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STATE OF CALIFORNIA – THE RESOURCES AGENCY
PETE WILSON, *Governor*

CALIFORNIA COASTAL COMMISSION
CENTRAL COAST AREA OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
[illegible]27-4863
HEARING IMPAIRED: (415) 904-5200

W 12B

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STAFF REPORT
REGULAR CALENDAR

APPLICATION NUMBER: **3-97-047, Pajaro River Lagoon Sand Bar Breaching**

APPLICANT: **SANTA CRUZ COUNTY PUBLIC WORKS DEPARTMENT**

PROJECT LOCATION: Mouth of Pajaro River, extreme southwest Santa Cruz County.

PROJECT DESCRIPTION: Breaching of the sand bar at the mouth of the Pajaro River as necessary for flood control purposes.

LOCAL APPROVALS: None required by County.

FILE DOCUMENTS: Pajaro River Lagoon Management Plan, Memorandum of Understanding Between the California Department of Fish and Game and the Santa Cruz County Department of Public Works, Pajaro River Corridor Management Plan.

SUMMARY OF STAFF RECOMMENDATION

This project is for the breaching of the sand bar at the mouth of the Pajaro River as necessary for flood control purposes. Staff recommends that the Commission, after public hearing, **approve** the proposal as conditioned in this report to require that breaching occur only at specified times, location, and by specific method. The conditions also require monitoring of the breach and the timing and method of closure to ensure that specified lagoon water levels are maintained.

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EXHIBITS

1. Location map
2. Vicinity map
3. Summer lagoon flooding areas

I. STAFF RECOMMENDATION

Staff recommends that the Commission adopt the following resolution:

Approval with Conditions

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, is located seaward of the first through public road (Highway One) and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. STANDARD CONDITIONS (See Attachment A)

III. SPECIAL CONDITIONS

1. Approved Development

This permit approves the breaching of the sand bar at the mouth of the Pajaro River Lagoon according to the methods and procedures described in the Pajaro River Lagoon Management Plan and the Memorandum of Understanding between the County of Santa Cruz and the Department of Fish and Game.

2. Plans and Criteria for Breaching

PRIOR TO COMMENCEMENT OF THE FIRST BREACHING OF THE SAND BAR UNDER THIS PERMIT OR WITHIN 60 DAYS OF COMMISSION ACTION ON THIS PERMIT, WHICHEVER COMES FIRST, permittee shall submit to the Executive Director for review and approval two copies of plans, to scale, showing the breaching area. The plans shall indicate the staging area for equipment to be used in the breaching and shall show the typical breaching area and typical dimensions of the breach. Permittee shall also submit two copies of a written description of the criteria under which breaching is proposed to take place. The criteria shall include all actions directly related to breaching such as, but not necessarily limited to, lagoon water level which triggers breaching, method of breaching, monitoring of lagoon outflow, and timing and method of closing of breach. The description shall include the name and phone number of the County staff member overseeing the breaching.

3. Other Approvals

PRIOR TO COMMENCEMENT OF THE FIRST BREACHING OF THE SAND BAR UNDER THIS PERMIT, permittee shall submit a letter of approval or other documentation from the Department of Parks and Recreation, the Department of Fish and Game, the US Fish and Wildlife Service, the US Army Corps of Engineers, and the Monterey Bay National Marine Sanctuary showing that the project has been approved by those agencies, or that no approval is necessary.

4. Interim Permit: Time Limit

This permit is valid until October 1, 1998. Lagoon water level management beyond this date will require a new permit application, no later than July 1, 1998. Supporting information shall include, but not necessarily be limited to, an analysis of the effects of the breaching on the species dependent on the lagoon, any species inhabiting the lagoon which have been listed as threatened or endangered since approval of this permit, the results of the on-going monitoring required by Special Condition 5 below, and the alternatives analysis required by Special Condition 6 below.

5. Monitoring

a. WITHIN 60 DAYS OF COMMISSION ACTION ON THIS PERMIT, permittee shall, submit to the Executive Director for review and approval the name, address, telephone number, and qualifications of an aquatic monitor and two copies of a proposed monitoring program prepared by the monitor. The monitor shall be a professional biologist with expertise in aquatic biology. At a minimum, the monitoring program shall include sampling and analysis of water quality, fisheries, and invertebrates. The monitoring shall periodically update the information in the Pajaro River Lagoon Management Plan, dated February 25, 1993, prepared for the County Public Works Department and the California Coastal Conservancy by Mitchell Swanson & Associates and The Habitat Restoration Group.

b. BY JULY 1, 1998, AND BY JULY 1 OF EACH SUBSEQUENT YEAR, permittee shall submit to the Executive Director for review a monitoring report for the preceding year.

6. Alternatives Analysis

WHEN APPLICATION FOR LAGOON WATER LEVEL MANAGEMENT IS NEXT MADE, permittee shall submit as part of the application material an analysis of potential alternatives to breaching. The alternatives analyzed shall include, but not necessarily be limited to, those identified in the staff report for this permit.

IV. FINDINGS AND DECLARATIONS

A. Project Description, Purpose, and Current Method of Operation

1. Description and Purpose

The Pajaro River, which marks the boundary between Santa Cruz and Monterey Counties, forms a lagoon at its mouth when ocean waves build up sand on the beach. Agricultural land lies on both sides of the river. Additionally, on the Santa Cruz County side of the river there is a residential area known as Pajaro Dunes. The agricultural fields and the residential area, as well as the road leading there, are subject to flooding when the water level in the lagoon rises behind the sand bar across the mouth of the river. This typically happens during the rainy season when the water often rises quickly, and during the summer months and early fall when the water rises slowly from agricultural runoff and other relatively small water sources. According to the Pajaro River Lagoon Management Plan

> *The summer hydrology of the Pajaro River lagoon is complex and difficult to measure because runoff is sporadic and unpredictable due to agricultural irrigation runoff, pumping of stored runoff at College Lake and shallow groundwater inflow.* (page 6)

The proposed project essentially consists of monitoring the level of water in the lagoon and breaching the sand bar at the river mouth, allowing lagoon water to flow into the ocean, thereby

reducing the flooding potential of the lagoon. The County has been breaching the sand bar for many years. The breaching is accomplished with heavy equipment grading or digging an opening in the sand bar. When the water level has dropped sufficiently, the breach may be closed with machinery or it may close on its own depending on tides and weather conditions.

Six different areas are impacted when water levels reach various heights above Mean Sea Level (MSL).

1. The farmland on the Monterey County side of the lagoon begins to be affected at water elevations of 3.0 to 3.5 MSL. At that level, the fields are not yet flooded but the soil becomes too saturated to support crops. Between 4.5 and 5.5 feet MSL the fields flood. Gravity drainage ditches function only at lower water levels. The Santa Cruz County side of the lagoon is somewhat more fortunate because there is a perimeter ditch system with pumps which controls summer flooding.

2. Marsh areas exist along the lagoon and the Watsonville Slough, a tributary to the lagoon which joins it from the north. At water levels of 3.5 to 4.0 MSL, these marsh areas flood. In spring and summer this can adversely affect nesting and foraging areas for waterfowl. Also, salt marsh vegetation is destroyed if it is inundated for too long a period.

3. The lower, mostly open space areas of the Pajaro Dunes residential development begins to flood at 3.5 to 4.0 MSL

4. The Shell Road pumps, which function to lower water levels in Watsonville Slough, become ineffective when water rises above 5.0 MSL. This leads to drainage problems on agricultural lands and makes the pumps work harder.

5. At elevation 5.5 MSL, Beach Road and Shell Road begin to flood. This can cut off vehicle passage to and from Pajaro Dunes.

6. A sewer pump station at Pajaro Dunes begins flooding at water level 6.0 MSL. This can result in raw sewage spills into Watsonville Slough.

The lagoon changes from a brackish water system to a fresh water system during the summer in most years when there are no abnormal weather patterns or events. Winter flows associated with upstream rainfall often lead to non-mechanical breaching of the sand bar, again depending on the specific weather pattern for that year. The sand bar usually forms in early to mid-summer, but has closed as late as August and has remained closed throughout the year, in drought years. The usual scenario, though, is for the sand bar to be breached by high flows in the river combined with a beach reduced in height by storm waves in late fall or early winter. Lagoon levels can raise quickly to higher levels in the rainy season. At such times mechanical breaching may be hazardous if not impossible if there are also large storm waves which can preclude operation of heavy equipment on the sand.

Wildlife and fish and their habitats are also affected by varying water levels in the lagoon. As mentioned above, marsh areas along the lagoon flood at water levels of 3.5 to 5.0 MSL, disrupting nesting and foraging.

When the lagoon is open to the ocean the salinity of the water ranges from ocean levels, around 34 parts per thousand, to fresh or almost fresh water levels in the extreme upstream end of the lagoon. The salinity varies not only horizontally, but also vertically. Calm conditions result in stratification -- the "layering" of water where the hotter, denser, heavier saline water occupies the lower portions of the water column with cooler, lighter, less saline water rising to the top of the water column. Strong winds or the influx of additional water can cause the layers to mix, resulting in a more uniform water column with respect to salinity. With a greater or lesser amount of freshwater inflow from upstream and a lack of additional saltwater because of the sand bar, a closed lagoon will gradually convert from saline water to fresh water. The data in the Plan indicate that, at least in drier years, conversion of the lagoon water from saline to relatively non-saline could occur in about 2.5 months. The Plan states that:

> *Under stratified conditions, fish and other aquatic organisms, especially benthic organisms, cannot survive. Without the basis for a healthy food chain, the biological productivity of the lagoon is diminished for fish, birds and other wildlife.* (Page 3)

Thus it is important to know when and under what conditions breaching should occur in order to maintain the biological health of the lagoon and to prevent losses from flooding. The later the sand bar forms and/or the more salt water that enters the lagoon, the longer it takes to convert to fresh water and the greater potential for harming organisms dependent of the conversion. Conversely, without tidal mixing (which implies a breached sand bar, mechanically or by current and/or wave action), water quality may not be adequate for species such as steelhead.

Beyond the issue of conversion of the water from saline to fresh is the issue of when organisms normally move through the lagoon system into and out of the ocean. For example, early closure of a breach in the spring may trap outmigrating steelhead smolts. The Lagoon Management Plan and a memorandum of understanding between the County and the Department of Fish and Game include provisions that govern timing of breaching and closure of the breach.

According to the County, the breaching has never been subject to local permits, is an on-going activity which was established prior to adoption of County codes regulating such activity, and is statutorily exempt from CEQA as an on-going project (Memo from County Environmental Coordinator, March 16, 1994). Nevertheless, the proposal is not exempt from review under the Coastal Act.

2. Current Method of Operation

The memorandum of understanding between the County and the Department of Fish and Game ties breaching of the sand bar to observation of the Watsonville Slough staff gauge located in Watsonville Slough on the southeast corner where Beach Road crosses the slough. When the gauge indicates water level is at 3.5 MSL during the rainy season and is rising, the County may begin mobilizing for mechanical breaching after notification to the Department of Fish and Game. Breaching then begins when the staff gauge reads 4.5 MSL and river flows are predicted that would cause flooding or when water begins to flood Beach Road or Shell Road. In the dry season, mobilization begins when water level reaches 4.5 MSL; breaching may occur at 5.5 MSL. The thresholds are higher during the dry season because the rise in water level is much more slow than in the rainy season where heavy rainfall upstream can

cause a rapid and large rise in the water level. After breaching the lagoon water level will be monitored twice a day until stabilized and sand bar reformation has occurred. No attempt is made to close the breach in the rainy season. In the dry season, it is preferable to close the breach to facilitate conversion of the water to fresh water. The county will attempt to close the breach when the water level has receded to 3.5 MSL and will attempt to maintain water level at 2.5 MSL.

So as to not trap outmigrating steelhead smolts in the spring, the County will not mechanically close the breach before June 15. Opening of the sand bar will be delayed as long as possible in the fall so that the sand bar won't be breached after a small storm. In that instance, the sand bar would reform quickly and create highly saline, stratified conditions in the lagoon. If high lagoon water levels occur in the spring, the County will maintain the sandbar when it is possible to do so safely. This is desirable because the sand bar will reform quickly in the spring leading to prolonged stratification a delay in conversion to fresh water.

Breaching of the lagoon has been on-going for many years. Breaching generally as described in this report has been occurring for at most nine years, with refinements in 1994. Commission regulatory authority was first exercised over the Pajaro Lagoon sand bar breaching in mid-1988 during a period of unusually high lagoon water. Since that time dry season breaching has taken place under an Interim Criteria Plan which includes the memorandum of understanding between the County and the Department of Fish and Game.

According to the County, no mechanical breaching has been done for three years because rainy season flows and waves were sufficient to open the lagoon and keep it open during the rainy season, while dry season runoff has not raised the lagoon level enough to necessitate breaching. This permit is the first coastal development permit to regulate the breaching.

B. Consistency of Breaching With the Coastal Act

The Pajaro River drains a watershed that has been severely manipulated by urban development, conversion of wetlands to agricultural use, and containment of the river within levees. It is recognized that the river cannot be returned to a completely pristine, natural state. The river though, still maintains many of its natural attributes such as riparian vegetation and anadromous fish runs; and still functions in many ways as it always has. For example, a lagoon still forms at the mouth of the river behind a sand bar with subsequent flooding of adjacent land. The County has manipulated the water level in the lagoon for flood control purposes by means of breaching the sand bar. The intent of this report and permit is to more closely examine the manipulation of water levels in the lagoon to develop a method by which both flood control and better biological health of the lagoon as well as ecological functioning of the river system may be achieved.

The primary Coastal Act policy for pursuing this goal in this case is section 30236, which states:

> *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

Of course, breaching of the sand bar at the mouth of the Pajaro River is a major alteration of the river and its lagoon. Currently, the County's sand bar breaching is governed by a memorandum of understanding with the Department of Fish and Game. The memorandum of understanding incorporates provisions relative to timing of breaching and maintenance of water levels that were developed in consultation with professional biologists. Those provisions appear to provide the best mitigation measures feasible for protecting aquatic habitat, consistent with section 30236, at least under the present method of lagoon water level manipulation through breaching.

As discussed above, the County breaches the sand bar for flood control purposes, to protect existing structures (roads, pumps, sanitary sewer) and for public safety (prevent hazardous driving conditions on roads). In these other respects, the breaching still meets the intent of Coastal Act section 30236.

However, section 30236 also requires a finding that "no other method for protecting existing structures in the floodplain is feasible." In the case of the Pajaro River breaching, comprehensive assessment of alternatives has not taken place. Thus, it is not known whether there are other feasible alternatives for flood control that do not involve the substantial alteration of the river necessitated by breaching. The Pajaro River Management Plan examined two alternatives, 1) pumping, with three variations, and 2) improved drainage with breaching.

The pumping alternative was based on the use of pumps to regulate the water level in the lagoon. The pump or pumps could discharge onto the beach or near the Pajaro Dunes rip rap. According to the Plan, the pumps would very likely disturb the bottom sediments where pesticide contaminated sediment lies and could not be discharged onto the beach or directly into the ocean. The Plan considered connecting the pump(s) to an old outfall line, but that alternative was rejected because of the cost of repairs to the old line and, again, there would be an undiluted and untreated discharge into the ocean. The third alternative using pumping considered discharge into the existing City of Watsonville sewage outfall line. That alternative was rejected because it would also necessitate approval from the City and likely changes to the City's permits for its ocean disposal, according to the Plan. None of the pumping alternatives were found to be feasible. The Commission has made no formal finding of feasibility though, and it is not immediately apparent without further analysis, that the pumping alternatives are infeasible.

The second alternative examined by the Plan includes improved drainage around the lagoon coupled with breaching. The Lagoon Management Plan describes this alternative as including

> *improving and/or adding pumps, perimeter ditches, and culverts and continuing the interim breaching program. When implemented, this alternative should buffer adjacent lands from flooding when the Summer lagoon reaches 5.0+ feet. A monitoring program would be implemented to ensure the success of this alternative.* (Page 31)

The Lagoon Management Plan goes on to state that these improvements would be less effective

> *when the sand bar is present during periods of rainfall. Under these circumstances, often in the fall, it may be necessary to breach the sand bar when the lagoon level reaches critical stage (above 4.5 feet) or earlier . . . .* (page 31)

The improvements proposed under this second alternative involved the Shell Road pumps, Beach Road drainage ditch outlet, and gravity outfalls on the Monterey County side of the river. These pumps drain Watsonville Slough, a tributary to the lagoon. Part of the Shell Road pump outlet pipe was subject to leakage, causing the pumps to not operate efficiently and thereby reducing drainage capability. It was recommended that the pump outlet pipe be repaired until the pump system can be replaced with an upgraded facility. The Beach Road drainage ditch runs along Beach Road, which is the only road into and out of the Pajaro Dunes area. The outlet is a 36 inch culvert with a flapgate which has experienced leakage which allows water from Watsonville Slough to backflow into the Beach Road Ditch exacerbating flooding of the road. It was recommended that the flapgate be replaced. Two gravity flow culverts on farm land on the Monterey County side of the lagoon provide some drainage from the fields to the lagoon. The Lagoon Management Plan recommended the installation of pumps landward of the two culverts to pump water over the levee.

Although all of the recommended improvements have been implemented, it is as yet unknown how well the improvements have worked. Because of this, on-going monitoring, as required by Special Condition 5, is necessary. More important, though, there may be additional alternatives worth considering.

As mentioned earlier in this report, six different features are impacted when water levels reach certain specific heights above Mean Sea Level (MSL). These features are Monterey County farmland, marsh areas, Pajaro Dunes fields, Beach Road and Shell Road, Shell Road pumps, and sanitary sewer manholes.

Water Level, Feet Above MSL	Condition
6.0 - 6.5	Shell Road and Beach Road flooded; Sanitary Sewer manholes flooded - chance of raw sewage spill
5.5 - 5.8	Shell Road and Beach begin to flood; Beach Road Ditch full
5.0	Shell Road pump system becomes overworked and potentially ineffective; Beach Road shoulder begins to flood
4.0 - 5.5	Monterey County farmland begins to flood
4.0	Pajaro Dunes fields begin to flood
3.5 - 4.0	Marsh areas begin to flood
3.0 - 3.5	Monterey County farmland soils begin to saturate

As can be seen from the table, different water levels affect different features of the Pajaro River lagoon area. Protection of each of these different features may necessitate different or separate strategies. For example, the Monterey County farm soils saturate at the lowest level, so if a solution for flooding was instituted that took effect at that water level, all other flooding conditions might also be taken care of. This would require that the solution be all encompassing and could, for example, take the form of breaching the sand bar or pumping the lagoon when water levels reached 3.0 - 3.5 MSL. However, such a global solution may not be appropriate since it would be effective only at the lowest water levels and those levels may not be sufficient for maintenance of fish and other species.

The table shows that the farmland does not begin to flood until water level reaches 4.0 - 5.5 MSL and that only the Pajaro Dunes fields and marsh areas begin to flood at water levels less than that. Flooding and/or saturation of the farmland might be able to be alleviated by a discrete solution such as constructing a perimeter ditch and pumping water from the fields

Flooding of the Pajaro Dunes fields may likely be the least concern under the Coastal Act. This is not to deny that there may be other concerns but unless there is habitat value to the fields, flooding there by itself may not warrant action under the Coastal Act.

Flooding of the marsh areas can, according to the Lagoon Management Plan,

> *significantly preclude wildlife use of portions of the lagoon and slough habitats, particularly use of the marshes by nesting ducks and shorebirds.*

This is clearly a concern under Coastal Act sections 30231 and 30240. Historical maps of the area show a much larger area of salt marsh than is there now. Most of the historical marsh has been converted to farmland or residential uses. The marsh cannot be isolated from the lagoon by levees or some other means and still function as a marsh. Probably the only way to prevent flooding of the marsh would be via a global solution, e.g., lagoon pumping or partial draining or breaching when the water level reaches between 3.5 - 4.0 MSL.

The remaining "problem" features, the Shell Road pump, Shell and Beach Roads, and the sanitary sewer manholes might be able to be protected from flooding by discrete means such as elevating or isolating from the lagoon with levees.

Yet another alternative is installation of a drain culvert structure near the mouth of the lagoon such as exists in Capitola on Soquel Creek or the drain approved by the Commission, but never implemented by the City of Santa Cruz, for the San Lorenzo River Lagoon. This structure would have a gate or other device for regulating amount of water passing through it and would be for regulating summer flooding.

Because there are potential alternatives which the Management Plan did not consider and because the Management Plan alternatives have not been thoroughly investigated by the Commission, the Commission finds that the proposal as submitted is inconsistent with Coastal Act section 30236. However, the Commission also finds that it is too late in the year to undertake and complete an alternatives analysis before potential flooding and breaching occur. Special Conditions 1 and 4 therefore, allow interim breaching for this coming year as the only feasible short-term alternative. With conditions limiting its term to one year and requiring further

alternatives analyses with the County's next submittal, the Commission finds the proposal to be consistent with Coastal Act section 30236.

If the County wishes to continue management of the lagoon water level, additional alternatives must be reviewed for feasibility before the permit can be amended or a new permit granted upon expiration of this permit.

C. Coastal Resource Issues

1. Access

Section 30211: Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212: (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

The beach seaward of the Pajaro River Lagoon is accessible from Sunset State Beach to the north and Zmudowski State Beach to the south; the beach itself is part of the state beaches. The wide sandy beach is almost always passable; the times when it may not be are when there are high tides coupled with storms or when the Pajaro River is flowing to the ocean.

The number of times per year that the Public Works Department breaches the lagoon can vary widely depending on winter rainfall, the height of the sand bar, agricultural runoff, etc. In any event, when the sand bar is breached, either with or without human assistance, the beach may be impassable depending on the depth of the channel resulting from breaching and the strength of the current of the flow from the lagoon.

Coastal Act sections 30211 and 30212 together require that development generally not interfere with the public's right of access to the sea and along the coast. One of the exceptions to this requirement is when such access is inconsistent with public safety. In the case of breaching, whether natural or induced, the volume and velocity of water flowing from the lagoon to the ocean may be such that lateral beach access is impossible. There are two public safety issues here. One is the hazardous nature of attempting to cross the river; the other is the need to protect the public from sewage spills if the sewer pump station is flooded and from hazardous driving conditions if Beach Road floods. If the sewage pump fails, the lagoon waters will become contaminated and a public hazard will result. Therefore, maintenance of water levels in the lagoon is essential for maintaining safe public access. Therefore, the Commission finds that no lateral access dedication is required and that the proposal is consistent with Coastal Act sections 30211 and 30212.

2. Marine Environment

Section 30230: Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231: The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

The fish population of the Pajaro River Lagoon includes marine and freshwater species. Pacific herring, shiner perch, staghorn sculpins, striped bass, juvenile steelhead, and tidewater gobies, have been found in the lagoon. Both the steelhead and the tidewater goby are listed by the federal government as endangered species.

Vegetation in and around the lagoon includes pickleweed, salt grass, alkali heath, willow, and other species of salt marsh, brackish marsh, riparian, and coastal scrub communities. According to the Pajaro River Lagoon Management Plan

no plant species of concern were found within the study area.

The lagoon and surrounding vegetation support several species of birds including the federally listed brown pelican, ducks and migratory waterbirds. The federally listed snowy plover nests on the sandy beach.

Breaching can have deleterious effects on marine resources. For example, there may be pesticides in the lagoon water which would be released to the ocean when the sand bar is breached; sensitive species living in the lagoon can be swept out to the ocean or the quantity and quality of habitat can be radically altered. The waters of the Pajaro River and it tributaries run through agricultural, residential, and industrial areas before reaching the lagoon. The lagoon itself is bordered mostly by agricultural fields. According to the Pajaro River Lagoon Management Plan pesticides have been found in the lagoon waters, including

endosulphan sulphate, a by-product of endosulphan, a pesticide often used in artichoke cultivation . . . and 4,4 DDE a toxic by-product of DDT . . . .

Both of these are toxic to organisms found in and around the lagoon. Both contaminants are found in the soils and are apparently washed into the lagoon by rain water or possibly irrigation water. Urban stormwater flows into the lagoon untreated and may contain grease, oil, heavy metals, etc. Breaching may release these contaminants to the ocean.

According to the Lagoon Management Plan,

> *A well circulated lagoon in the summer months is important for biological productivity, especially benthic (bottom dwelling) organisms. These become food for larger animals and eventually birds. Steelhead trout may use the lagoon for juvenile rearing since the lagoon can provide good conditions for growth before entering the Ocean. Sand bar breaching delays or prohibits the summer conversion to fresh water and causes a degradation of habitat quality, possibly creating lethal conditions . . . . It should be noted that in general high lagoon levels (say above 4.0 feet MSL) are not necessarily needed to have good habitat per se, what is important is to find alternative methods of flood prevention and lagoon water level control without sand bar breaching.*

Because of the memorandum of understanding between Fish and Game and the County (see page 6 of this report), and the interim nature of the breaching allowed by this permit, the Commission finds that the proposal, as conditioned, is consistent with Coastal Act sections 30230 and 30231. However, the Commission finds that further analysis of alternatives may also identify mechanisms for further enhancing the biological values of the Pajaro River System/Lagoon.

3. Environmentally Sensitive Habitat

> *Section 30240: (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The breaching takes place on the beach seaward of the lagoon. However, there is an obvious effect on the lagoon -- the water level recedes and, as discussed earlier in this report, there may be adverse effects on the lagoon environment. Over the years that the breaching has taken place without benefit of permit, no impacts which would significantly degrade the area have been identified but neither has there been any on-going monitoring of the lagoon habitat. It may be that breaching has in the past not been designed to prevent significant impacts and it may not have been compatible with the continuance of habitat and recreation areas. As just discussed, it also may be that an alternative to breaching will be identified which is clearly superior to breaching in terms of section 30240. However, as conditioned as an interim permit requiring further alternatives analysis, the Commission finds that the proposal satisfies the requirements of Coastal Act Section 30240 and is therefore consistent with that section.

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with any coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or

feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. The Commission finds that only as approved and conditioned will the project not have any significant adverse impacts on the environment and can be found consistent with CEQA.

VI. ATTACHMENT A: STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permitee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

5. Inspections. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.

6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

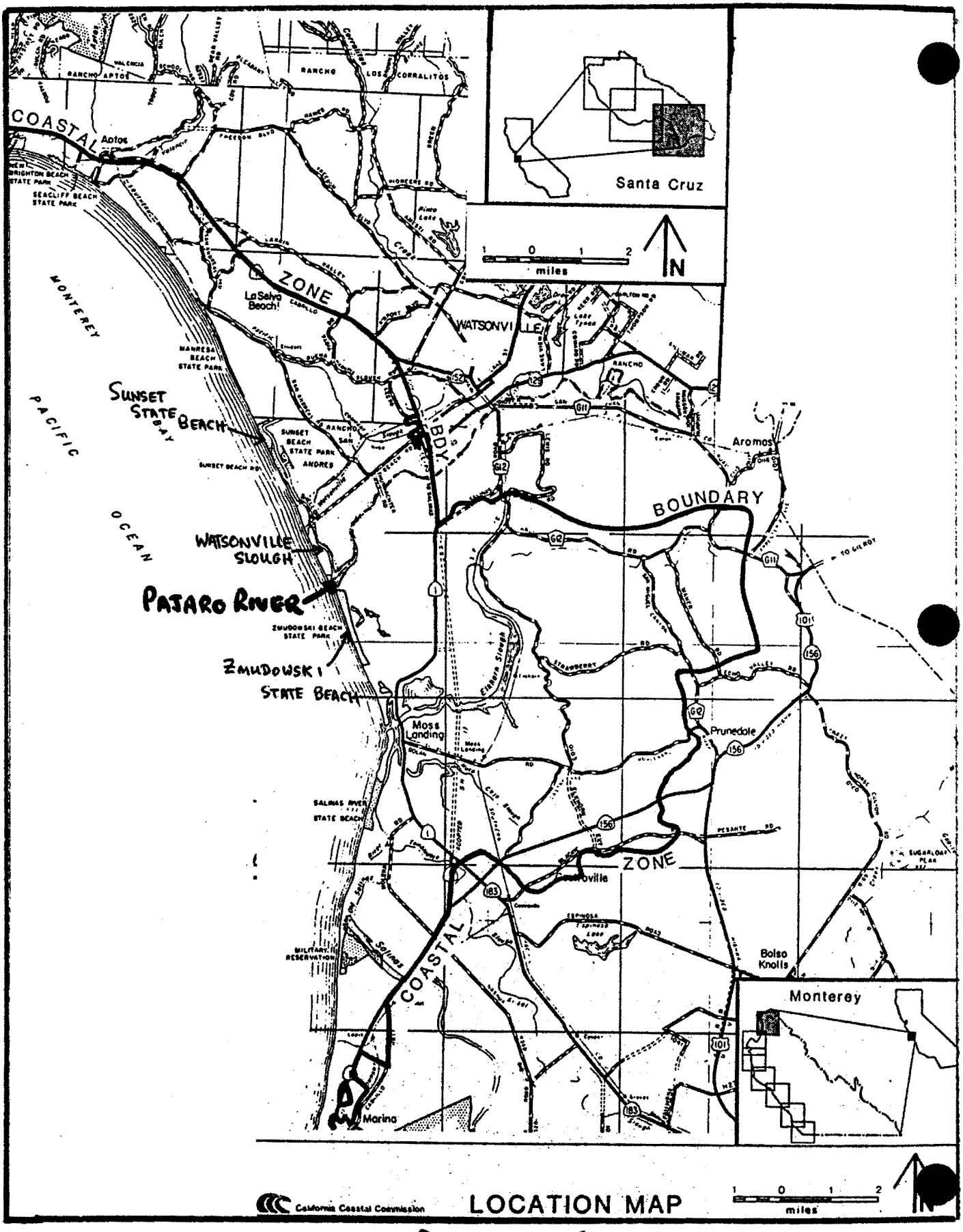

EXHIBIT 1
3-97-047

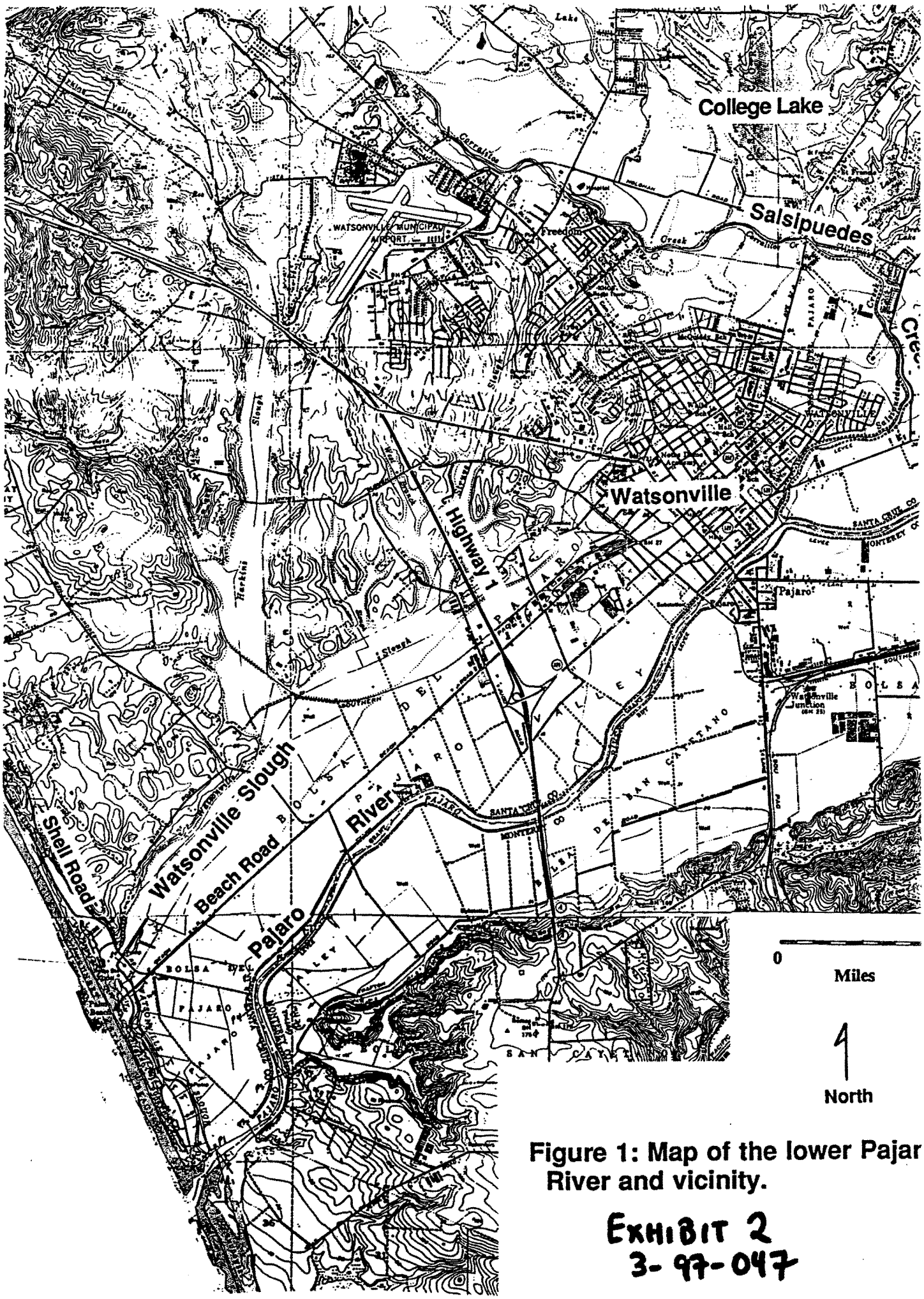

Figure 1: Map of the lower Pajaro River and vicinity.

EXHIBIT 2
3-97-047

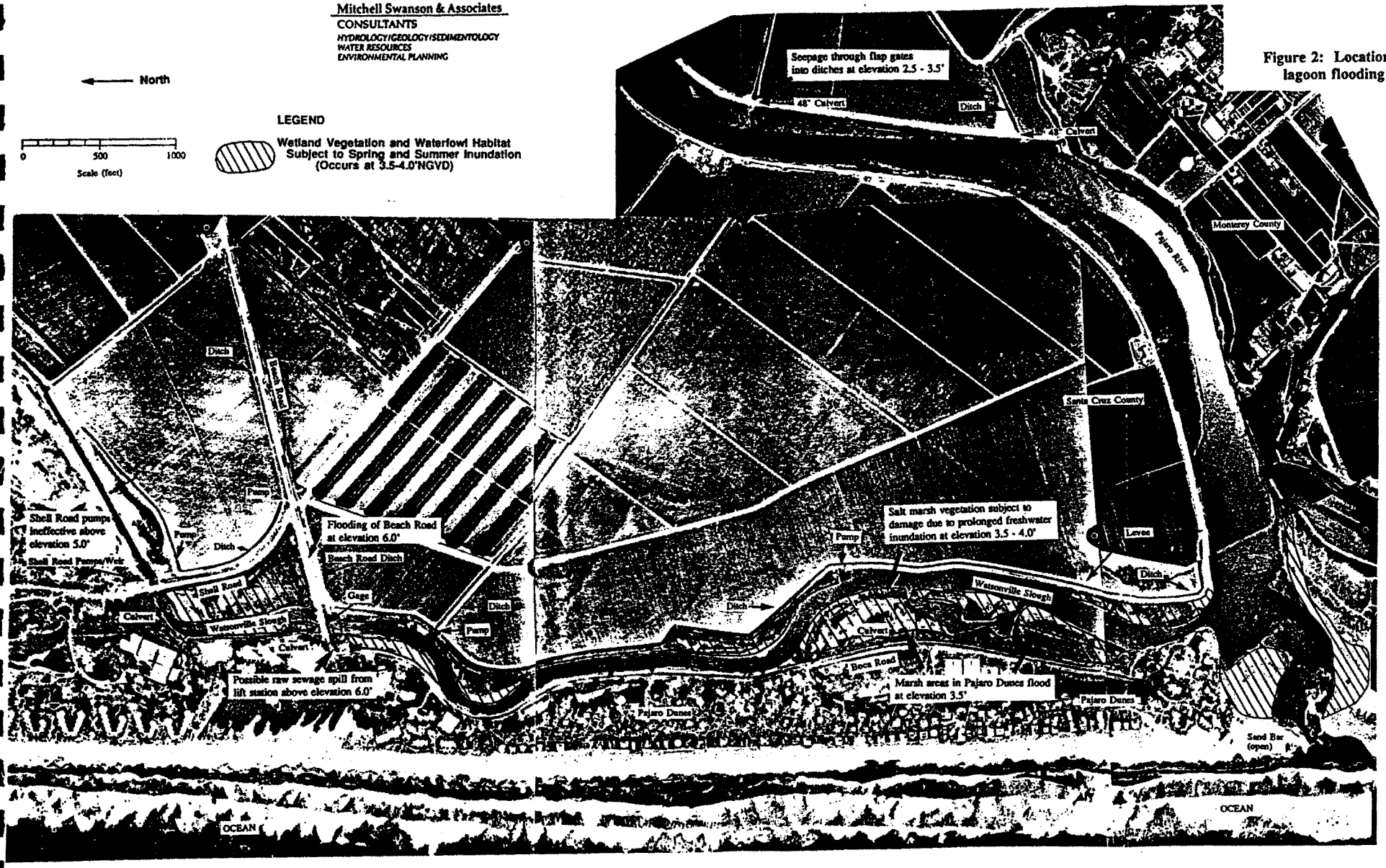

Figure 2: Location of summe lagoon flooding problems.

EXHIBIT 3
3-97-047