

Technical Study

**Industrial
Siting
Study**

Humboldt County
Local Coastal Program
Coastal Energy Impact Program
3015 H Street
Eureka, CA 95501

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Humboldt County
Local Coastal Program
Coastal Energy Impact Program

Draft Technical Study

Industrial Siting

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EXECUTIVE SUMMARY

This study is a technical background report for use in developing Local Coastal Program policies relating to energy and industrial development, including uses associated with the commercial fishing industry. This is a draft report and the policy recommendations contained herein do not constitute County policy. Comments on the data and assumptions included in the report would have particular relevance to the extent that they might affect the conclusions and policy recommendations of the report.

This report also function as the third in a series of issue papers for the Coastal Energy Impact Program. The first two reports of the series, Issue Paper #'s 1 and 2, projected development of facilities and reviewed siting options relative to offshore oil and gas development associated with federal leasing programs. This report utilizes the information developed in those reports to review potential onshore land use demands of offshore oil and gas development against the backdrop of all anticipated industrial demands in Humboldt County's coastal zone during the next 5 years. It is also intended to develop policy recommendations for those facilities as appropriate.

Chapter 1: This chapter reviews the Coastal Act policies for coastal-dependent, industrial and energy development. The chapter also reviews the work program for this study. Key Coastal Act policies are 30255 and 30260:

30255. Coastal-dependent developments shall have priority over other developments on or near the shore line. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accomodated within reasonable proximity to the coastal-dependent uses they support.

30260. Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accomodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Sections 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.

Chapter 2: Chapter 2 inventories industrial lands in the County's coastal zone and projects industrial siting needs over the next five years.

Industrial lands in the coastal zone are clustered around the Humboldt Bay area, with major sub-areas that include the North Spit, Fields Landing-King Salmon, Arcata and North Bay sites, and Eureka's industrial area west of Broadway and along the Inner Reach waterfront. Other more isolated industrial sites occur in the Eel River Planning Area and the North Coast Planning Area.

Of the approximately 2419 acres of industrial land in the Humboldt Bay area, about 482 acres are vacant or available for development, and would likely be appropriate for industrial zoning under Coastal Act policies. An additional 381 acres of land in industrial areas display wetland habitat values (relying on information in Shapiro & Assocs., 1980), and would be appropriate for development only if no less environmentally damaging alternatives existed.

<u>Sub-area</u>	<u>Industrial Land Total</u>	<u>Vacant or Available</u>	<u>Vacant, Wetlands</u>
North Spit	863	224	20
Arcata	293	53	11
Eureka	994	161	235
Fields Landing/ King Salmon	<u>268</u>	<u>41</u>	<u>115</u>
Total	2419	482	381

(total vacant or available = 482 + 381)

Cumulative industrial demand was projected over the next five years, and beyond. Specific projects that have been identified in previous reports were included in the projections, as well as a general industrial demand figure of 12% cumulative growth in industrial land use (200 acres), for a total projected demand of 376 acres.

The general industrial demand figure of 200 acres (averaging 40 acres per year for five years) is derived from compounding annually a 1.9% employment growth rate projected by the California Employment Development Department, and assuming a linear relationship between employment growth and industrial land use. A base acreage of 1707 acres (from Shapiro & Assocs., 1980) was used in this calculation.

SUMMARY OF POTENTIAL INDUSTRIAL PROJECTS,
HUMBOLDT BAY AREA, 1981-1986

<u>Project/ Sponsor</u>	<u>Land Required</u>	<u>Possible or Proposed Sites</u>	<u>Sites with Wet- land Impacts*</u>
Foreign Trade Zone/Eureka	40 acres	9 or 10, 11 & 12	9, 10
Marine Trade Ter- minal/North Coast Export	23 acres	13	
Temporary Service Base (OCS-related)	5-10 acres	1, 2, 9, 10, 11, 12, 18***	1**, 9, 10
Marine Oil Receiv- ing Terminal Wharf Expansions/Oregon Coast Towing/ Chevron	none	7, 8	Note (a)
Dock Replacement Louisiana-Pacific	none	20	
Wood Waste Power Plant/Humboldt Bay Power Co.	75 acres	14	
Seafood Technol- ogy Demonstration Program	1.5 acres	12, 23	
Fish By-Products Plant	1.5 acres	2, 23, 24, 25	24
Mussel Farming	0.25 acres	23	
Crab Holding Facilities	5 acres	4, 5, 6, 26, 27, 28	
Salmon Ranching	15-20 acres	4, 5, 6, 17	
12% General Indus- trial Growth	200 acres	30, 29, 31	Note (b)

* Does not include impacts incidental to any shoreline development.

** Bulkhead placement may have substantial impacts to adjacent habitats

*** For additional alternates, see Issue Paper No. 2

SUMMARY OF POTENTIAL INDUSTRIAL PROJECTS,
AFTER 1986

<u>Project/ Sponsor</u>	<u>Land Required</u>	<u>Possible or Proposed Sites</u>	<u>Sites with Wet- land Impacts*</u>
Gas Proces- sing Plant (OCS-related)	2-75 acres	15, 21	21
or,			
Oil & Gas Par- tial Processing Facility, includ- ing storage and marine terminal	100 acres	15 18, 22	Note (c)
Permanent Service Base (OSC-related)	10 acres	1,9, 10, 11, 12***	1**, 9, 10

Notes

(a) Operations presently represent an oil spill risk. Wetlands could be seriously impacted from present and future operations. Expanding wharfs to allow for larger tankers may or may not increase risk. Expansions would probably not involve any wetland conversion, except perhaps some associated with the Elk River sand spit. Neither firm has proposed expansion.

(b) Assumes a 2% per year industrial land use growth rate from a 1978 base figure for the Humboldt Bay area of 1707 acres (Shapiro & Assoc., 1980). This would constitute a reversal of the present declining trend in industrial land use demand, under the assumption that economic mitigation programs to site new industry in the County are effective. It is a liberal allowance for demand in that it is included over and above known potential projects and that it is probably a slight overestimate of the land use demand that would be generated by the 1.9% employment growth rate projected by the California Employment Development Department.

(c) Berthing terminal associated with partial processing facility could be considered either at site 18 (unused Crown-Simpson dock) inside the Bay, or at 22, offshore, as a monobuoy. Both sites could pose substantial risk to wetlands from an oil spill.

Since the general industrial demand figure is added in over and above identified projects, and is made in spite of the present declining trend in industrial land use, it probably overestimates demand. For comparison, Sonoma County, with a population about two and a half times Humboldt County's, has projected an annual industrial demand of 50 acres county-wide (County of Sonoma, 1980). It appears appropriate, however, in light of Humboldt County's economic condition, to provide a liberal allowance for new industrial uses.

Chapter 3: Chapter 3 reviews mining potential and current operations, with particular attention to sand and gravel operations. Included are recommended policies for sand and gravel extraction.

Chapter 4: Chapter 4 presents policy recommendations for possible incorporation into the County's local coastal program. Policies are included for general and coastal-dependent industry, and energy related facilities.

CHAPTER 1

INDUSTRIAL SITING STUDY

I. REQUIREMENTS, POLICIES, AND ISSUES

A. COASTAL ACT POLICIES ON INDUSTRIAL SITING

The policies of the Coastal Act establish a set of priorities for allowable developments within given areas. As this relates to industrial development, the policies distinguish between coastal dependent industrial facilities and those industrial uses without coastal dependency. Public Resources Code (PRC) Section 30101 defines "coastal-dependent development or use":

30101. "Coastal-dependent development or use" means any development or use which requires a site on, or adjacent to, the sea to be able to function at all.

Further clarification of this definition is provided by PRC Section 30115, which defines "sea":

30115. "Sea" means the Pacific Ocean and all harbors, bays, channels, estuaries, salt marshes, sloughs, and other areas subject to tidal action through any connection with the Pacific Ocean, excluding non-estuarine rivers, streams, tributaries, creeks, and flood control and drainage channels.

A 1979 amendment to the Coastal Act added the category of "coastal-related development" which is defined in Section 30101.3 as any use that relies on a coastal-dependent development or use. Section 30255, which establishes priority for coastal-dependent development, was amended to include a "coastal-related" use category:

30255. Coastal-dependent developments shall have priority over other developments on or near the shore line. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

Section 30255 above, together with Sections 30222 and 30260 quoted below, outline the priorities for siting coastal-dependent industrial facilities.

30222. The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

30260. Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Sections 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.

Section 30250 provides guidance for siting industrial facilities which are not coastal dependent:

30250. (a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

(b) Where feasible, new hazardous industrial development shall be located away from existing developed areas.

(c) Visitor-serving facilities that cannot feasibly be located in existing isolated developments or at selected points of attraction for visitors. (Amended by Cal. Stats. 1979, Ch. 1090.)

Section 30261 gives additional guidance for siting marine terminals:

30261. (a) multicompany use of existing and new tanker facilities shall be encouraged to the maximum extent feasible and legally permissible, except where to do so would result in increased tanker operations and associated onshore development incompatible with the land use and environmental goals for the area. New tanker terminals outside of existing terminal areas shall be situated as to avoid risk to environmentally sensitive areas and shall use a monobuoy system, unless an alternative type of system can be shown to be environmentally preferable for a specific site. Tanker facilities shall be designed to (1) minimize the total volume of oil spilled, (2) minimize the risk of collision from movement of other vessels, (3) have ready access to the most effective feasible containment and recovery equipment for oil spills, and (4) have onshore deballasting facilities to receive any fouled ballast water from tankers where operationally or legally required.

* The State Coastal Commission has also utilized 30262 for consistency review of OCS projects outside the State jurisdiction.

Section 30262 gives policy guidance for oil and gas development and related facilities that are located within the State's jurisdiction, i.e. onshore or offshore within the three mile limit. Note that subsection (b), which encourages consolidation of facilities, would apply to OCS-related facilities sited within the State's jurisdiction. *

30262. Oil and gas development shall be permitted in accordance with Section 30260, if the following conditions are met:

(a) The development is performed safely and consistent with the geologic conditions of the well site.

(b) New or expanded facilities related to such development are consolidated, to the maximum extent feasible and legally permissible, unless consolidation will have adverse environmental consequences and will not significantly reduce the number of producing wells, support facilities, or sites required to produce the reservoir economically and with minimal environmental impacts.

(c) Environmentally safe and feasible subsea completions are used when drilling platforms or islands would substantially degrade coastal visual qualities unless use of such structures will result in substantially less environmental risks.

(d) Platforms or islands will not be sited where a substantial hazard to vessel traffic might result from the facilities or related operations, determined in consultation with the United States Coast Guard and the Army Corps of Engineers.

(e) Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.

(f) With respect to new facilities, all oilfield brines are reinjected into oil-producing zones unless the Division of Oil and Gas of the Department of Conservation determines to do so would adversely affect production of the reservoirs and unless injection into other subsurface zones will reduce environmental risks. Exceptions to reinjections will be granted consistent with the Ocean Waters Discharge Plan of the State Water Resources Control Board and where adequate provision is made for the elimination of petroleum odors and water quality problems.

Where appropriate, monitoring programs to record land surface and near-shore ocean floor movements shall be initiated in locations of new large-scale fluid extraction on land or near shore before operations begin and shall continue until surface conditions have stabilized. Costs of monitoring and mitigation programs shall be borne by liquid and gas extraction operators.

Section 30263 conditions the siting and design of refineries and petrochemical facilities.

30263. (a) New or expanded refineries or petrochemical facilities not otherwise consistent with the provisions of this division shall be permitted if (1) alternative locations are not feasible or are more environmentally damaging; (2) adverse environmental effects are mitigated to the maximum extent feasible; (3) it is found that not permitting such development would adversely affect the public welfare; (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands, or within or contiguous to environmentally sensitive areas; and (5) the facility is sited so as to provide a sufficient buffer area to minimize adverse impacts on surrounding property.

(b) In addition to meeting all applicable air quality standards, new or expanded refineries or petrochemical facilities shall be permitted in areas designated as air quality maintenance areas by the State Air Resources Board and in areas where coastal resources would be adversely affected only if the negative impacts of the project upon air quality are offset by reductions in gaseous emissions in the area by the users of the fuels, or, in the case of an expansion of an existing site, total site emission levels, and site levels for each emission type for which national or state ambient air quality standards have been established do not increase.

(c) New or expanded refineries or petrochemical facilities shall minimize the need for once-through cooling by using air cooling to the maximum extent feasible and by using treated waste waters from inplant processes where feasible.

30264. Notwithstanding any other provision of this division, except subdivisions (b) and (c) of Section 30413, new or expanded thermal electric generating plants may be constructed in the coastal zone if the proposed coastal site has been determined by the State Energy Resources Conservation and Development Commission to have greater relative merit pursuant to the provisions of Section 25516.1 than available alternative sites and related facilities for an applicant's service area which have been determined to be acceptable pursuant to the provisions of Section 25516.

B. RELATED COASTAL ACT POLICIES

The following section of the Act place constraints on industrial siting:

Section 30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such 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 such areas, and shall be compatible with the continuance of such habitat areas.

Definitions:

"Environmentally sensitive areas" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments (Coastal Act Section 30107.5), including: areas of special biological significance as identified by the State Water Resources Control board; rare and endangered species habitat identified by the State Department of Fish and Game; all coastal wetlands and lagoons; all marine, wildlife, and education and research reserves; nearshore reefs; tidepools; sea caves; islets and offshore rocks; kelp beds; indigenous dune plant habitats; and wilderness and primitive areas.

"Uses dependent on such resources" -- include nature education and research, hunting, fishing, and aquaculture.

Locations and compatible uses of environmentally sensitive habitat areas will be identified for purposes of this and other studies, in the Habitat Sensitivity Study which will precede the Industrial Siting Study.

Section 13142.5 of the California Water Code was added by SEC. 15 of the Coastal Act:

13142.5. Coastal Marine Environment

In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that:

(a) Waste water discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:

1. Wetlands, estuaries, and other biologically sensitive sites.
2. Areas important for water contact sports.
3. Areas that produce shellfish for human consumption.
4. Ocean areas subject to massive waste discharge.

Ocean chemistry and mixing processes, marine life conditions, other present or proposed outfalls in the vicinity, and relevant aspects of areawide waste treatment management plans and programs, but not of convenience to the discharger, shall for the purposes of this section, be considered in determining the effects of such discharges. Toxic and hard-to-treat substances should be pretreated at the source if such substances would be incompatible with effective and economical treatment in municipal treatment plants.

(b) For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.

(c) Where otherwise permitted, new warmed or cooled water discharges into coastal wetlands or into areas of special biological importance, including marine reserves and kelp beds, shall not significantly alter the overall ecological balance of the receiving area.

(d) Independent baseline studies of the existing marine system should be conducted in the area that could be affected by a new or expanded industrial facility using seawater in advance of the carrying out of the development.

(e) Adequately treated reclaimed water should, where feasible, be made available to supplement existing surface and underground supplies and to assist in meeting future water requirements of the coastal zone, and that consideration, in statewide programs of financial assistance for water pollution or water quality control, shall be given to providing optimum water reclamation and use of reclaimed water.

30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

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.

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.

30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

1. New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

2. Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

3. In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland; provided, however, that in no event shall the size of the wetland area used for such boating facility, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, be greater than 25 percent of the total wetland area to be restored.

4. In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities.

5. *Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

6. *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

7. *Restoration purposes.*

8. *Nature study, aquaculture, or similar resource-dependent activities.*

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California," shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that no less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

30234. *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

30235. *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fishkills should be phased out or upgraded where feasible.*

30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain 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.

25516. Approval of Notice; Necessary for Alternative Site and Related Facility Proposals; Exception

The approval of the notice by the commission shall be based upon findings pursuant to Section 25514. The notice shall not be approved unless the commission finds at least two alternative site and related facility proposals considered in the commission's final report as acceptable. If the commission does not find at least two sites and related facilities acceptable, additional sites and related facilities may be proposed by the applicant which shall be considered in the same manner as those proposed in the original notice.

If the commission finds that a good faith effort has been made by the person submitting the notice to find an acceptable alternative site and related facility and that there is only one acceptable site and related facility among those submitted, the commission may approve the notice based on the one site and related facility. If a notice is approved based on one site and related facility, the commission may require a new notice to be filed to identify acceptable alternative sites and related facilities for the one site and related facility approved unless suitable alternative sites and related facilities have been approved by the commission in previous notice of intention proceedings.

If the commission finds that additional electric generating capacity is needed to accommodate the electric power demand forecast pursuant to subdivision (b) of Section 25309 and, after the commission finds that a good faith effort was made by the person submitting the notice to propose an acceptable site and related facility, it fails to find any proposed site and related facility to be acceptable, the commission shall designate, at the request of and at the expense of the person submitting the notice, a feasible site and related facility for providing the needed electric generating capacity.

25516.1 Finding of Relative Merit of Available Alternative Sites

If a site and related facility found to be acceptable by the commission pursuant to Section 25516 is located in the coastal zone, the Suisun Marsh, or the jurisdiction of the San Francisco Bay Conservation and Development Commission, no application for certification may be filed pursuant to Section 25519 unless the commission has determined, pursuant to Section 25514, that such site and related facility have greater relative merit than available alternative sites and related facilities for an applicant's service area which have been determined to be acceptable by the commission pursuant to Section 25516.

C. HUMBOLDT COUNTY INDUSTRIAL SITING ISSUES

While the Coastal Act provides the basic framework for a coastal plan, it does not provide a direct method for translating these policies onto the ground. As a starting point County coastal staff, aided by the coastal commission, local and state governmental agencies, citizen groups, and community workshops, prepared an identification of specific Humboldt County issues which require resolution in light of the Act's requirements. Issues were identified with an overall coastal county perspective as well as by a breakdown into six planning areas. The Issue Identification was officially approved by the State Coastal Commission in June 1978. These, then, are the identified industrial siting issues:

SUMMARY. Industrial activity in Humboldt County's coastal zone is located almost exclusively around Humboldt Bay and in the Eel River planning area, where the possibility of wetland impacts is high. No policies or standards for siting such activity in accord with Coastal Act policies exists, nor have guidelines been developed for identifying and giving preference to coastal dependent industries in siting decisions. Regulations and clean-up programs for the storage, handling and transport of oil and hazardous materials exist, but may not always meet Coastal Act requirements. The prospect of developing off-shore and on-shore petroleum reserves has not been fully assessed, nor have the implications of the Coastal Commission's power plant siting designations.

COUNTYWIDE

1. In an attempt to mitigate economic dependence on a single seasonal industry, Humboldt County has been encouraging new industry to locate here. Much of the suitable industrially zoned acreage is in or adjoining the coastal zone. No suitable criteria exist for establishing the degree of coastal dependence for such industrial relocation, or for identifying sites best suited to coastal-dependent industry.

2. A significant portion of coastal industrial sites, as currently designated by the General Plan, are situated near wetlands. Appropriate procedures for assessing impact and regulating detrimental developments, and for determining exemptions as per 30260 of the Coastal Act, do not exist.

3. Current energy resource extraction is limited to the natural gas fields at Tompkins Hill, at the edge of the coastal zone. However, reported reserves near Petrolia and in the Mad and Eel River bottoms may at some point be economically recoverable. No information has been gathered showing at what point this would occur, or what land use designations or restrictions would be appropriate if extraction should prove feasible before the end of this century.

4. The PG&E operates a nuclear reactor for generating power. That reactor is currently shut down, and may not be permitted to reopen. What effect a permanent shut-down may have on plant capacity and additional siting needs has not been determined. Alternative siting and development regulations for energy generating facilities have not been developed.

MCKINLEYVILLE

1. McKinleyville is being considered for designation as a site where there would be no Coastal Act conflicts with construction of energy generating facilities. What impact this designation, or the siting of a power plant, would have on development in the area is not clear at this time.

HUMBOLDT BAY

1. No policy or program for giving priority for land use in the coastal area to coastal-dependent industry exists.

2. If oil and gas reserves off-shore or along the Mad River bottoms are likely to be tapped in less than 25 years, the County will have to develop policies, and use patterns and programs to allow this development without impacting other coastal resources.

3. No policy exists on location of oil storage facilities adequate to requirements of the Coastal Act, Section 30263(a), which requires consideration of visual and habitat values as well as safety.

4. Where, pursuant to Section 30260 of the Coastal Act, industrial uses are sited in wetlands, no policy now exists to assure minimizing impacts to habitats and coastal views.

5. *The Coastal Commission is now finishing the process of designating sites unsuitable for new power plants based solely on criteria of the Coastal Act. Implications of these designations have not been assessed in terms of utility needs or land use planning implications.*

EEL RIVER

1. Development along the Eel river near Loleta and Fortuna poses the potential problem of industrial and domestic pollution.

D. THE SCOPE OF THE INDUSTRIAL SITING STUDY

Essentially the issues center on concerns for where new coastal industry should be sited, how trade-offs for siting in sensitive areas should be evaluated, and what are the possibilities and potential impacts of offshore oil development. These questions, and related questions which provide necessary background, define the focus of this study.

INDUSTRIAL SITING STUDY

- .1 Inventory existing industrial uses within the coastal area, with an indication of their coastal dependence.
- .2 Within areas currently used, planned, or zoned for industrial use, inventory existing parcels in the coastal zone suitable for coastal-dependent industrial and energy facility siting, and indicate potential impacts to wetlands and waterways of such development. Based on existing documents, estimate acreage needed for priority industrial uses. (For energy facilities, review the current designation program of the Coastal Commission in terms of established criteria of State agencies and utility companies for site selection. Determine appropriateness and availability of funding from the California Energy Impact Program.)
- .3 Identify degraded wetlands or diked former wetlands suitable for restoration or that could be suitably employed as mitigation trade-off lands for any potential conversion of wetlands into industrial sites. Estimate potential cost of acquisition for these sites. (Expected to be done by U.S. Army Corps of Engineers Study.)
- .4 Based on existing information, work completed in 211 and 212, and current standards of regulatory agencies, prepare a review of sand and gravel mining in the Mad and Eel Rivers identifying:

- a. Sand and gravel resources and current use.
 - b. Areas where sand and gravel mining may be permitted.
 - c. Conditions recommended to protect sensitive habitats, water quality and to accommodate flood and erosion hazards.
- .5 Review areas designated as unsuited for power plant siting:
- a. Based on the information gathered in 211, 213, and 221 and other studies, recommend addition designations as necessary.
 - b. Identify land use controls which will maintain siting options and protect potential power plant sites from conflicting uses.
- .6 Prepare a technical report presenting this information in a format usable by decision makers including:
- a. Copies of principal references.
 - b. Maps delineating existing and potential industrial acreage identified in 251.1 and 251.2.
 - c. A report discussing the methods used and information gathered in 251.5 including maps designating areas recommended for sand and gravel extraction.
 - d. Recommendations, if any, for additional areas to be designated as unsuited for power plant siting, including maps delineating the recommended areas.
 - e. A list of land use control options for potential power plant sites.
 - f. An executive summary reviewing the information in a. through e. above.

This study will be organized as follows:

Chapter 1: Review of coastal act policies, Humboldt County industrial siting issues, and the study format.

Chapter 2: Will examine existing plan documents, zoning, and resource texts for indications of current coastal industrial development, degree of coastal dependency, and existing or potential impacts to wetlands. It will also include an examination of areas currently designated acceptable for power plant siting.

Chapter 3: Will identify management tools available to local governments for maintaining power plant siting options, and to ensure gravel extraction operations minimize environmental impacts.

Chapter 4: Will recommend policies which will provide for coastal-dependent industry, options for future energy facility siting, while protecting sensitive habitats.

CHAPTER 2

Chapter 2. EXISTING & PROJECTED INDUSTRIAL USE

A. Inventory of Lands Planned, Zoned, or Used Industrial

North Spit Sub Area

The North Spit of Humboldt Bay is the site of the County's heaviest industrial uses, specifically the two pulp mills of Louisiana-Pacific and Crown-Simpson. In addition, the Simpson Timber Plywood Plant and the North Coast Export wood chip exporting facility comprise the other major industrial facilities on the spit.

Of the 863 acres that are planned and zoned industrial, 539 acres are in use and 297 acres are vacant. Of the 297 acres that are vacant, 73 are the site of the proposed Humboldt Bay Power Company wood-waste electrical generating facility. The remaining 224 acres are presently available for development; however, the available area may be reduced by 38 acres because of easements granted for water, sewer, and electrical transmission lines.

Vacant Industrial Parcels, North Spit

1. North Coast Exports 401-122-04,05 btn NCE and L-P	24 acres	channel access
2. Crown-Simpson 401-301-0905 (part) btn Gillete's & C-S	4 acres	channel access
3. Crown-Simpson 401-301-09 (part)	36 acres	no access
4. Simpson Timber 401-121-08 401-131-04	109 acres	no access
5. 401-111-07 (part)	50 acres	no access

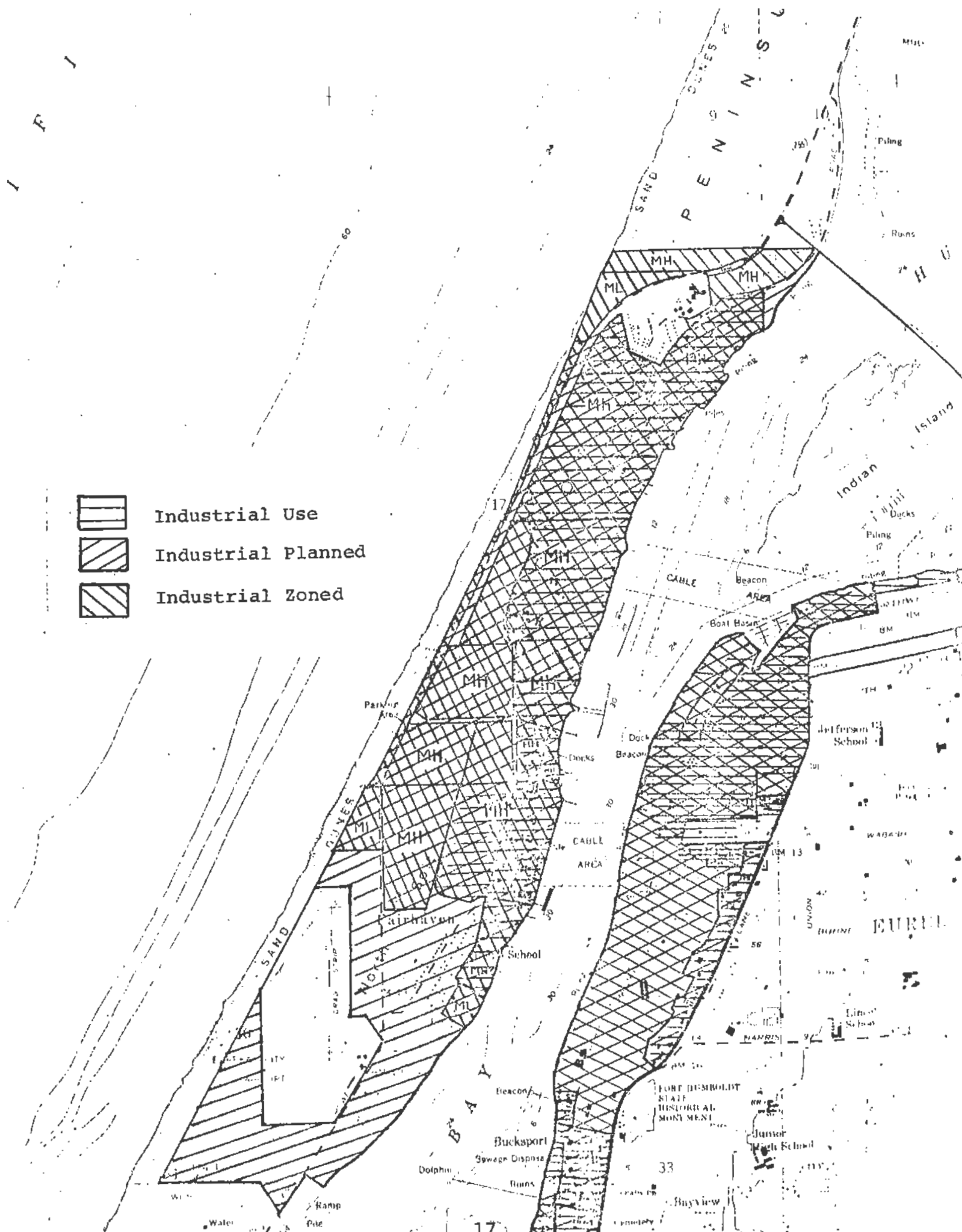
Of the 224 acres available for development, only two parcels comprising a total of 29 acres have access to the deep water channel of the Bay. The larger of the two sites is a 24 acre parcel owned by Northcoast Exports, and is located between the chip berths of Northcoast Exports and Louisiana-Pacific. The piers that straddle this parcel and the large cargo vessels (400-600 ft.) that use these piers for chip loading are established constraints for future uses of this site. Also because of these adjacent heavy industrial uses, the site is probably unsuitable for any uses other than industrial. It appears that about 700 feet of berthing frontage exists between the two chip berth piers. Because of the importance of this site for future coastal dependent industrial uses, the Regional Commission conditioned a use permit to allow chip storage and handling on a temporary basis only, pending development and approval of the County LCP.

The other site with channel access is a 4-acre site owned by Crown-Simpson at the north edge of Crown-Simpson's pulp mill site. It is part of the same parcel that the pulp mill is sited on, but is separated by a fence from the mill's operations. To the north of the site is a small boat repair (Gillete's) and some residential uses. There is a well-maintained dock at the south edge of the site, presently used only as a backup facility by Crown-Simpson.

Of the remaining available land which does not have channel access, 145 acres are contiguous. Thirty-six acres are part of the same Crown-Simpson parcel that has 4 acres of channel access, and 109 acres are owned by Simpson Timber. The parcels



Industrial Use
Industrial Planned
Industrial Zoned



have both highway and rail access.

In addition to these 145 contiguous acres, a 50-acre site immediately north of the proposed wood-waste power plant is also presently available. This site may be substantially encumbered by easements, however. Actual available acreage at this site would depend on specific use proposed.

Other Potential Industrial Land, North Spit

In addition to the above lands which are both zoned and planned for industrial use, there are also lands which are industrially zoned but not planned, or vice-versa, on the North Spit. The lands in this group are, as a whole, less suitable areas for industrial development for a variety of reasons. They do however, represent potential industrial area. Also, there is a third group of lands which are neither zoned nor planned industrial, but because of their location, merit review.

The strip of land that is adjacent to the west side of New Navy Base Road is currently zoned industrial. Although there may be some logic in heavy industrial uses along a service highway, the entire dune area west of New Navy Base Road is a popular recreation area and provides important public access to the ocean. The Regional Commission has conditional permits to gain access easements across this area. The area is planned regional park. (Eureka G.P. '66)

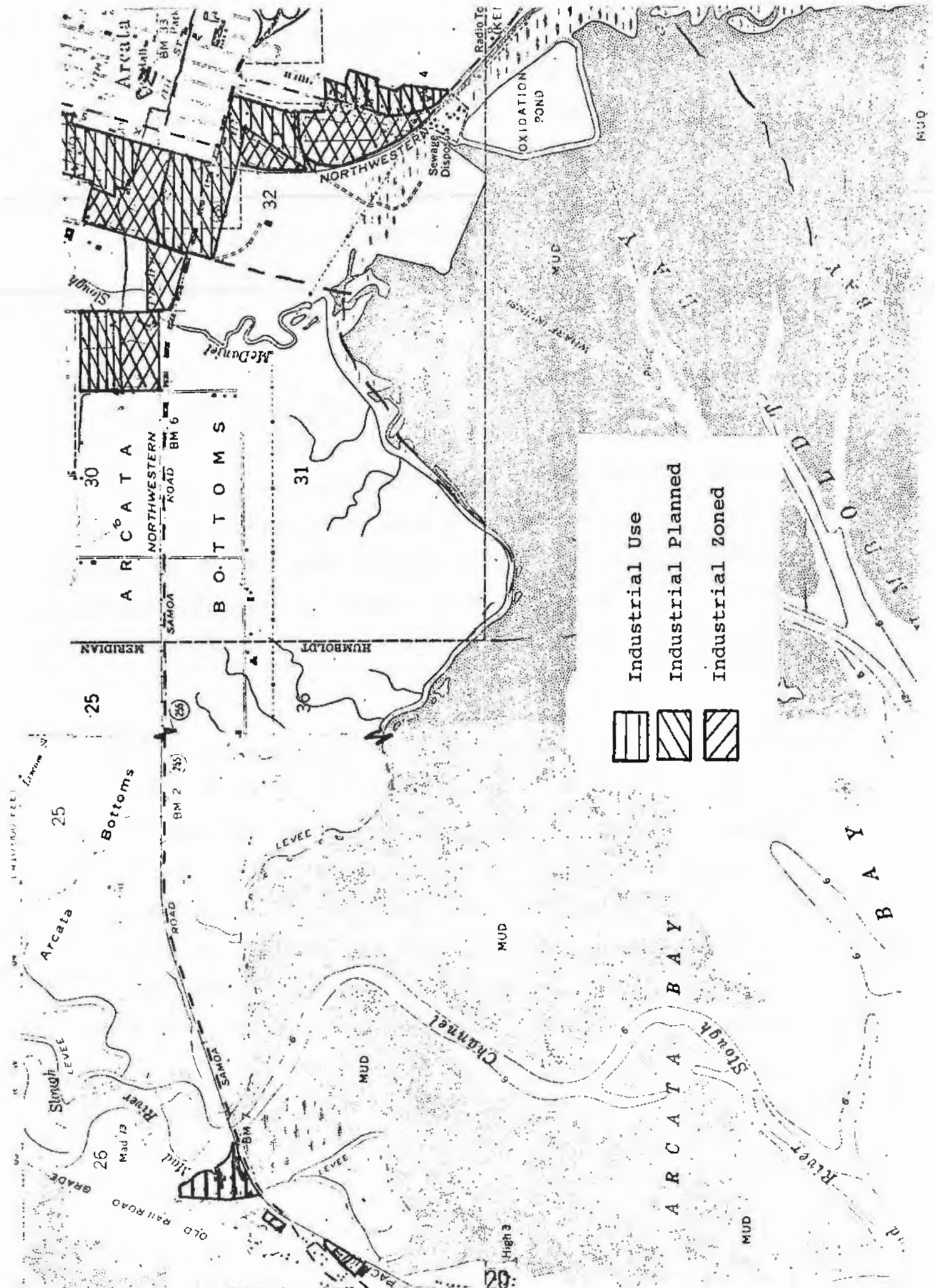
An area at the north end of L-P's property is zoned industrial but planned agricultural. It is currently used as a disposal site for a solid waste by-product of the pulping process.

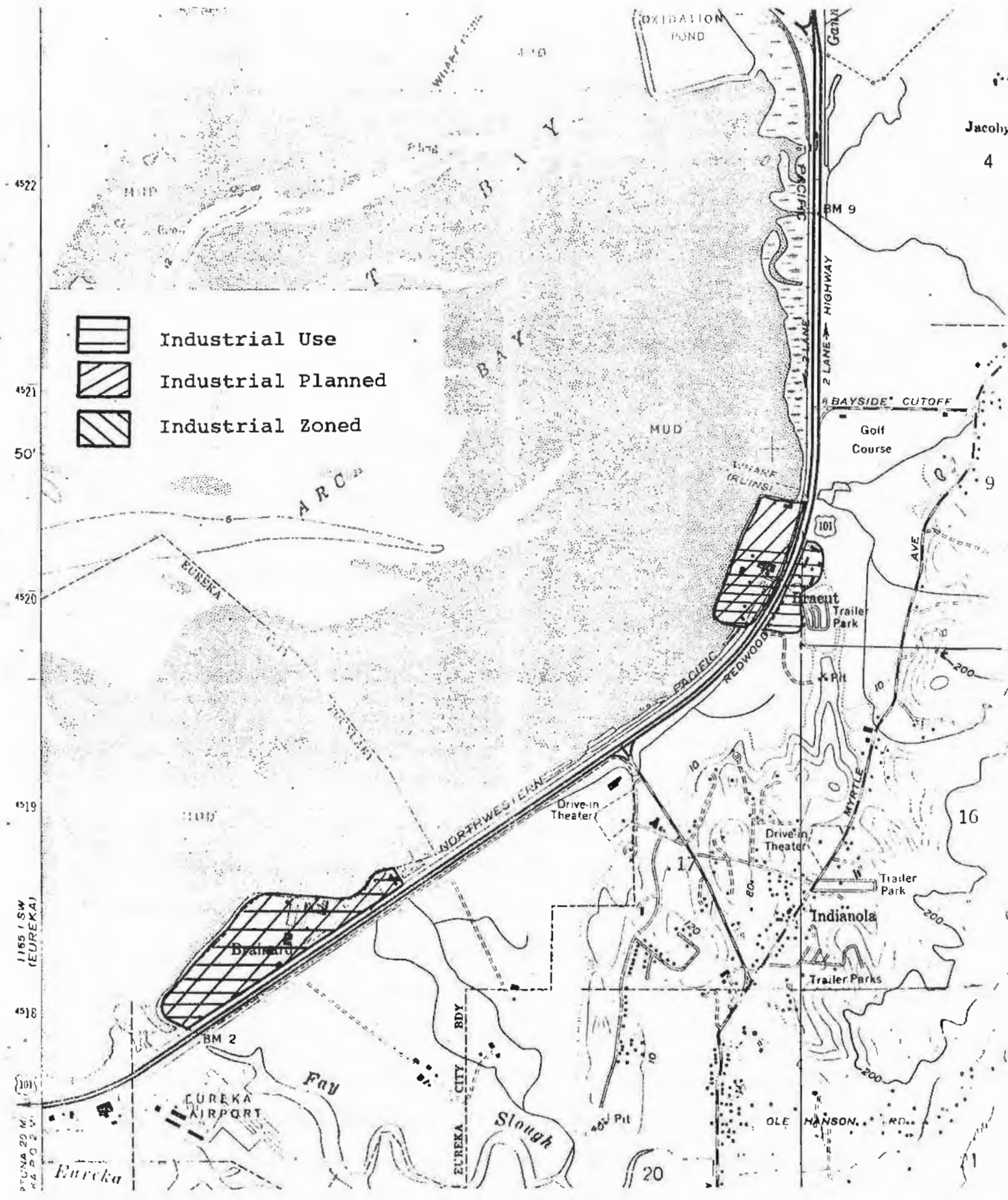
Toward the south end of the spit at Fairhaven is an area planned industrial under the Eureka General Plan ('66) which encompasses the community of Fairhaven and surrounds the abandoned Eureka Airport. Under the updated Eureka General Plan (1977) which was not adopted by the County, Fairhaven and the airport are excluded from the planned industrial designation; Fairhaven is designated as suburban with an open space buffer and the airport is designated open space.

Arcata Bay Sub-Area




Four areas with timber-related industrial uses occur around the Arcata Bay area: 1) the Brainard fill, site of Arcata-Redwood Lumber Co.; 2) Bracut Intl., a wood products wholesaler; 3) the City of Arcata industrial area, which has timber-related and light industrial uses; and, 4) the Emerson sawmill adjacent to Mad River Slough. In addition, a trucking firm (GAR Trucking) occupies about 6 acres at the north end of Manila.

Of the 293 acres of land in this sub-area which is industrially planned, zoned, or used, 64 acres can be considered vacant. These parcels are in or immediately adjacent to the Arcata city limits. Because of their location and limited size, heavy industrial development opportunities are somewhat constrained. Two parcels totalling 22 acres in County jurisdiction are zoned limited industrial (ML), and are in part used (11 acres) for wood storage. McDaniel Slough runs through a portion of the site, and wetland habitat exists on a portion also, so that usable acreage may be reduced to the 11 acres in use.





Jacoby 4

-  Industrial Use
-  Industrial Planned
-  Industrial Zoned

1165 (SW (EUREKA))
 4518
 4519
 4520
 4521
 4522

Because of adjacent agricultural uses, it might be appropriate to consider giving preference to agriculturally related industrial uses. The influence of agricultural on these parcels is somewhat limited, however, by the proximity of other uses adjacent to the city.

The two bayfill sites of Brainard and Bracut are in timber-related use of different magnitudes. Arcata-Redwood's (ARCO) operation at Brainard is one of the largest mills in the County. The site is well managed and is visually buffered with eucalyptus trees and other vegetation, an important consideration because of the adjacent Highway 101 corridor. The Bracut Lumber Company is a small, light industrial lumber wholesaler. Other uses on the site include equipment storage and grape stake manufacturing. The site has no visual buffering along this bayview highway corridor. At the north end of the fill, the Coastal Conservancy is pursuing a marsh restoration project on 3 to 8 acres of the site. Both Bracut and ARCO make use of the rail access available at these sites. Because these sites front on the Bay, coastal dependency is a concern, though neither has access to navigable channels.

The Emerson mill site is adjacent to Mad River Slough and is separated from Humboldt Bay by New Navy Base Road. The site is served by Northwestern Pacific railroad, and the abandoned Hammond Lumber railroad runs up the slough behind the site where previous lumber-related facilities existed. Expansion at the Emerson site would need to insure protection of the habitat values of the adjacent slough and wetlands.

The Emerson, ARCO, and Bracut sites are zoned unclassified, with ARCO and Bracut planned industrial (Eureka G.P. '66) and the Emerson site planned regional park (Arcata G.P. 1985).

Eureka Sub Area

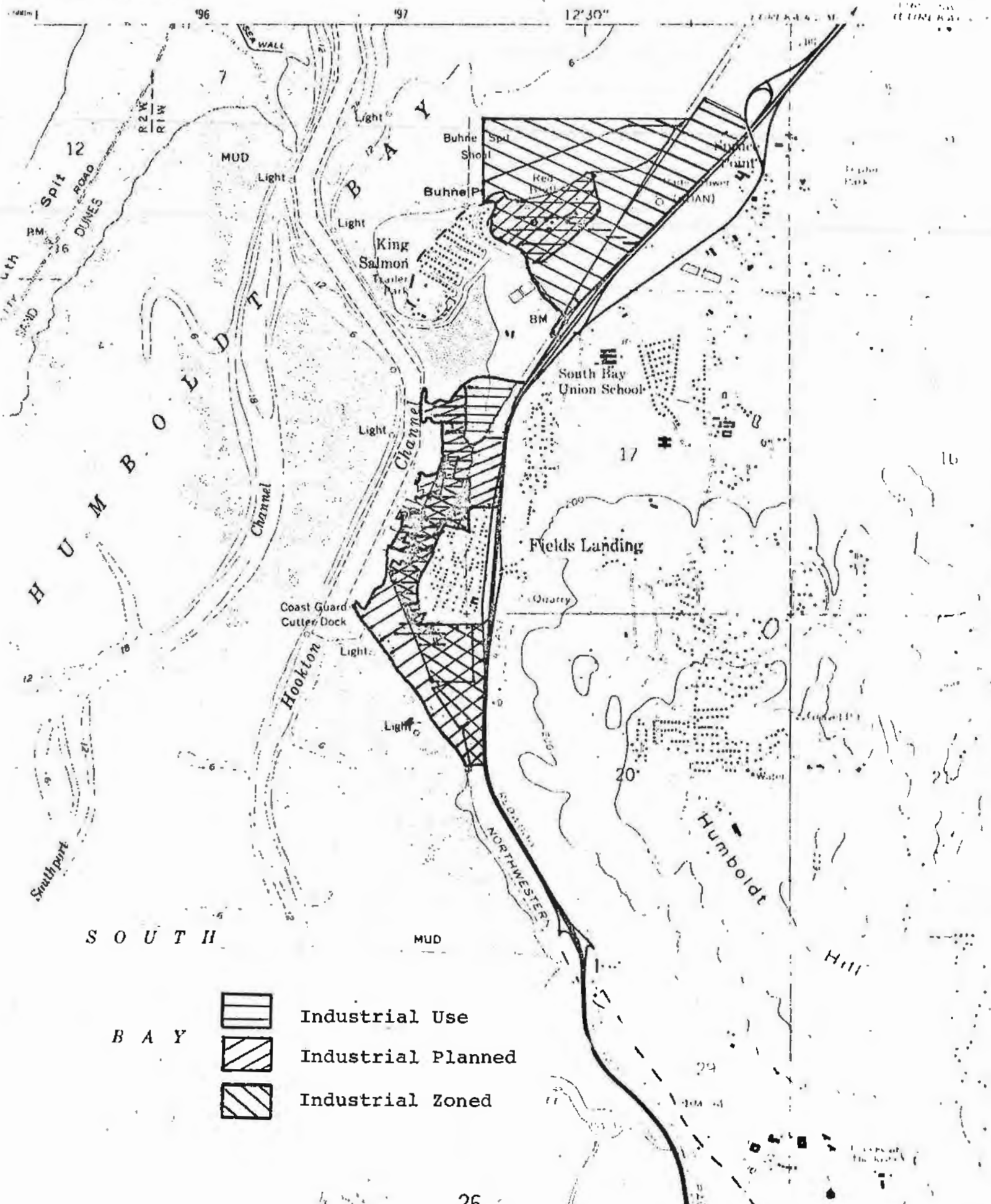
The Eureka Sub Area has three major areas: 1) the west of Broadway industrial area; 2) the Inner Reach waterfront-commercial area; and 3) the Jacobs Avenue light industrial strip. A detailed inventory of the industrial parcels within these areas has been undertaken by the North Coast Regional Commission staff.

Approximately 994 acres of planned, used, or zoned industrial land occur in the Eureka Sub Area. Of this, approximately 517 acres are vacant, but 235 acres are wetlands, and 121 acres are encumbered by the Eureka sewage treatment plant project. This leaves about 161 acres vacant and available for development. Several key waterfront sites are included in this net total, including portions of the old Pacific Lumber millsite, Cogshell Landing, and the area between Docks A & B. Another important site is Eureka Forest Products, which is presently available but not vacant.

Field's Landing - King Salmon Sub-Area

Of the 269 acres in this sub-area, 110 acres are in industrial use and 159 acres are vacant. Of the vacant acreage, however, approximately 115 acres are wetland habitat and flood hazard areas. The PG&E power plant at King Salmon, Olson Terminals, a log-exporting and fuel oil receiving terminal at Field's Landing, and South Bay Marina, Eureka Fisheries, and Vita Sea commercial fishing support facilities at Field's Landing comprise the major industrial uses in the sub-area. Kramer Dock at the south end of Field's Landing has recently been purchased by the Humboldt Bay Harbor District for development of a boat building and repair facility. Under this inventory it is considered vacant.

When the Kramer Dock Boat Repair facility is completed, 18 acres will still be available for development at the site. It represents a key waterfront development site in the South



Bay area. Two other developable waterfront parcels exist at Field's Landing: a 4-acre parcel (Halvorson) immediately north of the County boat ramp and the old Palladini dock between South Bay Marina and Olson Terminals. At King Salmon, two sites which are not included in the acreage totals in this inventory but have received previous consideration as waterfront development sites are Buhne Point and the Shipwreck site. Neither site is zoned, planned, or used industrially, and both sites have environmental constraints associated with them: Buhne Point is subject to severe erosion problems due to wave action and the Shipwreck site is almost all wetland habitat. Both are in the flood plain zone.

At King Salmon a narrow wedged-shaped parcel of about 80 acres lies east of the PG&E power plant between the railroad and Highway 101. It is vacant pastureland zoned heavy industrial. It is, however, subject to flooding, and displays wetland habitat qualities. PG&E owns two submerged parcels in the Bay west of the power plant; one of which is zoned industrial.

Eel River Sub-Area

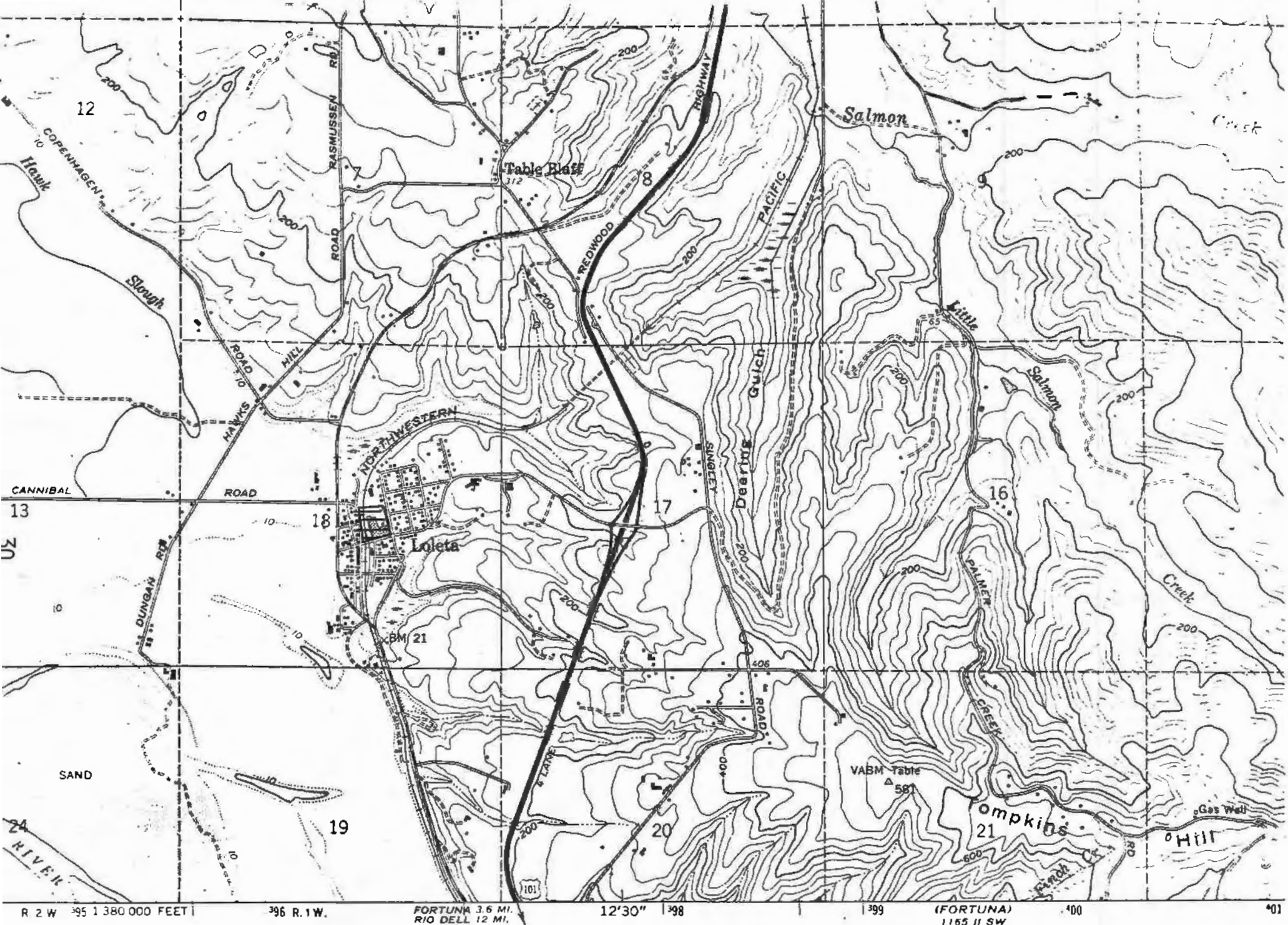
Industrial uses in the Eel River sub-area are limited to two creameries, one in Loleta and one at Fernbridge. Additionally, some sand and gravel extraction occurs on the river bars, and about 25 gas or oil wells have been drilled in the area, none of which are presently producing. A small wire rope manufacturing shop, a light-manufacturing or service commercial use, is situated in Alton.

The creamery at Loleta is sited on approximately 5 acres and is surrounded by residential and commercial uses and is served by rail. The creamery at Fernbridge occupies about 7 acres and has recently proposed a 2-acre expansion. The creamery is bounded by the Eel River, prime agricultural land, and the railroad, and is adjacent to the historic bridge across the Eel River at Fernbridge. The parcel is zoned Design-Floodway, and depending on the high water mark in relation to the parcel's elevation, the feasibility of additional structures may be limited.

Other Industrial Areas

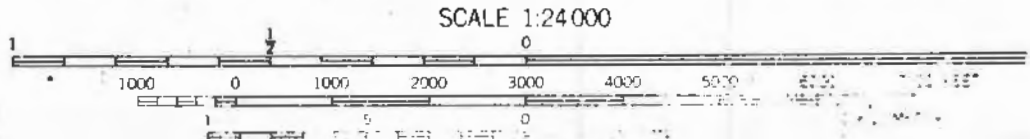
The only other industrial area in the County within the coastal zone and not in one of the previous sub-areas is the Louisiana-Pacific Big Lagoons millsite in the Northcoast area. There is also a California-Pacific mill at the mouth of Redwood Creek, but is not technically within the coastal zone because it is in Federal ownership as part of Redwood National Park.

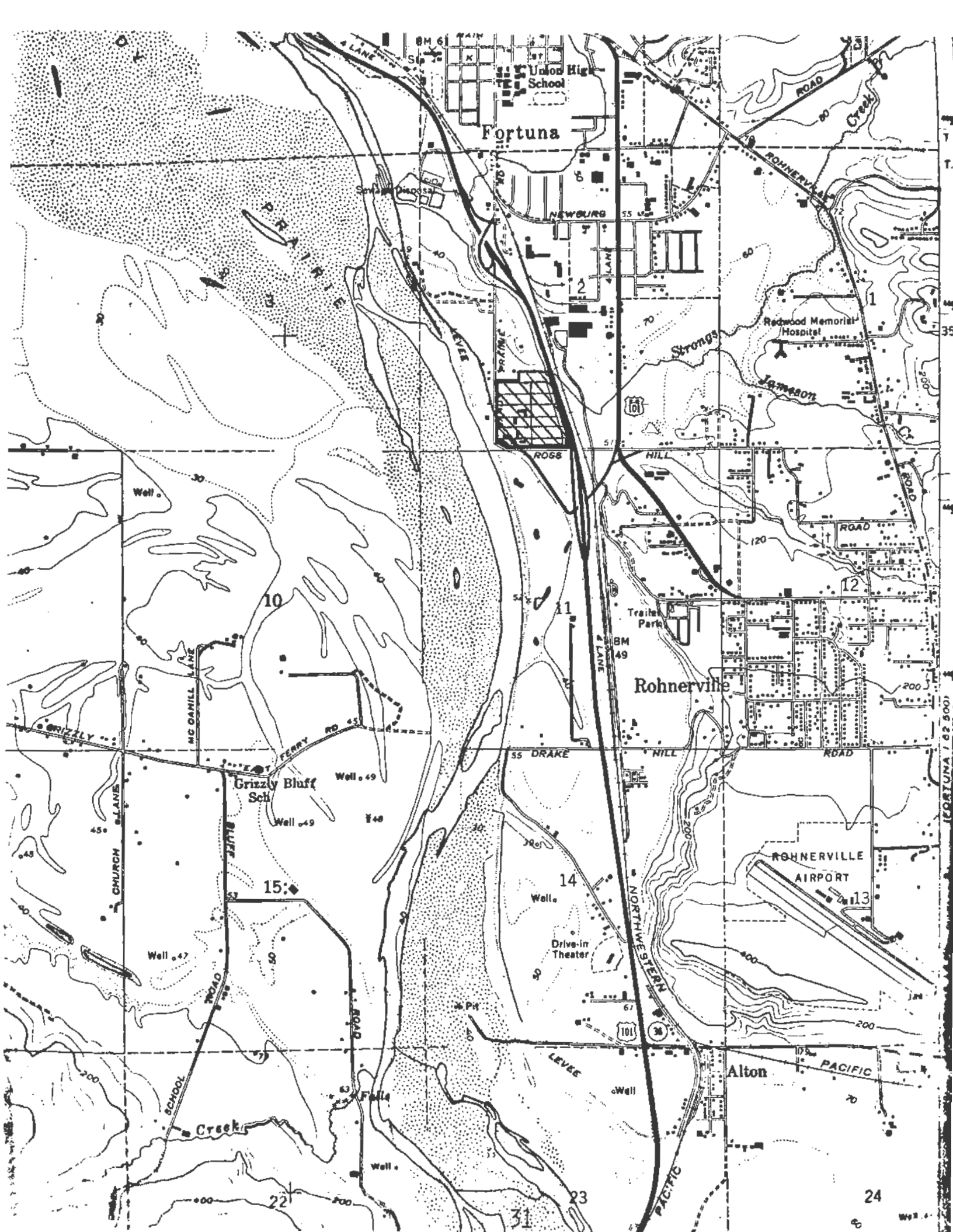
The L-P Big Lagoons millsite is about 40 acres surrounded by TPZ. The Northcoast Area Plan was amended by a Regional Commission recommendation to allow timber processing, not including pulp mills, as the only permitted industrial use in that area. If technical amendments are made to the Northcoast Area Plan, consideration should be given to substituting the general industrial policies recommended in Chapter 4 for the Regional Commission language.



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ited. and published by the Geological Survey
 BGS, USC&GS, USCE, and State of California
 from aerial photographs by photogrammetric methods
 made by the U.S. Geological Survey, 1959 Aerial photographs taken 1956





Fortuna

Rohnerville

Grizzly Bluff Sch

ROHNERVILLE AIRPORT

Alton

Union High School

Redwood Memorial Hospital

Traits Park

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SCHOOL

PACIFIC

NORTHWESTERN

GRAZING

Strongs

JAMARON

ROAD

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LEVEE

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Mussel Point

Snake
Cabbage
Creek

Orick
Hill

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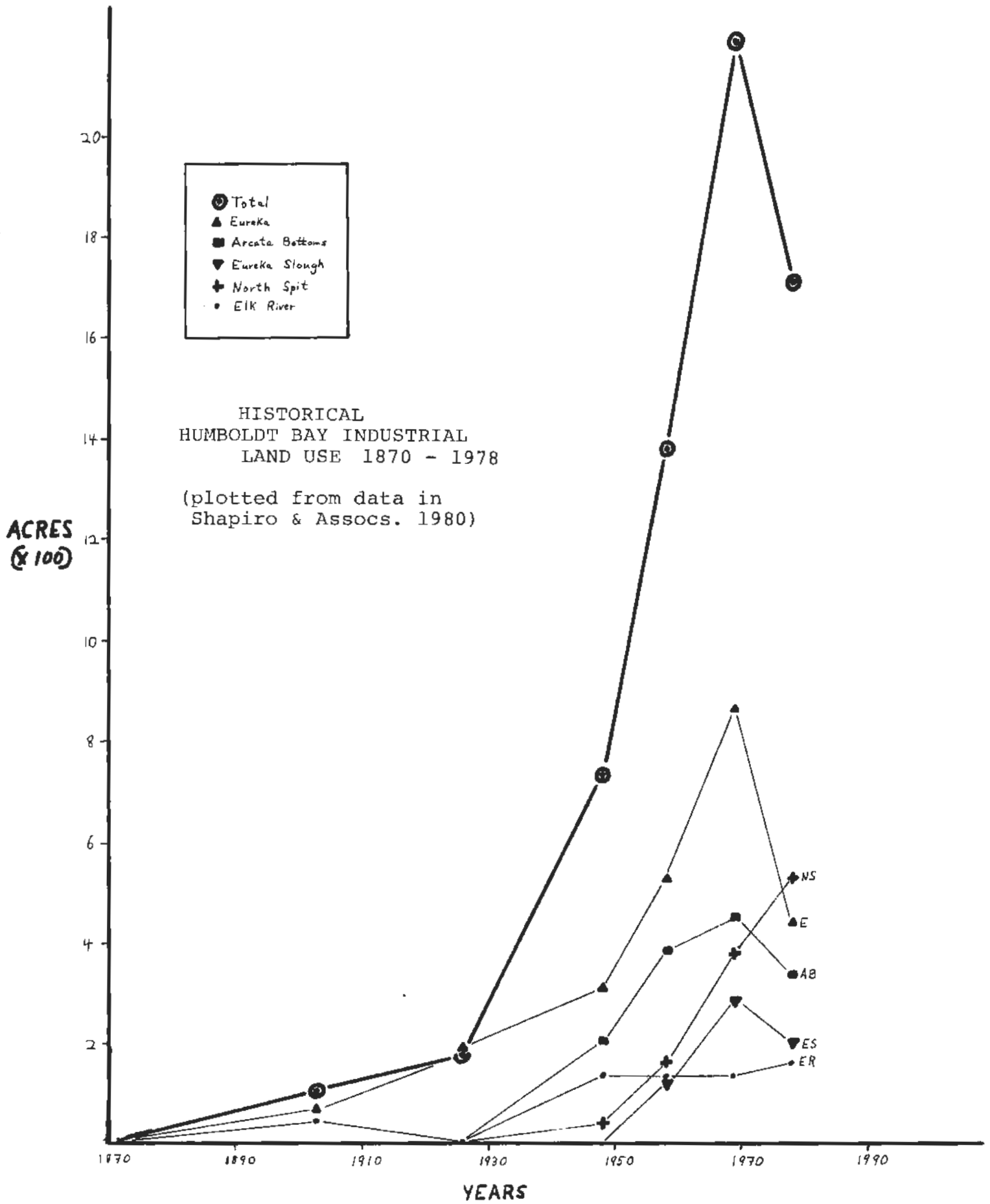
Creek

B. Projections of Industrial Siting Needs

1. General Perspectives and Setting

For approximately the past decade, various local interests have been seeking mitigation for the economic displacement resulting from a declining forest products industry. Numerous economic development proposals have been put forth, culminating with An Economic Development Action Plan and Strategy for Humboldt County, California (QRC, 1978). The QRC report represents the best attempt to date at outlining the County's economic condition, the underlying resource base available to support future economic situations, and the industrial sections and projects most likely to provide the desired mitigation. The synopsis of land use projections to support additional industrial development that follow are derived basically from that report, with updated information being supplied by various sources, primarily representatives of the various industrial sectors.

The viability of local basic industry has an important influence on population levels. When a major expansion in a basic industry occurs, a disproportionately large population increase may result. This is because certain service functions have a threshold population below which they cannot be supported. In small communities there is a "service drain" or leakage through expenditures for needed services which are available only in larger communities. If contraction of a basic industry occurs, either through lowered production volume or through mechanization, employment multipliers (and hence population) may decrease, particularly in smaller communities.



The economic base of Humboldt County is primarily dependent upon natural resources. The geographical characteristics of the county have made possible the development of a very significant forest products sector, producing about 25 percent of the state's lumber output, as well as a sizable seafood processing industry and to a lesser extent an agricultural sector (primarily dairy products). These sectors contribute significantly to the county's total exports. Continued reliance on these key sectors depends on the ability of the natural resource base to sustain the present rate of use. It appears that for the forest products industry, the trend of declining production over the last 20 years has not yet bottomed out, and that future sustainable yields may be below current levels. This is in part due to the continuing impact of the Redwood Park acquisition, which has been projected to reduce the County's yield by 23% (QRC, 1978)

Of the natural resource dependent industries important in the County, the fishing industry appears to be the one sector with significant expansion potential. Of the various Humboldt Bay Harbor development proposals analyzed in the QRC report, only those facilities associated with the fishing industry received positive recommendations. The Woodley Island marina and a boat building and repair yard, two major facilities included in the recommendations, are presently under construction. Other proposed projects with direct Humboldt Bay land use implications are addressed in the Commercial Fishing Facilities section.

2. General Industrial

a. Timber and Wood Products

The forest products industry is not expected to exert any significant additional land use demands on the County's coastal zone for industrial facilities. The demand represented by such facilities has been declining since the late 1960's. The major industrial facilities of the forest industry, particularly those in the Humboldt Bay area, are expected to continue at their present level of operation, with some modernization of equipment occurring, but without significant additional demands. In the next five years, two or three of the smaller facilities may close down, making additional land available. An opportunity may therefore exist to improve the utilization of the Bay by encouraging replacement users that require water access for their operation.

One potential demand that may arise from general industrial timber operations is a hardwoods plant. Since however, a site has received approval for a Fortuna Lumber Co. hardwoods operation outside the coastal zone, and at least three other sites outside the coastal zone were identified for potential hardwoods operations (Redwood Region Economic Development Commission, 1979), hardwoods facilities would not appear to exert a direct demand on industrial land in the coastal zone during the next five years.

Louisiana-Pacific has indicated that future upgrading of its pulp exporting dock will likely be necessary, with larger ships anticipated. Since the dock is at the north end of the complex and the pulp mill is at the south end,

relocation of the dock south toward the chip berth would be desirable and eliminate a two-mile hauling distance.

b. Other General Industry

The State Employment Development Department has projected a 1.9 percent annual employment growth rate for all industries for the Humboldt-Del Norte region during 1980-1985. Although such a number may not be accurate for the specific area within Humboldt County's coastal zone and reflects all employment categories, not just those requiring an industrial land use, it provides a gross approximation of potential industrial land use demand. The 1.9% annual growth represents about a 12% cumulative increase by 1985.

A more precise method for determining industrial land use demand would be to assign a coefficient of the number of acres each employee uses in each employment sector. Employment projections of each employment sector could then be used to generate a land use demand for each category. Such an undertaking is beyond the scope of this study. Because of the significance of the timber industry and the projected employment declines in that sector, such a study would most likely project a negative growth in industrial land use. The 12% cumulative growth through 1985 estimated here therefore probably is a reasonable upper bound for industrial land use demand.

3. Coastal Dependent Industry

Industries that are dependent on ocean access are the highest priority uses on parcels on or near the shoreline

under the policies of the Coastal Act. This is a most important consideration in the Humboldt Bay area, where industrial and port-related activities are centered. The projections that follow reflect anticipated demand during the next five years.

a. Dry Cargo Facilities

There are nine dry-cargo docks on Humboldt Bay. One dock, Kramer Dock, is delapidated and being taken down, and three other docks are in need of short-term repairs. According to the QRC Report, all of the operating docks are underutilized, with the possible exception of the Crown-Simpson dock. The report reviewed projections of future waterborne shipments and several facilities expansion proposals, including: roll-on/roll-off terminal facilities, containerized shipping, public-agency owned and operated dock, and establishment of a foreign trade zone. The report gave negative recommendations to all these proposals based on the lack of potential expansion of shipments:

"In short, there is little potential that the current cargo-mix will substantially expand in the future. Further, there are few positive indications that a new product-mix that will increase the use of Humboldt's terminal facilities will occur in the foreseeable future."

(QRC Report, p. 115)

With respect to the foreign trade zone proposal, the report states:

"In order to apply for a Foreign Trade Zone, it must be shown that it will be an integral part of a well-coordinated, comprehensive industrial development program. Further consideration of a Foreign Trade Zone should

await such developments. As a result, a Foreign Trade Zone is not recommended to be a part of Humboldt County's economic development action plan at this time. (QRC Report p. 173)

Despite this negative recommendation, considerable interest in the foreign trade zone continues to exist, particularly in light of opening of trade negotiations with China. The City of Eureka is pursuing the idea, but as yet has no formal plans or land use requirements. The area between the small boat basin and Del Norte Street has been identified as the general location such a zone might be sited within. (Bonnie Gool, personal communication)

For purpose of this study it will be assumed that the trade zone proposal will be a projected demand of 40 acres.*

b. Marine Oil Receiving Terminals

There are presently five locations in Humboldt Bay where fuel oil products are received via tanker or barge. Three are distributors, and two, PG&E and Crown-Simpson, receive products for their own use.

No increased demand beyond the capacities of the present facilities is expected. However, the phasing out of the smaller T-2 tankers will likely require additional dredging and some expansion of dock capabilities to accomodate larger class tankers. Union Oil is currently proposing maintenance dredging and placement of additional pilings at their facility.

*Recently, North Coast Exports has expressed interest in developing a marine import-export facility adjacent to its wood chip export operation. The project would utilize the 23-acre site owned by NCE just north of its chip berth, and require development of an extensive docking system to reach the deep water channel. It would likely compete for shipping demand with the foreign trade zone proposal.

No additional land use demand associated with these facilities is projected. Encroachment of other uses surrounding these facilities may pose a safety hazard, however. Attention should be given to the public safety aspects of land uses adjacent to these facilities. The three facilities are within the City of Eureka's jurisdiction.

c. OCS Facilities

Onshore facilities to support offshore oil and gas development on the Outer Continental Shelf (OCS) have been studied by the County under a Coastal Energy Impact Program Grant. Facilities estimates have been prepared using U.S. Geological Survey resource estimates. Such estimates are inherently speculative. USGS states there is a 60 percent probability that no commercial quantity of oil or gas would be found in the offshore Eel River Basin province. (USGS OFR 77-593).

A reasonable range of estimates for support facilities can be arrived at, however, and certain types of facilities can reasonably be considered outside the range of possibility for a particular area. Facilities outside the range of possibility for this area are refineries, platform fabrication yards, petrochemical plants, and liquification or regasification facilities for liquified natural gas (LNG). None of these facilities has even a remote chance of being required here, even if a discovery is made which is ten times larger than the mean USGS estimate, which for the Eel River portion of the Lease Sale #53 area, was 42 million barrels of oil and 120 billion cubic feet of gas. (revised 8/80)

The recent decision of the Secretary of the Interior to exclude the Eel River tracts from Lease Sale #53 affects the timing of the exploration of the Eel River basin, but does not totally remove the basin from active consideration because of two additional lease sales (numbers 73 & 80) which could include this basin. These sales are presently designated "California," and are scheduled for 1983 and 1984 respectively. The first step in the Lease Sale #73 process, the Call for Nominations, was issued in November, 1980.

Through the exploratory drilling phase the only facility that would be required is a temporary service base to serve as a materials storage and transfer site for the offshore drilling activity. If suitable docking at an existing public dock can be secured with a short term lease arrangement, then that is the option that drilling companies will choose. Assuming a 1983 lease sale date, the exploratory phase would occur between 1983 and 1986. On the order of 5 to 10 acres might be needed, with 200-400 feet of docking space.

Should a commercial find of oil and/or gas be made, the activity level would rise dramatically, depending on the size of the find. The onshore facilities that could be required are:

- * permanent service base
- * oil and/or gas pipeline from OCS to shore
- * gas processing or partial processing facility
- * oil export terminal

Although land requirements can vary considerably, for the purpose of projecting demand, the following estimates can be considered most probable should there be a commercial find:

- * permanent service base: 10 acres on waterfront,
400 feet of dock space
- * onshore pipeline: suitable corridor approximately
100 feet wide
- * combined partial processing, storage, and
marine terminal facility: 100 acres

These demands would not occur prior to 1986.

Because interest and speculation increase dramatically after a commercial find, very high short term activity peaks can occur. Adverse consequences have been associated with these activity peaks, both in meeting increasing demand for services and in coping with declining demand for employment. Humboldt County has shown itself to be sensitive to basic industry contraction, and is probably much more susceptible to "boom and bust" than southern California communities experiencing similar development proposals. The above mentioned facilities are those considered by industry to be necessary to develop the offshore oil and gas resources off the Humboldt coast (personal communication, Tony Mark, Dames & Moore, consultants to the Western Oil and Gas Assn.). Additional facilities might therefore be viewed as unnecessary and perhaps undesirable.

d. Commercial Fishing Facilities

Aside from the Woodley Island Marina and the boat building and repair facility sponsored by the Harbor District, a number of other projects with direct Humboldt Bay land use implications were included in the QRC report recommendations:

1. seafood technology demonstration program
2. fish by-products plant
3. mussel farming
4. crab holding facility
5. seaweed culturing
6. salmon and steelhead ranching

The "200-mile" law was passed in 1976, and is still in its early phases of implementation with a substantial need for data on the resource base still outstanding. Much skepticism has been directed toward the program for its lack of visible economic returns to date. The phase of implementation which would bring such returns is not expected to take hold until the mid-1980's. (J. Hokman, personal communication)

The QRC report states:

"Because of an increasing demand for seafoods, very high retail prices being charged for seafoods, and the recent passage of the "200-mile" law that regulates foreign fishing in American waters, an unusual opportunity now exists for an immediate and massive expansion of the fishing industry in the Humboldt County area."

Other conditions which could be translated into land use demands associated with the commercial fishing industry include inadequate ice and storage facilities at times of peak demand.

Expansion of the fishing industry is, however, faced with some formidable constraints, thus predictions of expansion are speculative and may not be realized. Marketing and seasonal fluctuations are two major problems, and negative economic impacts have been associated with the closures imposed by the Pacific Fisheries Management Council.

Seafood Technology Demonstration Program

This project would provide a facility to: demonstrate locally unused methods of fish holding, handling, processing, packing and transport; address problems with market development; and provide product testing and quality control servicing. The program would go hand in hand with any exploratory fishing or other project being directed toward unused or underutilized species.

The basic facilities required would be a specially equipped building or a leased existing building on or very near a dock or other fish landing point. The building would generally consist of a raw product receiving and sorting area, a holding area, a processing area, a staging area for demonstrations, an exhibition area, a lab, and office area, for a total building area of about 12,000 square feet. For purposes of estimating land use demand, it is assumed an acre and a half would be required for a new building, adjacent to an existing dock.

Fish By-Products Plant

Presently about 20 million pounds of fish and shellfish wastes are generated annually in the Humboldt Bay area. Only one fish waste processor, Vita Sea, makes use of fish waste. Vita Sea manufactures mink food for a mink-raising cooperative in Utah. The facility is limited by both demand and capacity. Most of the landed fish waste is either disposed of in solid waste dumps or sold at extremely low prices. Besides the waste produced from landed fish, much additional waste from on-board cleaning operations is discarded into the sea. Without the operation of a large plant, fish waste disposal problems are likely to become a serious constraint to fishery development.

Such a facility can be considered coastal-related (i.e. dependent on a coastal-dependent use), and would not need a waterfront location. Such a facility would fall under Chapter 2, Title VIII of the County Codes, which regulates reduction plants.

Such a facility is assumed to require 1½ acres, similar to the facility described in the Crescent City Harbor Plan. An abandoned mink slaughterhouse on Humboldt Hill (just outside the Coastal Zone) has been suggested as a possible location for such a facility (Fred Jurick, personal communication).

Mussel Farming

This project involves raising the blue mussel for human consumption and secondarily to the bait industry. It is expected that the land use requirements of such a project could be accommodated through lease of an existing facility.

Crab Holding Facilities

This project would provide for facilities to allow crab landings to be more staggered throughout the year, stabilize the price of crab during the season, and provide for a more stable supply to consumers. It would be an experimental model.

The facilities would include a series of finger ponds, located so that low-head pumps could supply Bay water at economical rates. Sites behind existing dikes have been suggested as the most feasible locations for such ponds. Such facilities would no doubt involve impacts to wetlands, but would be allowable as a resource-dependent activity under Section 30233(a)(8), if mitigation is provided. The facilities could be part of a wetlands restoration project.

The pilot project described in the QRC report calls for 80 ponds 20 by 100 feet. This would require about 200,000 square feet, or about 5 acres.

Seaweed Culturing

Seaweed culturing is similar to mussel farming in that it is an aquaculture activity which primarily utilizes the submerged areas of the Bay for the culturing activity, and land use needs ashore are very limited, involving rental of perhaps 10,000 square feet of space.

Salmon and Steelhead Ranching

Salmon ranching involves raising or merely holding salmon (or steelhead) until they have acquired the chemical cue which will instinctively direct their return to the rearing or holding facility a year and a half to two years later.

Two salmon ranching plans have been proposed for the Humboldt Bay area. One is a wastewater treatment, reclamation, and salmon rearing project, which is actively being developed by the City of Arcata under the direction of George Allen at Humboldt State University. The salmon rearing portion of the project is in the pilot stages, and not expected to contribute significantly to the salmon fishery for a number of years. The second proposal is by Oregon/Aqua Foods (a Weyerhaeuser subsidiary) to establish a salmon ranching facility in Humboldt Bay. A 15 to 20 acre site is required at a location with reasonable close access to the Bay entrance (Shapiro, 1980).

The Weyerhaeuser proposal is substantially different from the Arcata project in that it would raise fingerlings off-site at a conventional hatchery, and would only hold near-smolt stage salmon for a short period (as little as two weeks) in saltwater holding pens prior to release. The Arcata project is designed to take advantage of natural fish food organisms in the reclamation ponds. Salmon are dependent upon estuarine food organisms until smolt stage, at which point they change their feeding behavior and migrate to the open ocean.

The Weyerhaeuser type of proposal requires state legislation to allow the commercial development of salmon ranching. Legislation was introduced in 1980 for this purpose, but was met by stiff opposition, particularly for the commercial fishermen. Salmon ranching is seen essentially as an automation of the commercial salmon fishing industry (Pete Leipzig, personal communication). A number of issues were raised during the

legislative debate, among them charges that the Oregon salmon season had been legislatively manipulated by corporate interests to permit escapement of salmon back to their salmon ranching facilities, and concerns regarding the possible disruption of the Bay ecology by the massive releases of foraging salmon.

The controversy over the salmon ranching issue appears to be focused more toward institutional problems rather than land use problems. It is therefore recommended that policy recommendations be solicited during the public workshops that will provide mitigation, such as local or cooperative management or ownership, for these institutional concerns.

4. Electrical Power Plants

PG&E is the primary producer and sole distributor of electricity in Humboldt County. Electrical demand is primarily met by PG&E's Humboldt Bay Power Plant at King Salmon which utilizes two combustion turbines of 55 megawatts each and two 15 megawatt emergency mobile turbine units, for a total capacity of 140 megawatts. A 63 megawatt nuclear unit at the site is presently not in operation due to a Nuclear Regulatory Commission (NRC) directive following an earthquake episode in 1976.

Normal mode of operation is to run the two main combustion turbines and import the balance during peaking periods (winter) from outside the area via 60 KV and 120 KV transmission lines. The combustion turbines can burn either natural or fuel oil, and are periodically switched back and forth depending on a variety of conditions.

Louisiana-Pacific Co. also generates electricity, primarily for use at its pulp mill on the Samoa Spit. L-P currently has turbines with a total power rating of 48 megawatts, and has plans to increase capacity to 80 MW. This will allow them to sell about an average of 20 MW to PG&E as surplus. The turbines are fired by hog fuel (wood wastes) or a black liquor feed (a liquid by-product of wood chip processing).

Two additional electrical generating facilities have been proposed in Humboldt County. One is a small 8 MW hydroelectric turbine that would be installed on Ruth Dam (outside the coastal zone) on the Mad River. The Humboldt Bay Municipal Water District, the project sponsor, is presently seeking an exemption from FERC (Federal Energy Regulatory Commission) permit review. The project would have an indirect positive impact on coastal resources because it would back out the Water District's present electrical demand which is currently supplied by generating facilities located within the coastal zone.

The second proposal is a 40 MW waste-fuel plant that would burn a feed of wood wastes and garbage-derived fuel. The Humboldt Bay Power Company (a consortium of timber products companies) has been awarded a \$300,000 grant by the Solid Waste Management Board for development of the plant. The proposed plant site is on the Samoa Spit between the Crown-Simpson and Louisiana-Pacific mills.

All of the existing and proposed facilities mentioned above are in the small to very small range of power plants presently being constructed. Plants less than 50 MW are

exempt from California Energy Commission permitting.

PG&E has stated that they have no plans to add any plant capacity in the area over the next five years (John Stuart, personal communication).

If the nuclear unit is not relicensed, it still does not appear that it would be necessary to add plant capacity. Annual load growth has been projected to be between 1 and 2 percent.

Because of its somewhat isolated location, Humboldt County does not make an ideal site for a major energy facility (on the order of 500-1500 MW). Present transmission capacity in or out of the County is about 70 MW (J. Stuart, personal communication). This situation is not a severe constraint, but a consideration.

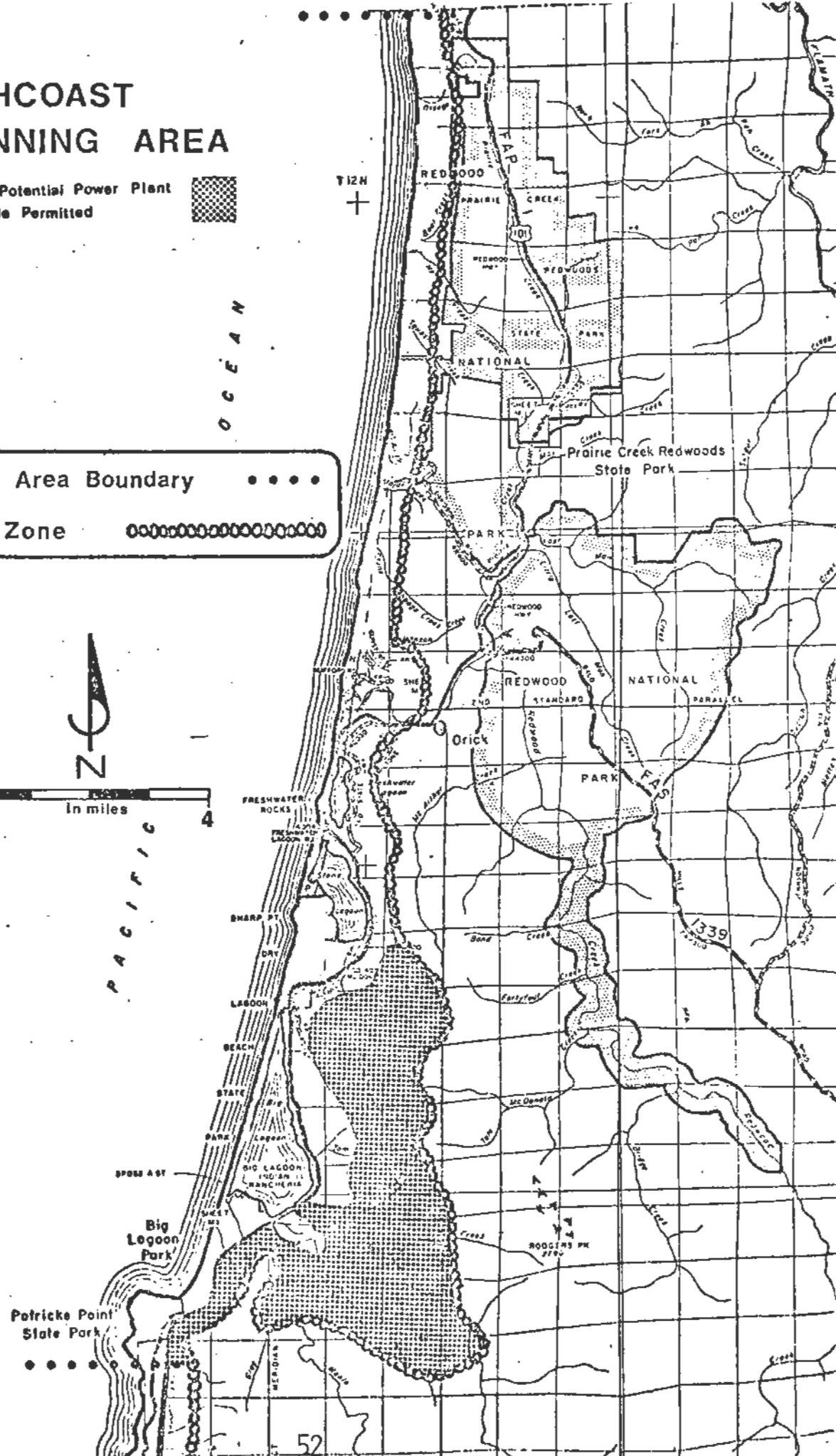
The Coastal Commission has designated areas in the coastal zone that are not suitable for siting new power plants greater than 50 MW or related facilities, pursuant to Section 30413. The maps on the following pages identify undesignated areas, that is areas that may be suitable for siting electric power plants, within Humboldt County. California Energy Commission staff have reviewed these undesignated areas for feasible sites for new power plants. All but the Samoa Spit area were eliminated from further study in the initial screening for general land use and air quality (Bryce Caughy). It is therefore unlikely, but still allowable, for a major new power plant to be sited in these screened out areas. The Coastal Commission reviews the designations every other year. The County may petition to have areas designated unsuitable for power plant siting based on the criteria established by the Coastal

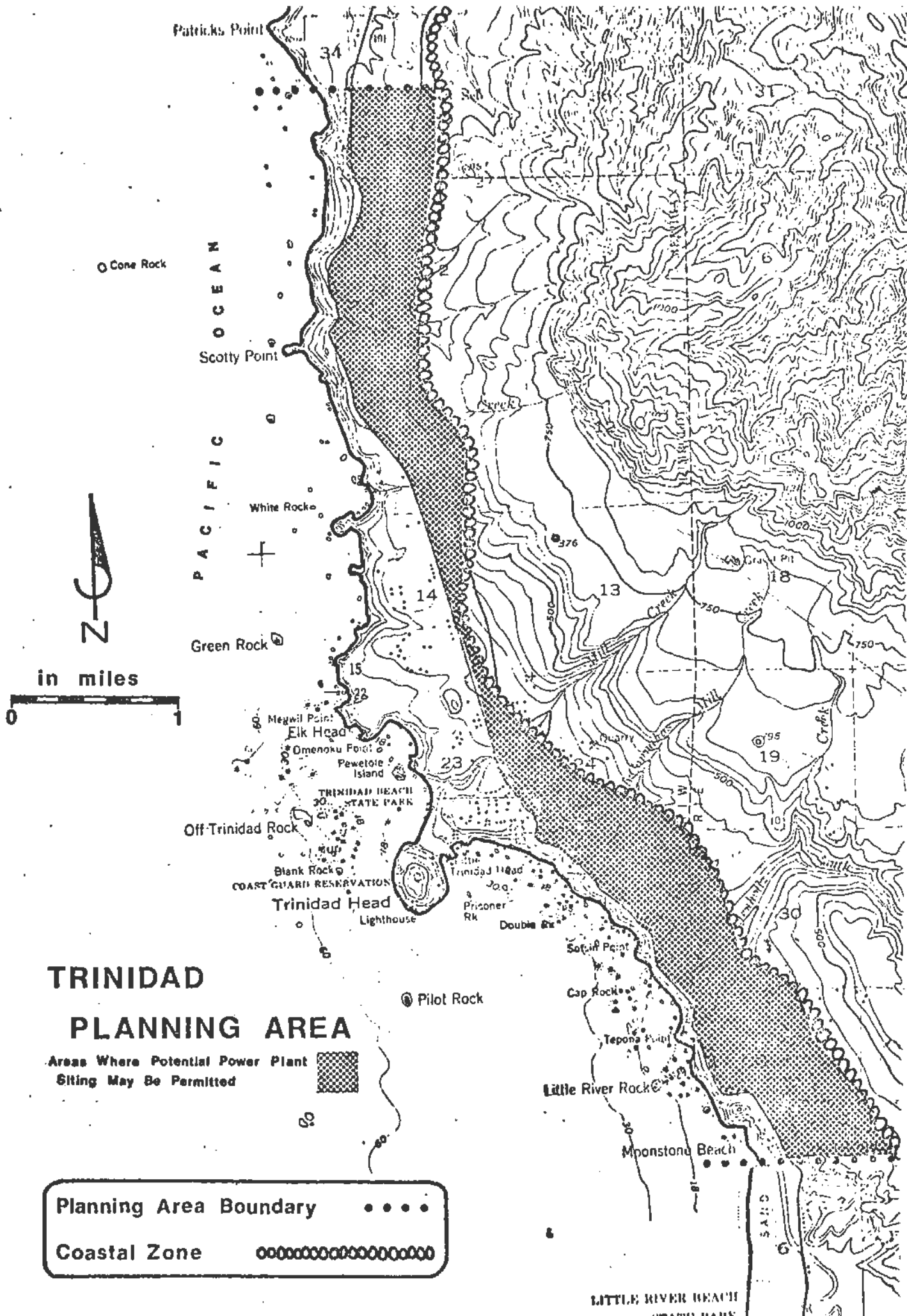
NORTHCOAST PLANNING AREA

Areas Where Potential Power Plant
Siting May Be Permitted



Planning Area Boundary
Coastal Zone oooooo





TRINIDAD PLANNING AREA

Areas Where Potential Power Plant
Siting May Be Permitted

Planning Area Boundary

Coastal Zone

LITTLE RIVER BEACH

Commission. This would not affect the ability to site power plants of less than 50 MW in these areas, but the designations may provide guidance for the siting of such facilities.

The area around PG&E's Humboldt Bay is undesignated to allow for reasonable expansion of that facility. A California Energy Commission staff report, Feasibility of Expansion of Existing Coastal Zone Power Plants (9/79), states that it is probably not feasible to expand the nuclear unit capabilities because of potentially active faults which exist at the site. (p. 25) The report also states, however, that expansion opportunities do exist for steam and combustion turbines to a maximum of 560 MW (p. 86). Repowering opportunities (converting the combustion turbines into a highly-efficient combined-cycle system by adding a steam turbine unit) also exist.

The major constraint that will limit expansion of the plant is the cooling water supply. As it is presently operating, the plant would not meet the new thermal policy of the Regional Water Quality Control Board which was adopted after the plant was built. The Regional Board would seek to rectify this situation if an expansion were proposed. At the time the CEC report was done, the Elk River sewage treatment site had not been chosen, so the report assumed waste water for cooling would not be available. Should an expansion be proposed at this site, a feasibility study should be undertaken to investigate the use of the waste water discharge for power plant cooling water.

Wetlands surrounding the plant are also seen as a constraint that limit the variety of power plant types that would be feasible. Repowering would probably not need to impact wetlands.

5. Onshore Oil and Gas Wells

Onshore exploratory drilling has the potential to increase substantially over the next five years. The County presently has one producing dry gas field, Tompkins Hill, which is outside the coastal zone north of Fortuna. Two abandoned gas fields, Table Bluff and Grizzly Bluff, occur in the coastal zone in the Eel River Planning Area. These two bluffs are small anticlinal structures which are open rolling coastal hills forming the northern and southern boundaries of the Eel River Delta. Argo Petroleum, in conjunction with a subsidiary of PG&E, has recently applied for permits to drill exploratory wells on these two structures. A feed line from the abandoned Table Bluff field to PG&E distribution facilities still exists.

The Eel River Delta is the center of the axis of the onshore portion of the sedimentary basin which is hydrocarbon prone. Assuming dry gas and not oil is the resource that continues to be found in this area, a potential exists for approximately 200 wells to be drilled. This estimate assumes one well per 160 acres over a 50 square mile area and is intended only as a gross approximation of potential buildout. The basin also encompasses the Mad River Bottoms, an area with a potential for about 50 wells, using the same assumptions as above. These estimates could be made upper bound by the adoption of a density standard.

To date natural gas has been produced by equipment at individual wellheads, rather than by piping product from a number of wells to a gas processing plant. Equipment at the well sites typically includes a well head completion unit

or "Christmas tree," a heater for dehydration, a separation column, and storage tank (1,000 gals. or less) for condensate (natural gas liquids). Wells are spaced singly or up to 4 wells per drillsite. The condensate is trucked away and the gas is fed into a small ($\frac{1}{4}$ acre) PG&E distribution station.

The Mattole Basin south of Cape Mendocino also has hydrocarbon potential, and in fact, the first oil well in California was drilled in the basin in Petrolia. Only 350 barrels of production were ever recorded, however, and no wells are presently active. Changing economic conditions could renew interest in this area, which is largely within the jurisdiction of the King Range National Conservation Area. It is expected (and recommended) that oil production be limited to wellhead facilities. Where road maintenance would be a concern, it might be appropriate to prohibit drilling.

A variety of impacts are associated with onshore oil and gas wells: road construction and maintenance; solid and water waste disposal, including harmful, hazardous, or toxic materials; visual, noise, and safety concerns; air quality; habitat disruption; and, site restoration.

6. SUMMARY OF POTENTIAL INDUSTRIAL PROJECTS,
HUMBOLDT BAY AREA, 1981-1986

<u>Project/ Sponsor</u>	<u>Land Required</u>	<u>Possible or Proposed Sites</u>	<u>Sites with Wet- land Impacts*</u>
Foreign Trade Zone/Eureka	40 acres	9 or 10, 11 & 12	9, 10
Marine Trade Ter- minal/North Coast Export	23 acres	13	
Temporary Service Base (OCS-related)	5-10 acres	1, 2, 9, 10, 11, 12, 18***	1**, 9, 10
Marine Oil Receiv- ing Terminal Wharf Expansions/Oregon Coast Towing/ Chevron	none	7, 8	Note (a)
Dock Replacement Louisiana-Pacific	none	20	
Wood Waste Power Plant/Humboldt Bay Power Co.	75 acres	14	
Seafood Technol- ogy Demonstration Program	1.5 acres	12, 23	
Fish By-Products Plant	1.5 acres	2, 23, 24, 25	24
Mussel Farming	0.25 acres	23	
Crab Holding Facilities	5 acres	4, 5, 6, 26, 27, 28	
Salmon Ranching	15-20 acres	4, 5, 6, 17	
12% General Indus- trial Growth	200 acres	30, 29, 31	Note (b)

* Does not include impacts incidental to any shoreline development

** Bulkhead placement may have substantial impacts to adjacent habitats

*** For additional alternates, see Issue Paper No. 2

SUMMARY OF POTENTIAL INDUSTRIAL PROJECTS,
AFTER 1986

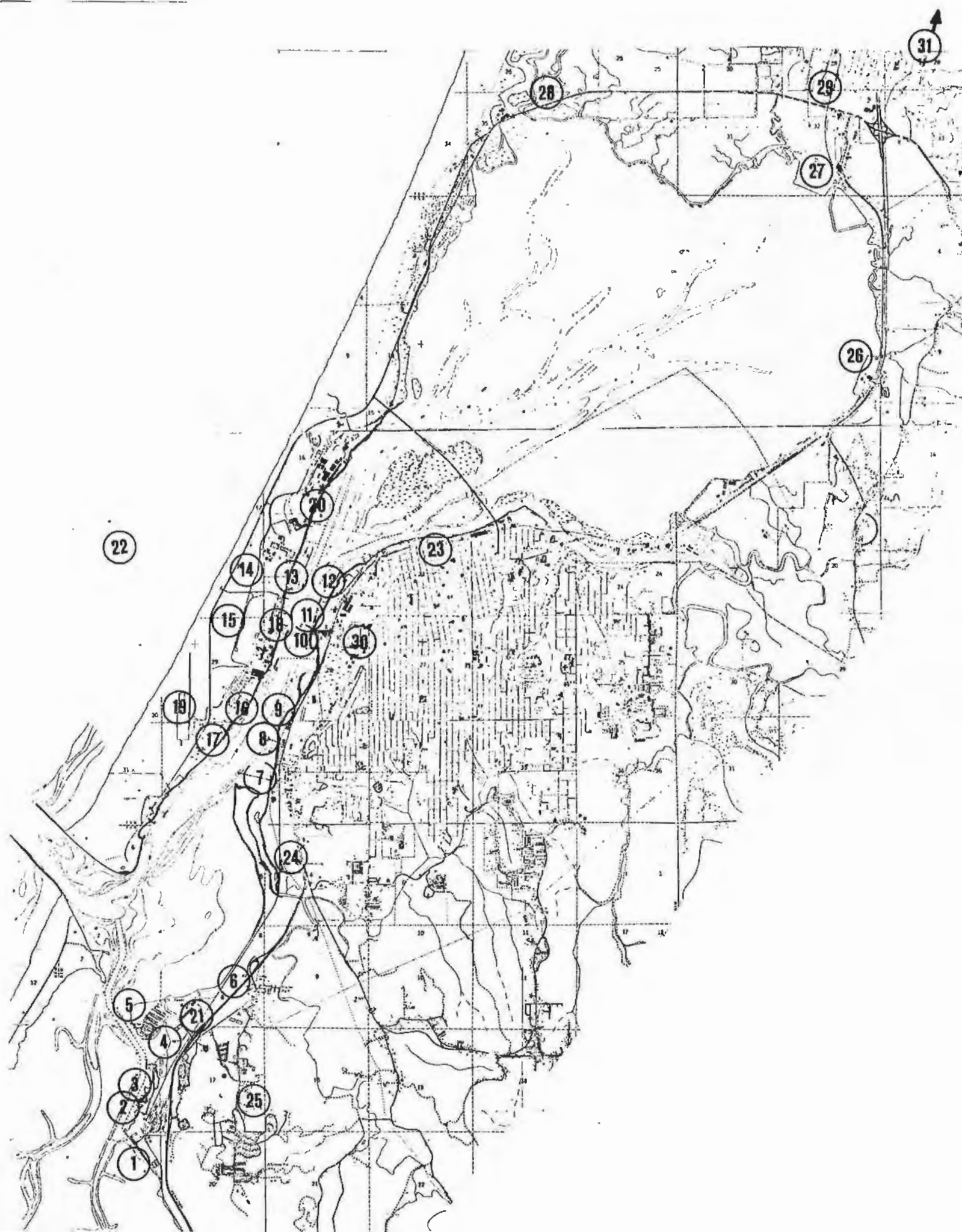
<u>Project/ Sponsor</u>	<u>Land Required</u>	<u>Possible or Proposed Sites</u>	<u>Sites with Wet- land Impacts*</u>
Gas Proces- sing Plant (OCS-related)	2-75 acres	15, 21	21
or,			
Oil & Gas Par- tial Processing Facility, includ- ing storage and marine terminal	100 acres	15 18, 22	Note (c)
Permanent Service Base (OSC-related)	10 acres	1,9, 10, 11, 12***	1**, 9, 10

Notes

(a) Operations presently represent an oil spill risk. Wetlands could be seriously impacted from present and future operations. Expanding wharfs to allow for larger tankers may or may not increase risk. Expansions would probably not involve any wetland conversion, except perhaps some associated with the Elk River sand spit. Neither firm has proposed expansion.

(b) Assumes a 2% per year industrial land use growth rate from a 1978 base figure for the Humboldt Bay area of 1707 acres (Shapiro & Assoc., 1980). This would constitute a reversal of the present declining trend in industrial land use demand, under the assumption that economic mitigation programs to site new industry in the County are effective. It is a liberal allowance for demand in that it is included over and above known potential projects and that it is probably a slight overestimate of the land use demand that would be generated by the 1.9% employment growth rate projected by the California Employment Development Department.

(c) Berthing terminal associated with partial processing facility could be considered either at site 18 (unused Crown-Simpson dock) inside the Bay, or at 22, offshore, as a monobuoy. Both sites could pose substantial risk to wetlands from an oil spill.



KEY TO SITE LIST

1. Kramer Dock
2. Halverson property north of County Boat Ramp
3. Old Palladini dock
4. Shipwreck
5. Buhne Point
6. Three parcels northeast of PG&E power plant (A.P.#'s 305-131-16,21,&22)
7. Oregon Coast Marine Oil Terminal
8. Chevron Oil Terminal
9. Old Pacific Lumber millsite
10. Cogshell Landing
11. Eureka Forest Products
12. Between Docks A & B
13. Parcel between North Coast Exports and L-P's chip berths
14. Proposed wood-waste power plant site
15. Vacant Crown-Simpson parcels
16. Park St. parcels (A.P. #'s 401-281-01,02,03,05,06)
17. West parcel east of old airport (A.P. # 401-141-03)
18. Crown-Simpson unused north dock
19. Old Eureka Airport
20. Louisiana-Pacific waterfront north of pulp mill
21. Adjacent to PG&E power plant
22. Offshore
23. Eureka Inner Reach waterfront
24. Adjacent to future Eureka sewage treatment plant
25. Humboldt Hill- old mink slaughterhouse
26. Bracut
27. Arcata marsh restoration project
28. Old log pond adjacent to Mad River Slough
29. Arcata industrial area
30. General west of Broadway industrial area
31. West End Road industrial area

CHAPTER 3

Mining

A. Mineral Resources

Mining activity has been relatively limited in Humboldt County. Currently, sand, gravel, stone and natural gas make up the basis of the County's mineral resource production. Latest available figures indicate that over \$2,000,000 worth of sand, gravel and stone were produced in Humboldt County during 1978. This discussion does not include natural gas production.

County-wide, there is a potential for mineral production other than sand, gravel and stone. Gold, copper, silver, lead and zinc have all been mined as recently as 1966. In fact, in 1961, Humboldt County lead the state in the production of all but gold and was second in gold production state-wide. Significant chromite deposits also exist in Humboldt County along with some minor manganese deposits. However, what true potential these resources represent is as yet unknown.

1. Aggregate Resources

Within the Coastal zone, gravel extraction is the principle surface mining activity. Areas throughout the County where gravel extraction is likely to occur include: Redwood Creek from the mouth to Redwood National Park Boundary; Klamath River from the Humboldt-Siskiyou

County line to near Pecwan; Trinity River and its South Fork from the Humboldt-Trinity County line to its confluence with the Klamath River at Weitchpec; Mad River from the mouth to Ruth Reservoir with primary areas of extraction occurring between the 101 Bridge and the Fish Hatchery; Van Duzen River from its confluence with the Eel River to Dinsmore; and Eel River and its South Fork from the mouth to the Humboldt-Trinity County line.

Of these areas, only portions of Redwood Creek, the Mad River, the Van Duzen River and the Eel River are in the Coastal Zone. Other rivers and creeks such as the Bear River and the Mattole River within the Coastal Zone, as well as Jacoby Creek, Larabee Creek and Yager Creek outside the Coastal Zone have some potential for gravel extraction, but no major operations are taking place along them at this time according to information currently available.

2. Other Mined Resources

Currently, the only other resource being mined in any appreciable quantity is sand. Sand excavation takes place most commonly among the large dunes on the seaward side of the North Spit bordering Humboldt Bay. Other areas along the Coast which may have a potential for sand excavation include the South Spit bordering Humboldt

Bay and the Mad River Beach area. However, sand removal should be limited to those areas currently being mined.

B. Aggregate Extraction

Aggregate extraction in Humboldt County has taken two main forms: Instream and streambank extraction and rock quarries. The divergence between these two types of operations provides material of differing composition, consistency, quality and creates dissimilar land use conflicts and environmental effects.

1. Instream and Streambank Operations

Historically, the Mad River and the Eel River have accounted for the majority of aggregates used within the Coastal Zone and the urbanized areas of Humboldt County adjacent to the Coastal Zone. Latest available production figures indicate that gravel operations account for over three quarters of a million tons of aggregate annually.

In addition to gravel, however, the Mad and Eel Rivers, as well as Redwood Creek and the Van Duzen River, provide other major resource functions such as:

- a. Urban water supply
- b. Agricultural water supply
- c. Recreation
- d. Fish and wildlife habitat
- e. Storm water drainage

The extent to which these additional functions are compatible with or in conflict with instream gravel extraction has never been fully investigated. The only possible exceptions to this are the in-house guidelines used by the California Department of Fish and Game to determine permissible instream gravel extractions.

The long-term cumulative environmental effects of instream operations cannot yet be determined based on currently available information which is vague and inconclusive. However, some of the concerns that need examination are:

1. How operations may cause down-grading of the streambed upstream of the operation.
2. Bank erosion at the area of extraction.
3. Increased sedimentation, bank erosion, etc. downstream from a gravel extraction.

The most beneficial long-term utilization of instream aggregate resources requires that extraction does not outstrip the average annual replenishment level and that extraction procedures minimize effects detrimental to other uses of the watercourse. Figures are expected to come out of SMARA Reclamation Plans and should be included in this document in the next LCP review.

2. Rock Quarries

Rock quarries are located in a variety of surroundings

throughout Humboldt County. Many of these are small, localized quarries used to surface timber harvest roads or for County road projects. Some major commercial quarries have supplied large rock for breakwaters, levees, shoreline erosion control and the Humboldt Bay Woodly Island Marina Project. Quarries can come into conflict with other land uses but may be located in areas of minimal conflict. The longevity of a rock quarry depends entirely on the size of the outcrop and its compatibility with uses in demand.

C. Future Needs

Expansion of sand, gravel and stone extraction activities in Humboldt County is foreseen only if demand for construction materials substantially increases over the currently available supply. Most operations are seasonal due to unfavorable weather conditions that make operation difficult, if not impossible, during the winter months. Actual mining and stockpiling takes place during the good weather months and what level of demand for material there is during the poor weather months is usually satisfied from those stockpiles.

D. Recommended Conditions

Within the Coastal Zone, the greatest concerns deal with the protection of sensitive habitats and water quality and to accomodate flood and erosion hazards. Humboldt County has enacted Ordinance No. 1373 for regulating

surface mining activities as required by the Surface Mining and Reclamation Act of 1975. This ordinance more specifically defines conditions for issuance of mining permits and requires reclamation plans for all non-exempt operations. One thing that Ordinance No. 1373 also does is to exempt from its influence certain classifications of operations. These exemptions include:

1. Excavations or grading conducted for farming, on-site construction or for the purpose of restoring land following a flood or a natural disaster.
2. Excavation for the construction of any building or structure for which a necessary building permit has been duly issued, or excavation which is all or part of a grading operation necessary to bring the contours of a proposed land subdivision to the grades shown on a tentative subdivision plan which has been officially approved.
3. Work conducted in any County or public right-of-way or easement when the work is for public roads, public utilities, or other public purpose.
4. Surface mining operations, including prospecting and exploration for minerals of commercial value, so long as the lands mined do not exceed one (1) acre in extent and the total of material removed, including overburden, does not exceed one thousand (1000) cubic yards in any one (1) year.

5. Surface mining operations that are required by federal law in order to protect a mining claim, if such operations are conducted solely for that purpose.

6. Such other excavation and removal of rock, sand, stone or minerals that the Board of Supervisors determines to be exempt from the provisions of this chapter or which the State Mining and Geology Board determines to be of an infrequent nature and which involves only minor surface disturbance.

For surface mining projects within the Coastal Zone, it is recommended that the following conditions apply to all operations whether they are covered by Ordinance No. 1373 or not:

1. The annual amount of gravel removal be less than the average annual rate of replacement in order to prevent depletion of the resource.
2. Removal be from non-vegetated bars.
3. Disturbance of banks be avoided or minimized.
4. Excavations not leave holes or pits which could trap or kill aquatic life.
5. Gravel be removed from behind the protection of a dike or berm if the site is likely to inundated by high water.
6. Use sediment settling ponds for fine silt trapment when a crusher is used at the gravel site. Fine silts are to be transported off the river bar to an upland disposal site before November.

7. In order to minimize impacts to migrating anadromous fish, follow the Department of Fish and Game guideline for removal of gravels only from May to November of each year.
8. River crossings, or drainage crossing on the gravel bar, should use temporary culverts or removable bridges to minimize impacts to water quality sedimentation.

CHAPTER 4

RECOMMENDATIONS FOR INDUSTRIAL SITING POLICIES

This Chapter includes a set of recommended policies for the siting of coastal-dependent and general industry, commercial fishing facilities, and energy facilities, including power generating facilities, OCS support facilities, and onshore oil and gas production facilities. The recommendations made here also appear in the Discussion Draft of the Humboldt Bay Area Plan of the LCP. It is believed that these policies meet the requirements of the California Coastal Act. It is also believed that these recommendations will bring County land use policies more closely into conformance with the conservation and development policies of the Humboldt Bay Harbor District.

The basic thrust of the policies presented here is to give priority to those uses dependent on coastal sites at those sites with coastal access. Sites with access to maintained dredged channels are distinguished from sites without such access. Policies are presented to encourage the utilization of existing sites and discourage conversion of wetland sites. Provisions are included to allow coastal-dependent industrial to be sited in wetlands, but only if there are no less environmentally damaging alternatives available.

Management options under the Coastal Act range from developing a plan that does little more than quote the policies of the Coastal Act and identifying general land use categories to developing performance standards and specifically identifying a certain project for each site within the plan area. The approach taken here falls in between these two extremes by setting up a priority rating system which guides preferred developments within land use categories.

Present County industrial zoning ordinances allow a very broad range of uses within industrial zones, and do not give preference to coastal-dependent uses at parcels on or near the shore. The ordinances are so broad as to allow conflicting uses within the same zone, without listing criteria to resolve or avoid such conflicts. In addition, present general plan designations in some cases do not realistically reflect desired or appropriate uses. For instance, the applicable general plan adjacent to Arcata is the Mid-Humboldt County General Plan 1985, and it calls for an airport, a marina, and residential estates to be developed in the pasturelands along the Bay west of Arcata. Many parcels around the Humboldt Bay area are zoned "Unclassified", which allows a single family dwelling without a use permit and any other use with a use permit. Several existing and potential industrial sites have this zoning. The policies presented here are designed to protect and reserve sites for industrial use and minimize conflicts with surrounding land uses such as residential.

The Coastal Act has several policies among its general findings relative to industrial development. Section 30001(d) finds and declares:

(d) That existing developed uses, and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and especially to working persons employed within the coastal zone.

In reviewing the application of this policy in the Humboldt Bay area, for instance, the commercial fishing industry can be regarded as an existing developed use essential to the economic and social well-being of the people of the state, and that only new industry which can be planned in such a manner as to avoid adverse impacts to the fishing industry would be allowable. It is a policy to provide general guidance, however as is Section 30001.2:

30001.2. The Legislature further finds and declares that, notwithstanding the fact electrical generating facilities, refineries, and coastal-dependent developments, including ports, and commercial fishing facilities, offshore petroleum and gas development, and liquified natural gas facilities, may have significant adverse effects on coastal resources or coastal access, it may be necessary to locate such developments in the coastal zone in order to ensure that inland as well as coastal resources are preserved and that orderly economic development proceeds within the state.

One of the basic goals of the Coastal Act stated in Section 30001.5(d) is to assure priority for coastal-dependent and coastal-related development over other development on the coast.

3.33 COASTAL-DEPENDENT DEVELOPMENT

30255. Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

30234. Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

A. PRIORITIES FOR COASTAL-DEPENDENT USE

1. The Area Plan identifies on-shore and near-shore areas for coastal-dependent industrial, commercial, and recreational use. Only uses dependent upon such resources shall be approved in areas so designated, according to the following criteria:

a. Industrial:

- 1) any coastal-dependent industrial use that requires access to a maintained navigable channel in order to function, including, but not limited to: public docks, waterborne carrier import and export operations, ship building and boat repair, commercial fishing facilities, including berthing and fish receiving, and fish processing when product is for human consumption; fish waste processing and fish processing of products for other than human consumption are considered coastal-related uses; marine oil terminals, and supply bases and pipelines serving offshore facilities.
- 2) gas and/or oil processing and treatment facilities, electrical generating facilities or other facilities which require an ocean intake, outfall, or discharge. Such facilities are considered coastal-related.
- 3) within areas designated Resource Dependent (MR), coastal-dependent uses other than recreational, commercial, and facilities identified in paragraph (2) above, which require access to the sea but not requiring access to maintained dredged channels, including, but not limited to: aquaculture (including salmon ranching), habitat restoration projects, and nature study facilities.

- b. Recreational: any active or passive recreational activity requiring use of open water, the water-beach interface, or other natural features which in Humboldt County exist only or predominantly at near-shore areas.
- c. Commercial: Visitor-serving facilities which accommodate or facilitate public use of the shoreline for coastal-dependent recreational purposes, when provision of such services is best provided at shore-line areas and does not interfere with access to the coast.

(2) Where coastal-dependent uses conflict among themselves, priority shall be given to industrial over recreational or commercial uses, and to recreational over commercial uses; except that recreational and visitor serving use of private lands shall not displace existing agricultural use where the Area Plan or zoning protect the use.

(3) In reviewing projects requiring channel access, it is recognized that the channel adjacent to the Samoa Spit is naturally scoured and generally provides the best opportunity for deeper draft uses.

(3.38) 1.070 Industrial

(modified 30250(a)). New industrial development, except as may be otherwise provided in this plan, shall be located within, contiguous with, or in close proximity to, existing developed industrial areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

(3.38.1) .071 Where an industrial use is proposed as a conditional use, in addition to complying with Section 1.070, such a proposed use must demonstrate compatibility with the policies and standards of the principal use designations of the areas within, contiguous with, or in close proximity to the site of the proposed use.

(3.38.2) .072 When notice has been given that an industrial facility or portion thereof will be closing down, the Planning Department shall solicit recommendations for appropriate future uses of the site. In determining the appropriate land use designation(s) of the site, the standards and policies of the lands within, contiguous with, or in close proximity to the site shall be used as criteria. The recommendations of the operator together with any advice received from the Coastal Conservancy or other interested parties will be used to assist in making the determination. The feasibility of restoring or converting the site to the uses of the contiguous lands shall be considered prior to final determination. An LCP amendment shall be applied for where the recommendation is to change the site's existing area designation.

(3.38.3) 073 *30260. Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this plan. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this plan, they may nonetheless be permitted in accordance with this section and Sections 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.*

.1

- a. The initial study and subsequent environmental review of a proposed coastal-dependent or coastal-related facility included in Section 1.031(a) shall include a priority rating of alternative sites within appropriate land use designations for the proposed project.
- b. Alternative sites included in the review shall include at a minimum those sites received from soliciting the California Coastal Commission, the Humboldt Bay Harbor Recreation and Conservation District, the Army Corps of Engineers, and the Humboldt County Planning Department. Alternative sites shall be rated according to the following priorities:

Priority 1 Sites:

sites with existing facilities suitable, with minor alteration, to accommodate the proposed use, or that could accommodate the proposed use through expansion.

Priority 2 Sites:

sites requiring the construction of new facilities which do not convert wetlands. Preferred sites within this category are those requiring the least site alteration (e.g. dredging, grading, habitat modification).

Priority 3 Sites:

sites where the proposed use would require conversion of wetlands.

Priority 4 Sites:

sites requiring dredging of a new deep water channel.

b. The proposed use shall be located on a site with the lowest priority rating (i.e. Priority 1 is the lowest). The Humboldt Bay Harbor Recreation and Conservation District shall be petitioned to exercise its right of eminent domain to secure the site if necessary.

c. A Priority 3 or 4 site shall be used only if the following findings can be made: that the proposed use cannot feasibly be accommodated in a Priority 1 or 2 site or use of Priority 1 or 2 sites would be more environmentally damaging; and to do otherwise would adversely affect the public welfare; and adverse environmental effects are mitigated to the maximum extent feasible; at a minimum in conformance with Chapter 3 of CLUPS.

(3.38.4) .074 For new or expansions to existing marine petroleum transfer facilities, or for new or expanded marine transfer facilities for other hazardous liquids, in addition to the other sections applying to coastal-dependent facilities, the following shall apply:

30261. (a) *multicompany use of existing and new tanker facilities shall be encouraged to the maximum extent feasible and legally permissible, except where to do so would result in increased tanker operations and associated onshore development incompatible with the land use and environmental goals for the area. New tanker terminals outside of existing terminal areas shall be situated as to avoid risk to environmentally sensitive areas and shall use a monobuoy system, unless an alternative type of system can be shown to be environmentally preferable for a specific site. Tanker facilities shall be designed to (1) minimize the total volume of oil spilled, (2) minimize the risk of collision from movement of other vessels, (3) have ready access to the most effective feasible containment and recovery equipment for oil spills, and (4) have onshore deballasting facilities to receive any fouled ballast water from tankers where operationally or legally required.*

a. The following findings shall be required for project approval:

1. that increased tanker operations and associated on-shore development will not be incompatible with the land use and environmental goals for the area;
2. that existing facilities will be expanded or that it would not be feasible or legally permissible to do so;
3. that the facility will be designed and operated to
 - a) provide maximum feasible and legally permissible multicompany use;
 - b) minimize the total volume of oil spilled;
 - c) minimize the risk of collision from movement of other vessels;
 - d) have ready access to the most effective feasible containment and recovery equipment for spills; and,
 - e) have onshore deballasting facilities to receive fouled ballast water from tankers where operationally or legally required.

(3.38.5).075 For oil and gas wells within the coastal zone, that is both onshore and offshore within the three mile limit, and for production support facilities within the coastal zone, including those serving the Outer Continental Shelf, section 30262 applies, in addition to other applicable sections:

30262. Oil and gas development shall be permitted in accordance with Section 30260, if the following conditions are met:

(a) The development is performed safely and consistent with the geologic conditions of the well site.

(b) New or expanded facilities related to such development are consolidated, to the maximum extent feasible and legally permissible, unless consolidation will have adverse environmental consequences and will not significantly reduce the number of producing wells, support facilities, or sites required to produce the reservoir economically and with minimal environmental impacts.

(c) Environmentally safe and feasible subsea completions are used when drilling platforms or islands would substantially degrade coastal visual qualities unless use of such structures will result in substantially less environmental risks.

(d) Platforms or islands will not be sited where a substantial hazard to vessel traffic might result from the facilities or related operations, determined in consultation with the United States Coast Guard and the Army Corps of Engineers.

(e) Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.

(f) *With respect to new facilities, all oilfield brines are reinjected into oil-producing zones unless the Division of Oil and Gas of the Department of Conservation determines to do so would adversely affect production of the reservoirs and unless injection into other subsurface zones will reduce environmental risks. Exceptions to reinjections will be granted consistent with the Ocean Waters Discharge Plan of the State Water Resources Control Board and where adequate provision is made for the elimination of petroleum odors and water quality problems.*

Where appropriate, monitoring programs to record land surface and near-shore ocean floor movements shall be initiated in locations of new large-scale fluid extraction on land or near shore before operations begin and shall continue until surface conditions have stabilized. Costs of monitoring and mitigation programs shall be borne by liquid and gas extraction operators.

(3.38.5a).075(a) Prior to project approval, findings in conformance with Section 30262 will be required.

(3.38.5b).075(b) Development associated with onshore oil and gas wells shall be permitted by conditional use permit in agricultural, timber commercial, heavy industrial, and coastal-dependent land use classifications.

A permit will be required for each drillsite and a separate permit will be required for production facilities. Additional wells proposed for an approved drillsite may be administratively approved if they can be accomplished within the limitations and conditions of the original use permit for the drillsite.

In submitting information for the initial study, the applicant shall include information sufficient to determine that the project will be so sited and designed to mitigate to the maximum extent feasible adverse environmental effects. Specifically, the following shall be provided for:

a) A plot plan of the entire area under lease or ownership, showing the relationship of the proposed facilities to ultimate potential development, and a map showing the relationship of contours, buildings, structures, and/or natural or artificial features, including

b) consolidation of facilities as per 30262(b); in general, drillsites shall not be established at a density greater than one per ten (10) acres;

c) procedures for the transport and disposal of all solid and liquid wastes. All liquid drilling discharge wastes shall

be accumulated in steel tanks prior to disposal at any approved disposal site, and such steel tanks shall be removed within thirty days after completion or abandonment of the subject wells. Solid drilling waste materials may be temporarily deposited in an earthen depression with the final disposition of said solid waste materials to be accomplished in compliance with the requirements of the Regional Water Quality Control Board.

- d) grading plans and procedures for minimizing erosion;
- e) where public views are affected, landscaping plans and measures for minimizing visual impacts;
- f) fire prevention procedures
- g) air emission control measures
- h) oil spill contingency procedures
- i) For production facilities, a phasing plan for the staging of development which indicates the approximate anticipated timetable and production levels for the project.
- j) Procedures for the abandonment and restoration of the site which provide for removal of all equipment, disposal of wastes, and recontouring, reseeding and planting to conform with surrounding topography and vegetation. All earthen sumps or other depressions containing drilling mud, oil, or other waste products from the drilling operation shall be cleaned up by removing such waste products or by consolidating them into the land by diking, harrowing, and regrading to restore the area to its original condition.

(3.38.6).076 For pipelines serving oil and gas facilities, the following shall apply:

1. Pipelines should avoid sensitive habitat areas and follow existing utility corridors where they are present.
2. When avoidance of a sensitive habitat area is not possible, effective mitigation measures shall be employed to minimize adverse impacts. Directional drilling shall be employed to avoid wetlands and riparian habitats unless an independent engineering contractor selected by the County determines that to do so would not be feasible.
3. All right-of-ways shall be regraded and revegetated to their original state. Where a responsible agency identifies a degraded habitat along the proposed right-of-way where it might be preferable to restore it to a condition other than its present state, said agency shall recommend to the lead agency plans for restoration of the habitat. The lead agency shall require restoration of the habitat as a condition of approval, unless a review of the public record indicates it would be more appropriate to do otherwise.

4. All compressor, metering, or odorizing stations shall be visually and acoustically buffered with vegetation and other means as necessary.
5. Above-ground pipelines should be sited outside view corridors when feasible, and scenic areas shall be avoided wherever possible. When an above-ground pipeline must be sited in a view corridor, it shall be visually buffered with vegetation and other means as necessary, and in scenic areas shall not extend along the road right-of-way for continuous extended distances.

(3.38.7) .077 Electrical Transmission Lines

The California Public Utilities Commission (PUC) and the California Energy Commission are the agencies responsible for review and approval of transmission lines which includes technical and safety performance and environmental concerns. The CPUC has the authority to regulate all service, design, construction, and related activities of electrical utilities including the location and method of construction of transmission and distribution facilities. All transmission lines proposed for the coastal zone are considered developments under the Coastal Act, thus the County will have permit review authority based on the following policies.

1. Transmission line rights-of-way shall be routed to minimize impacts on the viewshed in the coastal zone, especially in scenic rural areas, and to avoid locations which are on or near habitat, recreational, or archaeological resources, whenever feasible. Scarring, grading, or other vegetative removal shall be minimized and revegetated with plants similar to those in the area.
2. Where above-ground transmission line placement would unavoidably affect views, undergrounding shall be required where it is technically and economically feasible unless it can be shown that other alternatives are less environmentally damaging. When above-ground facilities are necessary, design of the support towers shall be compatible with the surroundings to the extent safety and economic considerations allow.
3. Above-ground transmission lines should be sited outside view corridors when feasible, and scenic areas shall be avoided wherever possible. When an above-ground transmission line must be sited in a view corridor, it should not extend along the road right-of-way for continuous extended distances.
4. Siting of transmission lines should avoid the crests of roadways to minimize their visibility on distant views. Lines should cross the roadway at a downhill low elevation site or a curve in the road.

5. New major steel tower electrical transmission facilities should be consolidated with existing electrical steel tower transmission facilities unless there are social, aesthetic or significant economic concerns.
6. Existing rights-of-way should be utilized for other related utilities to provide consolidated corridors wherever such uses are compatible or feasible.
7. Access and construction roads should be located to minimize landform alterations. Road grades and alignments should follow the contour of the land with smooth, gradual curves where possible.

30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

APPENDICES

- A. Suggested Land Use Designations
- B. Wetlands Restoration and Compensation
Discussion from Shapiro & Assocs.
- C. Power Plant Siting Policy Statement
from Trinidad Area Plan
- D. Employment and Growth Rates by Industry
Employment Development Department
- E. Bibliography

MG INDUSTRIAL/GENERAL

Purpose: to protect sites suitable for the development of general industrial uses.

Principle Use: light and general manufacturing, warehousing and wholesaling, research and development.

Conditional Uses: heavy manufacturing, drilling and processing of oil and gas, agricultural-general uses, heavy commercial uses, sand and gravel extraction, electrical generating and distribution facilities, animal and fish reduction plants.

MC INDUSTRIAL/COASTAL-DEPENDENT

Purpose: to protect and reserve parcels on or near the sea for industrial uses dependent on the harbor.

Principal Use: uses that require a deep water channel access in order to function, including but not limited to: water-borne carrier import and export operations, public docks, marine oil terminals, ship building and boat repair, commercial fishing facilities, including food fish processing, OCS service bases, and pipelines serving offshore facilities.

Conditional Uses: visitor serving recreational facilities that require channel access, including, but not limited to marinas serving other than solely commercial vessels, fishing piers, and boat launching facilities; coastal-related industrial uses, including, but not limited to fish waste processing and fish processing of products for other than human consumption, gas and/or oil processing and treatment facilities serving offshore production, electrical generating facilities or other facilities which require an ocean intake, outfalls, and pipelines.

MR RESOURCE DEPENDENT

Purpose: to protect parcels on or near the sea for uses dependent on nearshore coastal resources.

Principal Use: uses requiring access to the sea, but not requiring access to maintained dredged channels, including, but not limited to: aquaculture (including salmon ranching), habitat restoration projects, and nature study facilities.

Conditional Uses: pasture, visitor serving recreational facilities that utilize the coastal resources of the site: fishing piers, small boat ramps (to tidal channels not requiring dredging), access support facilities (parking, restrooms).

NR NATURAL RESOURCES

Purpose: to protect and enhance valuable fish and wildlife habitats, and provide for public and private use of their resources, including hunting, fishing and other forms of recreation.

Principle Use: management for fish and wildlife habitat.

Conditional Uses: wetland restoration, development of hunting blinds and similar minor facilities, improvement of boating facilities in estuaries consistent with Section 4.70 of the plan, accessway development and improvement and removal of trees for firewood, disease control and public safety purposes.

Application

The purpose of this section is not to critique methods of habitat evaluation, but rather to suggest some mechanisms for implementation of compensation regulations. These suggestions include:

- . Identification of areas where compensation might be both suitable and economically feasible.
- . A compensation land bank which might be used by development agencies or organizations.
- . A joint agency agreement on what ecosystem characteristic(s) should be maintained in the Humboldt Bay study area.

Each of these suggestions is explored in the following discussion.

Potential Compensation Areas. Compensation is the replacement or creation of habitat types lost due to development activities. The most common replacement technique has involved breaching levees surrounding diked pastures (most of which are in fact reclaimed wetlands). Such replacement has often been considered prohibitively expensive, due to not only the cost of the compensation land, but also the cost of creating new dikes. (Typically dikes surround large areas, therefore creating a small wetland would require constructing a new dike inside the old.)

As a part of the habitat mapping conducted during this project the location of dikes was mapped. (The dikes are depicted on the 1:6000 vegetation maps which accompany Volume III.) This included both dikes presently protecting pasture land from inundation and older dikes or railroad grades located inside the presently used dikes. It is these older dikes which increase the potential for compensation areas.

The older dikes present a situation in which returning tidal circulation to a reclaimed wetland would not entail construc-

tion of a new dike. The old dike would have to be investigated for suitable construction, elevation, etc., and new tide gates would have to be installed. However, these activities would be much less costly than construction of a new dike. In addition, the old dikes divide the potential compensation areas into units as small as a few acres. Finally, it should be noted that the pasture lands identified as potential compensation areas consist of low-lying, saturated Loleta, Bayside, and Ferndale soils of low agricultural capability (see Agricultural Soils, Section VI-F); such pasturelands are not generally considered prime agricultural land, although with very good hay values, they may qualify as prime under CGC 51201(c5). Use of such lands for compensation removes them from agricultural use.

The potential compensation areas identified during this study are delineated in Figure V-1 and listed below:

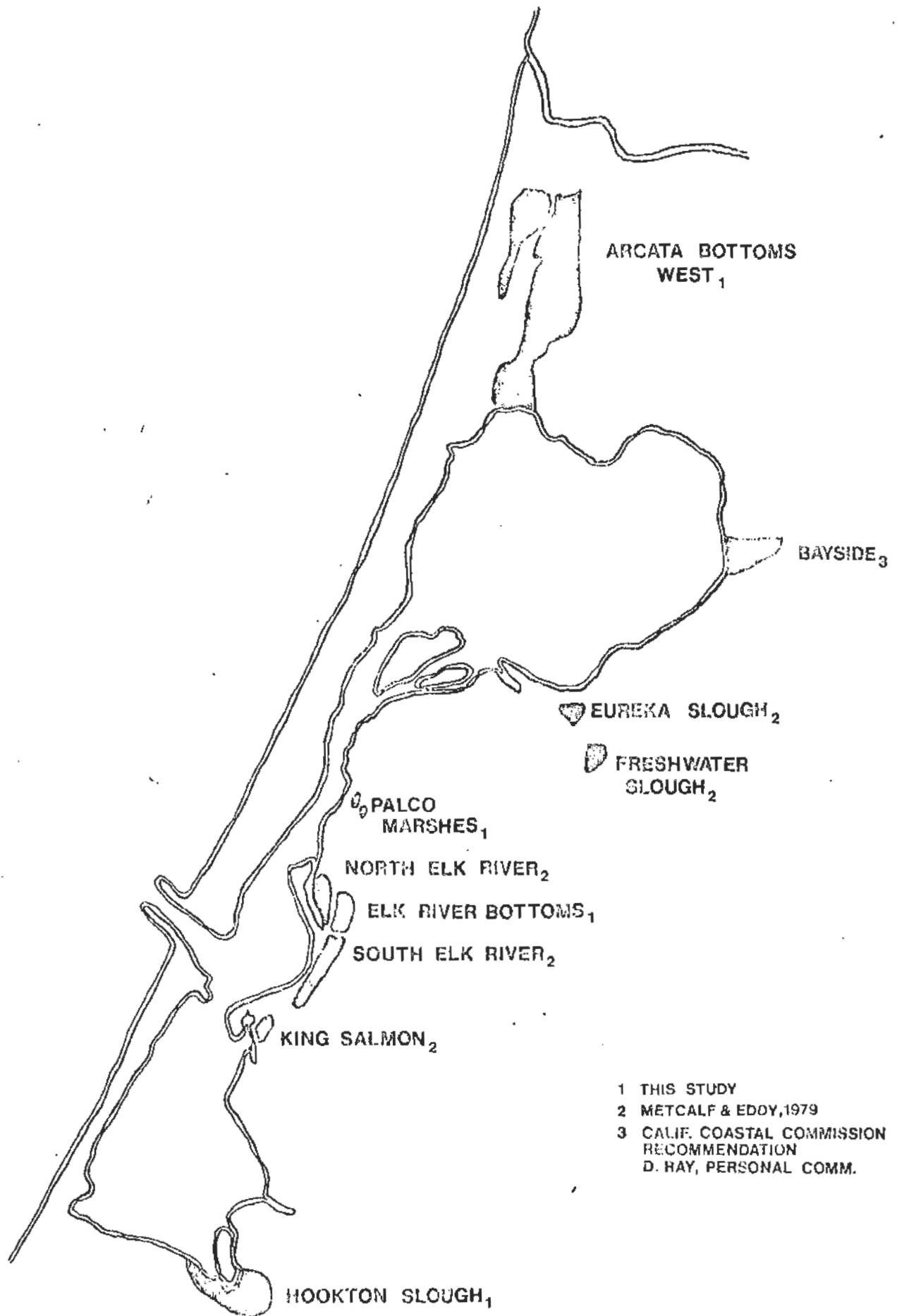
- #16. South Bay, the portion of Beatrice Flats around Hookton Slough
- #21. Arcata Bottoms West, around the Mad River Slough
- #31. Palco Marshes, south of the Broadway wetlands
- #33. Elk River Bottoms, near Highway 101

These areas are described in Findings, Section V-B, and shown on Plate 1A. The Hookton Slough and Arcata Bottoms West areas will require dike breaching and construction; the Palco Marshes are degraded wetlands and would be suitable for restoration or enhancement. Several locations within Elk River Bottoms would be suitable for compensation, with dike breaching and construction. Part of this area has already been acquired by Caltrans for that purpose.

Several "Potential Marsh Reclamation Sites" have been identified by Metcalf and Eddy (page VIII-58, 1979). Each of these sites will be discussed here. It should be noted, however, that the Metcalf and Eddy study was specifically concerned with appropriate sites to create freshwater marshes for wastewater enhancement, and not necessarily for compensation sites.

Both the Freshwater Slough and Eureka Slough Marsh sites are located in diked bottomlands adjacent to tidal sloughs. Creation of wetlands in these areas would entail construction of entirely new dikes as no old dikes are present. The soils here are Bayside series, and not generally considered prime agricultural land. Most likely, salt and/or brackish marshes would form if tidal influence was returned.

The Pacific Lumber site is already a broad expanse of salt, brackish and fresh marsh, and swamp habitat types. The area has been designated Area of Importance #10 in this study. The King Salmon site



is also considered an Area of Importance (#14) in this study, due to the presence of salt and brackish marshes in the area (as mentioned in Section V.B., however, recent repair of the dike in this area may result in long-term changes to the character of the area).

As mentioned by Metcalf and Eddy (1979), much of the North Elk River site is stabilized dune, and therefore not appropriate for easy wetland creation through dike breaching activities. The wetlands on this site have been designated an Area of Importance (#11) in this study; the remainder of the site is an Area of Environmental Concern (#33) with some potential for wetlands creation through dike breaching.

The South Elk River site is also located within Area of Environmental Concern #33. The soils here are Bayside series, and generally not considered prime agricultural land. This site is mentioned above as a potential compensation site.

The Bayside site, located between Bayside cutoff and the Bayside wetlands, is an area of periodically flooded pasture which has been identified by the Coastal Commission as a potential wetland restoration site. It is described as low value pasture where levee maintenance is often needed (Dan Ray, personal communication). Although this 60-acre parcel has no internal levees that readily divide it, it is well confined by the cutoff road and closely associated with the Bayside wetlands.

Compensation Land Bank. To date, the acquisition of compensation areas has been somewhat haphazard, with development agencies (for example, Caltrans and the Harbor District) purchasing small isolated parcels to be reverted to wetland. Very few of such parcels are left at present in the study area.

A possible mechanism to make acquisition both easier and more cost effective is the formation of a compensation area land bank. The land bank would consist of development agencies and industries interested in purchasing compensation parcels. With the combination of efforts and resources the bank could acquire large parcels and assess each member according to its compensation needs. [This concept has already been started by Caltrans with the acquisition of 17 acres at Elk River Corners, part of which is to compensate for the loss of less than 2 acres near Mad River Slough. The remainder should serve as a compensation bank for future projects.]

Several advantages, both economic and environmental, would accrue from implementation of the compensation concept. First, a single large parcel allows for coordination of habitat evaluation and environmental impact assessment procedures. The result would be a single study and permit process rather than numerous smaller ones. Second, by consolidating compensation areas a larger ecosystem can

be created, offering habitat to a greater number and diversity of organisms than might several smaller, isolated areas of equal total area.

There will undoubtedly be numerous difficulties in setting up the compensation area land bank. The most immediate decision lies in setting up the appropriate agency structure for acquisition and management of banked lands. The California Coastal Conservancy may be the most appropriate agency to head the land bank, since it is already authorized to acquire sensitive coastal lands. Banked lands would be managed under Sections 30230, 30231, and 30233 of the Coastal Act, the State's policies for estuarine and wetland management. Whatever the difficulties, the compensation area land bank offers a mechanism for overcoming an increasingly difficult problem in both an economically and environmentally sound manner.

Maintenance of Ecosystem Characteristics. Finally, it is important for the various agencies involved in reviewing permit activities and formulating permit conditions in the study area to agree on which ecosystem characteristics are important to maintain. (This is particularly difficult since different agencies have different policies and responsibilities.) Management of the ecosystems to maximize primary productivity will necessarily be different from management to maximize waterfowl use, for example. The present systems for calculating compensation requirements emphasize replacing habitat value calculated on the basis of various ecosystem characteristics; agreement on required compensation could more easily be reached if all agencies were using the same basis for preservation.

3. Power Plant Siting

A. Notwithstanding the fact that the authority for siting power plants greater than 50 (fifty) megawatts has been delegated to the California Energy Commission, and that the California Coastal Commission has designated certain areas where siting such a power plant would prevent the achievement of the objectives of the Coastal Act, and that certain undesignated areas occur within this plan area; it is the opinion of the County that the siting of such a facility in the undesignated areas within this plan area would constitute development that would be incompatible with this plan, and that further, the County recommends that California Coastal Commission in its biennial review include the undesignated areas within this area plan as designated areas where siting of a power plant would prevent achievement of the objectives of the Coastal Act.

B. Within the Trinidad Planning Area the following coastal resources would be adversely impacted by the siting of a power plant:

1. Commercial Timberlands located east of Highway 101;
2. Riparian vegetation occurring along Beach Creek, Riley Creek, Burris Creek, Savage Creek, McNeil Creek, Hobson Creek, Martin Creek, Mill Creek, McConnahas-Mill Creek, Deadman Creek, Luffenholtz Creek, (also City of Trinidad's water source), First Avenue Creek, and un-named Creek south of Driver Road;
3. Coastal Scenic areas adjacent to Highway 101.

C. The plan does not propose any significant increase in public services but does propose policies which do address

existing problems with inadequate (or non-existent) public services such as community water, fire protection, and wastewater disposal. No regional or community sewage treatment plants are proposed as future development will continue to be primarily dependent on individual wastewater systems. Power plant siting within the Trinidad planning area would further exacerbate this situation and would be in conflict with Section 30250 of the Coastal Act.

TABLE 1. EMPLOYMENT AND GROWTH RATES BY INDUSTRY
1976, 1980, 1985--HUMBOLDT/DEL NORTE COUNTIES Appendix D

Industry ^{1/}	Number of Employed Individuals ^{2/}			Compound Annual Average Growth Rate	
	1976	1980	1985	76-80	80-85
1	2	3	4	5	6
Total, All Industries ^{3/}	49,500	54,500	59,900	2.4	1.9
Agriculture, Forestry, Fisheries	3,200	3,800	4,000	4.4	1.0
Construction & Mining	2,200	2,500	2,900	3.3	3.0
Manufacturing	10,800	10,800	10,200	.0	-1.1
Lumber & Wood Products	8,700	8,500	7,700	-.6	-2.0
Food & Kindred Products	900	1,000	1,100	2.7	1.9
Other Manufacturing	1,200	1,300	1,400	2.0	1.5
Transportation, Communications, & Utilities	3,100	3,200	3,300	.8	.6
Transportation	1,800	1,800	1,800	.0	.0
Communications & Utilities	1,300	1,400	1,500	1.9	1.4
Trade	9,800	11,200	12,800	3.4	2.7
Wholesale Trade	1,300	1,500	1,600	3.6	1.3
Retail Trade	8,500	9,700	11,200	3.4	2.9
General Merchandise, Apparel	1,400	1,500	1,600	1.7	1.3
Food & Dairy Stores	1,300	1,400	1,600	1.9	2.7
Auto Dealers, Gas Stations	1,300	1,400	1,500	1.9	1.4
Eating & Drinking Places	2,600	3,200	3,900	5.3	4.0
All Other Retail Trade	1,900	2,200	2,600	3.7	3.4
Finance, Insurance, and Real Estate	1,400	1,600	1,900	3.4	3.5
Finance	700	800	1,000	3.4	4.6
Insurance	300	300	400	.0	5.9
Real Estate	400	500	500	5.7	.0
Services	16,700	18,800	21,900	3.0	3.1
Hotels & Lodging Places	1,400	1,700	2,100	5.0	4.3
Medical, Other Health	3,700	4,100	5,000	2.6	4.1
Education	5,600	6,300	7,200	3.0	2.7
All Other Services	6,000	6,700	7,600	2.8	2.6
Public Administration	2,400	2,700	3,000	3.0	2.1
Federal Public Administration	400	500	500	5.7	.0
State Public Administration	300	300	300	.0	.0
Local Public Administration	1,700	1,900	2,200	2.8	3.0

^{1/} Major industries are aggregated here according to the census classification method. All classes of civilian workers are included (private wage and salary, self-employed, unpaid family, and government). A major proportion of government workers are assigned to the various industries in which they would appear if they were in private employment; i.e., construction crafts workers employed by government agencies are counted with construction; municipal utility workers are counted with transportation, communications, & utilities; and public school employees are included with education as part of the services industries. Remaining in public administration are such groups as public officials, police officers and fire fighters, and employees of regulatory agencies.

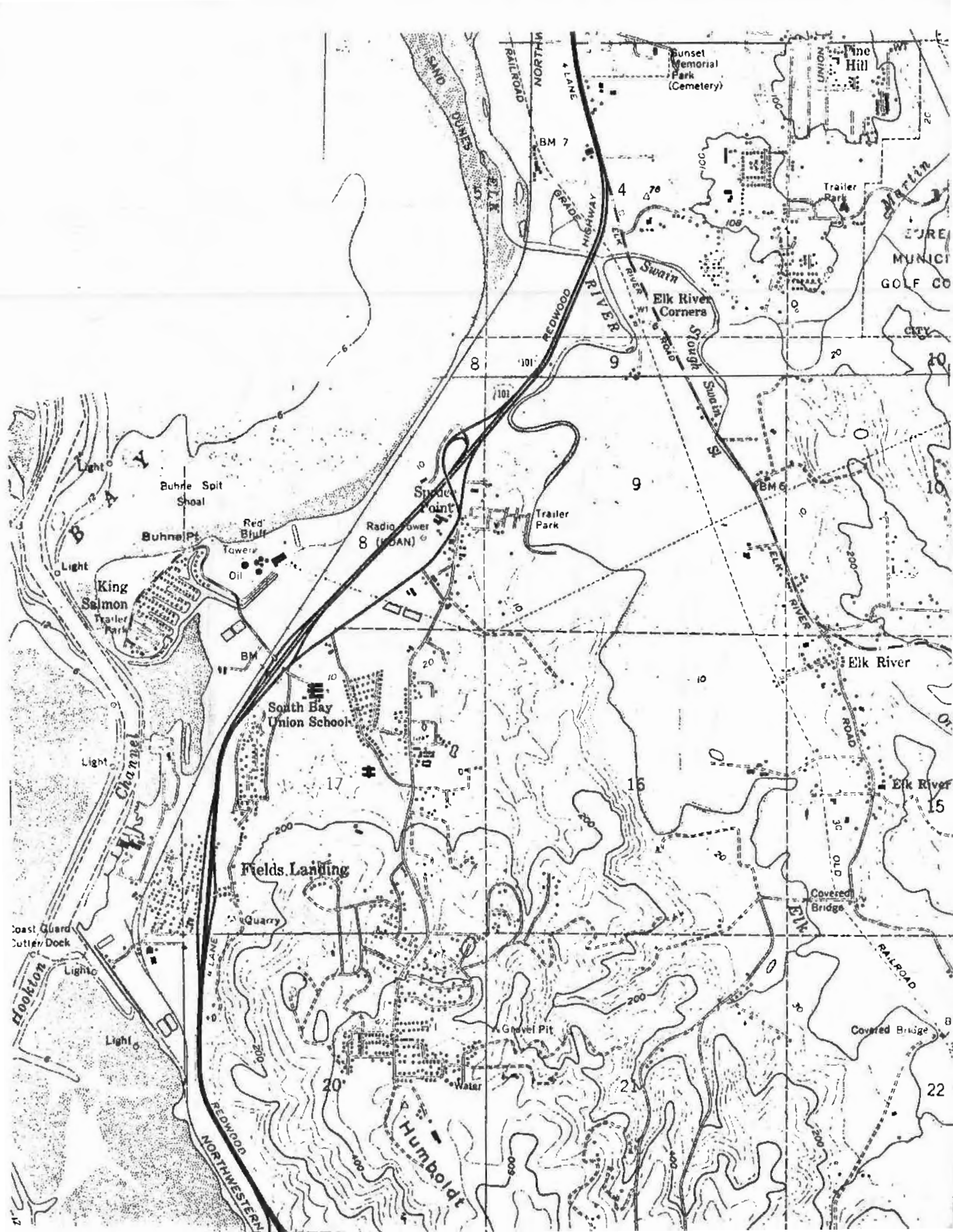
^{2/} Industry totals have been rounded to the nearest hundred.

^{3/} Individual line items may not add to totals because of rounding.

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