scott Creek, Davenport Landing, Panther, Bonny Doon, Yellowbank, and Laguna Creek.[1] Scott Creek Beach is located approximately five miles south of the San Mateo-Santa Cruz County line; and all six beaches are dispersed over a distance of approximately five and one-half miles along Highway 1 (see Exhibit 2). The southernmost beach, Laguna Creek Beach, is located approximately six miles north of the Santa Cruz city limits. All six beaches are located just west of Highway 1.

In addition to the six beaches considered in this General Plan there are several other beaches in the area. South of Laguna Creek Beach lies Red, White and Blue Beach which is under private ownership but open to the public on a fee basis. Further south are beaches in the undeveloped Wilder Ranch State Park and Four Mile Beach.

North of Scott Creek Beach is Big Basin Redwoods State Park which includes the state owned beach at the mouth of Waddell Creek. South of this state park is Greyhound Rock which is owned by the State Department of Fish and Game and managed by the County of Santa Cruz.

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1 It has been noted that the beaches in the General Plan are incorrectly named in two instances. According to Save Our Shores, Yellowbank Beach is commonly known as Panther Beach and Chimney Rock Beach has been wrongly named Panther Beach. Letter to Supervisor Gary Patton from Josh Goldstein, SOS North Coast Beaches Committee, December 28, 1988. For consistency this EIR will use the same beach names as used in the General Plan.

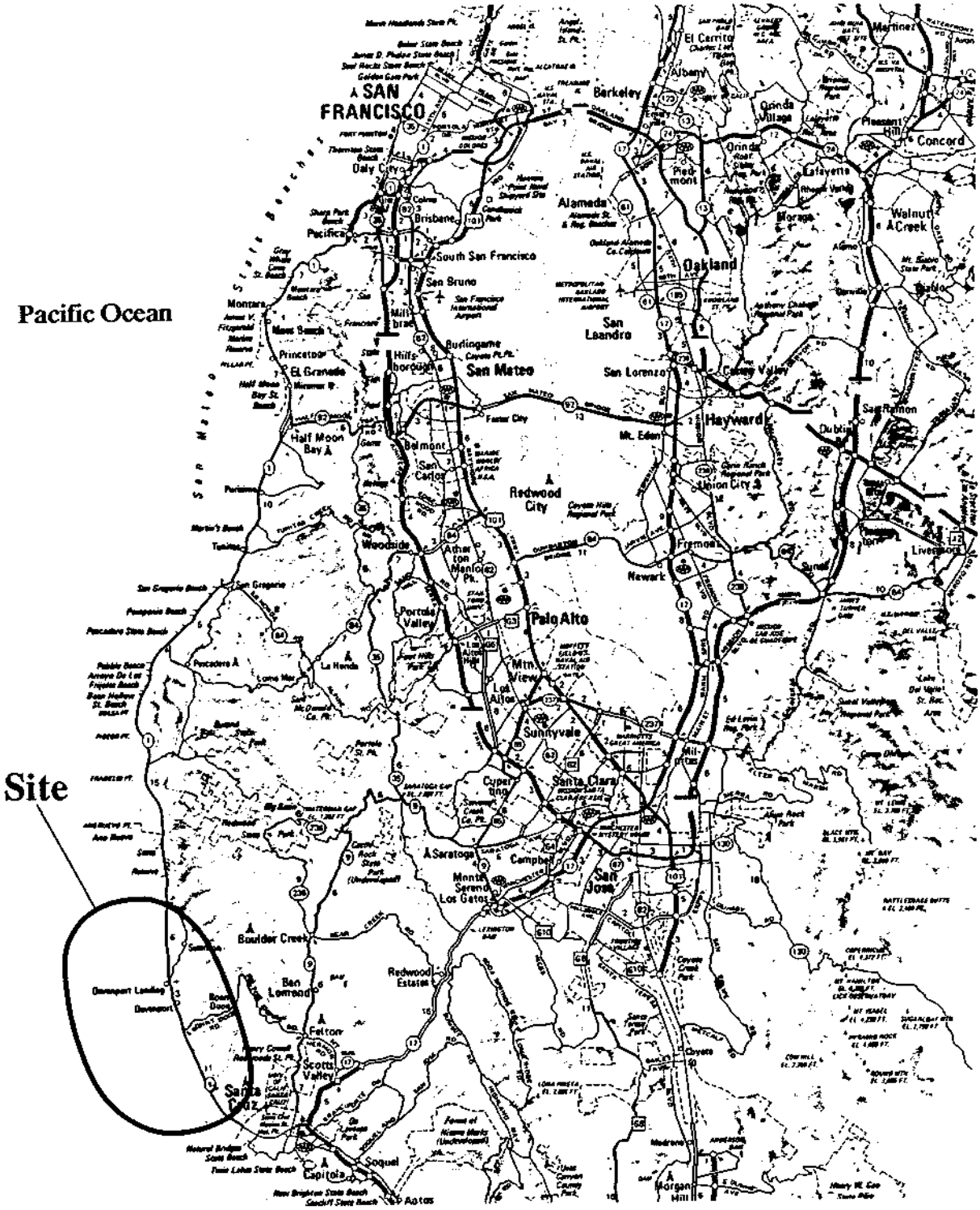

EXHIBIT 1 - REGIONAL LOCATION

North Coast Beaches Study Area

N

Not to Scale

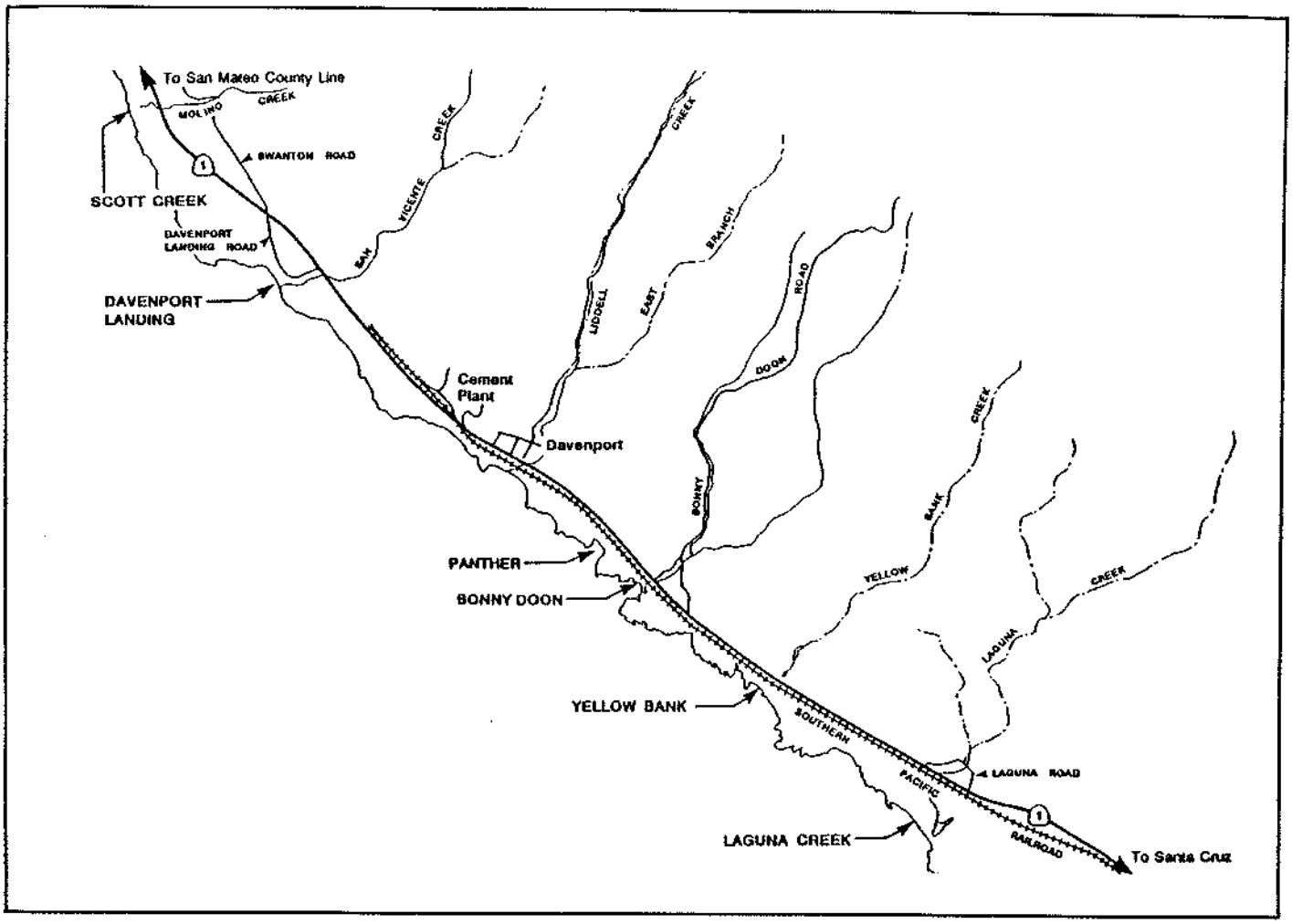

EXHIBIT 2 - NORTH COAST BEACHES PROGRAM AREA
County of Santa Cruz, California

0 6000 Feet

Davenport Beach is another North Coast beach, but is has been excluded from this General Plan because of its proximity to the Davenport community.[2]

3.1.2 EXISTING USES

The approximate size of each of the beaches is shown below:

Name of Beach	Size of Beach in Acres
Scott Creek	14.0
Davenport Landing	2.1
Panther	0.3
Bonny Doon	5.5
Yellowbank	2.8
Laguna Creek	6.9

Existing uses for each of the six beaches are described below.

Scott Creek Beach

The main beach at Scott Creek extends over half a mile between a sloped terrace on the north and sand dunes and bluff on the south. A narrow strip of beach, again as long as the main beach, continues to the south at the base of a bluff. It is inaccessible during the winter. The river valley runs deep inland, but the main beach is separated from a wetland area by an elevated portion of Highway 1.

Because of its open exposure to prevailing winds, Scott Creek is not a popular beach for sunbathing. Surfers favor the north end where a submerged reef creates some of the best waves along the North Coast. Many people stop to take a stroll at this particular beach because it is the most accessible. Illegal off-road vehicle occasionally occurs.

Davenport Landing Beach

Davenport Landing Beach is approximately 200 yards long and 50 yards wide. It is bounded at both ends by low rocky terraces backed by vertical cliffs 30 to 40 feet high. The beach is bordered to the east by a broad low terrace.

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2 It is understood that a separate plan will be prepared for Davenport Beach and incorporated into a comprehensive community plan at a future date. General Plan for the North Coast Beaches, County of Santa Cruz, December, 1987, page 10.

Davenport Landing has the most consistent use throughout the year. It is easily accessible from Davenport Landing Road,[3] which encourages uses by families with children, the elderly, and the handicapped. The beach is also heavily used by fishermen and surfers. Occasionally people camp and have parties on the beach.

Panther Beach

Panther Beach is the smallest of the six beaches studied and its size can vary from year to year. It is surrounded by 40-foot high cliffs. In the center of the cove there is a large pinnacle of rock, isolated from shoreline even at low tide.

Young and middle-age adult sunbathers use Panther Beach most frequently. Very little water use occurs. Occasionally it is used for camping. People whale watch from the plateau above the beach. Of the six beaches under study, Panther receives the fewest number of visitors.

Bonny Doon Beach

Sixty foot bluffs enclose Bonny Doon Beach on the north and south, and a large sand dune encloses it on the east. The beach is about 250 yards long and half as wide. A pocket beach at the north end is reclaimed during the winter.

Bonny Doon is used primarily by young and middle-aged adult nude sunbathers. Socializing, volleyball, and Frisbee throwing are the most popular activities. Water sports are uncommon because of hazardous surf conditions. Bonny Doon is inundated with revelers on holidays. This beach consistently receives more use than any of the other beaches.

Yellowbank Beach

Yellowbank Beach consists of a main beach 100 yards long and 70 yards wide; it is separated from a long narrow beach to the south by a small rock archway that is passable only at low or medium tides, and is otherwise inaccessible. Both beaches are bounded at either end by 30- to 40-foot bluffs. The main beach is separated from the Yellow Creek Canyon by a wall of railroad and highway fill.

Sunbathing is the principal activity at Yellowbank Beach, but fishing and camping are also common. Tidepool exploring is also popular. The main beach is more heavily used because it is closer to the parking area and because the south beach is inaccessible except at high tide.

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3 It should be noted Davenport Landing Road is incorrectly identified as Old Coast Highway in the General Plan.

Laguna Creek Beach

The most distant from Highway 1, Laguna Creek Beach stretches over half a mile and is half as wide as it is long. There is a small pocket beach at the north end. A series of stepped terraces bound it on the north; the south end is cut short by an 80-foot bluff. A large lagoon and wetland area border the beach to the east.

Laguna Creek Beach is used by a wide variety of people for sunbathing, fishing, musseling (in winter), surfing, picnicing, and camping. The north end of the beach and inland wetland area are the most heavily used because they provide shelter from summer winds.

3.1.3 SURROUNDING LAND USE

Except for small amount of residential use, a commercial fishery, and the Lone Star Cement property at Davenport Landing, intensive commercial agriculture is the predominant land use surrounding the six beaches. Most of the agricultural land is used for the production of Brussel sprouts and artichokes.

3.1.4 LAND OWNERSHIP AND OTHER CONDITIONS

Land at all the beaches is privately owned except at Scott Creek Beach. Here, the beach, dunes, and northern terrace are owned by the County of Santa Cruz, although the wetland area and terrace at the southern end are in private ownership.

The California Department of Transportation (Caltrans) maintains a right-of-way of variable width (Highway 1) through each beach area except Davenport Landing. The existing parking areas are located either partially or wholly within this right-of-way.

Until July 1987, Southern Pacific Railroad had a wide right-of-way along the railroad tracks at Panther, Bonny Doon, Yellowbank, and Laguna Creek beaches, that included a large area once designated for future train stations. Except for a narrow strip of land encompassing just the railroad bed, ownership of this land has returned to the adjacent landowners. Trains pass through the area several times a day, passing between the parking areas and the beaches, hauling sand and coal to the Lone Star Cement Company, and hauling cement out.

The wetland at Scott Creek is owned by a single individual, Albert Smith, who farms land adjacent to the creek. The other private landowner at Scott Creek is Coast Dairies and Land Company, a Swiss-based firm that owns most of the farmland at all the other beach units, including at Laguna Creek. At Davenport Landing there are also several other private landowners, including Lone Star Cement Company.

3.2 DESCRIPTION OF THE PROPOSED GENERAL PLAN

The proposed project is the adoption of a master plan for six beaches along the North Coast of Santa Cruz County. The General Plan for the North Coast Beaches (the General Plan) has been

prepared to guide the future development and management of Scott Creek, Davenport Landing, Yellowbank, Panther, Bonny Doon, and Laguna beaches. The General Plan has been prepared in accordance with the General Plan standards set forth by the California Department of Parks and Recreation so that it may eventually be considered for adoption by the State Parks and Recreation Commission.

The General Plan contains resource management recommendations for restoring and protecting native coastal plant communities; enhancing and preserving important wildlife habitat, particularly wetlands; preventing further degradation of the coast line's other natural, cultural, aesthetic, and recreation resources and improving and expanding recreation opportunities and experiences, specifically parking and public access. The General Plan proposes to minimize private property damage; reduce public hazards; clarify liability responsibilities and provide sanitary facilities and garbage collection services. Development proposals are prioritized by beach for expected incremental funding; Bonny Doon Beach will be developed first. It is proposed that the beaches be managed at least in the short-term by the private sector; that vehicular access into the parking lots be controlled and fees charged to maintain a financially self-supporting operation.

The General Plan includes a resource element, a land use and facilities element, an interpretive element, an operations element, and a cost/revenue analysis.

The improvements proposed at each of the beach units are discussed below and illustrated in Exhibits 3 through 7.

3.2.1 SCOTT CREEK BEACH

- Add a 12-foot maximum wide center turning lane for northbound traffic into the proposed southern parking lot.
- Add an eight-foot maximum wide shoulder turning lane for southbound traffic turning into the proposed southern parking lot.
- Develop a 110-vehicle unpaved parking lot at the south end, complete with an access road off Highway 1 and revegetation of the resulting cut slope.
- Provide a gate and tire teeth at the parking lot so that it can be closed and still permit vehicles to exit.
- Provide fee envelope dispensing and repository boxes at the parking lot.
- Provide an entrance station at the southern parking lot so that fees can be manually collected.
- Construct a pedestrian bridge or elevated boardwalk parallel to and preferably below the Scott Creek bridge.

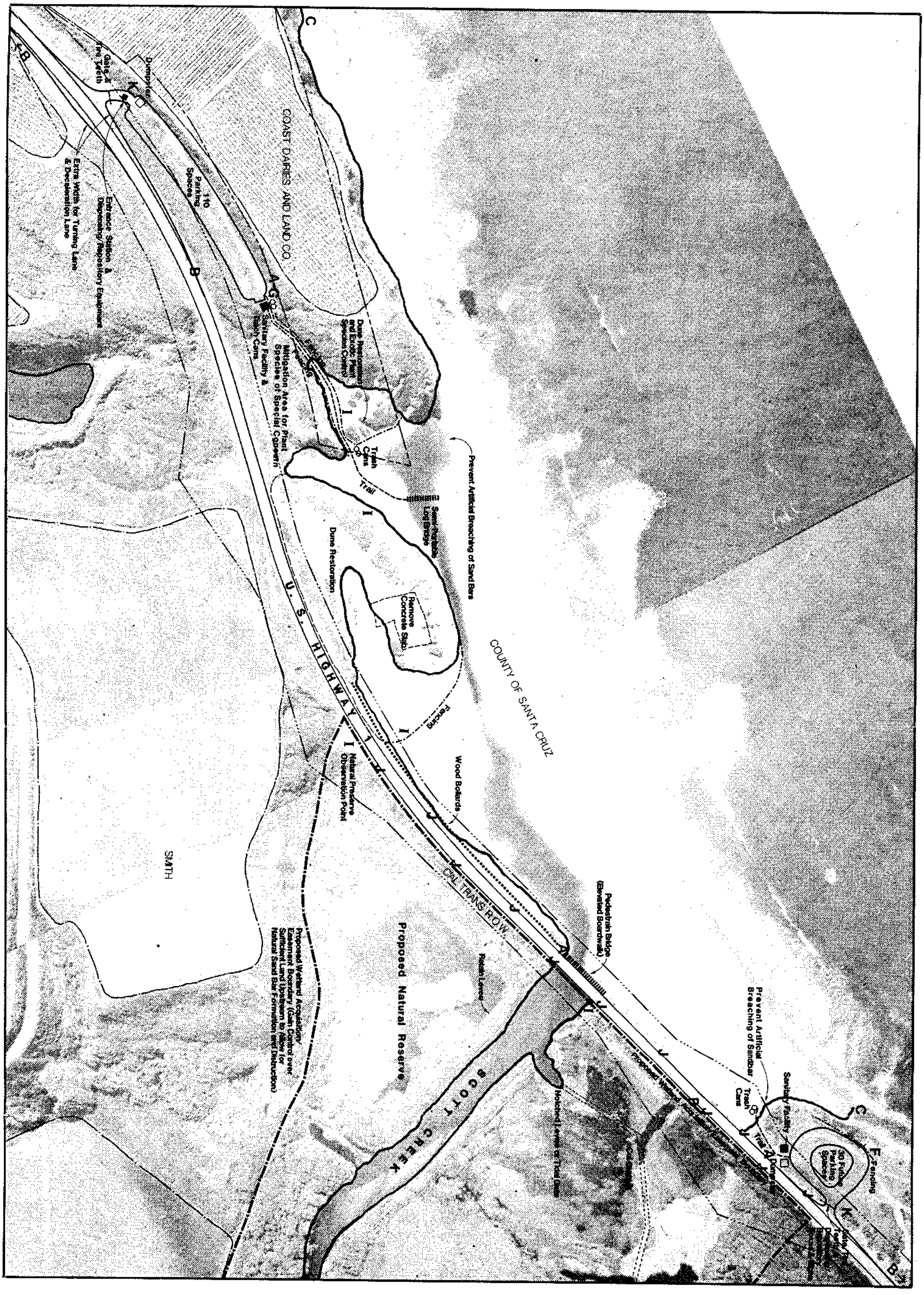

EXHIBIT 3 - SCOTT CREEK BEACH
Proposed Improvements

N

0 400 Feet

Source: Prepared by EDAW Inc., July 1987

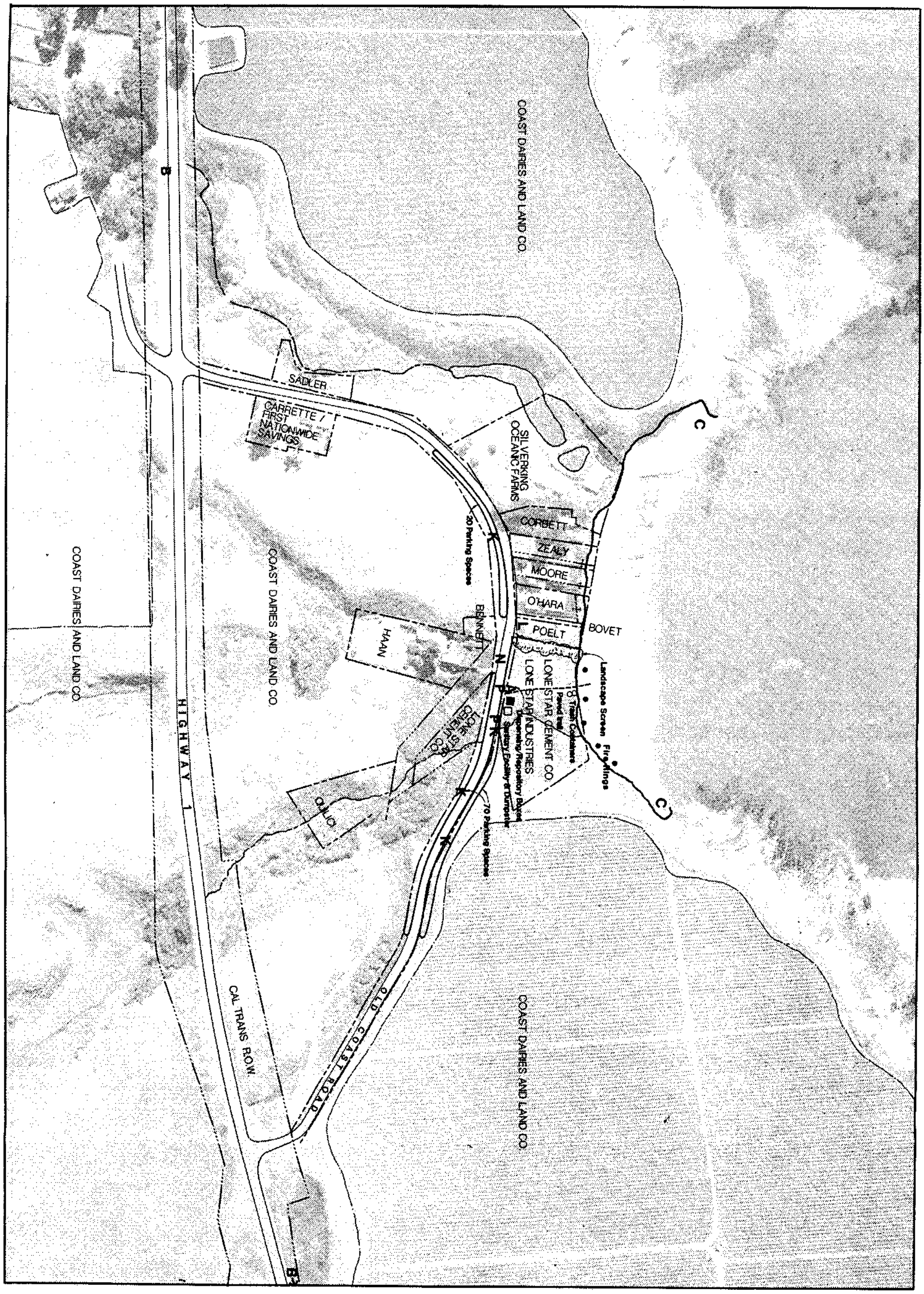

EXHIBIT 4 - DAVENPORT LANDING BEACH
Proposed Improvements

Source: Prepared by EDAW Inc., July 1987

0 400 Feet

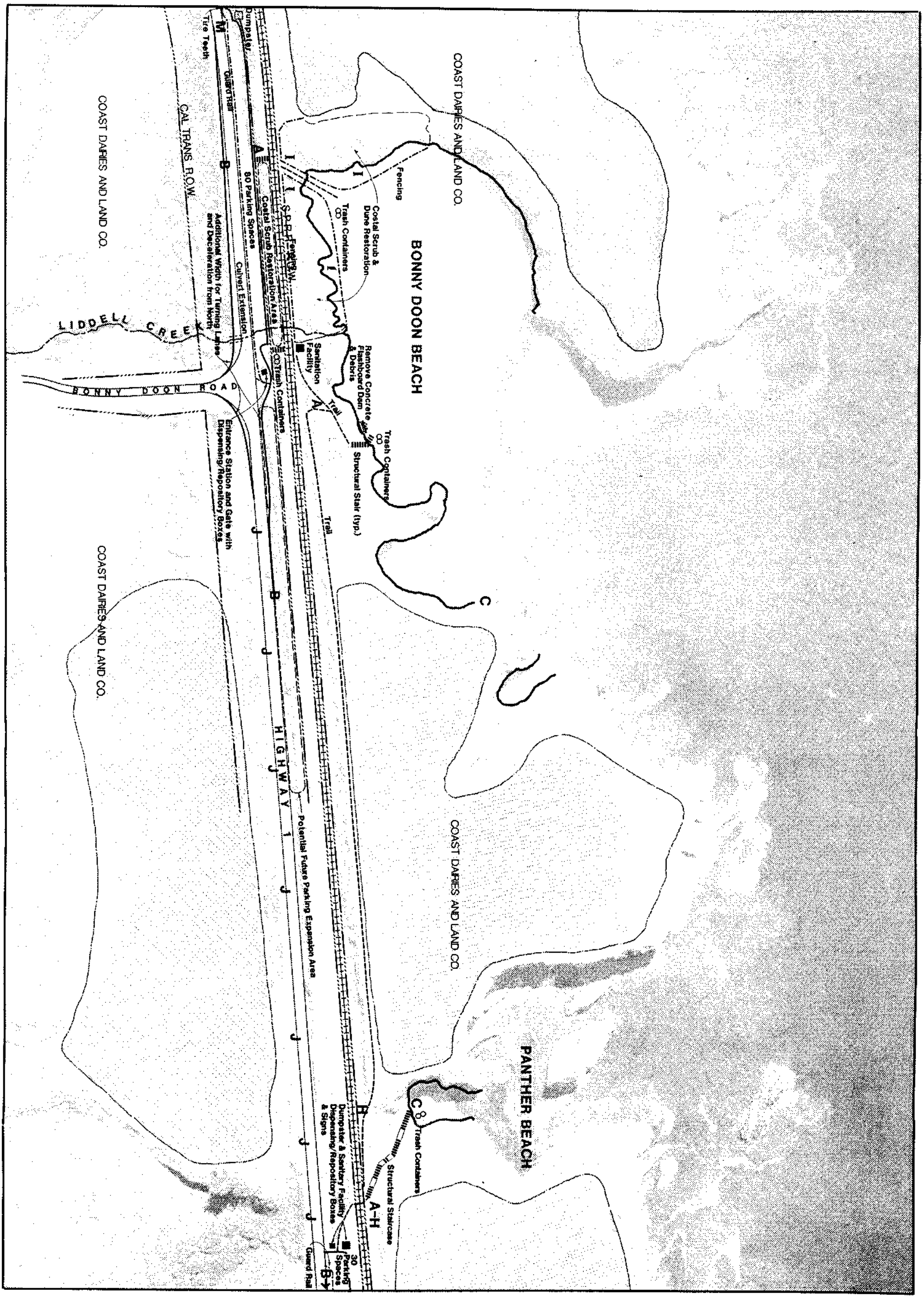

EXHIBIT 5 - BONNY DOON BEACH AND PANTHER BEACH
Proposed Improvements

Source: Prepared by EDAW Inc., July 1987

0 400 Feet

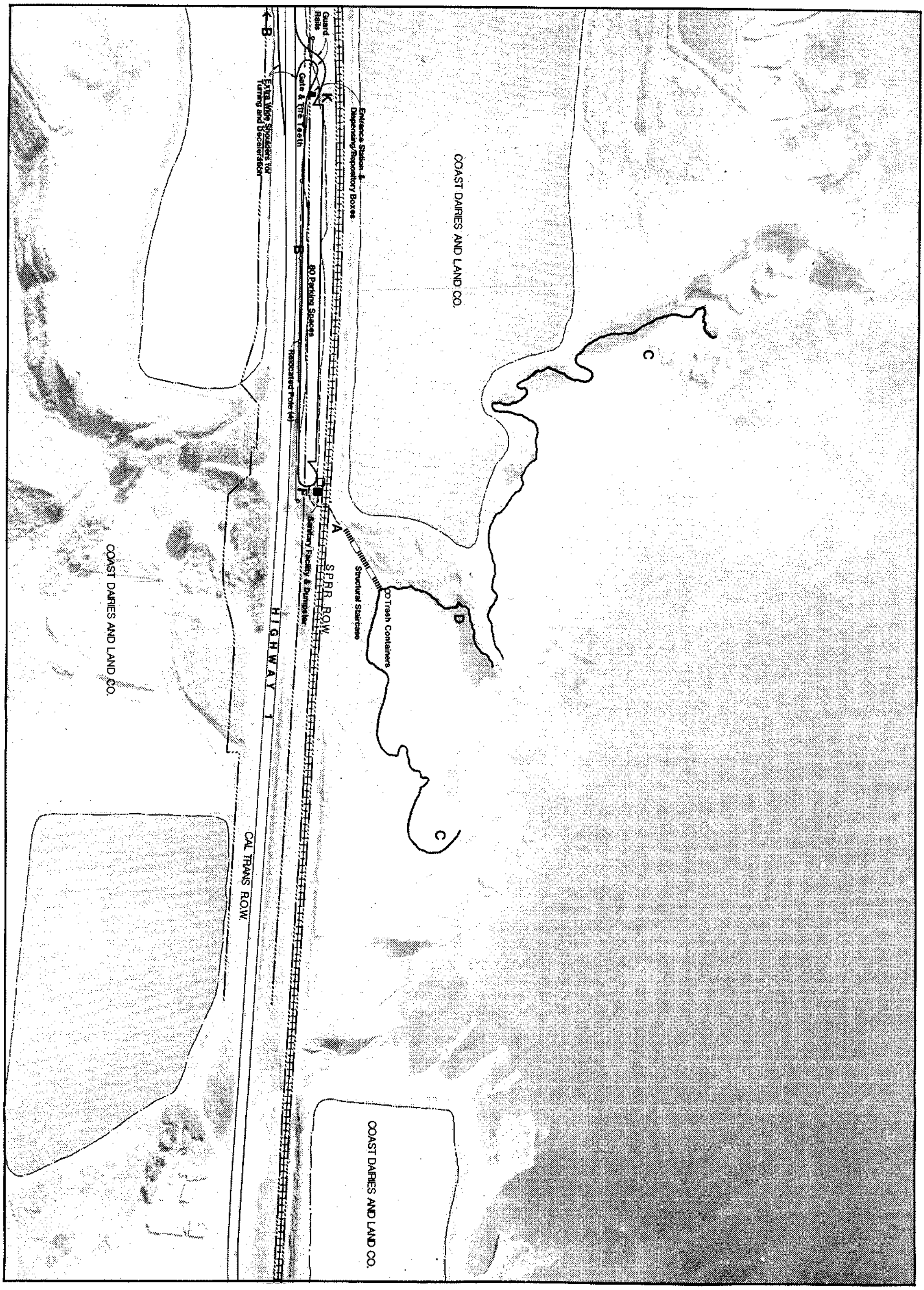

EXHIBIT 6 - YELLOWBANK BEACH
Proposed Improvements

Source: Prepared by EDAW Inc., July 1987

EXHIBIT 7 - LAGUNA CREEK BEACH
Proposed Improvements

Source: Prepared by EDAW Inc., July 1987

0 400 Feet

- Construct a semi-portable log bridge where Molino Creek and Scott Creek meet and flow across the beach to prevent beach visitors and others from artificially breaching the lagoon and to provide access from the southern parking lot. The bridge should be constructed so that it is usable at all lagoon widths and depths, and the movement of water in the lagoon is not obstructed.
- Provide trash containers at various locations.
- Provide vault toilets at the south trailhead adjacent to the parking lot where there will be minimum impact to surrounding coastal bluff scrub vegetation.
- Provide signs.
- Restore and protect dunes.
- Establish a wetland preserve.

A 30-vehicle parking lot and recreation facilities will be constructed at the northern end of the beach as additional parking becomes necessary. Turning and deceleration lanes on Highway 1 may be required. The lot will be visually screened from the highway with earth mounds and native landscaping.

3.2.2 DAVENPORT LANDING BEACH

- Grade road shoulders to provide for additional, safer parking.
- Provide fee envelope dispensing and repository boxes at the trailhead.
- Provide an eight-foot wide paved trail with a slope that does not exceed eight percent and with "landings", as required for handicap access.
- Provide a vault toilet near the trailhead.
- Provide signs.
- Provide five fire rings at the back of the beach.
- Plant large growing shrubs to screen nearby residences from the proposed facilities.

3.2.3 PANTHER BEACH

- Install a guard rail between the highway edge and existing parking area, leaving an opening at the south end for ingress and egress and providing space for approximately 30 vehicles.
- Provide fee envelope dispensing and repository boxes near the parking lot entrance.

- Construct concrete stairs with a pipe handrail down to the beach; provide landings where possible.
- Provide trash containers at the beach and trailhead.
- Provide a vault toilet at the trailhead, or at the top of the stairs where it would be accessible by farm road.
- Provide signs.

3.2.4 BONNY DOON BEACH

- Add a 12-foot maximum wide center turning lane for northbound traffic turning into the parking lot.
- Add an eight-foot maximum wide deceleration lane along the shoulder for southbound traffic turning into the parking lot.
- Install a guard rail between the highway edge and existing parking area, forming an entrance road at the intersection with Bonny Doon Road and an exit at the south end.
- Expand the existing parking area southward to accommodate a total of 80 vehicles parked at 60-degree angles.
- Provide a gate at the entrance.
- Provide tire teeth at the exit.
- Provide an entrance station and fee envelope dispensing and repository boxes near the opening into the parking lot.
- Construct concrete stairs with pipe handrails at two locations near the parking lot.
- Construct a wood staircase with pipe handrails at the base of the bluff for access to the beach.
- Provide trash containers at various locations.
- Provide vault toilets near the primary trailhead; if use of the farm road for pump truck access cannot be obtained from the landowner, it should be located near the parking lot instead.
- Clean the beach and dune area to remove existing litter; this may have to be done mechanically in order to unbury debris.
- Provide signs.
- Restore and protect dunes.

- Enhance fisheries.

3.2.5 YELLOWBANK BEACH

- Add eight-foot maximum wide paved shoulders for vehicles into the parking lot from the north and south.
- Install a guard rail to form a parking lot entrance/exit.
- Provide a gate and tire teeth to permit closing of the parking lot without locking vehicles in.
- Relocate to one side the electrical poles that traverse the parking lot.
- Regrade the parking area for approximately 80 vehicles and provide proper drainage.
- Provide fee envelope dispensing and repository boxes and an entrance station at the opening to the parking lot.
- Construct concrete stairs with a pipe handrail between the beach and railroad tracks.
- Provide trash containers at various locations.
- Provide a vault toilet at the trailhead.
- Clean the beach of broken glass and other debris.
- Provide signs.
- Rehabilitate a secondary trail.

3.2.6 LAGUNA CREEK BEACH

- Add eight-foot maximum wide shoulders for vehicle turning onto Laguna Creek Road (at the north end) to access the parking lot.
- Paint a pedestrian crossing zone on the highway surface between the trailhead and an opening in the parking lot guard rail.
- Install a guard rail between the roadway edges and the parking area and provide an opening near the rear for ingress and egress.
- Provide a gate, tire teeth, entrance station and fee envelope dispensing and repository boxes in the guard rail opening.
- Improve the access trail by widening the section between the railroad track and highway and grading the farm road evenly for pump truck access.

- Provide concrete stairs with a pipe handrail down the coastal bluff to the pocket beach at the north end.
- Install trail barriers at either end of a secondary trail that runs alongside the wetland.
- Provide trash containers at various locations.
- Provide vault toilets along the trail on the lower bench; if the right to use the farm road for pumping the toilets cannot be obtained from landowner, the sanitary facilities should be located to the rear of the parking lot.
- Provide signs.
- Establish a wetland preserve.
- Protect the snowy plover resting area.

Sign Program

A key aspect to the General Plan is the proposed sign program. A recommended sign schedule, with options for general information signs, has been prepared for each beach. Exhibit 8 lists the proposed sign schedule and the recommended placement of the signs is indicated on Exhibits 3 through 7.

Habitat Enhancement Plan

A component of the General Plan is the protection and enhancement of the natural resources. The priorities of the General Plan in this area are:

- Restoring native vegetation, especially coastal scrub and dune plant species;
- Protecting (or mitigating impacts to) rare plant and animal species; and
- Preserving the habitat values of wetland areas, i.e. lagoons, marsh habitat, and stream courses.

Policies are incorporated into the resource element of the General Plan to reflect the Plan's priorities for the protection and enhancement of natural resources.

Phasing

A phasing plan for the implementation of the recommended improvements has been prepared. The recommended phasing is as follows:

- Bonny Doon -- All proposed improvements

EXHIBIT 8

Proposed Sign Schedule

Map Key		Scott Creek	Davenport Landing	Panther	Bonny Doon	Yellow-bank	Laguna Creek
A	General Information (see below)	3*	1	1	2	1	1
B	Coastal Access	4	2	2	2	2	2
C	Warning--Hazardous Shoreline	2	2	1	1	2	2
D	Warning--No Beach at High Tide			1		1	
E	Access Closed						3
F	⟵ Trail	1*					1
G	Trail ⟶	1					
H	Trail to Bonny Doon Beach			1			
I	Habitat Restoration/Protection--Please Stay Out (with Interpretive Information)	5			4		3
J	No Parking at Any Time	11*			7		3
K	No Parking 10 p.m. to 6 a.m.	2	4		1	1	
L	No Parking Beyond This Point		1	1			1
M	Do Not Enter--Tires will be Punctured				1		
N	Do Not Block Driveway		1				
O	Pedestrian Crossing Next 1500 Feet						2
P	Handicap Parking Only Between Signs		2				
	TOTAL	29	13	7	18	7	18
	General Information Options						
	Credit for Improvements	x	x	x	x	x	x
	Management Authority	x	x	x	x	x	x
	No Littering	x	x	x	x	x	x
	Emergency Telephone Information	x	x	x	x	x	x
	Fees and Deposit Information	x	x	x	x	x	x
	Stay on Trails--Surrounding Property Privately Owned		x	x	x	x	x
	Stay on Trails--Help Protect Our Natural Resources	x					
	Hazardous Cliffs/Shorebird Habitat	x	x	x	x	x	x
	No Breaching of Beach Lagoons Permitted	x					x
	Strong Currents/Swim at Your Own Risk/No Lifeguard on Duty	x	x	x	x	x	x
	No Overnight Camping	x	x		x	x	
	No Motorized Vehicles	x	x				
	No Dogs						x

* Signs at the north end of Scott Creek Beach will only be installed if and when the northern parking lot is constructed.

Source: EDAW Inc., July 1987

- Scott Creek, As proposed:

  Highway improvements
  Parking improvements, south end
  Sanitation, south end
  Signs, appropriate to phasing
  Dune restoration/preservation

- Yellowbank -- All proposed improvements
- Laguna Creek -- All proposed improvements
- Davenport Landing -- All proposed improvements
- Panther Beach -- All proposed improvements
- Scott Creek -- Remaining proposed improvements

Phasing is based heavily on available funding. The phasing of improvements may change if additional funding is made available in the initial phase of implementation.

3.3 RELATIONSHIP TO PUBLIC PLANS

This section discusses the proposed General Plan for the North Coast Beaches (the General Plan) in relation to adopted public policies in order to determine the extent to which the General Plan would conform with adopted public policies or to document specific inconsistencies. This assessment examines the General Plan's conformance with the County's Local Coastal Program, the 1982 Air Quality Plan, the 208 Water Quality Plan, and the Regional Transportation Plan.

3.3.1 SANTA CRUZ COUNTY LOCAL COASTAL PROGRAM

In conformance with the California Coastal Act of 1976 Santa Cruz County adopted a Local Coastal Program in May 1981. The Local Coastal Program was certified by the California Coastal Commission in February 1982.[4]

The Local Coastal Program (LCP) is divided into two major parts, the Land Use Plan and the Implementation Plan. The Land Use Plan is a comprehensive long-term plan for land use and physical development within the County's Coastal Zone. The Land Use Plan included policies and programs consistent with the provisions of the State Coastal Act. The Implementation Plan includes zoning, regulation revision, and other programs needs to carry out the goals, policies, and land use designations of the Land Use Plan.[5]

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4 Santa Cruz County Local Coastal Program, adopted May 15, 1981, and certified by the California Coastal Commission February 3, 1982.

5 Ibid., page 2.

As part of the implementation of the Land Use Plan, the plan was adopted as an element of the County General Plan. The Land Use Plan takes precedence over General Plan policies where the LCP policies are more stringent. Implementation of the LCP is a top priority of the County of Santa Cruz.[6] One of the purposes of the General Plan is to implement a major portion of the LCP policies. It is stated in the LCP that "in order to solve the North Coast problems via the policies of the LCP, there must be a comprehensive plan, involving as many of the beaches as possible, and a coordinated approach for development and management".[7] One of the major purposes of the General Plan is to develop a comprehensive plan for six of the North Coast beaches.

The Land Use Plan of the LCP contains a number of policies which relate to the proposed General Plan. This section of the EIR reviews the extent to which the General Plan would conform with relevant policies of the LCP's Land Use Plan.

Natural Systems Element

The Natural Systems Element incorporates policies and programs to protect sensitive habitat areas against any significant disruption of habitat values, and allows only uses dependent on such resources to occur in such areas.

The relevant policies of the Natural Systems Element are listed below (**in bold**) followed by a discussion of how the proposed General Plan would conform to the policy.

Uses shall be permitted in and adjacent to sensitive habitats only as shown on the Sensitive Habitat Standards Table. (policies 1.3.1 and 1.3.2)

The Sensitive Habitat Standards Table in the LCP identifies Dunes and Coastal Strand, Coastal Scrub, and Wetlands, Estuaries, and Lagoons as sensitive habitat. This policy establishes both permitted uses within and adjacent to the habitat area. For dunes and coastal strand permitted uses adjacent to the habitat area are resource protection and beach recreation. For coastal scrub areas permitted uses within the area are blufftop viewing, hiking, and nature observation. Permitted uses adjacent to the areas are access, parking, agriculture, and grazing.

As discussed in Section 4.5 of this EIR, construction of the 110-vehicle parking lot at Scott Creek beach and construction of the future parking expansion area shown between Panther and Bonny Doon beaches would result in a significant loss of coastal scrub habitat. This would be inconsistent with policies of the LCP to protect sensitive habitat areas.

Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and any proposed development must maintain or enhance the functional capacity of the habitat area. Only uses dependent on such resources shall be allowed within such areas. (policy 1.3.3)

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6 Ibid., page 5.

7 Ibid.

Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas. (policy 1.3.4)

In the LCP environmentally sensitive habitat areas are distinguished from sensitive habitats. Environmentally sensitive habitat areas include a) the habitat of rare, endangered and threatened species, b) marine reserves, c) dune plant habitats, d) wetlands, estuaries, lagoons, streams and rivers, and e) riparian corridors.

The General Plan proposes the protection and enhancement of the natural resources of the North Coast Beaches. For example, the General Plan proposes the reestablishment of coastal dune vegetation at both Scott Creek and Bonny Doon beaches. The wetland areas at Scott Creek and Laguna Creek beaches are proposed to be protected through designation of these areas as natural preserves. Each of these proposals would be consistent with the policies of the Natural Systems Element to protect environmentally sensitive habitat areas.

Shoreline Access Element

The Shoreline Access Element incorporates policies and programs in order to achieve the following two objectives:[8]

- To provide a system of shoreline access to the coast with adequate improvements to serve the general public and the coastal neighborhoods which is consistent with public safety needs, protects natural resource areas from over use, protects public rights and the rights of private property owners, minimizes conflicts with adjacent land uses, and does not adversely affect agriculture.

- To maintain or provide access, including visual access, to every beach to which access exists or where there is a presumption of access by prescriptive rights, to ensure one access to every pocket beach and convenient, well distributed access to long sandy beaches.

With the exception of Panther Beach, the LCP identifies each of the beaches under consideration in the General Plan as primary public access points. Panther Beach was probably not included as a primary public access point due to its small size.[9] Provision of public access to Panther Beach, as envisioned by the General Plan, would not appear to be inconsistent with the LCP.

The relevant policies of the Shoreline Access Element are listed below (**in bold**) followed by a discussion of how the proposed General Plan would conform to the policy.

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8 Ibid., page 65.

9 Nichols • Berman conversation with Rick Hyman, State of California Coastal Commission, December 1988.

The shoreline access maps and charts define a system of shoreline access to the coast, both public and private, and the appropriate locations for primary public access and improvements. Primary public access points shall be developed only when they can provide automobile parking or an acceptable alternative, and when all environmental impacts and use conflicts can be satisfactorily mitigated. (policy 4.1.1)

It is the intent of the General Plan to implement this policy via the adoption of a comprehensive plan for the North Coast beaches. The extent that this can be accomplished with all the environmental impacts and use conflicts satisfactorily mitigated is the subject of this EIR.

Require the establishment of controlled public access to environmentally sensitive habitats through grants, dedications of easements or other means, including as a condition of new development approval. Open the access only for education or nature study purposes, and only when improvements and management are adequate to protect the resources. (policy 4.4.1)

Prohibit off-road vehicle use of shoreline accesses and beaches. (policy 4.4.2)

Reduce the number of trails to destinations where the present level of use is causing deterioration to sensitive habitat or serious erosion problems. (policy 4.4.3)

The General Plan is consistent with the three above policies of the LCP. The General Plan contains specific policies aimed at implementing the policies of the LCP to avoid conflicts with natural resources protection. For example, one of the policies of the General Plan is to insure that coastal access to the beaches from the parking areas shall be directed and controlled to minimize random destructive erosion.[10] Another policy of the General Plan is to reestablish the existing disturbed areas of coastal scrub vegetation at Bonny Doon Beach. Furthermore, it is recommended that access through these areas should be restricted or otherwise discouraged.[11]

Minimize the number of accessways through and adjacent to agricultural areas. Delineate the accessways adjacent to agricultural areas, so it is clear where the public is allowed. As needed, use such methods as low barriers, fences, thorny hedges, and paving. (policy 4.5.2)

Require separation of agricultural fields and identified accessways by as much distance as practicable.

Require separation of access users from aerial and highly toxic spraying, and post the hazard of aerial and highly toxic spraying. Require provision of a gate at the road and a place on the gate for pesticide spray warnings. (policy 4.5.4)

Where necessary to protect public safety, require agricultural operators with facilities adjacent to the high use recreational areas and shoreline accessways to erect barriers, consistent with LCP policies, while ensuring that beach access is protected. (policy 4.5.5)

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10 General Plan for the North Coast Beaches, op. cit., page 21.

11 Ibid., page 24.

Allow agricultural operators with facilities adjacent to high use recreational areas and shoreline accessways to erect barriers, consistent with LCP policies, designed to discourage public encroachment while ensuring that beach access is protected. (policy 4.5.6)

One of the underlying purposes of the General Plan is to allow public access to the North Coast beaches and simultaneously maintain coastal agricultural land in production. The only policy of the General Plan dealing with potential public access and agricultural conflicts is one that states an agreement with the local farmers should be sought to eliminate the use of the more hazardous compounds within the vicinity beach facilities.[12] As discussed in sections 4.6 and 4.7 of this EIR coastal farmers in adjacent San Mateo County have expressed feelings of frustration over solving some of the problems associated with public access as State ownership and/or management of land has increased in the coastal area. Despite the intent of the General Plan it is likely that farmers in the program area will experience the same frustrations over solving the problems associated with public access as the farmers in San Mateo County have.

Furthermore, agriculturalists and recreationists alike are skeptical about the effectiveness of the General Plan's policy on pesticide use.

The point is that the intent of the General Plan appears to be consistent with the LCP's policies to maintain coastal agricultural land in production. However, as discussed in section 5.3.3 of this EIR one of the long-term, cumulative effects of implementation of the General Plan may be to adversely affect agricultural production in the area. If this is the long-term result this would be contrary to the policies of the LCP.

Consideration should be given to adding policies to the General Plan that would deal with the potential conflict between public access and adjacent agricultural uses. Such policies should deal directly with the need to maintain separation of public accessways and adjacent agricultural areas and the need to protect beach users from the hazards of agricultural chemicals.

It is recommended that the following additional policies be added to the General Plan.

- Retain the maximum amount of prime agricultural land in agricultural production within each beach unit.
- Coastal access trails should be sited in such a manner so as to minimize possible conflicts with agriculture in the area.
- Where coastal access trails are located adjacent to agricultural lands there should be a 50-foot buffer setback with fencing or vegetative screening, as appropriate.
- The County Agricultural Commissioner should work together with the local farmers to minimize conflicts of pesticide use and public access to the beaches.

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12 Ibid., page 37.

Several policies of the LCP discuss the need for garbage collection and recycling at access points to the coast. Relevant policies of the LCP are listed below **(in bold)** followed by a discussion of how the proposed General Plan would conform to the policies.

Provide, encourage provision of, and/or require as a condition of new development approval the following improvements at primary destinations; path improvements and maintenance, recycling, garbage collection, etc. (policy 4.1.4)

Open accessways only after a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway, including regular garbage collection (and recycling where feasible) at the trailhead, along the trail, and at the beach destination. (policy 4.3.6)

The General Plan does recommend the location of trash containers at various locations at Scott Creek, Panther, Bonny Doon, Yellowbank and Laguna Creek beaches. The General Plan does not, however, discuss the potential for recycling at each of the North Coast beaches. A policy should be added to the General Plan that would require regular garbage collection at each beach and would encourage the establishment of recycling facilities at each beach.

Visual Resources Element

The Visual Resources Element establishes policies to consider and protect the scenic and visual qualities of the coastal area as a resource of public importance. A "scenic corridor" is defined as all areas under the County's jurisdiction within the Coastal Zone which are visible from a designated scenic highway, public vista point, from any beach, or which are within a designated special scenic area. The LCP Visual Resources map designates a Highway 1 scenic corridor, including all views of ocean and bay waters. Each of the beaches considered in the General Plan is within the scenic corridor. Furthermore, the entire length of Highway 1 within Santa Cruz County, from San Mateo County to Monterey County, is designated in the LCP as a scenic highway.

The relevant policies of the Visual Resources Element are listed below **(in bold)** followed by a discussion of how the General Plan would conform to the policy.

Apply LCP visual protection policies to all areas of the Highway 1 scenic corridor. (policy 6.1.2)

Maintain the scenic integrity of open beaches. (policy 6.2.4)

On Highway 1, allow only the standard directional, access, and business identification signs. (policy 6.4.1)

Signs shall minimize disruption of the scenic qualities of the viewshed through the appropriate use of materials, scale, location, and orientation. Develop specific standards for signs in scenic corridors. (policy 6.4.2)

The policies of the General Plan would be consistent with the visual resources element of the LCP. It is a policy of the General Plan that no site improvements would be permitted that detract from or contrast with the existing scenic quality of the area. As discussed in section 4.14 of this EIR the implementation of the General Plan would generally result in an overall improvement in the visual quality of the program area.

Require new development to be sited and designed to minimize grading, earthmoving, major vegetation removal, and other land form alterations. (policy 6.5.1)

Where there is cutting, grading, filling, or major vegetation removal, blend revegetation and contours of the finished surface with adjacent natural terrain to achieve a consistent grade and natural appearance, and to provide erosion control. (policy 6.5.2)

As discussed above, construction of the 110-vehicle parking lot at Scott Creek beach and construction of the future parking expansion area shown between Panther and Bonny Doon beaches would result in a significant loss of vegetation, inconsistent with policy 6.5.1. Grading would be necessary in order to complete some of the other plan proposals. For example construction of the 110-vehicle parking lot at Scott Creek beach, expansion of the existing parking lot at Bonny Doon beach, and expansion of the parking lot at Laguna Creek beach would each require grading and earthmoving. Based upon the information available, it does appear that consistent with the above policies, the amount of landform alteration necessary for the proposed improvements is the minimum amount necessary.

3.3.2 1982 AIR QUALITY PLAN FOR THE MONTEREY BAY REGION

The 1982 Air Quality Plan for the Monterey Bay Region[13] (Air Quality Plan) presents strategies for reducing air pollution in Monterey, Santa Cruz, and San Benito Counties. The Air Quality Plan is an update of the 1979 Air Quality Plan. The strategies are designed to meet air quality standards set by the state and federal governments to protect public health.[14] The strategies consist of controls on emissions from stationary sources such as manufacturing facilities, and mobile sources such as individual cars and trucks. They also include transportation and land use strategies for minimizing the total amount of driving required, improved traffic flow, and mitigating the adverse air quality impacts of future growth and development.

The strategies are divided into four groups: stationary source strategies, transportation strategies, mobile source strategies, and administrative measures. The strategies of the Air Quality Plan most relevant to the General Plan are the transportation measures. In addition to the measures contained in the 1979 Air Quality Plan measures in the transportation section of the 1982 Air Quality Plan recommended for implementation included short-range transit improvements,

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13 1982 Air Quality Plan for the Monterey Bay Region, Monterey Bay Unified Air Pollution Control District Board, San Benito County Council of Governments, and Association of Monterey Bay Area Governments, 1982.

14 Ibid., page I-1.

traffic flow improvements (such as signal optimization), improved bicycle facilities, and areawide ridesharing programs.

Implementation of the General Plan would not be inconsistent with the Air Quality Plan. It would appear that the policies of the General Plan would be consistent with the control strategies of the Air Quality Plan and would further the attainment of the goals of the Air Quality Plan. For example, it is proposed that there be a designated bus stop on Highway 1 near each of the six beaches.

3.3.3 WATER QUALITY MANAGEMENT PLAN FOR THE MONTEREY BAY REGION

The Water Quality Management Plan for the Monterey Bay Region[15] (Water Quality Plan) presents programs for the cleaning up of and maintenance of water quality in the Monterey Bay Region. The portion of the Water Quality Plan most relevant to the General Plan for the North Coast Beaches is the section regarding soil erosion and sedimentation. The program area is identified as a "water erosion and sediment production area" in the Water Quality Plan.[16] The major problem in the program area appears to be that development (including intensive agricultural uses) without adequate runoff and erosion control would increase erosion and the discharge of sediments into water in rivers, streams, and other water bodies.

It does not appear that implementation of the General Plan would be inconsistent with the Water Quality Plan. Specific policies regarding water quality are not contained in the General Plan and specific improvements have not yet been designed. It is understood, however, that specific projects, such as the highway improvements, would be designed by an engineering consultant or the Santa Cruz County Public Work Department. Highway improvements would be reviewed and approved by the California Department of Transportation.[17] This process will insure that proper erosion control measures will be incorporated into each of the individual improvements.

3.3.4 REGIONAL TRANSPORTATION PLAN

The transportation improvements proposed as part of the General Plan are all consistent with the Regional Transportation Plan.

3.4 ADMINISTRATIVE ACTIONS

The lead agency for this EIR is the County of Santa Cruz. The County will be responsible for adoption of the General Plan. Responsible agencies (including those with permit-granting authority) include:

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15 Water Quality Management Plan for the Monterey Bay Region, Association of Monterey Bay Area Governments, 1978.

16 Ibid., page V-4.

17 General Plan for the North Coast Beaches, op. cit., page 53.

3.4.1 CALIFORNIA COASTAL COMMISSION

The California Coastal Commission would have to certify any amendments to the LCP. The General Plan itself could be adopted as an amendment to the LCP or it may be necessary to amend existing policies of the LCP to eliminate inconsistencies between the LCP and the General Plan. Any LCP amendments would be reviewed by the Coastal Commission and must be certified before becoming effective.

3.4.2 CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Department of Fish and Game would be responsible for the issuance of any streambed modification or wetland modification permits.

3.4.3 CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) would have jurisdiction over any improvements proposed within its right-of-way. This would include improvements to parking facilities within the right-of-way as well as circulation improvements, such as turning lanes, widened shoulders, and deceleration lanes, for Highway 1. In order to make any improvement within a Caltrans owned right-of-way, an encroachment permit is required. Caltrans issues these permits after a detailed review of the project. The review includes the following:

- Engineering drawings for improvements
- Sight distance analysis of engineering drawings
- Roadway drainage analysis
- Safety requirement and standards analysis
- Highway design manual standards analysis (including traffic volumes, traffic speeds, turning movements, accident records, and sight distances).

In order to obtain an encroachment permit, the agency proposing the improvement must fill out a form, present a traffic analysis, and several sets of engineering drawings for the improvements to Caltrans. This information is reviewed by several different departments and the proponent is notified about any modifications required by Caltrans. The whole process can take several months and, therefore, Caltrans recommends that the permit be applied for as early as possible.

3.4.4 CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

The California Department of Parks and Recreation (the Department) may possibly assume development and/or management responsibility for the North Coast beaches. If the Department were to consider accepting the North Coast beaches into its State Park System adoption of a General Plan would be necessary. The General Plan for the North Coast Beaches has been formatted according to the Department's requirements of a General Plan.

4.0 ENVIRONMENTAL CONSIDERATIONS

4.1 GEOLOGY AND SOILS -- THE SETTING

The principal reference used to prepare this section was a report prepared by Foxx, Nielsen & Associates entitled General Plan for the North Coast Beaches -- Geologic Investigation, January 1989. This report is available for review at the County of Santa Cruz Planning Department.

4.1.1 REGIONAL GEOLOGY

The program area lies within the Coast Ranges' geomorphic province. The six beaches are located near the western edge of the Salinian Block which is composed on metasedimentary and granitic rocks bounded on the east side by the San Andreas fault zone and on the west side by the San Gregorio fault zone.

At each of the beaches, bedrock is Santa Cruz Mudstone which is white to yellowish-light gray, bedded, hard, and very highly fractured. Bedding planes in the mudstone in the vicinity of the six beaches are very gently inclined. At Scott Creek Beach, bedding planes are inclined very gently (8 and 16 degrees) to the northeast (into the coast); at the remaining five beaches, bedding planes are inclined very gently (3 and 13 degrees) to the south and southwest (out of the coast).

Five prominent emergent Pleistocene marine terraces that range in age from 100,000 to 1,200,000 years old are found along the coast north and west of Santa Cruz. The first marine terrace, called the Santa Cruz Terrace (elevation about 100 feet above MSL) is present at each of six beaches.[1]

4.1.2 SEISMICITY

A number of earthquake faults exist in the vicinity of the program area. These faults include the San Andreas fault, the San Gregorio-Hosgri fault zone, the Zayante fault, the Monterey Bay fault zone, and the Butano fault. These faults are either active or considered potentially active because they exhibit evidence of having moved within Quaternary time (last two to three million years). The Ben Lomond fault is nearby, but evidence suggests that this fault is not presently active.

For each of these faults Exhibit 9 summarizes its distance from the program area, its estimated recurrence interval, and the estimated maximum credible earthquake.

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1 Stratigraphy, Paleontology, and Geology of the Central Santa Cruz Mountains, California Coast Ranges, USGS Professional Paper 1168, 1981 and Form, Genesis, and Deformation of Central California Wave-Cut Platforms, Geological Society of America Bulletin, 1976.

EXHIBIT 9

Summary Of Pertinent Faults

Fault	Distance from Site	Estimated Recurrence Interval (years)	Max. Credible Earthquake (Richter Mag.)
San Andreas	15 miles	50 - 250	6.5 to 7.0 1/
San Gregorio	1-4 miles	824 2/	7.7 2/
Zayante	8-11 miles	3130 2/	7.4
Monterey Bay	3-28 miles	?	?
Butano	14 miles	?	6.4
Ben Lomond	6-8 miles	?	5.5 3/

1/ This estimate is for the segment of the San Andreas fault (between San Jose and San Juan Bautista) closest to the program area.

2/ "Earthquakes, Quaternary Faults, and Seismic Hazards in California", Journal of Geophysical Research, Volume 91, number B12, 1986.

3/ "Faults and Their Potential Hazards in Santa Cruz County, California", USGS Miscellaneous Field Studies, Map MF-626, 1974.

Source: Foxx, Nielsen & Associates

4.1.3 SEISMIC HAZARDS

Hazards associated with earthquakes in the vicinity of the program area can be placed into three general categories: surface ground rupture, horizontal ground acceleration, and seismically induced ground failure which includes liquefaction. Following is an assessment of these hazards on the proposed project.

Surface Ground Rupture

Surface ground rupture occurs when fault movement breaks the ground surface. Because of the generally accepted geologic principle that fault-related surface rupture occurs most commonly or in close proximity to pre-existing active fault traces, it is important to locate site improvements away from, and in particular not straddling active fault traces.

There is a very low probability of fault-related surface ground rupture at any of the six beaches during the next 50 years because no mapped fault traces transect any of the beach parking and access improvement areas.

Estimation of Horizontal Ground Acceleration

It is likely that the program area will experience ground shaking from an earthquake on the San Andreas fault in the next 50 years. However, it is possible that the San Gregorio-Hosgri fault zone could be the source of a large magnitude earthquake that would generate the greatest ground shaking in the program area.

The most severe ground shaking in the program area will probably be from an earthquake of approximate Magnitude 7.5 on the San Gregorio fault about one to four miles from the area; such an event will most likely create moderate to severe ground shaking.

Seismically Induced Ground Failure

Seismically induced ground failure is typically one of two types: landsliding or liquefaction-related failures. The probability of liquefaction at each of the beaches is low because of the types of earth materials present. The majority of the proposed improvements are situated on bedrock or relatively dense marine terrace deposits.

Seismically induced landsliding poses a definite hazard at Davenport Landing. Seismically induced landsliding hazards at the other access and parking improvement sites are insignificant.

4.2 SOILS AND GEOLOGY -- THE IMPACTS

4.2.1 SCOTT CREEK BEACH

30-Vehicle Parking Lot and Trail

The proposed 30-vehicle parking lot would be located between Highway 1 and the coast at the north end of Scott Creek Beach. The proposed parking lot and the associated trail to the beach contain the greatest potential for damage to any of the proposed structures, parking areas, or trails associated with this project due to erosion and seacliff retreat.

The parking lot is located on the first marine terrace. As such, the earth materials underlying this area consist chiefly of highly erodible marine terrace deposits that are underlain by Santa Cruz mudstone bedrock. It appears that an ancient mouth of either Scott Creek or another creek was located at the site of the parking lot based on examination of the seacliff. This is because mudstone bedrock rises along a near vertical line in the seacliff just north and south of the parking lot so that the majority of the approximately 100-foot high seacliff under the parking lot exposes marine terrace deposits, but to the north and south the majority of the seacliff is composed of mudstone bedrock.

The geologic significance of this condition is that the parking lot is underlain by highly erodible marine terrace deposits. A positive factor is that mudstone bedrock forms the lower approximately 10 feet of the 100-foot high seacliff at the parking area. This bedrock, at the base of the seacliff, is acting to reduce the rate of erosion of the marine terrace deposits.

Five sets of stereoscopic aerial photographs were examined to evaluate coastal bluff retreat rates at the parking lot site. Comparison of the 1948 and 1985 photos provides a visual comparison of the marine terrace at the site, and the terrace does not appear to have decreased appreciably in size. Detailed measurements from these photos indicates that over the 40 years covered by the photos (1948-present), there has been very little detectable retreat of the coastal bluff at the parking lot site.

This is not to say that a large section of the coastal bluff will not fail during an intense winter storm. High tides in combination with severe storm conditions can generate rapid, episodic erosion of seacliffs. It would not be surprising to experience failure of a five- to 15- foot wide section of the seacliff.

Runoff from about 350 to 400 feet of Highway 1 currently flows off the highway and onto the marine terrace surface where the parking lot is planned. This runoff then flows along Highway 1 and down the existing trail to the beach. This runoff is eroding a small portion of the Highway 1 fillslope, but erosion along the trail does not appear to be extensive as yet.

In addition to the runoff from Highway 1, some runoff from the terrace surface drains through this trail. Not much runoff appears to flow off the terrace surface because it is very soft and permeable. Most of the runoff comes from about 350 to 400 lineal feet of Highway 1. Construction of a parking lot here would generate substantially more runoff than presently

occurs, and all of this runoff would flow down the existing trail unless an alternate drainage system is designed and constructed.

Uncontrolled runoff down the trail would probably lead to excessive, and potentially rapid, erosion of the trail. The trail borders the base of the fillslope for Highway 1. Excessive erosion in this area could lead to undermining of a portion of the Highway 1 fillslope and could lead to failure of a portion of the highway.

There is already a crude, yet usable, trail where the General Plan proposes to construct the trail from the proposed northern Scott Creek parking lot to the beach. Drainage would flow down this trail if alternate provisions are not made. If an alternate drainage system becomes plugged and runoff flows down the proposed trail, it could eventually cause severe erosion of the trail from the parking lot to the beach. Maintenance of this drainage system during storms could be very difficult, and this is when blockage typically could occur.

The bottom 20 feet of the trail traverses across large riprap boulders that are used to protect Highway 1 from erosion by Scott Creek and the ocean. These boulders are potentially unstable if undermined by coastal erosion of beach sand. This could result in unsafe conditions for pedestrians.

It would be very difficult to improve the lower part of this trail so that it can be used by the general public as a "safe" means of reaching the beach. Potential shifting boulders would render it extremely difficult to construct any permanent form of safe trail across the riprap boulders without construction of reinforced concrete steps along the lower part.

A combination of creek flow and wave runup affect the lower portion of this trail. Analysis of time sequential stereoscopic aerial photographs indicates that Scott Creek frequently flows northward along the base of the rip-rap and the adjacent bluff. Under the December 1988 conditions, wave runup was observed to flow up the Scott Creek channel and impact the lower part of the area proposed for the trail with significant force.

A sand bar forms across Scott Creek when the creek flows to the north rather than flowing straight across the beach. The sand bar is a transitory feature that is typically removed during highflow periods on Scott Creek and by the ocean during winter months. Buildup of this bar occurs during spring months, and the bar usually remains until the next winter rains erode it away.

The sand bar is a natural feature that forms every year. When the sand bar is in place, it provides a safe and dry means of crossing Scott Creek from the proposed 30-car parking lot. Artificial breaching of this sand bar would remove this pathway. Information is not available to determine if the sand bar was breached how fast it would re-establish itself by natural processes.

The trail from the proposed 30-vehicle parking lot leads to the spot on the beach where the sand bar is most sensitive to breaching. Here, the sand bar is typically the lowest and narrowest of any other location along Scott Creek Beach. Presently, only surfers and other beach users accustomed to crossing flowing creeks on loose sand use this trail to reach the beach. The crude nature of the pathway renders it generally unusable for families and others who would prefer not

to negotiate this trail. If a structural stairway was constructed from the proposed 30-vehicle parking lot to the beach, many more people would use this pathway to the beach, and foot traffic across the sand bar would greatly increase. Due to the potential for increased use, the probability becomes much higher that the sand bar would be breached by beach-goers.

An attempt to stop artificial breaching could involve the installation of signs at the trail head and on the beach informing people that it is inappropriate to breach the sand bar and explain the reasons for trying to preserve the sand bar. The signs on the beach would probably have to be moved occasionally to prevent their burial by blowing sand. A temporary wire-picket fence could be installed on the beach to force people to walk over the sand bar rather than stop and excavate it. Such a fence would also keep foot traffic in a predetermined line across the bar, but concentrated foot traffic could have adverse affects on the stability of the sand bar. The fence would probably have to be moved occasionally to prevent its burial by blowing sand. It is likely that the fence would probably become buried and rendered unretrievable by blowing sand at some point, so it should be considered an expendable item. If the fence is buried by sand or if it is not removed before the creek naturally breaches, it would be drawn into the surf when erosion and removal of the sand bar occurs during the winter. Then the fence becomes a piece of flotsam in the surf zone, which poses additional hazards to surfers and beach goers. It is unfeasible to physically prevent artificially breaching of the sand bar by fencing, etc.

In summary, the 30-vehicle parking lot and associated trail to Scott Creek beach are subject to the most geologic, hydrologic, and oceanographic constraints of any improvements proposed in the General Plan. Implementation of the proposed parking lot and associated trail would result in a significant adverse environmental impact.

Pedestrian Bridge Over Scott Creek

This proposed bridge is located at the existing concrete automobile bridge on Highway 1. The potential geologic hazards of coastal erosion and flooding at the proposed bridge site can be mitigated by structurally anchoring the proposed boardwalk bridge to the existing concrete bridge. A structural engineer should prepare this design.

If another option is chosen, a soils engineer should evaluate and design the necessary foundation elements for the pedestrian bridge in a manner that will prevent them from being undermined or damage by flooding from the creek or the ocean.

110-Vehicle Parking Lot and Trail

This proposed parking lot is located in an old railroad cut on the south side of Highway 1 between the roadway and adjacent agricultural field. There are presently no railroad tracks in this old alignment. The old railroad bed is presently about 30 feet wide with approximately 25-foot high cutslopes inclined 45 to 60 degrees on the east and west sides. The cutslopes along the east and west sides of this old railroad cut have been in place for over 60 years; they are visible in 1928 aerial photographs which are the earliest photos that were available for review for this EIR.

Earth materials exposed in the cutslopes appear to consist of marine terrace deposits that are composed chiefly of angular clasts of mudstone surrounded by clay sandy silt. These materials appear to be clast supported with little matrix material. Due to the dense vegetative cover, it could not determined whether the lower portions of the cutslopes were graded into Santa Cruz Mudstone bedrock. There is no change in gradient in the cutslopes that would suggest a change in erodibility which would be likely if bedrock was present in the cutslopes.

Although the proposed parking lot would sit within the old railroad alignment, an extensive amount of grading would be required to widen and accommodate the proposed design. The slope on the east side would have to be cut back about 30 to 35 feet horizontally in order to establish the approximately 68-foot width necessary to accommodate the proposed amount of parking. Because the existing cutslopes have been stable for at least 60 years at a relatively steep angle (45 to 60 degrees), there is no geological reason to assume that the proposed cutslope would not be stable in this same configuration. However, grading the cutslope to this steep angle may result in ravelling (periodic thin, less than six-inch, failure of the surficial material by individual grains or clasts) which would be undesirable in a parking lot situation.

The existing old railroad cut currently drains to the north. The sources of surface water that enters this area include rainfall and seepage from a closed depression located on the coast side of Highway 1 immediately south of the proposed entrance road to the parking lot. Presently, water ponds in this closed depression during and after rainfall, and some of this water seeps through the slope on the north side of the depression into the old railroad cut. No road runoff is directed into this depression from Highway 1, and it appears that the agricultural fields drain towards the coast. Therefore, there is not an extensive amount of drainage that collects in this depression.

It appears that grading the proposed entrance road to the parking lot would block drainage from the adjacent closed depression. Water seeping under the access road from the closed depression would cause excessive saturation of the materials underlying the roadbed, and this could lead to erosion or settlement of the roadbed.

As with the 30-vehicle parking lot at the north end of Scott Creek Beach, there is a concern regarding the methods available to prevent artificial breaching of the sand bar that blocks Molino Creek at the base of the trail to the beach. Installing signs that explain the reasons for preserving the sand bar may be the most practical way to prevent breaching of the sand bar. If people know that there is a practical and biological reason for preserving the sand bar, they may allow it to survive. The "semi-portable" log bridge might effectively reduce the probability of erosion from pedestrians. If this bridge is used, it must be founded in such a manner that safety hazards do not result from potential undermining from creek scour. This bridge would have to be removed in the fall and replaced in the spring.

The trail to the beach from the proposed parking lot appears to be presently stable and quite passable. There appears to be no geologic hazards associated with continued use and maintenance of this trail.

4.2.2 DAVENPORT LANDING BEACH

The proposed improvements at Davenport Landing Beach consist of installation of about 90 parking spaces, a sanitary facility, and installation of five fire pits on the beach.

Proposed 70 Parking Spaces

There are 70 proposed parking spaces located on both sides of Davenport Landing Road north of the beach. There is an approximately 20-foot high, near vertical cut slope in highly fractured Santa Cruz Mudstone along the coast side of the Davenport Landing Road in much of the area shown for the 70 parking spaces. Mudstone bedrock is exposed to the top of the cut, and it is overhung in places. Large, potentially damaging blocks of mudstone should be expected to fall from this cutslope during its lifetime. The property line of Coast Dairies and Land Company property is located about 10 feet behind the top of this cut in places, so it does not appear likely that the cut can be laid back at a sufficiently gentle angle to completely mitigate the hazard posed by falling blocks of mudstone, without permission of the Coast Dairies owners.

This cutslope is a potential source for large boulders of mudstone to roll down onto the roadway. If a falling boulder were to hit a parked car or a person, significant damage or injury could occur due to the potential size of some of the blocks.

Drainage From Davenport Landing Road

Severe erosion has occurred in the fill on the coastside of Davenport Landing Road at the culvert crossing. This erosion is due entirely to uncontrolled runoff from Davenport Landing Road to the north and has nearly undermined Davenport Landing Road.

There is a 42-inch diameter steel culvert that flows under Davenport Landing Road at this location. The entrance to this culvert is fully open, but there is dense vegetation (poison oak, berry vines, etc.) growing around it. This vegetation indicates that erosion is not taking place on the upstream side of the road. Furthermore, this condition strongly suggests that the culvert is not undersized. However, determination of whether this culvert is designed to accommodate all potential flow volumes is beyond the scope of this EIR. During recent high rainfall periods, (the January 1982 rainstorm, the 1982-83 high rainfall year, and the February 1986 week long rainstorm) the culvert apparently operated without plugging or showing signs that it is undersized.

The downstream end of this culvert is protected by two poorly placed concrete slabs which presumably were designed to keep the road fill from plugging the culvert. Even with these slabs in place, sediment has partially filled the culvert pipe and reduced its effective diameter.

Proposed 20 Parking Spaces

The 20 parking spaces appear feasible from a geologic standpoint. Mudstone bedrock should be encountered at relatively shallow depth, and four- to seven-foot high, near vertical cutslopes are presently stable near this area.

Care should be taken to ensure that no damage is done to the existing large volume water line that feeds Silverking Oceanic Farms. This line is located near the east end of the proposed parking area.

Proposed Fire Rings

There are five fire rings proposed for the sand beach at Davenport Landing. These pits would be subjected to surf, wind driven sand, and other hazards involved in the beach environment.

4.2.2 PANTHER BEACH

From a geologic standpoint, this beach and parking area were in the best condition of any of the six beaches studied.

The parking area is covered with base rock, and drainage occurs to the south. There is a minor erosion gully where concentrated drainage flows, but this has cut down to mudstone bedrock and does not appear to be actively eroding at a rate that will generate problems.

The proposed staircase is located in a natural walkway location. Installation of a staircase here would greatly reduce erosion along the existing path. At least the lower 30 feet of the staircase should be constructed of reinforced concrete to mitigate the hazards of ocean wave runup damaging the stairs.

4.2.4 BONNY DOON BEACH

Impacts at Bonny Doon beach include 1) blowing sand in the parking lot, 2) stairways from the lot to the railroad tracks, 3) construction of structural stairs to the beach, 4) grading at the southern end to widen the existing lot, and 5) placement of fill along the east and west sides of Highway 1 to widen the roadway for a northbound turning lane onto Bonny Doon Road and a deceleration lane for entrance to the proposed parking lot.

Blowing Sand in Parking Lot

The south end of the parking lot is presently overlain with loose, wind blown sand that renders parking very difficult in this portion of the parking area. It is uncertain how much sand blows over the railroad tracks and into the parking area and how long it has taken for the existing sand to accumulate in the parking lot. It is understood that personnel from the Southern Pacific Railroad (SPRR) remove sand from the railroad tracks about once every year or two, however,

records of this are not kept.[2] Some of the existing sand is from erosion of the slopes along the edge of the parking lot. This erosion has increased due to pedestrian traffic across the slope.

Stairways From Parking Lot to Railroad

There are two proposed structural stairways that lead from the parking lot to the railroad tracks above. These stairways are necessary to reduce erosion of the fillslope that borders the railroad tracks. Presently, erosion due beach-goers using this area has created significant depressions in this fillslope in numerous locations. The erosion in two of these depressions has come within one to three feet of the existing railroad ties that support the tracks. SPRR has indicated that it has had to use heavy equipment to move large rocks and earth into these depressions in an attempt to prevent beach users from continuing to use them.[3] SPRR considers this situation a critical hazard to the safe operation of the railroad line.

The proposed parking lot is about 900 feet long. If stairways are located only at each end of the lot, people would most likely continue to use the existing pathways because of the long walk from the center of the lot. If the existing pathways are continued to be used as access ways to the beach, erosion of the fillslope for the railroad tracks will continue to occur, and the tracks will eventually be undermined.

Structural Stairway to the Beach

The structural stairway to the beach would be founded on Santa Cruz Mudstone bedrock. This rock is hard yet very highly fractured. Beds in this section of the mudstone average about 12 inches thick and are very gently dipping towards the ocean. Design and construction of the stairway should take into account the highly fractured nature of the bedrock.

The stairway would be located adjacent to a natural drainage path. This drainage course carries runoff that ponds on the railroad alignment due to existing improper grading and resulting negative drainage conditions. The water drains from this pond through the subsurface and emerges as surface flow about 40- to 50-feet below the railroad bed. This emerging surface flow has completely eroded the approximately four- to six-foot thick cover of soil and colluvium from on top of the bedrock.

If the ponding water is not eliminated from the railroad bed above the proposed stairway, it is possible that the excessive saturation and subsurface flow in this area could generate a landslide of the soil and colluvium that overlies the bedrock.

The lower most section of the stairway is located on the sandy back beach. This area is susceptible to ocean wave action during extremely high tides and severe winter storm conditions.

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2 Foxx, Nielsen and Associates conversation with Mr. Jerry Casteaneda, Southern Pacific Railroad, March 1989.

3 Ibid.

The base of the stairway should be founded into mudstone bedrock below sand level to mitigate undermining of the stairway foundation by extreme ocean wave runup that cause erosion of the sand.

Grading

The southern end of the existing parking lot must be widened in order to accommodate the proposed parking lot. This would involve cutting back the existing cutslope, which is about 25 to 30 feet high and nearly vertical. The cutslope exposes mudstone bedrock for its entire height, and grading of this bedrock should not affect the stability of the existing railroad tracks located above this site.

However, a potential problem associated with this cutslope location would be ravelling or rocks falling from the new cutslope. The present cutslope has weathered for many years so that no rocks presently fall from it. Due to the closeness of the railroad tracks to this location, it would probably be difficult to recline this cut very much.

Road Widening

It is proposed that Highway 1 be widened to accommodate turning lanes from both the south and north and for a deceleration lane from the north for entrance to the parking lot.

Widening of the northbound lane would require placement of fill on the slope bordering the east side of the highway. The slope in this area is presently composed of fill from construction of the highway.

The presence of the entrance to an eight foot diameter tunnel, in which Liddell Creek flows under Highway 1, is a critical factor that will affect the placement of fill on the east side of the highway. This tunnel entrance has been in its present location since 1940 based on the date on the concrete abutment of this tunnel. The creek flows parallel to Highway 1 for a distance of about 50 feet before entering the tunnel which is angled so that it discharges about 15 feet south of the proposed structural stairway to the beach at the north end of Bonny Doon Beach.

On the west side of Highway 1 at the north end of Bonny Doon Beach, there is an existing approximately 10 to 15 foot deep swale that extends about 80 to 100 feet from the northern end of the existing parking lot. Drainage from the existing parking lot and from Highway 1 north of this site flows into this swale. There is an existing concrete drop box at the bottom of this swale, and a steel culvert pipe connects this drain to the Liddell Creek tunnel that extends under Highway 1.

The General Plan indicates that this swale would be filled in entirely to accommodate the entrance station and trash containers for the proposed parking lot.

The General Plan appears to indicate that the existing cutslope on the west side of Highway 1 north of the existing Bonny Doon parking lot would be cut back no more than 10 feet to accommodate the deceleration and entrance lane for southbound traffic. This cutslope is

composed of mudstone bedrock, and there would be no geologic problem associated with cutting this slope back a short distance.

The General Plan indicates that the north side of the Bonny Doon/Highway 1 intersection would be widened slightly. Although there is an existing swale here, there would not be any geologic problem associated with widening the road 10 feet as proposed.

4.2.5 YELLOWBANK BEACH

Potentially adverse drainage in the parking lot, along the existing railroad, and along the proposed trail to the beach are the only potentially adverse conditions at Yellowbank Beach.

Parking Lot Drainage

The parking lot presently drains to the north. There is a two- to three-foot deep gully along the center of the parking area. This gully cannot be crossed by vehicles due to its steep sides and depth. Because mudstone bedrock appears at relatively shallow depth here, extensive erosion is not occurring in the drainage gully.

Erosion Gully from Railroad Grade Runoff

Presently, runoff from the west side of the railroad tracks flows north past the proposed trail to the beach and discharges down the steep slope to the beach. This runoff has generated an approximately 15-foot wide, five to 10 foot deep erosional gully on the slope leading to the beach. This gully discharges onto the beach at the foot of the proposed trail to the beach. Continued, uncontrolled flow of this runoff from the railroad grade will continue to erode the edge of the railroad grade and could result in undermining of the railroad tracks. The resulting erosion also leads to deposition of debris at the foot of the trail to the beach and will probably require periodic clearing of the trail.

Structural Stairway to the Beach

The trail to the beach is situated in a natural drainage swale. No gullying is present in this swale due to the small volume of water that flows in it during and shortly after significant rainfall.

Construction of the structural stairway should take into account the natural drainage that will flow along the stairway alignment. The volume of flow will probably be very small but could generate erosion around the stairway, depending on the type of foundation used.

4.2.6 LAGUNA CREEK BEACH

The areas of concern at Laguna Creek include the cutslope at the back side of the parking lot, drainage from the parking lot, and the proposed structural staircase to the beach.

Parking Lot Expansion

The approximately 20-foot high cutslope at the back of the existing parking lot exposes mudstone bedrock to its top, and it is laid back at about a 1-1/2:1 angle. This cutslope gradient has effectively mitigated ravelling of mudstone boulders that could damage vehicles parked in the lot.

The proposed expansion of the parking lot would require further cutting back of the hillside behind the lot. There is an old roadcut behind the existing cutslope such that when the cutslope is graded back, the resulting cutslope would be about half as high as the existing cut.

Drainage from the existing and proposed parking lots is directed into an existing 20-inch diameter culvert located at the corner of Highway 1 and Laguna Road. This culvert extends under Highway 1 and discharges into a natural drainage course on the coast side of Highway 1.

Structural Stairway to the Beach

The existing trail to Laguna Creek Beach is underlain by soil over the last several hundred feet to the beach. This soil becomes muddy after rainstorms and is undoubtedly subject to some erosion during the year. The trail is not incised into the ground surface indicating that the rate of erosion is not great. The upper portion of this trail exposes mudstone bedrock, and this area does not appear to be subject to adverse erosion.

The proposed expansion of the Laguna Creek parking lot will result in greater foot traffic along this trail. An evaluation of whether this increased foot traffic would significantly increase erosion along this trail is difficult since no data to measure the rate of erosion is available. Based on field observations, there is no evidence that concentrated surface runoff flows down this trail. Other than the fact that the trail is devoid of any vegetation, compared to the densely vegetated adjacent agricultural field and land, there was no indication that significant erosion is occurring here.

The proposed structural stairway to the beach is located on an approximately 10-foot high, near vertical section of the mudstone bedrock. Bedding planes are gently inclined towards the ocean. Based on observations at the beach this stairway is both unnecessary and situated in a vulnerable location. First, there is a natural, gentle sloping trail about 100 feet to the south around the bedrock cliff crossed by the proposed stairway. This trail is presently used by beach-goers for access to Laguna Creek Beach, and it is a safe means of walking to the beach.

For people to reach the beach from the coast end of this trail they must negotiate a short slope (about 50 feet long and 8 feet down) that leads to a mudstone bedrock platform which forms the back beach here. Construction of a structural stairway here would allow for much easier access to the beach.

More importantly, construction of the stairway in the proposed location would allow people to enter the beach at dangerous times of high tides and/or high surf. Presently, high surf conditions keep people away from the northern portion of Laguna Creek Beach when conditions are

unfavorable. A gently sloping bedrock surface forms the "beach" between the natural access point and the proposed stairway. When wave conditions are adverse for access to the beach, people cannot walk on this bedrock surface because it is both slippery and subject to wave inundation.

If the stairway is constructed, it would allow people to access the relatively small northern portion of Laguna Creek Beach. But waves regularly run up into the natural drainage mouth that is present at the stairway. So construction of the stairway would establish an access to the beach when conditions there could be quite dangerous and wave runup would probably damage the stairway due to its exposed location.

4.3 GEOLOGY AND SOILS -- MITIGATION MEASURES

4.3.1 SCOTT CREEK

30-Vehicle Parking Lot and Trail

Mitigation of geologic hazards at the parking lot site would involve setting the edge of the parking lot back 30 feet from the present edge of the terrace surface along the coastal side, and constructing a fence around the parking lot.[4] Several signs should display the imminent hazard of cliff instability and undermining on the ocean side of the proposed parking lot fence. Examples of similar signs can be found along West Cliff Drive in the City of Santa Cruz where numerous people have been washed into the ocean while standing too close to the edge of the coastal bluff.

A reinforced concrete stairway founded on bedrock would be required to withstand wave forces, beach scour, creek flooding, and rip-rap instability at the end of the trail from the parking lot to the beach. During some portions of the year, this stairway may terminate in the flow channel of Scott Creek.

Mitigation of the potential runoff problem should involve: (1) repair of the berm along the west side of Highway 1 and installing a new drop box-culvert pipe on Highway 1 south of the parking area, and (2) controlling runoff from the proposed parking lot. The asphalt berm along the west side of Highway 1 should be repaired so that road runoff flows past the proposed parking area. A new drop box-culvert pipe system must be constructed south of the parking lot and a culvert pipe extended to Scott Creek at the base of the Highway 1 fillslope to mitigate erosion of the highway fillslope.

Future runoff from the proposed parking lot would have to be controlled to mitigate erosion of the trail to the beach. A dropbox-culvert pipe drain system should be installed at the top of the trail where the trail meets the parking lot. The culvert pipe should be extended downslope to

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4 The LCP recommends in general a 50-foot setback for all new development proposals on a coastal bluff but in no case shall the setback be reduced to less than 25 feet.

Scott Creek and discharge o the rip-rap. A silt and grease trap should be installed at the parking lot to minimize potential contamination of Scott Creek. Extending the pipe downslope to the beach would mean either running it down the trail underground, or supporting the pipe along the west side of the trail. Supporting the pipe along the west side of the trail will require the services of a drainage or structural engineer. Locating the pipe underground would, however, have less visual impact, and is more desirable.

Mitigation of the Scott Creek, Highway 1, and parking lot drainage problem would require calculation of the expected runoff and proper sizing of the culvert pipes.

Although implementation of these mitigation measures would reduce the environmental impacts they would not reduce the impacts to levels of less than a significant impact. Elimination of the proposed 30-vehicle parking lot and stairway would eliminate the impact.

Pedestrian Bridge over Scott Creek

The potential geologic hazards of coastal erosion and flooding at the proposed bridge site can be mitigated by structurally anchoring the proposed boardwalk bridge to the existing concrete bridge. A structural engineer should prepare this design.

If another option is chosen, a soils engineer should evaluate and design the necessary foundation elements for the pedestrian bridge in a manner that would prevent them from being undermined or damage by flooding from the creek or the ocean.

110-Vehicle Parking Lot and Trail

The proposed cutslope on the east side of the 110-vehicle parking lot should be reclined to a 1:1 gradient. If a steeper gradient is necessary (the southern end of the proposed lot comes close to the edge of Highway 1), then a soils engineer should examine the earth materials and provide grading criteria prior to initiation of earth moving.

In light of the fact that the existing trail appears to have been in its present location for many years without showing signs of failure or deterioration, use of the existing trail would be a better option than disturbing the slopes to create a new trail.

Seepage from the closed depression south of the proposed access road to the parking lot would cause excessive saturation of the materials under the access road. To mitigate this adverse situation, the existing earth materials in this area should be excavated to the level of the parking lot and replaced with an engineered fill designed by a registered soils engineer. A subdrain should be installed under the fill to provide drainage for subsurface flow and seepage from the closed depression. This subdrain should discharge into the surface drainage system that will have to be established in the parking lot.

A positive drainage system must be constructed in the parking lot to prevent flooding. The lot presently drains to the north east corner of the existing railroad cut, and this is the best location to direct surface drainage from the proposed parking lot. Proper grading of the parking lot will

be required so that runoff can be collected at the north end of the lot. Here, a drop box-culvert pipe system should be installed to collect parking lot runoff and convey it down to the base of the vegetated slopes north of the lot.

4.3.2 DAVENPORT LANDING BEACH

Proposed 70 Parking Spaces

Mitigation of the falling rock hazard can be accomplished by establishing parking only on the inland side of Davenport Landing Road rather than along the coastal side as proposed. The existing cutslope can be graded back to widen the road and eliminate the overhung sections. The roadbed should be moved towards the coast, and diagonal (side-by-side) parking installed along the inland side of Davenport Landing Road. This would be a much safer option than trying to park cars along the high, steep cutslope present there today.

If it is decided that it is necessary to park cars along the coast side of Davenport Landing Road north of the beach access, then a detailed study of the stability of this cutslope should be conducted with emphasis placed on evaluation of measures to mitigate falling blocks of mudstone.

Drainage from Davenport Landing Road

To mitigate failure of Davenport Landing Road at the culvert crossing, engineered fill designed and inspected by a registered soils engineer must be placed on the coast side of the road way to reestablish the fill embankment eroded by uncontrolled flow from Davenport Landing Road.

Mitigation of continued erosion of road fill at the culvert crossing must involve the installation of a drop box-drain pipe system to collect road runoff from Davenport Landing Road north of the culvert location and convey it in a culvert pipe to the natural drainage course which is located about 30 feet below the roadbed. It would be possible to bury this culvert pipe under new fill which must be placed on the coast side of the road to reestablish support for the road bed.

To mitigate plugging of the discharge end of the 42-inch culvert pipe, the culvert pipe should be extended beyond the base of the fill that must be replaced here. The project soils engineer should evaluate the necessary length of this pipe extension, and it should be installed before any new fill is installed on the coast side of the road at the culvert crossing.

Proposed Fire Rings

As discussed in the General Plan the fire rings would need to be removed from the beach each fall and replaced each spring.

4.3.3 PANTHER BEACH

At least the lower 30 feet of the proposed staircase should be constructed of reinforced concrete to mitigate the hazards of ocean wave runup damaging the stairs.

4.3.4 BONNY DOON BEACH

Blowing Sand in Parking Lot

The impact of blowing sand can be reduced if the fences that are proposed on the coast side of the railroad tracks are constructed of wood slats in chain link type fencing (for example "snow fencing"). This type of fencing "catches" blowing sand and should reduce the migration of sand across the railroad tracks. Contingency plans must be made to either raise the fencing as sand builds up on the coast side or add new fencing as the fencing is buried by the sand accumulating against its coastal side.

Grading

To prevent possible damage to parked vehicles from falling rocks, a fence should be installed along the base of the cut and be designed to prevent falling rocks from hitting parked cars. An engineer with experience in such designs should be involved in the design phase of this proposed cutslope.

Stairways from Parking Lot to Railroad

Three stairways, in place of the two proposed stairways, should be constructed from the parking lot to the railroad tracks to mitigate future erosion hazards at the site. The parking lot is about 900 feet long. If stairways are located only at each end of the lot, people may choose to continue to use the existing pathways because of the long walk from the center of the lot. It is recommended that the third stairway be constructed approximately midway between the other two proposed stairways.

Structural Stairway to the Beach

Design and construction of the structural stairway to the beach should take into account the highly fractured nature of the bedrock. The bedrock is highly fractured with major fracture planes generally spaced between four and 12 inches apart, but there are areas where the bedrock is shattered into small pieces. Spalling (the breaking off of the shattered surficial bedrock) of the bedrock will remove support for any footings placed on top ofthe bedrock, so the footings for the stairway must be carefully excavated into the bedrock and not simply placed on the bedrock. Maintenance of this stairway must involve a periodic inspection program to identify and repair footings that become undermined.

Mitigation of the ponding water on the railroad alignment can be accomplished by minor grading in this area to create gravity flow to the southeast. Surface flow should be directed down the natural drainage path in this area.

The base of the lower most section of the stairway should be founded into mudstone bedrock below sand level to mitigate undermining of the stairway foundation by extreme winter storms that cause erosion of the sand.

Widening of Highway 1

All vegetation must be removed prior to the emplacement of fill on the east side of Highway 1 south of Bonny Doon Road.

Because the existing slope here is composed of fill, a registered soils engineer should: 1) test this material to determine its ability to accept the additional load of new fill, and 2) provide design criteria for the new fill and inspect its installation.

When fill is placed along the east side of Highway 1 to widen the road, the fill must not be allowed to cascade over the tunnel abutment because it could partially block the entrance. The tunnel must be extended through the new fill.

A registered soils engineer must provide design criteria and oversee the installation of fill that will be placed in the swale at the north end of Bonny Doon Beach parking lot.

The existing concrete drop box in the bottom of this swale must be extended upward to rise out of the fill which will be placed in this swale. Steel ladder rungs must be installed in the dropbox to allow access to the bottom of the drop box for removal of debris that will collect and obstruct the culvert opening. A locking steel grate must be installed on this drop box to prevent access by unauthorized personnel because this drop box will be about 20 vertical feet deep.

4.3.5 YELLOWBANK BEACH

Parking Lot Drainage

Mitigation of parking lot drainage should involve grading of the lot to establish a central, asphalt lined ditch that discharges at the north end of the parking lot. At the discharge point, drainage could be allowed to flow over the well vegetated slope, but adverse erosion may occur as a result of concentrated flow. Installation of a drop box-culvert pipe system to collect runoff and convey it to the natural drainage basin north of the parking lot would mitigate potential erosion on this slope.

At the discharge point, adverse erosion will probably occur as a result of concentrated flow, installation of a rock energy dissipater at the discharge point would mitigate the potential for increased erosion in the natural drainage.

Railroad Grade Erosion Gully

In its present form, the erosional gully that has been generated by this uncontrolled runoff can be used to correct the erosion problem. A drop box'culvert pipe system could easily be installed here. The culvert pipe could be extended inside the gully to the base of the steep slope at the back beach. Then, the culvert pipe could be buried and the gully filled in. This would both remove the unsightly gully and provide earth to support vegetation. The lower 50 feet of the culvert pipe should be curved to the north so that the runoff discharges onto the naturally vegetated back beach where there is a small depression which could act as a holding area for the runoff.

Water discharging from this culvert pipe will have much more erosive energy than the runoff that presently flows down the gully, so it is imperative that an effective energy dissipater be constructed at the discharge point to mitigate erosion of vegetation and sand on the back beach. The energy dissipater should consist of large rocks placed at the discharge point on the back beach. A drainage engineer should design and oversee the installation of this culvert system and energy dissipater. It is possible that these rocks may settle if they are not founded on bedrock, therefore, they should either be founded on bedrock or maintance plans should be prepared to periodically check the energy dissipater and repair it as needed.

Structural Stairway to the Beach

A solution to the potential erosion condition here would be to construct a wooden stairway supported with piles that would allow runoff to flow under the stairway.

The stairway should terminate on soil and colluvium at a point that is well back from the sandy beach to mitigate possible damage to the stairway from large winter storm waves.

4.3.6 LAGUNA CREEK BEACH

Parking Lot Expansion

The proposed cutslope of the hillside behind the parking lot should be laid back at a gradient of about 1-1/2:1 to mitigate ravelling of mudstone boulders.

A civil engineer should determine whether the existing 20-inch diameter culvert located at the corner of Highway 1 and Laguna Road is properly sized to accommodate the increased runoff from the expanded parking lot.

Structural Stairway to the Beach

The proposed structural staircase to Laguna Creek Beach should be deleted from the proposed improvements.

Alternatively, a rough surfaced concrete ramp could be constructed along the route of the existing trail.

Signs must be posted at the head of the beach trails at Highway 1 that clearly state that conditions at Laguna Creek Beach can be extremely severe and hazardous at times, particularly during storms and periods of high surf. These signs must be printed in both English and Spanish.

4.4 VEGETATION AND WILDLIFE -- THE SETTING

4.4.1 VEGETATION

Vegetation types occurring in the program area are typical of coastal, hydrologically, or human-influenced environments. Seven plant communities were identified within the boundaries of the six beaches considered in the General Plan for the North Coast Beaches (the General Plan). These community types are coastal scrub, coastal bluff scrub, coastal dunes, coastal cliffs, riparian, brackish marsh/lagoon, and ruderal. The ruderal community includes fallow agriculture fields. The locations of each of these community types are shown on Maps 2 through 6 contained in the General Plan.

The northern coast of Santa Cruz County is characterized by even-terrained uplifted terraces separated from the Pacific Ocean by steep bluffs. In general, the beach areas occur where the terrace is dissected by stream drainages. The diverse topographic character of the landscape combined with the diverse harsh environmental factors (i.e., salt spray, high winds, rock fall, fog) results in plant communities specifically adapted for coastal areas. Major drainages at Scott Creek Beach and Laguna Creek Beach have resulted in the creation of backwater areas behind foredunes and beaches that support lagoons, marshes, and other wetland communities. Both these streams support a well-developed wooded riparian community on their upper reaches predominantly east of Highway 1. The cliff areas and hardrock terraces support low growing, wind pruned perennial herb and shrub dominated communities. The wider, flatter terraces have been converted to rotated cropland. Those lands previously supporting agriculture and areas adjacent to access roads and existing dirt parking areas support ruderal (disturbed) vegetation. Low cliff slope areas at the prevailing windward end of the beaches at Scott Creek, Bonny Doon, and to a lesser extent Laguna Creek beach support active and stabilized coastal dune communities.

The structure, physiography and composition of the seven community types observed within the program area are described below. Common names of plants used in these descriptions follow those listed in Appendix A of the General Plan.

Coastal Scrub

This community type is characterized by a dense, often impenetrable stand of woody shrubs and subshrubs on the bluff tops and rocky back slopes within each beach unit. Vegetation structure often takes on the even appearance of a pruned hedge. Plant composition varies from stand to stand based on the types, extent and recentness of disturbance. More disturbed sites support larger densities of coyote brush, yellow bush lupine, poison oak, and blackberry. Less disturbed or undisturbed sites support greater plant diversity along with a prominence of lizard tail, California sage, and assorted herbs including seaside paint, common yarrow, common aster, California bee plant, and cudweeds.

Coastal Bluff Scrub

This vegetation type is a moderate to dense, low growing perennial herb and subshrub dominated community occurring closer to the ocean bluffs on north and west-facing slopes. Coastal bluff scrub is best developed on thin, fractured mudstone substrates. Common plant species include live-forever, seaside daisy, seaside plantain, sea pink, beach strawberry, buckwheat, annual lupines and several perennial and annual grasses. Two California Native Plant Society rare and endangered plant species (purple-flowered piperia and Blasdale's bent grass) were observed in this community type during the field surveys conducted as part of the preparation of the General Plan.

Coastal Dunes

The dune communities are not well developed in the program area and have been highly disturbed by recent and past activities. The two most prominent dune areas are at the south ends of Scott Creek and Bonny Doon Beaches. These are characterized by an unstablized surface layer of sand over a stabilized mud- and sandstone derived slope. Due to frequent impacts from off-road vehicles (ORVs), foot traffic, and historical agricultural influences these habitats are generally lacking in significant vegetation cover. Stabilized portions of these dune communities support low growing flowering perennial herbs and grasses. Common species include yellow sand verbena, pink sand verbena, beach bur, sea rocket, silky beach pea, and american dune grass. Stabilized, previously disturbed sites often support dense monotypic stands of sea fig and hottentot fig.

Coastal Cliffs

Vegetation development on the banks of the steep cliffs above the surf line is typically marginal and limited primarily to protected ledges and crevices watered by springs and surface runoff down the cliff face. These "hanging gardens" support pockets of perennial herbs and ferns also found in the coastal bluff scrub above. Common plant species observed in this community include seaside daisy, live-forever, coastal monkey flower, seaside plantain, large-flowered sand spurry, and California polypody.

Riparian

The riparian community is characterized by a tree-dominated, azonal band of woodland vegetation along the banks of perennial streams that drain into the ocean. In the program area this community is best developed along the upper reaches of Scott Creek, Davenport Landing Creek, Liddell Creek, and Laguna Creek. Characteristic trees include red alder, coast live oak, California buckeye, arroyo willow, and sub-tree sized red elderberry. Several shrub and herb species occur in the understory including poison oak, California coffeeberry, blackberry, flowering currant, hedge nettle, coast iris, and common vetch. Disturbed sections and sections close to agriculture fields often include stands of non-native wattle and thick climbing carpets of

german ivy. The latter species is particularly prominent in the Davenport Landing Creek and Laguna Creek drainages.

Brackish Marsh/Lagoon

This community is best developed at Scott Creek and Laguna Creek Beaches. The brackish marsh community is characterized by dense stands of grass-like plants and brackish soil and submergence adapted herb species. The marsh is a mosaic of vegetation types ordered on a gradient of flooding and lengths of annual inundation. Those areas where standing waters occur over seven months of the year support dense stands of cat-tail and rush around the waters edge. Areas flooded for shorter periods support various stands of pickleweed, salt grass, slough sedge, and dock species. The pattern and composition is also influenced by soil salinity.

Ruderal

This community type is characterized by sites that have been modified or receive continued disturbance. These are typically areas along road sides and parking areas, fallow agriculture fields, and old building sites. Common plants species are typically non-native, weedy annual herbs and grasses. Species indicative of this community in the coastal zone include poison hemlock, sweet fennel, bristly ox-tongue, star thistle, field mustard, English plantain, ripgut brome, soft chess, and farmer's foxtail.

4.4.2 SENSITIVE HABITATS

These are defined by the County of Santa Cruz as "any area in which a plant or animal species or its habitat is either rare or especially valuable because of its special nature or role in an ecosystem...".[1] Included in this category are habitats essential to rare, endangered, and threatened species designated by the California Department of Fish and Game and U.S. Fish and Wildlife Service or species listed as rare, endangered, and threatened by the California Native Plant Society.

In the program area designated sensitive habitats and environmentally sensitive habitats identified in the Local Coastal Plan and County Sensitive Habitat Protection Ordinance include rocky intertidal zones, sand dunes and coastal strand, seabird and shorebird concentration areas and cliff nesting areas, coastal scrub, wetlands, estuaries, ponds, and reservoirs, North Coast grasslands, and riparian corridors. The majority of all native habitat remaining in the program area falls under one of these sensitive habitat categories.

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1 "Sensitive Habitat Protection Ordinance", Chapter 16.32, County of Santa Cruz, 1984.

4.4.3 SENSITIVE PLANTS

Several native plants species have been identified in the North Coast region as rare, threatened, endangered, or species of concern. A list of those sensitive plant species with potential to occur in the program area are shown in Exhibit 10. Two of these species were documented during the field surveys conducted as part of the preparation of the General Plan, Blasdale's bent grass and purple-flowered piperia. One species of special concern, Monterey indian paintbrush was observed in the coastal scrub community at the Scott Creek, Bonny Doon, and Laguna Creek Beach areas. Potential habitat exists for several others including awned bent grass, San Francisco collinsia, San Francisco wallflower, Choris's popcornflower, and San Francisco campion.

4.4.4 WILDLIFE

The program area supports a wide diversity of wildlife, especially birds, owing to a diverse assemblage of coastal marine, estuarine, and terrestrial habitats in close association. Common avifaunal groups around the North Coast beaches include seabirds, gulls, and waterfowl in the open ocean and surf zones, shorebirds and gulls in the coastal strand, land birds in the dune and scrub communities and waterfowl and shorebirds in the backwater marshes. Several cliff-nesting species use the coastal cliffs.

Exhibit 11 contains a list of animal species of special concern observed or predicted to occur at the beaches in the program area.[2]

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2 Special Animals, California Department of Fish and Game Natural Diversity Data Base, December 1988.

EXHIBIT 10

Status, Distribution, and Habitat of Rare Plants with Potential to Occur in Program Area

Status, distribution and habitat of rare plants with potential to occur in the vicinity of the North Coast Beaches General Plan study area, Santa Cruz County, California.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[4]
Agrostis aristiglumis Awned bent grass	Cat. 2	None	3-2-3 List 1B	valley grassland, coastal prairie	MRN SCR?
Agrostis blasdalei Blasdale's bent grass	Cat. 2	None	3-2-3 List 1B	coastal bluff scrub coastal prairie	MRN MEN SCR? SON
Amsinckia lunaris bent-flowered fiddleneck	None	None	1-1-3 List 4	valley grassland	LAK MRN SCR SHA SIS SON
Castilleja latifolia Monterey indian paintbrush	None	None	1-1-3 List 4	coastal dunes	MNT SCR
Collinsia franciscana San Francisco collinsia	None	None	1-1-3 List 4	coastal scrub, closed cone conifer forest	MNT SCR SFO SMT
Corethrogyne leucophylla Branching beach aster	None	None	1-1-3 List 4	coastal dunes, closed cone conifer forest	MNT SCR SLO
Erysimum franciscanum San Francisco wallflower	Cat. 2	None	1-2-3 List 4	coastal dunes, coastal scrub	MRN SCR SFO SMT SON
Microseris decipiens Santa Cruz microseris	Cat. 2	None	2-2-3 List 1B	coastal prairie, coastal scrub	MNT MRN SCR
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	Cat. 2	None	1-2-3 List 1B	coastal prairie, chaparral	KRN LAX* MNT NAP ORA* SCL SCR SDG* SLO SMT* SOL SON
Piperia elongata ssp. *michaelii* Purple-flowered piperia	None	None	1-2-3 List 4	coastal bluff scrub	ALA HUM MNT MRN SCR SFO SLO SMT
Plagiobothrys chorisianus Choris's popcornflower	None	None	?-?-3 List 3	coastal scrub, chaparral	SCR SFO SMT
Plagiobothrys diffusus San Francisco popcornflower	Cat. 2*	Endang.	None List 1A	valley grassland	SCR* SFO*
Silene verecunda ssp. *verecunda* San Francisco campion	Cat. 2	None	3-2-3 List 1B	coastal scrub, valley grassland	SCR SFO SMT
Stylocline amphibola Mt. Diablo cottonweed	None	None	1-1-3 List 4	coastal prairie chaparral	ALA CCA LAK MRN NAP SCR SON

Notes:
1. Nomenclature corresponds to Munz and Keck (1959).
2. Cat. 1 (Under review, sufficient information to justify listing).
   Cat. 2 (Under review, insufficient information).
   Cat. 3c (Not presently threatened) (USFWS 1985).
3. Section 1904, California Fish and Game Code (January 1987 listing) (CDFG 1987).
4. Smith and Berg (1988), counties abbreviated by a three-letter code.
5. Thomas (1961), Smith and Berg (1988).

* Plants presumed extinct in these counties.

Source: Biosystems Analysis, Inc.

EXHIBIT 11

Animal Species of Special Concern in Program Area

BIRDS	SCIENTIFIC NAME	STATUS FEDERAL	STATE
Peregrine Falcon	*Falco peregrinus anatum*	FE	CE
California Brown Pelican	*Pelicanus occidentalis californicus*	FE	CE
Snowy Plover	*Charadrius alexandrinus nivosus*	FC2	CSC
Common Loon	*Gavia immer*		CSC
Western Grebe	*Aechmophorus occidentalis*		W
Double-crested Cormorant	*Phalacrocorax auritus*		CSC
Great Blue Heron	*Ardea herodias*		SA
Great Egret	*Casmerodius albus*		SA
Snowy Egret	*Egretta thula*		SA
Black-crowned Night Heron	*Nycticorax nycticorax*		SA
Harlequin Duck	*Histrionicus histrionicus*		CSC
Cooper's Hawk	*Accipiter cooperii*		CSC
Sharp-shinned Hawk	*Accipiter striatus*		CSC,W
Golden Eagle	*Aquila chrysaetos*		CSC
Osprey	*Pandion haliaetus*		CSC
Northern Harrier	*Circus cyaneus*		CSC
Black-shouldered Kite	*Elanus caeruleus*		SA
California Gull	*Larus californicus*		CSC
Caspian Tern	*Sterna caspia*		W
Elegant Tern	*Sterna elegans*		CSC
Marbled Murrelet	*Brachyramphus marmoratus*		CSC
Rhinoceros Auklet	*Cerorhinca monocerata*		CSC
Short-eared Owl	*Asio flammeus*		CSC
Long-eared Owl	*Asio otus*		CSC
Burrowing Owl	*Athene cunicularia*		CSC
Black Swift	*Cypseloides niger*		CSC
Purple Martin	*Progne subis*		CSC,W
Bank Swallow	*Riparia riparia*		CCE
Yellow Warbler	*Dendroica petechia brewsteri*		CSC
Yellow-breasted Chat	*Icteria virens*		CSC

Source: Biosystems Analysis, Inc.

EXHIBIT 11 (Continued)

Animal Species of Special Concern in Program Area

MAMMALS	SCIENTIFIC NAME	FEDERAL	STATE
Southern Sea Otter	*Enhydra lutris nereis*	FT	SA
Townsend's Western Big-eated Bat	*Plecotus townsendii townsendii*	FC2	CSC
California Mastiff Bat	*Eumops perotis*	FC2	CSC
Badger	*Taxidea taxis*		CSC
REPTILES AND AMPHIBIANS			
California Tiger Salamander	*Ambystoma tigrinum californiense*	FC2	CSC
Southwestern Pond Turtle	*Clemmys mormorata pallida*	FC2	CSC
California Horned Lizard	*Phrynosoma coronatum frontale*		CSC,W
Foothill Yellow-legged Frog	*Rana boylei*		CSC
FISH			
Tidewater Goby	*Eucyclogobius newberryi*	FC2	CSC
Steelhead Trout	*Salmo gairdneri gairdneri*	FSS	SA
INSECTS			
San Francisco Tree Lupine Moth	*Grapholita edwardsiana*	FC2	SA

FE	*Listed as Endangered by the Federal Government*
FT	*Listed as Threatened by the Federal Government*
FSS	*Federal (BLM and USFS) Sensitive Species*
FC2	*Category 2 Candidate for Federal Listing*
CE	*Listed as Endangered in the State of California*
CSC	*California Department of Fish and Game Species of Special Concern*
W	*Watch list. Location information for these taxa is not computerized. The NDDB is currently collecting distribution information but maintains manual files only.*
SA	*On Special Animals List of California Department of Fish and Game Natural Diversity Data Base*
CCE	*California Candidate for listing as Endangered*

Source: Biosystems Analysis, Inc.

4.5 VEGETATION AND WILDLIFE -- THE IMPACTS

4.5.1 VEGETATION

The objectives and policies of the General Plan are to perpetuate the environmental quality of the natural resources, particularly wildlife habitat and coastal dependent vegetation, while promoting compatible public use and recreational activities. It is the intent of the recommendations in the land use and facilities element to eliminate continuing direct and indirect impacts to natural resources and to restore disturbed communities. Furthermore it also addresses the needs of important and sensitive wildlife and plant species and habitats through the establishment of protective measures and long-term management, including the setting aside of special habitat areas as natural preserves. Generally, proposals recommended in the land use section of the General Plan serve to accomplish these policy objectives. However, some of the specific proposals may result in potential adverse impacts if they are not implemented properly or if further studies are not conducted prior to their implementation. The following sections address only those proposals that can or would be harmful to the native vegetation resources in the program area.

Scott Creek Beach

The majority of the proposed improvements at Scott Creek Beach would result in no or positive impacts to the natural resources in the program area.

A significant impact to a diverse and mature stand of coastal scrub and rare plant habitat (for purple-flowered piperia and Monterey indian paintbrush) would result from construction of the proposed 110-vehicle unpaved parking lot at the south end of the beach. This development would necessitate the direct removal of coastal scrub vegetation and require extensive substrate disturbance due to the need to recontour and remove excavated materials off-site. The creation of new moderately-steep cut faces could lead to erosion, slope failure, and a site difficult to revegetate. The impermeable compacted surface of the parking area would result in increased surface runoff down the sandy slope to Molino Creek. Uncontrolled, this runoff may result in gullying and erosion of the coastal scrub and dune communities above the beach.

The proposed 30-vehicle parking lot at the north end of the beach unit would be constructed on a ruderally disturbed terrace and should have minimum impact on the surrounding vegetation with the implementation of proposed surface runoff management and erosion control measures.

Proposed dune restoration and protection measures would generally result in positive impacts and habitat improvements. However, site specific studies should be conducted to determine existing substrate conditions, soils types, textures, fertility, depths and other environmental site characteristics prior to the initiation of large scale restoration activities. Lacking this information may result in planting schemes that fail in the first growing season leaving newly exposed and recontoured surfaces to continue to erode and potentially blowout (meaning a loss of the integrity of the dune face resulting in sand being picked up and moved to the back of the dune or other locations, such as Highway 1).

Proposed hydrologic modifications to the Scott Creek wetland area from new levee construction and tidal gate water management could result in an observable shift in the vegetation structure and composition due to increased flooding, changes in the salinity regime, and soil-water table modifications. Without detailed analysis of the current operational interactions of the marsh ecosystem, proposed improvements may result in unwanted shifts in vegetation structure and composition.

Davenport Landing Beach

Proposed improvements at this beach would have no negative impacts to native vegetation resources.

Panther Beach

In general, proposed improvements at this beach would have no negative impacts to vegetation resources. Minor direct impacts may result to coastal scrub vegetation as a result of construction of the concrete staircase to the beach.

Bonny Doon Beach

The majority of the proposed improvements and restoration measures would result in positive long-term impacts at this beach unit. Off-road vehicle access down the dune face at the south end of the beach continues the destabilization of the dune community and impacts to the remnant dune vegetation. Staircases and access trails are proposed to be built on existing trails and would not result in an increased loss of native vegetation.

The future parking expansion area shown between Panther and Bonny Doon beaches would result in a significant loss of coastal scrub habitat and require significant grading and material movement.

Widening of the east side of Highway 1 for turning lanes may result in a direct loss of coastal scrub vegetation and potential sedimentation into Liddell Creek. No direct impacts due to road widening are expected to occur to riparian vegetation of Liddell Creek northeast of Highway 1.

Yellowbank Beach

Proposed improvements and enhancement plans at this beach would not result in negative impacts to vegetation resources.

Laguna Creek Beach

In general, the proposed improvements and installations would not result in direct or indirect impacts to the vegetation resources documented within this beach and would likely result in corrections of previous disturbances.

Widening of Highway 1 for turning lanes may result in short-term sedimentation of Laguna Creek east of the highway. No direct impacts from road widening activities are anticipated to riparian vegetation northeast of the highway.

Proposed habitat enhancements and modifications to the wetland area could result in similar consequences discussed for Scott Creek marsh. An existing, unpaved farm road on the southwest-facing slope below the railroad grade at the eastern end of the unit is providing ORV access to the beach by way of the marsh. This activity is resulting in direct impacts to both marsh and dune vegetation in the unit.

4.5.2 WILDLIFE

The General Plan proposes improvements in parking, access, and sanitation at each of the six beaches. The General Plan's construction and management recommendations are designed to protect and enhance wildlife values in a variety of habitat types found at these beaches. The impacts of the proposed improvements on sensitive wildlife species and habitats are discussed below.

The General Plan's proposals consist of relatively minor modifications and improvements to existing access routes to the beaches. No presently inaccessible beach areas would be opened to human visitation by the proposed improvements in the General Plan. Some existing access trails that are causing damage to sensitive habitat are proposed to be closed and alternate routes through less sensitive areas are substituted. No significant impacts to sensitive fish and wildlife species are anticipated to result from implementation of the General Plan's recommendations. Some loss and/or modification of sensitive habitat areas is predicted to result from parking area construction at selected sites. These issues are discussed in the following section that address the proposed developments at each beach.

The General Plan's proposals are not designed to significantly increase future levels of use at any of the beaches. Rather, they are conceived to better accommodate current levels of visitation. No significant impacts to sensitive wildlife resources are expected to result from modest use increases, as long as average demand approximates the levels outlined in the General Plan. Should visitation rates increase dramatically as a result of the General Plan's improvements there could be a spill-over effect which could impact sensitive habitats adjacent to the beach, for example, coastal scrub areas and cliff nesting sites.

As discussed above, a number of animal species of special concern may occur in the program area. Potential impacts to many of these species are likely to be insignificant since they only occur as transients. Without a thorough inventory of the occurrence of all the species of special

concern potentially occurring in the program area, however, it is too speculative to further discuss potential impacts on these species.

The impacts on wildlife as a result of the implementation of the specific proposals at each beach are discussed below.

Scott Creek Beach

Among the proposed improvements at Scott Creek Beach is the construction of a 110-vehicle parking lot at the south end. The site where this parking lot is planned contains sensitive coastal scrub habitat. Construction of this parking area would cause a direct loss of the wildlife habitat value of this area. However, no significant impacts to any particular sensitive wildlife species are anticipated since adjacent areas of the same habitat type will remain intact.

The 30-vehicle parking area proposed on the terrace at the north end of Scott Creek is in an area of ruderal vegetation and construction of the lot should not cause the loss of any valuable wildlife habitat. Several sensitive species use the cliffs at the north end of Scott Creek. The proposed fence along the west side of the parking area should reduce the chances for potentially disruptive foot traffic along the cliff top.

The proposed Natural Preserve in the wetland area at Scott Creek should protect and enhance conditions for a variety of wildlife species that use the marsh. The existing lagoon represents valuable habitat for tidewater goby, a candidate for federal listing, and for steelhead trout. The habitat improvement plan calls for a new channel to be cut through the marsh on the north side of the creek and the installation of a flow control structure to enable the flooding of an additional area of marsh.

It should be noted, however, that the construction of a new channel and the resultant modification to the hydrodynamics of this estuary could have significant impacts on the distribution of numerous sensitive plant and animal species.

Davenport Landing Beach

No impacts to sensitive wildlife species are anticipated to result from the proposed parking and access improvements at Davenport Landing Beach.

Panther Beach

The parking area and access improvements proposed for Panther Beach would cause no significant impacts to any sensitive wildlife species.

Bonny Doon Beach

Development of the existing parking area and beach access modification proposed at Bonny Doon Beach should result in no negative impacts to sensitive wildlife species.

Fencing is proposed to establish a narrower access through the sensitive dune habitat, and thereby reduce the impacts from unregulated foot travel. The proposed revegetation of the dune slopes should enhance the wildlife habitat value of this cover.

Construction of the potential future parking expansion area identified for the area between Bonny Doon Beach and Panther would necessitate the conversion of an area of coastal scrub habitat and a reduction in its value as wildlife habitat. No significant impacts to sensitive wildlife species are anticipated, however.

Yellowbank Beach

The parking and access improvements proposed for Yellowbank Beach would result in no significant impacts to sensitive wildlife species.

Laguna Creek Beach

The proposed improvements at Laguna Creek Beach, which include the establishment of a Natural Preserve, should enhance the habitat values of this area for a variety of wildlife species.

The General Plan calls for the establishment of a seasonally fenced sanctuary for nesting snowy plovers in the back dune area at the south end of the beach. This area is one of only a few areas on the North Coast where these plovers still nest. They nest in the sand and are vulnerable to disturbance from foot traffic, dogs and all terrain vehicle use. Five nests containing 10 eggs were recorded in 1988. Only one nesting attempt was successful and three young were produced.[3]. Seasonal fencing and monitoring should enhance the chances for successful nesting, as long as the fencing is secure and not easily vandalized. The fencing perimeter shown on the development map runs around the back dune area and along the top of the adjacent coastal scrub bluff. Two gaps in the fencing are shown in the area where the creek turns as it exits the marsh. These gaps would allow beach users to enter the area and possibly disturb the nesting birds.

The General Plan also contains provisions to remove the flashboard dam and to construct a tidal gate so additional wetland can be flooded. Modification of the fresh water flow regime to this wetland could have significant impacts on the distribution of numerous sensitive plant and animal species.

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3 Biosystems Analysis conversation with D. Suddjian, January 1989.

4.6 VEGETATION AND WILDLIFE -- MITIGATION MEASURES

4.6.1 VEGETATION

Prior to the initiation of those activities proposed in the General Plan for vegetation enhancement and restoration studies should be conducted. These studies should be designed to determine precisely the types of modifications, their timing and extent, and to evaluate shifts in vegetation structure and composition that might result from their implementation.

Test plots should be established in those areas designated for dune restoration to define the planting techniques most likely to give positive, long-term results. The monitoring program should include quantitative measurement of plant cover and composition and should continue for a period of five years following the last planting effort.

Methods of eradication and control of exotic plant species should be experimentally evaluated prior to full scale implementation. The general use of herbicides should be avoided, when possible, in native habitats. No broad scale application of herbicides should be permitted at any time.

Scott Creek Beach

The proposed 110-vehicle parking lot can not be mitigated to a less then significant impact level as presently proposed.

All cut slopes should be revegetated with native coastal scrub species as specified in the General Plan.

All fencing and barriers should be constructed of non-combustible material to prevent their removal for firewood or access to the beach.

Site specific studies should be conducted to determine environmental site characteristics of the dune habitat prior to initiation of large scale restoration activities.

Bonny Doon Beach

Eliminate proposed parking expansion area from the General Plan.

Use metal fence barriers along the entire length of the upper dune on the railroad grade to prevent ORV access to the beach area.

Yellowbank Beach

Divert runoff away from the east-facing slope below the railroad right-of-way. Install flash boards at the head of the existing erosion gully on that slope. Place water bars at selected

intervals down slope and fill to grade. Revegetate fill material with native coast scrub plant species.

Install a culvert below the proposed staircase to the beach to divert runoff off the slope below the proposed staircase. Install fenced barriers to the trails through the coastal scrub vegetation south of the staircase prior to initiation of trail revegetation.

Laguna Creek Beach

Install a pipe fence barrier, constructed of non-combustible material, along the entire length of the railroad right-of-way above the existing marsh area. Close and revegetate the old farm road down to the marsh preserve area, if it is no longer being used for farm access, or place a gate at the top of the road to prevent ORV access to the marsh and beach.

4.6.2 SENSITIVE PLANT SPECIES

Prior to the initiation of any proposed improvements or modifications at each individual beach a field survey should be conducted to determine the existence or absence of sensitive plant species with potential to occur in the program area (see Exhibit 10). Sensitive plant occurrences should be marked and protected with fencing if necessary to prevent direct impacts during the prescribed restoration and development programs. When possible these species should be included in the revegetation mix proposed for their specific habitats. Sensitive plant surveys should be conducted in the marsh/lagoon preserve areas, especially prior to the implementation of hydrologic modifications.

4.6.3. WILDLIFE

Prior to the initiation of any proposed improvements or modifications at each individual beach field surveys should be conducted to determine the existence or absence of animal species of special concern with potential to occur in the program area (see Exhibit 11).

Scott Creek Beach

The recommendation in the General Plan that detailed studies be conducted in this wetland area before any hydrological modifications are implemented should be undertaken. This study should address all sensitive fish and wildlife species possibly occurring at Scott Creek.

Laguna Creek Beach

The natural preserve plan for Laguna Creek Beach calls for the closure of the existing trail through the riparian area in the northeast corner of the wetland area. Another existing prominent trail into the wetland from along the railroad tracks should also be permanently closed.

The proposed seasonal fencing of the snowy plovers nesting area should be made contiguous along the creek so there are no available entrances into the sanctuary zone.

Additional, detailed studies of the hydrodynamics of this wetland should be undertaken before any plans to alter stream flow regimes are designed. A basic inventory of this wetland should also be conducted to determine the existence or absence of any sensitive species, especially the tidewater goby.

4.7 LAND USE -- THE SETTING

The predominant land use in the program area is agricultural. Large areas of coastal bench lands were used for dairy grazing until about 50 to 75 years ago when pastures were leased as cropland. Principal crops currently are Brussels sprouts and artichokes; another, smaller agricultural activity in the program area is aquaculture.[1] There is an existing salmon raising operation (Silverking Oceanic Farms) at Davenport Landing beach and a proposed abalone raising operation (Pacific Mariculture) south of Laguna Creek beach.

All agricultural lands in the program area are privately-owned and farmed, primarily by tenants who lease the land.[2] Five program area beaches are located on private land, and the sixth, Scott Creek Beach, is owned and operated by the County. Public access to all beaches crosses private land. Public recreational use of North Coast beaches constitutes another important land use in the program area.

While State and County coastline conservation policies seek both to preserve and "balance" private agricultural and public recreational land uses, agricultural operations and recreational activities can conflict. The principal impacts of beach-goers on agricultural uses include trespassing and vandalism.[3] The trespassing and vandalism that occurs results in crop losses and reduced revenues or in damage, such as to farm equipment and irrigation facilities, and increased operating costs. Trespass and related problems primarily occur where parking areas and access trails are adjacent to agricultural fields. Where there is a separation between the agricultural fields and the parking areas and trails there are significantly less trespass problems.

Although trespassing problems occur in the program area, with the current level of use of the beaches it is not a major problem at this time.[4] Nevertheless, North Coast farmers are becoming increasingly concerned with trespass problems associated with increased public use of the beaches.[5] Farmers are also concerned with liability insurance problems when trespassing occurs.[6]

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1 Some limited grazing continues in upland areas, outside the program area, which reportedly have only marginal value for agricultural use. Nichols • Berman conversation with Robert Bosso, Attorney for Coast Dairies and Land Company, January 1989.

2 Outside the program area, such as Wilder Ranch State Park, agricultural lands are publicly-owned and leased to private farmers. Wilder Ranch, for instance, consists of approximately 800 acres of cultivated agricultural land.

3 Nichols • Berman conversation with Richard Bergman, Deputy Agricultural Commissioner, March 1989.

4 Nichols • Berman conversation with Steve Bontadelli, North Coast farmer, March 1989.

5 Nichols • Berman conversation with Steve Siri, Santa Cruz Farm Bureau, March 1989.

6 Ibid.

Program area Brussels sprout and artichoke fields are not fenced and are not known to have been fenced in the past when the land was used for grazing, although some individual access gates have been installed.[7] Fences have not been built for several reasons, including expense and the room needed to maneuver farm equipment. Fences generally tend to be reserved for operations involving farm animals. Without fences, farmers' crops can be trampled (even unintentionally) or stolen, resulting in the loss or damage to several rows of crops. At least one fence built recently in the program area reportedly was removed by vandals for firewood.[8] Posting signs directing beach-goers to not cross fields does not necessarily discourage them from doing so, especially if a route through fields appears shorter or more direct.[9] Installing fences along public access routes is not always a satisfactory solution for farmers because fences reduce total tillable acreage; where fences are installed, crops must be set back by ten to 20 feet for equipment to be used in the fields. An alternative to the construction of fences is the planting of hedges or other vegetation. These practices can similarly reduce total tillable area.

Littering also is a problem for farmers, due both to people walking to and from the beaches and the proximity of some parking areas to the fields.

The principal effect of farming on recreationists is exposure to pesticides used in agricultural production; another conflict is when farm equipment and walkers share access.[10]

Farm operations for the program area's two primary crops differ in some ways and are similar in others. Brussels sprouts generally are transplanted to fields in May, grow through the summer (during peak beach using periods), and are harvested in November when all Brussels sprouts are picked at one time. Artichokes start sprouting in about September, and harvesting begins in November. Because artichokes mature at different rates, harvesting is irregular and may continue until some time in January.[11]

Local Brussels sprout- and artichoke-growing practices conventionally involve pesticide use, although alternate application and treatment techniques, such as integrated pest control, are being tested at Wilder Ranch State Park's leased agricultural lands. The pesticides currently

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7 Nichols • Berman conversation with Robert Bosso, op. cit.

8 Ibid.

9 Nichols • Berman conversation with Bill Rosar, San Mateo County Planning Department, January 1989.

10 Public agencies managing land both for agricultural and recreational use are concerned about the hazards to walkers from farm vehicles using common accessways and also recognize that farmers are irritated by pedestrians interfering in their operations. In the San Mateo Coast District, the State Department of Parks and Recreation plans to post signs to warn recreational users that the land is in active agricultural production in addition to providing public open space. The Department does not know, however, how effective such signs will be in reducing conflicts and hazards. Nichols • Berman conversation with Carol Nelson, District Superintendent, San Mateo District, California Department of Parks and Recreation, January 1989.

11 Nichols • Berman conversation with Robert Bosso, op. cit.

used on these crops are highly toxic[12] and are sprayed at night or in early morning when program area winds are light. Agricultural workers stay out of artichoke fields for four to five days after pesticides are used. Workers stay out of Brussels sprouts' fields somewhat less time after spraying[13], but frequent pesticide applications are necessary.[14] Farmers are required to post warning signs when certain, highly toxic chemicals are used. Posting is not required, however, for pesticides currently used on Brussels sprouts and artichokes. Even when posting does occur it does not seem to reduce trespass or vandalism problems.[15]

A problem related to the use of pesticides is the potential for off-site drift of the pesticides. Even though the pesticide application generally occurs at night or in early morning when winds are light there is a potential for the pesticides to drift off-site onto public access trails and/or beaches.

In the late 1970s, the California Department of Food and Agriculture tested public access routes and beaches in the program area for pesticide residues.[16] The study found residues on public access paths adjacent to fields where these substances were being used during the time the chemicals were being applied, but no residues were found on the beaches.

Santa Cruz County does not have any records of incidents in the past ten years of pesticides causing illness from any persons using beach access anywhere in the County.[17] However, the lack of recorded incidents in the County does not mean that conflicts between the use of pesticides and beach-goers does not occur.[18]

Pesticide use increasingly is being addressed in agricultural land leases, primarily those involving private production on publicly-owned land. For instance, in San Mateo County leases are requiring farmers to alter prior or institute new practices.[19] "Pesticide constraints" are

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12 Ibid.

13 Ibid.

14 Nichols • Berman conversation with Carol Nelson, op. cit.

15 Letter to Kathleen Akao, County of Santa Cruz County Counsel from Lenord Craft, Santa Cruz County Agricultural Commissioner, December 1, 1988.

16 The tests were conducted when the State acquired Wilder Ranch. Nichols • Berman conversation with Ron Tyler, University of California Cooperative Extension, San Cruz County, January 1989.

17 Nichols • Berman conversation with Richard Bergman, op. cit.

18 Ibid.

19 At Cowell Ranch in San Mateo County, the California Department of Parks and Recreation has asked to be notified when agricultural spraying is scheduled so the Department can close the beach it is acquiring there. A disadvantage of closing the beach, however, is to reduce its value for recreation which has stalled State negotiations to buy the land. Nichols • Berman conversation with Carol Nelson, op. cit. Other changes from past practice include application methods; manual versus aerial spraying, however, is more labor intensive and, thus, more expensive.

unpopular with farmers who attribute various difficulties -- from the decreased economic viability of farming to the loss of the agricultural land supply -- to pesticide regulations.[20] Those members of the agricultural community frequently mention the "failure of Wilder" in referring to integrated pest management techniques tested on Brussels sprouts at Wilder Ranch State Park. Assessments of this technique vary among agriculturalists from fully or partially successful to unsuccessful. Integrated pest control, as distinguished from biological control or organic methods, uses agricultural chemicals but differently than according to conventional practices. Treatments may be changed from liquid to granular applications, for instance; spraying may occur only when needed instead of on a calendar schedule.[21]

Program area farmers rely primarily (some depend exclusively) on local streams for water to irrigate their crops and rely secondarily on well water to supplement surface water sources.[22] The City of Santa Cruz owns riparian rights (first rights) to all surface water in Laguna Creek, Liddell Springs, and Majors Creek which account for about 20 to 30 percent of its total supply, and farmers are entitled to any water not used by the City. The City's diversions are located upstream (inland) from the coastline, and, while the City typically does not divert all water from its sources, an "underflow"[23] keeps water in the creeks downstream of the City's diversions.[24] Farmers collect downstream flows by building "flashboard" dams on the creeks to create ponds from which irrigation water is pumped. This is done because it is more efficient for farmers to pump from a pond than from a free-flowing stream.[25]

In the summer, lagoons form at Scott Creek and Laguna Creek beaches when flows in the respective creeks lack the force to breach sandbars at the beaches. Water in these lagoons can flood nearby agricultural lands. The lagoons at Scott Creek and Laguna Creek beaches have been artificially breached in the past to prevent the flooding of adjacent farmland.

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20 Nichols • Berman conversation with Betty Stone, Secretary, San Mateo County Agricultural Advisory Board, January 1989.

21 Biological control introduces pests' natural predators (lady bugs to eat aphids, for instance). There is wide disagreement about whether (or the extent to which) agriculture has "failed at Wilder"; it would be too speculative for this EIR to resolve these conflicts. Nichols • Berman conversation with Ron Tyler, op. cit.

22 South of the program area (south of Laguna Creek Beach), most farmers rely primarily on well water, at least through July (which some farmers supplement with surface water while available), and then use City of Santa Cruz water. Nichols • Berman conversation with Bill Coker, Director, City of Santa Cruz Water Department, January 1989.

23 Seepage, water entering from downstream tributaries, etc.

24 Nichols • Berman with Bill Coker, op. cit.

25 Nichols • Berman conversation with Robert Bosso, op. cit.

Documentation as to the total amount of agricultural land inundated when lagoons are not breached is not available. It is believed that the amount of agricultural land inundated is not significant, for example, probably about four acres at Scott Creek beach.[26]

State ownership and/or management of increasingly greater areas of agricultural land has become a major concern of coastal farmers in San Mateo County who believe that local control and the responsiveness of local officials to their problems have been reduced accordingly. Two trends have contributed to agriculturalists' feelings of frustration and powerlessness.

One trend relates to public acquisition of farmlands through gifts or purchase. While LCPs require both Santa Cruz and San Mateo Counties to maintain coastal agricultural land in production, individual lease conditions, such as "pesticide constraints", often are interpreted by farmers as inhibiting agricultural operations and, ultimately, affecting the economic viability of farming. As farmers curtail or cease operation, the total supply of land in agricultural production declines, even if open space is maintained through public ownership.[27] Incremental decreases in agricultural land affect production of food and fiber and also can reduce agricultural support services in an area (such as seed distributors or vets), the loss of which can affect remaining farmers adversely.

In some cases when agricultural production continues on publicly-owned land and public access also is permitted, however, different crops may be introduced, replacing traditional crops and reducing total Brussels sprout and artichoke production, for instance. In San Mateo County, for example, the Department of Parks and Recreation tends to lease agricultural land for hay production to continue agricultural use and minimize conflicts between farming and recreational activities.[28]

The second trend involves limited budgets at all levels of government and, specifically, the effects on police staffing levels to manage beaches, public access, and parking areas. Coastal farmers attribute existing problems from trespassing and vandalism primarily to insufficient policing and enforcement of recreational activities. Some who characterize North Coast beach users as "rowdy", for instance, believe that those people visit the program area because there is little enforcement.[29] While beaches are closed at night, illegal camping continues at beaches or on nearby agricultural lands due to under-staffing.[30]

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26 Ibid.

27 Nichols • Berman conversation with Betty Stone, op. cit.

28 Nichols • Berman conversation with Carol Nelson, op. cit.

29 Nichols • Berman conversation with Robert Bosso, op. cit.

30 Nichols • Berman conversation with Betty Stone, op. cit.

4.8 LAND USE -- THE IMPACTS

Implementing the General Plan as currently proposed would result in land use impacts on existing agricultural operations. Impacts would range from those attributable to broad general policies of the General Plan to site specific effects of the General Plan expected elsewhere in the program area.

One of the purposes for preparing the General Plan is to fulfil the objective of the Local Coastal Program to provide a system of shoreline access to the coast that among other things minimizes conflicts with adjacent land uses and does not adversely affect agriculture. The General Plan minimizes conflicts with adjacent land uses by not proposing new public access trails through agricultural fields, rather it proposes to formalize existing trails and provide clearer marking of the trails. Furthermore, with the installation of structural stairs and railings it is proposed that coastal access trails be made as safe as possible. With better signage and more formal access trails it is possible that existing trespass problems would be reduced. It would be too speculative, however, to state that with an improved shoreline access system there would not be any trespass problems on adjacent agricultural fields.

For the most part the proposed parking areas and access trails are not adjacent to agricultural fields. The two exceptions are the proposed trail at Laguna Creek beach and the connecting trail between Bonny Doon and Panther beaches. The primary access route to Laguna Creek beach will continue to follow the existing farm road adjacent to the agricultural field to the south. The access trail between Bonny Doon and Panther beaches is located between the SP railroad to the east and agricultural land to the west, along an existing trail. Of all the access trails these two trails pose the greatest potential for trespass and vandalism problems to the adjacent agricultural fields.

Consideration should be given to the establishment of a buffer area between the access trails and the adjacent agricultural fields. The buffer should consist of a 50-foot setback with fencing or vegetative screening, as appropriate. Although it is true that farmers generally oppose fences and vegetative screening because they usually result in a reduction of total tillable area, farmers would likely support such recommendations in this situation in order to reduce conflicts with the contiguous agricultural operations.[31]

A concern raised by North Coast farmers with the General Plan is with the implementation of the specific improvements there would be an significant increase in the number of people using the beaches, resulting in increased trespass and vandalism problems.

The General Plan's proposals are not designed to significantly increase existing levels of use at any of the beaches. It is anticipated that approximately the same number of people would use the beaches after the improvements are made as use them now. There may initially be some shift in attendance at the North Coast beaches with the impositions of parking fees, as proposed. As people become accustomed to paying for beach parking attendance would likely return to current levels. Even if there was a slight increase in beach attendance after all the improvements were

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31 Nichols • Berman conversations with Rick Bergman and Steve Bontadelli, op. cit.

completed the increase would not be enough to result in a significant increase in trespass and vandalism problems.

Agriculturalists and recreationists alike are skeptical about the effectiveness of the proposed policy on pesticide use.[32] Farmers oppose reducing quantity, decreasing the frequency, or eliminating the use of pesticides for various reasons, mostly relating to traditional practices. Concerns about "pesticide constraints" include the difficulty, inefficiency, or expense of treating fields by other methods, the potential effects on crop yields and net incomes, and, ultimately, the long-term viability of their operations altogether. Perceived "failures at Wilder" reinforce farmers' apprehension about changing successful past practices. The reported failure of the County to coordinate the North Coast beach planning process with local farmers also may have contributed to agriculturalists' reticence to adopt alternate techniques or modify their present practices.

Agriculturalists and recreationists both readily acknowledge the hazards of agricultural chemicals. Farmers already are required to notify the County Agricultural Commissioner 24 hours prior to the use of specific chemicals and to post warning signs when certain chemicals are used. The proposal to warn beach-goers about pesticide use in adjacent fields by posting signs evokes skepticism over the need or efficacy of the measure. One rhetorical response to the policy was whether Proposition 65 signs at grocery stores provided consumers with useful information.[33] Another was that children who cannot be induced to eat Brussels sprouts at home will eat them from fields, regardless of posted warnings, fences, or other inhibitions.[34]

The County would consider closing parking areas and access trails when pesticides were being sprayed on adjacent agricultural fields.[35] Farmers expressed skepticism over the effectiveness of this measure.[36] The concern raised is that if parking areas are closed beach-goers would attempt to park in other locations, perhaps within agricultural fields, and if trails were closed beach-goers would likely simply walk through the fields to get to the beaches.

Measures proposed or used elsewhere to mitigate potential conflicts with pesticide use have not satisfied both constituencies and are unlikely to fully mitigate the concerns of one without adversely affecting the other. However, in as much as the General Plan does not provide for additional beach access points or substantial increase in beach use, the General Plan will not increase conflicts with pesticide use over that currently experienced.

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32 The proposed policy recommends: "An agreement with the local farmers should be sought to eliminate the use of the more hazardous compounds within the vicinity of the beaches, trails, parking areas, and streams, or to at least reduce the quantity and/or frequency of application. Signs should be posted to warn visitors not to eat or touch the crops because of the toxic pesticides." Ibid., page 37.

33 Nichols • Berman conversation with Ann King, op. cit.

34 Nichols • Berman conversation with Robert Bosso, op. cit.

35 Nichols • Berman conversation with Dave Mitchell, Santa Cruz County Parks, Open Space and Cultural Services Department, March 1989.

36 Nichols • Berman conversation with Steve Siri, op. cit.

Removal of flashboard dams on Scott Creek, Laguna Creek, and Liddell Creek (which flows into Bonny Doon Beach) would result in significant adverse impacts to the farmers who use water from these impoundments to irrigate their crops because the ponds on these creeks provide the main source of water for adjacent agricultural operations.[37] The total acreage which would be affected has not been estimated, but eliminating the dams and substantially reducing the water supply would be expected to result in removing agricultural land from production, contrary to State and County coastal policies. Depending on the amount of land removed, the feasibility of individual agricultural operations could be endangered. The program area's major agricultural landowner, Coast Dairies and Land Company, leases its property to three farmers, and Albert Smith owns a sizable parcel near Scott Creek Beach, any or all of whom could be affected adversely.

The proposed policy to eliminate "any existing water diversion from either Scott Creek or Laguna Creek"[38] would affect coastal farmers and, as currently recommended, potentially could affect City of Santa Cruz water supply adversely. The impacts of this policy on agriculture would be similar to those discussed above; loss of irrigation water would reduce land in production with concomitant decreases in crop yields and potential impacts on the economic viability of individual farm operations. Since Santa Cruz owns the first right to all Laguna Creek water, the loss of this source would diminish total City supply. This could have significant adverse consequences in drought years; in 1976, for instance, the City diverted all water from Laguna Creek. Customers were subject to voluntary water conservation measures in 1988 and again in 1989, and, depending on rainfall this winter (1988-1989), the City could impose mandatory water rationing in 1989.

The General Plan recommends that the artificial sandbar breaching of Scott Creek and Laguna Creek lagoon shall not be permitted. The total amount of agricultural land inundated when lagoons are not breached is estimated to be small, although as discussed above, the exact amount is not known. The General Plan does recommend that past breaching activities, dates of breaching and inundation levels should be determined, if possible. Furthermore, the General Plan recommends that it may be necessary to acquire an upland buffer and to construct levees along Scott Creek adjacent to farmland to prevent flooding. With implementation of the General Plan policies the elimination of the artificial sandbar breaching would not significantly increase upstream flooding. If there was some increase in periodic flooding, as a result of eliminating the artificial sandbar breaching, it would only cause localized impacts on specific farmers, reducing the total acreage under cultivation, and thus yields in those years. This would not, however, constitute a significant adverse impact.

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37 The proposed policy recommends: "Diversion dam structures and any other structure or feature that severally reduces stream flow or adversely affects the fisheries should be considered for removal after detailed analysis of their usefulness for habitat management and related impacts." General Plan for the North Coast Beaches, op. cit., page 20.

38 The proposed policy recommends: "Any existing water diversion from either Scott Creek or Laguna Creek should be eliminated. The lagoons and wetlands at these units should receive consideration in future water rights hearings. New appropriations from Scott and Laguna Creeks should be opposed." Ibid., page 20.

The County's ultimate goal of having the California Department of Parks and Recreation assume management of the program area beaches would be expected to affect farmers adversely. First, the Department has a different "mission" from farmers; its primary function is to provide and maintain park and recreational opportunities for the public. Second, State agencies are subject to similar budget constraints as local agencies face, but local pressures to provide funds for adequate policing, for instance, are unlikely to influence decisions made and priorities set on a statewide basis. Coastal farmers are concerned that if after plan implementation there is insufficient funding for policing and enforcement of recreational activities there would be an increase in trespassing and vandalism.

4.9 LAND USE -- MITIGATION MEASURES

The policy to remove flashboard dams and similar diversion structures should be modified to include detailed analysis of impacts on farmers' water supply and agricultural capability, in addition to studying the effects of removing the dams on habitat values.

Although implementation of this mitigation measure would reduce environmental impacts the impacts could not be reduced to a less than significant level without deleting the policy from the General Plan.

The policy to eliminate any existing water diversion from Scott Creek or Laguna Creek should be modified. The upstream applicability of the policy should be defined in the General Plan to ensure that the City of Santa Cruz's water supply diversion would be maintained. Impacts of this policy on agricultural land uses could not be mitigated short of deleting the policy from the General Plan.

The location of the coastal access trails should be reviewed in light of the following criteria:

- Coastal access trails should be sited in such a manner so as to minimize possible conflicts with agriculture in the area.

- Where coastal access trails are located adjacent to agricultural lands there should be a 50-foot buffer setback with fencing or vegetative screening, as appropriate.

Consistent with the above measures, the trail at Laguna Creek beach and the trail between Bonny Doon and Panther beaches should be revised. Consideration should be given to relocating the trail between Bonny Doon and Panther beaches adjacent to the railroad.

The County Agricultural Commissioner should work together with the local farmers to minimize conflicts of pesticide use and public access to the beaches.

4.10 ARCHAEOLOGY AND CULTURAL RESOURCES -- THE SETTING

Prior to conducting a field reconnaissance of the program area maps and records, which indicate the location of known archaeological and historical resources in those general areas, were reviewed. Also, a literature review was accomplished at the California Archaeological Inventory Northwest Information Center at Sonoma State University. In addition, the National Register of Historic Places, the California Inventory of Historic Resources, and the California Historical Landmarks listing were consulted. Several historically important structures are located in the general region of the six beaches, however, none are located within or near the improvement areas.

Numerous archaeological sites are situated along the Santa Cruz County coast, with no less than 20 prehistoric sites located between Scott Creek Beach and Laguna Creek Beach. Sites tend to cluster at beaches where streams enter the ocean, which were environmentally favorable settings for settlements and encampments. The majority of the documented sites are described as shellfish and chert processing stations.

Records indicate that three archaeological sites (CA-SCr-47, -49 and -197) are located at Scott Creek Beach, two sites (CA-SCr-45 and -117) are located at Davenport Landing Beach, one site (CA-SCr-19) is located at Bonny Doon Beach, two sites (CA-SCr-36 and -57) are located at Yellowbank Beach, and two sites (CA-SCr-17 and -58) are located at Laguna Creek Beach.

An archaeological field survey of the program area was conducted for this EIR by David Chavez & Associates in January 1989. The field survey was intensive in nature and was approached with two objectives: one was to determine the proximity of recorded archaeological sites to the proposed improvements and the other was to determine if any additional sites are located in or adjacent to those areas. All open and visible ground surface was inspected at each beach.

During the survey, close attention was given to the detection of those surface features that indicate the presence of prehistoric cultural resources in this part of Santa Cruz County (changes in soil color, composition and/or texture, which suggest the occurrence of archaeological midden -- particularly the presence of dark, organic, shell-laden soil; unusual ground contours or abrupt changes in vegetation patterns; the presence of prehistoric stone, shell or bone artifacts; obsidian, chert or other types of lithic flaking wastes; fire-fractured rock, charcoal deposits and/or charred faunal remains). Equal attention was given to the detection of historic period artifacts, debris and features that indicate the possible presence of historical cultural resources.

4.11 ARCHAEOLOGY AND CULTURAL RESOURCES -- THE IMPACTS

No additional archaeological sites were discovered during the field survey and the following determinations were made regarding the previously recorded sites at each of the beaches.

4.11.1 SCOTT CREEK BEACH

The archaeological site record for CA-SCr-47 provided an unclear location description and map; however, the description does identify a bluff overlooking the beach on lands belonging to the Coast Dairies and Land Company. That area is also the location of CA-SCr-197 and it is believed that CA-SCr-47 and -197 are separate recordings of the same site. The site location is sufficiently isolated and would not be directly impacted by beach improvements.

CA-SCr-49 is located approximately 200 yards east of Highway 1 and 100 yards south of Molino Creek, outside the proposed improvement area.

It is concluded that the proposed improvements at Scott Creek Beach would have no direct adverse impacts on known cultural resources. However, along with recreational facilities improvements will come greater use of the area with the potential for indirect impacts to the sites, as a result of more people in the area.

4.11.2 DAVENPORT LANDING BEACH

CA-SCr-45 is located on the north side of an unnamed intermittent drainage on a hillside overlooking the beach. The chert and shell midden site of unknown dimension (ground cover was too dense to reasonably determine the boundaries), is located north and across the creek from the beach improvement areas, and should not be directly impacted by the improvements.

CA-SCr-117 is located southwest of the improvement areas on Silverking Oceanic Farms property. The shell and chert midden site is situated at a sufficient distance from the roadway and improvement locations and should not be directly impacted.

Both sites could, however, be indirectly impacted by increased usage of the overall beach environment.

4.11.3 PANTHER BEACH

No evidence of archaeological resources was observed within or adjacent to the improvement areas and no impacts are anticipated.

4.11.4 BONNY DOON BEACH

CA-SCr-19 was found to be located on the south side of Liddell Creek, approximately 450 yards east of Highway 1. The site is well outside the boundaries of improvement locations and no direct or indirect impacts are anticipated.

4.11.5 YELLOWBANK BEACH

CA-SCr-36 is located approximately 250 yards east of Highway 1 on the north side of Yellowbank Creek and no direct or indirect impacts from beach improvements are anticipated.

CA-SCr-57 is located on a bluff south of the beach, approximately 350 yards southwest of Highway 1 and no direct or indirect impacts are expected.

4.11.6 LAGUNA CREEK BEACH

CA-SCr-17 is located approximately 250 yards northeast of Highway 1 on the east side of Laguna Creek and no direct or indirect impacts are anticipated.

CA-SCr-58 is located on a terraced area immediately above the beach, on the west side of Laguna Creek and immediately adjacent to the proposed Wetland and Natural Preserve area. The shell and chert midden site extends over a relatively large area (approximately 350 yards by 100 yards) and may represent a more permanent settlement-type site. Existing trails presently transect the site area.

Beach and parking improvements would not impact the site directly. The General Plan proposes to direct and control access to each of the beaches. It is likely, therefore, that the existing trails in this area would be closed resulting in a beneficial impact on the protection of this site.

Similar to other beaches, however, increased usage of the overall beach environment could result in indirect impacts to the site. Furthermore, if trail improvements are proposed in the future, direct adverse impacts could occur as a result of land alteration activities.

4.12 ARCHAEOLOGY AND CULTURAL RESOURCES -- MITIGATION MEASURES

No direct adverse impacts to archaeological or historical resources are anticipated as a result of the proposed improvements at the North Coast beaches. The one exception could be at Laguna Creek beach (CA-SCr-58), where direct impacts could occur if trail improvements are ever considered. In the event that such improvements are proposed, steps should be taken to mitigate impacts that would likely occur from land disturbance activities. Mitigation should be preceded by the subsurface testing of the site to determine the horizontal and vertical boundaries, depositional integrity and significance of the cultural deposits. Mitigation alternatives would likely include preservation of the resource in its present condition by rerouting trails and avoiding the site; "capping" or covering the site with a fill material so that trail work does not disturb the cultural deposits; or conducting a program of data retrieval through excavation of those portions of the site which would be disturbed as a result of trail work.

In the event of archaeological testing or excavation, all such work should be conducted within the context of regional research consideration by a fully qualified archaeologist familiar with the prehistory of the region and in consultation with local Native American representatives.

Archival review and field survey efforts have identified the known cultural resources for the six beaches. It is, however, noted that because of the shifting sand dunes, there is a high potential for buried archaeological deposits that could be discovered during land alteration activities associated with the proposed improvements. In the event that archaeological remains are discovered, land alteration work in the general vicinity of the find should be halted and a qualified archaeologist should be consulted. Prompt evaluations could then be made regarding the finds and a course of action acceptable to all concerned parties could then be adopted. If prehistoric archaeological deposits are discovered, local Native American organizations should be consulted and involved in making resource management decisions.

4.13 VISUAL AND AESTHETIC CONSIDERATIONS -- THE SETTING

Existing visual resources in the program area are described in both the General Plan[1] and in The North Coast Today and Tomorrow.[2]

Typical examples of the visual character of the program area are provided in Exhibit 12, A through H.

4.14 VISUAL AND AESTHETIC CONSIDERATIONS -- THE IMPACTS

One of the underlying purposes of the General Plan is to preserve the unexcelled visual resources on and along the North Coast and simultaneously to ensure that improvements made to enhance public access to the North Coast beaches would not spoil the area's visual quality and aesthetic character for the recreational public, passers-by, and residents. This purpose of the General Plan would be carried out through implementation of the General Pan policy that states that no site improvements shall be permitted that detract from or contrast with the existing scenic quality of the area.[3]

The major features of the General Plan which could affect the visual quality of the program area are:

- The extent of grading needed for the proposed parking areas.
- The installation of signs and small structures providing information for visitors -- directing beach-goers to parking areas or trails and away from sensitive habitat -- or other improvements, including sanitary facilities, trash cans, or fences and gates.
- Visibility of parked cars as seen by recreationists, travelers, or residents.

Implementation of the parking improvements should result in an overall improvement in the visual quality of the program area. At the present time parking occurs at numerous "unofficial" locations along both sides of Highway 1. Parked vehicles are highly visible to travelers on Highway 1. The result of this parking is a highly degraded visual quality along Highway 1. Implementation of the parking improvements would result in the elimination of some of the existing parking along Highway 1 and improvement to other existing parking areas. Although parked cars would still be visible -- by recreationists, travelers, or residents -- the overall visual impact would be improved with the proposed improvements.

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1 General Plan for the North Coast Beaches, op. cit., pages 31 to 33.

2 The North Coast Today and Tomorrow, North Coast Beaches Advisory Committee, June 1985, pages 17 to 56.

3 General Plan for the North Coast Beaches, op. cit., page 33.

Implementation of some of the parking improvements would result in the removal of existing vegetation and require significant cuts in existing slopes. The General Plan proposes the revegetation of the resulting cutslopes with native vegetation. Guidelines for revegetation are contained in the General Plan. Experience in the area, however, indicates that it may be difficult to revegetate the new cutslopes. The ability to revegetate the cutslopes would depend in large part on the steepness of the cut and the substrate conditions. Even if the revegetation efforts are successful, complete revegetation may take as long as ten years. Mitigation measures in section 4.6 (Vegetation and Wildlife) of this EIR recommend the establishment of test plots in those areas designated for revegetation to define the planting techniques most likely to give positive, long-term results. Implementation of this mitigation measure would help to ensure successful revegetation of cutslopes and, thereby reduce the visual impacts associated with the cutslopes.

4.14.1 SCOTT CREEK BEACH

Construction of the 110-vehicle parking lot at Scott Creek Beach would result in the removal of existing coastal scrub vegetation and, depending on the final plans, a moderate to steep cutslope. Except for a short view at the entrance to the parking lot, the cutslope would likely not be visible to motorists on Highway 1. The cutslope would, however, be visible to users of the parking lot.

Construction of the 110-vehicle parking lot would allow for the elimination of existing parking along Highway 1 in this location. This elimination of parked vehicles would result in a beneficial visual impact.

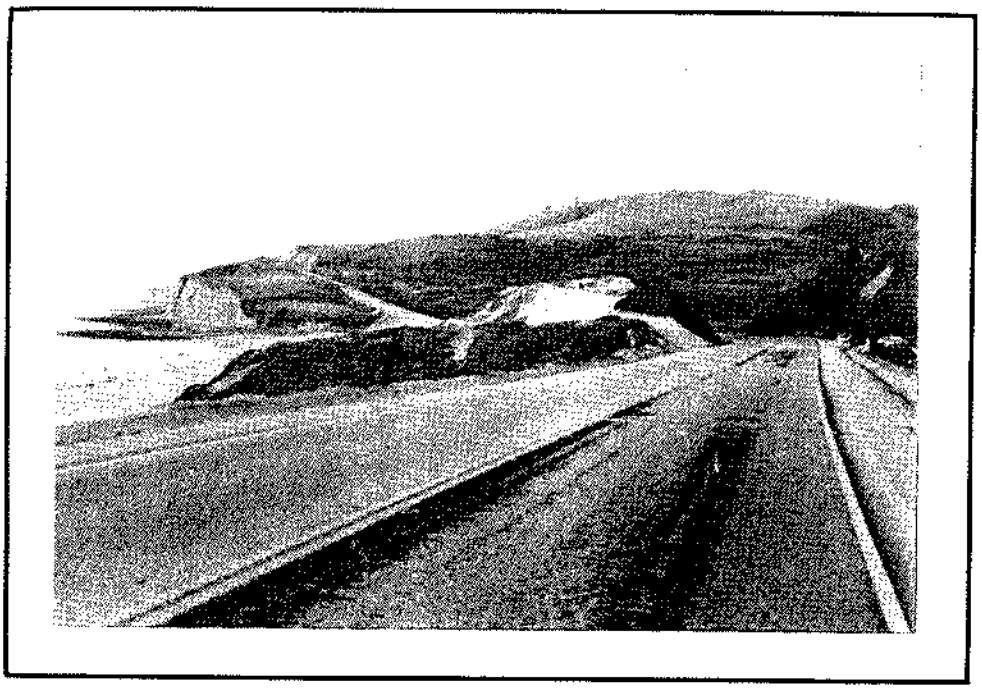
The location of the 30-vehicle parking lot at the north end of Scott Creek Beach is highly visible to motorists on Highway 1 and some of the dune areas of the beach. Parked vehicles would be highly visible to motorists on Highway 1. Furthermore, it is likely that during certain times of the day glare reflected off of the parked cars would also be visible. Without adequate mitigation, construction of this parking lot would result in a significant adverse visual impact.

It is the intent of the General Plan that this parking lot would be visually screened from Highway 1 with earth mounds and native landscaping. No plans are available for the mounding and landscaping and, therefore, it is not possible to evaluate how successfully the parked cars would be screened. Due to the elevation and visibility of the 30-vehicle parking lot it is unlikely, however, that the parked vehicles would be completely screened from motorists on Highway 1. In order to completely screen the parked vehicles it is likely that the earth mounding and landscaping would need to be so extensive that the mounding and landscaping itself would have adverse visual impacts.

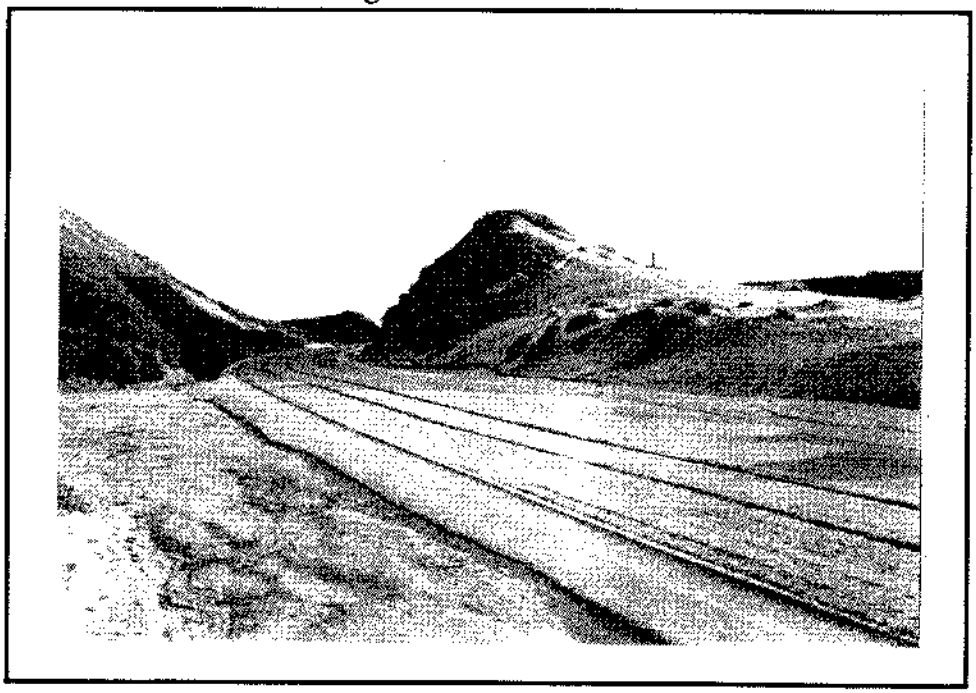
The proposed fencing around the dune restoration area would be visible to travelers on Highway 1. The fencing would not, however, result in a significant adverse visual impact.

4.14.2 DAVENPORT LANDING BEACH

The General Plan recommends grading along Davenport Landing Road at Davenport Landing Beach to provide for additional parking. Depending on the final design, moderate to steep

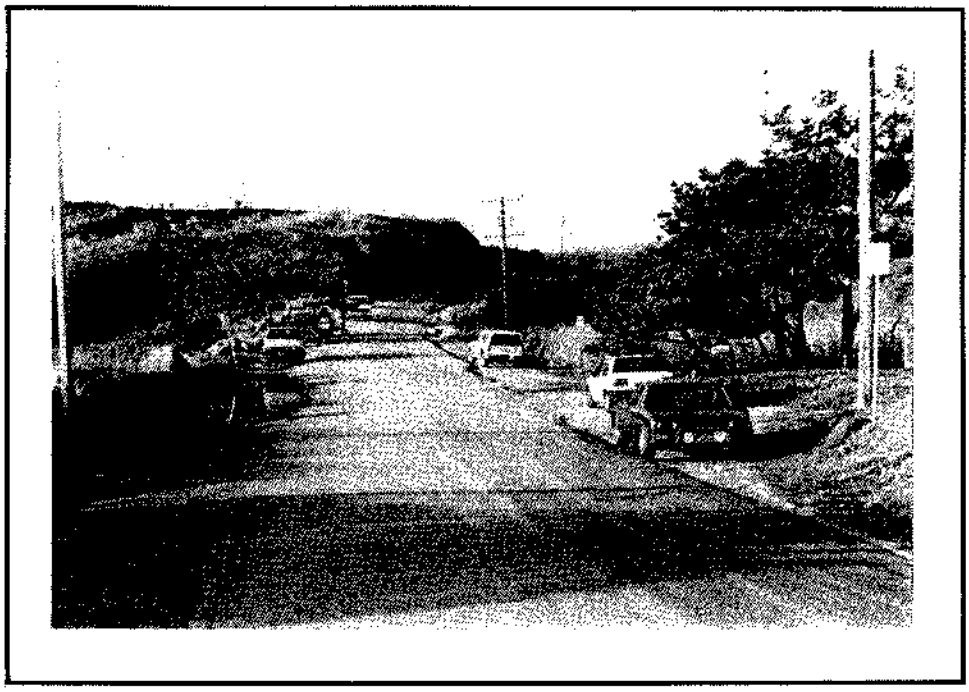


A. Scott Creek Beach - Looking North on Highway 1 near proposed 110-Vehicle Parking Lot.

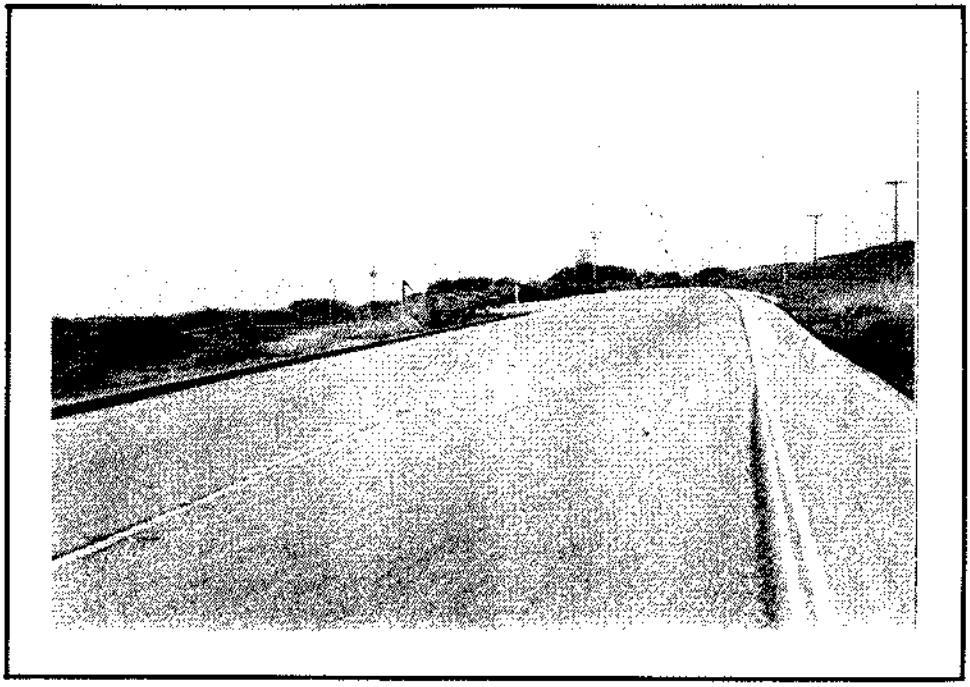


B. Scott Creek Beach - Looking South on Highway 1 near North End of proposed 110-Vehicle Parking Lot.

EXHIBIT 12 - VISUAL CHARACTER OF PROGRAM AREA
County of Santa Cruz, California

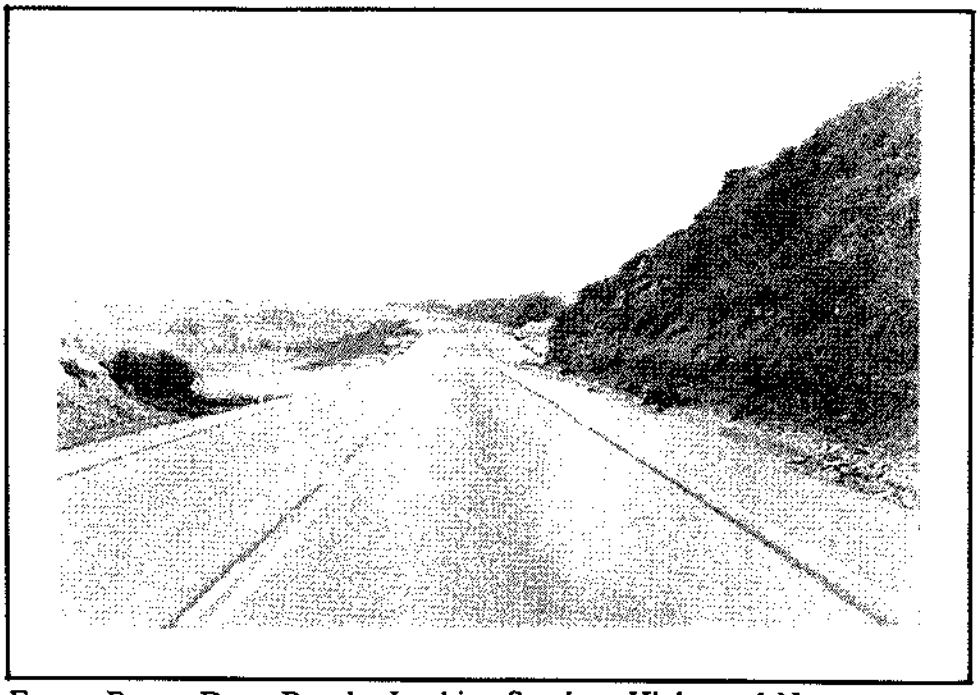


C. Davenport Landing Beach - Looking North on Old Coast Road Showing Existing and Future Parking.

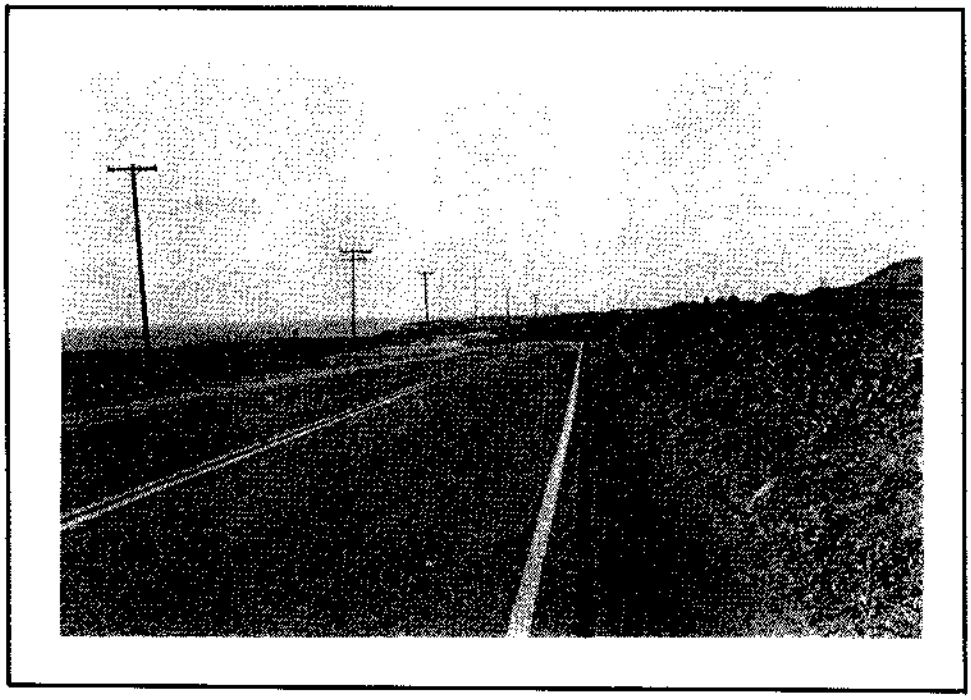


D. Panther Beach - Looking North on Highway 1 Showing Existing Parking on Eastside.

EXHIBIT 12 - VISUAL CHARACTER OF PROGRAM AREA
(Continue) County of Santa Cruz, California

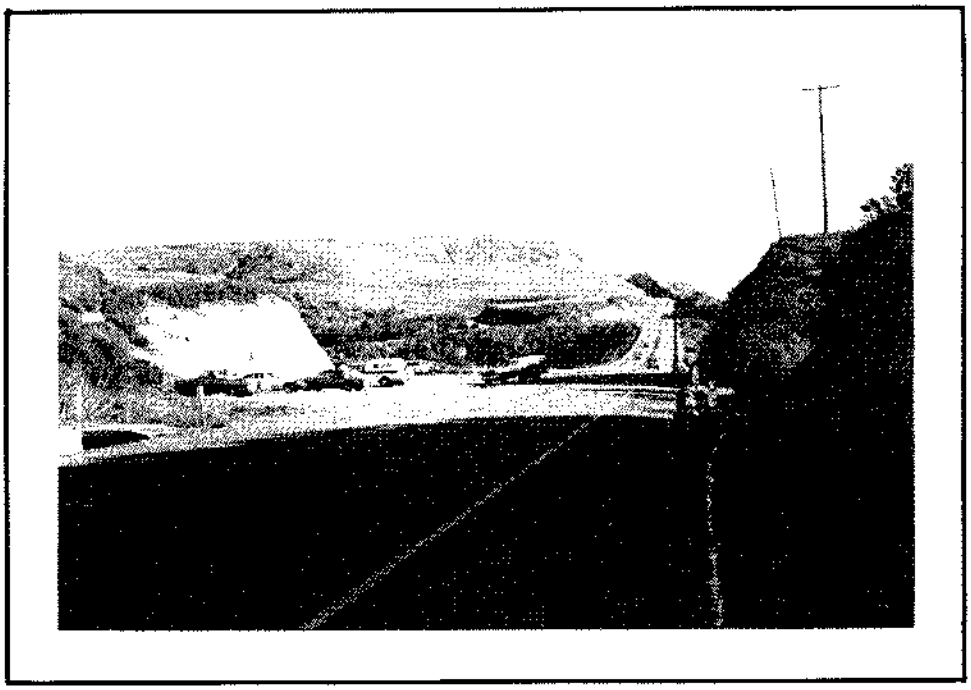


E. Bonny Doon Beach - Looking South on Highway 1 Near Intersection of Bonny Doon Road and Highway 1.

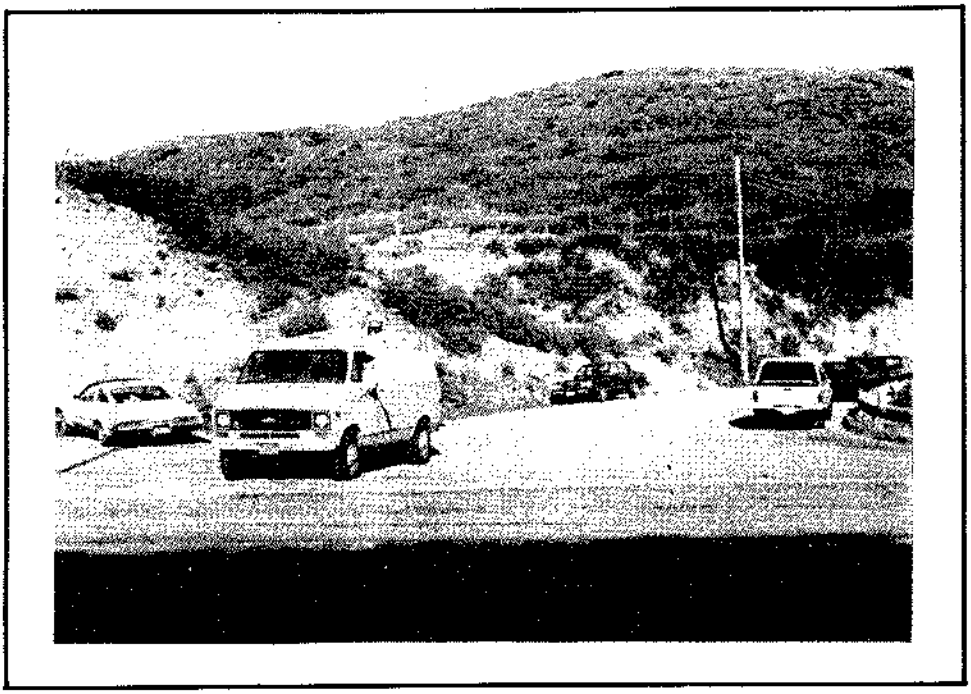


F. Yellowbank Beach - Looking North on Highway 1 Showing Existing Parking and Future Shoulder Widening.

EXHIBIT 12 - VISUAL CHARACTER OF PROGRAM AREA
(Continue) **County of Santa Cruz, California**



G. Laguna Creek Beach - Northern Intersection of Laguna Road and Highway 1, Looking East.



H. Laguna Creek Beach - Existing Parking on Laguna Road at the Intersection of Highway 1 and Laguna Road.

EXHIBIT 12 - VISUAL CHARACTER OF PROGRAM AREA
(Continue) **County of Santa Cruz, California**

cutslopes may be visible to motorists and others along Old Coast Road. Assuming that efforts for revegetation of the cutslopes are undertaken and are successful, such grading would result in a "cleaning up" of the existing conditions resulting in an overall improved visual quality at this location.

4.14.3 PANTHER BEACH

In general, proposed improvements at this beach would have no negative visual impacts.

4.14.4 BONNY DOON BEACH

Assuming that it is successful, the proposed coastal scrub restoration area west of the 80-vehicle parking area would result in a positive visual impact.

The potential future parking expansion area would require removal of a significant amount of coastal scrub habitat and may require a significant amount of grading. The resulting cutslopes would be highly visible to motorists on Highway 1. The significance of the visual impact would again depend on the successfulness of revegetation efforts.

4.14.5 YELLOWBANK BEACH

An improvement in the visual quality of Yellowbank Beach would result from the proposed regrading of the existing parking lot and the relocation of the four existing power poles.

4.14.6 LAGUNA CREEK BEACH

Expansion of the existing parking lot at Laguna Creek Beach would involve cutting the hillside behind the parking lot further. The amount of grading that would be involved would depend on the final parking lot expansion plan. It should be noted, however, that there is an old roadcut behind the existing cutslope so it is possible that when the existing cutslope is graded back, the new cutslope could be about half as high as the existing slope. This would, therefore, reduce the adverse visual impact of the existing cutslope. As stated above, however, it would be difficult to revegetate this new cutslope.

The General Plan also includes the development of a number of small individual structures such as entrance stations (kiosks) at the parking lots at Scott Creek, Bonny Doon, Yellowbank, and Laguna Creek beaches, trash containers and vault toilets. In addition a comprehensive sign program is proposed. Exhibit 8 lists the proposed sign schedule and the recommended placement of the signs is indicated on Exhibits 3 through 7. The small size of the individual structures and the signs would minimize their visual impact and their locations would avoid any disruption of existing scenic views.

4.13 VISUAL AND AESTHETIC CONSIDERATIONS -- MITIGATION MEASURES

Implementation of the mitigation measures contained in sections 4.3 (Geology and Soils) and 4.6 (Vegetation and Wildlife) of this EIR would reduce the adverse visual impacts associated with vegetation removal and grading.

The only additional mitigation measure necessary would be the preparation of a specific program to visually screen the 30-vehicle parking lot at Scott Creek Beach from Highway 1. Prior to the approval of this parking lot a grading and landscaping plan shall be prepared. The intent of this plan shall be to maximize the amount of visual screening of the parked vehicles to motorists on Highway 1. Although implementation of this mitigation measure would reduce the visual impact of the parking lot it would not reduce the impact to a level of less than a significant impact.

4.16 TRAFFIC AND CIRCULATION -- THE SETTING

The principal reference used to prepare this section was a report prepared by Wilbur Smith Associates entitled General Plan for the North Coast Beaches -- Transportation Impact Study, January 1989. This report is available for review at the County of Santa Cruz Planning Department.

4.16.1 HIGHWAY 1

Few roadways in the world are as famous as Highway 1. Many people make driving on Highway 1 an integral part of their vacation visits to California. In addition to non-residents, Highway 1 attracts a large number of weekend recreational users from Northern California's cities. This makes Highway 1 one of those unique roadways with higher levels of traffic at peak recreational periods than during traditional peak periods.

In general, Highway 1 in the program area can be characterized as a very scenic roadway. The road rises and falls; there are curves; it is narrow in places and the views are frequently spectacular. Roadway engineers working in these types of scenic settings must strike a complicated balance between meeting strict design guidelines and preserving the spectacular nature of the roadway experience. It is within this context that the improvements associated with the General Plan for the North Coast Beaches (the General Plan) must be evaluated.

Highway 1 is a two-lane highway in the program area. Just north of Santa Cruz, there are several passing sections, but there are no passing sections in the program area. In many locations the shoulders are not standard (eight foot) width, and sight distances are limited leading to restrictions in passing.

Exhibit 13 presents traffic volumes in the program area. As shown, traffic volumes in the program area have been gradually increasing over the past five years. According to the Transportation Research Board's 1985 Highway Capacity Manual, all peak hour traffic volumes for Highway 1 are within the Level of Service D category (two-way volumes between 1,200 and 1,800 vehicles per hour). This indicates acceptable quality of service but approaching a level which may be unacceptable.

According to Caltrans, the segment of Highway 1 from the Santa Cruz City line to the San Mateo county line has lower accident rates than the state highways on the average.[1] Caltrans also reports that 1985 traffic conditions for the entire segment were Level of Service D, which agrees with results presented above based on 1987 traffic volumes.[2] Traffic and parking conditions at each of the six beaches are discussed below.

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1 Draft Route 1 Santa Cruz County Route Concept Report, Caltrans District 4, 1987, page 5.

2 Ibid., page 7.

EXHIBIT 13

Highway 1 Traffic Volumes

Location	Year	Average Daily Traffic: Peak Hour	Peak Month	Annual Average
Santa Cruz North City Limits	1982	1,250	12,100	8,800
	1984	1,350	12,500	9,800
	1987	1,300	11,800	9,300
Percent Increase (1982 to 1987)		4%	3%	6%
Bonny Doon Road	1982	1,450	10,500	7,200
	1984	1,600	10,500	8,100
	1987	1,800	11,500	8,900
Percent Increase (1982 to 1987)		24%	10%	24%
Davenport, North	1982	1,200	7,700	5,400
	1984	1,300	8,200	6,000
	1987	1,600	9,900	7,200
Percent Increase (1982 to 1987)		33%	29%	33%
San Mateo County Line	1982	1,150	6,500	4,600
	1984	1,300	7,100	5,100
	1987	1,350	7,700	5,400
Percent Increase (1982 to 1987)		17%	18%	17%

All volumes two-way.

Source: Wilbur Smith Associates; January, 1989.
Caltrans Traffic Volumes; 1982, 1984, 1987.

4.16.2 TRAFFIC AND PARKING CONDITIONS IN THE PROGRAM AREA

Scott Creek Beach

This beach is large and easily visible from Highway 1. Vehicles travelling south on Highway 1 approach Scott Creek on a downgrade through a cut.[3] Visibility is fairly good in this direction. Continuing south, vehicles cross a narrow bridge (two lanes only) over Scott Creek. Next, they begin an upgrade after passing through a slight curve. The upgrade soon enters a deep cut with a curve at the top. Sight distances are poor in this area. No passing is permitted in this area.

There are no off-road parking facilities in the beach area. Parking takes place on shoulders at both sides of Highway 1. Eight traffic accidents were reported at this beach during the period from 1980-1982.[4]

Davenport Landing Beach

Davenport Landing Beach is located on a loop road (Davenport Landing) to the west of Highway 1. Davenport Landing Road serves several residences in addition to the beach. Visitors to the beach park on the shoulders of this relatively narrow roadway. A previous study reports that this beach does not cause problems for Highway 1 traffic.[5]

Currently, there are limited sight distances at the north Davenport Landing Road/Highway 1 intersection. Swanton Road forms a "T" intersection with Highway 1 just north of this intersection. These two intersections are located within 100 feet of each other.

The southern Davenport Landing Road/Highway 1 intersection is located on a relatively flat, straight section of Highway 1. Therefore, sight distances are good and no significant traffic problems appear to exist.

Panther Beach

Parking for Panther Beach is located on a wide area well off the side of Highway 1. In general, sight distances are good from Highway 1 to this area except at the north end of the parking area

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3 A cut is a man-made valley through which a roadway or other facility passes. Cuts are built to reduce roadway grade (steepness).

4 North Coast Beach Parking Study, Santa Cruz Transportation Commission, June 1983, page 5. More recent accident information is currently unavailable due to changes in statewide accident disclosure procedures. If available, more recent information will be included in the Final EIR.

5 Ibid., page 19.

where sight distances are somewhat limited. No traffic accidents were reported during the years 1980-1982 at this beach.[6]

Bonny Doon Beach

The Bonny Doon Beach parking area is located on a relatively flat section of Highway 1. A slight curve reduces sight distances at the south end of the parking area and Highway 1 at the north end is in a deep cut which also reduces sight distances. A previous study found that six accidents had occurred here between 1980 and 1982.[7]

Bonny Doon Road forms a "T" intersection with Highway 1 just north of the parking area. On days with heavy beach usage, parking frequently spills over onto Bonny Doon Road and the east shoulder of Highway 1.

Yellowbank Beach

The Yellowbank Beach parking area is located off Highway 1. Vehicles enter the parking area via a wide unimproved flat area. This access point intersects Highway 1 at a flat section. To the south, Highway 1 remains level and straight and there is good visibility. To the north, Highway 1 goes into a slight downgrade which limits visibility slightly.

No accidents were reported during the years 1980-1982 in this area, indicating that it is relatively safe. This is a reasonable conclusion given the fact that visibility from the parking access point is good, and that there is one access point to Highway 1 concentrating the number of traffic movements in a single location so Highway 1 drivers can be prepared for entering or slowing traffic.

Laguna Creek Beach

The parking area for Laguna Creek Beach is located on the east side of Highway 1, forcing pedestrians to cross Highway 1 to reach the beach. Laguna Road forms a loop intersecting Highway 1 approximately one-fourth of a mile south of the parking area and at the southern edge of the parking area. Overflow parking occurs on the shoulder of Laguna Road adjacent to the parking area.

To the south of the parking area, Highway 1 is straight and flat with good sight distances. However, to the north of the parking area, Highway 1 is in a cut which limits visibility somewhat, especially for vehicles entering or exiting at the north end of the parking area. Four accidents were reported here during the years 1980 to 1982.[8]

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6 Ibid., page 17.

7 Ibid., page 5.

8 Ibid.

4.16.3 PARKING

Parking is the most problematic transportation aspect of current beach usage. As discussed above, unimproved parking areas have developed to the side of Highway 1 at most beach locations. Vehicles slowing to turn into the parking areas or slowly moving onto Highway 1 from the parking areas constitute a potentially serious safety hazard, especially given the high traffic speed and limited sight distances on Highway 1. During the peak periods, space in these parking areas is insufficient for demand, forcing others to park on the shoulder of Highway 1 - an even greater traffic hazard.

In addition to vehicle-vehicle conflicts at the parking areas, a significant problem is pedestrian-vehicle conflicts. Pedestrians crossing Highway 1, walking along the highway's shoulder or unloading vehicles, are extremely vulnerable to passing high speed auto traffic. Clearly, hazards associated with the present parking situation are potentially extremely serious.

The existing parking conditions at each beaches considered in the General Plan is discussed above. Additional information is provided in the North Coast Beach Parking Study, prepared by the Santa Cruz County Transportation Commission in June 1983.

4.16.4 TRANSIT SERVICE

The program area is served by Santa Cruz Metropolitan Transit District (SCMTD) service. SCMTD bus route number 40, Davenport/North Coast Beaches, provides service from the Downtown Santa Cruz Transit Center to Waddell Creek. Nine daily round trips are provided on weekdays and six trips are provided on weekends. Many of the runs are equipped with bicycle racks and are handicapped accessible. All beaches are accessible from bus route 40 buses.

No baggage exceeding five feet in length is allowed on SCMTD buses (including fishing poles and surfboards) which limits the potential for this bus route to carry recreational passengers to the beaches. Fares are $0.60 per ride (regular adult); a wide variety of discount fares and passes are also available. Some SCMTD buses are designed to carry bicycles. Bicycles may be loaded and unloaded at selected bus stops. On bus route 40, these stops are located at:

- Metro Center (Santa Cruz)
- Mission Street at Western Drive
- Davenport Post Office (outbound)
- Davenport Pacific School (inbound)
- Waddell Creek

4.16.5 BICYCLE TRANSPORTATION

Bicycle transportation is supported and encouraged in Santa Cruz County. Highway 1 was part of the USA Bicentennial Bike Route in 1976. Caltrans has identified the segment of Highway 1

between Santa Cruz and the San Mateo County line as a "suggested and heavily used bicycle route".[9]

Highway 1 in the program area is not part of the County's existing or planned Class I (separate bikepath) or Class II (marked bike lane) bikeway network. However, given the scenic beauty of Highway 1 it probably attracts many bicyclists, especially during the summer months.

As discussed above, Highway 1 in the program area is relatively narrow and traffic operates at high speeds. Additionally, sight distances are limited in some areas due to the roadway's curving and undulating geometry. Furthermore, in many places shoulders have deteriorated and several bridges are too narrow to allow bikes to be passed safely by vehicles. These conditions add up to potentially hazardous bicycling conditions, especially for novices.

4.16.6 RAIL FACILITIES

A branch line of the Southern Pacific Railroad (SP Railroad) parallels Highway 1 from Santa Cruz to just south of Davenport Landing. The rail line, currently used for freight service, is relatively well maintained. It has a fairly wide right-of-way, in many places it includes an unimproved access roadway alongside the tracks. The railway is located on the western side of Highway 1 and passes directly by four of the six beaches, (Panther, Bonny Doon, Yellow Bank, and Laguna Creek). Additionally, it ends a relatively short distance from Davenport Landing Beach.

4.17 TRAFFIC AND CIRCULATION -- THE IMPACTS

4.17.1 PROJECT TRIP GENERATION

One of the most difficult aspects of the traffic and circulation analysis of the General Plan was estimating the project's trip generation. There is very little recent trip generation data for beaches. Furthermore, the available trip generation data is for projects which are not strictly comparable. The data is from larger beaches with more facilities than planned for the program area.

However, the trip generation caused by the improvements proposed as part of the General Plan is likely to be relatively small when compared to the existing beach trip generation. In other words, approximately the same number of people would use the beaches after the improvements are made as use them now. In fact, experience at beaches in San Mateo County suggests that attendance would decrease as a result of the improvements because a fee will be imposed to pay for them.[10] In the long run, use of the beaches is likely to slightly increase with or without the improvements.

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9 Draft Route 1 Santa Cruz County Route Concept Report, op. cit., page 4.

10 North Coast Beach Parking Study, op. cit., page 22.

Furthermore, except at Bonny Doon Beach, the General Plan proposes that parking supply would be limited to just slightly more than average existing demand, as shown in Exhibit 14. At Bonny Doon Beach the parking supply would be slightly less than the average existing demand. In addition to the provision of off-road parking facilities, the General Plan proposes that parking on the shoulders of Highway 1 be eliminated. This would be enforced through signage and issuing citations. Thus, for purposes of the transportation analysis, it is assumed that the proposed improvements would not generate a significant number of additional trips to the beaches.

While the transportation impacts of improvements at any particular beach is likely to be small, overall impacts may be greater. The reason for this is that the improvements would be paid for partly by charging parking fees. This could cause users to switch from beaches charging fees to free beaches, especially if the beaches are improved in a phased manner as planned.

Therefore, with respect to analyzing the impacts of improvements at any specific beach, the most significant transportation impact would be the layout and design of beach parking access, not additional trips generated from the improvements. From the perspective of improvements at all six beaches, the most significant impacts would be individual beach access and impacts of a staged beach improvement plan on attendance at other beaches. Both these aspects are discussed below.

4.17.2 TRANSPORTATION IMPACTS AT EACH BEACH

This section describes transportation impacts of specific improvements at each of the six beaches studied in the General Plan.

Scott Creek Beach

At the Scott Creek Beach, a 110-vehicle parking area would be built at the south end of the beach. This parking area would have one entrance well to the south of the existing parking areas (shoulders of Highway 1). At the access point, a left-turn lane for northbound Highway 1 traffic would be provided and shoulders would be widened.

An additional 30-vehicle parking area north of the bridge is proposed to be constructed as additional parking becomes necessary. The parking lot would be located at the top of the hill just before Highway 1 begins its downgrade towards Scott Creek. The parking area entrance should not have sight distance problems, however, Highway 1 shoulders should be widened at the parking area entrance to allow vehicles to decelerate and turn into the parking area without interfering with Highway 1 traffic.

An additional significant safety improvement is construction of a pedestrian bridge across Scott Creek adjacent to the existing narrow bridge for Highway 1 traffic. This would help keep pedestrians off Highway 1.

Finally, it must be emphasized that strict enforcement of Highway 1 shoulder parking restrictions must be included in the General Plan for this beach. The Highway 1 shoulder, where existing parking occurs, is much closer to the beach and, hence, more attractive to visitors than the

EXHIBIT 14

Targeted Number of Parking Spces Based on Beach Carrying Capacity

Name of Beach	Size of Beach1/	Carrying Capacity2/	Average Demand3/	Avilable Space4/	Targeted Supply5/
Scott Creek	609,000	609	90	10	110
Davenport Landing	92,000	92	35	206	90
Panther	13,320	13	15	55	30
Bonny Doon	238,514	239	100	50	80
Yellowbank	122,826	123	80	80	80
Laguna Creek	303,000	303	50	30	60

1/ In square feet.

2/ Optimum number of parties (and, therefore, vehicles) per 1,000 square feet of beach as measured between high and low tides.

3/ Number of vehicles based on observations made during summer weekends in 1987.

4/ Off-highway parking areas only.

5/ Represents a percentage of the physical carrying capacity, reflecting management objectives for that particular beach, as well as physical constraints.

Source: General Plan for North Coast Beaches, County of Santa Cruz, December 1987, Table 5, page 39

proposed beach parking areas. Without strict enforcement of parking restrictions, people would continue to park on the shoulders.

One of the proposed improvements consists of placing wood bollards along the westside of Highway 1 in the area of Scott Creek Beach. The wood bollards along, however, would not eliminate parking on the shoulder of the highway. For safety reasons the wood bollards would be placed on the outside edge of the highway shoulder. Therefore, vehicles would still be able to park on the shoulder unless strict enforcement keeps them from doing so.

The impact of this project would be to improve traffic safety on Highway 1 by confining parking to a specified facility located off Highway 1. Shoulder parking would be eliminated (assuming that the restrictions are strictly enforced). The pedestrian bridge across Scott Creek would also improve traffic safety by keeping pedestrians off Highway 1.

Davenport Landing Beach

The transportation improvements proposed for Davenport Landing Beach are relatively minor. They consist of grading Davenport Landing Road's shoulders to provide additional safe parking. A total of 90 parking spaces are proposed. The transportation impacts of this would be relatively small. As discussed above, this beach area currently does not cause problems for Highway 1 traffic, and traffic should not be increased significantly by the proposed improvements.

It should be noted, however, that the existing limited sight distances at the north Davenport Landing Road/Highway 1 intersection may cause problems if there was a significant increase in traffic. Furthermore, since the north Davenport Landing Road/Highway 1 and the Swanton Road/Highway 1 intersections are located within 100 feet of each other this may cause problems if there was a significant increase in traffic on Highway 1.

Panther Beach

The only transportation improvement proposed at Panther Beach is to construct a guard rail which would define the existing parking area and control access to it from Highway 1. Parking in the area would be reduced from 53 spaces to approximately 30. With strict enforcement of the shoulder parking restrictions, this improvement would enhance safety on Highway 1, and have a positive impact on traffic conditions.

Bonny Doon Beach

The transportation improvements at this beach would consist of expanding and improving the existing parking area. When completed, the parking area would have a capacity for 80 vehicles, an entrance would be provided at the area's north end (located across from the Bonny Doon Road intersection with Highway 1), and an exit would be located at the south end of the parking area.

North of the proposed parking area a future parking expansion area has been identified. This area is currently located on a rise above Highway 1 and access to it could present sight distance problems. It is anticipated that the additional parking area would be graded to eliminate any sight distance problems. However, a specific layout for the parking area is not included in the General Plan and, therefore, no detailed analysis could be performed as part of this EIR.

A left turn lane for northbound Highway 1 traffic would be built at the Bonny Doon Road/parking access/Highway 1 intersection and the southbound Highway 1 shoulder would be widened to allow deceleration space for vehicles turning into the parking area. In order to assure that safety on Highway 1 is improved, it would be important that parking restrictions on Highway 1 be enforced since the beach is very popular.

The most significant transportation impact of this project would to improve traffic conditions on Highway 1 in the program area. The improvements themselves are not expected to increase beach attendance. As with all the beaches, enforcement of parking restrictions would be important if the positive impacts of the transportation improvements are to be realized.

Because of Bonny Doon Beach's popularity, it is likely that demand for parking would exceed supply on days of peak usage. Currently, visitors park on the shoulders of Bonny Doon Road when the unimproved parking area is filled. While this is not as great a safety hazard as parking on Highway 1 shoulders, it does require that pedestrians walk across Highway 1 which is potentially hazardous.

Yellowbank Beach

The transportation improvements proposed for Yellowbank Beach consist of improving the existing parking area and widening the shoulders of Highway 1 in both the northbound and southbound directions to allow vehicles access to the area. The parking area would have a capacity for approximately 80 vehicles. No left turn lane for northbound Highway 1 traffic into the parking area is proposed. Highway 1 is straight and flat in this area so a separate turn lane may not be required if the shoulders are widened to the standard eight foot width as proposed.

The most significant transportation impact of improvements at Yellowbank Beach would be the positive impact on Highway 1 safety. In order for these improvements to be realized, parking restrictions on the shoulders of Highway 1 must be strictly enforced. These improvements are not expected to increase attendance at the beach significantly.

Laguna Creek Beach

The existing Laguna Creek Beach parking area is located on the eastside of Highway 1. This means that pedestrians must cross Highway 1 to reach the beach, an inherently dangerous situation. Sight distances for the pedestrian crossing from the north may be poor depending on the pedestrian crossing's exact location. The transportation improvements proposed at Laguna Creek Beach consist of improving the parking area, widening both Highway 1 shoulders to the

eight-foot standard width in sections adjoining the parking area, and painting a pedestrian crossing zone on the highway. Access to the parking area would be via Laguna Creek Road.

These transportation improvements are expected to increase traffic safety in the beach area. This is a positive impact. The improvement program would not increase attendance at the beaches significantly.

4.18 TRAFFIC AND CIRCULATION -- MITIGATION MEASURES

The General Plan improvements are not expected to result in significant adverse traffic conditions in the program area. In fact, the traffic and circulation improvements would improve program area traffic safety. However, additional improvements could be made to further increase traffic safety. The mitigation measures described below fall into this category.

As discussed in section 3.4 of this EIR, Caltrans has jurisdiction over any improvements proposed within its right-of-way. In order to make any improvement with a Caltrans owned right-of-way, an encroachment permit is required. In the encroachment permit process legitimate safety concerns, such as those used to define the improvements discussed below, and Caltrans standards, may be applied by Caltrans to require implementation of the improvements suggested below. This would be the case even if the proposed project's specific transportation impacts do not justify the need for the improvement.

4.18.1 SCOTT CREEK BEACH

The final improvement plan for Scott Creek Beach should include some provision for buses to drop off passengers at the beach. The beach is currently served by bus service and this service could be expanded to increase recreation possibilities for Santa Cruz citizens and reduce negative environmental impacts of driving. While identifying bus stops for all beaches is part of the General Plan, programs to increase the use of transit service must be encouraged. Simply identifying bus stops does not meet that requirement (see section 5.3.5 of this EIR for further discussion of this mitigation measure).

An analysis of bicycle needs should be performed to determine whether the narrow bridge can safely accommodate bicyclists.

The shoulder parking restrictions must be diligently enforced. Without them, people would continue to park on Highway 1 shoulders negating any positive impact of the improvements.

4.18.2 DAVENPORT LANDING BEACH

The same mitigation measures are recommended for Davenport Landing Beach as for Scott Creek Beach. Additional mitigation measures are as follows:

Future recreational rail service on the Davenport Branch Line of the SP Railroad should be considered (see section 5.3.5 of this EIR for a further discussion of this mitigation measure). A trail or bikeway from the end of that track should be considered as well.

The northern intersection of Davenport Landing Road with Highway 1 should be improved. Currently, sight distances are somewhat limited to the north and Davenport Landing Road slopes steeply down towards the intersection. Furthermore, Swanton Road intersects Highway 1 a slight distance to the north of the Davenport Landing intersection. A plan for reorienting these two "T" intersections into one four-leg intersection should also be considered.

4.18.3 PANTHER BEACH

Mitigation measures suggested include making provisions to encourage use of existing bus service and investigation of future rail service on the SP branch rail line (which passes directly by the site).

4.18.4 BONNY DOON BEACH

The same general mitigation measures should be considered for Bonny Doon Beach as for the other beaches. These measures include provisions to encourage use of existing bus service and investigation of future rail service on the SP branch rail line.

If parking on the shoulder of Bonny Doon Road is to be prohibited such restrictions must be strictly enforced. If parking is to be permitted, provisions for increasing safety should be added to the plan. These provisions include warning signs for Highway 1 motorists indicating pedestrian crossing, painting a crossing area across Highway 1, consideration of widening and grading Bonny Doon Road shoulders, as well as other safety improvements.

If the future parking expansion area is to be considered further a specific parking layout should be prepared and an analysis of the safety of the access from Highway 1 should be completed.

4.18.5 YELLOWBANK BEACH

The same mitigation measures are suggested for Yellowbank Beach as for the other beaches. These measures include provisions to encourage use of existing bus service and investigation of future rail service on the SP branch rail line.

4.18.6 LAGUNA CREEK BEACH

The same mitigation measures are suggested for Laguna Creek Beach as for the other beaches. These measures include provisions to encourage use of existing bus service and investigation of future rail service on the SP branch rail line.

In addition to the above mitigation measures it is recommended that some safer means of crossing Highway 1 be investigated. An overpass or underpass should be considered. Since the trail to the beach on the west side of Highway 1 is located on a bluff, an overpass might be feasible and attractive to pedestrians. It is acknowledged, however, that construction of an overpass or underpass at this location would likely have environmental impacts which would need to be further studied.

5.0. IMPACT OVERVIEW

5.1 ALTERNATIVES

The two alternatives discussed in this section are the No Project Alternative and the Mitigated Alternative. Other alternatives were reviewed but were withdrawn from consideration. For example, consideration of an alternative site for the project is not relevant to the proposed project. The General Plan has been prepared to guide the future development and management of six specific beaches along the North Coast. The selection of an alternative site, for example other beaches along the North Coast or beaches along the South Coast simply would not achieve the objectives of the General Plan.

Another alternative would be consideration of a smaller project, less beaches, or consideration of a larger project, more beaches. Similar to the alternative site discussion, consideration of a smaller project was rejected because it would not achieve the objectives of the General Plan. There are several other beaches along the North Coast which could be incorporated into a larger project. However, except for Davenport Beach, other beaches along the North Coast are already under some type of management plan. Red, White and Blue Beach is under private ownership. A General Plan has previously been adopted for Wilder Ranch State Park. The State Department of Parks and Recreation's Big Basin State Park includes the state owned beach at the mouth of Waddell Creek. South of this state park is Greyhound Rock which is owned by the Department of Fish and Game and managed by the County of Santa Cruz. It is not necessary, therefore, to incorporate these beaches into the General Plan.

Consideration had been given to the inclusion of Davenport Beach into the General Plan. It was decided, however, to exclude this beach from the General Plan because of its proximity to the Davenport community. A separate plan will be prepared for Davenport Beach and incorporated into a comprehensive community plan at a future date.

5.1.1 NO PROJECT ALTERNATIVE

The No Project Alternative would involve no adoption of the General Plan and, subsequently, no improvements at any of the six North Coast beaches. Under the No Project Alternative existing conditions at each of the six beaches would continue and the impacts associated with the individual improvement plans would not occur.

With this alternative the existing conditions and problems described in the report titled The North Coast Today and Tomorrow would persist. These problems included litter and sanitation, parking and transportation, pedestrian access and safety, and inadequate law enforcement. In addition natural resources, such as sand dunes where vegetation has been trampled by uncontrolled access and wetlands that are important to wildlife, would continue to suffer.

Furthermore, the policies of the LCP aimed at protecting and improving conditions along the North Coast would likely not be implemented by Santa Cruz County in any coordinated way. Under this alternative the pressure to prepare a comprehensive plan to effectively solve the North Coast problems would continue.

5.1.2 THE MITIGATED ALTERNATIVE

The mitigated alternative would incorporate the mitigation measures recommended in the EIR. The purpose of the mitigated alternative would be to minimize the identified potential adverse impacts that would occur through project implementation.

Mitigation would include the following:

- Elimination of the 30-vehicle parking lot at the north end of Scotts Creek Beach.
- The establishment of parking only on the inland side of Davenport Landing Road rather than along the coastal side as proposed north of the beach access.
- Construction of a third stairway in the parking lot at Bonny Doon Beach, approximately midway between the other two proposed stairways.
- Elimination of the structural staircase to Laguna Creek Beach.
- Elimination of the 110-vehicle parking lot at the southern end of Scott Creek Beach.
- Elimination of the proposed parking expansion area at Bonny Doon Beach.
- Establishment of buffer areas along access trails adjacent to agricultural fields.
- Modification of the General Plan's policies to remove flashboard dams and to eliminate any existing water diversion from Scott Creek or Laguna Creek.
- Incorporation of plans to encourage transit use along the North Coast
- The improvement of the Davenport Landing Road/Highway 1 intersection.
- Consideration of an overpass or underpass for pedestrians crossing Highway 1 from the parking lot at Laguna Creek Beach.

Implementation of the Mitigated Alternative would, however, result in some environmental impacts not associated with the proposed project.

One impact of implementation of the mitigation measures would be to eliminate both proposed parking lots at Scott Creek Beach. Alternative locations for the 110-vehicle parking lot could be in agricultural fields to the south or along the eastside of Highway 1. If the parking lot was located further to the south this would result in the removal of land from agricultural production and additional conflicts between agriculturalists and recreationists. Construction of a parking lot

on the eastside of Highway 1 would likely result in hazards for pedestrians crossing Highway 1. If parking was permitted in this location provisions for increasing pedestrian safety would be needed. These provisions would include warning signs for Highway 1 motorists indicating pedestrian crossing, painting a crossing area across Highway 1, and possibly widening the shoulders.

The construction of an overpass or underpass of Highway 1 at Laguna Creek Beach would likely have its own environmental impacts. It is too speculative to further discuss such impacts at this time. If such an overpass or underpass is further considered the potential impacts would also need to be further studied.

5.2 GROWTH INDUCING IMPACTS

A project can cause growth inducing impacts directly or indirectly if it stimulates rapid or unplanned growth. Implementation of the General Plan would not result in growth inducing impacts for a number of reasons:

- A traditional way to assess growth inducing impacts of a proposed project relates to public services and facilities. When a project is proposed in a relatively undeveloped area, roads, water, sewer, and other urban services often must be extended to the new project. Then the availability of these new services makes it possible for other development to occur and connect with these facilities. Implementation of the planned improvements at the North Coast beaches does not include, nor would not require, the extension of urban services. Thus there would be no growth inducing impacts associated with the extension of such services.

- The planned improvements do include the provision of parking at each of the North Coast beaches. A significant increase in the parking supply could have some growth potential impact. The General Plan proposes, however, that the parking supply would be limited to just slightly more than average existing demand, except at Bonny Doon Beach where the supply would be slightly less than the average demand. Without a large oversupply of parking, the provisions of the General Plan to provide parking would not have growth inducing impacts.

- As stated in section 4.17 (Traffic and Circulation) of this EIR it is estimated that approximately the same number of people would use the beaches after the improvements are made as use them now. There may initially be some shift in attendance at the North Coast beaches with the imposition of parking fees, as proposed. As people become accustomed to paying for beach parking attendance would likely return to current levels. Even if there was a slight increase in beach attendance after all the improvements were completed the increase would not be enough to generate growth inducing impacts.

5.3 CUMULATIVE IMPACTS

Cumulative impacts associated with implementation of the General Plan can occur when effects of little or no significance are combined with existing or projected conditions. Effects of the General Plan which could contribute incrementally to existing or anticipated conditions and result in cumulative impacts are discussed below.

5.3.1 CUMULATIVE TRAFFIC AND CIRCULATION IMPACTS

The program area encompasses the last stretch of unimproved coastline between the Cities of San Francisco and Santa Cruz. While there may be advantages to the unimproved nature of the beaches, there are also significant disadvantages. One of the most important disadvantages is the safety and transportation problems inherent in the existing undeveloped beaches.

The General Plan proposes that fundamental improvements be made to the six north coast beaches in order to enhance visitor enjoyment, improve the beaches' natural environments, and improve safety (for visitors and Highway 1 traffic). This discussion is limited to the cumulative impacts of improvements at all six beaches and transportation improvements, specifically.

In terms of cumulative impacts, the fundamental question is: How will the General Plan affect beach attendance? As has been previously discussed, the improvements program itself is not expected to increase attendance significantly at the beaches. The reason is that attendance would be limited by the number of parking spaces provided at the beaches (which is not significantly higher than existing usage).

Furthermore, the improvements provided in the General Plan are not expected to increase future demand for the beaches. These improvements would simply enhance the beach experience, not cause a major change which might draw more people.

However, the types of visitors are expected to change in subtle ways. According to the General Plan, the most important reasons for these changes would be the imposition of fees and the imposition of a more regulated and supervised beach operation. The General Plan predicts that user-type may change from young singles to family members.[1] The North Coast Beach Parking Study reports that, based upon San Mateo County experience, attendance at beaches falls initially after imposition of fees, but gradually rebounds to approximately 75 to 90 percent of pre-charging levels. It also states that the new clientele is less likely to vandalize, create disturbances, or litter the beach and parking areas.[2]

This change in clientele brings up an important question; namely, where do the displaced clientele go? This is especially problematic in a phased implementation plan as proposed for the North Coast beaches. There is a possibility that displaced clientele would move to one of the free beaches.

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1 General Pan for North Coast Beaches, Santa Cruz County, December 19887, page 14.

2 North Coast Beach Parking Study, Santa Cruz County Transportation Commission, June 1983, page 22.

In order to address this problem, it is recommended that several beaches be improved at the same time, and that fee charging start after a short free trial basis. This would allow people to experience the advantages of the improvements without paying and encourage them to continue using the beaches after fees are implemented. It would be best if the last several (two or three) beaches were improved at the same time and if fee charging could begin simultaneously at all beaches.

5.3.2 CUMULATIVE ARCHAEOLOGY AND CULTURAL RESOURCES IMPACTS

The potential for cumulative impacts to several archaeological sites has been discussed above. These impacts could occur as a result of increased public use of adjacent recreational areas and subsequent exploration of site locations. Cultural deposits can be disturbed by the most well-meaning visitors and often cultural materials will be collected.

5.3.3 CUMULATIVE LAND USE IMPACTS

The potential land use impact of greatest underlying concern -- but which would be to speculative for this EIR to predict or quantify -- is the cumulative effect of the project on long-term agricultural use of land in the program area. This impact could result from incremental, individually insignificant effects -- for instance, relatively small losses of water, cultivated land, etc. -- which, when combined, would make continued production infeasible. Existing public policies to conserve agricultural land use in the coastal zone make it unlikely that production would be discontinued immediately, but the types of crops might be changed or might constitute only temporary production before agriculture ceases and the land is maintained solely as open space.

5.3.4 CUMULATIVE VISUAL AND AESTHETIC IMPACTS

The principal cumulative visual impact of implementation of the General Plan would be the overall change in the visual character of the program area as a result of the proposed improvements. One of the principal qualities of the program area is its existing rural scenic character. Installation of some of the elements of urbanization -- guard rails along Highway 1, entrance stations at parking lots, signs warning people of potential hazards -- would contribute to a change in the visual character of the area, from a scenic rural area to a more organized, urban setting. Although this would not result in a significant change, nevertheless it would result in change to the visual character.

5.3.5 CUMULATIVE IMPACTS MITIGATION MEASURES

As discussed under the individual beach impacts in section 4.17 (Traffic and Circulation) of this EIR, the General Plan improvements are not expected to significantly impact transportation considerations except for the better by improving safety on Highway 1. However, overall demand for recreation, and beach activities in particular, may slightly increase in the future; therefore, this should be considered in the General Plan.

In considering the improvement program as a whole, the North Coast beaches present a unique opportunity for developing an innovative and environmentally sensitive means of access. Some of the opportunities are discussed below.

First, the entire beach area is served by existing transit service (SCMTD's Line 40). This service is limited (nine trips on weekdays and six trips on weekends), but none the less it exists, and it could provide better service to the beaches in the future. Recreational transit service is an important aspect of Santa Cruz County's Regional Transportation Plan. Several improvements could make the existing North Coast service more attractive to potential patrons. These improvements include:

- More frequent service (summer weekends especially).
- A marketing and promotion program. Perhaps naming the route "the Beach Bus" and painting it with a distinctive color scheme. (Note: Similar programs could be of use for other SCMTD bus routes and a comprehensive "Beach Bus" network might be implemented.)
- Relax restrictions on large objects being carried on the route (for example: fishing poles, surfboards, and other beach gear).
- Provide well marked bus stops at beaches as they are improved. The stops should have information showing a route map, schedule, and should include a shelter if possible.

Over the longer term, special buses might be purchased which would enhance the visit and serve State beaches all along the coast from San Francisco to Santa Cruz. The bus service could be connected to major transit facilities and park-and-ride locations. Physically, the buses might resemble Yosemite Park buses with large open windows and cargo areas accessible from the outside. These long-term recommendations would require close cooperation of many State and local agencies. Finally, longer distance service, perhaps from Santa Clara County, should be considered.

The second overall mitigation measure suggested is to use the existing Southern Pacific Railroad (SP Railroad) track from Santa Cruz to just south of Davenport Landing beach for passenger rail service to the beaches. The operation could serve five of the six North Coast beaches and, if operated properly, could be quite attractive. Passengers could board in downtown Santa Cruz and would be treated to a spectacular ride along the coast to their destination beach. Additionally, service could be provided using historic vehicles to increase attractiveness.

The branch line rail bed is in good condition and would probably require little improvement to operate the service. Small transit shelters would be erected at each beach to serve as station stops. There is a growing interest in privately operated small scale railroad operations (including the Santa Cruz, Big Trees and Pacific Railway Service operating between Santa Cruz and Roaring Camp), service on the Santa Cruz - Davenport Landing line would be a natural candidate. The Santa Cruz County Regional Transportation Plan identifies the line as having potential for intra-county recreational use.

The final overall traffic and circulation mitigation measure suggested is encouragement of bicycle access to the North Coast beaches. Bicycles seem to be a logical means of travel for beach users. Travelling to the beach via bicycle would heighten the recreational experience. Additionally, Highway 1 provides a spectacular setting for riding.

According to Caltrans, Highway 1 in the program area is a "suggested and heavily used bicycle route". As part of the General Plan, improvements and facilities which encourage bicycle access to the beaches should be considered. While field observations indicate that Highway 1 is generally acceptable for bicycling, there are certain places where the shoulder could be widened in order to improve bicycling conditions. It is recommended that a bicycle facility engineering survey be completed to identify a series of bicycle improvements such as shoulder widenings, warning signs, and off road bike paths where necessary.

An additional element of encouraging bicycle access concerns transit service. Some existing SCMTD buses on the North Beaches Route have the capacity to carry bicycles; in the future, all vehicles should be so equipped. Bicyclists could use the transit service to leave the city then get off and bike to the beach, or they could use the bus to get back to the city after a day at the beach. Both types of service would be of immense benefit to bicyclists and would encourage bicycle access.

Another prospect for encouraging bicycle access to the beach would be to make use of the SP Railway right-of-way from Santa Cruz to Davenport Landing as a bicycle path. In most places, this right-of-way is wide enough to allow construction of a bicycle path alongside the tracks. (Currently there is an unimproved road which provides access to the tracks for work crews along some of the line.) The path would have to be built to allow access by rail line work vehicles and would require close cooperation with the SP Railway and abutting property owners, but it could be a significant improvement for recreation in the County.

To mitigate cumulative archaeological and cultural resource impacts it is recommended that public access to nearby archaeological site locations be restricted by fencing or vegetation barriers or by posting signs.

Under some circumstances, such as at Davenport Landing Beach where the archaeological sites are located very close to the beach areas, it may be appropriate to include the site as a point of interest and post information about the site and the need for public participation in preserving the resources.

5.4 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Adoption and implementation of the General Plan would result in the following adverse environmental impacts that will not be mitigated to a less than significant level by measures included in this EIR:

- Construction of the 30-vehicle parking lot at Scott Creek Beach would result in unavoidable significant geologic and visual impacts.

- Construction of the 110-vehicle parking lot at Scott Creek Beach would result in an unavoidable significant loss of coastal scrub and rare plant habitat.

- Construction of the potential future parking expansion area near Bonny Doon Beach would result in an unavoidable significant loss of coast scrub habitat.

- Removal of flashboard dams on Scott Creek, Laguna Creek, and Liddell Creek would result in significant adverse impacts to the farmers who use water from these impoundments to irrigate their crops.

5.5 IRREVERSIBLE ENVIRONMENTAL CHANGES

The irreversible environmental changes that would result from the adoption of the General Plan and implementation of the proposed improvements would be the loss of coastal scrub habitat at Scott Creek and Bonny Doon beaches and the loss of rare plant habitat at Scott Creek Beach.

5.6 EFFECTS FOUND NOT TO BE SIGNIFICANT

Based on the County's Initial Study[3] and the analyses prepared as part of this EIR it has been determined that a number of potential impacts of the proposed project are not significant. These effects are as follows:

- The proposed project would not be affected by soils hazards, mineral resources, or unique geologic features.

- The proposed project would not affect, or be affected by a private or public water supply, septic system functioning, increased siltation rates, surface or ground water quality, quantity of ground water supply, ground water supply, flood hazard, cumulative saltwater intrusion, or inefficient or unnecessary water consumption.

- The proposed project would not affect, or be affected by a fire hazard from flammable brush, grass, or trees, or a commercial forest resource.

- The proposed project would not be exposed to, or generate, adverse noise levels.

- The proposed project would not cause an increase in air emissions, noxious odors, inefficient, wasteful, or unnecessary consumption of fuel or energy, a cumulative increase in energy demand, noise, or air pollutants, or be exposed to or generate excessive shadows.

- The proposed project would not affect historical buildings or unique cultural features.

- The proposed project would not involve an extension of existing public utility lines, expansion of or creation of new utility facilities, demand for services from an agency

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3 A copy of the Initial Study is in Appendix C.

which is operating at or near capacity, disposal of potentially hazardous chemicals or materials, inadequate water supply for fire protection, or inadequate access for fire protection.

- The proposed project would not result in a pre-emption of public mass transportation or alternative transportation modes.

- The proposed project would not involve a reduction of low or moderate income housing, create demand for additional housing employment opportunities for various socio economic groups or change the character of the community.

- The proposed project would not conflict with the adopted fire safety element, scenic highways element, housing element, noise element, land use element, seismic safety element, circulation element, or PRCS element of the County General Plan.

5.7 SHORT-TERM USES VERSUS ENHANCEMENT OF LONG-TERM PRODUCTIVITY

One of the objectives of the General Plan is to perpetuate the environmental quality of the natural resources of the North Coast beaches while promoting compatible public use and recreational activities. As discussed in this EIR the General Plan does address the long-term needs of important and sensitive wildlife and plant species and habitats through the establishment of protective measures and long-term management.

Furthermore, another objective of the General Plan is to enhance public access while simultaneously promoting continued, long-term productivity of adjacent agricultural lands. As discussed above, one of the long-term impacts of implementation of the General Plan may adversely effect the long-term agricultural use of land in the program area.

The policy of the General Plan to remove flashboard dams on Scott Creek, Laguna Creek, and Liddell Creek would adversely affect the farmers who use water from these impoundments to irrigate their crops. The loss of water for irrigation would adversely affect the long-term agricultural productivity of lands adjacent to the creeks.

APPENDIX

APPENDIX A
REPORT PREPARATION

This EIR has been prepared by Nichols • Berman under contract to the County of Santa Cruz.

The persons involved in the preparation of this report are as follows:

- Nichols • Berman, Environmental Planning

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  Lousie Nichols
  Bazer Tritt

- Biosystems Analysis

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APPENDIX B
REFERENCES

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PERSONS AND ORGANIZATIONS CONSULTED

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APPENDIX C

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT

INITIAL STUDY

Date: Sept. 26, 1988
Staff Planner: Pete Parkinson
Dave Mitchell-
POSCS

APPLICANT: COUNTY OF SANTA CRUZ
APN: Various
OWNER: Various owners, see attachments
APPLICATION NO: N/A
Supervisorial District: Third

LOCATION: Scott Creek Beach, Davenport Landing Beach, Laguna Beach, Panther Beach, Bonny Doon Beach, Yellowbank Beach, all located in the North Coast Planning Area and the Bonny Doon Planning Area.

EXISTING SITE CONDITIONS

Parcel Size:	VARIES - SEE ATTACHED MATERIALS FOR EACH BEACH						
Land Use:	"	"	"	"	"	"	"
Vegetation:	"	"	"	"	"	"	"
Slope:	"	0-15% __	16-30% __	31-50% __	51% __	acres/sq.ft.	
Nearby Watercourse:	"	"	"	"	"	"	"
Distance To:	"	"	"	"	"	"	"
Agri. Class/Type:	"	"	"	"	"	"	"
Rock/Soil Type:	"	"	"	"	"	"	"

ENVIRONMENTAL CONCERNS - SEE PLAN

Within USL:	No	Erosion:	High potential
Road Access:	Yes	Landslide:	yes
Groundwater Supply:	Yes - Laguna only	Liquefaction:	moderate to high potential
		Seismic:	Not in fault zone
Water Resource Protection:	Not water supply watershed	Floodplain:	yes, Laguna, Scotts Creek
Timber and Mineral:	No mapped resources	Riparian Corridor:	Yes, at some beached
Wildlife:	Mapped sensitive area	Solar Access:	N/A
Fire Hazard:	Portions mapped as CFHA	Solar Orientation:	N/A
Archaeology:	Sensitive areas		

SERVICES

Fire Protection:	CDF & Davenport	New Roads Required:	No
School District:	N/A		
Water Supply:	None proposed		
Sewage Disposal:	Private pumping service	Access:	Highway 1
Drainage:	N/A		

PLANNING POLICIES

Zone District:	CA & PR	Area:	Adopted:
General Plan:	Agriculture & Parks & Rec.	Area: North Coast, Bonny Doon	Adopted: 1983

Coastal Zone: Yes - permits required for site development

ENVIRONMENTAL COORDINATOR'S ACTION: EIR Required

PROPOSAL

A proposal to adopt a master plan for North Coast Beaches. Includes parking, access, sanitation, habitat enhancement and management improvements at Scott Creek Beach, Davenport Landing Beah Laguna Beach, Panther Beach, Bonny Doon Beach and Yellowbank Beach. Located in the North Coast and Bonny Doon Planning areas.

EVALUATION

	Note Mitigation Measure	EIR/EA	EA/FONSI
A. GEOLOGIC FACTORS Could the Project or its related activities affect, or be affected by, the following:			
1. Seismic Hazards: including fault, surface rupture, tsunami inundation			
1a. Landsliding			✓
1b. Liquefaction	✓		
2. General Slope Failure		see A.1	✓
3. Coastal Cliff Erosion		✓	
4. Beach Sand Distribution		✓	
5. Steep Slopes		see A.1	✓
6. Soil Hazards: soil creep, shrink-swell (expansiveness), high erosion potential	✓		
7. Mineral Resource	✓		
8. Unique Geologic Features	✓		
Sources of Information Plan; field review; LCP			
B. HYDROLOGIC FACTORS Could the Project affect, or be affected by, the following:			
1. Private or Public Water Supply	✓	No water provided	
2. Septic System Functioning (inadequate percolation, high water table, proximity to watercourses, etc.)	✓	Pump-out vault toilets proposed	
3. Increased Siltation Rates	✓		
4. Surface or Ground Water Quality (contaminants other than silt - urban runoff, nutrient enrichment, pesticides, etc.)	✓		
5. Quantity of Ground Water Supply	✓		
6. Ground Water Recharge	✓		
7. Watercourse Configuration, Capacity, or Hydraulics		✓	
8. Degradation of Riparian Corridor, Marsh, Lake, Estuary, Slough			✓
9. Increased Runoff Due to Impervious Surfacing	✓		
10. Flood Hazard	✓		
11. Cumulative Saltwater Intrusion	✓		
12. Inefficient or Unnecessary Water Consumption	✓		
Sources of Information Plan; field review; LCP maps			

	NO	QUALIFIED NO (Note Mitigation Measures)	YES	UNKNOWN
C. BIOTIC FACTORS Could the Project affect, or be affected by, the following:				
1. Known Habitat of Rare/Endangered Plants or Animals (designate specific species if known)			✓	
2. Unique or Fragile Biotic Community (Riparian, [illegible], Ponderosa Pine, etc.)				✓
3. Wildlife Habitat or Migration Corridor		see C.1 & C.2		✓
4. Fire Hazard from Flammable Brush, Grass, or Trees	✓			
5. Anadromous Fishery			✓	
6. Commercial Forest Resource	✓			
7. Lands Currently Utilized for Agriculture				✓
Sources of Information Plan; field review; LCP				
D. NOISE, AIR, OR ENERGY FACTORS Could the Project cause the following:				
1. Will the Project be exposed to, or generate, adverse noise levels?	✓			
2. Increase in Air Emissions (auto, dust, smoke, etc.)	✓			
3. Noxious Odors	✓			
4. Inefficient, Wasteful, or Unnecessary Consumption of Fuel or Energy	✓			
5. Does the Project design include available energy conservation measures		n/a		
6. Cumulative Increase in Energy Demand, Noise, or Air Pollutants	✓			
7. Will the Project be Exposed To or Generate Excessive Shadows? (Solar Access)	✓			
Sources of Information Plan; field review				
E. CULTURAL/AESTHETICS FACTORS Could the Project affect the following:				
1. Historical Buildings or Unique Cultural Features	✓			
2. Archaeological Resources				✓
3. Areas Having Important Visual/Scenic Value			✓	
4. Adopted Scenic Highway or Scenic Corridor			✓	
Sources of Information Plan; field review; LCP; archeology maps				

	SCALE OF IMPACT			
	NO	QUALIFIED NO (Note Mitigation Measures)	YES MODERATE	YES MAJOR	UNKNOWN
F. SERVICES & UTILITIES					
Could the Project or its related activities involve:					
1. Extension of Existing Public Utility Lines (sewer, water, etc.)	✓				
2. Expansion of or Creation of New Utility Facilities (e.g. sewage plants, water storage, mutual water systems, storm drainage, etc.)	✓				
3. Demand for Services from an Agency (county, city, utility, fire or school district) which is Operating At or Near Capacity.	✓				
4. Disposal of Potentially Hazardous Chemicals or Materials	✓				
5. Inadequate Water Supply for Fire Protection	✓				
6. Inadequate Access for Fire Protection	✓				
Sources of Information Plan review					
G. TRAFFIC & TRANSPORTATION					
1. Are the traffic demands on adjacent roads currently at or above capacity? If not, will the traffic generated by the project cause the adjacent roads to reach or exceed capacity?			✓		
2. Will the Project result in Traffic Hazards?					✓
3. Pre-Emption of Public Mass-Transportation or Alternative Transportation Modes (Bicycle, etc)		✓			
Sources of Information Plan; field review					
H. SOCIO-ECONOMIC					
Could the Project involve:					
1. Expenditure of Public Funds in Excess of Public Revenue Generated by the Project			✓		
2. Reduction of Low/Moderate Income Housing	✓				
3. Create Demand for Additional Housing	✓				
4. Land Use not in Conformance with Character of Surrounding Neighborhood		see C.7			✓
5. Employment Opportunities for Various Socio-Economic Groups	✓				
6. Will the Project Change the Character of the Community in Terms of Distribution or Concentration of Income, Ethnic, Housing, or Age Group?	✓				
Sources of Information Plan; field review					

	SCALE OF IMPACT			
	NO	QUALIFIED NO (Note Mitigation Measures)	YES MINIMAL	YES SIGNIFICANT
I. GENERAL PLANS AND PLANNING POLICY				
1. Does the Project conflict with adopted General Plan elements?				
A. Fire Safety Element		✓		
B. Scenic Highways Element				✓
C. Housing Element		✓		
D. Noise Element		✓		
E. Land Use Element				✓
F. Seismic Safety Element		✓		
G. Circulation		✓		
H. PROS (Conservation and Open Spaces)		✓		
Applicable General Plan				
2. Does the Project Conflict with Adopted Policies (Rural Development Policies, Developable Land Standards, etc.)? Which and How?		See above		✓
3. Does the Project have Potentially Growth-Inducing Effects?		✓		
Sources of Information				
J. OTHER POTENTIAL IMPACTS				
Sources of Information				

K. MANDATORY FINDINGS OF SIGNIFICANCE

	POTENTIALLY NO	NO	YES	UNKNOWN
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✓			
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	✓			
3. Does the project have impacts which are individually limited but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)				✓
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	✓			

NOTES:

See attached notes on checklist

NOTES ON INITIAL STUDY CHECKLIST

A.1 Landsliding. Small landslides are present at several of the sites. Cut and fill operations, particularly at Scott Creek and shoulder widening at Bonny Doon, Laguna and Davenport Landing, could result in decreased slope stability.

Most beach areas are highly susceptible to liquefaction. However, no habitable or other critical public facilities are proposed which would be significantly affected by liquefaction hazards.

A.3 Coastal Cliff Erosion. The project will have a beneficial effect on coastal cliff erosion. Warning signs will be placed in certain areas and the installation of structural stairs will reduce existing cliff erosion resulting from uncontrolled access.

A.4 Beach Sand Distribution. Beach sand distribution is presently affected in a minor way by periodic breaching of the sand bars which build up at Scott and Laguna Creeks. The Plan proposes a policy which would prohibit artificial breaching of these sand bars. No significant adverse effect will result.

B.7 Watercourse hydraulics. The project should have a beneficial impact on watercourse hydraulics by removing flashboard dams and prohibiting the artificial breaching of sand bars.

B.8 Degradation of riparian corridors and wetlands. The project has the potential for both beneficial and adverse impacts in this category. A major feature of the plans for Laguna and Scott Creek beaches is to protect and restore the wetland areas which have been degraded by beach users and agricultural practices. However, circulation improvements at Scott Creek, Laguna and possibly Davenport Landing will involve the placement of fill in riparian corridors to provide increased shoulder width. This fill will adversely affect these riparian areas.

B.9 Increased runoff will be minimal since very little impervious surface will be used. Parking lots will be surfaced with baserock.

B.10 Flood Zone. No facilities are planned in the flood zone.

C.1 Rare and Endangered Species. Several rare and endangered plant species and one endangered animal species occur at various beaches according to the biotic study completed for the plan. Policies in the Plan call for avoidance of direct disturbance of these species. In other areas, barriers are proposed to reduce off-trail access in sensitive areas.

C.2 Fragile Biotic Communities. Both beneficial and adverse impacts to riparian corridors could result, see B.8. The botanical surveys completed for the plan identify a number of "locally unique" plant species. These plants should be included in restoration and habitat

enhancement plans. Areas where improvements are proposed should be surveyed for the presence of these species prior to preparing final construction drawings. Similarly, a number of "locally unique" wildlife species have been either observed or predicted at various beaches. Areas proposed for construction of improvements should be surveyed for potential habitat prior to preparation of final plans. A well defined mitigation plan should be developed for construction related impacts.

C.5 Anadromous Fishery. Plan features which call for wetland enhancement, flash board dam removal and prohibition of sand bar breaching will have a beneficial impact on anadromous fisheries.

C.7 Agricultural land. The plan includes beach access trails directly adjacent to commercial agricultural land (row crops including artichokes and Brussels sprouts). Although these access trails exist now, the plan will formalize the trails and provide new beach access signing. The plan will not remove any land from agricultural production. However, the potential for use conflicts exists with respect to the effect of agricultural spraying (some of which is highly toxic) on beach goers and restrictions on agricultural operations due to recreational use.

The plan also calls for prohibiting the artificial breaching of sand bars at Scott and Laguna Creeks and the removal of flash board dams at Bonny Doon Beach and Laguna Creek. Although these plan features will result in habitat enhancement for the wetlands, they could adversely affect the productivity or farmability of adjacent agricultural lands.

E.2 Archaeological resources. The entire North Coast area is "archaeologically sensitive." Known archaeological sites exist at several of the beaches. An archival search and surface reconnaissance in the area of proposed improvements should be completed to assess the plan's potential impact on archaeological resources.

E.3 Scenic resources. All beaches are located along Highway 1 which is a designated scenic highway and an area of great scenic value. Many of the existing "unofficial" parking areas result in a degraded visual quality along the coastal highway. Restrictions on shoulder parking and improvements to existing parking areas could result in an improvement. However, substantial landform alteration will be necessary at Scott Creek beach for construction of the 110 space southern parking lot. The "future" 30 space northern lot will be highly visible from the Highway and upper dune areas at Scott Creek. Smaller excavations will also be necessary at Laguna and Bonny Doon parking areas. These features have the potential for adverse visual impacts.

Other features of the plan include trash receptacles, small pump-out sanitary facilities, parking lot kiosks and signing. These features will be small and unobtrusive and will not result in adverse visual impacts.

G.1 Traffic volume. Any effect on traffic volume should be very minor. The number of parking spaces called for in the plan is approximately 22 percent over present average demand, so some increase in beach use could be expected in the long run. Where a similar controlled parking program was implemented in San Mateo County, beach use initially dropped and then gradually increased to a stable level. The provision of increased beach parking and signing will not necessarily result in a direct increase in traffic. It is logical to assume that a substantial portion of new beach users will come from through traffic which is already travelling on Highway One, but hesitant to stop at the beaches due to lack of safe parking or signing. Implementation of the plan should not result in significantly increased traffic volumes.

G.2 Traffic Hazards. Impacts in this category could be both beneficial and adverse. Beneficial effects will occur as a result of controlled ingress and egress to parking areas and prohibitions on shoulder parking which is presently a significant hazard at Scott Creek and Bonny Doon beaches. The plan would formalize and possibly intensify an existing traffic hazard at Laguna Beach. At Laguna, beach users will still have to cross Highway 1 to get from the parking area to the beach access point. Additional parking will be provided under the plan, resulting in increased use of this crossing (the targeted parking supply at Laguna is approximately 20 percent over present average demand). Although a crosswalk is proposed, the crossing remains inherently dangerous. There may be inadequate sight distance to the north at the access point.

G.3 Alternative transportation. The installation of guard rails could reduce shoulder and roadway areas which are presently available for bicycle use. Specific project designs will need to include adequate space for continued bicycle use.

I. Plan Consistency. The Plan is intended to implement many of the policies found in Section 4 of the LCP relating to shoreline access. The Plan is consistent with section 4.4 of the LCP relating to "Conflicts with Natural Resources Protection" in that it controls public access to environmentally sensitive areas and reduces the number of access trails in sensitive areas.

Further analysis is needed to determine consistency of the Plan with sections 4.5.2, 4.5.3 and 4.5.4 of the LCP relating to conflicts between beach access and agricultural operations. Policy 4.5.2 requires "minimizing" the number of accessways through and adjacent to agricultural areas. Policy 4.5.3 requires separation of ag fields and accessways; the plan proposes accessways immediately adjacent to ag fields in some instances. Policy 4.5.4 requires separation of access users from toxic spraying and posting of hazard warnings, thus placing the burden of responsibility on beach users; instead, the plan calls for working with farmers to control and/or reduce the use of toxic sprays.

Further consistency analysis is also needed with respect to Section 1.0 relating to sensitive habitat protection (see notes for B.8 and C.2) and Section 6.0 relating to visual resources (See Note E.3).

K.3 Cumulative Impacts. Cumulative impacts could result if the implementation of controlled parking and access at the subject beaches had the effect of shifting beach use to remaining uncontrolled beaches such as four-mile beach.

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