

EAST BAY REGIONAL PARK DISTRICT

Resolution No. 2001-10-243

Tuesday, October 16, 2001

ADOPTION OF A MITIGATED NEGATIVE
DECLARATION FOR THE BIG BREAK
REGIONAL SHORELINE LAND USE PLAN

WHEREAS, the East Bay Regional Park District issued a Notice of Intention on August 18, 2001 to adopt a Negative Declaration for the Big Break Regional Shoreline Land Use Plan, and

WHEREAS, during the comment period, no individual or agency provided substantial evidence that a significant adverse impact would occur, and

WHEREAS, the Mitigated Negative Declaration reflects the independent judgment of the East Bay Regional Park District.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the East Bay Regional Park District hereby adopts a Mitigated Negative Declaration (Revised as shown in Attachment C) and Mitigation Monitoring Program (Attachment D) for the Big Break Regional Shoreline Land Use Plan, and

BE IT FURTHER RESOLVED that the General Manager is hereby authorized and directed, on behalf of the District and in its name, to execute and deliver such documents and to do such acts as may be deemed necessary or appropriate to accomplish the intentions of this resolution.

Moved by Director Radke, seconded by Director Siri and approved this 16th day of October, 2001, by the following vote:

FOR: Directors Beverly Lane, Ted Radke, Carol Severin, Douglas Siden,
Jean Siri, John Sutter, Ayn Wieskamp

AGAINST: None

ABSENT: None

ABSTAIN: None

CERTIFICATION

I, Debra Fassler, Clerk of the Board of Directors of the East Bay Regional Park District, do hereby certify that the above and foregoing is a full, true, and correct copy of Resolution 2001-10-243 adopted by the Board of Directors at a regular meeting held on October 16, 2001

Debra Fassler

Attachment C

**REVISION SHEET FOR THE
INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION
FOR THE BIG BREAK REGIONAL SHORELINE LAND USE PLAN**

The following changes are hereby added to the August 17, 2001 "Initial Study and Proposed, Mitigated Negative Declaration." Locations of changes are written in **bold**. Additions are indicated with underlining, and deletions are indicated with ~~strikeout~~ text.

Section 1.2 and Section 4.4

(Additional Mitigation for Special-Status Fish and Wildlife)

- At the time the water tower is modified for public use, barn owl boxes shall be installed in the Special Protection Feature 5 (the eastern half of the Lauritzen Site), to replace barn owl habitat. The number of boxes shall be determined by estimating the number of breeding owl pairs, and shall be located by a qualified Park District biologist.

Section 1.2 and Section 4.4

(Mitigation for Hazardous Materials)

- The existence or absence of the suspected ground water well near the former barn (southeast corner of Lauritzen Site) shall be confirmed and, if it is not feasible to re-use the well, as required for public safety, it shall be properly closed off in compliance with Contra Costa County standards.
- Prior to demolition of the red cabin, limited soil sampling for lead and pesticides shall be conducted along the dripline. During demolition of the red cabin, lead paint, contaminated soil, and asbestos-containing materials shall be abated and disposed of in conformance with the established environmental health standards of all relevant regulatory agencies, including: Cal/OSHA (California Occupational Safety and Health), California Environmental Protection Agency, and the Bay Area Air Quality Management District. Asbestos removal shall be conducted by a certified asbestos-removal contractor.
- A program of limited soil sampling for agricultural pesticides shall be conducted on the Lauritzen Site, based on guidance from the Department of Toxic Substances Control (DTSC). If contaminated soil is detected at inappropriate levels, one or several standard, soil remediation activities shall be conducted: on-site treatment of the soil; excavation and trucking off-site to an appropriate disposal facility; and/or capping in place with clean fill; as well as implementation of a worker safety plan. All remediation shall be conducted with the approval of DTSC, the Regional Water Quality Control Board, and/or other relevant regulatory agencies.

Attachment D

Big Regional Shoreline Land Use Plan
 Mitigation Monitoring Program
 RESPONSIBILITY MATRIX
 October 2001

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Air Quality:</u> Standard EBRPD contract specifications regarding dust control shall be followed by all contractors (Standard Contract, General Conditions, Article 21).	During Construction	(Not Applicable)	Contractor	Construction Inspector
<p><u>Air Quality:</u> Due to the proximity of sensitive receptors (residences and wildlife), construction contractor(s) shall be required to abide by the following "Special Conditions" in their contract(s):</p> <ul style="list-style-type: none"> •Cover all trucks hauling soil and other loose material, or maintain at least two feet of freeboard. •Sweep daily (with water sweepers) all paved access roads, parking areas and construction staging areas. •Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles. •Limit traffic speeds on unpaved roads to 15 mph. •Install wheel washers for all exiting trucks, or wash off the truck tires or tracks of trucks and equipment leaving the site. •Install sandbags or other erosion control measures to prevent silt runoff to public roadways. •Replant vegetation in disturbed areas as quickly as possible. 	During bid document preparation; and construction.	These Special Conditions must be included in bid document; and be implemented.	Project Designer (bid document); and Contractor	Chief of Design Dept.; and Construction Inspector

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Special-Status Plants:</u> Weed control activities shall be implemented <i>prior to</i> the construction of facilities at the Lauritzen Site to prevent the spread of weedy plant species into disturbed ground.	Prior to construction	(Not Applicable)	Park Staff; IPM Staff	IPM Specialist
<u>Special-Status Plants:</u> Site-specific surveys shall be conducted prior to implementing weed control programs to identify special-status plant or animal species in the treatment area. Treatment methods and timing shall be adjusted accordingly to avoid adversely affecting the identified special-status species.	Prior to weed control	(Not Applicable)	Staff botanist or consulting botanist	IPM Specialist
<u>Wetlands:</u> The project would potentially remove, shade and/or fill approximately ½ to 1 acre of tidal wetlands, which would be mitigated by enhancing or creating approximately three (3) acres of tidal wetlands. The exact amount and location of wetland mitigation will be determined during permitting consultation with regulatory agencies.	As soon as feasible after park construction.	Successful construction of mitigation site.	Project Designer	Army Corps of Engrs., CA Dept of Fish and Game, SF Reg Water Quality Ctrl Board
<u>Wetlands:</u> All construction activities that would affect wetland areas (including structures on the shoreline, bridges, and culvert work) shall take place outside the rainy season, <i>between April 15 and October 31</i> , or as otherwise determined by permitting agencies, and in compliance with the federal Clean Water Act.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Wetlands:</u> The full perimeter of all identified, non-tidal wetland basins (see wetland report by Vollmar, 2000) should be clearly delineated on plans for grading and construction and clearly flagged in the field prior to earthwork and construction.	During Final Design	(Not Applicable)	Project Designer	Ecological Services Coordinator
<u>Special-Status Fish:</u> All construction and demolition along the shoreline that would disturb the tidal marsh/mudflat areas and open water shall take place <i>between mid-July and October 1</i> .	During Construction	Avoid impacts on delta smelt, long-fin smelt, Sacramento splittail, green sturgeon, steelhead and chinook salmon reproduction.	Project Designer & Contractor	Chief of Design & Construction Inspector

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Special-Status Birds</u> : A wildlife biologist shall conduct nest surveys for white-tailed kite, California black rail, northern harrier, yellow-breasted chat, and other special-status bird species at the Lauritzen Site, during each nesting season, including 2002, until immediately prior to construction.	During each nesting season.	(Not Applicable)	Staff biologist or consulting biologist	Ecological Services Coordinator
<u>Special-Status Birds</u> : If nests for white-tailed kite, northern harrier, California black rail, yellow-breasted chat, or other special-status birds are identified, nearby construction activities shall take place in the non-nesting season, <i>between August 1 and February 28</i> , to avoid disturbing nesting activities.	After preliminary design and prior to final design.	(Not Applicable)	Staff biologist or consulting biologist	Project Designer
<u>Special-Status Birds</u> : To avoid disturbance of identified California black rail nests, the Special Protection Feature (SPF-5) shall be posted with signs to prohibit dogs, as per the protection afforded to nature study areas under EBRPD Ordinance 38.	Prior to public opening	Installation of signs.	Park Staff	Ecological Services Coordinator
<u>Special-Status Birds</u> : All public use facilities shall be sited no closer to identified nests of special-status birds than the recommended buffer distance determined by the California Department of Fish and Game and U.S. Fish and Wildlife Service. (Note: the current park site design already substantially achieves the desired buffer distances from the identified nests.)	During preliminary design	(Not Applicable)	Project Designer	Ecological Services Coordinator
<u>Special-Status Birds</u> : Future "field stations" that will be associated with the proposed educational and research programs shall be sited using the appropriate wildlife buffers and/or design considerations determined through consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.	During field station design	(Not Applicable)	Project Designer	Ecological Services Coordinator
<u>Barn Owls</u> : At the time the water tower is modified for public use, barn owl boxes shall be installed in the Special Protection Feature 5 (the eastern half of the Lauritzen Site), to replace barn owl habitat. The number of boxes shall be determined by estimating the number of breeding owl pairs, and shall be located by a qualified Park District biologist.	During design of water tower modifications	Installation of specified number of boxes by contractor or Park Staff.	Project Designer	Ecological Services Coordinator

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Special-Status Reptiles:</u> Construction activities within giant garter snake habitat shall be restricted to the period May 1 through October 1. This is the most active period for the snakes and direct mortality is decreased because snakes are expected to move more readily to avoid danger.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Special-Status Reptiles:</u> Construction personnel shall receive (U.S. Fish and Wildlife) Service-approved, environmental awareness training, including giant garter snake identification.	Prior to construction	Mandatory training requirement should be specified in the contract bid document.	Proj. Designer (bid doc.); & Ecol. Svcs. Coord. (for training)	Construction Inspector; & Stewardship Manager
<u>Special-Status Reptiles:</u> The project area shall be surveyed for giant garter snake 24 hours prior to construction. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a snake is encountered during the surveys or construction, activities in the immediate area shall cease until appropriate corrective measures have been completed or it has been determined the snake would not be harmed.	24 hrs. prior to construction	(Not Applicable)	Ecological Services Coordinator; or consulting biologist	Construction Inspector
<u>Special-Status Reptiles:</u> Prior to excavating or filling any dewatered habitat for giant garter snake, the habitat shall remain dry for at least 15 consecutive days after April 15.	15 days prior to construction	(Not Applicable)	Ecological Services Coordinator	Construction Inspector
<u>Special-Status Reptiles:</u> To prevent the direct take of giant garter snake during routine grass mowing, Park Staff shall set the mower blades to a height of at least six (6) inches.	When park opens	(Not Applicable)	Park Staff	Park Supervisor
<u>Special-Status Reptiles:</u> Approximately ½ to 1 acre of wetlands would be lost that provide potential, giant garter snake habitat. This would be mitigated by enhancing or creating tidal wetlands in an area of approximately 3 acres, and an adjoining area of upland located above the 100-year flood plain.	As soon as feasible after park construction.	Successful construction of mitigation site.	Project Designer	Army Corps of Engrs., CA Dept of Fish and Game, SF Reg Water Quality Ctrl Board

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Special-Status Reptiles</u> : Clearing for construction activities shall be confined to the minimum necessary area.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Special-Status Reptiles</u> : During utility trenching on the Lauritzen Site, contractors shall avoid leaving steep-sided cuts on the ends of each trench, and shall instead leave an earthen ramp so that small wildlife could climb out. For public and wildlife safety, open trenches shall be surrounded by temporary construction fencing, and shall be filled or covered at the end of each working day.	During bid document preparation; and During Construction	(Not Applicable)	Project Designer (bid document); & Contractor (trenching)	Construction Inspector
<u>Cultural Resources</u> : Maintain the identified archaeological and paleontological sites in situ and maintain their confidentiality, as per the Park District Cultural Resources Policy (EBRPD Board Resolution 1989-4-124).	Ongoing	(Not Applicable)	All EBRPD Staff	Chief of Planning/ Stewardship
<u>Cultural Resources</u> : Ongoing patrols of the known archaeological and paleontological sites shall be continued. At a minimum, the regular EBRPD helicopter patrol flights shall patrol this area.	Ongoing	(Not Applicable)	Public Safety Department	Park Supervisor
<u>Cultural Resources</u> : The Park District shall arrange to properly collect, map, and accession identified cultural resources that are exposed on the ground surface. Appropriate Native American consultants and the California Native American Heritage Commission shall be contacted to determine the appropriate disposition of Native American burial remains, and appropriate future management of Site CA-CCo-538.	Prior to public opening	(Not Applicable)	Planning Dept.; Interpretive Services; or consulting Archaeologist	Chief of Planning/ Stewardship
<u>Cultural Resources</u> : Historic and paleontological resources shall be considered as a component of the interpretive and educational program to be established at Big Break Regional Shoreline, as outlined in the Land Use Plan.	During program development	(Not Applicable)	Interpretive Services; or science center staff	Chief of Planning/ Stewardship

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Cultural Resources</u> : If unanticipated cultural resources should be encountered during construction in the park, all ground-disturbing activities shall be halted within at least 50 feet until evaluated by an archaeologist, in accordance with state and federal law. This is a standard Park District protocol for protecting parkland archaeological sites (EBRPD Board Resolution 1989-4-124). Furthermore, if human remains were to be encountered during construction, the Park District policy requires consultation with the county coroner and Native American "most likely descendants," to determine the appropriate treatment of the remains, in accordance with state and federal law.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Cultural Resources</u> : During construction, all contractors shall abide by the "general conditions" (Article 22) in the EBRPD standard contract, regarding the protection of historic resources and human remains.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Soils</u> : All topsoil removed during major earthmoving work shall be stockpiled on site within one of the Recreation Units, in a location away from all natural drainages, water bodies, designated wetlands, and sensitive wildlife habitat. The stockpile shall be immediately enclosed or covered; or seeded with native seed and watered at least once daily. Necessary erosion control measures shall be used around the stockpile as needed to prevent erosion. The topsoil shall be re-used during final grading as a top dressing for all landscaping areas.	During bid document preparation; and During Construction	(Not Applicable)	Project Designer (bid document); & Contractor (stockpiling)	Construction Inspector
<u>Hazardous Materials</u> : Prior to demolition of the red cabin, limited soil sampling for lead and pesticides shall be conducted along the dripline. During demolition, lead paint, contaminated soil, and asbestos-containing materials shall be abated and disposed of in conformance with the established environmental health standards of all relevant regulatory agencies, including: Cal/OSHA (California Occupational Safety and Health), California Environmental Protection Agency, and the Bay Area Air Quality Management District. Asbestos removal shall be conducted by a certified asbestos-removal contractor.	During Construction	(Not Applicable)	Contractor	Maintenance Department Contract Manager

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Mitigation Measure	Timing	Performance Objective	Responsible for Implementing	Responsible for Monitoring
<u>Hazardous Materials</u> : The existence or absence of the suspected ground water well near the former barn (southeast corner of Lauritzen Site) shall be confirmed and, if it is not feasible to re-use the well, and as required for public safety, it shall be properly closed off in compliance with Contra Costa County standards.	Prior to public opening	Comply with County standards.	Contractor	Maint. Dept. Contract Manager
<u>Water Quality</u> : The shoreline construction and barge removal shall be conducted in full compliance with the conditions imposed by the nationwide permit program of the U.S. Army Corps of Engineers and other state and local regulatory programs, to ensure no violations of waste discharge requirements would occur.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Water Quality</u> : Standard EBRPD contract specifications regarding water pollution shall be followed by all contractors (Standard Contract, General Conditions, Article 21). This specifies that the contractor shall submit and adhere to a written, water pollution and erosion control program.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Water Quality</u> : At a minimum, the water pollution and erosion control program shall include the installation of silt fencing on the edge of construction sites located next to the tidal sloughs and Big Break shoreline, and the use of other erosion control methods at off-site storm drains and on-site natural drainages, when necessary in the opinion of the EBRPD Construction Inspector.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Water Quality</u> : Contractors shall be required to abide by the following "Supplementary Conditions" in their construction contract, when working in or adjacent to water bodies: construction equipment and vehicles shall be properly maintained to minimize fluid leakage; and containment booms and absorbent mats shall be kept on site to contain any petroleum products that are inadvertently discharged during construction.	During bid document preparation; and construction.	These Special Conditions must be included in bid document; and be implemented.	Project Designer (bid document); and Contractor	Chief of Design Dept.; and Construction Inspector
<u>Noise</u> : Noisy, stationary construction equipment shall be located as far as possible from nearby residences.	During Construction	(Not Applicable)	Contractor	Construction Inspector
<u>Noise</u> : All construction equipment shall be in good working order and mufflers regularly inspected for proper function.	During Construction	(Not Applicable)	Contractor	Construction Inspector

**INITIAL STUDY and
PROPOSED, MITIGATED NEGATIVE DECLARATION
for**

*BIG BREAK REGIONAL SHORELINE
LAND USE PLAN
OAKLEY, CONTRA COSTA COUNTY, CALIFORNIA*

August 2001
(with board revisions)

Lead Agency:
East Bay Regional Park District
P.O. Box 5381, Oakland, CA 94605

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1.0 MITIGATED NEGATIVE DECLARATION (PROPOSED)

1.1 Project Description

As specified by the California Environmental Quality Act, this Negative Declaration and Initial Study address those recommendations in the Land Use Plan (LUP) that would result in *physical changes* to the baseline conditions at Big Break Regional Shoreline. These are summarized below. For a detailed description of these recommendations, please see the LUP, which is incorporated by reference into this document.

Recreation Units

The LUP covers approximately 1,650 acres of open water, wetlands and uplands in Oakley, California (see Figures 1 and 2). Two areas have been designated as Recreation Units where developed facilities can be constructed. The LUP proposes to build interpretive and recreation facilities in the Northern Recreation Unit and the Southern Recreation Unit, both located on the Lauritzen Site (see Figure 3). Approximately 12 acres are proposed for development.

The facilities would feature interpretive and educational programs related to Big Break and the Delta. The facilities may include several educational structures in a "campus style" cluster, to maximize open space. The interpretive/educational complex may include space for the following: reception, interpretive exhibits, observation, special events, meetings, classes, library, laboratories, staff offices, gift shop, snack bar, restrooms, boat storage, maintenance, receiving area, and similar accessory facilities. In addition the Recreation Units would also provide a public access pier, outdoor gathering area, and adequate outdoor open space for drop-in visitors to enjoy access to the open shoreline, birdwatching, trail use, picnicking and small boat launching.

The pier would be approximately 14,000 square feet (SF) in area and would be constructed on an estimated 40 (pre-cast concrete) pilings. The existing boat launch ramp for car top boats would be maintained and improved. The existing water tower at the site would be rehabilitated to serve as an observation tower. Several dilapidated structures -- the red cabin and five shoreline barges -- would be removed for public safety and habitat restoration.

The interpretive/educational buildings would be constructed only within the Northern and/or Southern Recreation Units. To show the scale of the buildings within the site, a conceptual building footprint is shown in Figure 4. The total building square footage within both Recreation Units shall not exceed 35,000 SF. Buildings in the Southern Recreation Unit shall not exceed 15,000 SF (of the total square footage), and shall not be located closer than 100 feet from the southern property line. One of the buildings would be constructed overhanging the water (an estimated 3,110 SF of overhang), and possibly associated with the proposed public access pier. The over-water building would require approximately 10-

20 (pre-cast concrete) pilings in addition to those used for the proposed pier. Buildings to be constructed within the 100-year floodplain on the upland areas of the site would also be built on pilings to maintain a minimum finished floor elevation that meets applicable development permit standards -- currently anticipated to be an elevation of 10 feet mean sea level. The building pilings would not be located in any wetland areas.

The existing entry road would be improved and paved (24 feet wide and 1,400 feet long) from Big Break Road onto the site, and an entry kiosk would be built along the road. An estimated 260 cubic yards (CY) of fill would need to be imported for landscaping mounds in the access corridor. A new alignment, as shown on Figure 5, would require a bridge constructed across the tidal slough, estimated at 440 feet long by 18 feet wide, and built on an estimated 48 (pre-cast concrete) pilings with an abutment on each bank. Proposed parking areas are shown on Figure 5. The parking areas would be constructed in phases over time to serve the parking needs of the facilities, up to a 250-vehicle capacity and requiring up to 2-1/2 acres of land. An estimated 3,000 CY of fill would need to be imported for landscaping mounds in the parking areas.

The utility services (water, electrical, telephone, sewer) would be supplied to the site by connecting to existing municipal utility lines (along Big Break Road, and at the corner of Vintage Parkway and Almaden Circle). If feasible, all utility lines would be installed underground in a common utility corridor following existing roads, to minimize ground disturbance. Trenching of approximately 2,000 to 3,500 feet would be required (none of which is proposed within any wetlands).

The LUP also includes an option for an on-site, biological water treatment system, to be located at the edge of the building complex. Depending on its feasibility, the system would consist of a series of above-ground tanks through which wastewater would be cycled and broken down by bacteria, plants, and other organisms. The system would act as an educational exhibit as well. Based on designs of similar systems at other sites, the treatment system would treat approximately 25,000 gallons of wastewater per day, and the tanks would require an estimated area of 1,000 SF.

Natural Unit

The Natural Unit would be managed according to the Resource Management Recommendations in Section IV.B of the LUP. Trail development would also take place in the Natural Unit as shown on Figure 5, causing a few physical changes in the Natural Unit, as follows.

Trails and Observation Platform

The LUP proposes several trails in the Natural Unit (Figure 5). Approximately 550 feet of unpaved hiking trails (10 feet wide) are shown on Figure 5. The new segment of the Big Break Regional Trail would be a paved, multi-use trail, approximately 1,375 feet long and

10 feet wide. The multi-use trail Regional Trail would be used for walking, jogging, bicycling, dog-walking, skating, and similar trail activities. A trail and vehicle bridge (approximately 110 feet long and 13 feet wide) would be constructed over the flood control channel next to Piper Lane. This would be a bridge with an estimated 4 (pre-cast, concrete) pilings and an abutment on each bank. The proposed observation platform would be a raised structure approximately 500 SF in area, at a height of about 15 feet above the ground. In total, construction of the trails and observation platform would require grading or ground clearing in an area of approximately one-half (1/2) acre in the Natural Unit. None of this would be in any wetland.

Vegetation Management Activities

Active management of aquatic and terrestrial weeds would include several Integrated Pest Management (IPM) activities within the Natural Unit, as applicable to land and water areas: prescribed burning, mowing, clearing, herbicides and biological control methods. IPM efforts are currently underway, and would continue to be conducted in compliance with applicable state and federal law and the District's "Pest Management Policies and Practices" manual (EBRPD Board Resolution No. 1987-11-325). The District's existing IPM program includes a comprehensive methodology for: evaluating weed problem areas; choosing the appropriate treatment from among non-chemical and chemical alternatives; and conducting treatments safely for both applicators and the environment. Prescribed burning, when chosen for grassland management, would be conducted by fire department personnel in compliance with state and local air quality regulations -- Regulation 5 of the Bay Area Air Quality Management District and Title 17 of the California Code of Regulations.

Open Water

The open water of the Natural Unit would continue to be used for the water recreation activities that have traditionally occurred there -- boating, fishing and waterfowl hunting (from boats and floating blinds). In general, the Park District finds that these ongoing activities contribute little or no environmental damage when conducted in accordance with existing state and federal, wildlife and water quality laws; with the Park District's Ordinance 38; and with the resource management recommendations in the LUP. These activities are already regulated by law, with enforcement by the East Bay Regional Park District Police Department, the Contra Costa County Sheriff's Marine Unit, and the California Department of Fish and Game.

Construction Timing and Phasing

The Park District proposes to construct the facilities in a phased manner to minimize environmental impacts. A key component will be to schedule the main construction period late summer through fall, which avoids the wildlife breeding season. This construction schedule complies with the period recommended by U.S. Fish and Wildlife Service,

National Marine Fisheries Service, California Department of Fish and Game, and U.S. Army Corps of Engineers, to minimize wetland and special-status species impacts. (Note: portions of the project area that do not contain wetlands, special-status wildlife habitat or wildlife buffer zones would not be subject to this limited construction period.) During late summer and fall, the Park District would first complete the construction activities with the most potential for site impact: grading, other site work, laying utility lines, driving pilings and constructing foundations, bridges, pier and platforms, etc. Once this initial construction phase is completed, other work -- such as bridge decking, sign installation, interior building work and roof work, etc. -- would then proceed, which would have fewer potential impacts. More details on construction timing are included in the Mitigation Measures.

1.2 Mitigation Measures

The following Mitigation Measures are taken from Section 4.0, "Environmental Impact Discussion." These measures would be incorporated into the project described in Section 1.1, to avoid and minimize the potentially significant impacts.

Air Quality Mitigation

- Standard EBRPD contract specifications regarding dust control shall be followed by all contractors (Standard Contract, General Conditions, Article 21). This specifies that a dust palliative or water (in sensitive habitats) shall be applied by the contractor on unpaved access roads, the construction site, parking areas and construction staging areas. The EBRPD Construction Inspector shall have full authority to suspend work if dust control is not to the satisfaction of the Inspector.
- Due to the proximity of sensitive receptors (residences and wildlife), construction contractor(s) shall be required to abide by the following "Special Conditions" in their contract(s):
 - Cover all trucks hauling soil and other loose material, or maintain at least two feet of freeboard.
 - Sweep daily (with water sweepers) all *paved* access roads, parking areas and construction staging areas.
 - Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles.
 - Limit traffic speeds on unpaved roads to 15 mph.
 - Install wheel washers for all exiting trucks, or wash off the truck tires or tracks of trucks and equipment leaving the site.
 - Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
 - Replant vegetation in disturbed areas as quickly as possible.

Special-Status Plant Mitigation

- After the two bridges have been sited and preliminarily designed, and prior to final design, botanical surveys shall be conducted to confirm the absence of special-status plants within any affected areas of tidal marsh/mudflat or tidal slough/freshwater marsh. If present, individual plants shall be relocated or replaced with replacement plants in a suitable location as nearby as possible on-site.
- Weed control activities shall be implemented *prior to* the construction of facilities at the Lauritzen Site to prevent the spread of weedy plant species into disturbed ground.
- Site-specific surveys shall be conducted prior to implementing weed control programs to identify special-status plant or animal species in the treatment area. Treatment methods and timing shall be adjusted accordingly to avoid adversely affecting the identified special-status species.

Wetland Mitigation

- The project would potentially remove, shade and/or fill approximately ½ to 1 acre of tidal wetlands, which would be mitigated by enhancing or creating approximately three (3) acres of tidal wetlands. The exact amount and location of wetland mitigation will be determined during permitting consultation with the U.S. Army Corps of Engineers, California Department of Fish and Game, and San Francisco Regional Water Quality Control Board.
- All construction activities that would affect wetland areas (including structures on the shoreline, bridges, and culvert work) shall take place outside the rainy season, *between April 15 and October 31*, or as otherwise determined by permitting agencies, and in compliance with the federal Clean Water Act.
- To ensure that no non-tidal wetland basins are inadvertently destroyed during construction, the full perimeter of all identified, non-tidal wetland basins (see wetland report by Vollmar, 2000) should be clearly delineated on plans for grading and construction and clearly flagged in the field prior to earthwork and construction.

Mitigation for Special-Status Fish and Wildlife

- All construction and demolition along the shoreline that would disturb the tidal marsh/mudflat areas and open water shall take place *between mid-July and October 1* to avoid impacts on egg-laying and juvenile migration of special-status fish species (delta smelt, long-fin smelt, Sacramento splittail, green sturgeon, steelhead and chinook salmon).

- A wildlife biologist shall conduct nest surveys for white-tailed kite, California black rail, northern harrier, yellow-breasted chat, and other special-status bird species at the Lauritzen Site, during each nesting season, including 2002, until immediately prior to construction.
- If nests for white-tailed kite, northern harrier, California black rail, yellow-breasted chat, or other special-status birds are identified, nearby construction activities shall take place in the non-nesting season, *between August 1 and February 28*, to avoid disturbing nesting activities.
- To avoid disturbance of identified California black rail nests, the Special Protection Feature (SPF-5) shall be posted with signs to prohibit dogs, as per the protection afforded to nature study areas under EBRPD Ordinance 38.
- All public use facilities shall be sited no closer to identified nests of special-status birds than the recommended buffer distance determined by the California Department of Fish and Game and U.S. Fish and Wildlife Service. (Note: the current park site design already substantially achieves the desired buffer distances from the identified nests.)
- Construction activities within giant garter snake habitat shall be restricted to the period May 1 through October 1. This is the most active period for the snakes and direct mortality is decreased because snakes are expected to move more readily to avoid danger.
- Construction personnel shall receive (U.S. Fish and Wildlife) Service-approved, environmental awareness training, including giant garter snake identification.
- The project area shall be surveyed for giant garter snake 24 hours prior to construction. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a snake is encountered during the surveys or construction, activities in the immediate area shall cease until appropriate corrective measures have been completed or it has been determined the snake would not be harmed.
- Prior to excavating or filling any dewatered habitat for giant garter snake, the habitat shall remain dry for at least 15 consecutive days after April 15.
- To prevent the direct take of giant garter snake during routine grass mowing, Park Staff shall set the mower blades to a height of at least six (6) inches.
- Approximately ½ to 1 acre of wetlands would be lost that provide potential, giant garter snake habitat. This would be mitigated by enhancing or creating tidal wetlands in an area of approximately 3 acres, and an adjoining area of upland

located above the 100-year flood plain. (The 3-acre wetland mitigation is coincident with, and not in addition to, the wetland mitigation measure listed above.) The exact amount and location of mitigation areas will be determined during permitting consultation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, and San Francisco Regional Water Quality Control Board.

- Clearing for construction activities shall be confined to the minimum necessary area.
- During utility trenching on the Lauritzen Site, contractors shall avoid leaving steep-sided cuts on the *ends* of each trench, and shall instead leave an earthen ramp so that small wildlife could climb out. For public and wildlife safety, open trenches shall be surrounded by temporary construction fencing, and shall be filled or covered at the end of each working day.
- Future "field stations" that will be associated with the proposed educational and research programs shall be sited using the appropriate wildlife buffers and/or design considerations determined through consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Cultural Resource Mitigation

- Maintain the identified archaeological and paleontological sites in situ and maintain their confidentiality, as per the Park District Cultural Resources Policy (EBRPD Board Resolution 1989-4-124).
- Ongoing patrols of the known archaeological and paleontological sites shall be continued. At a minimum, the regular EBRPD helicopter patrol flights shall patrol this area.
- The Park District shall arrange to properly collect, map, and accession identified cultural resources that are exposed on the ground surface. Appropriate Native American consultants and the California Native American Heritage Commission shall be contacted to determine the appropriate disposition of Native American burial remains, and appropriate future management of Site CA-CCo-538.
- Historic and paleontological resources shall be considered as a component of the interpretive and educational program to be established at Big Break Regional Shoreline, as outlined in the Land Use Plan.
- If unanticipated cultural resources should be encountered during construction in the park, all ground-disturbing activities shall be halted within at least 50 feet until evaluated by an archaeologist, in accordance with state and federal law. This is a standard Park District protocol for protecting parkland archaeological sites (EBRPD

Board Resolution 1989-4-124). Furthermore, if human remains were to be encountered during construction, the Park District policy requires consultation with the county coroner and Native American "most likely descendants," to determine the appropriate treatment of the remains, in accordance with state and federal law.

- During construction, all contractors shall abide by the "general conditions" (Article 22) in the EBRPD standard contract, regarding the protection of historic resources and human remains.

Mitigation for Soils Impact

- All topsoil removed during major earthmoving work shall be stockpiled on site within one of the Recreation Units, in a location away from all natural drainages, water bodies, designated wetlands, and sensitive wildlife habitat. The stockpile shall be immediately enclosed or covered; or seeded with native seed and watered at least once daily. Necessary erosion control measures shall be used around the stockpile as needed to prevent erosion. The topsoil shall be re-used during final grading as a top dressing for all landscaping areas.

Mitigation for Hazardous Materials

- During demolition of the red cabin, lead paint and asbestos-containing materials shall be abated and disposed of in conformance with the established environmental health standards of all relevant regulatory agencies, including: Cal/OSHA (California Occupational Safety and Health), California Environmental Protection Agency, and the Bay Area Air Quality Management District. Asbestos removal shall be conducted by a certified asbestos-removal contractor.
- The existence or absence of the suspected ground water well near the former barn (southeast corner of Lauritzen Site) shall be confirmed and, if required for public safety, properly closed off in compliance with Contra Costa County standards.

Water Quality Mitigation Measures

- The shoreline construction and barge removal shall be conducted in full compliance with the conditions imposed by the nationwide permit program of the U.S. Army Corps of Engineers and other state and local regulatory programs, to ensure no violations of waste discharge requirements would occur.
- Standard EBRPD contract specifications regarding water pollution shall be followed by all contractors (Standard Contract, General Conditions, Article 21). This specifies that the contractor shall submit and adhere to a written, water pollution and erosion control program. The Inspector shall have the authority to direct the contractor to perform work in small units or using modified construction procedures

when necessary, to provide effective water pollution control.

- At a minimum, the water pollution and erosion control program shall include the installation of silt fencing on the edge of construction sites located next to the tidal sloughs and Big Break shoreline, and the use of other erosion control methods at off-site storm drains and on-site natural drainages, when necessary in the opinion of the EBRPD Construction Inspector.
- Contractors shall be required to abide by the following "Supplementary Conditions" in their construction contract, when working in or adjacent to water bodies: construction equipment and vehicles shall be properly maintained to minimize fluid leakage; and containment booms and absorbent mats shall be kept on site to contain any petroleum products that are inadvertently discharged during construction.

Mitigation for Noise Impacts

- Noisy, stationary construction equipment shall be located as far as possible from nearby residences.
- All construction equipment shall be in good working order and mufflers regularly inspected for proper function.

1.3 Determination

An Initial Study has been prepared under the direction of the East Bay Regional Park District's Planning/Stewardship Department, in which the environmental effects of the proposed project have been evaluated. On the basis of this Initial Study, a copy of which is attached, the EBRPD has found that the proposed project (including the mitigation measures that would be incorporated into the project) would not have a significant effect on the environment and, therefore, does not require an Environmental Impact Report.

ATTEST:

Maxine Turner
Maxine Turner
Chief, Planning, Stewardship, and GIS Services Department

DATE: 8/17/01

Big Break Regional Shoreline Land Use Plan Initial Study

Big Break
Regional Shoreline

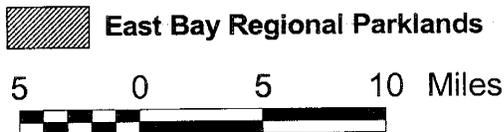
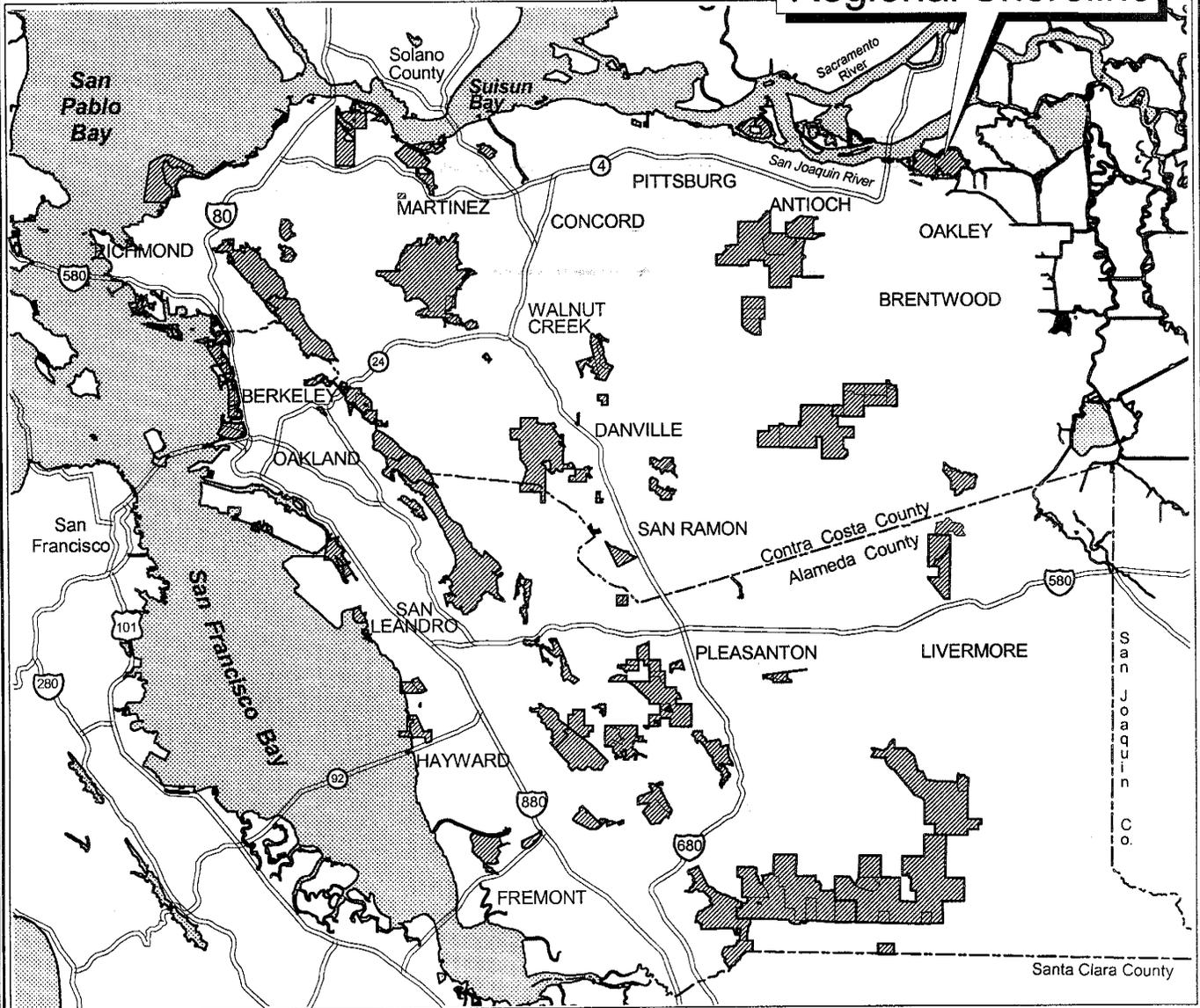
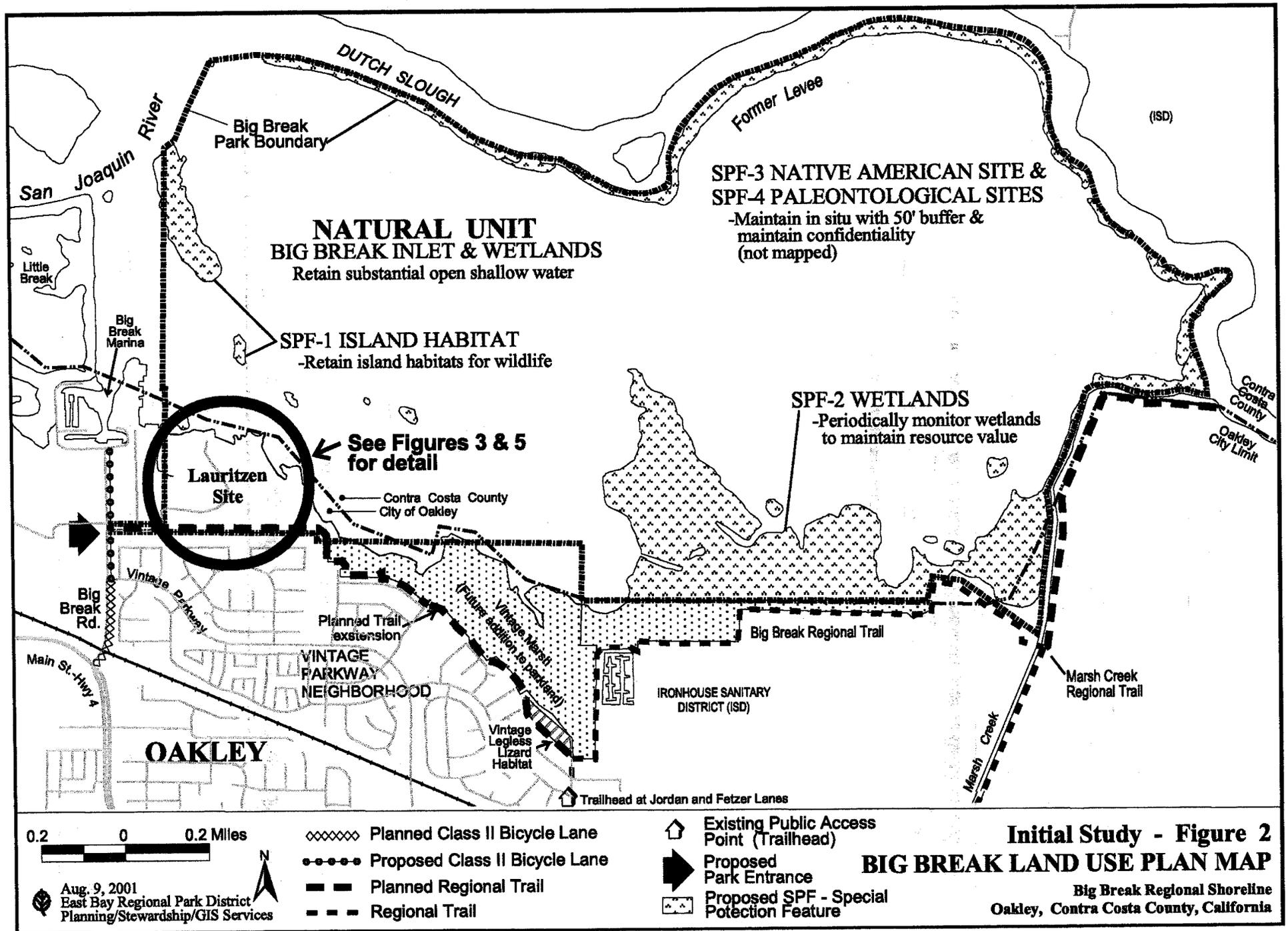


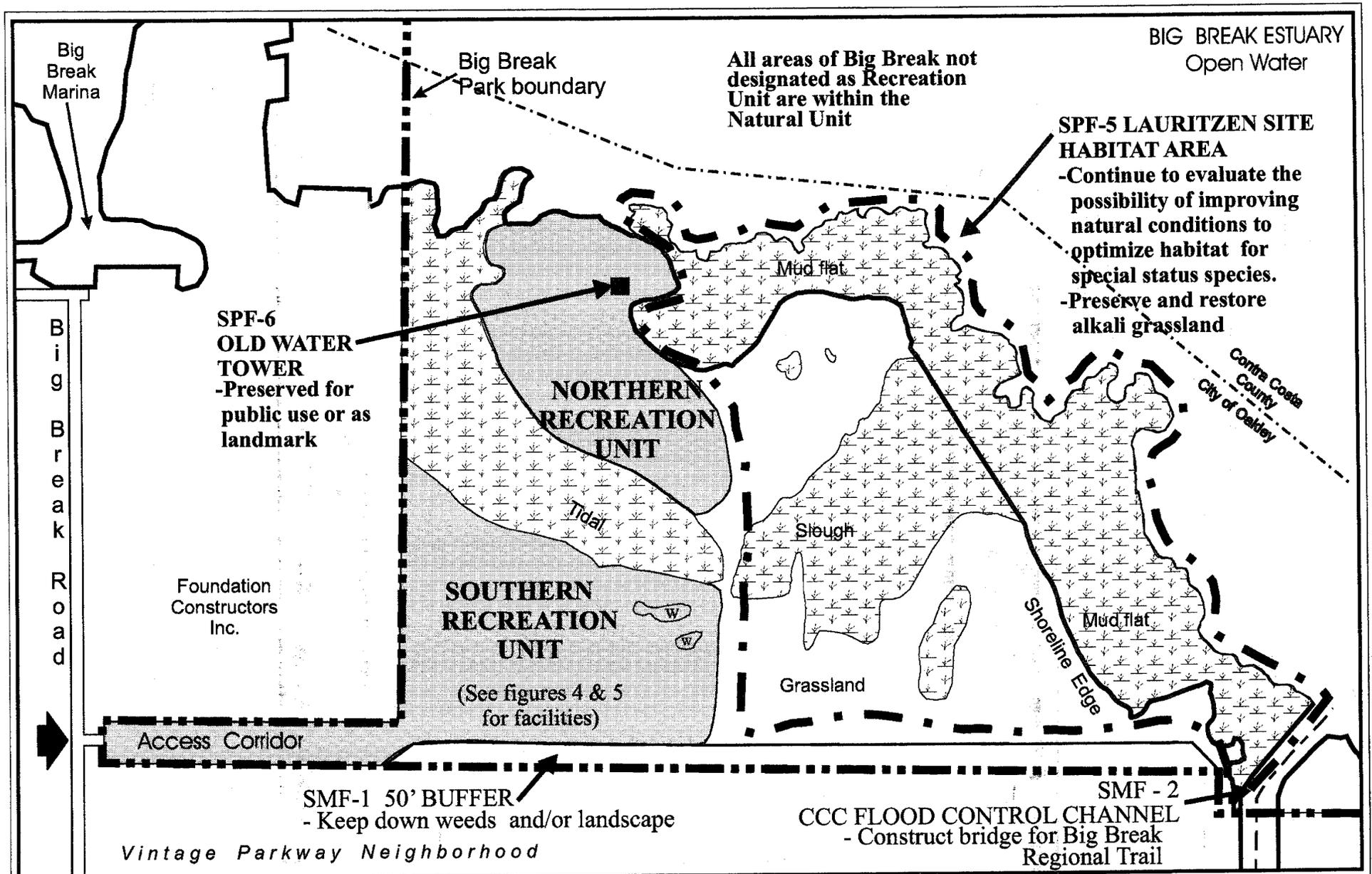
Figure 1
LOCATION MAP

Big Break Regional Shoreline
Oakley, Contra Costa County, California

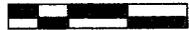


July 6, 2001
East Bay Regional Park District
Planning/Stewardship/GIS Services

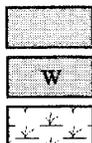




100 0 100 200 Feet



Aug 9, 2001
East Bay Regional Park District
Planning/Stewardship/GIS Services



Recreation Unit
Wetlands in Recreation Unit
Wetlands in Natural Unit

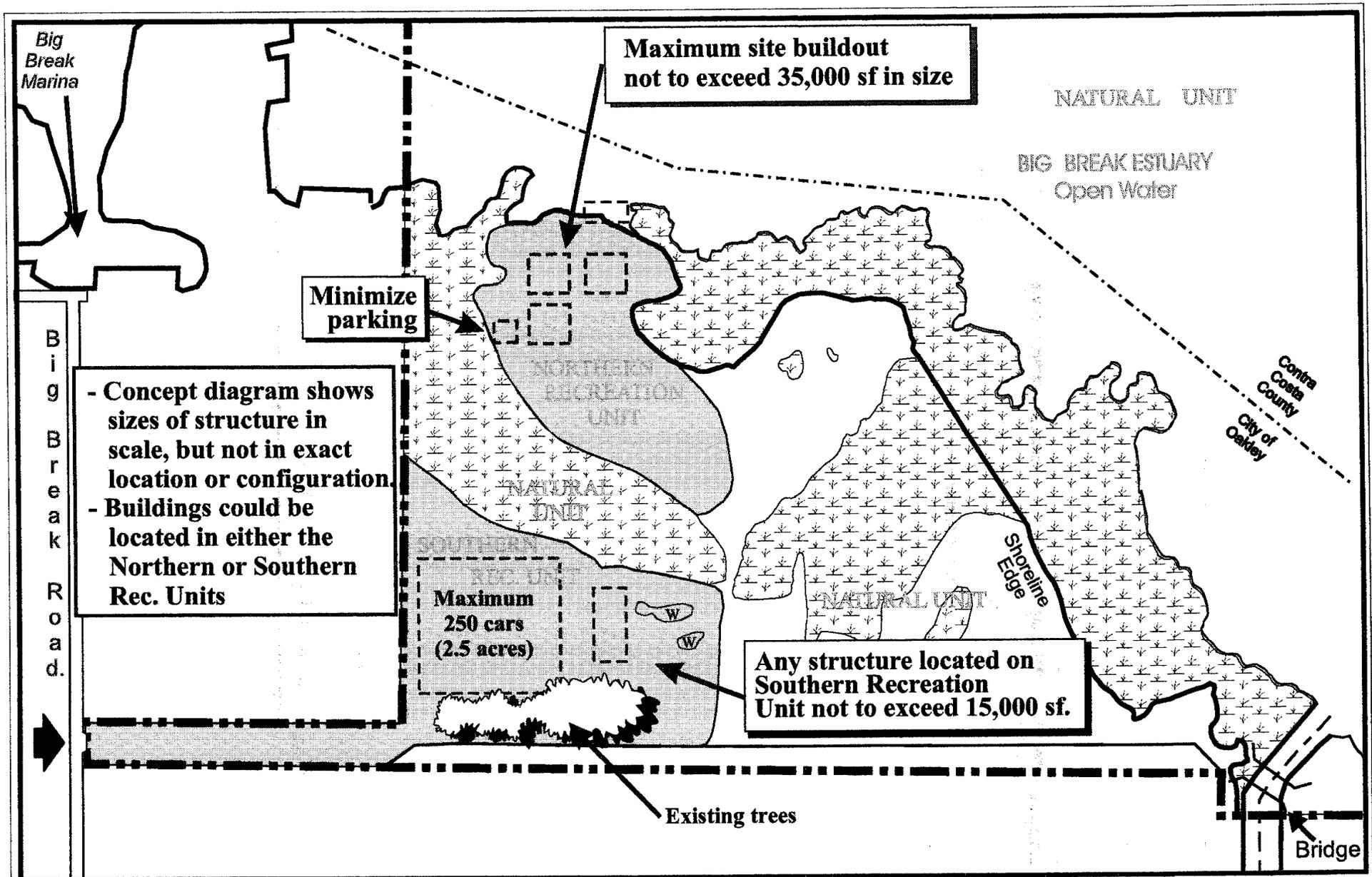


Park Entrance



Shoreline Edge
SPF-5 Boundary

Initial Study - Figure 3
BIG BREAK LAND USE PLAN MAP
Lauritzen Site: Land Use Designation
Big Break Regional Shoreline
Oakley, Contra Costa County, California



- Concept diagram shows sizes of structure in scale, but not in exact location or configuration.
 - Buildings could be located in either the Northern or Southern Rec. Units

Maximum site buildout not to exceed 35,000 sf in size

Minimize parking

Maximum 250 cars (2.5 acres)

Any structure located on Southern Recreation Unit not to exceed 15,000 sf.

Existing trees

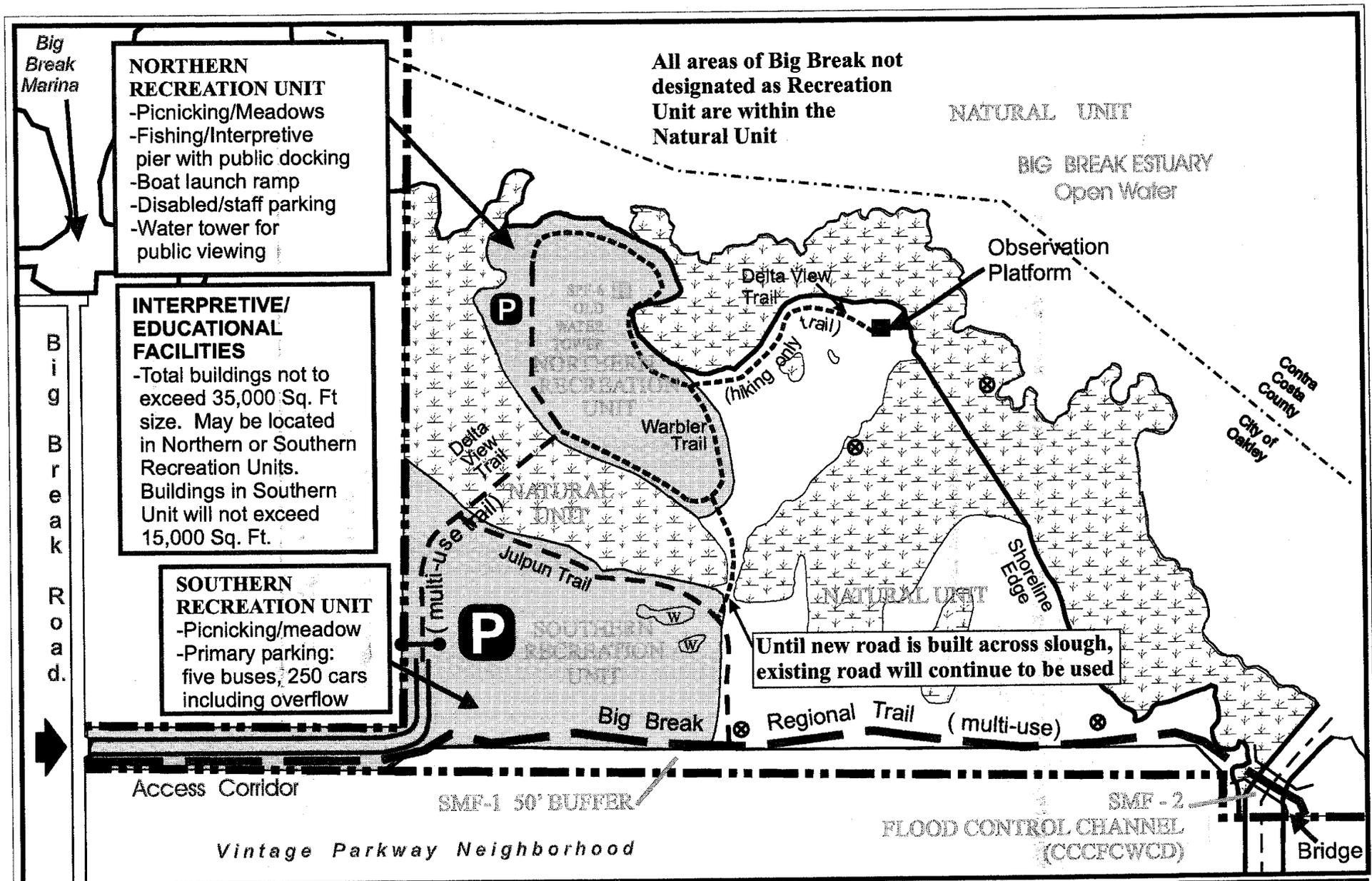
Bridge

100 0 100 200 Feet

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 East Bay Regional Park District
 Planning/Stewardship GIS Services

**Initial Study - Figure 4
 Conceptual Building Footprint Diagram
 Lauritzen Site
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California**

Natural Units
 Recreation Unit
w Wetlands in Rec. Unit
 Building/parking footprints at maximum buildout
 Park Entrance



100 0 100 200 Feet

Aug. 14, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services

N

Natural Units
 Recreation Unit
 Wetlands in Rec. Unit

SPF - Special Protection Feature
 SMF - Special Management Feature

Park Entrance
 Field Station (future project)
 Shoreline Edge

Initial Study - Figure 5
BIG BREAK LAND USE PLAN MAP
Lauritzen Site: Trails and Facilities
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

2.0 BACKGROUND AND SITE INFORMATION

2.1 Introduction

The East Bay Regional Park District (EBRPD) has prepared this Initial Study and Negative Declaration for the proposed project, pursuant to the California Environmental Quality Act (CEQA), as amended (Public Resources Code Section 21000 et seq.), and in accordance with the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). The project is described in Section 1.1.

The purpose of this Initial Study is to determine whether implementation of the project would result in potentially significant effects to the environment and, if so, to incorporate mitigation measures to reduce or eliminate the project's significant or potentially significant effects to a less-than-significant level. If, after consideration of this Initial Study, and any comments received during the public review period, EBRPD finds there is no substantial evidence that the proposed project would have a significant effect on the environment, then a Negative Declaration would be approved by the EBRPD Board of Directors, as provided in CEQA, Section 21064.

2.2 Project Purpose and Need

EBRPD has developed the recommendations and development proposals in the LUP to provide public shoreline access, environmental education facilities and an important link in the District's regional trail system.

2.3 Project Review and Approval

This Initial Study / Negative Declaration (IS/ND) has been distributed for review by local and regional agencies with jurisdiction over the project area. A notice of availability of the IS/ND has been sent to adjacent property owners and other interested parties. The document is available for review at the following locations:

- Oakley Library, 1050 Neroly Road, Oakley.
- Antioch Library, 501 West 18th Street, Antioch.
- Brentwood Library, 751-3rd Street, Brentwood.
- East Bay Regional Park District,
Planning, Stewardship and GIS Services Department
2950 Peralta Oaks Court, P.O. Box 5381, Oakland, CA 94605.
Phone: (510) 544-2320.

Comments on the IS/ND should be submitted in writing to EBRPD, before the end of the public comment period (not later than 5:00 p.m. on **September 18, 2001**). Comments should be sent to the attention of the Planning, Stewardship and GIS Services Department, at the above address. In reviewing the IS/ND, affected public agencies and interested

citizens should focus on the sufficiency of the document in identifying and analyzing the potential impacts on the environment and ways in which the significant effects of the project are proposed to be avoided or mitigated.

The EBRPD will determine whether any substantial new environmental issues have been raised, after receiving and evaluating comments from agencies, individuals, and organizations. If there are substantial new environmental issues, further documentation, such as an Environmental Impact Report or an expanded IS/ND, may be required. If not, the Mitigated Negative Declaration would be adopted by the EBRPD Board of Directors and the project would be approved. Following project approval, a Notice of Determination would be filed with the Contra Costa County Clerk's Office within five days.

2.4 Permits Needed

The Land Use Plan proposes several activities that would be subject to permitting by various regulatory agencies, including but not limited to the permits described below.

The City of Oakley has requested that this project be submitted for a development review (Henson 2000). The City will review: the plans for all buildings, parking lots, restrooms and accessory facilities; grading, drainage, and landscaping drawings; and environmental documentation. City staff may request modifications or stipulate conditions of approval, and may require encroachment, grading and building permits, as applicable. City staff will determine whether the project is in the flood plain, and, as applicable, the Park District may be subject to the requirements of Contra Costa County for a flood plain permit and permit under the National Pollution Discharge Elimination System (NPDES). The City staff will also determine whether the project would be considered a conforming use with the Heavy Industry (H-I) zoning at the Lauritzen Site. Zoning non-conformance may require that the Park District obtain a Conditional Use Permit.

The facilities planned for the Lauritzen Site may affect both wetlands and special-status species. Therefore, the project would be subject to the permitting requirements of the Clean Water Act and the federal and state Endangered Species Acts. The Clean Water Act is administered under permit programs of the U.S. Army Corps of Engineers and Regional Water Quality Control Board. Permitting under the state and federal Endangered Species Acts will require consultation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game. A Streambed Alteration Agreement will be required for construction in wetlands, in compliance with Section 1600 et seq. of the Fish and Game Code.

The Park District anticipates that, in order to comply with the Clean Water Act and Endangered Species Acts, a variety of mitigation measures and permitting conditions will be required. The Park District has attempted (to the extent that these requirements can be known in advance) to incorporate these requirements into the design of the project and/or into this Initial Study. To this end Park District staff made numerous attempts to

make contact with all the above agencies prior to the release of this document, in order to collect this information.

Permits for prescribed burning would be required from the Bay Area Air Quality Management District (pursuant to BAAQMD Regulation 5 and California Code of Regulations, Title 17).

2.5 Existing Site Conditions

The Land Use Plan (LUP) (Sections I and III) provides a description of the existing vegetation, wildlife and buildings at Big Break Regional Shoreline. These existing site conditions represent the "baseline conditions" for the environmental impact analysis, as summarized here.

The existing condition of the land, water and vegetation reflect centuries of human occupation, including rural, agricultural and recreational uses from the mid-1800s to today. From prehistoric times up to the late 1800s, Native Americans inhabited the area -- the most recent population being the Julpun people of the Bay Miwok language group. Evidence of prehistoric habitation has been found in marshlands within Big Break.

On the upland areas of the park, there has been little development, so that a lush growth of endemic and planted vegetation and trees has developed over time (see Figure 6). This is particularly notable at the Lauritzen Site (see Figure 7), where there are thick stands of blackberry, grasses, and groves of trees on the shoreline and tidal sloughs -- including willows, poplars, and cottonwoods. These trees, open grasslands, shorelines, and sloughs provide a habitat for a variety of wildlife, including common, urban-tolerant animals (e.g. raccoon, scrub jay, ground squirrel), and several rare birds (see discussion in Section 4.4). In addition, the water tower there supports nesting barn owls and is a potential roosting or hibernaculum habitat for several bat species.

Although it is considered an upland, the Lauritzen Site is flood-prone (see Figure 8). Most of the site is within the 100-year flood zone (Zone A2), and much of it below an elevation that would be flooded by the "5-year flood level" (HUD, Flood Insurance Rate Map 1987; William S. Wells Design, 2000). The shoreline is bordered by tidal marsh and mudflats (see Figure 9) which contain a few sites with rare plant populations and archaeological and paleontological artifacts buried in the mud (see further description in Section 4.5). Wetlands at the Lauritzen Site include the tidal sloughs, tidal marsh, mudflats, open water, and an estimated ½ acre of non-tidal, freshwater marsh scattered among six, low-lying basins in the grassland (Vollmar 2000).

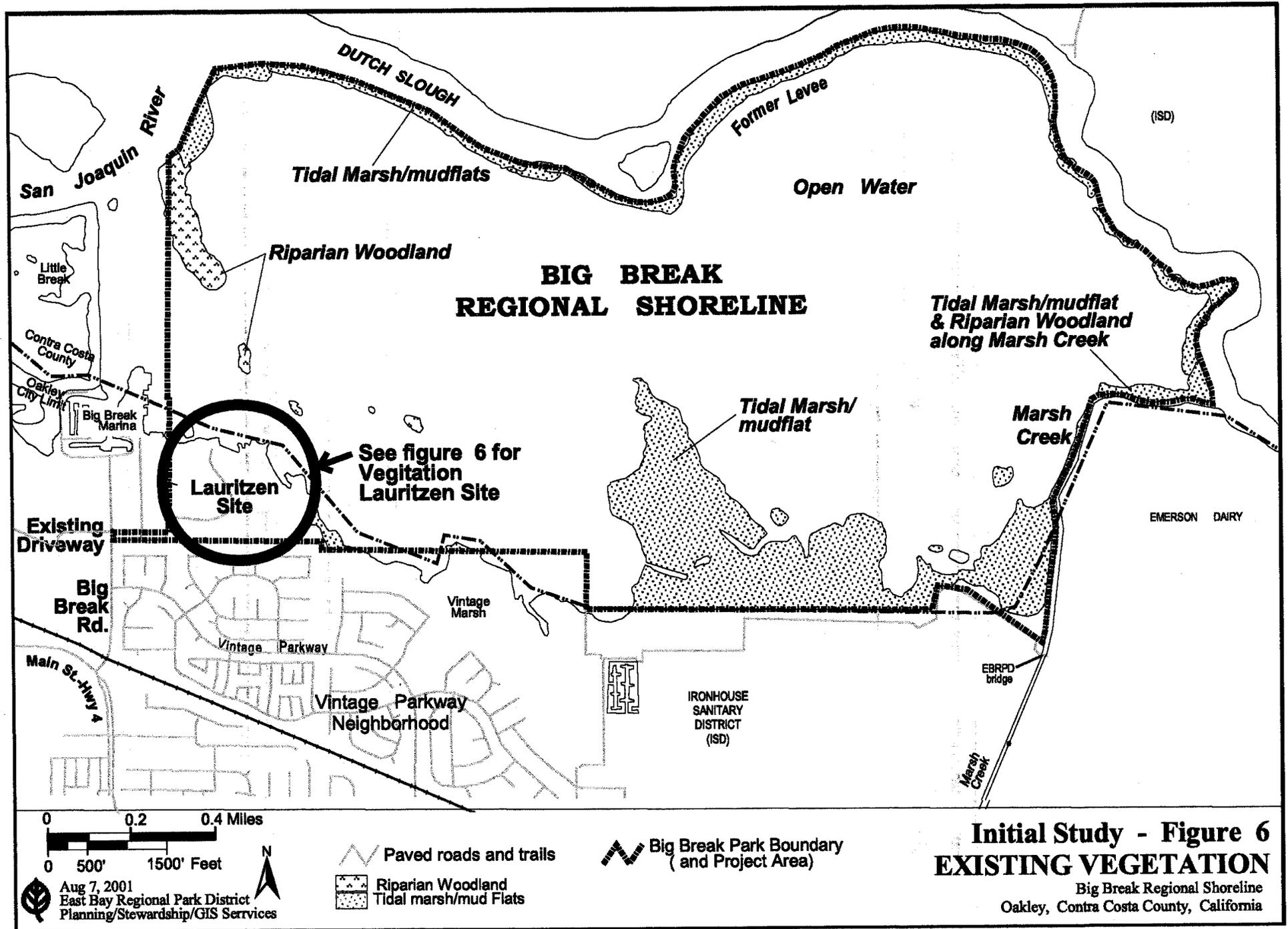
Much of the shoreline property adjacent to the parkland has been developed for farmland or urban uses -- homes, marinas, and industrial uses (see Figure 10). In contrast, the Lauritzen Site contains only a few buildings, remnants of a small family retreat (see Figure

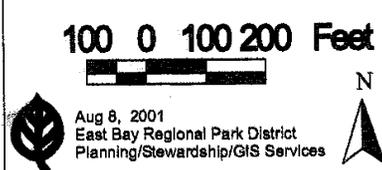
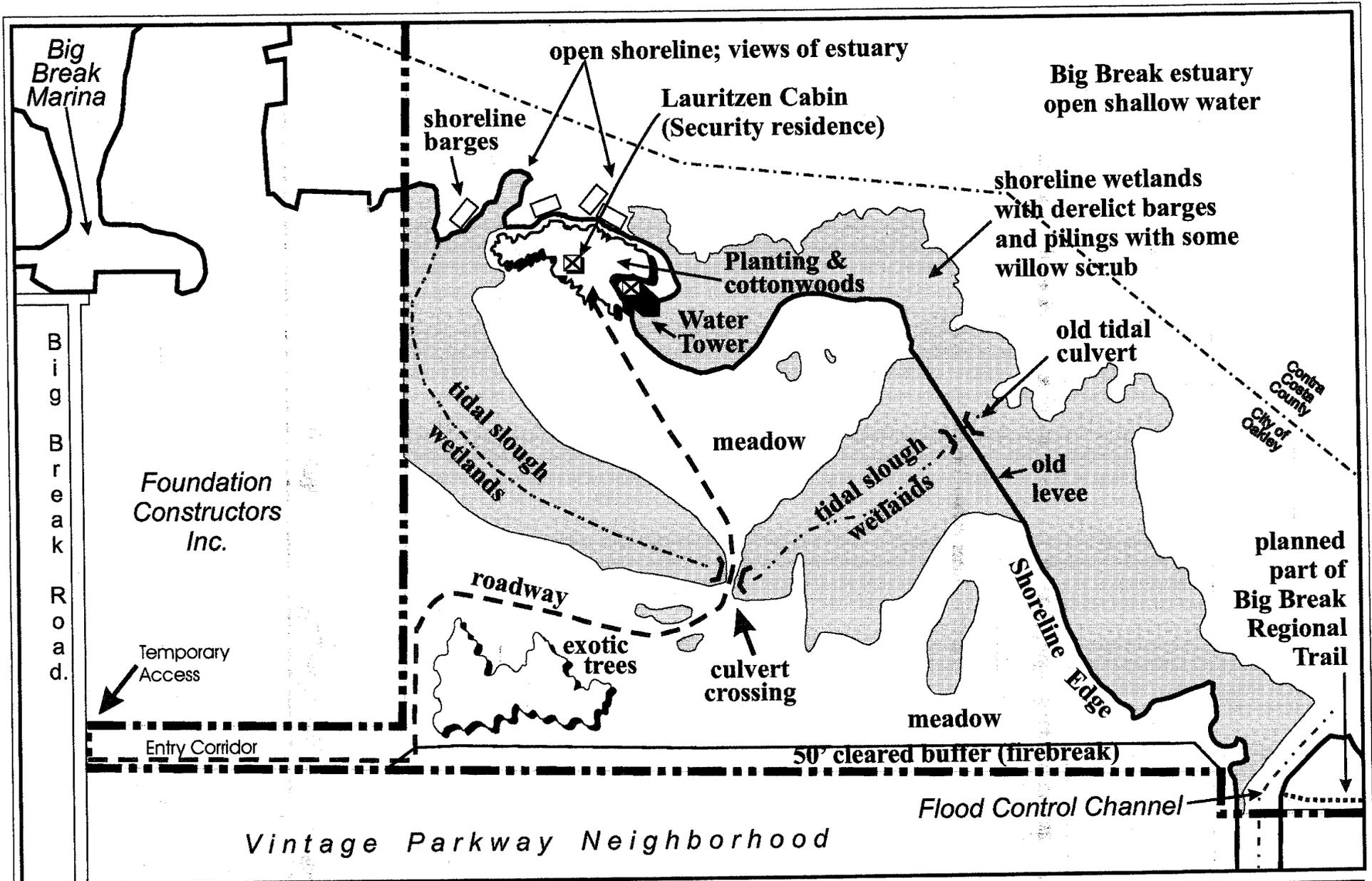
7). Prominent views from the Lauritzen Site include an impressive view of Mount Diablo (to the southwest), and open water to the north and east. The open water contains several interesting views: the arching Antioch Bridge; boats lazily cruising the nearby San Joaquin River; mysterious hulks of marine debris; and lushly vegetated islets that have sprouted from the shallower mudflats or have colonized sunken barges. Properties that are adjacent to the Lauritzen Site, particularly residences south of the park, enjoy views onto the site. Views onto the site include the grove of graceful "trees of heaven" (*Ailanthus sp.*) in the southwest corner; the landmark water tower; the open expanse of waving grassland; and the fringe of shoreline trees, from which birds can be seen departing on the breeze to survey the grassland for prey.

In acquiring this shoreline property and the inlet, the Park District recognized the value in setting aside this area for open space and recreation. The LUP represents the Park District's attempt to provide a valuable recreational and educational site while retaining its natural condition and special-status species habitat. The Lauritzen Site represents a site where, after the initial development impacts, the site would be managed with the goal of protecting and learning about the valuable natural and cultural resources in the rest of the parkland.

There has been thorough site planning for the development proposals contained in the LUP. Numerous resource studies have been conducted at Big Break Regional Shoreline, and the studies were used to design the project to minimize its environmental impact. The results of these studies are described in more detail in the LUP, but are also included in this Initial Study, where relevant (see the full list of References in Section 5.0).

Wildlife surveys of the site were conducted both by Ibis Environmental (Ibis Environmental, 2000) and EBRPD wildlife biologists. The wildlife surveys gave special attention to identifying known and potential habitat for special-status birds. Wetlands and vegetation, including special-status plant populations, were surveyed, mapped (including wetland delineation) and listed by Vollmar Consulting (September 2000). The wetland delineation was verified by the U.S. Army Corps of Engineers (Finan, June 2001). The Lauritzen Site has been investigated for the presence of hazardous materials, in a "Phase I Environmental Assessment" (Tetra Tech 1997), and a "Phase II Site Assessment" (Baseline 1998). A preliminary site design by William S. Wells Design (2000) proposed a layout for the buildings, roads, parking, and other facilities that minimized their environmental impact. This site design used the above-mentioned resource studies in choosing where facilities should be located, as well as considering the site's viewsheds, cultural features, flooding risks, and traffic circulation.

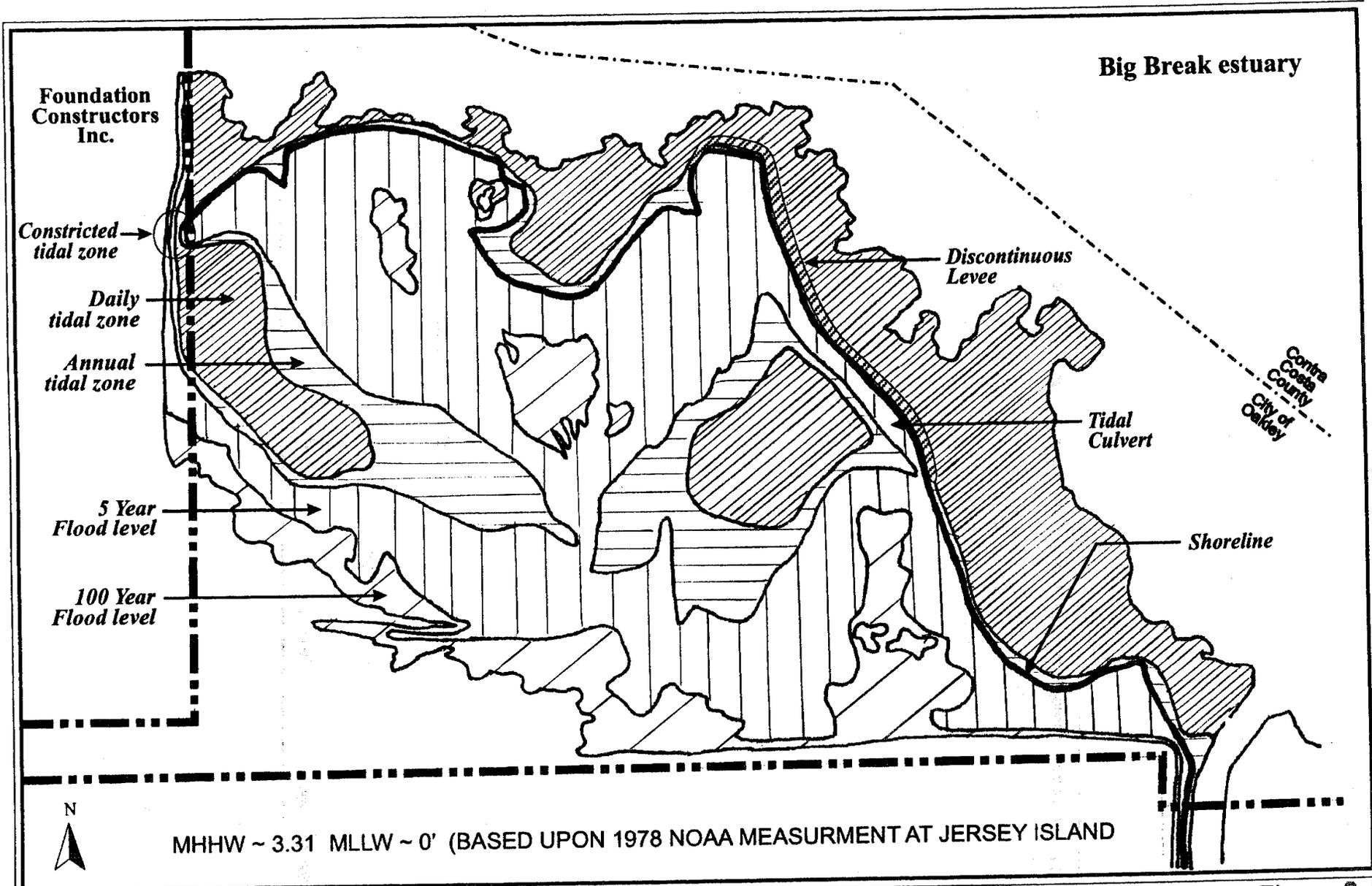




-  Wetland
-  Tree Groves
-  Park boundary
-  Existing Road

Initial Study - Figure 7
EXISTING CONDITIONS - LAURITZEN SITE
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

Aug 8, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services



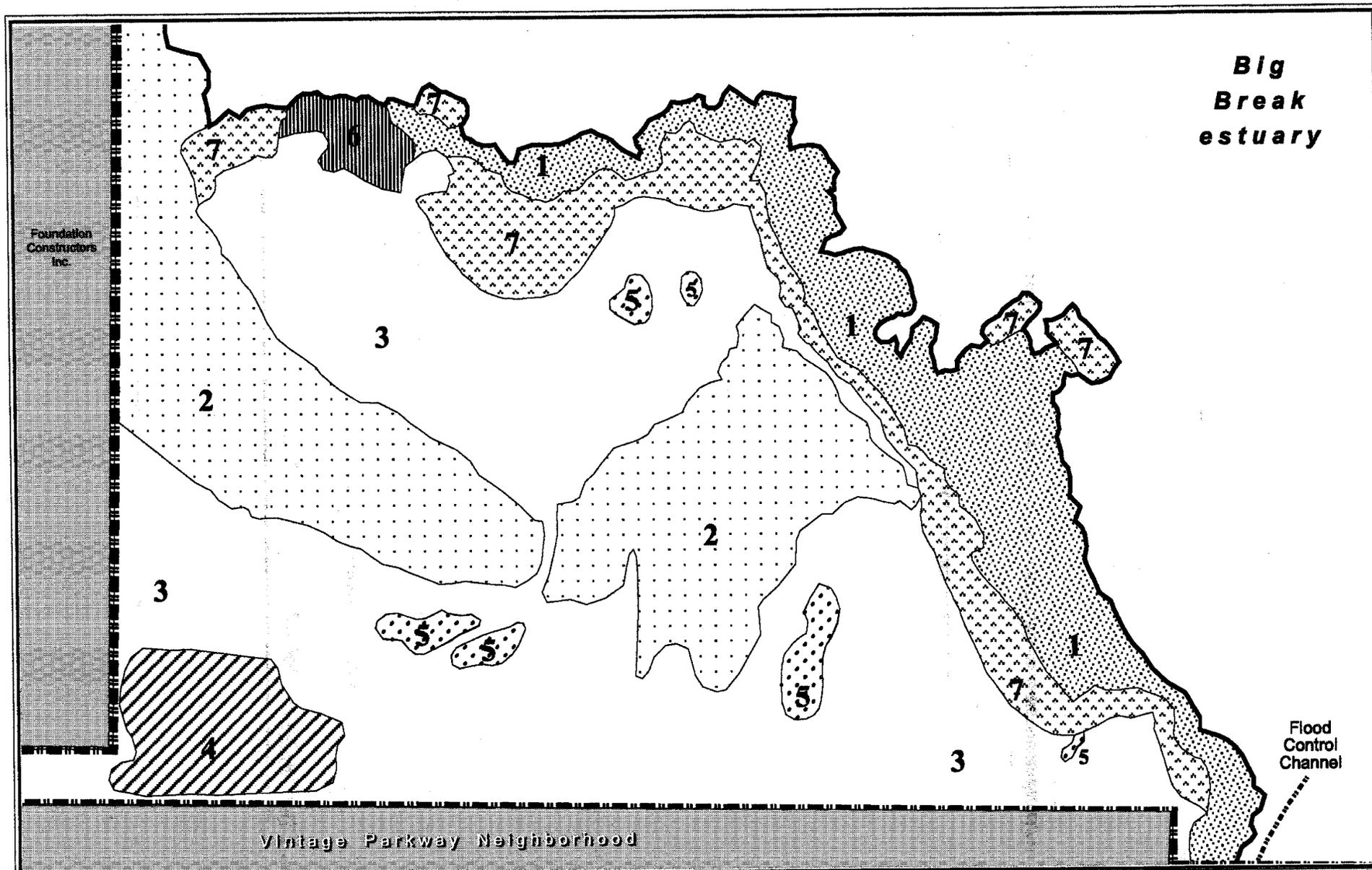
Source: Delta Science Center, 2000
 Preliminary Opportunities & Restraints Maps

— — — — — Big Break Regional Shoreline Boundary
 [Hatched Box] Levee

100 0 100 200 Feet

July 6, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Department

Figure 8
CURRENT TIDAL CONDITIONS
Lauritzen Site
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California



**Big
Break
estuary**

Foundation
Constructors
Inc.

Flood
Control
Channel

Vintage Parkway Neighborhood

100 0 100 200 Feet



Aug 7, 2001
East Bay Regional Park District
Land Use Plan
Planning/Stewardship/GIS Services

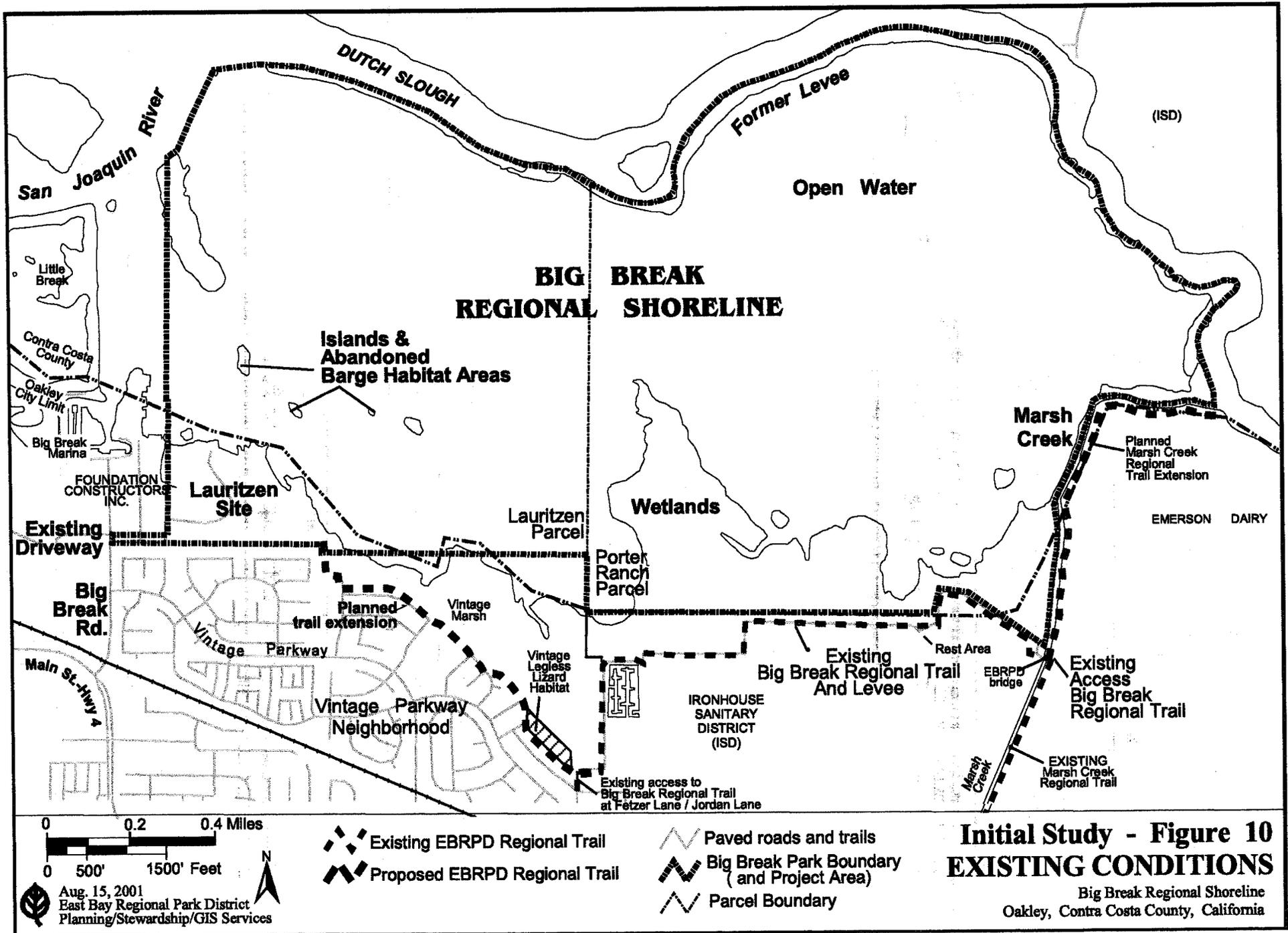


-  **1** Tidal Marsh/Mudflat
-  **2** Tidal Slough/Freshwater Marsh
-  **3** Alkali Grasslands
-  **4** Non-native Woodland

-  **5** Freshwater Marsh
-  **6** Alder woodland
-  **7** Riparian woodland

**Initial Study - Figure 9
EXISTING VEGETATION
LAURITZEN SITE**

Big Break Regional Shoreline
Oakley, Contra Costa County, California



Initial Study - Figure 10
EXISTING CONDITIONS
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

3.0 ENVIRONMENTAL CHECKLIST

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	I. Aesthetics		II. Agricultural Resources		III. Air Quality
	IV. Biological Resources		V. Cultural Resources		VI. Geology /Soils
	VII. Hazards & Hazardous Materials		VIII. Hydrology / Water Quality		IX. Land Use / Planning
	X. Mineral Resources		XI. Noise		XII. Population / Housing
	XIII. Public Services		XIV. Recreation		XV. Transportation / Traffic
	XVI. Utilities / Service Systems		XVII. Mandatory Findings of Significance	X	(None of the Above.)

If you have any questions, please contact Dan Sykes, Park Planner, in the Planning, Stewardship, and GIS Services Department, at (510) 635-0135.

Lead Agency Determination

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: 8/17/01

Maxine Terner
 Maxine Terner, Chief, Planning, Stewardship, and GIS Services Department

I. AESTHETICS -- Would the project:	Rating
a) Have a substantial adverse effect on a scenic vista?	⊖
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	⊙
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	⊖
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	⊖
II. AGRICULTURAL RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Rating
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	⊙
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	⊙
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	⊙
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Rating
a) Conflict with or obstruct implementation of the applicable air quality plan?	⊙
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	⊖
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	⊙
d) Expose sensitive receptors to substantial pollutant concentrations?	⊕
e) Create objectionable odors affecting a substantial number of people?	⊕
IV. BIOLOGICAL RESOURCES -- Would the project:	
a) Have an adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	⊕
b) Have an adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	⊕

LEGEND: ⊙ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	⊕
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	⊕
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	⊙
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	⊙
V. CULTURAL RESOURCES -- Would the project:	
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	⊕
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	⊕
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	⊕
d) Disturb any human remains, including those interred outside of formal cemeteries?	⊕
VI. GEOLOGY AND SOILS -- Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	⊙
ii) Strong seismic ground shaking?	⊖
iii) Seismic-related ground failure, including liquefaction?	⊖
iv) Landslides?	⊙
b) Result in substantial soil erosion or the loss of topsoil?	⊙
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	⊙
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	⊙
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	⊙

LEGEND: ⊙ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact

VII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	⊙
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	⊕
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	⊙
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	⊙
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	⊙
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	⊙
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	⊙
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	⊖
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:	
a) Violate any water quality standards or waste discharge requirements?	⊕
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	⊙
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	⊙
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	⊙
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	⊙
f) Otherwise substantially degrade water quality?	⊙
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	⊙
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	⊖

LEGEND: ⊙ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact 27

I) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	⊙
j) Inundation by seiche, tsunami, or mudflow?	⊙
IX. LAND USE AND PLANNING - Would the project:	
a) Physically divide an established community?	⊙
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	⊖
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	⊙
X. MINERAL RESOURCES -- Would the project:	
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	⊙
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	⊙
XI. NOISE – Would the project result in:	
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	⊖
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	⊖
c) A permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	⊖
d) A temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	⊕
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	⊙
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	⊙
XII. POPULATION AND HOUSING -- Would the project:	
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	⊙
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	⊙
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	⊙

LEGEND: ⊙ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact 28

XIII. PUBLIC SERVICES	
a) Would the project result in substantial, adverse, physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:	
Fire protection?	⊖
Police protection?	⊖
Schools?	⊙
Parks?	⊙
Other public facilities?	⊙
XIV. RECREATION --	
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	⊙
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	⊙
XV. TRANSPORTATION/TRAFFIC -- Would the project:	
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	⊖
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	⊖
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	⊙
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	⊙
e) Result in inadequate emergency access?	⊙
f) Result in inadequate parking capacity?	⊙
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	⊙
XVI. UTILITIES AND SERVICE SYSTEMS – Would the project:	
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	⊖
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	⊖

LEGEND: ⊙ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	⊖
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	⊖
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	⊖
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	⊖
g) Comply with federal, state, and local statutes and regulations related to solid waste?	⊕
XVII. MANDATORY FINDINGS OF SIGNIFICANCE --	
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	No
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	No

LEGEND: ⊕ No Impact; ⊖ Less-Than-Significant Impact;
 ⊕ Less-Than-Significant Impact with Mitigation Incorporated;
 ⊗ Potentially Significant Impact

4.0 ENVIRONMENTAL IMPACT DISCUSSION

4.1 Overview

After completing the above checklist, EBRPD has found that the project would have *no impact* in the following subject areas: Agricultural Resources; Mineral Resources; Population and Housing; Recreation; or Mandatory Findings of Significance. The following sections (4.2 to 4.13) address those subject areas in which the project could have impacts, as identified in the above checklist.

4.2 Aesthetics

Aesthetics were considered from two aspects, the views from the Lauritzen Site, and the views from neighboring properties onto the Lauritzen Site. (No substantial changes are proposed for the open water, so the existing views there would not change.)

The most notable views *from* the Recreation Unit are the north- and east-facing views next to the shoreline, where one can have vistas of the open water, the interesting collection of old barges, and the arching Antioch Bridge. Although the site is oriented toward the water, the southwest-facing view of Mount Diablo is also impressive. The development proposed in the LUP would make no significant changes to any of these views, and Park Designers would feature them as much as possible in choosing an orientation for proposed buildings, picnic areas, and other use areas.

The obvious views from neighboring properties looking *onto* the Lauritzen Site include the open grassy meadow; the graceful *Ailanthus* trees (trees of heaven) in the southwest corner of the property; the lush, naturalized vegetation along the shoreline and tidal slough; and the cluster of aged, wooden buildings dominated by the water tower and flanked by tall trees. The existing visual character of the site is typified by open views, a semi-natural setting, and the small cluster of modest, functional structures for agricultural and shoreline uses.

The project would introduce new visual elements to the Lauritzen Site that would change the existing view from neighbors' backyards. These would include new buildings, paved surfaces, signs, lighting, and park-related facilities such as picnic tables. The proposed buildings would be larger and of a greater number than the current buildings on the site, but would incorporate design elements of marine architecture and related materials that would be appropriate with a shoreline setting. The proposed facilities also contrast with the intensive industrial or residential development that could have been allowed here under current zoning if the Park District had not acquired the Lauritzen Site. The project described in the LUP would retain the major visual features of the site, including trees on

the shoreline, open grassland, and the water tower. Altogether, the proposed development should be able to retain much of the existing visual character of the site, and the changes would be less-than-significant.

Some of the neighbors have expressed concern about the glare impact that would occur from nighttime lighting. The lighting is necessary for building security and nighttime public safety at the site, and would be limited to the main public activity areas around the buildings and parking lots. (The rest of the park would not be lighted.) The LUP (Section IV.C, *Interpretive and Recreational Facilities*) includes the following provisions for reducing the glare and general visual impact of buildings in the Southern Recreation Unit: no buildings shall exceed 15,000 square feet, nor be located closer than 100 feet from the southern property line; building design shall place outdoor areas or patios on the northern side of the buildings, as much as feasible; required lighting would be designed to focus on facilities and not toward the neighborhood; and windows on the southern side would be minimized or located to maintain privacy. These design considerations would minimize this visual impact to a level of less-than-significant.

The proposed parking lots would consist of up to 2-1/2 acres of graveled or paved surface. Typical Park District parking lots utilize landscaping and natural materials for fencing and signs (e.g. wood, stone) where possible, to achieve a more natural or rural look to the facilities. The placement of the parking lots on the western portion of the Lauritzen Site would take advantage of the existing grove of *Ailanthus* trees that provide a visual buffer from some adjacent houses. Planted trees and landscaped mounds would also help to reduce the visual impact of the parking lots. The use of these practical design considerations would ensure that the parking lots would cause a less-than-significant visual impact.

Finally, the project would also *remove* some of the visual elements that detract from a park-like or natural setting. This includes discarded debris, deteriorated structures, and cluttered belongings that have been stored near the red cabin for many years. The Park District finds that these changes would be a beneficial visual impact.

4.3 Air Quality

Construction Impacts

Construction of the proposed park facilities would create substantial amounts of dust. Construction equipment would also generate petroleum-based fuel odors and typical motor vehicle pollutants, including particulate matter, carbon monoxide, and ozone precursors (e.g., nitrogen oxide and sulfur dioxide). The effect on air quality from dust and equipment

would be potentially significant, but would be temporary and localized. The Park District would limit construction work to daylight hours and would require contractors to control dust, which is a standard requirement for any EBRPD construction contract. In addition the Bay Area Air Quality Management District also strongly encourages that additional control measures be implemented when a project involves a large construction site or is located near sensitive receptors (BAAQMD 1996, p. 14). The incorporation of these mitigation measures would lessen the potentially significant impacts to a level of less-than-significant.

MITIGATION: Standard EBRPD contract specifications regarding dust control shall be followed by all contractors (Standard Contract, General Conditions, Article 21). This specifies that a dust palliative or water (in sensitive habitats) shall be applied by the contractor on unpaved access roads, the construction site, parking areas and construction staging areas. The EBRPD Construction Inspector shall have full authority to suspend work if dust control is not to the satisfaction of the Inspector.

MITIGATION: Due to the proximity of sensitive receptors (residences and wildlife), construction contractor(s) shall be required to abide by the following "Special Conditions" in their contract(s):

- Cover all trucks hauling soil and other loose material, or maintain at least two feet of freeboard.
- Sweep daily (with water sweepers) all *paved* access roads, parking areas and construction staging areas.
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install wheel washers for all exiting trucks, or wash off the truck tires or tracks of trucks and equipment leaving the site.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Prescribed Burning

Periodically EBRPD would conduct prescribed grassland burns, which would produce smoke. Prescribed burns are a component of the District's ongoing vegetation management of District wildlands. EBRPD has successfully conducted burns in many of its grassland parks throughout Contra Costa and Alameda Counties, including Round Valley Preserve, Point Pinole Shoreline, Briones Park, Carquinez Strait Shoreline and others. The Park District Fire Department conducts all prescribed burns in compliance with

Regulation 5 of the Bay Area Air Quality Management District (BAAQMD) and Title 17 of the California Code of Regulations. Smoke production can be managed by burning when environmental conditions (e.g., fuel moisture, temperature, relative humidity) are appropriate for minimizing the fire's air quality impacts. The appropriate day for a burn is specified as a "burn day" by BAAQMD. If the appropriate conditions could not be met, EBRPD would not conduct the burn.

For a typical burn operation, EBRPD would prepare a "prescribed burn plan" which describes the burn's objectives, how smoke would be managed, and other details about when and where the burn would be conducted. This plan would be written in cooperation with in-house fire fighters, biologists, park operations staff, and the California Department of Forestry and Fire Protection. The plan would be reviewed by BAAQMD. After BAAQMD would approve the plan, an appropriate date would be set, fire staff assembled, and park neighbors notified.

On the burn day, EBRPD fire officers would monitor the conditions to confirm that the burn could proceed, and BAAQMD may send an inspector to monitor smoke production along with EBRPD's personnel. A large contingent of staff and fire fighting equipment would be deployed to the site for the duration of the prescribed fire and subsequent mop-up. The Park District Fire Department would also prepare and submit a post-burn report to BAAQMD within 30 days. Compliance with these procedures, as outlined in BAAQMD's Regulation 5, would ensure that EBRPD's prescribed burns would have a less-than-significant air quality impact.

Vehicle Exhaust

The project would generate traffic from park users, estimated at a maximum of approximately 425 vehicles per day (approximately 950 trips per day) on a typical Sunday with sunny weather (see Section 4.12, Traffic). On most days throughout the year, particularly weekdays, the volume of traffic would likely be much less. The project-generated traffic, therefore is less than the "significance threshold" for air pollutants established by the Bay Area Air Quality Management District (BAAQMD). According to BAAQMD a traffic volume of 2,000 vehicles per day is the minimum threshold at which a project is expected to generate a significant amount of air pollution from motor vehicles ("BAAQMD, CEQA Guidelines" 1996). Therefore, the project would cause a less-than-significant amount of motor vehicle air pollution.

4.4 Biological Resources

Biology Overview

The LUP calls for approximately 12 acres of development at full facility build-out, including construction of the interpretive and research buildings, recreational facilities and trails (as described in Section 1.1). This development would all occur on the 40-acre Lauritzen Site, and would be focused in the two Recreation Units on the west half of the Lauritzen Site. The 40-acre site is virtually the only non-submerged area within the park, and therefore contains almost all the terrestrial wildlife habitat (see also LUP, Section III.C, *Plant Communities and Associated Wildlife*). The Park District has minimized or avoided wildlife impacts to the extent feasible, using wildlife-sensitive site planning in the development of the LUP. In addition, mitigation is discussed below for construction of the facilities that would avoid or minimize these impacts to a level of less-than-significant.

The LUP attempted to avoid wildlife impacts through appropriate site planning, as discussed in Section 1.1. The layout shown in the LUP (Figure 3) sets aside approximately ½ of the Lauritzen Site as a special protection feature (SPF-5), to preserve a representative mosaic of the wildlife habitats there (tidal marsh, tidal slough, freshwater marsh, mudflat, alkali grassland, and riparian woodland -- see also Figure 9) and to limit public use there. Impacts on wetlands have been minimized by siting the proposed buildings on the higher-elevation grasslands. Newly proposed development has been focused on those portions of the site that either have been previously developed (around the water tower and red cabin) or are adjacent to the existing construction yard (Foundation Constructors' property). Finally, the Park District believes that, in a larger sense, the facilities proposed in the LUP will actually aid in the long-term preservation of the natural environment of Big Break Regional Shoreline and the Delta, due to the educational and environmental research programs that would occur there.

Effects on Special-Status Plants

The populations of special-status plants identified at the Lauritzen Site (see Table 1) are all located in the tidal marsh/mudflat community on the shoreline (see Figure 9). This is where the Vollmar report identified one population of Suisun marsh aster (Federal Species of Concern; List 1B of the California Native Plant Society¹) and two populations of Mason's lilaeopsis (State-listed rare plant; Federal Species of Concern; List 1B of the California Native Plant Society). These identified populations were located at the base of the levee separating the Lauritzen Site from the bay. Habitat for other special-status plants exists within the tidal marsh/mudflat community -- although individuals were not identified during the surveys -- including Delta mudwort, delta tule pea, and rose-mallow (see Table 1).

¹List 1B of the California Native Plant Society = listed as rare, threatened, or endangered in California and elsewhere.

Table 1. Special Status Plant Species List

Special status plant species known to occur, or with potential to occur, in the vicinity of the Big Break study site, southern edge of Big Break, Contra Costa County, California. Sources of information include CDFG's California Natural Diversity Data Base (1999) and California Native Plant Society's Electronic Inventory of Rare Plants of California (1999) (Antioch North and Jersey Island USGS 7.5' quadrangles). Source: East Bay Regional Park District and Vollmar Consulting. 2000. Big Break Marsh Project, Vegetation, Wetland & Botanic Studies

SPECIES ¹	STATUS ²	HABITAT ³	NOTES ³
<i>Aster lentus</i> Suisun marsh aster	FSC CNPS 1B	Edges of perennial freshwater and brackish marsh in Suisun Bay.	Restricted to Suisun Bay and adjacent delta. Known occurrences around Big Break. One population found on study site along edge of Big Break next to Lauritzen Site. Extant occurrences within Antioch North quad.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	CNPS 1B	Mesic grasslands, alkaline vernal pools in the Delta and Central Vly.	Extant occurrences within Antioch North quad.
<i>Atriplex cordulata</i> heartscale	FSC CNPS 1B	Chenopod scrub, mesic alkaline grasslands/sandy soils in the Delta, basin of Central Valley.	Extant occurrences within Antioch North quad.
<i>Atriplex joaquiniana</i> San Joaquin spearscale	FSC CNPS 1B	Chenopod scrub, mesic alkaline grasslands soils in the Delta, basin of Central Valley.	Extant occurrences within Antioch North quad, extirpated from Jersey Island quad.
<i>Cryptantha hooveri</i> Hoover's cryptantha	CNPS 1B	Sandy soils in grasslands.	Extant occurrences in Antioch North quad.
<i>Erysimum capitatum</i> var. <i>angustatum</i> Contra Costa wallflower	FE/CE CNPS 1B	Inland sand dunes (Antioch dunes).	Known from only three occurrences at the Antioch dunes.
<i>Hibiscus lasiocarpus</i> rose-mallow	CNPS 2	Edges of perennial freshwater and brackish marsh in the Delta, basin of mid-Central Valley.	Extant occurrences in Jersey Island quad.
<i>Isocoma arguta</i> Carquinez golden bush	FSC CNPS 1B	Alkaline grasslands in delta.	Extant occurrences in Antioch North quad.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	FSC CNPS 1B	Edges of brackish and freshwater marsh in the Delta, San Pablo Bay.	Extant occurrences in Antioch North, Jersey Island quads.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	FSC/CR CNPS 1B	Edges of brackish/freshwater marsh, and riparian scrub in the Delta.	Known occurrences around Big Break. Two populations found on study site along edge of Big Break next to Lauritzen Site. Other occurrences expected.
<i>Limosella subulata</i> Delta mudwort	CNPS 2	Edges of brackish/freshwater marsh, on tidal mudflats, in the Delta.	Known occurrences around Big Break. Not found during surveys but likely to occur on study site.
<i>Oenothera deltoides</i> ssp. <i>howellii</i> Antioch dunes evening primrose	FE/CE CNPS 1B	Inland sand dunes in the Delta.	Known from only three native occurrences within Antioch North and Jersey Island quads.

Notes:

- Scientific names correspond to Hickman (1993), common names correspond to Hickman (1993) and Abrams (1940).
- FE = federally listed as endangered; FSC = federal species of concern; CE = state listed as endangered; CR = state listed as rare; CNPS 1B = listed as rare, threatened, or endangered in California and elsewhere by the California Native Plant Society (CNPS); CNPS 2 = listed as rare in California, more common elsewhere by CNPS.
- Habitat/Notes from Skinner and Pavlik (1994), Hickman (1993), CNDDB (1999), Munz and Keck (1960), Abrams (1940).

A potentially significant impact would occur if the special-status plants were destroyed or shaded by the pier and interpretive/recreation buildings that would be constructed along the shoreline, overhanging the tidal marsh/mudflat. At full build-out, these structures would potentially shade or disturb an area of tidal marsh/mudflat of up to 17,110 square feet along the shoreline, which would include installing up to 60 pilings (pre-cast concrete). In addition, two bridges are proposed, one over the western tidal slough and the other over the flood control channel next to Piper Lane (see Figures 5 and 9). The Vollmar report noted that populations of Mason's lilaepsis and Suisun marsh aster would be expected (although not initially identified) within the tidal slough/ freshwater marsh communities (see Figure 9) on the site. Because these two bridges would be constructed in habitats that may potentially support special-status plants, this would require surveys to determine the absence of any special-status plant populations at the bridge sites (when they have been determined during preliminary design). The presence of any of these plants would require relocation or replacement of the plants. By incorporating the pre-construction surveys into the project, potentially significant impacts to these special-status marsh plants would be avoided.

MITIGATION: After the two bridges have been sited and preliminarily designed, and prior to final design, botanical surveys shall be conducted to confirm the absence of special-status plants within any affected areas of tidal marsh/mudflat or tidal slough/freshwater marsh. If present, individual plants shall be relocated or replaced with replacement plants in a suitable location as nearby as possible on-site.

The following two mitigation measures were adapted from recommendations made in the Land Use Plan (Section IV.B), and would help enhance the habitat available to special-status species.

MITIGATION: Weed control activities shall be implemented *prior to* the construction of facilities at the Lauritzen Site to prevent the spread of weedy plant species into disturbed ground.

MITIGATION: Site-specific surveys shall be conducted prior to implementing weed control programs to identify special-status plant or animal species in the treatment area. Treatment methods and timing shall be adjusted accordingly to avoid adversely affecting the identified special-status species.

Effects on Wetlands

Constructing the pier, over-water building and two bridges described in Section 1.1 would result in the removal, shading and/or filling of an estimated ½ to 1 acre of wetland habitat, as delineated by Vollmar Consulting (2000) and verified by the U.S. Army Corps of Engineers (Finan 2001). This wetland impact includes:

- The pier -- approximately 14,000 square feet (SF) of overhang and requiring an estimated 40 pre-cast concrete pilings (approximately 0.3 acres of wetland affected);
- The over-water, interpretive/research building -- approximately 3,100 SF of overhang and requiring an estimated 10-20 pre-cast concrete pilings (approximately 0.07 acres of wetlands affected);
- The entry road bridge over the western tidal slough -- approximately 18 feet wide by 440 feet long, and requiring an estimated 48 pre-cast concrete pilings (approximately 0.2 acres of wetlands affected); and
- The trail and vehicle bridge over the flood control channel next to Piper Lane -- approximately 13 feet wide by 110 feet long, and requiring an estimated 4 pre-cast concrete pilings (approximately 0.03 acres of wetlands affected).

MITIGATION: The project would potentially remove, shade and/or fill approximately ½ to 1 acre of tidal wetlands, which would be mitigated by enhancing or creating approximately three (3) acres of tidal wetlands. The exact amount and location of wetland mitigation will be determined during permitting consultation with the U.S. Army Corps of Engineers, California Department of Fish and Game, and San Francisco Regional Water Quality Control Board.

MITIGATION: All construction activities that would affect wetland areas (including structures on the shoreline, bridges, and culvert work) shall take place outside the rainy season, *between April 15 and October 31*, or as otherwise determined by permitting agencies, and in compliance with the federal Clean Water Act.

MITIGATION: To ensure that no non-tidal wetland basins are inadvertently destroyed during construction, the full perimeter of all identified, non-tidal wetland basins (see wetland report by Vollmar, 2000) should be clearly delineated on plans for grading and construction and clearly flagged in the field prior to earthwork and construction.

Effects on Special-Status Fish

Several special-status fish species (see Table 2) could be potentially affected by the construction of the pier and other structures and the removal of sunken barges from the tidal marsh/mudflats. There are several species known to inhabit shallow waters which have been identified in the vicinity of Big Break, Marsh Creek and/or the San Joaquin/Sacramento River Delta (see Table 2, and a more detailed description in the LUP, Section III.C). These fish include: delta smelt (federal and state threatened); longfin smelt (federal and California Species of Special Concern); Sacramento splittail (federal threatened and California Species of Special Concern); green sturgeon (federal and California Species of Special Concern); steelhead (federally threatened and California Species of Special Concern); and chinook salmon (federally endangered or threatened, and state endangered species).

Of particular note are those fish which spawn nearby, including: the longfin smelt, which may be found in the Big Break region laying their adhesive eggs on marsh vegetation and roots; and the Sacramento splittail, for which the mouth of Marsh Creek is good habitat to lay their eggs over flooded vegetation and weed beds. The other fish primarily would be expected to use the Big Break estuary for foraging and refuge, and as a stopover for fish migrating to and from the Pacific Ocean (steelhead and chinook salmon).

The installation of piles, construction of shoreline structures, and removal of barges could result in inadvertent injury or mortality of fish, either through direct impact on fish or suffocation of eggs by stirring up sediment. This would be a temporary impact during construction only. Conducting construction and demolition during the non-breeding season would avoid or minimize these impacts to a less-than-significant level.

MITIGATION: All construction and demolition along the shoreline that would disturb the tidal marsh/mudflat areas and open water shall take place *between mid-July and October 1* to avoid impacts on egg-laying and juvenile migration of special-status fish species (delta smelt, long-fin smelt, Sacramento splittail, green sturgeon, steelhead and chinook salmon).

Table 2 Special Status Fish and Wildlife Species List

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS ¹	STATE STATUS ¹	OCCURRENCE ²
California black rail	<i>Laterallus jamaicensis</i>	FSC	CT/CFP	O
White-tailed kite	<i>Elanus leucurus</i>	-	CFP	O
Northern harrier	<i>Circus cyaneus</i>	-	CSC ³	O
Swainson's hawk	<i>Buteo swainsoni</i>	-	CT	P
Ferruginous hawk	<i>Buteo regalis</i>	FSC	CSC	P
Sharp-shinned hawk	<i>Accipiter striatus</i>	-	CSC ³	O
Cooper's hawk	<i>Accipiter cooperii</i>	-	CSC ³	O
Peregrine falcon	<i>Falco peregrinus</i>	Delisted	CE/CFP	O
Short-eared owl	<i>Asio flammeus</i>	-	CSC ³	P
Burrowing owl	<i>Athene cunicularia hypugea</i>	FSC	CSC	U
Long-eared owl	<i>Asio otus</i>	-	CSC ³	P
Yellow-breasted chat	<i>Icteria virens</i>	-	CSC ³	O
Tricolored blackbird	<i>Agelaius tricolor</i>	FSC ³	CSC ³	U
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSC	CSC	O
Suisun song sparrow	<i>Melospiza melodia maxillaris</i>	FSC	CSC	N
Yellow warbler	<i>Dendroica petechia</i>	-	CSC ³	O
California horned lark	<i>Eremophila alpestris</i>	-	CSC	P
Double-crested cormorant	<i>Phalacrocorax auritus</i>	-	CSC ³	O
Great blue heron	<i>Ardea herodias</i>	-	CDF ³	O
Great egret	<i>Ardea alba</i>	-	CDF ³	O
Snowy egret	<i>Egretta thula</i>	-	* ³	O
Black-crowned night heron	<i>Nycticorax nycticorax</i>	-	* ³	P
California red-legged frog	<i>Rana aurora draytonii</i>	FT	CSC,CP	N
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	FSC	CSC	U
Western pond turtle	<i>Clemmys marmorata</i>	FSC	CSC	K
Giant garter snake	<i>Thamnophis gigas</i>	FT	CT/CP	P
Pallid bat	<i>Antrozous pallidus</i>	-	CSC	P
Delta smelt	<i>Hypomesus transpacificus</i>	FT	CT	P
Longfin smelt	<i>Spirinichus thaleichthys</i>	FSC	CSC	P
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	FT	CSC	P
Green sturgeon	<i>Acipenser medirostris</i>	FSC	CSC	P
Steelhead	<i>Oncorhynchus mykiss</i>	FT	CSC	P
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FT/FE	CE	P

¹ Status definitions and governing agencies follows:

U.S. Fish and Wildlife Service

FE Listed as endangered by the Federal Government
 FT Listed as threatened by the Federal Government
 FSC Federal species of concern

California Fish and Game Commission

CE Listed as endangered by the state of California
 CT Listed as threatened by the state of California
 CSC Species of Special Concern
 CFP Fully Protected Species
 CP Protected Species

Other Codes

CDF California Department of Forestry - sensitive species
 * No special status but being tracked by CNDDDB

² Occurrence: O=observed during our surveys, K=known to occur, P=potential to occur U=unlikely to occur, N=no habitat potential or outside range

³ Rookeries or nesting only

Sources: East Bay Regional Park District and IBIS Environmental Services 2000 Wildlife Surveys at the Lauritzen Property, Contra Costa County, California.

Effects on Special-Status Wildlife

Construction activities would have the potential for impacts to several special-status bird and reptile species (see Table 2). The LUP proposes to construct buildings, parking, and outdoor activity areas in the two Recreation Units, and trails and an observation platform in the Natural Unit (see Figure 5).

No direct impacts on bird nests were identified based on the surveys conducted. Several nests of special-status birds were identified, but all were within the Special Protection Feature 5 (SPF-5), which is not proposed for development (Ibis 2000). These birds are the white-tailed kite (California fully protected species), California black rail (state threatened and California fully protected species), northern harrier (California species of special concern) and yellow-breasted chat (California species of special concern). All the identified nest sites are within the area designated by the LUP as Special Protection Feature number 5 (SPF-5, see Figure 3), which would serve as a buffer area between the nests and the new park facilities. Therefore, no direct impacts on bird nests were identified.

However, *indirect* impacts on bird nesting could be potentially significant. Construction and close human presence could disturb nesting birds, causing them to abandon a nest or to avoid previous nesting sites at the Lauritzen Site. There could also be indirect impacts on foraging by birds (within the grassland and tidal sloughs), which include the above mentioned special-status birds, as well as: the loggerhead shrike (California species of special concern), California horned lark (California species of special concern), and a number of more common birds such as the northern flicker, scrub jay, and American robin, etc. (see full description in the LUP, section III.C). The LUP attempts to minimize indirect impacts by leaving the eastern half of the Lauritzen site (SPF-5) as an undeveloped area, with trails only along its perimeter. The below mitigation measures would also be incorporated into the project to minimize (or avoid) impacts to bird foraging and nesting to a less-than-significant level.

Special-status reptiles include the western pond turtle (federal and California Species of Special Concern), which is known to occur on the Lauritzen Site (Ibis 2000). The giant garter snake (federally and state threatened species) is also believed to be potentially present on the Lauritzen Site because the U.S. Fish and Wildlife Service considers it to be highly suitable habitat. The particular combination of tidal sloughs and grassland next to one another makes this site suitable for giant garter snake. In addition giant garter snakes have been documented in 1998 near Sherman Island, 0.5 mile north of Big Break, and in the mid-1980s at the north end of the Antioch Bridge (Ibis, 2000; and California Natural Diversity Database).

Construction and park activities on the site could potentially injure these special-status

reptiles, which would be a potentially significant impact. The building of project facilities along the shoreline and in the tidal sloughs would also permanently remove or shade out wetland vegetation that provides habitat for these species (see also "*Effects on Wetlands*" above). The following mitigation measures incorporate the U.S. Fish and Wildlife Service's recommendations for how to avoid impacts to the giant garter snake, by construction scheduling and habitat replacement with suitable, in-kind habitat. These mitigation measures would reduce the potential impacts to giant garter snake to a level of less-than-significant. Due to the mitigation for the giant garter snake, the potential impacts on western pond turtle would also be mitigated to a level of less-than-significant.

MITIGATION: A wildlife biologist shall conduct nest surveys for white-tailed kite, California black rail, northern harrier, yellow-breasted chat, and other special-status bird species at the Lauritzen Site, during each nesting season, including 2002, until immediately prior to construction.

MITIGATION: If nests for white-tailed kite, northern harrier, California black rail, yellow-breasted chat, or other special-status birds are identified, nearby construction activities shall take place in the non-nesting season, *between August 1 and February 28*, to avoid disturbing nesting activities.

MITIGATION: To avoid disturbance of identified California black rail nests, the Special Protection Feature (SPF-5) shall be posted with signs to prohibit dogs, as per the protection afforded to nature study areas under EBRPD Ordinance 38.

MITIGATION: All public use facilities shall be sited no closer to identified nests of special-status birds than the recommended buffer distance determined by the California Department of Fish and Game and U.S. Fish and Wildlife Service. (Note: the current park site design already substantially achieves the desired buffer distances from the identified nests.)

MITIGATION: Construction activities within giant garter snake habitat shall be restricted to the period May 1 through October 1. This is the most active period for the snakes and direct mortality is decreased because snakes are expected to move more readily to avoid danger.

MITIGATION: Construction personnel shall receive (U.S. Fish and Wildlife) Service-approved, environmental awareness training, including giant garter snake identification.

- MITIGATION:** The project area shall be surveyed for giant garter snake 24 hours prior to construction. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If a snake is encountered during the surveys or construction, activities in the immediate area shall cease until appropriate corrective measures have been completed or it has been determined the snake would not be harmed.
- MITIGATION:** Prior to excavating or filling any dewatered habitat for giant garter snake, the habitat shall remain dry for at least 15 consecutive days after April 15.
- MITIGATION:** To prevent the direct take of giant garter snake during routine grass mowing, Park Staff shall set the mower blades to a height of at least six (6) inches.
- MITIGATION:** Approximately ½ to 1 acre of wetlands would be lost that provide potential, giant garter snake habitat. This would be mitigated by enhancing or creating tidal wetlands in an area of approximately 3 acres, and an adjoining area of upland located above the 100-year flood plain. (The 3-acre wetland mitigation is coincident with, and not in addition to, the wetland mitigation measure listed above.) The exact amount and location of mitigation areas will be determined during permitting consultation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, and San Francisco Regional Water Quality Control Board.
- MITIGATION:** Clearing for construction activities shall be confined to the minimum necessary area.
- MITIGATION:** During utility trenching on the Lauritzen Site, contractors shall avoid leaving steep-sided cuts on the *ends* of each trench, and shall instead leave an earthen ramp so that small wildlife could climb out. For public and wildlife safety, open trenches shall be surrounded by temporary construction fencing, and shall be filled or covered at the end of each working day.
- MITIGATION:** Future "field stations" that will be associated with the proposed educational and research programs shall be sited using the appropriate wildlife buffers and/or design considerations determined through consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

4.5 Cultural Resources

Introduction

The Big Break Regional Shoreline contains a few sites of historic and prehistoric remains from previous human occupation here, which include historic structures, archaeological resources and paleontological (fossil) resources (described in more detail below). Research suggests Native American occupation and use of the general Big Break area appears to extend over 5,000-7,000 years, and maybe longer. Other Native American occupation sites or burial mounds have also been identified in shoreline areas and sandy substrate in several areas of the Delta Region, including Jersey Island. Based on previous research, it is thought these other Delta mound sites were probably occupied during the Middle Horizon (ca. 200 B.C. - A.D. 100 to A.D. 500 - A.D. 700) and the Late Horizon (ca. A.D. 300), up to just prior to the historic period (ca. A.D. 1700) (Basin et al., pp. 4-5).

The project area appears to have been within the Julpun tribelet territory of the Bay Miwok or Eastern Miwok who occupied the area between Port Chicago and the mouth of Marsh Creek. *Chupcan* is the closest known ethnographic village, which appears to have been located at present-day Antioch. Research suggests that *Chupcan* was first documented by Spanish soldiers associated with the Captain Pedro Fages and Fray Juan Crespi expedition of 1772 (Busby et al., pp. 5-7).

European contact with Native Americans continued and increased over the subsequent decades due to European exploration, conflicts over land settlement, and attempts to convert the Native Americans to Christianity. Most of the Bay Miwok converts to Christianity were reportedly taken to Mission San Jose in present-day Fremont. Sickness and conflict with European settlers killed others. By the early 1800s, it appears the south shore of Carquinez Strait and Suisun Bay was essentially depopulated of Native Americans (Busby et al., pp. 5-7). The early- to mid-1880s were the beginning of the first significant period of European settlement of Big Break, the conversion of marshland to farmland, and the founding of local populations -- this history is briefly reviewed in the Land Use Plan, Section III.A.

The Park District hired several professional archaeologists, a paleontologist and an architectural historian to study the cultural resources here. These investigators thoroughly researched the available literature and completed several field reviews at Big Break Regional Shoreline. A historical architectural evaluation was conducted on-site by Mr. Ward Hill on May 4, 2000 (see *Historical Structures*, below). A second field review was conducted by BASIN Research Associates and PaleoResource Consultants at a previously known archaeological site (Site CA-CCo-538) on June 26, 2001 (see *Archaeological Resources* and *Paleontological Resources*, below). BASIN Research Associates also

conducted an archaeological field inventory of the Lauritzen Site on July 2, 2001, using randomly spaced transects within the Northern and Southern Recreation Units. At the Lauritzen Site, no prehistoric or historically significant archaeological resources were observed (Busby, et al., 2001, p. 15).

The CEQA Guidelines specifies that a project would have a potentially significant impact on a historic resource if the project would cause a substantial adverse change in the significance of the site. A "substantial adverse change" includes: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that significance of the historical resource would be materially impaired" (CEQA Section 15064.5[b]).

Historic Structures

The LUP addresses two historic structures at the Lauritzen Site, the water tower and the red cabin. The LUP proposes that the existing water tower near the shoreline be rehabilitated for use as an observation tower. This tower, approximately 50 feet tall and probably constructed in the mid-1940s, was evaluated by an Architectural Historian (Hill, 2000). The tower was determined to be *not* potentially eligible for the California or National Register of Historic Places because: it "does not appear to have been a significant local influence on the design of this (water tower) building type;" nor is it " a rare surviving example of its type in this area;" nor does it have "significant associations" with local history (Hill, pp. 5-6). This means the structure would not be considered a "historic resource" under the definition in the California Environmental Quality Act (CEQA), Section 15064.5. Nonetheless, the tower "appears to be of local historical interest" due to its unusual height and unique, heavy timber construction (Hill, p. 6). Therefore, if it is possible to make the tower safe for public use, the LUP proposes to rehabilitate and modify this structure to turn it into an observation tower. This would be considered a less-than-significant impact under CEQA due to the fact the tower is not considered a CEQA "historic resource."

The LUP proposes that the small, 4-room, red cabin on the site be demolished for public safety, because it is in a deteriorated condition with extensive dry rot. The cabin was evaluated by an Architectural Historian (Hill, 2000) and determined to be *not* potentially eligible for the California or National Register of Historic Places, because it lacks "historic integrity" and is not "a distinguished or exceptional example of its style or period or architecture" (ca. 1930s). Therefore, the building is not considered a "historic resource" under CEQA. Its demolition would therefore constitute a less-than-significant impact.

Archaeological Resources

Archaeological research and field reviews were conducted for Big Break Regional Shoreline. A field inventory of the Lauritzen Site by a professional archaeologist identified no prehistoric or historically significant, archaeological resources in the Recreation Units

(Busby, et al., 2001, p. 15). Therefore no potential archaeological impacts were identified due to construction in the Recreation Units. However, it is possible, that unknown archaeological materials could be uncovered during construction. If this were to happen, the Park District would follow its established protocol for appropriate treatment of these materials (see the mitigation measures listed below) so that potentially significant impacts would not occur.

The other subject of research and field review was a known archaeological site in the marshland of Big Break. The site has been catalogued by the State Department of Parks and Recreation as Site CA-CCo-538. Its location is not shown in this report or the LUP so it may be kept confidential for its protection.

Based on the field review and literature research, the investigators concluded that site CA-CCo-538 contains culturally significant, prehistoric and historic (EuroAmerican and Chinese) resources. The investigators found that: the site has the potential to yield information important to the prehistory and history of the state or the nation; it appears to retain integrity; and it is fifty years or older. These findings mean the site appears eligible for the California Register of Historic Resources (Busby et al., pp. 16-17). This finding means that the site would be considered a "historic resource" under the California Environmental Quality Act (CEQA, Section 15064.5).

The development proposals in the LUP would not cause any physical alteration at or immediately surrounding Site CA-CCo-538. (The Recreation Units at the Lauritzen Site would be located over a mile away.) Therefore, the development of the facilities at the Lauritzen Site would not cause any "substantial adverse changes" to Site CA-CCo-538, and therefore no potentially significant impact would occur.

However, with an increase in park users to the area, there could be an increased risk of park users finding Site CA-CCo-538, and inadvertently or intentionally removing or vandalizing the resources there. This would constitute a potentially significant impact. The investigators also noted that natural weathering and erosion are affecting the site. Natural forces will ultimately result in the destruction of the site, and the loss of information inherent in the cultural materials and their context (Busby et al., p. 18). The mitigation measures listed below would be incorporated into the project and minimize the likelihood of these impacts occurring, and lessen the impacts to a level of less-than-significant.

MITIGATION: Maintain the identified archaeological and paleontological sites in situ and maintain their confidentiality, as per the Park District Cultural Resources Policy (EBRPD Board Resolution 1989-4-124).

MITIGATION: Ongoing patrols of the known archaeological and paleontological sites shall be continued. At a minimum, the regular EBRPD helicopter patrol flights shall patrol this area.

MITIGATION: The Park District shall arrange to properly collect, map, and accession identified cultural resources that are exposed on the ground surface. Appropriate Native American consultants and the California Native American Heritage Commission shall be contacted to determine the appropriate disposition of Native American burial remains, and appropriate future management of Site CA-CCo-538.

MITIGATION: Historic and paleontological resources shall be considered as a component of the interpretive and educational program to be established at Big Break Regional Shoreline, as outlined in the Land Use Plan.

MITIGATION: If unanticipated cultural resources should be encountered during construction in the park, all ground-disturbing activities shall be halted within at least 50 feet until evaluated by an archaeologist, in accordance with state and federal law. This is a standard Park District protocol for protecting parkland archaeological sites (EBRPD Board Resolution 1989-4-124). Furthermore, if human remains were to be encountered during construction, the Park District policy requires consultation with the county coroner and Native American "most likely descendants," to determine the appropriate treatment of the remains, in accordance with state and federal law.

MITIGATION: During construction, all contractors shall abide by the "general conditions" (Article 22) in the EBRPD standard contract, regarding the protection of historic resources and human remains.

Paleontological Resources

Significant paleontological artifacts have also been identified in the marshlands. Specimens from the site have been the subject of prior scientific research in the 1980s by researchers from the University of California, Berkeley, Department of Anthropology (Richards and McCrossin 1991). The University of California museum has designated the site of collection of these artifacts as "UCMP V-87047." At that time, the researchers found two skulls that they suspect are of an extinct species of pronghorn antelope that once lived in the Big Break area.

Based on the proven, and possible future, scientific value of the fossils at Site UCMP V-87047, this finding lends support to the conclusion that this site should be considered a significant historical resource (Fisk 2001; Busby et al. 2001), and possibly a unique paleontological resource, under CEQA. Alteration or destruction of the site would therefore be considered a significant cultural resource impact.

The Land Use Plan for Big Break Regional Shoreline does not propose any alterations at or near the identified paleontological site. A field review of the Lauritzen Site did not identify any paleontological artifacts. However, with the increase in park users to the area, there could be an increased risk of park users finding, and inadvertently or intentionally removing or vandalizing the resources there. There is a particular concern that fossil hunters may try to collect the fossils to sell them. Natural weathering and erosion are also affecting the site. The mitigation measures listed above for archaeological resources would also serve to minimize the likelihood of these impacts occurring, and lessen the impacts to a level of less-than-significant.

4.6 Geology and Soils

The project would be considered to have a significant impact if it would: result in substantial erosion or loss of topsoil; or if it would expose people or structures to strong seismic ground-shaking or seismic-related ground failure, including liquefaction (see Environmental Checklist, Item VI). The geology and soils of the project area are described in the LUP, Section III.C. The project area has soils that suggest that, "a potential for liquefaction of the surficial deposits and subsequent damage to structures exists in the area if a strong earthquake occurs" (LUP, Section III.C, Geology). The LUP also notes that the probability of a large, damaging earthquake here is one of the lowest in the Bay Area. Nevertheless, structures constructed at the site would need to be designed to ensure public safety, and therefore would incorporate all applicable design standards of the Universal Building Code and applicable County and/or City building permit regulations. Compliance with these established standards are already anticipated as part of the design process, and would ensure that public exposure to seismic hazards would be less-than-significant.

Construction of the proposed park facilities would occur in an area of up to approximately 12 acres, and this has the potential to cause erosion and loss of topsoil. For a discussion of potential erosion impacts, please see Section 4.8, "Hydrology and Water Quality." Topsoil would be removed in potentially significant amounts where grading and clearing are necessary to accommodate the (up to 35,000-square foot) footprint of the indoor and outdoor facilities, as well as the entry road and parking areas (up to 2-1/2 acres). The potential loss of topsoil would be less than the total construction area because it would not be necessary to clear or grade that entire area. The exact area of earthwork cannot be determined until the final site design is developed at a later project stage. However, the aim of the Land Use Plan is to retain as much as possible of the 12 acres that is not built upon as unpaved open space. The topsoil that is removed would be stockpiled on-site and used as much as possible in all areas to be landscaped, as the topsoil will provide the best possible medium for plant growth. This will minimize the loss of topsoil from the site and lessen the impact to a less-than-significant level.

MITIGATION: All topsoil removed during major earthmoving work shall be stockpiled on site within one of the Recreation Units, in a location away from all natural drainages, water bodies, designated wetlands, and sensitive wildlife habitat. The stockpile shall be immediately enclosed or covered; or seeded with native seed and watered at least once daily. Necessary erosion control measures shall be used around the stockpile as needed to prevent erosion. The topsoil shall be re-used during final grading as a top dressing for all landscaping areas.

4.7 Hazards and Hazardous Materials

The small red cabin on the site contains lead paint, and asbestos in the window sealant (Baseline 1998). Demolition of the cabin could result in the potential release of these health hazards into the environment. To avoid or minimize this potential impact, a mitigation measure is included below to ensure compliance with the applicable environmental health regulations.

MITIGATION: During demolition of the red cabin, lead paint and asbestos-containing materials shall be abated and disposed of in conformance with the established environmental health standards of all relevant regulatory agencies, including: Cal/OSHA (California Occupational Safety and Health), California Environmental Protection Agency, and the Bay Area Air Quality Management District. Asbestos removal shall be conducted by a certified asbestos-removal contractor.

CEQA specifies that a project will cause a significant impact if it would "expose people or structures to a significant risk of loss, injury, or death involving wildland fires" (Section 3.0, Environmental Checklist, Item VII, Hazards and Hazardous Materials). Several homes are located near potentially flammable, open grasslands along the south edge of the Lauritzen Site. However, the Park District finds that there would be a *less-than-significant* risk of wildland fires because the LUP does *not* propose any park uses (e.g. camping) here that would allow open fires; and because the Park District finds that the weed control recommendations (LUP, Section IV.B, Resource Management, *Vegetation and Wildlife Management*) and fire prevention recommendations (LUP, Section IV.E, Public Safety, *Fire and Rescue*) described in the LUP would adequately mitigate the fire intensity and risk caused by wildland fires at the site. The site would also be adequately served for fire suppression by the Oakley Fire Department, with a 5-minute response time, and support and equipment from the East Bay Regional Park District Fire Department (see LUP, Section III.J, Public Safety).

There is apparently an abandoned ground water well located in the south east corner of the Lauritzen Site that was associated with a former residence and barn there (Tetra Tech 1997, p. 24). This well location should be confirmed and properly closed off if it presents a public safety hazard. Closing off the well would include cracking the well casing and filling the well with grout, in compliance with Contra Costa County standards.

MITIGATION: The existence or absence of the suspected ground water well near the former barn (southeast corner of Lauritzen Site) shall be confirmed and, if required for public safety, properly closed off in compliance with Contra Costa County standards.

4.8 Hydrology and Water Quality

Construction Impacts

CEQA specifies that a project will cause a significant impact if it would "violate any waste discharge requirements" (Section 3.0, Environmental Checklist, Item VIII, Hydrology and Water Quality). The construction of a shoreline pier, buildings and barge removal would have the potential for stirring up underwater sediments and clouding the water, affecting short-term water quality. Grading and other earthmoving work would have the potential for erosion and siltation of on-site water bodies (tidal sloughs and Big Break estuary).

The Park District intends to conduct all construction and barge removal in full compliance with all applicable water quality and waste discharge requirements. Based on a preliminary discussion with the U.S. Army Corps of Engineers (Corps), the Park District anticipates that the proposed work would be fully addressed and covered under a programmatic permit for these types of minor projects, as authorized by the Corps' "nationwide permit" program. This program imposes conditions on the construction work including: conducting work during the summer low tide months and appropriate construction practices to minimize release of construction materials into the water. Permit review also includes input and requirements of the California Department of Fish and Game, and the Regional Water Quality Control Board. Full compliance with the conditions imposed by the nationwide permit would ensure the project is in compliance with the federal Clean Water Act. Therefore, the temporary water quality impacts would be less-than-significant.

MITIGATION: The shoreline construction and barge removal shall be conducted in full compliance with the conditions imposed by the nationwide permit program of the U.S. Army Corps of Engineers and other state and local regulatory programs, to ensure no violations of waste discharge requirements would occur.

MITIGATION: Standard EBRPD contract specifications regarding water pollution shall be followed by all contractors (Standard Contract, General Conditions, Article 21). This specifies that the contractor shall submit and adhere to a written, water pollution and erosion control program. The Inspector shall have the authority to direct the contractor to perform work in small units or using modified construction procedures when necessary, to provide effective water pollution control.

MITIGATION: At a minimum, the water pollution and erosion control program shall include the installation of silt fencing on the edge of construction sites located next to the tidal sloughs and Big Break shoreline, and the use of other erosion control methods at off-site storm drains and on-site natural drainages, when necessary in the opinion of the EBRPD Construction Inspector.

MITIGATION: Contractors shall be required to abide by the following "Supplementary Conditions" in their construction contract, when working in or adjacent to water bodies: construction equipment and vehicles shall be properly maintained to minimize fluid leakage; and containment booms and absorbent mats shall be kept on site to contain any petroleum products that are inadvertently discharged during construction.

Floodplain Impacts

CEQA specifies that a project will cause a significant impact if it would "place within a 100-year flood hazard area structures which would impede or redirect flood flows" (Section 3.0, Environmental Checklist, Item VIII, Hydrology and Water Quality). This project would place parking lots, outdoor recreation facilities, and several buildings in the Recreation Units that would be located within the 100-year flood zone. The parking lots and outdoor facilities would have few standing facilities (e.g., light poles, picnic tables), and so would not impede or redirect flood flows substantially. All buildings would be built on pilings, so that they too would not impede or redirect flood flows significantly. The project would be built in compliance with the City of Oakley's Flood plain Ordinance and permitting requirements (see also Section 2.4, Permits Needed). The impact on flows within the 100-year flood zone would therefore be less-than-significant.

4.9 Land Use and Planning

The applicable regional and local land use plans are discussed in the LUP (Section III.B). The existing Contra Costa County General Plan (1991) shows a "Delta Recreation" land use designation for Big Break Regional Shoreline. The County's General Plan is the

applicable municipal planning document that addresses all of the open water area of the parkland. The Lauritzen Site is actually located within the City of Oakley, but the city is in the midst of preparing their General Plan update, so the County's General Plan is currently the guiding document within the City. The county zoning for the parkland includes Agriculture (A-2) zoning for the marsh and open water, and Heavy Industry (H-I) at the 40-acre Lauritzen Site. The park and recreation land uses proposed for the Lauritzen Site may, therefore, be determined to be non-conforming uses. This discrepancy between the zoning and the General Plan designations may mean that the Park District would be required to obtain a Conditional Use Permit. Obtaining this permit would ensure that this zoning conflict would be a less-than-significant impact.

4.10 Noise

Introduction

The Park District hired a professional noise consulting firm, Charles M. Salter Associates, to conduct an Environmental Noise Study to evaluate the impacts of the project on surrounding land uses. The *CEQA Guidelines* specifies that a project would have a significant impact if it were to: expose persons to noise levels above the local standards; expose persons to excessive groundborne vibration; cause a *permanent* increase in ambient noise levels; or cause a temporary or periodic increase in ambient noise levels (see also Section 3.0, *Environmental Checklist*).

The County Noise Element has "Land Use Compatibility Guidelines" that serve as the local standards for community, exterior noise environments. A commonly used standard to measure ambient noise is the "Day/Night Average Sound Level," abbreviated " L_{dn} ." The County has established that the "normally acceptable" noise level for *single-family residential areas* is an L_{dn} measurement of 60 decibels (60 dBA) or less. For *neighborhood parks*, the County guidelines specify a normally acceptable noise limit to be an L_{dn} of 70 dBA or less.

Ambient Noise Levels

The existing ambient noise levels were measured by the consultants within the proposed Recreation Units and Access Corridor. The dominant noise sources at the Lauritzen Site are vehicular traffic on Highway 4 and Big Break Road. Also observed is the noise from the Foundation Constructors yard (maximum noise levels of 55-64 dBA), which operates weekdays from 8 a.m. to 5 p.m. Noise from boat activity from the Big Break Marina, the San Joaquin River, and along the shoreline (fishing) generated maximum noise levels measured at 52-57 dBA along the northern shoreline. Two continuous 24-measurements and four short-term, 15-minute measurements were made in the Recreation Units and

Access Corridor. These measurements were correlated and averaged out to calculate the existing, ambient "Day/Night Average Sound Level" (L_{dn}) at the Lauritzen Site, which ranges from 51-59 dBA.

Potential Noise Sources and Impacts

In general, the loudest noise impacts associated with this project would be caused by construction. This noise would be temporary and the impacts could be lessened during construction with the mitigation measures listed below. Normal park activities would not exceed the County's noise standards or otherwise cause significant noise impacts, as described below. Note: the noise generated by the project is expressed below in three ways: in terms of "maximum noise level" using "A-weighted decibels" (dBA); in terms of an average noise level over time, the "average hourly noise level" using the symbol " L_{eq} "; and in terms of noise levels averaged over a 24-hour period, using the "day/night average sound level" or L_{dn} .

Park activities that would generate noise include outdoor park activities, building equipment (e.g., air conditioning), traffic, and parking lot noise. Outdoor park activities, such as picnicking and use of the outdoor gathering area (e.g., gathering spot for school groups or occasional, larger groups for special events, fundraisers, etc.) were calculated to have an (L_{dn}) of 47 dBA or less at the nearest Vintage Parkway residences, assuming most of these facilities are concentrated in the Northern Recreation Unit and oriented away from the nearest residences. Building equipment of the type used on facilities proposed in the LUP (including exhibit areas, meeting rooms, classrooms, research laboratories, offices, gift shop, and restrooms) would generate noise, but would be designed and oriented to minimize noise exposure to neighbors. The noises generated by outdoor activities and building equipment would be designed to not exceed the County's L_{dn} noise standard of 60 dBA, so they would constitute less-than-significant impacts.

In the parking areas and access corridor, the loudest noises would be from cars and buses passing by. Cars starting and doors closing in the parking lots could generate a maximum noise level of 43-53 dBA. The noise consultants calculate that, based on the site layout, the "average hourly noise level" (L_{eq}) generated by car pass-bys on the access road and other parking lot activity would be an L_{eq} of 58 dBA at the nearest residences. The "Day/Night Average Sound Level" would be an L_{dn} of 47-53 dBA, which is below the County's "normally acceptable" L_{dn} noise standard of 60 dBA. The traffic noise combined with other activity noise would increase existing L_{dn} by less than 5 dB, which constitute a less-than-significant impact.

During construction, equipment that would create temporary noise would include earth-moving tractors, hand-held power tools, pile-driving equipment, electrical generators, delivery trucks, and similar vehicles and equipment. Construction activities typically can

generate a maximum noise level of up to 80-90 dBA, measured 50 feet away. Properly muffled equipment can moderately attenuate these noise levels. It is anticipated that the louder activities would be from construction of the bridges and new access road, and could result in maximum noise levels of up to 70-80 dBA at the nearest residences. Typical Park District construction hours are on weekdays from 7 a.m. to 7 p.m., except under special circumstances. Construction noises would be audible and may cause short-term elevated noise levels. However this impact would be temporary, and, with the following mitigation measures, would be considered a less-than-significant impact.

MITIGATION: Noisy, stationary construction equipment shall be located as far as possible from nearby residences.

MITIGATION: All construction equipment shall be in good working order and mufflers regularly inspected for proper function.

4.11 Public Services

EBRPD finds that the District's and other local police and fire services described in the LUP (Section III.J, Public Safety) would provide adequate police and fire protection for Big Break Regional Shoreline. EBRPD maintains a staff of fully equipped and professionally trained police officers and fire fighters, in addition to its park ranger staff. EBRPD also participates in countywide and state, fire and mutual aid systems. It is therefore not anticipated that any new police or fire facilities would need to be built in order to serve this parkland. Therefore, the increased need for public services would have a less-than-significant impact on the environment.

4.12 Traffic

Introduction

The impacts of the project on local roadways were evaluated by professional traffic engineers from Fehr & Peers Associates, Inc., with the oversight of City of Oakley engineering staff, and using standard industry traffic modeling techniques. The results of the Transportation Impact Study (Fehr & Peers, July 2001) show that the traffic generated by the project would not be of a sufficient volume to significantly impact local roadways (results summarized below, *Impact of Project Traffic*). There is sufficient capacity on the existing and planned local roadways to accommodate the project traffic without roadway traffic deteriorating to unacceptable levels of service. Therefore, the project traffic would cause a less-than-significant impact.

The California Environmental Quality Act (CEQA), "Environmental Checklist" (see Section 3.0) specifies that a project would have a significant traffic impact if it would generate a traffic volume that either: exceeds the capacity of the local roadways; exceeds an intersection "level-of-service" standard; interferes with air traffic; creates a traffic hazard due to a design feature; restricts emergency access; does not provide sufficient parking; or conflicts with adopted transportation plans.

The Park District believes the project provides sufficient parking with 250 spaces, based on the proposed park activities, and Park Staff experience with similar facilities in the Park District. The project also would not affect air traffic and would not create any design feature that would either create traffic hazards or restrict emergency access. Finally, the bicycle and pedestrian improvements recommended in the LUP are in conformance with the *Oakley Parks Masterplan*.

Therefore, the following discussion focuses on the intersection level-of-service (LOS), a rating which indicates both whether the intersection is operating efficiently, and whether the local roadways are operating within their capacity to handle traffic flow (Note: the LOS standard for signalized intersections set by the City of Oakley and Contra Costa County is LOS "D" or better.)

Project Traffic

The anticipated park activities were analyzed to estimate what volume of vehicle traffic would be generated by the project per day and during peak travel periods. The park activities would include: visits to the interpretive facilities; drop-in picnicking; staging for trips on the Big Break Regional Trail; birdwatching; small boat launching; fishing; university research programs; environmental education classes; park maintenance and deliveries.

The traffic engineers were able to roughly estimate the volume of traffic that these activities would generate based on traffic volumes generated by other similar park facilities already operating in the East Bay Regional Park District. Traffic was estimated by using a methodology developed from a 1997 Districtwide, "Traffic Background Report," and the estimates were field-verified by conducting a count of all traffic entering and leaving Coyote Hills Regional Park in Fremont (for a period of 6 days).

The methodology from the 1997 Background Traffic Report operates by taking a parking lot of a given size, and multiplying the number of parking spaces by the number of times the parking space will "turn over" on a typical, Summer Sunday (typically the busiest Park day). The 1997 Background Traffic Report provided data on parking turnover from day-long parking surveys of three (3) Regional Parks. Fehr & Peers averaged this data and concluded that an appropriate parking turnover rate to assume for Big Break Regional Shoreline would be approximately 1.9 cars per parking space, per day (Fehr & Peers, p. 13).

In the case of the Big Break Regional Shoreline, a parking capacity of 250 spaces is assumed. Therefore, the total number of cars per day is estimated at approximately 475 (250 x 1.9) cars per day, on a typical Summer Sunday. Therefore, the number of total *vehicle trips* would be estimated at up to, approximately 950 trips per day, on a typical Summer Sunday. On a weekday, the project traffic volume was estimated at up to, approximately 428 trips per weekday. These traffic volumes were verified by conducting a traffic count at a similar type of park facility, Coyote Hills Regional Park -- at which the maximum traffic volume was approximately 850 vehicle trips per Sunday, and approximately 450 trips per weekday. Therefore, Staff concluded that assuming a 950 trips-per-Sunday volume for Big Break Regional Shoreline would be a conservative estimate, and would be appropriate for impact analysis. It is likely that actual traffic volumes would be lower during cold or rainy weather and mid-day on weekdays.

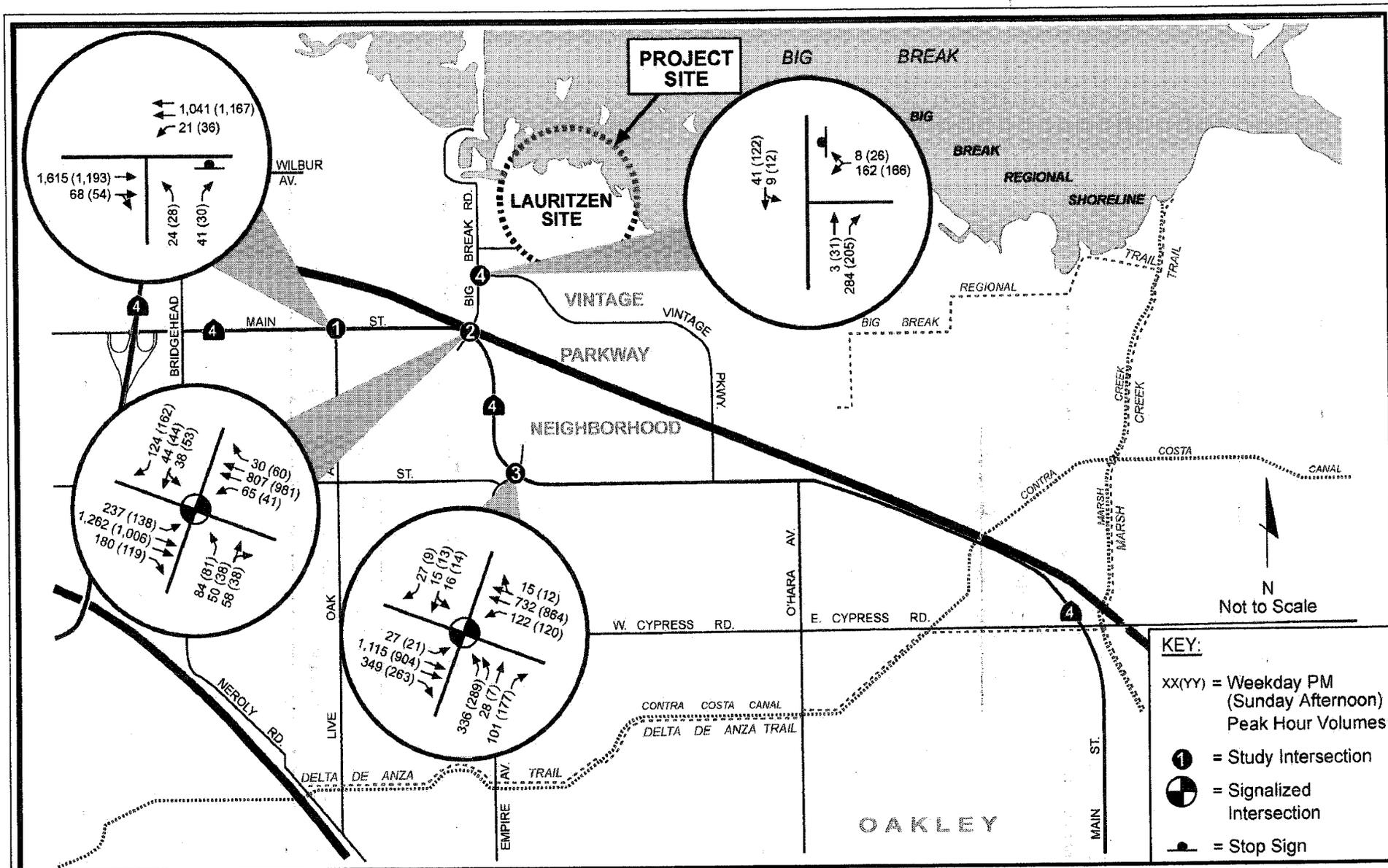
Based on a daily traffic volume of 950 trips, and based on observations of traffic at other parks, Fehr & Peers estimated that the "peak hour" (highest volume during one hour) would occur on Summer Sunday afternoons. The Sunday peak volume was estimated at up to, approximately 95 trips per hour (Sunday afternoon peak). Additionally, Fehr & Peers estimated the project traffic that would be generated during the peak commuting hour on local roadways, on a weekday afternoon -- up to, approximately 33 trips per hour (weekday afternoon peak).

Impact of Project Traffic

Figure 11 shows the intersections and roadway network used in the analysis. Table 3 shows the *levels of service* (LOS) at all the intersections, which were derived from a computer traffic model. All the intersections shown in Figure 11 currently operate at LOS A, which is the best rating, indicating smooth traffic flow and roadways operating within their capacity. However one left turn movement -- from northbound Live Oak onto westbound Main Street -- currently operates poorly, and is rated LOS F, indicating a long waiting time (estimated at greater than 50 seconds). The City of Oakley is aware of this poor LOS rating and is reportedly planning to signalize this intersection in the near future (Fehr & Peers, p. 14). The Park District is assuming that the proposed signalization will improve the Main/Live Oak intersection to the City standard of LOS D or better. The Park District assumes for this traffic analysis, that the intersection will operate at LOS D or better by the time the Big Break project is built.

The numbers in Figure 11 show the combined ("existing plus project") traffic volume from the project-generated traffic, added to the existing traffic volumes on local roadways. The numbers in the figure are shown in pairs, representing the *peak hour* volumes that would be crossing each intersection during 1.) the weekday afternoon peak hour, at commute time, and 2.) during a Sunday afternoon peak hour (the numbers shown in parentheses). These two "peak hours" represent the times when the highest volumes are typically experienced on local roadways and at Park District facilities, respectively. Therefore, the traffic volumes during these peak periods are good, conservative indicators of measuring the maximum traffic impact that could potentially occur.

As shown in Table 3, the LOS at each intersection changes only minimally when the project's peak hour traffic is added. Due to the relatively small volume of traffic that would be added by the project, each intersection experiences only a slight additional delay (less than one second). The LOS remains at a rating of A for all intersections except Big Break/Vintage Parkway, which would be changed from A to B during the Sunday afternoon peak hour (shown in Table 6 as "AN Peak Hour"). A change from LOS A to B represents only a minimal change in LOS, and the intersection would not exceed the LOS standard of D set by the City of Oakley and Contra Costa County. Therefore, the project would cause a less-than-significant impact on level-of-service.



Source:
FEHR & PEERS ASSOCIATES, INC. JULY 2001

Initial Study - Figure 11
EXISTING PLUS PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES & LANE CONFIGURATIONS

Big Break Regional Shoreline
Oakley, Contra Costa County, California

Table 3
Estimated Change in Intersection Levels of Service

Intersection	Existing				Existing Plus Project			
	PM Peak Hour ¹		AN Peak Hour ²		PM Peak Hour ¹		AN Peak Hour ²	
	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS
Signalized								
2. Main/Big Break	0.52	A	0.47	A	0.52	A	0.49	A
3. Main/Empire	0.54	A	0.46	A	0.54	A	0.46	A
Unsignalized⁴								
1. Main/Live Oak	2.9 (>50)	A (F ⁵)	1.8 (>50)	A (F ⁵)	3.1 (>50)	A (F ⁵)	1.9 (>50)	A (F ⁵)
4. Big Break/Vintage	3.3 (9.7)	A (A)	3.9 (10)	A (A)	3.3 (10.0)	A (A)	3.9 (10.9)	A (B)

Notes:

1. PM peak hour is one hour between 4:00 and 6:00 PM on a weekday.
2. Afternoon (AN) peak hour is one hour between 3:00 and 5:00 PM on a Sunday.
3. Volume-to-capacity ratio (V/C) calculated for signalized intersections and delay per vehicle (seconds) calculated for unsignalized intersections.
4. Delay and LOS at unsignalized locations reported for total intersection. Worst-case movement results provided in parentheses.
5. The worst-case movement operating at LOS F is the northbound left-turn off of Live Oak Avenue onto westbound Main Street.

Source: Fehr & Peers Associates, July 2001.

Cumulative Traffic Impact

Fehr & Peers also evaluated the "cumulative" traffic impact of the project. CEQA defines "cumulative impacts" as, "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, Section 15355). A *significant* cumulative impact would occur if a project were to "exceed cumulatively a level-of-service standard established by the county congestion management agency" (*Environmental Checklist*, Section 3.0 of this document). Oakley's and Contra Costa County's level-of-service (LOS) Standard is LOS D or better.

A relevant consideration was which other projects should be included in determining the cumulative impact. The CEQA Guidelines advises that the other projects that should be included are, "other closely related past, present, and reasonably foreseeable probable future projects" (CEQA Guidelines, Section 15355). Fehr & Peers resolved this question by using the development projects in the City of Oakley's General Plan (currently being created) as an approximation of the "reasonably foreseeable probable future projects." Oakley's General Plan includes anticipated development in the City through the year 2025.

Therefore, the cumulative traffic impact was estimated by adding the Big Break project traffic volume (see *Project Traffic* above) onto the traffic volume that would be generated by Oakley development projects up to the year 2025. The City's estimated 2025 traffic volumes were available from its "Long Range Circulation Plan (6/19/00 Administrative Draft). The City's 2025 traffic volumes took into account two proposed roadway improvements that will affect traffic patterns in the Oakley area in 2025: the proposed construction of a four-lane expressway as a highway bypass from Highway 4 to Balfour Road in Brentwood; and the proposed widening of Main Street through Oakley to six lanes west of Empire Avenue, and to four lanes east of Empire Avenue.

Table 4 shows the results of a cumulative impact analysis run on a computer traffic model. As shown in Table 4, the LOS at each intersection changes only minimally when the project's peak hour traffic is added (on either a Sunday or weekday). The "Cumulative Plus Project" traffic results in a LOS of A or B for all intersections. None of the intersections would exceed the LOS standard of D. Therefore, the Big Break project, when added to all other reasonably foreseeable projects, would cause a less-than-significant, cumulative traffic impact.

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Table 4 Estimated Change in Cumulative Intersection Levels of Service								
Intersection	Cumulative (in 2025)				Cumulative Plus Project (in 2025)			
	PM Peak Hour ¹		AN Peak Hour ²		PM Peak Hour ¹		AN Peak Hour ²	
	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS	V/C or Delay per Vehicle (seconds) ³	LOS
Signalized								
1. Main/Live Oak	0.52	A	0.38	A	0.52	A	0.39	A
2. Main/Big Break	0.58	A	0.44	A	0.59	A	0.46	A
3. Main/Empire	0.67	B	0.57	A	0.67	B	0.57	A
Unsignalized⁴								
4. Big Break/Vintage	5.0 (11.8)	A (B)	3.6 (10.6)	A (B)	5.1 (12.3)	A (B)	3.7 (11.4)	A (B)
<p>Notes:</p> <ol style="list-style-type: none"> 1. PM peak hour is one hour between 4:00 and 6:00 PM on a weekday. 2. Afternoon (AN) peak hour is one hour between 3:00 and 5:00 PM on a Sunday. 3. Volume-to-capacity ratio (V/C) calculated for signalized intersections and delay per vehicle (seconds) calculated for unsignalized intersections. 4. Delay and LOS at unsignalized locations reported for total intersection. Worst-case movement results provided in parentheses. 								
<p>Source: Fehr & Peers Associates, July 2001.</p>								

4.13 Utilities and Service Systems

CEQA specifies that a project would have a significant impact if it would "Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;" or "Require or result in the construction of new water or wastewater treatment facilities;" or would cause the local municipal water supplier, wastewater treatment provider, or landfill to exceed its capacity (Section 3.0, Environmental Checklist, Item XVI, Utilities and Service Systems).

The LUP proposes the construction of a biological water treatment system that would require the clearing of approximately 1,000 square feet of grassland within the proposed Northern Recreation Unit (see Section 1.1, Project Description). The impacts on grassland habitat are addressed above in Section 4.4. Although it would be able to treat wastewater, the water output from the system would most likely be disposed of via a municipal sewer line for final treatment. The main intent of the biological water treatment system would most likely be for educational purposes. There would be no further environmental impact, aside from that discussed in Section 4.4.

In regard to service demands, the Park District finds that the project would be of a size and type that would create a *less-than-significant demand* on the municipal water supplier, wastewater treatment provider, and landfill provider. Although exact estimates of demand are not possible, Park District staff estimate that the facilities proposed in the LUP (at full build-out) would be consistent with the service demands of, perhaps, several residential homes, or a small city park or small community center. The total building square footage would be no more than 35,000 square feet, which includes all meeting rooms, public spaces, restrooms, permanent exhibits, maintenance and utility rooms. In preliminary discussions with service providers, Park District staff were not notified of any potential exceedances over their current ability to provide water, wastewater and solid waste disposal services (Bowers 2000, Williams 2000, Nejedly 2001). Park District staff have identified no aspects of the proposed park activities or size of the facility that would suggest an unusually large demand for services, so it is estimated there will be a less-than-significant impact on these service systems.

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Attachment A

**REVISION SHEET FOR THE
INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION
FOR THE BIG BREAK REGIONAL SHORELINE LAND USE PLAN**

The following changes are hereby added to the August 17, 2001 "Initial Study and Proposed, Mitigated Negative Declaration." Locations of changes are written in **bold**. Additions are indicated with underlining, and deletions are indicated with ~~strikeout~~ text.

**Section 1.2 and Section 4.4
(Additional Mitigation for Special-Status Fish and Wildlife)**

- At the time the water tower is modified for public use, barn owl boxes shall be installed in the Special Protection Feature 5 (the eastern half of the Lauritzen Site), to replace barn owl habitat. The number of boxes shall be determined by estimating the number of breeding owl pairs, and shall be located by a qualified Park District biologist.

**Section 1.2 and Section 4.7
(Mitigation for Hazardous Materials)**

- The existence or absence of the suspected ground water well near the former barn (southeast corner of Lauritzen Site) shall be confirmed and, if it is not feasible to re-use the well, as required for public safety, it shall be properly closed off in compliance with Contra Costa County standards.
- Prior to demolition of the red cabin, limited soil sampling for lead and pesticides shall be conducted along the dripline. During demolition of the red cabin, lead paint, contaminated soil, and asbestos-containing materials shall be abated and disposed of in conformance with the established environmental health standards of all relevant regulatory agencies, including: Cal/OSHA (California Occupational Safety and Health), California Environmental Protection Agency, and the Bay Area Air Quality Management District. Asbestos removal shall be conducted by a certified asbestos-removal contractor.
- A program of limited soil sampling for agricultural pesticides shall be conducted on the Lauritzen Site, based on guidance from the Department of Toxic Substances Control (DTSC). If contaminated soil is detected at inappropriate levels, one or several standard, soil remediation activities shall be conducted: on-site treatment of the soil; excavation and trucking off-site to an appropriate disposal facility; and/or capping in place with clean fill; as well as implementation of a worker safety plan.

All remediation shall be conducted with the approval of DTSC, the Regional Water Quality Control Board, and/or other relevant regulatory agencies.

Big Break Regional Shoreline Land Use Plan

October 16, 2001



East Bay Regional Park District

**Big Break
Regional Shoreline
Land Use Plan**

Approved: October 16, 2001

Resolution No: 2001-10-244

**Planning/Stewardship/GIS Services Department
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605
(510) 635-0138 ext. 2320**

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Big Break Regional Shoreline Land Use Plan

Big Break
Regional Shoreline

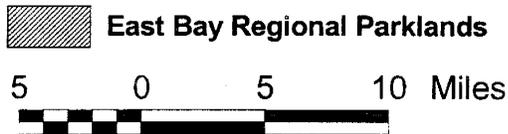
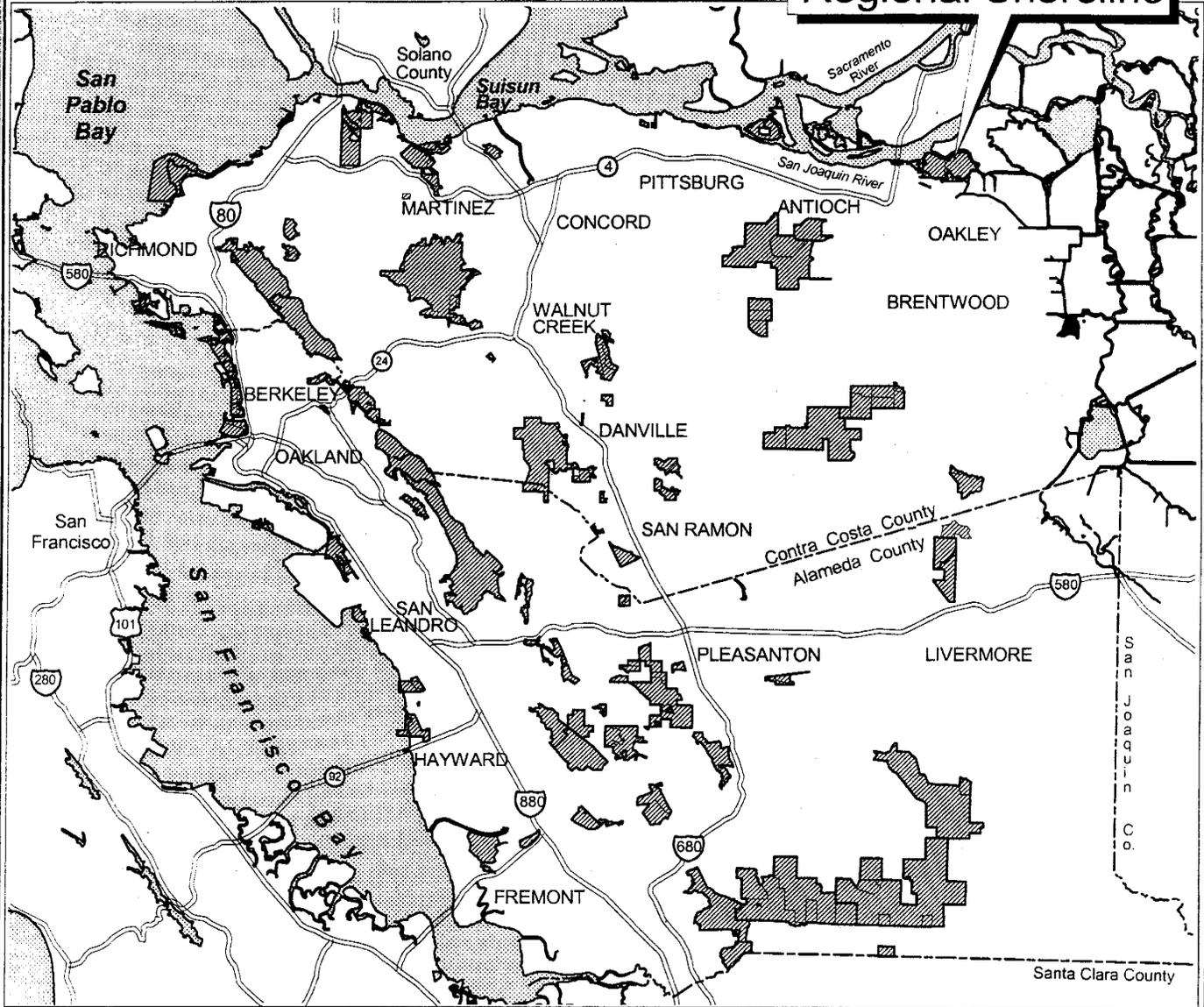
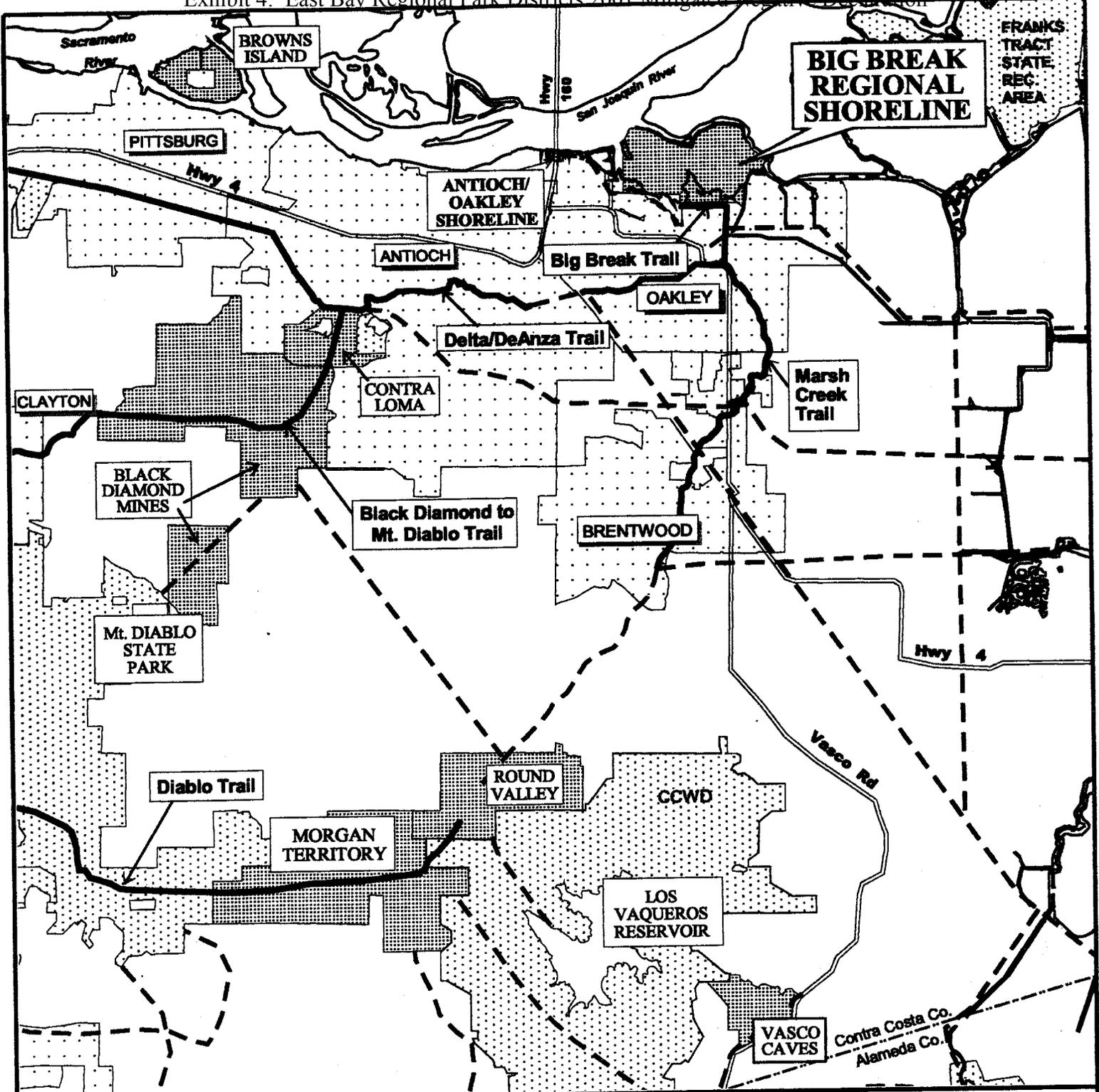


Figure 1
LOCATION MAP

Big Break Regional Shoreline
Oakley, Contra Costa County, California



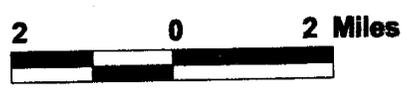
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-  EBRPD Parkands
-  Misc. Public Lands
-  Incorporated City Limits

-  Existing Regional Trails
-  Selected Roads

-  Proposed Regional Trails
EBRPD Master Plan



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Figure 2
VICINITY MAP
 Big Break Regional Shoreline
 Oakland, Contra Costa County, California

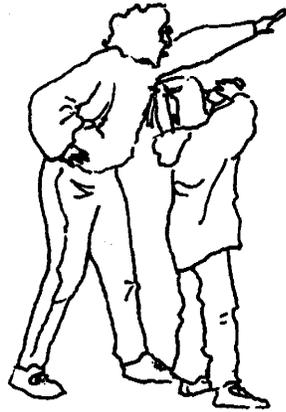
I. INTRODUCTION

A. Site Description



Big Break Regional Shoreline and Project Area

Big Break Regional Shoreline is a part of the great 1,680 square mile San Francisco/San Joaquin Delta estuary in Northern California. The water flowing past Big Break through the State's two greatest rivers, the Sacramento and San Joaquin, drains half of California and creates the largest estuarine environment on the Pacific coast. This area is also referred to as the "Inland Coast". The



rivers, dredged as deep water channels, carry constant shipping traffic from the Pacific Ocean to Stockton and Sacramento. The force of the rivers is tremendous and is partially responsible for Big Break's unique physical shape and condition, which will be discussed in the History section. Big Break, a small bay or estuary at the edge of the San Joaquin (See Figures 1 and 2), is a tidal part of the Delta, lying in the zone where salty sea water meets the fresh mountain snow melt and the runoff from the Sierra Nevada mountains. The mixing of salty and fresh water produces an "edge effect" for increased habitat and species diversity. It makes Big Break a fine home or stop-over spot for a wide variety of species, particularly birds and fish. Big Break has a significant number of listed species because of long term water diversions and loss of habitat throughout the Delta which has adversely affected the native plants and wildlife.

Big Break Regional Shoreline is not officially open to the public because regional recreational facilities have not been constructed, but the bay has been used by boaters, bass fishermen and hunters for years because they have rights to use navigable waters of the public domain. Currently trail users travel just outside the border of the parkland on the adjacent Big Break Regional Trail through the Ironhouse Sanitary District and catch glimpses of the estuary across the parkland's marshes. For those looking forward to visiting this new public parkland, the cool marine breezes in the summer, constant bird songs from the marshes, and escape from the urban landscape will be an enjoyable experience. (See Figure 3)

In addition to its open water and wetlands, the parkland also includes 40 acres of upland near Big Break Road (see Figure 4). Most of this area is within the 100 year flood plain, but has been inhabited since the 1950s. This area is referred to as the "Lauritzen Site." It is named after the former owner, Howard Lauritzen, who founded the adjacent marine construction and salvage business. He left numerous old barges and pilings in the mud around the upland. This area has turned into an unusual wetland area as aquatic plants have grown over and seemingly connected the decaying barges. Over the years, some have turned into islands, others are hazardous marine "sculptures", all are naturalized vegetation and wildlife areas.

The Big Break estuary is located along the edge of the recently incorporated City of Oakley in Contra Costa County. Big Break is a special Delta environment, unlike any other regional parkland, in the 93,000 acre East Bay Regional Park District. The majority of the parkland has been created from two large acquisitions, the former Porter Ranch (acquired in 1995) and Lauritzen parcel (or Big Break Partners, acquired in 2000).

The project area of the Land Use Plan is confined to the parkland acreage of the Porter and Lauritzen parcels (1,648 acres). It does not include the nearby Big Break Marine.

Adjacent Neighbors

Big Break is located in eastern Contra Costa County in an area that is experiencing rapid suburban growth. The parkland is surrounded by a variety of land uses. To the north, the parkland adjoins the San Joaquin River and Dutch Slough and Jersey Island, a future Ironhouse Sanitary District (ISD) sanitary waste disposal area which serves as an open space buffer that helps protect the parkland from strong river flows. To the west of Big Break is privately held land, with Foundation Constructors Incorporated (FCI) as the park's adjacent neighbor. Across Big Break Road from FCI is the DuPont property which includes the Big Break Marina and the former DuPont plant site. Along the DuPont shoreline are marshlands, including the "Little Break" site which is currently being remediated.

To the south of the parkland (moving from west to east) is the Vintage Parkway neighborhood which borders the Lauritzen Site, Vintage Marsh, and the Ironhouse Sanitary District. ISD includes administrative offices, sewage treatment ponds and irrigated, grazed fields and the Big Break Regional Trail. The ISD system processes 100% of its effluent and allows no surface water discharge into Big Break. On the east side of Big Break is Marsh Creek which drains the 100 square mile Marsh Creek watershed. Marsh Creek is now channelized and maintained by Contra Costa County Flood Control and Water Conservation District (CCCFCWCD) and is an historic Steelhead reproduction area. Further to the east are undeveloped lands belonging to the Emerson Dairy.

B. Purpose of the Report

The purpose of this Land Use Plan (LUP or Plan) is to establish appropriate resource management guidelines for protecting unique habitat and species of the parkland and to establish access guidelines for opening the parkland to public use. The Plan also includes criteria for the siting of facilities.

Upon adoption by the EBRPD Board of Directors, specific capital projects will be identified for funding through the District's annual budget process. The priorities of these projects will be established and based on the following criteria: urgency due to public safety or resource protection, critical paths (certain projects must precede others), funding opportunities and recreational needs.

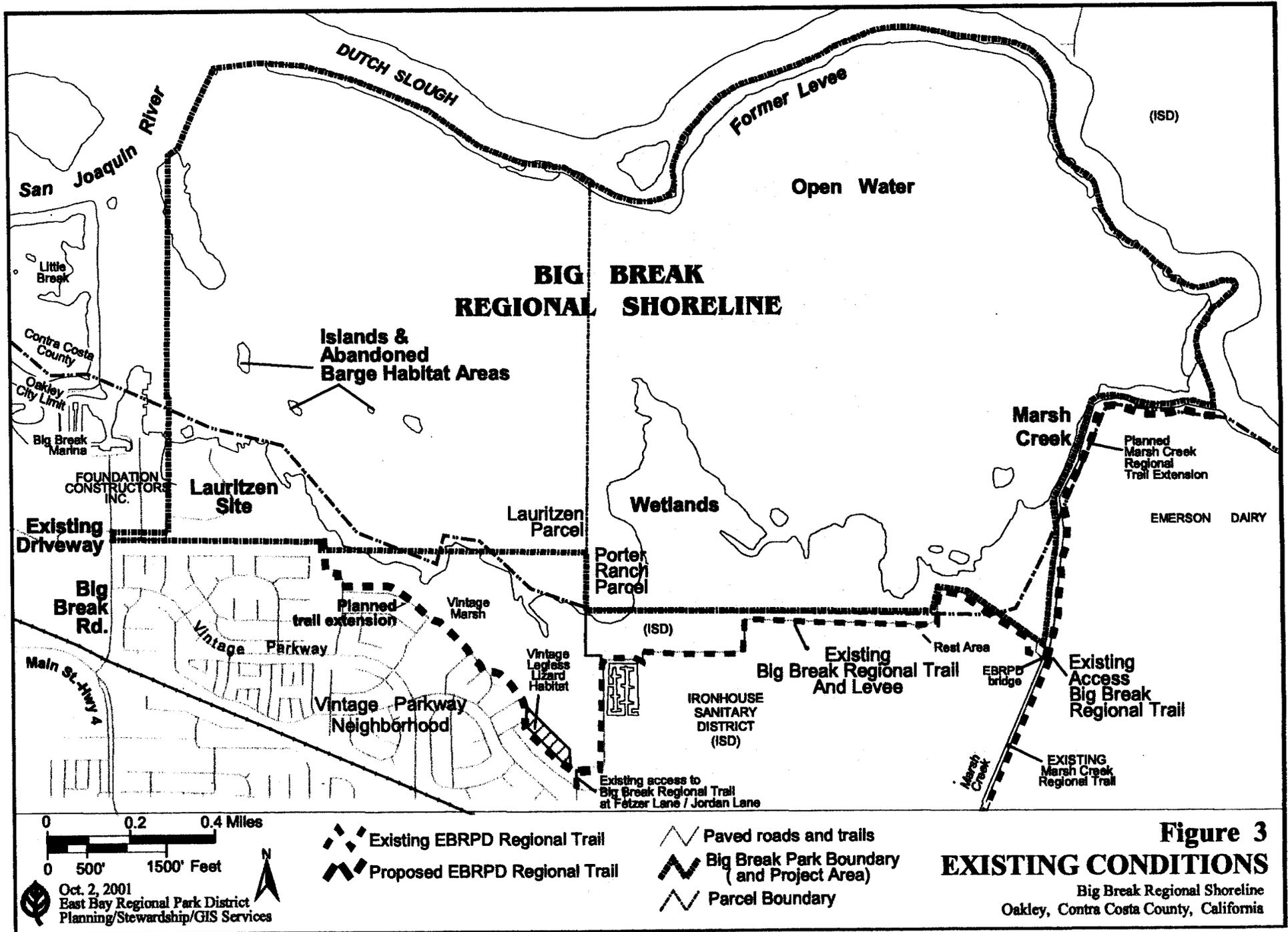
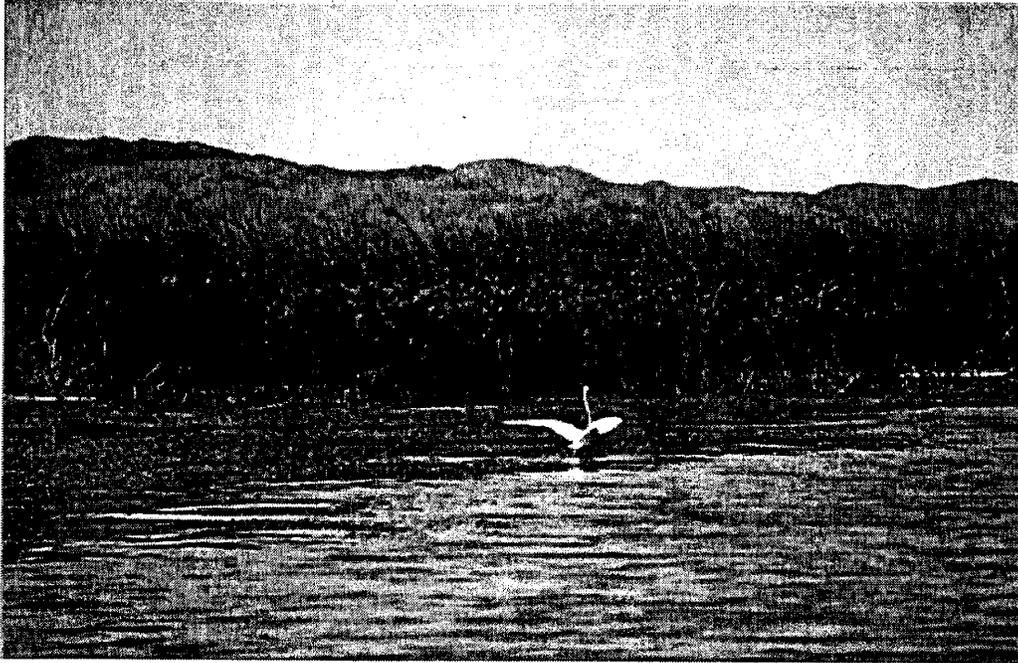


Figure 3
EXISTING CONDITIONS
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California



II. PLAN SUMMARY



A. Project Description

In the context of the Delta, the 1,648 acre Big Break Regional Shoreline (the project area) is a very small environment. The Big Break estuary is about 2.5 miles long and more than one mile wide. The water is very shallow, about three to seven feet deep, and is shaped somewhat like a pair of overlapping coins. Big Break is significant as a recreational area for boating and bass fishing. Seasonal hunting is another long term activity allowed by state law in the public domain of navigable waters. Big Break's size is large enough that it can continue to serve these uses and also provide additional regional recreational opportunities such as picnicking, interpretive and educational experiences, and hiking access to the shoreline.

An important regional recreation facility proposed along the southern border of Big Break Regional Shoreline at the Lauritzen Site is a link of the Big Break Regional Trail. It currently runs between Fetzer and Jordan Lanes in the Vintage Parkway neighborhood and the Marsh Creek Regional Trail but does not yet reach the project site. This one and one-half mile section is open for use by pedestrians, bicyclists, and equestrians within the Ironhouse Sanitary District (ISD). In the future the trail will be extended further, for a total of approximately four miles, between the Marsh Creek Regional Trail and the Antioch/Oakley Regional Shoreline.

This area is also an outstanding environment for native species and has a large number of special-status birds and fish that live or rest there. The 40 acre Lauritzen Site has convenient road access and can accommodate recreational uses. The Land Use Plan (LUP) proposes resource management strategies to protect the parkland resources. It also proposes the construction of interpretive, recreational, educational and research facilities at the Lauritzen Site which can accommodate a future Delta Science Center. Facilities and programs will focus on Big Break and its watershed as a microcosm of Delta issues and will include habitat restoration.

B. Key Plan Recommendations

Naming

The name "Big Break" conjures up images of a calamity and aptly describes part of the colorful history of the property. The name resulted from a 1928 break in the levee that separated an asparagus farm from the San Joaquin River and Dutch Slough. The "Lauritzen Site" is named after the marine construction magnate, Howard Lauritzen, who used the area as a weekend retreat through the 50s and 60s.

The "Big Break Regional Trail" name has been used since the trail was opened in 1997. Proposed trail names at the Lauritzen Site are after natural features or historic associations per the EBRPD Naming Policy and include the Delta View Trail, Julpun Trail, Warbler Trail and Old Water Tower Trail.

Resource Management

The District will retain the substantial open, shallow water and island habitats for wildlife, but will be receptive to efforts by other agencies for improvements to water quality and for marsh restoration. The District will conduct surveys, monitor, maintain and enhance special-status plant and animal species habitat. It will establish Special Protection Features, buffers and restrict trail access to sensitive areas. The District will protect Native American and paleontological sites and it will coordinate with other responsible agencies to control pest species.



Access and Facilities

Existing water related recreational activities on Big Break estuary will continue. Big Break Road off of Highway 4 (Main Street) will provide convenient local and regional automobile access to the parkland. Two Recreation Units (totaling 12 acres) are designated at the Lauritzen Site for interpretive and educational facilities, trails, observation platforms, picnic areas, a pier and small boat launch ramp. No more than 35,000 square feet of buildings may be built in either or both of the Recreation Units; however, any buildings located in the Southern Unit will be limited to not exceed 15,000 square feet. The site will be served by a maximum of 250 parking spaces and three bus spaces. A new multi-use trail is proposed across a tidal slough between the parking lot and the shoreline to the north. The existing route will be used until the new crossing is constructed. The Big Break Regional Trail, including a bridge over the flood control channel, will be constructed through the Lauritzen Site and several other trails will create loop walking opportunities. Facilities will utilize "green architecture" and low-impact systems. Mature trees will be retained and use areas will be landscaped. Utilities service will be upgraded. Interpretive programs will be developed to highlight the Delta and other relevant topics.

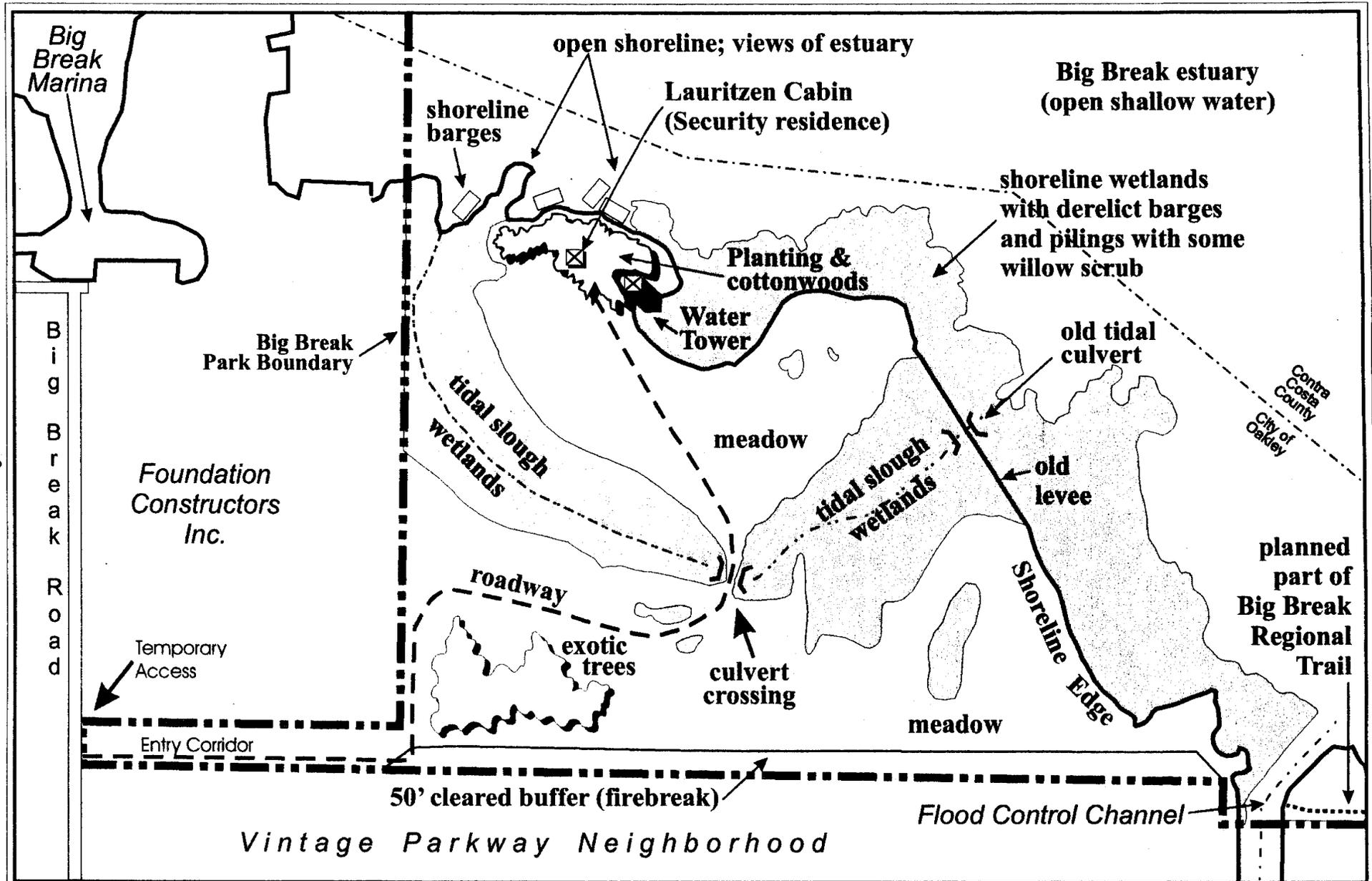
EBRPD/Delta Science Center @ Big Break Partnership

The District has been one of many organizations supporting the creation and development of the Delta Science Center @ Big Break (DSC). The purpose of the District's interest is to support research, increase public awareness and foster environmental education, highlighting the importance of the Delta. The Partnership with the DSC is intended to be formalized through an operating agreement specifically focused on the Lauritzen Site and on the facilities that will be constructed there. The Delta Science Center Board of Directors has proposed programs to raise public awareness and take active steps to help solve complex Delta issues. Because Big Break is particularly well

suited for this endeavor, the District will work with the DSC to determine the most suitable structures and park design for the public programs envisioned.

A Business Plan will be developed to coordinate the construction of facilities and the implementation of resource management programs. It will identify potential grants, partnerships, revenue generating activities and bond acts.





100 0 100 200 Feet



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 Wetland

 Tree Groves

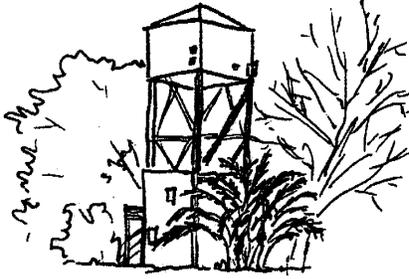
 Park boundary

 Existing Road

Figure 4
EXISTING CONDITIONS - LAURITZEN SITE

Big Break Regional Shoreline
 Oakley, Contra Costa County, California

III. EXISTING CONDITIONS



A. History of the Delta Vicinity of Big Break

History of the Vicinity

Big Break is an environment with a fascinating history because the parkland's shoreline, along with the entire Delta, has been dramatically altered by both man and nature a number of times since settlers first made their home here. An 1850s map shows that the area that is now known as Big Break was originally a relatively straight shoreline of sand dune and marshy lands bordered by oak woodlands, with Dutch Slough penetrating into the interior of the mainland (see Figure 5). The first inhabitants were Native American tribes who are assumed to have lived in the Bay Area for the last 10,000 years, although the Native American cultures changed over time prior to the first contact with Spain. Randall Milliken's Book, A Time of Little Choice, shows the Big Break area at the edge of the Bay Miwok and Plains Miwok tribes with the Julpun, Bay Miwok language group, as the closest tribelet (See Figure 6).

Spanish explorers were the first non-natives to find the Delta in 1772. In 1776, Mission Dolores, the closest mission to Big Break, was established in San Francisco. The Native American lifestyle was largely destroyed by subdivision of the land into ranchos, cultural subjugation and disease. By 1810, there were no longer any tribelets maintaining a completely aboriginal existence.

Other ethnic groups followed the Spanish into the Bay Area and Delta. French trappers arrived in 1832, attracted to the same abundant wildlife that had sustained the Native Americans. They collected beaver pelts for the European top hat trade. Anglo mountain men such as Jedediah Smith explored the area, and the Chinese built farming levees in the Delta after laying the first railroad tracks through the Sierra Nevada. Portuguese, Italians, Dutch and other nationalities were also drawn to the area. Seagoing ships navigated the rivers transporting supplies, primarily importing tallow and exporting furs. The entire Delta was dramatically transformed by the California Gold Rush.

The California Gold Rush, starting in 1848, accelerated the settlement of the Delta and the substantial land reclamation that changed the environment of the Delta area. Paddle-wheeler steamboats ferried miners to Sacramento and Stockton on their way to the Sierra Nevada. Some of those miners who did not find their fortune in the Motherlode returned to the Delta to farm the rich soils there. Because of the annual flooding, they erected crude, hand-built levees and drained the nutrient-rich soil. They also reclaimed tidelands, submerged lands, swamps and overflowed lands, burning off the tules and taking land that was not valued for its valuable wildlife habitat or other qualities. In the 1870s, the clamshell dredge enabled farmers to erect more stable levees. By 1930, Delta reclamation was almost complete with some 57 manmade islands, encompassing over 550,000 acres. To this day agriculture is the primary land use, particularly the production of dry grains and other specialty crops such as the asparagus that are suited to the soils and climate.

The Delta was further modified in the 1950s and 1960s with the construction of the world's largest manmade system of reservoirs, dams and canals which gave California a dependable source of water for farms, industry and cities. Through this state and federal program, much freshwater has been diverted away from the Delta. Despite levees and water diversions, flooding continues to be a serious issue for waterside land owners and businesses. Occasionally whole islands or farms, such as the one that was located at Big Break, are lost due to failing levees. This is exacerbated by the fact that the peat soils within the levees are subsiding, leaving some tracts as much as 18 feet below river level. Watching the tops of boats sail by above the level of the dry farms is a surreal view.

Serious restoration of marshes of the Bay and Delta did not get under way until the 1970s. Now federal, state and local agencies, as well as organizations and interested citizens are working to develop solutions to enhance wildlife populations and restore habitat in this complex world of competing needs for water and space.

Despite the level of development in and around the Delta, an ecological treasure remains. It is home to a broad variety of plants as well as wildlife including fish, beaver, river otter, native birds and hundreds of thousands of migratory fowl. It is also a prized fishing, boating and hunting area. Enjoyment of these activities can be expanded to the general public with a new regional parkland at Big Break.

History of the Area Now Known as Big Break

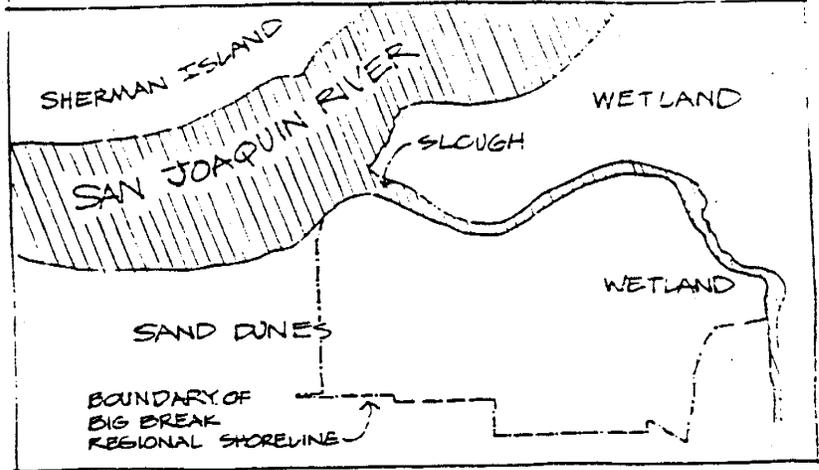
The shoreline at the site of Big Break estuary was radically transformed sometime between the late 1800s and 1910 with the erection of dikes along Dutch Slough and river's edge and the dewatering of the marshland. Asparagus was farmed until 1928 when, during a heavy storm, a big expanse of the levee was broken, inundating the farm and claiming 2 ½ square miles of upland. This act of nature is responsible for the simple but descriptive name of the site and parkland. Reportedly, by the time the farmer could finance levee repair the area had been declared a part of the state's waterway system and remains so to this day. "Little Break" was also created to the west on the nearby Dupont property during a period of raging water. Once the farm was inundated, the area became a boating, fishing and hunting area.

More research beyond the scope of this Plan is needed about Big Break and its vicinity. Sketchy but interesting reports include the sinking of a big ferry by the site of the levee break to protect a fishing area from the currents. It has been rumored that during World War II, when the Bay Area was a major focus of this country's Pacific war effort, abandoned vessels were sunk there for target practice by American fighter pilots, although no confirming data has been found to verify this.

Another colorful chapter in the history of Big Break surrounds Howard F. Lauritzen who was born on Woods Island near Rio Vista. He was a descendant of Danish immigrants who came to the Delta in 1869. Members of his family have been associated with the Delta for generations, operating fleets of stern-wheelers, then ferries and operating marinas and construction businesses. Howard Lauritzen began his association with Big Break in the 1950s when he traded property with the Pittsburg Steel Company and started his marine construction company along Big Break Road. This acquisition also included the western half of Big Break estuary and a 40 acre site which the Lauritzen family used

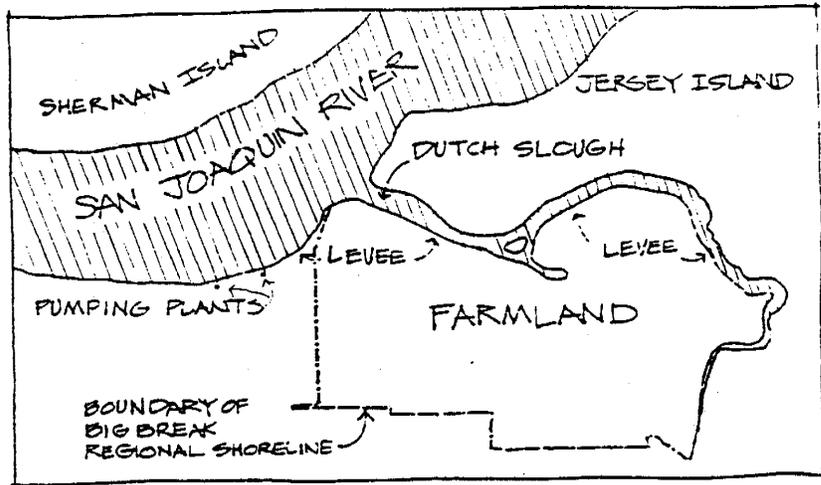
1850

Big Break area from a map by U.S. Navy shows natural shoreline prior to settlement, erection of Delta levees and farming.



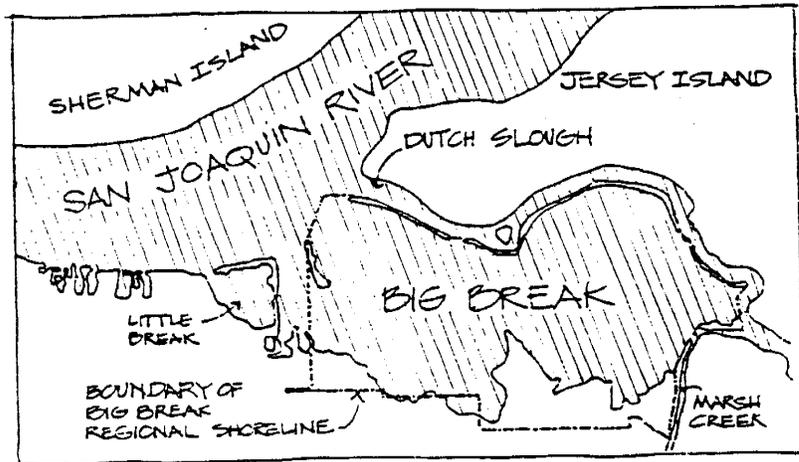
1910

Big Break area from a USGS Historical Topographic Map shows area that is now Big Break as a farm created by levees and pumping.



2001

Big Break area from a 1978 USGS map shows current shallow, open water of Big Break inlet created by the 1928 levee break.



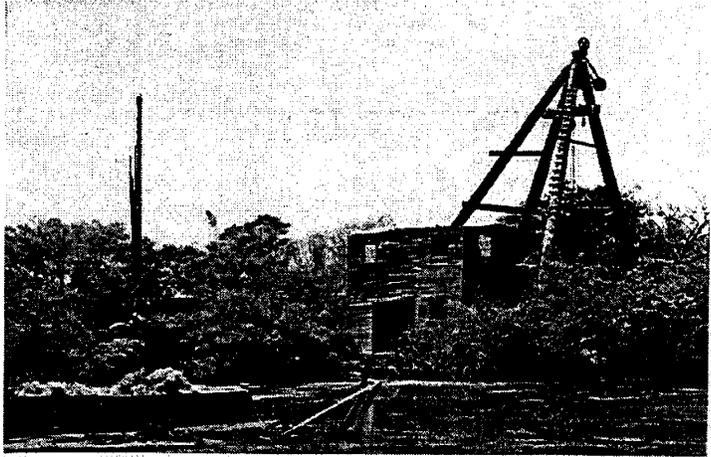
Source:
 Status and trends Report on Pollutants in the San Francisco Estuary
 San Francisco Estuary Project, Mar. 1991



July 6, 2001
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Figure 5
SHORELINE CHANGES
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

to store equipment and as a weekend retreat. He erected the cabin and large water tower which still remain. With the development of a marine salvage business, the western end of the estuary was once again radically changed. Lauritzen, under contract with the US Army Corps of Engineers, disposed of abandoned World War II military barges. He towed the barges and other boats into the shallows to strip them and salvaged the scrap metal. Not caring about the wooden hulks, he left them to rot in a shallow marine graveyard. Over the years they silted in and as native and exotic vegetation gained a foothold, they became “reefs” or artificial islands which have developed into wildlife habitat areas. To some, the 30 to 40 or more unique marine features, called “Lauritzen’s Flower Pots” seem like abstract sculptures; to others they are hazards shown on navigational charts, but to the fish, mammals and birds they have become home. In the later 1970s Mrs. Lauritzen sold the property. Marine construction continued under different owners, by Big Break Road. The area now known as the Lauritzen Site was rented as a residential site. Use in that area has remained low although neighbors occasionally walk through the property.



The acquisition of a parkland on the Delta has been a EBRPD commitment since the Antioch Sand Dunes (later purchased by the California Department of Fish and Game) was included in the *EBRPD 1973 Master Plan*. The first EBRPD Delta acquisition at Big Break was a subdivision dedication for habitat for the legless lizard in 1987. It is located about a quarter of a mile south of the shoreline and is closed to the public to protect the listed animals. The legless lizard habitat is not included in this LUP because it does not relate to the shoreline area. EBRPD’s legless lizard habitat is not to be confused with the “Vintage” legless lizard habitat that is adjacent to the Big Break Trail.

The first major purchase of Big Break in 1995 was the Porter Ranch, 980 acres of the eastern half of the estuary. The western end was acquired in early 2000. Acquisition has been a combined effort of local, regional and state agencies to create a large Delta wetland area, providing public educational facilities and enhancing recreational access to the Delta. Acquisition of these areas was partially funded through the Park District’s 1988 Measure AA and by grants from the Habitat Conservation Fund for habitat protection goals. The U.S. Bureau of Reclamation also granted mitigation money for the Lauritzen acquisition.

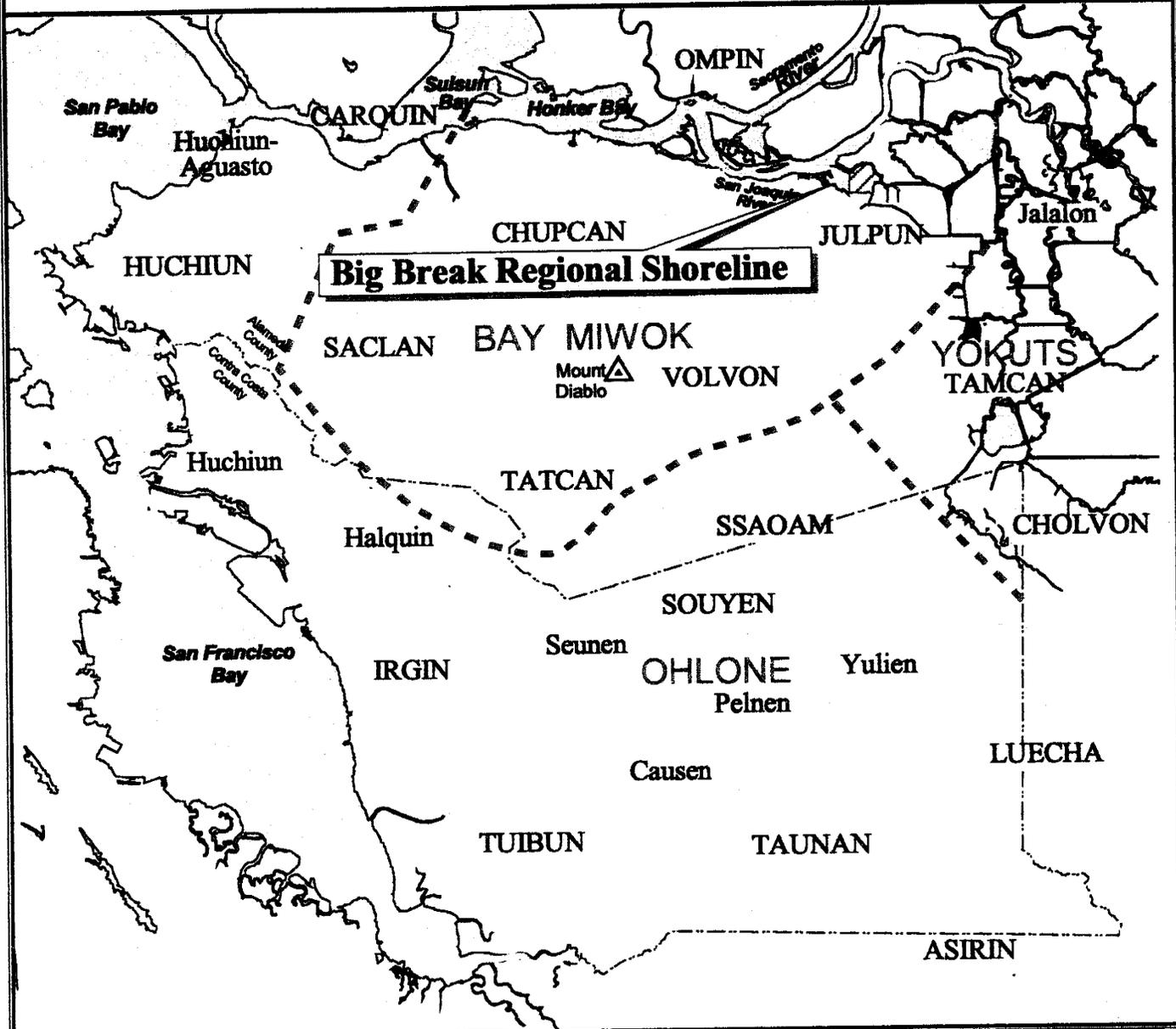
B. Planning Context

EBRPD Planning Context

Big Break Ownership

Big Break Regional Shoreline is a new and important addition to the 93,000 acres that comprise the East Bay Regional Park District. Big Break is significant because it greatly increases the potential

Tribal Names



 Approximate boundary of
 Major Language Groups

Tribal names follow the Spanish pronunciation.
 Those tribes marked by all capital letters had the largest populations.

Source: RANDY MILLIKEN, Far West Anthropological Research Group
 -Tribal Names/Location

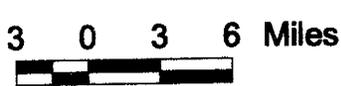


Figure 6
NATIVE PEOPLES OF THE EAST BAY
BIG BREAK REGIONAL SHORELINE
 Livermore, Alameda County, California



Oct. 1, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services

for Delta fishing and boating access in the East Contra Costa County area of the Park District. The Antioch/Oakley Regional Shoreline, about three miles to the west, is the only other EBRPD facility currently on the Delta. This 7.5 acre site provides picnicking and fishing from a pier.

The 1,656 acre Big Break Regional Shoreline ownership by the East Bay Regional Park District includes the 980 acre former Porter Estate/Oakley Ranch parcel and the 668 acre former Big Break Partners parcel (Lauritzen) and the 8 acre Legless Lizard Habitat from two subdivision dedications (the 1,648 acre project area does not include the 8 acre parcel). The former Porter Estate and Lauritzen parcels include approximately 1,400 acres of open, shallow water which is within the public domain. EBRPD has some regulatory rights in the water along with the State of California.

Related Easements and Other Agreements

The Ironhouse Sanitary District (ISD) granted EBRPD a license agreement in 1996 for a 1.5 mile portion of the Big Break Regional Trail which is now in use. This multi-use trail, adjacent to Big Break Regional Shoreline, runs between the Marsh Creek Trail and Jordan and Fetzer Lanes in the Vintage Parkway neighborhood. The trail is important because it provides access along the southern side of Big Break.

ISD conveyed fee title of five acres for a service yard/park office to EBRPD for the East Contra Costa County regional parkland needs within the ISD facility in 2001. The East Contra Costa County Trails Unit currently operates from there, maintaining all regional trails within East Contra Costa County.

EBRPD has acquired an approximately 2 mile long, 25 foot wide easement for the planned segment of the Big Break Regional Trail from the flood control channel near Piper Lane east to Walnut Meadows Court. Another one-half mile still must be acquired between Walnut Meadows Court and the existing trail before funds can be budgeted and construction can begin to complete this trail link.

The Delta Science Center (DSC) has a 1998 draft agreement with the ISD for lease of about 23 acres of land at the Ironhouse site for facilities and an access road near the Big Break and Marsh Creek Regional Trails.

The levee road for the Marsh Creek Regional Trail extension to Dutch Slough is owned by Contra Costa County Flood Control and Water Conservation District. EBRPD and CCCFCWCD have a license agreement for EBRPD to construct and operate a trail there. The Flood Control District has also given license agreements to ISD and the Emerson Dairy. The three potential users are negotiating a cooperative agreement for coordinated use.

The Flood Control District possesses an agreement for the flood control channel that is located at the eastern end of the Lauritzen Site and runs parallel to Piper Lane. This channel must be crossed to connect the Lauritzen site with the Big Break Regional Trail.

Planning

Big Break is designated by EBRPD's *Master Plan* as a "Regional Shoreline" because of its location on the San Joaquin River. This designation provides for a balance between protection of resources and shoreline access and recreation.

Related EBRPD planning documents

EBRPD adopted a 1996 Negative Declaration for the stretch of Big Break Regional Trail between the Ironhouse Sanitary District and the Contra Costa County Flood Control channel near Piper Lane. This section of trail has not yet been fully acquired or constructed but will connect to the Lauritzen Site in the future.

The CEQA documentation for the extension of the Marsh Creek Trail between the Big Break Regional Trail and Dutch Slough was completed in 1992. This section of trail has not yet been constructed. It will allow trail users to walk along the south eastern edge of Big Break estuary where they will be closer to and have better views of the open water of the bay than are possible on the existing trail.

Existing Recreation at Big Break

While the parkland is not officially open because no developed facilities have been established, the Big Break water area is available for public use through state laws governing navigable waters and has been historically used by boaters, fishermen and hunters. Bass fishing is currently the biggest recreational activity at Big Break. The number of fishermen has dramatically increased in the past few years as Big Break has been promoted as a largemouth/black bass tournament site and is drawing fishermen from many locations.

General boating also takes place at Big Break estuary because of its accessibility to the rivers and sloughs of the Inland Coast. Boaters enjoy sunbathing on the islands north of the Lauritzen Site. Occasional waterskiing and jet ski use takes place and there have been reports of boaters speeding at up to 70 mph through the bay despite navigational hazards near the Lauritzen Site. Illegal night activities such as gillnetting have also been reported.

Hunting waterfowl from floating duck blinds during the hunting season is allowed by State law in Big Break estuary. Hunters may not hunt from land areas owned by EBRPD and may not erect permanent duck blinds.



The adjacent Big Break Regional Trail which runs along the southern edge of Big Break through the Ironhouse Sanitary District is an asset to the Regional Shoreline and provides access for hikers, bicyclists and equestrians to the southeastern edge of the estuary. The Regional Trail connects to the Marsh Creek Trail running through Oakley and Brentwood and then on to the Delta de Anza and the other regional trails of the EBRPD regional trail system. Dedicated off-street parking is needed for

the Big Break Regional Trail. The closest parking to the trail is the neighborhood streets of Fetzer and Jordan Lanes at the western end of the existing trail.

Big Break Regional Shoreline has tremendous potential for interpretation, education and research. It is occasionally used for limited education and interpretative programs by the EBRPD and by classes from the Vintage Parkway Elementary School which borders the parkland's marshes. Programs, facilities and adequate parking could transform Big Break into a valuable and important educational resource.

Local Recreation, Open Space and Recreation Needs

The Sacramento/San Joaquin Delta draws people from all over the Bay Area and from the Central Valley. EBRPD serves the area around Big Break with several Regional Trails as well as with Browns Island Regional Preserve (accessible only by small boat) and the Antioch/Oakley Regional Shoreline (which includes picnicking and fishing). Other nearby regional-scale parklands include Brannan Island and Frank's Tract State Regional Recreation Areas. Regional scale wildlife refuges are located across the river at the Lower Sherman Island Wildlife Area and further to the northwest at the Grizzly Island Wildlife Area in Suisun Bay. There are numerous private marinas, resorts and restaurants, particularly along the Antioch-Oakley shoreline as well as Bethel Island and Hotchkiss Tract. Big Break Marina provides boat launch ramps but does not serve non-motorized boats such as kayaks and canoes. However, according to the Delta Protection Commission there is a need for more public parklands which provide boating destinations, small boat launch ramps, restrooms, pedestrian and shoreline fishing as well as pedestrian access along the shoreline.

Delta Science Center @ Big Break

In 1994 EBRPD entered into a Memorandum of Understanding (MOU) to create a Coordinating Council for the Delta Science Center, which is now proposed to be located at the Lauritzen Site of Big Break. The original signatories of the agreement were EBRPD, Contra Costa County, Contra Costa County Community College District, Cal State University, Hayward, and the Ironhouse Sanitary District, with Mt. Diablo Audubon Society as an advisory member. The Council created a Board of Directors which now includes representatives from other agencies, such as the Cities of Oakley and Brentwood, Contra Costa Mosquito & Vector Control District, Contra Costa Water District, and other organizations such as the Delta Group of the Sierra Club, Emerson Dairy, and Hofmann Co. The MOU sets the stage for the development of a Master Plan for the Delta Science Center which is currently being prepared. The *Big Break Land Use Plan* coordinates with the *DSC Master Plan* by designating space for the DSC facilities. The basic physical needs of the Science Center include space for buildings, outdoor activities and parking in addition to utility service.

Community Planning Context

EBRPD held a public meeting on June 7, 2000, to receive input for the Big Break Land Use Plan. Approximately 70 people attended, primarily residents of the adjacent Vintage Parkway neighborhood. Also attending were bird watchers, environmentalists and representatives from other local and state agencies. There were speakers who voiced enthusiasm and concerns about the park and the Delta Science Center and protection of the natural environment and existing activities. Many comments focused on privacy issues for those living adjacent to the Lauritzen Site.

The DSC and EBRPD had two follow-up input meetings with approximately 20 neighbors whose properties adjoin the Lauritzen Site on September 30, 2000, and at the Vintage Parkway Elementary School on May 16, 2001. The neighbors' primary concerns were privacy, traffic and other potential impacts from the park and Delta Science Center.

The Draft LUP was presented to the public on September 6, 2001, and to the adjacent neighbors on September 22, 2001, for review.

Regional Planning Context

A large number of agencies have jurisdiction and interests in Big Break Regional Shoreline for many reasons, particularly for protection of listed species, water quality, shoreline access, recreation and potential Delta restoration. The relevant role of each agency is discussed below.

Local Agencies

City of Oakley: The Lauritzen Site of Big Break is located within the newly incorporated City of Oakley. The open water and wetlands are in Contra Costa County but are also within the Oakley Urban Limit Line. The City of Oakley has adopted the *Contra Costa County General Plan* as its interim General Plan. The General Plan designation for the City jurisdiction is Delta Recreation. The parcel that includes the Lauritzen Site is zoned H-I, heavy industry, but the other Lauritzen parcel is zoned A-2 general agriculture. The City of Oakley is expected to require encroachment, grading and building permits to build parkland facilities. A conditional letter of map revision would be needed for a flood plain permit and a National Pollution Discharge Elimination System (NPDES) permit will be required because the site is in the flood plain. Also, either a land use permit or rezoning may be required to rectify zoning and *General Plan* differences.

Oakley Parks Master Plan: This plan shows a Class II Bicycle Lane on the portion of Big Break Road between Highway 4 and Vintage Parkway, but not extending north to the Big Break Entrance on Big Break Road.

Contra Costa County: The submerged areas and wetlands lie within unincorporated lands of Contra Costa County. The General Plan designation is Delta Recreation. The zoning for the parcel which includes the Lauritzen site is H-I, heavy industrial but zoning for the other parcel is A-2, general agriculture. A flood plain permit and possibly a building permit could be required for the proposed pier if it extends into county jurisdiction. Either a land use permit (conditional use permit) or rezoning may be required to rectify zoning and *General Plan* differences.

The Contra Costa County General Plan Land Use Element shows the parkland outside of the urban limit line and within the "Primary Zone" of the Delta. The purpose of the recreation designation is to balance recreational uses to avoid conflicting with agriculture and habitat and to prevent flooding. All development must be consistent with the *Land Use and Resource Management Plan* of the Delta Protection Commission. The parkland is consistent with the *Contra Costa County General Plan*.

Contra Costa County Flood Control and Water Conservation District: This agency has an easement over EBRPD property for the flood control channel between the Lauritzen Site and Piper Lane and owns Marsh Creek. A drainage permit will be required for a bridge over the channel to the Lauritzen Site.

Contra Costa Sheriffs Department, Marine Unit: This agency occasionally patrols Big Break and responds to emergencies.

The Ironhouse Sanitary District: ISD is a neighbor to Big Break and includes a site for the operating portion of the Big Break Regional Trail and the EBRPD East County Service Yard.

The 1994 Final Environmental Impact Report for the Ironhouse Sanitary District Wastewater Facilities Plan and Delta Environmental Science Center was written for the upgrade and expansion of sanitary facilities on Jersey Island but also includes a 13.2 acre site and ten acres of access for the Delta Science Center. Since the Delta Science Center is now planned elsewhere, the ISD has endorsed a 23 acre restoration proposal for lower Marsh Creek.

The Contra Costa Mosquito Vector and Control District: This agency monitors the county for mosquito and other vector nuisances such as yellow jackets and rats, particularly in places with a history of problems and provides control where necessary.

State of California and U. S. Government Agencies

California Department of Boating and Waterways: This agency will review any signage and speed limits proposed by EBRPD. It is also in charge of aquatic weed control within the Delta.

The U.S. Coast Guard: The Coast Guard will coordinate review of signage and speed limits on the water ways. It responds to emergencies in the waters of the Delta.

The Delta Protection Commission: This agency has a role in protecting wildlife, agriculture and recreation and has planning and limited regulatory authority over local government actions in the Primary Zone of the Delta.

The Commission's 1995 *Land Use and Resource Management Plan for the Primary Zone of the Delta* was prepared to implement the 1992 Delta Protection Act by the State of California to "protect, maintain, and where possible, enhance and restore the overall quality of the Delta environment, including but not limited to agriculture, wildlife habitat, and recreational activities; assure orderly, balanced conservation and development of Delta land resources and improve flood protection" It is expected that the LUP proposals will be in compliance with the Commission's Plan.

The 1997 *Sacramento-San Joaquin Delta Recreation Survey* reveals that while most of the navigable Delta waterways are public, recreation is limited because most land is private. Survey respondents indicated that courtesy docks, restroom, and shoreline access for boaters were inadequate.



California State Lands Commission: The State Lands Commission has jurisdiction over navigable waterways. The precise location of the State's boundary along Dutch Slough adjacent to Big Break has never been determined. It is therefore likely that area may be subject to the State's sovereign interest which could require a public trust easement for water-borne commerce, navigation, fisheries, recreation and open space. In addition, the submerged lands within Big Break are subject to a navigational easement, which provides that members of the public have the right to navigate there. These easements, held by the State Lands Commission, would prohibit the installation of new levees or the alteration of the waters as they presently exist.

The 1991 *Delta-Estuary California's Inland Coast a Public Trust Report* by the California State Lands Commission discusses the need for habitat protection and recreational opportunities in the Delta and acknowledges EBRPD's efforts to acquire open space at Big Break for passive recreation use.

U.S. Army Corps of Engineers: (ACOE) has jurisdiction over Big Break for actions that affect wetlands habitat and marine navigability. It will be necessary to obtain an ACOE permit for structures proposed in the areas within Big Break that are designated wetlands. Other regulatory and resource agencies charged with protecting natural resources will evaluate and review plan proposals, including: **California Department of Fish and Game, California Regional Water Quality Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries and the U.S. Environmental Protection Agency.**

The 1996 U.S. Fish and Wildlife Service /California Department of Fish and Game Recovery Plan for the Sacramento/San Joaquin Delta Native Fishes discusses eight listed native fish in the Delta. The objective is the de-listing and restoration of the species. Big Break lies within the study area and is prime habitat for some of these species. It is expected that the Plan proposals will be in compliance with the goals of the of the Recovery Plan.

The 1980 *Sacramento/San Joaquin Delta Wildlife Habitat Protection & Restoration Plan*: U.S. Fish & Wildlife Service and the California Department of Fish & Game report that emergent wetland has dramatically decreased in the Delta over the last 100 years due to use conversion. The report defines Big Break's emergent marsh as significant.

The CalFed Bay-Delta Program: The CalFed Bay-Delta Program is a cooperative effort of federal and state agencies with management and regulatory responsibility in the Bay-Delta Estuary formed to develop and implement a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta System.

In 1994, the Framework Agreement was signed by the Governor's Water Policy Council and the Federal Ecosystem Directorate (ClubFed), which set forth the operating principles for developing a long-term solution to the Bay-Delta problems. In December 1994, the State and Federal agencies and stakeholders signed the "Principles for Agreement on Bay-Delta Standards between the State of California and the Federal Government" (the Accord), which established interim measures for both environmental protection and regulatory stability in the Bay-Delta. The State and Federal agencies developed the CALFED Bay-Delta Program in 1995 to develop the long-term solution to Bay-Delta problems and prepare a Programmatic EIS/EIR.

CALFED agencies have worked for over five years to develop a Final Programmatic EIS/EIR and Preferred Program Alternative in collaboration with representatives of agricultural, urban, environmental, fishery, business, rural counties, environmental justice, farm labor, Indian tribes and Delta interests. The Record of Decision for the Final Programmatic EIS/EIR was signed by the CALFED agencies on August 28, 2000.

Big Break is within the CalFed planning area. Therefore, forthcoming actions and decisions, such as marsh restoration, by CalFed and others will have some effect on the hydrology, water quality and habitat at Big Break. However, CalFed decisions are not expected to pose problems with recreation and operation of the site as a public parkland.

C. Natural Resources

Big Break is part of the Sacramento/San Joaquin River Delta which is more than 1,000 square miles of sea level estuary, a complex of waterways and islands in California at the upper end of the San Francisco Bay. Big Break is located at the western end of the Delta along the Oakley Shoreline. The estuary supports an extraordinarily diverse and productive ecosystem within its dynamic and complex environmental conditions. Approximately 1,400 acres of Big Break Regional Shoreline is open, shallow water, several hundred acres are marshland and 40 acres are the area referred to as the Lauritzen Site.



Topography, Geology and Soils

Topography

Big Break Regional Shoreline is a very flat area with the estuary and marshes lying at sea level. The Lauritzen Site provides the only land area along the water's edge. The highest elevation is along the southern boundary next to the Vintage Parkway neighborhood, which is about 12 feet above sea level. However, within the 40 acre Lauritzen Site, only about 6 acres are above the 100 year flood level.

Geology

The Big Break area lies in the flood plain of the San Joaquin River and surficial deposits include sand, silts, and clays deposited by the river. The bedrock geology dips into a basinal low formed by two opposing normal tensional faults in the subsurface, the down-to-the west Midland Fault on the east side, and the down-to the east Sherman Island Fault on the west side. Neither fault is regarded as active. A potential for liquefaction of the surficial deposits and subsequent damage to structures exists in the area if a strong earthquake occurs. The probability of a large earthquake is very low. Strong ground motion was recorded to the north in the Winters-Vacaville area in 1892 (magnitude 6.4), in the Antioch area in 1889 (magnitude 6.0), and minor earthquakes have been recorded in the Montezuma Hills and Antioch areas. In spite of these earthquakes, the area has the lowest potential for large, damaging earthquakes in the entire Bay Area, similar to that of the Great Valley.

Soils

The soils of Big Break are those of the Delta Plain, which was once a freshwater marsh. These soils formed in the accumulated remains of tules, reeds and other aquatic plants with thin layers of silty mineral matter. The organic content increases with depth. The surface of these soils lie at or below sea level to about 15 feet above sea level. Most wetland soils at Big Break are classified as "Rd", Rindge Muck. Rindge soils are deep, black, organic material and have been primarily used for irrigated pasture, field corn and asparagus. In the early 1900s, before the levee failed, asparagus was farmed at Big Break. Flooded areas of Rindge soils are excellent waterfowl habitat. The levees and larger islands are classified as "Fc", Fluvaquents, very poorly drained, loamy, mineral soils in sloughs and river channels. According to the resource studies prepared as base data for this LUP, groundwater in uplands areas can be expected between 3-8 feet below ground surface depending on time of year. Groundwater flow is reportedly northward toward the San Joaquin River. The tidal slough and low areas of the Lauritzen Site are "Pd" Piper sand. These soils formed in windblown material that had encroached into the northwestern part of the Delta. They are very poorly drained and are saturated within 20 to 40 inches all year and within 20 inches for as much as 4 months per year. Vegetation is annual grasses. These soils are primarily used for dryland or irrigated pasture. The higher elevations of the Lauritzen Site are classified as "DaC", Delhi sand. These are the areas most promising for future recreational development. These areas are very deep sands, formed in

wind-modified stream deposits of mixed origins. They have rapid permeability and slow runoff. Vegetation is annual grasses, forbs and scattered live oaks. There are only "slight" degrees and kinds of limitations indicated for Delhi sands for roads and dwellings (without basements). The AASHTO (American Association of State Highway and Transportation Officials) classification is A-3. Topsoil is sandy and poor. Embankments for water retention have medium shear strength, low compressibility, high permeability of compacted soil, medium to high susceptibility to piping, and good compaction characteristics. Bed rock is greater than five feet deep and the shrink-swell potential is low. Low elevations at the Lauritzen Site will be a challenge for the designers of the buildings, utilities and other structures, and soil engineering will be particularly important.

Paleontology, Archaeology and History

Paleontology

A 1990 discovery of the bones of an extinct species (later Quaternary period) of Pronghorn antelope (*Antilocapra pacifica*) was made at Big Break and is designated as site UCMP V -87047. The discovery is notable because the species is larger than the living species and Big Break may be the only site where the species has been uncovered.¹ It is considered "extremely sensitive" by District consultants (Basin Research Associates) and appears to meet the eligibility criteria of the California Register of Historical Resources. Field work conducted for the LUP determined that there is high potential for additional fossil remains associated with Pleistocene and Holocene sediments. These potential remains, roughly 14,000 to 6,000 years could have significant scientific value for the period toward the end of or immediately following the "Ice Age"².

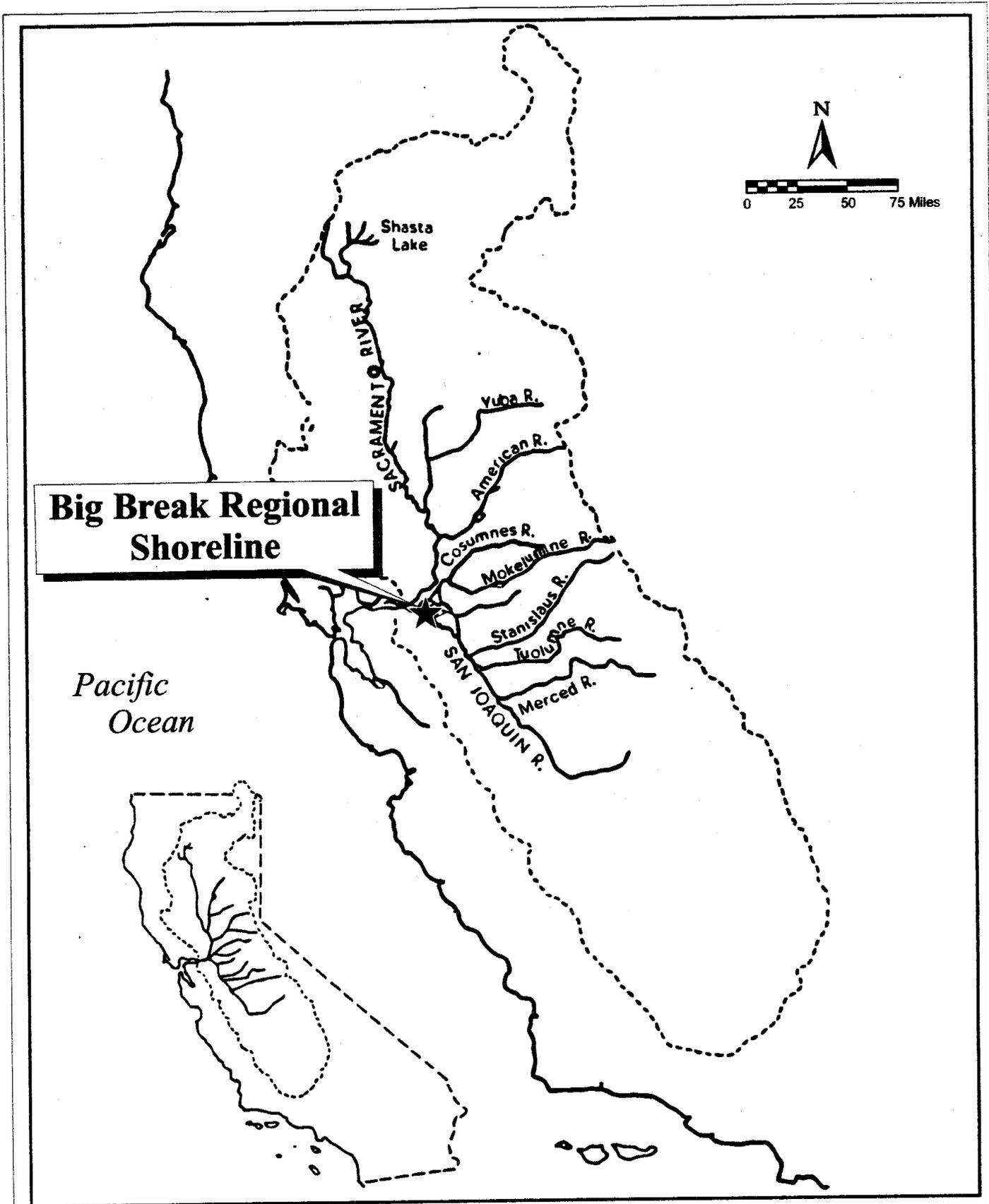
Archaeology and History

An archaeological investigation for this report has researched the prehistoric archaeological site, CA-CCo-538, that is present within the parkland which is considered "extremely sensitive." It is thought to be a Late horizon village site possibly dating from ca. A.D. 300 to just prior to the historic period, ca. A.D. 1700 and perhaps later. The site appears to meet the eligibility criteria of the California Register of Historical Resources. (Basin) District policy mandates the preservation of cultural resources "in situ" whenever feasible and further protects them through land use designation with buffer areas. The locations of archaeological sites are confidential.

A portion of the Juan Bautista de Anza National Historic Trail [1776] is located along the southern

¹ *A New Species of Antilocapra from the Late Quaternary of California*. September 17, 1990. Gary D. Richards and Mornte L. McCrossin, Department of Anthropology, University of California.

² Basin Research Associates. July 30, 2001. *Cultural Resources and Paleontological Assessments, Big Break Regional Shoreline Preserve, City of Oakley and Unincorporated Area near Oakley, contra Costa County*.



Big Break Regional Shoreline

Pacific Ocean

Source:
Status and trends Report on Pollutants in the San Francisco Estuary
San Francisco Estuary Project, Mar. 1991



Oct 1, 2001
East Bay Regional Park District
Planning/Stewardship/GIS Services

Figure 7
DELTA WATERSHED
Big Break Regional Shoreline
Oakley, Contra Costa County, California

edge of the western part of Big Break. Also, one of the expedition's campsites appears to have been located within approximately three-fourths of a mile which includes part of the southern portion of Big Break extending south to Route 4. (Basin)

No American Period archaeological resources (including shipwrecks) have been recorded or identified in or adjacent to Big Break. (Basin)

An Historical Architectural Assessment was prepared in 2000 at the Lauritzen site using the criteria of the California Register relating to the statutes and guidelines of the California Environmental Quality Act (CEQA) to determine if the Lauritzen cabin and water tower were historic resources. The report concluded that neither structure was eligible for the California Register. The cabin does not retain its historic integrity, is not a distinguished or exceptional example of its style and is fairly deteriorated. The water tower is more unusual because of its height and heavy timber frame and retains a good level of historic integrity. However, it is not sufficiently significant for register designation³. The report recommends engineering analysis and consideration of preserving the tower for public use.

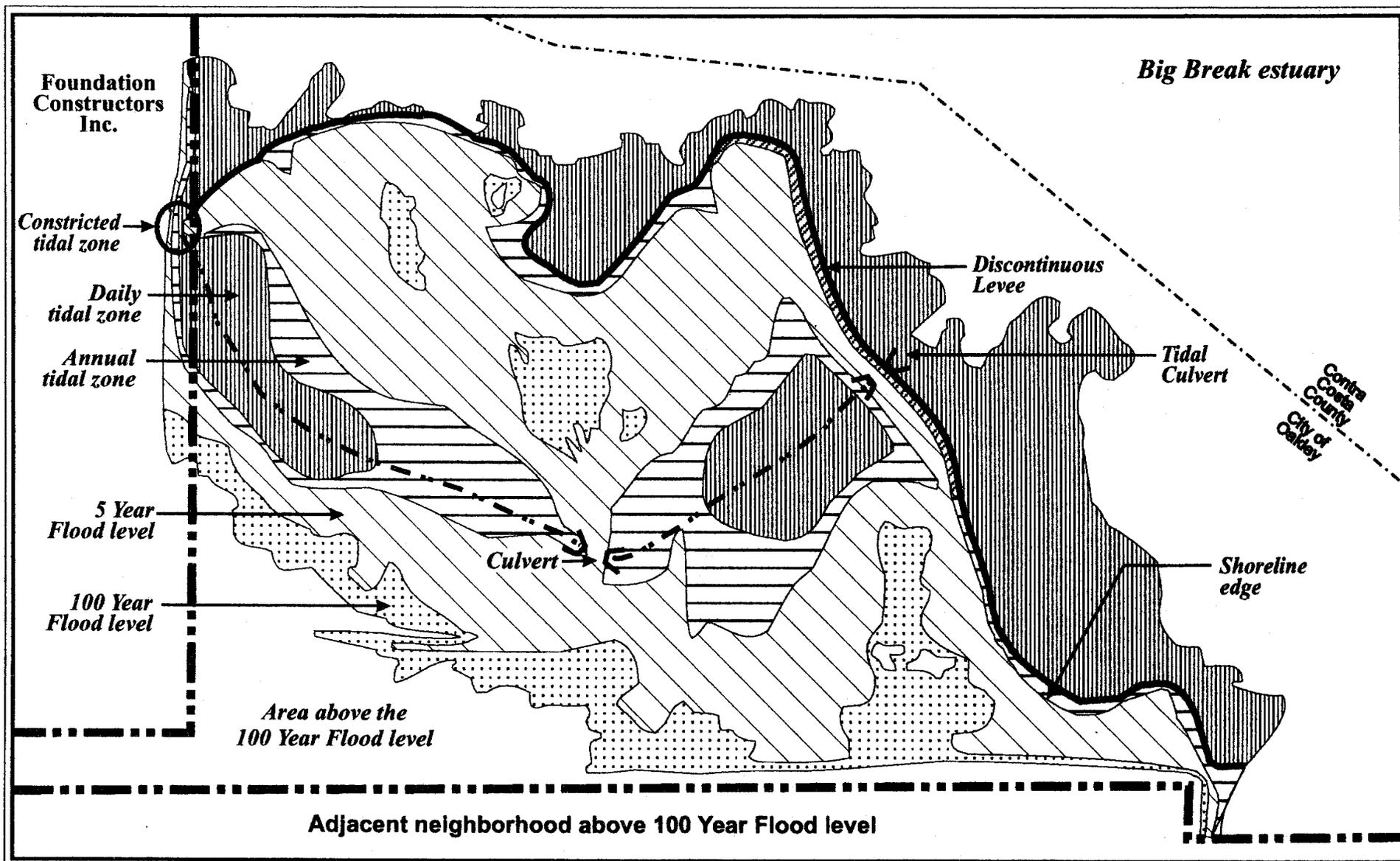
Hydrology/Watershed

Big Break is situated just east of the confluence of the Sacramento River and San Joaquin River systems that collectively drain the Central Valley or about 37% (58,000 square miles) of the land mass of California. Drainage of these two river systems into San Francisco Bay, influenced by tidal salinity changes, forms the San Francisco Bay/Delta Estuary (approximately 1,680 square miles). (See Figure 7) Most of the 1,656 acres currently in the Big Break parkland are inundated by 3-7 feet of water. Diurnal tides typical along the West Coast influence water elevations daily (about five feet of fluctuation) and can contribute significantly to severity of flooding when maximum high tides occur during significant rainfall events in the winter. Peak flows from the two river systems vary annually depending on rainfall patterns (higher in wet years and lower in dry years). Outflows have become significantly muted compared to historic peak flows due to such factors as dam storage, controlled releases, and Delta pumping activities. Nonetheless, virtually the whole parkland is within the 100 year flood plain datum established by the U.S. Geological Survey mapping system with only about six acres of the Lauritzen Site being above the 100 year flood plain. Parkland related recreational development will be affected by this site characteristic. (See Figure 8)

Water Quality

The Big Break area of the Delta was historically subject to seasonal saltwater intrusion. Prior to damming of upstream rivers, the Delta experienced flushing/flood flows through winter and spring, followed by very low flows in the summer and fall. During this low flow period, saltwater from San Francisco Bay intruded up the Delta. Under current conditions, the flood flows are greatly reduced while the summer/fall flows are enhanced due to agricultural run-off. As a result, saltwater now rarely intrudes into this area (DWR 1995).

³Hill, Ward. July 28, 2000. *Historic Architecture Evaluation, Big Break Regional Shoreline, Lauritzen parcels, Oakley, California.*

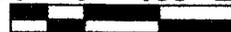


MHHW ~ 3.31 MLLW ~ 0' (BASED UPON 1978 NOAA MEASUREMENT AT JERSEY ISLAND)

Source: Delta Science Center. 2000
 Preliminary Opportunities & Restraints Maps

Oct. 4, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services

100 0 100 200 Feet



Big Break Regional Shoreline Boundary

Levee

CURRENT TIDAL CONDITIONS

Lauritzen Site

Big Break Regional Shoreline
 Oakley, Contra Costa County, California

Figure 8

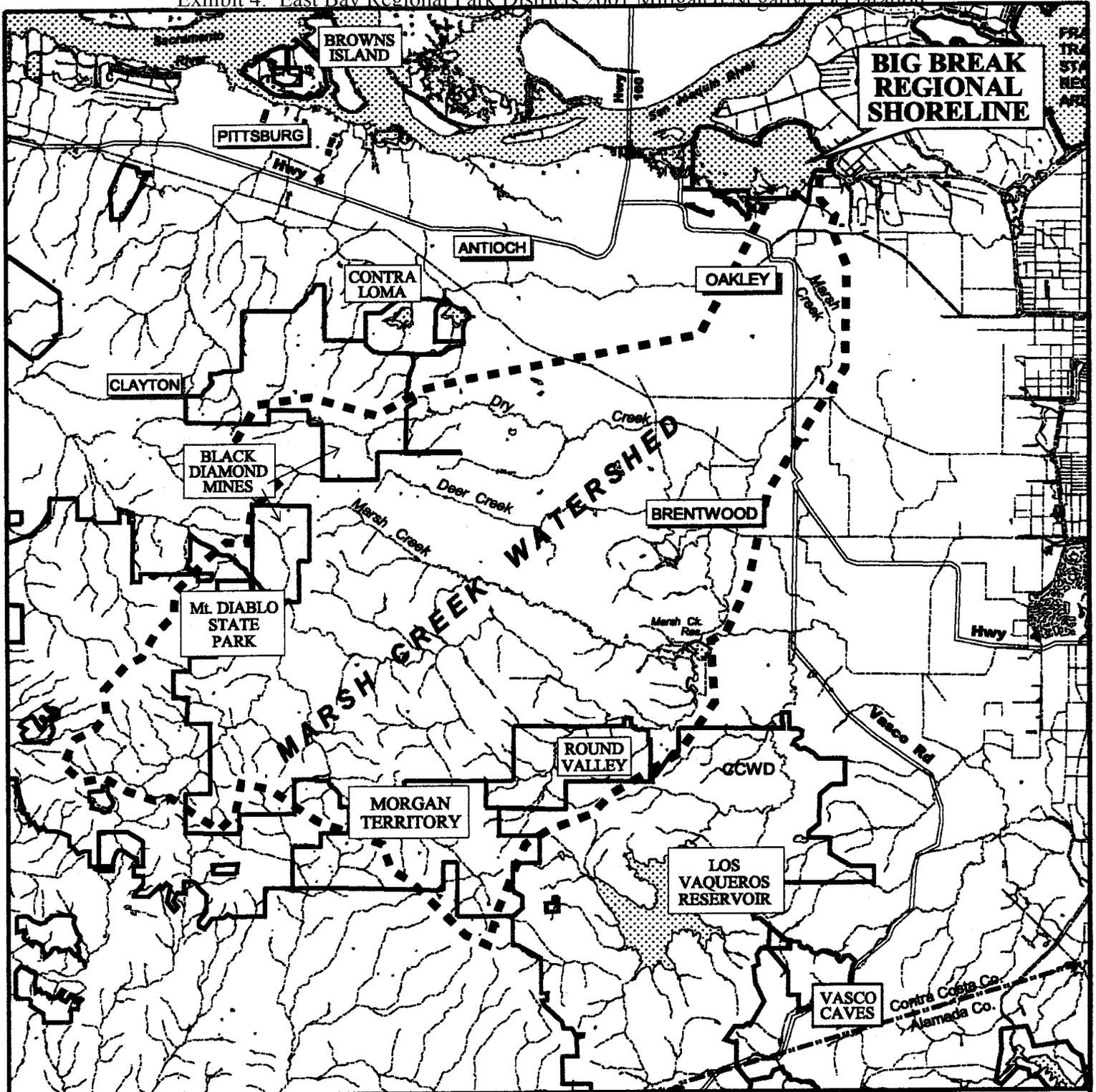
Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration
Francisco Bay intruded up the Delta. Under current conditions, the flood flows are greatly reduced while the summer/fall flows are enhanced due to agricultural run-off. As a result, saltwater now rarely intrudes into this area (DWR 1995).

Water quality at Big Break is influenced by two primary sources –Delta outflow and Marsh Creek inflow. Outflow is influenced by the riverine (Sacramento River and San Joaquin River) transport of pollutants from upstream sources as well as inputs from tidal mixing. Big Break is far enough upstream that although it is affected by tidal oscillations, its salinity level remains low and Big Break is considered freshwater habitat. The salinity level at Big Break varies considerably with factors such as severe weather conditions, (drought and floods) and water diversions for agricultural and urban uses. In general, Big Break water quality is considered good enough to support such beneficial uses as fishing, fish habitat including spawning and migration, domestic and industrial uses and water contact and non-contact recreation. Pollutant inputs include point source discharges from industrial, mining and wastewater treatment outfalls; and non-point sources such as agricultural, urban, undeveloped open space run-off as well as storm drain outlets from many sources.

Environmentally persistent pollutants found within the Delta, that are of particular concern, include mercury, selenium, silver, copper, various pesticides, polynuclear aromatic hydrocarbons (PAH's), and polychlorinated biphenyls (PCB's). The distribution, future and effects of these pollutants and their impact on wildlife and beneficial uses of water is a major component of ongoing data collection by state and local agencies. EBRPD does not have any data indicating that there are water quality problems at Big Break. Big Break relies on good water quality to support appropriate recreational uses and public health and safety.

Marsh Creek inflow is affected by urban and agricultural run-off and natural mercury deposits that exist within the upper watershed. (See Figure 9) A study was performed to better understand the significance of the mercury deposits within the watershed when elevated levels of mercury were detected in largemouth bass and other fish inhabiting Marsh Creek Reservoir several miles upstream from Big Break. The study determined that the reservoir acts as a sink for the mercury and low levels of mercury are found in sediments downstream from the reservoir. As urban development continues, sediment losses generated by land disturbance from development could result in further shallowing of Big Break from silt and sediment bedload deposition. These are all factors that need further consideration as well as characterizing the normal water quality of Marsh Creek prior to any wetlands restoration/enhancement at or near the mouth of the creek.

The shallow water conditions at Big Break, as well as the poor circulation associated with the shape and form of the embayment (off to the side of the main stem of the San Joaquin River channel and Dutch Slough), create ideal conditions for aquatic weed proliferation. During summer months aquatic weed growth biomass can increase significantly, further interfering with water circulation resulting in stagnant warm water conditions and expectant low dissolved oxygen conditions. However, these conditions are likely to be relatively localized and short term as no obvious fish kills have occurred and angling for bass and other species by boat access is a common occurrence at Big Break. State agencies have performed weed control activities in the Delta targeting water hyacinth, a non-native prolific problem plant capable of clogging channels and creating extremely dense biomass. Their efforts may include Big Break. Groundwater and soil investigations undertaken for the acquisition evaluation of the former Lauritzen parcel included analysis of wrecks in the shallow



 Marsh Creek Watershed Boundary (USGS Topographic Interpretation)
 Creeks or Streams

 Selected Public Open Spaces
 Selected Roads

3 0 3 Miles



 Oct. 4, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services

Figure 9
MARSH CREEK WATERSHED
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

water that could be visually located. No petrochemical or other toxic materials were found in any of the remaining tanks or barrels. There are no known groundwater pollution problems affecting the site.

Plant Communities and Associated Wildlife

Vegetation, wetland delineation, and botanical studies on Big Break Regional Shoreline were conducted by Vollmar Consulting and the Natural Heritage Institute (NHI), under the auspices of the Delta Science Center, and are summarized herein. The studies were conducted along the southern edge of the bay, from the forty acre Lauritzen Site (west end) to Marsh Creek (east end). The purpose of these studies was to provide baseline information on the vegetation types, jurisdictional wetlands, site floristics, special-status plant species, and invasive weeds present on the site. More detailed information is contained within *Big Break Marsh Project: Vegetation, Wetland and Botanical Studies* (Vollmar Consulting 2000). Appendix A provides an annotated list of all plant species identified in the area.



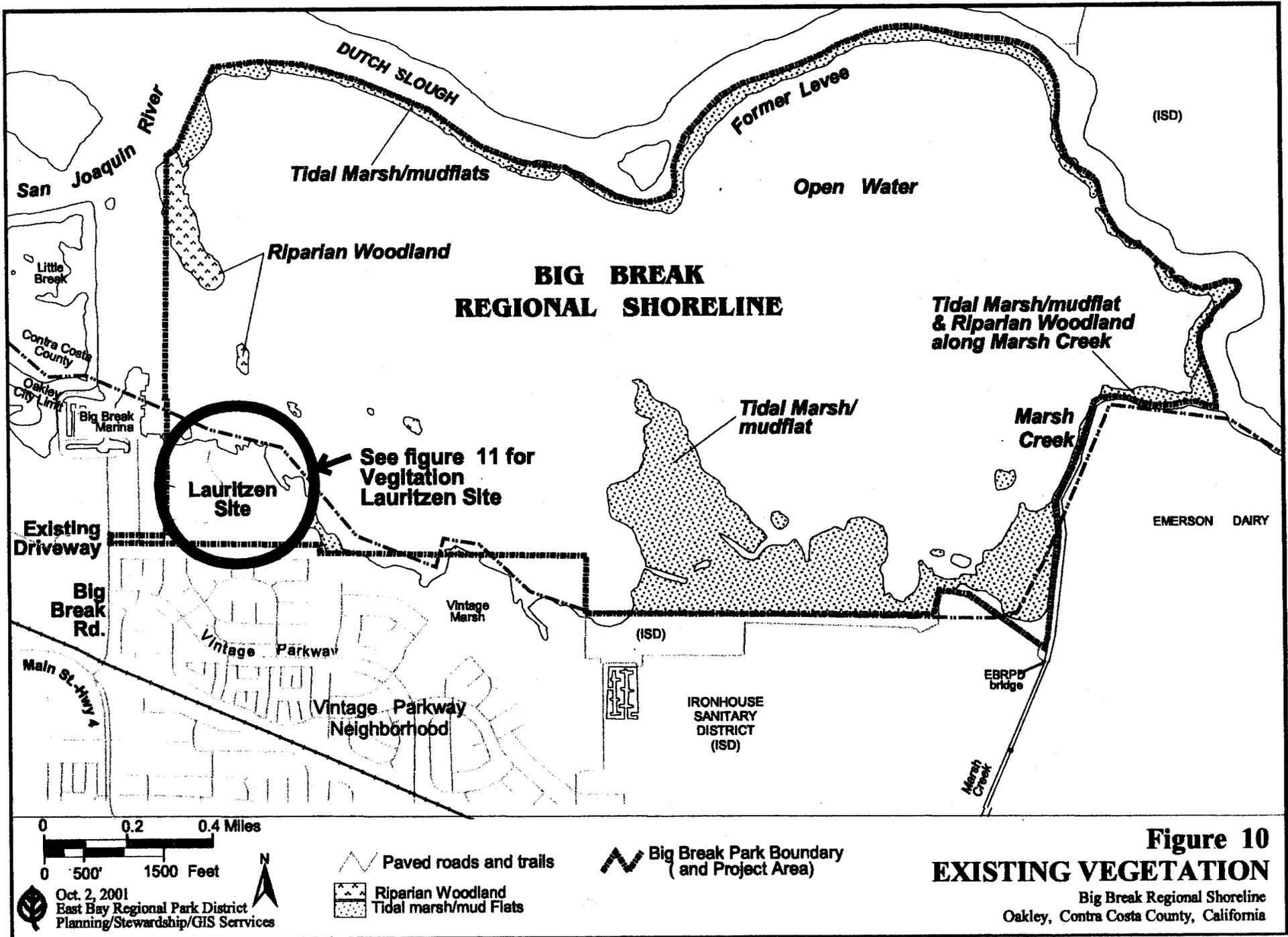
The vegetation classification system used to distinguish the various vegetation types or plant associations found on the site is based on information contained in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolfe 1995). A total of 25 distinct vegetation types were identified on the study site and are outlined in the report by Vollmar Consulting. For the purposes of this plan, these different vegetation types are combined into ecological classifications (marsh, slough, riparian, woodland, grassland). In general, the site was categorized into wetland, estuarine, and upland habitats. All scientific plant names correspond to The Jepson Manual: Higher Plants of California (Hickman 1993). Common names are from Hickman (1993), Illustrated Flora of the Pacific States: Washington, Oregon and California (Abrams 1940), or National list of plants that occur in wetlands: California (Reed 1988).

Wildlife surveys were conducted on the Lauritzen Site under contract with the NHI and Delta Science Center by Ibis Environmental Services (Ibis 2000), and supplemented with information provided by EBRPD wildlife biologists. Ibis biologists examined aerial photographs, reviewed existing reports, and coordinated with regulatory agency biologists and independent consultants. A search of the California Natural Diversity Database (CNDDDB) was conducted for known occurrences of special-status species, and site-specific surveys were carried out on the site. Wildlife species and habitat features were mapped and lists of observed wildlife were maintained during the surveys. Appendix B includes a list of wildlife species observed at the Lauritzen Site.

Plant and Animal Communities

The Lauritzen/Big Break region has a relatively high percentage and diversity of native plant species, particularly in the wetland habitats, many of which are unique or interesting from a botanical perspective. (See Figure 10). This is especially true of the tidal marsh/mudflat plant community,

29



which includes a representation of native plant species in excess of 90 percent. Two special-status plant species found on the site, Mason's lilaeopsis and Suisun marsh aster, occur within this habitat. The alkali grasslands on the Lauritzen Site have a predominance of native plant species. Most of the non-native species occur in the non-native woodland, ruderal (disturbed) and alkali grassland habitats on the site. Invasive weeds tend to occur scattered or in small isolated pockets in low numbers. The exception is broadleaf pepper-grass, which forms large, dense stands in some low-lying areas of the grasslands. Ruderal areas subject to continued disturbance (such as roadsides and the disced strip along the southern fence line on the Lauritzen Site) have a particularly high number of non-native species, including many invasive weeds.

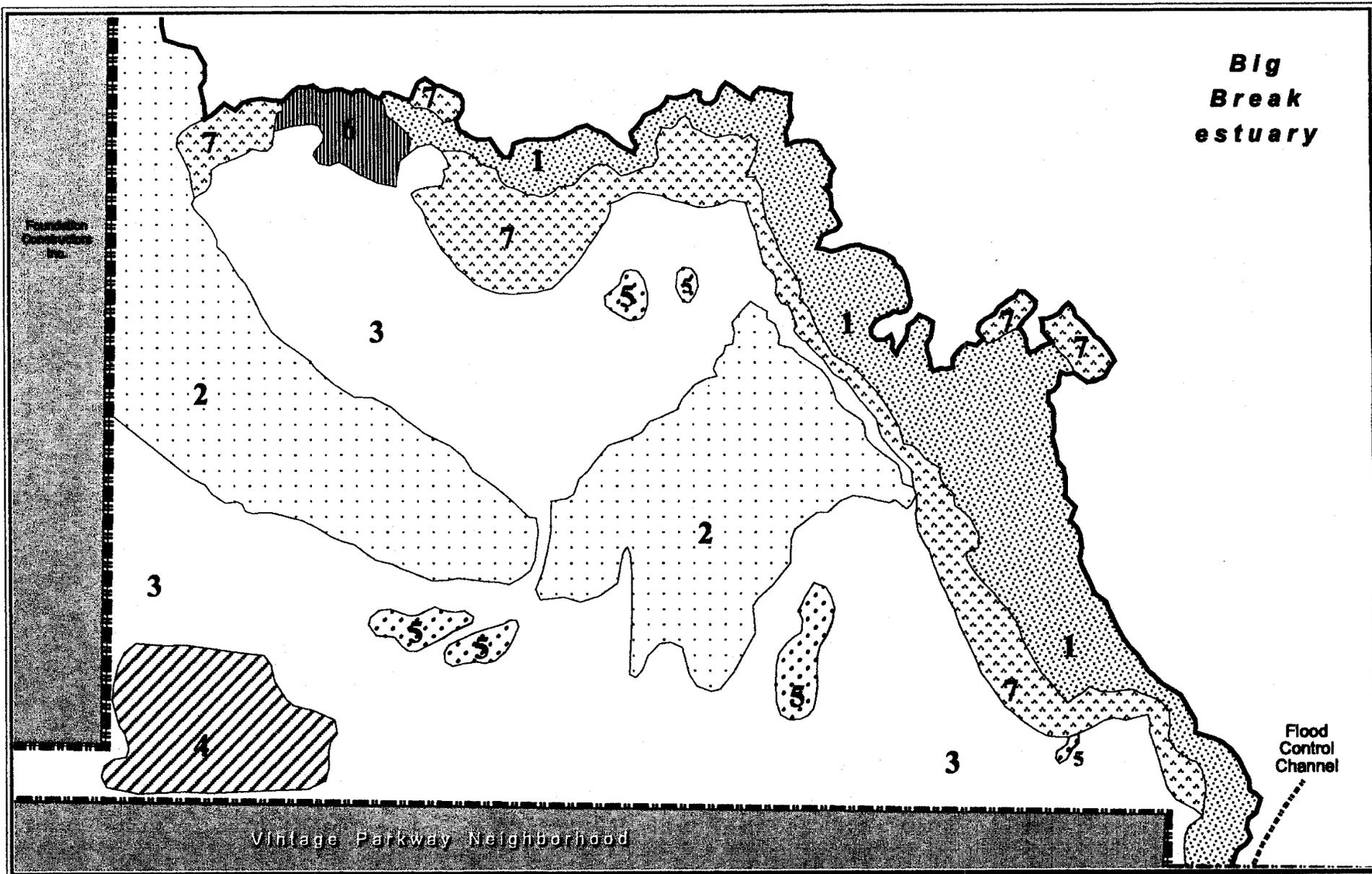
Throughout Big Break the wildlife species is diverse and rich. Seventy species of birds and several species of mammals or their sign were observed. Twenty seven special-status wildlife species have the potential to occur within the parkland and six special-status wildlife species are known to occur on the Lauritzen Site. Nesting was confirmed or suspected for black rails, northern harriers, white-tailed kites, and yellow-breasted chats.

Wetland Habitat

The levee along the northern perimeter of the site that bordered Dutch Slough, a natural historic slough channel, created the farmlands at Big Break. The site continued to be used for agriculture into the late 1920s when flood flows breached the perimeter levee along Dutch Slough and flooded the site. The levees were never repaired and the site remains an open water bay. The site now experiences average daily tidal fluctuations of a couple of feet, but is far enough upstream of the San Francisco Bay that salinity is minimal. The Lauritzen Site contains tidal sloughs and a few isolated basins that support wetland habitat. The bay shorelines and inlet sloughs are dominated by obligate or facultative wetland plant species (Reed 1988).

Tidal Marsh/Mudflat: This plant community occurs in sizable stands along the shoreline, extending into the open water bay, and surrounding the islands and the breached levee areas within the bay. Isolated stands also exist along the edges of Marsh Creek and in a low-lying area near the south end of the Ironhouse Sanitary District property. The emergent wetland vegetation is characterized by perennial monocots that include broad-leaved cattail, common three-square, tule, and California bulrush. The shorelines and lower levee banks support tidal mudflat plants that represent a diverse mix of many unique, native perennial freshwater marsh species associated with the intertidal zone. These plants are subject to daily freshwater inundation due to tidal fluctuations. Common species include floating pennywort, whorled pennywort, bugleweed, California loosestrife, water-pimpernel, and chain speedwell.

Tidal Slough/Freshwater Marsh: The Lauritzen Site contains three tidal sloughs and a few isolated basins that support wetland habitat. The tidal sloughs are directly connected to the bay through an inlet pipe (easternmost slough) or small tidal channels (middle and westernmost slough). Water levels within the sloughs fluctuate with the tides. As a result, the sloughs support concentric zones of wetland vegetation linked to small elevation changes and subtle differences in the water regime. Perennial emergent freshwater marsh occurs in the lowest areas of the sloughs. These areas remain permanently inundated except perhaps during very low tides.

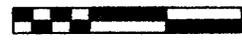


**Big
Break
estuary**

Flood
Control
Channel

Village Parkway Neighborhood

100 0 100 200 Feet



-  1 Tidal Marsh/Mudflat
-  2 Tidal Slough/Freshwater Marsh
-  3 Alkali Grasslands
-  4 Non-native Woodland

-  5 Freshwater Marsh
-  6 Alder woodland
-  7 Riparian woodland

**Figure 11
EXISTING VEGETATION
LAURITZEN SITE**

Big Break Regional Shoreline
Oakley, Contra Costa County, California

Oct. 1, 2001
East Bay Regional Park District
Planning/Stewardship/GIS Services

Within the sloughs, dense thickets of arroyo willow occur in slightly higher areas that remain permanently saturated, at least within the lower root zones, and are periodically inundated. Himalayan blackberry occurs in the mid-to-upper wetland areas adjacent to arroyo willow in locations that remain moist to saturated but are infrequently inundated. Other associated plant species include rabbit's-foot grass, Italian ryegrass, dallisgrass, joint paspalum, dotted smartweed, field mint, umbrella nutsedge, cocklebur, brass buttons, Mexican plantain, clustered dock, horseweed, and pale spikerush.

The alkali marsh component occurs at the upper wetland margin of the sloughs in areas that remain permanently moist but are infrequently saturated or inundated. The alkalinity associated with this habitat is leached from soils, which were historically subject to saltwater intrusion during summer and fall which are low-flow periods through the Delta. The alkaline marsh species tend to be restricted to the upper margins of the wetland habitats, while lower areas support freshwater marsh species. This is probably due to the fact that the lower areas are regularly flushed with fresh water, effectively diluting residual soil salts, while in the higher areas, the soils are infrequently flushed and the residual salts remain as a soil component. Plants of the alkali marsh environments include saltgrass, alkali ryegrass, broad-leaved peppergrass, yerba mansa, Mexican rush, and pickleweed. Scattered

occurrences of plant species typical of the tidal marsh may exist in scattered pockets within the tidal sloughs. The majority of the Big Break site is open water environment which is subject to tidal pulses and is always inundated. This environment is predominated by the non-native water weed *elodea*.

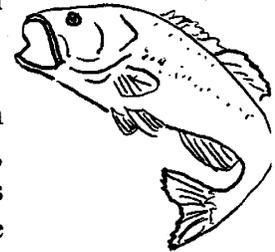
There are a few isolated low-lying, wetland basins on the site with no direct tidal connection to the bay. They remain inundated or saturated for prolonged periods due to the presence of a permanent near-surface water table that appears directly linked to the mean water level in the bay. These basins probably have a higher residual soil salinity than the tidal inlets since they do not receive direct inputs of fresh water from the bay. Most of these areas are dominated by pickleweed, which is typically associated with highly alkaline soils.

Wetland Wildlife: The California black rail, a State threatened, California fully protected, Federal Species of Concern, is a year-round resident of saline, brackish, and freshwater marshes in San Francisco Bay and the Sacramento-San Joaquin Delta. This tiny, secretive rail prefers high-marsh zones where they can retreat from high tides and build their nest in dry vegetation. The densely vegetated shorelines, islands, and swale areas of Big Break provide this important refugia and is highly suitable rail nesting habitat. A predator of the black rail, the northern harrier, a California Species of Concern, occurs in a variety of open terrains where it is often observed foraging for small reptiles, birds, and mammals. Harriers are a common resident of the Bay-Delta region and nest on the ground in drier marsh or shrubby upland vegetation. Both of these species were observed nesting in close proximity to each other at Big Break and the Lauritzen Site (Ibis 2000).

Many wading birds, including green herons and white-faced ibis, forage in the tidal sloughs and fresh water marshes. These areas also provide habitat for Western pond turtles, a California Species of Special Concern, which have been observed basking on rocks, logs, and the exposed banks. Big Break is suitable breeding habitat for turtles, and females can lay their eggs in the sandy banks and

well-drained upland soils. The hatchlings will typically remain near water while larger turtles may leave aquatic sites to aestivate or overwinter on land. The tidal sloughs, freshwater marsh, and riparian areas also provide valuable habitat for beavers, muskrats, and river otters which forage and potentially den at Big Break.

Estuarine Wildlife: Estuarine areas of Big Break include open water areas that are periodically and permanently flooded by a mix of tidal and riverine waters. In general, this estuary varies seasonally with a tremendous fresh water influence during the winter and a greater saline effect during the summer. This considerable movement and mixture of water creates a nutrient-rich environment of high aquatic diversity that is a very productive feeding area for many fish species. The mud and sand flats support a wide variety of benthic invertebrates, such as bottom-dwelling clams, amphipods, muscles, and worms. During low tides these animals are exposed to foraging black-necked stilts, marbled godwits, and spotted sandpipers. The shallow water provides habitat for diving and dabbling ducks, grebes, and cormorants. Osprey and several species of terns have been observed plunge-diving for fish in the shallows of Big Break.



Many species of native fish may be found in the waters of Big Break, such as three-spined stickleback, sculpin, starry flounder, Sacramento sucker, Sacramento pikeminnow, tule perch, Sacramento blackfish, hitch and others (see Appendix B). Although Big Break has a diverse assemblage of native fish, several non-native fish have been introduced or have successfully invaded the estuary. In the late 1800s many eastern species, such as carp, crappie, and green sunfish, were introduced into the Delta, Sacramento and San Joaquin Rivers. Several of these introduced non-natives are valuable game fish. Largemouth bass, in particular, are very popular in the Delta, including the shallow waters of Big Break and especially in the deeper water areas of Dutch Slough and the San Joaquin River. Big Break provides excellent habitat for bass, and anglers pursue these fish near the weed beds, along the shoreline, at many of the abandoned underwater structures, and riparian islets. Big Break is also popular with anglers seeking striped bass, white and channel catfish.

Upland Habitats

Evidence of former saltwater intrusion remains in the upland soils of the Lauritzen Site. These soils contain residual salts, and as a result generally support a high component of salt-tolerant plant species. The entire Lauritzen Site is underlain by a permanent near-surface water table that appears hydrologically linked to the waters of Big Break. Based on examination of soil pits, it appears the water table in the uplands remains around 8 feet below the surface most of the time. During sustained high tides or periods of high flood flows, the water table may elevate one to two feet. Most of the site consists of upland habitat supporting alkali grassland. The remaining upland areas support non-native tree stands, ruderal (disturbed) habitats, and developed areas. Ruderal habitats occur along the southern fence line, adjacent to roads, and around buildings. Developed areas include buildings and roads on the site. (See Figure 11)

Riparian Woodland: Riparian woodland plant communities are tree-dominated habitats that occur in extensive stands along the levees separating the Lauritzen Site from the bay, on the “islands” formed on sunken barges in the open bay, and in scattered small stands along Marsh Creek. This habitat supports dense, homogeneous thickets of arroyo willow, with scattered individuals or small stands of Goodding’s black willow, California black walnut, coast live oak, prunus, red alder, and Fremont’s cottonwood. Understory vegetation is a dense tangle of Himalayan blackberry, with associated shrubs and herbs, such as California rose, mugwort, and western ragwort.

Marsh Creek, along the eastern boundary of the site, is the only creek that flows into Big Break. The creek channel is straightened and bordered by levees, and supports minimal riparian or marsh vegetation. Vegetation along the creek channel is seriously degraded. The creek channel is periodically dredged and marsh and riparian vegetation is regularly cleared. The lower levee banks support a small strip of perennial, non-emergent freshwater marsh vegetation dominated primarily by California bulrush and broad-leaved cattail, which varies from five to ten feet wide along the course of the creek. Common species within this habitat include dotted smartweed, dallisgrass, joint paspalum, rabbit’s-foot grass, horseweed, and field mint. There is little riparian habitat along the creek channel other than a few, small, scattered arroyo willows. Stands of riparian trees (arroyo willow, Goodding’s black willow, and Northern California black walnut) occur just west of the levee along the middle section of the creek. The upper levee banks and tops support ruderal habitat dominated by weedy herbs and grasses.

Alkali Grassland: Alkali grassland occurs throughout most of the upland interior of the Lauritzen Site. This grassland supports a significant component of saltgrass and alkali ryegrass, both of which are perennial grasses associated with alkaline soil conditions. Alkalinity comes from leaching of remnant salts in the soils. Although these grasses are considered facultative wetland plant species, the alkali grassland areas show no surface indicators of wetland hydrology, and depth to hydric soils generally exceeds 24 inches. The presence of these grass species is attributed to the near-surface water table, which keeps the upper soils moist (though not saturated) throughout the year. Associated plant species include a mix of upland native annual grasses and non-native herbs, including wild oats, ripgut brome, western ragweed, spring vetch, prickly lettuce, broad-leaved peppergrass, and telegraph weed.

The California Department of Fish and Game’s (CDFG) California Natural Diversity Database (CNDDDB) maintains records of sites containing populations or stands of sensitive species or natural communities, which are referred to as “elements.” An “element occurrence” is a location record for a site which contains a population or stand of a sensitive element. The elements are afforded a state and global ranking, which is a reflection of overall condition in terms of their rarity and endangerment. The saltgrass/creeping wildrye plant association on the Lauritzen Site is regarded as a “terrestrial natural community” element under the category of a “valley wildrye grassland.” This plant community is considered to be “very threatened,” occurring on only 2,000 to 10,000 acres of land within its range. Management of this plant community should be oriented toward its preservation and restoration.

Non-Native Woodland: A mixed stand of non-native woodland occurs in the southwest portion of the Lauritzen property. The trees have been planted or were otherwise introduced onto the site, often around roads or near old buildings. The trees of this woodland include a mixture of black locust, sumac, eucalyptus, prunus, tamarisk, tree of heaven, and white poplar.

Upland Wildlife: The upland consists of a mosaic of grasslands, riparian woodlands, non-native woodlands, and ruderal vegetation, which is suitable habitat for a variety of wildlife. Numerous insects and ground dwelling mammals such as California ground squirrels, California voles, and Western harvest mice inhabit the grasslands and provide foraging opportunities for insectivorous and predatory birds. The white-tailed kite, a California Fully Protected Species, inhabits the grasslands, agricultural fields, and marshes of the Delta, where small rodent prey is common. Within the Lauritzen Site, this raptor will typically nest in an oak, willow, or bay laurel. They have an extended breeding season and may produce two broods within a six-month period.



Loggerhead shrikes, a California Species of Concern, are also primarily found in the open habitats of Big Break and often perch on shrubs, trees, or fences in search of prey. Typically, shrikes build their stick nests in dense woody vegetation. They are known to nest throughout the region and potentially nest on the property; however, no nests were detected in recent surveys (Ibis 2000). California horned lark, a California Species of Concern, prefers grasslands and areas with sparse vegetation. This omnivorous bird forages and nests on the ground, and they are known to occur near the mouth of Marsh Creek (S. Glover pers. comm.). The Lauritzen property provides potential habitat for this species.

The non-native and riparian woodlands provide habitat for a diverse assemblage of birds and it is an important stop-over for neotropical migrants. It supports many common residents including northern flicker, scrub jay, American robin, bushtit, song sparrow, and house finch. In addition, less frequent species like kingbirds, tanagers, and grosbeaks appear seasonally at the site. Big Break also provides habitat for many warblers such as the yellow-breasted chat and yellow warbler, both California Species of Concern. These passerines occur in riparian woodlands, where they forage and glean insects from the shrubby vegetation or the upper canopy. Both these species require dense understory for nesting, and chats are known to nest at Big Break and the Lauritzen property (Ibis 2000). The yellow warbler, a summer migrant, has become regionally rare and is not known to nest in this portion of the Delta (S. Glover pers. comm.).

Big Break is strewn with old structures, including a water tower on the Lauritzen Site, which support nesting barn owls and provide potential roosting or hibernaculum habitat for several bat species. The most significant is the pallid bat, a California Species of Special Concern, which may forage throughout the site and roost in the tree hollows (Ibis 2000).

Table 1. Special Status Plant Species List

Special status plant species known to occur, or with potential to occur, in the vicinity of the Big Break study site, southern edge of Big Break, Contra Costa County, California. Sources of information include CDFG's California Natural Diversity Data Base (1999) and California Native Plant Society's Electronic Inventory of Rare Plants of California (1999) (Antioch North and Jersey Island USGS 7.5' quadrangles).

SPECIES¹	STATUS²	HABITAT³	NOTES³
<i>Aster lentus</i> Suisun marsh aster	FSC CNPS 1B	Edges of perennial freshwater and brackish marsh in Suisun Bay.	Restricted to Suisun Bay and adjacent delta. Known occurrences around Big Break. One population found on study site along edge of Big Break next to Lauritzen Site.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	CNPS 1B	Mesic grasslands, alkaline vernal pools in the Delta and Central Valley.	Extant occurrences within Antioch North quad.
<i>Atriplex cordulata</i> heartscale	FSC CNPS 1B	Chenopod scrub, mesic alkaline grasslands/sandy soils in the Delta, basin of Central Valley.	Extant occurrences within Antioch North quad.
<i>Atriplex joaquiniana</i> San Joaquin spearscale	FSC CNPS 1B	Chenopod scrub, mesic alkaline grasslands soils in the Delta, basin of Central Valley.	Extant occurrences within Antioch North quad, extirpated from Jersey Island quad.
<i>Cryptantha hooveri</i> Hoover's cryptantha	CNPS 1B	Sandy soils in grasslands.	Extant occurrences in Antioch North quad.
<i>Erysimum capitatum</i> var. <i>angustatum</i> Contra Costa wallflower	FE/CE CNPS 1B	Inland sand dunes (Antioch dunes).	Known from only three occurrences at the Antioch dunes.
<i>Hibiscus lasiocarpus</i> rose-mallow	CNPS 2	Edges of perennial freshwater and brackish marsh in the Delta, basin of mid-Central Valley.	Extant occurrences in Jersey Island quad.
<i>Isocoma arguta</i> Carquinez golden bush	FSC CNPS 1B	Alkaline grasslands in delta.	Extant occurrences in Antioch North quad.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	FSC CNPS 1B	Edges of brackish and freshwater marsh in the Delta, San Pablo Bay.	Extant occurrences in Antioch North, Jersey Island quads.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	FSC/CR CNPS 1B	Edges of brackish/freshwater marsh, and riparian scrub in the Delta.	Known occurrences around Big Break. Two populations found on study site along edge of Big Break next to Lauritzen Site. Other occurrences expected.
<i>Limosella subulata</i> Delta mudwort	CNPS 2	Edges of brackish/freshwater marsh, on tidal mudflats, in the Delta.	Known occurrences around Big Break. Not found during surveys but likely to occur on study site.
<i>Oenothera deltooides</i> ssp. <i>howellii</i> Antioch dunes evening primrose	FE/CE CNPS 1B	Inland sand dunes in the Delta.	Known from only three native occurrences within Antioch North and Jersey Island quads.

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

Notes:

1. Scientific names correspond to Hickman (1993), common names correspond to Hickman (1993) and Abrams (1940)
2. FE = federally listed as endangered; FSC = federal species of concern; CE = state listed as endangered; CR = state listed as rare; CNPS 1B = listed as rare, threatened, or endangered in California and elsewhere by the California Native Plant Society (CNPS); CNPS 2 = listed as rare in California, more common elsewhere by CNPS.
3. Habitat/Notes from Skinner and Pavlik (1994), Hickman (1993), CNDDB (1999), Munz and Keck (1960), Abrams (1940).

Source: East Bay Regional Park District and Vollmar Consulting, 2000. Big Break Marsh Project, Vegetation, Wetland & Botanic Studies

Table 2 Special Status Fish and Wildlife Species List

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS ¹	STATE STATUS ¹	OCCURRENCE ²
California black rail	<i>Laterallus jamaicensis</i>	FSC	CT/CFP	O
White-tailed kite	<i>Elanus leucurus</i>	-	CFP	O
Northern harrier	<i>Circus cyaneus</i>	-	CSC ³	O
Swainson's hawk	<i>Buteo swainsoni</i>	-	CT	P
Ferruginous hawk	<i>Buteo regalis</i>	FSC	CSC	P
Sharp-shinned hawk	<i>Accipiter striatus</i>	-	CSC ³	O
Cooper's hawk	<i>Accipiter cooperii</i>	-	CSC ³	O
Peregrine falcon	<i>Falco peregrinus</i>	Delisted	CE/CFP	O
Short-eared owl	<i>Asio flammeus</i>	-	CSC ³	P
Burrowing owl	<i>Athene cunicularia hypugea</i>	FSC	CSC	U
Long-eared owl	<i>Asio otus</i>	-	CSC ³	P
Yellow-breasted chat	<i>Icteria virens</i>	-	CSC ³	O
Tricolored blackbird	<i>Agelaius tricolor</i>	FSC ³	CSC ³	U
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSC	CSC	O
Suisun song sparrow	<i>Melospiza melodia maxillaris</i>	FSC	CSC	N
Yellow warbler	<i>Dendroica petechia</i>	-	CSC ³	O
California horned lark	<i>Eremophila alpestris</i>	-	CSC	P
Double-crested cormorant	<i>Phalacrocorax auritus</i>	-	CSC ³	O
Great blue heron	<i>Ardea herodias</i>	-	CDF ³	O
Great egret	<i>Ardea alba</i>	-	CDF ³	O
Snowy egret	<i>Egretta thula</i>	-	* ³	O
Black-crowned night heron	<i>Nycticorax nycticorax</i>	-	* ³	P
California red-legged frog	<i>Rana aurora draytonii</i>	FT	CSC,CP	N
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	FSC	CSC	U
Western pond turtle	<i>Clemmys marmorata</i>	FSC	CSC	K
Giant garter snake	<i>Thamnophis gigas</i>	FT	CT/CP	P
Pallid bat	<i>Antrozous pallidus</i>	-	CSC	P
Delta smelt	<i>Hypomesus transpacificus</i>	FT	CT	P
Longfin smelt	<i>Spirinichus thaleichthys</i>	FSC	CSC	P
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	FT	CSC	P
Green sturgeon	<i>Acipenser medirostris</i>	FSC	CSC	P
Steelhead	<i>Oncorhynchus mykiss</i>	FT	CSC	P
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FT/FE	CE	P

¹ Status definitions and governing agencies follows:

U.S. Fish and Wildlife Service

FE Listed as endangered by the Federal Government
 FT Listed as threatened by the Federal Government
 FSC Federal species of concern

California Fish and Game Commission

CE Listed as endangered by the state of California
 CT Listed as threatened by the state of California
 CSC Species of Special Concern
 CFP Fully Protected Species
 CP Protected Species

Other Codes

CDF California Department of Forestry - sensitive species
 * No special status but being tracked by CNDDB

² Occurrence: O=observed during our surveys, K=known to occur, P=potential to occur U=unlikely to occur, N=no habitat potential or outside range

³ Rookeries or nesting only

Sources: East Bay Regional Park District and IBIS Environmental Services 2000 Wildlife Surveys at the Lauritzen Property, Contra Costa County, California.

Wide-Ranging Wildlife Species

Seventy species of birds were identified at the Lauritzen Site (Ibis 2000, Appendix A). Some of the more common include great blue herons, great egrets, and snowy egrets which mainly feed on invertebrates and small fish. Although no cormorant, egret or heron nests were identified during the surveys (Ibis 2000), Big Break's numerous riparian islets and woodlands provide potential nesting habitat for these species. Other resident birds, such as American kestrels, red-tailed hawks, scrub jays, and crows, occur in a wide range of habitats on the site. Several species of mammals, such as grey foxes, raccoons, and striped skunks, are remarkably adaptable and range throughout the wetlands, ruderal areas, and uplands of Big Break.

Special Status Species

Special-Status Plants: The term "special status" refers to those species listed, proposed for listing, or candidates for listing by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) as endangered, threatened or rare. It also includes USFWS and CDFG species of concern and plants listed as rare or endangered by the California Native Plant Society (CNPS). Table 1 is a list of special status plants occurring or with the potential to occur on the site. The CDFG's California Natural Diversity Data Base (CNDDDB 1999) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (Skinner And Pavlik 1994, electronic update 1999; Antioch North and Jersey Island USGS 7.5' quadrangles), were referenced to determine which special-status species had the potential to occur in the vicinity of Big Break. Big Break also contains several species identified by the East Bay Chapter of the California Native Plant Society as "unusual and significant." These plants are considered rare in Alameda and Contra Costa Counties, but not necessarily in other parts of the state. At least 11 of these plants are known to occur on the site. Twelve special status plant species have the potential to occur in the area. Three of these species, Suisun marsh aster, Mason's lilaepsis, and Delta mudwort occupy tidal marsh/mudflat habitat in the Delta. One population of Suisun marsh aster and two populations of Mason's lilaepsis exist within this habitat along the base of the levee separating the Lauritzen Site from the bay. The latter is a state-listed rare plant, while the former is a plant considered rare by the CNPS (List 1B). CDFG's CNDDDB indicates that several populations of delta mudwort, a CNPS List 1B species, occur along the northern perimeter of Big Break. Other special-status plants with potential to occur in this habitat include delta tulle pea and rose-mallow.

The low-lying basins on the Lauritzen Site that support alkali marsh vegetation, such as pickleweed, provide low to moderate potential habitat for heartscale, and San Joaquin spearscale. These species are associated with chenopod scrub and alkaline grasslands within low-lying basins or flats. The alkali grasslands on the Lauritzen Site provide low to moderate potential habitat for alkali milk-vetch and Carquinez golden bush. Other special status plant species with the potential to occur on the site are associated with inland dunes and exposed sandy soils. While the soils throughout the Lauritzen Site consist primarily of sand, there are no sand dunes or open exposed sands. It is therefore unlikely these species would occur on the site. There is minimal potential habitat for special status plant species along Marsh Creek. This area is seriously degraded and does not provide any of the specialized native habitats required to support these species.



Special-Status Wildlife: Based on a review of the California Natural Diversity Database and surveys conducted by East Bay Regional Park District and Ibis biologists, twenty seven (27) special-status species were identified on or could potentially occur at the Lauritzen Site of the Big Break Regional Shoreline. Table 2 includes the status of these species and their potential for occurrence. Twelve listed species are known to occur and seven species potentially occur on the site. Many species of raptors, including the peregrine falcon, Cooper's hawk, and sharp-shinned hawk roost and forage at Big Break, but are not known to nest at the site. Other species which regionally occur, such as the Swainson's hawk, Western burrowing owl, tri-colored blackbird, silvery legless lizard, and giant garter snake, are documented in the area, but have not been observed at the site. In addition, Big Break is considered outside the distributional range of the Suisun song sparrow and does not provide habitat for California red-legged frog (Ibis 2000).

Special-Status Fish: The shallow water estuary system of Big Break is essential habitat and provides valuable nursery areas for many native fish species. Delta smelt, a Federally threatened and State threatened species, prefer shallow water habitat in or adjacent to main river channels of the Bay-Delta, where they feed on zooplankton. These small fish typically occur in and around the open water and near shore areas of Big Break. Delta smelt are primarily an annual species, with their life cycle beginning and ending within one year. They spawn from late February through May (Radtke 1966) in relatively cool waters along the river's edge and adjoining sloughs. Longfin smelt, a California Species of Special Concern and Federal Species of Concern, are normally found in the San Pablo and Suisun Bays. Adult longfins are slightly larger than Delta smelt and appear to feed on larger zooplankton. However, spawning adults may be found in the Big Break region laying their adhesive eggs on marsh vegetation and roots. The young longfins hatch out a few days after spawning and drift downstream where they complete much of their life cycle (Moyle 1976).

Another very notable fish is the Sacramento splittail, a Federally threatened species and California Species of Special Concern, which occurs in shallow water of the Sacramento-San Joaquin Delta region. This species prefers habitat at or near the mouth of streams where it forages on aquatic and terrestrial invertebrates washed downstream during flood events (R. Baxter, CDFG, per comm.). The intertidal, slack water, and riverine flood plains of Marsh Creek are particularly good foraging and spawning habitat for splittail, and within these areas the adults will lay their eggs over flooded vegetation and weed beds (Moyle 1976). Many of the larval and juvenile splittail are transported to the Delta by freshwater outflows of the Sacramento and San Joaquin Rivers (R. Baxter, CDFG, per comm.). This riverine system also provides habitat for green sturgeon, a California Species of Special Concern and Federal Species of Concern, which is primarily marine but seasonally occurs in the shallow water habitats of the lower San Joaquin River and Big Break estuary.

Big Break is bordered by deeper waters of Dutch Slough and the San Joaquin River. Steelhead, a Federally threatened species and California Species of Special Concern, and Chinook salmon, a Federal endangered or threatened and State endangered species, pass through Big Break on their winter-spring migrations into the freshwater tributaries of the San Joaquin and Sacramento watersheds. The shallow water habitat of Big Break is an important foraging habitat and refugia for the juvenile steelhead and salmon as they migrate towards the Pacific ocean.

Several invasive weedy plant species occur in isolated populations or are scattered throughout the Lauritzen Site in significant enough numbers as to warrant close attention. These plants have the potential for expanding their populations into additional wildland settings if left unmanaged. They include yellow starthistle, perennial pepperweed, fennel, Russian thistle or tumbleweed, hoary cress, and giant reed.

Perennial peppergrass occurs on the Lauritzen Site in scattered stands within the uplands and along the margins of the wetlands. This weed is extremely invasive, and will require immediate treatment to prevent its spread into other parts of the site. Yellow starthistle and Russian thistle are presently confined to roadside margins and in the disked firebreaks along the border of the residential area south of the Lauritzen Site, but have the potential to invade other disturbed areas. Small, isolated populations of hoary cress exist in seasonally wet, alkaline areas of the property. Fennel appears sporadically on the uplands of the Lauritzen Site. Giant reed occurs in small, isolated clumps on some of the "islands" formed on sunken barges in the open bay, on the levees, and along Marsh Creek.

The aquatic portions of Big Break are infested with Brazilian waterweed. Water hyacinth, a native of tropical America, has become established as a weed in the Delta, and has the potential to infest the Big Break area. Brazilian waterweed grows submerged in the shallow water of the bay; water hyacinth is a floating plant that forms dense mats on the water surface, impairing light penetration and impeding navigation. Left unmanaged, these plants can affect the natural biodiversity and recreational water use of this area.

Mitten crabs are a species of aquatic crab introduced from China in about 1992. This species spends most of its adult life in freshwater streams, but must enter the salt water environment to spawn. Adult mitten crabs burrow into Delta levees and create potential stability problems. It is a voracious bottom feeder which often interferes with bait anglers.

Commensal rodents such as gophers, voles, mice, and possibly the Norway rat are expected to inhabit the upland areas of Big Break. To date, no surveys have been conducted to establish their presence and numbers. Several different seasonal types of biting mosquitos breed in both fresh and brackish water of the former Lauritzen and Porter parcels as well as in the adjacent Hofmann property. In fresh water, mosquito fish and other species help to control population numbers. Mosquito control is the responsibility of the Contra Costa Mosquito and Vector Control District, which monitors for mosquito presence in the marshes and applies appropriate methods of control to reduce mosquito nuisance.

D. Visual Resources

The water and natural vegetation of Big Break Regional Shoreline provide refreshing and pleasant views for the park user. On the water, the view is expansive because of the large size of the inlet. Views include Mt. Diablo, Dutch Slough levee, Jersey Island and the Highway 160 bridge. Nearby residences are also visible from many areas. In other areas on the water, particularly along the

wetland vegetation, one can feel far away from the urban scene. Views of the inlet from the Lauritzen Site are generally restricted because of the blackberries on an old remnant levee and the surrounding wetland built up upon derelict barges. Open views to the water are possible at the cabin site. All levels of the old water tower afford good views of the parkland, with panoramas increasing with each level.

E. Circulation

Roads and Trails

Big Break is approximately 1½ hours from Oakland and one hour from Stockton. The western end of the parkland with the only land area (Lauritzen Site) lies only about one mile from the freeway section of Highway 4. Big Break Road (a collector road) provides direct public auto access from Highway 4 into the Lauritzen Site. Between Main Street (Highway 4) and Vintage Parkway (just south of the Big Break entrance), Big Break Road is approximately 38 feet wide in an 84 foot right-of-way, which includes a right hand turn onto Vintage Parkway. A stop sign is located on Vintage Parkway at Big Break Road. Some neighbors say that there are traffic conflicts at the intersection and want a signal, but the City says that the intersection is engineered correctly for the existing level of traffic. A sidewalk is located on the east side of the road along the subdivision and a Class II bike trail (on-road, striped) is planned.

Big Break Road is about 28 feet wide in a 60 foot right of way between Vintage Parkway and the Marina (just north of the Big Break entrance). Foundation Constructors Incorporated is slated to build a sidewalk here through a deferred improvement agreement.

The parkland entrance is a 100 foot wide, 725 foot long access corridor from Big Break Road located between the Vintage Parkway neighborhood and Foundation Constructors Incorporated (FCI). FCI is currently using this corridor for its entry road, but will relocate it directly onto Big Break Road in the future. The unpaved access road continues through the center of the Lauritzen Site, crossing the slough over a culvert, to the security residence and old home site. There are no other roads or official trails in the project area. A portion of the Big Break Regional Trail is planned to run through the Lauritzen Site. In the future it will connect, on the east, to the existing and planned portion of the Big Break Regional Trail, and on the west, to future acquisitions that will eventually connect to Antioch/Oakley Regional Shoreline. There is currently no official, off-street parking for the Big Break Regional Trail.

The Tri-Delta Transit Authority runs three bus lines that stop at the intersection of Big Break Road and Main Street (Highway 4). Two of the lines run week days, one of which is a limited stop, commuter line. The other line runs during the weekend. All lines run between the Pittsburg BART station and the City of Brentwood.

Boat Access

Big Break is accessible directly from the San Joaquin River and Dutch Slough. Through these waterways, Big Break is connected to a large number of private marinas on the mainland, Sherman Island, Bethel and other islands. The closest marina is Big Break Marina off of Big Break Road. It provides launching for motorized boats and its channel connects directly into the park's water acreage. Big Break is considered "navigable" water, even though it is very shallow, has aquatic weeds, underwater obstructions and artificial islands which are mapped as hazards to navigation (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service Nautical Chart # 18661). Very slow speeds are required for safe boating through the area. (See Figure 12)

F. Facilities

Lauritzen Site

All facilities within the parkland are located on the only upland area which is located in the southwestern corner of the park, accessible from Big Break Road. It is a relatively isolated, triangle shaped area, surrounded by the Foundations Constructors Inc., housing development and water and wetland (See Figure 4). An old slough runs through the middle of the site which was once operated by gates. Tidewater flows through it during the higher tides and it is filled with vegetation, primarily black berry vines. The majority of the site consists of grass fields with some scattered debris from the earlier salvage business. An EBRPD security residence provides protection for the Lauritzen Site, which is currently closed to the public. The old Lauritzen cabin functions as a shelter, but is not in good condition after repeated flooding. The large wood water tower built on large concrete corner foundations appears to be structurally sound but would require rehabilitation to be used. The tower could provide a good site for viewing Big Break from all levels if rehabilitated. The residence and water tower are located along the edge of the inlet and are surrounded by volunteer cottonwoods, foundation plantings and some orchard trees. The complex includes a hand made boat launch ramp and decrepit dock of old barges. The site is a rustic and pleasant habitation along a serene waterway. None of the structures have historic significance. However, the water tower appears to be of local historical interest and should be considered for public use.

The Lauritzen Site is separated by fences from the construction company and the backyards of adjacent residences of the Vintage Parkway neighborhood. The old corrugated hay barn, located by groves of trees at the southern end of the property, was recently dismantled. An environmental assessment of the former Lauritzen property in 1998 found that the site is free of hazardous materials such as chemicals or other toxic waste.

Water and Wetland

No facilities are located within the water and wetland area except the county Flood Control District drainage channel located within an easement across park property at the eastern edge of the Lauritzen Site. Boards lying across the channel indicate that local residents may be crossing the channel in an unsafe manner. Numerous decrepit barges and pilings line the shoreline, but dense blackberries form

a living barrier between the shore and the marine relics. The plants also create a visual barrier to the water in most areas. The abandoned barges dot the shallow water area, particularly around the Lauritzen site, and are mapped as hazards on the U.S. government nautical chart. Privately- owned hunting blinds are also found along the edge of the marshland.

G. Utilities

The Lauritzen Site has existing utilities for the EBRPD security residence although some are temporary. Future recreational uses will increase demands and service needs and will require upgraded service lines for all utilities. Electrical power and telephone are carried to both EBRPD and FCI on poles from Big Break Road, through the 100 foot -wide access corridor and then through FCI. The line ends at a meter near the cabin. Several unused power poles remain in the entry corridor. An old propane tank that previously served the cabin is located near it.

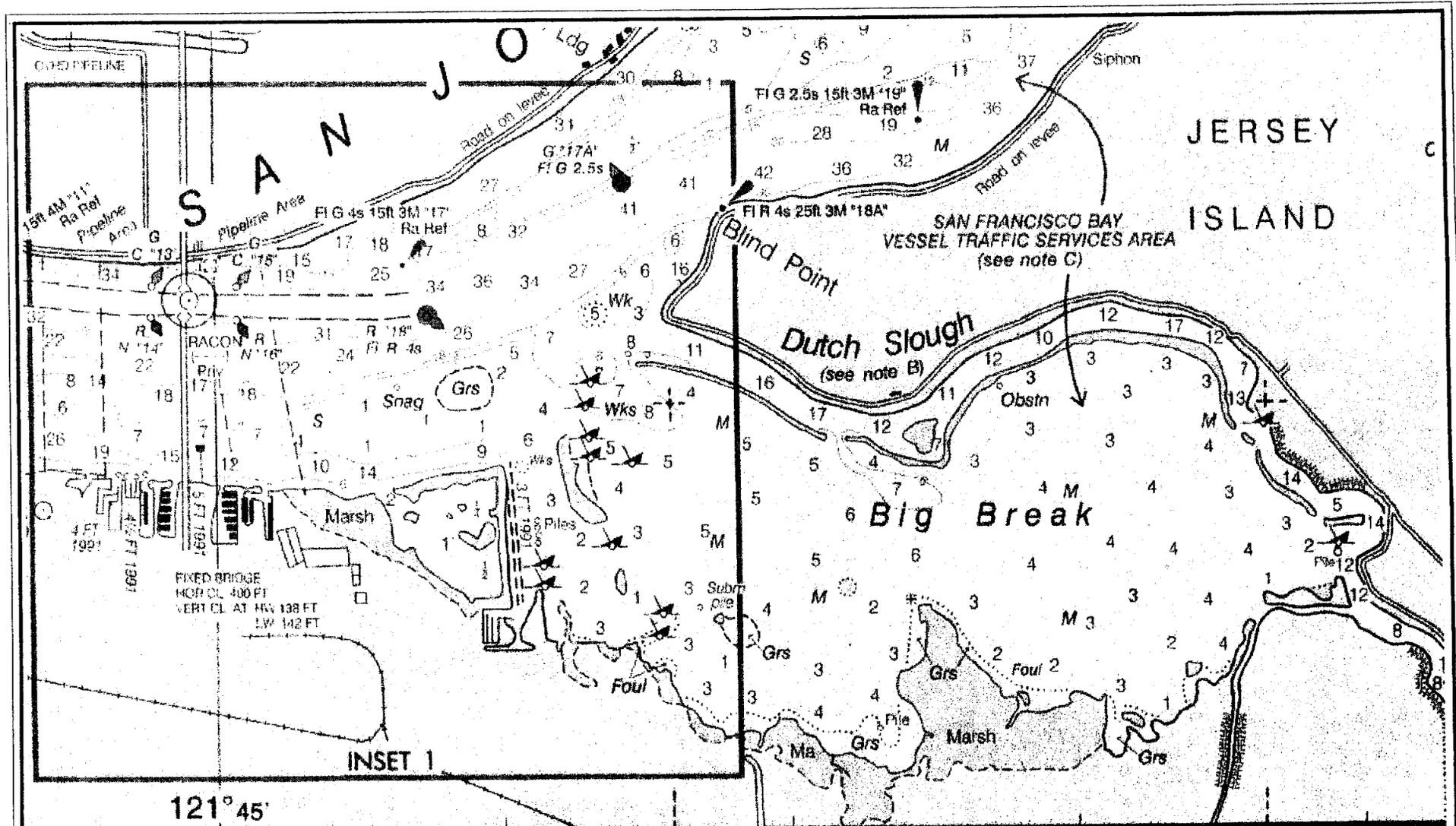
A six inch water main is located in Big Break Road at the park entry and a 12- inch line is located to the south at Big Break and Vintage Parkway. EBRPD is currently using a 5/8- inch water meter at Big Break road with a one- inch water line running underground along FCI, and a temporary one- inch line above ground line crossing the tidal slough to the cabin. It is not determined whether connection to the six- inch line will be sufficient for fire fighting for new facilities. Two old water wells are cited in technical reports. One was destroyed prior to District ownership and one near the former barn is reported to still exist.

The cabin uses a preexisting septic/leach system. A chemical toilet is located by the water tower. The Lauritzen Site is within the Ironhouse Sanitary District jurisdiction although there is no sewer connection at this time. The likely point for a gravity sewer connection along the southern edge of the Lauritzen Site is the end of the subdivision sewer at Vintage Parkway and Almaden Circle, about 200 feet from Big Break Road. A lift station would be required within the parkland and possibly part of the line would be a force main. Wetland areas could be avoided if the line crossed the tidal slough over the culvert with the existing road.

H. Park Operations and Maintenance

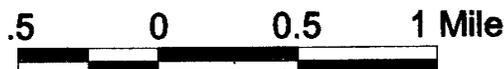
Big Break is currently closed to the public because recreational facilities have not been developed. Big Break is part of the Shoreline Operational Unit and is operated and maintained by the Martinez Regional Shoreline staff. Their primary responsibility currently is maintaining the 50 foot (minimum) fire break next to the adjacent residential neighborhood. The Lauritzen Site is a relatively new acquisition and debris remains from the former ownership, including a number of derelict barges along the shoreline and in the shallow water. In the future, the park crews may have to deal with debris and hazards floating in from the river, particularly oil spills and floating debris.

Listed species occurring in the Lauritzen Site could be disturbed by operational personnel during nesting season if care is not taken.



National Oceanic & Atmospheric Administration (NOAA)
 Nautical Chart #18661 (9/25/99)
 U.S. Department of Commerce
 California Sacramento & San Joaquin Rivers

Soundings are in feet at mean lower low water



- Wks, Wreck
- M Mud
- Ma Marsh
- Grs Grass
- Foul Hazard

Figure 12
NOAA NAUTICAL CHART
Big Break Regional Shoreline Preserve
 Oakley, Contra Costa County, California

I. Public Safety

Fire and Rescue

Primary jurisdiction for wildland fires at Big Break Regional Shoreline is the responsibility of the Oakley Fire Department. The East Bay Regional Parks Fire Department will provide supplemental response depending on the magnitude of the fire. The estimated response time for the Oakley Fire Department is five minutes. The closest East Bay Regional Parks fire station is at Contra Loma Regional Park, approximately 15 minutes away if the station is staffed. Park staff maintains a 50 foot space serving as a fuel break (approximately 2,000 feet long) between the edge of the park and the Weibel and Stonegate Circle neighborhoods.

The primary responder for fire/rescue emergencies (including structure fires and medical emergencies) is the Oakley Fire Department with an estimated response time of 5 minutes. In the event of water related emergencies, the Rio Vista Coast Guard station will be requested to respond with an estimated response time of 15 minutes. In addition, the Bethel Island Fire Department would respond with a rescue boat with a response time of approximately 20 minutes. The East Bay Regional Parks Fire Department will respond with an inflatable rescue boat from Fire Station One with an estimated response time of 40 minutes.

The Oakley Fire Department will handle initial response to hazardous materials incidents. East Bay Regional Parks Fire Department will assist in identification of unknown substances via the Hazardous Materials Categorization Identification Kit, along with clean-up of the material.

Police

Land-based activity: Big Break Regional Shoreline falls under concurrent jurisdiction of the East Bay Regional Parks Police Department and Oakley Police Department (a contract department under the Contra Costa County Sheriff). Oakley Police Department provides patrol of adjacent lands and immediate response to critical emergencies on District property until officers from our Department arrive. According to the Oakley Chief of Police, they have experienced very few problems in that area.

There is currently a non-District employee caretaker residing in the cabin. There have been no calls for service from the resident. The cabin is tentatively slated for removal because of its deteriorated condition. Decrepit barges and piling are scattered along the shoreline of the Lauritzen Site and extend out into the shallow water. The structures are connected by blackberries and aquatic plants that create a wide wetland fringe around the site. Several barges near the cabin are accessible to people but most are covered with dense blackberry bushes and other vegetation which serves as a natural barrier.

Marine-based activity: Big Break hosts several recreational activities requiring varied levels of police response and patrol attention including waterfowl hunting, fishing, and boating. Enforcement has primarily been the responsibility of the Contra Costa Sheriff's Marine Patrol, which patrols the Contra Costa portion of the Delta and responds to marine emergencies. Because they have concurrent

jurisdiction over Big Break and are berthed nearby, they will continue to patrol the area as their staffing allows, but have transferred to the District Police Department primary responsibility to investigate serious accidents or crimes. According to the Contra Costa County Sheriff's Marine unit there has been one fatal boating accident within the past three years, but they have otherwise provided only occasional patrol. Potential police marine issues include:

Waterfowl Hunting

Big Break has historically been used by seasonal waterfowl (duck) hunters, who primarily hunt from "duck boats" or floating blinds which the hunters tow into the embayment. Hunting on upland areas is no longer legal. The District Marine Officer and California Department of Fish and Game wardens periodically check hunting licenses and will continue to enforce hunting laws. The existing floating duck blinds have been moored to District shoreline property during the off-season without incident. Permanent blinds attached to the land are not legal.

Fishing

The District Marine Officer and California Department of Fish and Game (CDFG) wardens periodically check fishing licenses and will continue to enforce fishing laws. Illegal gillnetting and other illegal fishing activities occasionally occur, requiring additional monitoring.

Boating

Because of the very shallow depth and the navigational hazards, safe boat speeds are limited. In the middle of Big Break inlet, speed is not an issue. Because the navigational hazards are well-marked on navigational maps, they do not need to be signed by the District but some may warrant removal. The Contra Costa County Sheriff's Marine Unit will continue to patrol Big Break along with EBRPD. Patrols will include vessel inspections to ensure safe boating operation (including alcohol enforcement). Fish and Game Codes will also be enforced. Boating accidents will be investigated by the District.





IV. LAND USE PLAN

Big Break Regional Shoreline, including the Lauritzen Site, is a special marine environment with unique features and significant resources, particularly the open water, wetland habitat and wildlife. In addition to being the home to many native and migratory species, the parkland is also home, or a resting spot, for many listed species of birds and fish. Big Break's sizeable open space area allows conservation as well as recreational use as a Regional Parkland. It is a very suitable location to provide for shoreline access as well as a multitude of interpretive and educational programs focusing on the resources and challenges of the San Francisco/San Joaquin/Delta. The intent of the LUP is to balance resource protection and public access with appropriate facilities, activities, and resource management strategies. This includes enhancement and restoration of valuable habitat areas where feasible.

The Lauritzen Site is located next to a residential neighborhood where neighbors for many years have had a special connection to the site. The neighbors also have an appreciation and attachment to the beauty and value of Big Break and the Lauritzen Site. Neighbors serve as additional eyes and ears to alert park staff to problems and concerns.

The LUP proposes the siting of facilities at the Lauritzen Site to buffer neighbors and sensitive resources from park activities and facilities. The Recreation Unit is kept to a minimal size. Half of the site, where there are existing nests of listed species (including Black Rails, White-tailed Kites and Northern Harrier), has been designated as a Special Protection Unit and access is limited. Preservation of these rare birds will be an important part of educational programs. The District will continue to evaluate the possibility of improvements to the natural quality of this unit to optimize habitat for special status species. The LUP is shown in graphic form in Figures 13, 14 and 15.

The following land use designations, resource management strategies and recreational development recommendations will guide the management and use of the District's newest shoreline parkland. The LUP is schematic in nature. The exact locations for activities, facilities and restoration areas will be determined during the subsequent design phase. EBRPD will work with regulatory agencies to specifically site each structure and activity area in locations that minimize disturbance to existing listed species and minimize costs where possible.

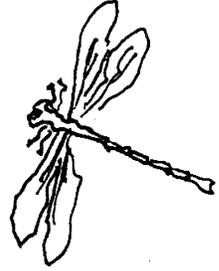
A. Designation of Planning Units

Natural Unit

EBRPD establishes Land Use Designations or "units" to indicate different levels of resource protection and recreational use within a specific parkland. Both a Natural Unit and Recreation/Staging Unit are included in the parkland. The Natural Unit includes approximately 1,636

acres or more than 99 % of the parkland. The Recreation Unit includes approximately 12 acres or less than 1% of the parkland. (See Figure 13 and 14)

The purpose of designating a Natural Unit is to preserve and enhance natural habitats. The Natural Unit for Big Break includes the open water area, shoreline wetlands and wetland portions of the Lauritzen Site. Natural Units generally include “lower intensity recreational activities” such as hiking, plant and wildlife study, educational pursuits, and contemplation. In the case of Big Break, the Natural Unit also includes existing recreational activities such as boating, fishing as well as hunting (from boats and floating blinds) which are allowed within the public domain.



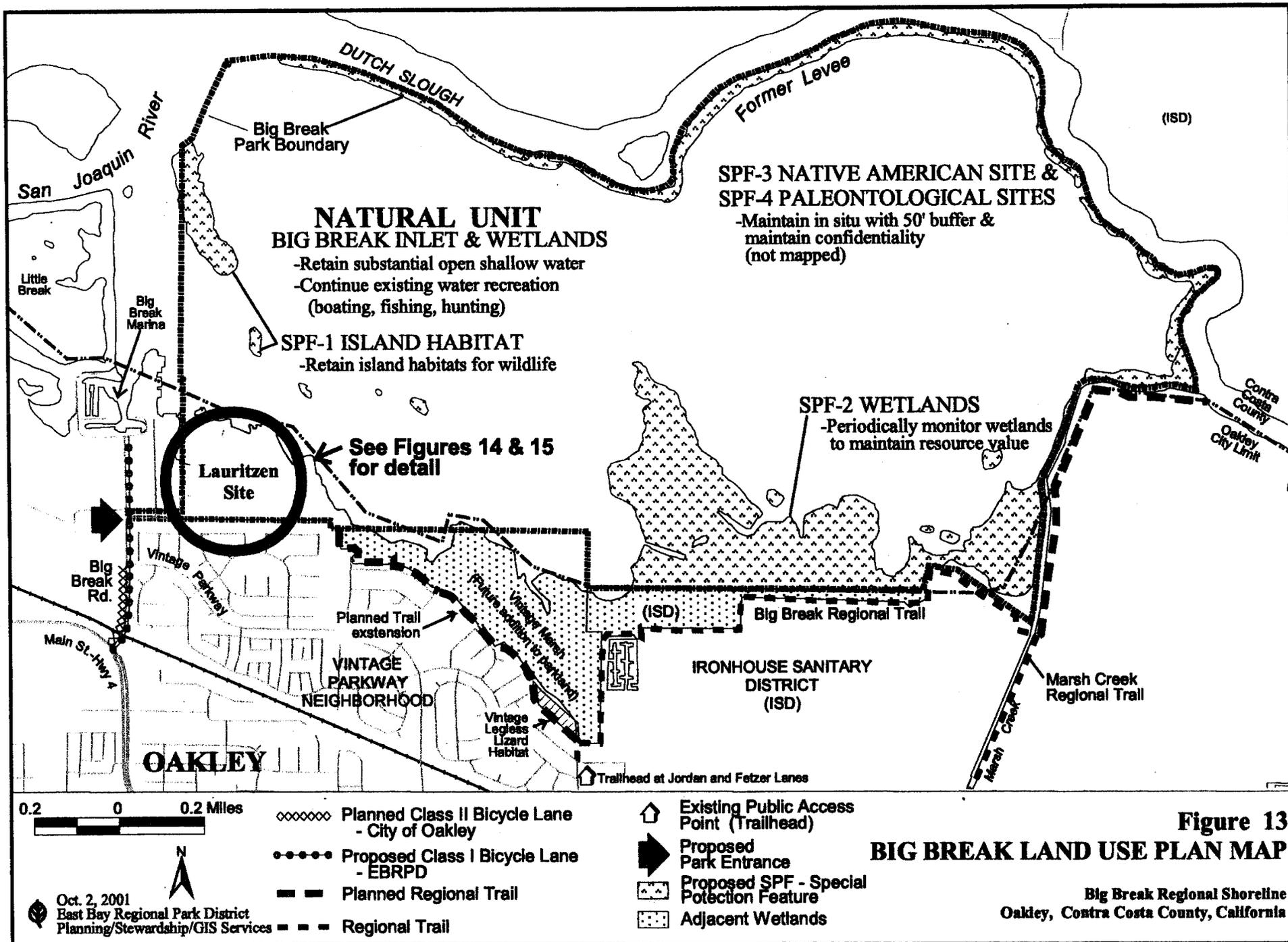
Recreation Unit

The purpose of designating a Recreation Unit is to protect open space by clustering recreational development while providing recreation activities and facilities including access roads, parking and service facilities. The Lauritzen Site, accessed from Big Break Road, is the only land area within the parkland. This upland area was purchased with the goal of providing shoreline and recreational space at Big Break and has good potential for public use. The Lauritzen Site is a relatively small shoreline meadow, much of which is within the flood plain. A tidal slough flows through the center, at higher tides, dividing the higher ground into two areas. An existing road crosses the slough to the shoreline. The slough and surrounding wetlands contain significant habitat areas and are resting areas and home for wildlife, including listed species. Based on a thorough resource investigation of the site the LUP proposes interpretive and recreational facilities in areas that are compatible with and buffered from adjacent resource and residential areas.

Two small Recreation Units are designated at the Lauritzen Site. The Northern Unit is centered on a high spot where the existing cabin and water tower are located. It includes the open shoreline area and meadow. The Southern Unit includes the access corridor from Big Break Road and the adjacent upland area with existing grove of trees. This area is bounded by Foundation Constructors Inc. and the adjacent neighborhood. The Recreation Units are designated for developed facilities that will serve Big Break Regional Shoreline, interpretive and educational facilities and parking for the Big Break Regional Trail.

Special Features

The parkland contains areas with unique or fragile natural, cultural, aesthetic or educational features that are identified as Special Protection Features (SPF) and areas that require special maintenance or care that are identified as Special Management Features (SMF).



Designate Special Protection Features:

- (SPF-1) ISLAND HABITAT: including islands, wrecks and former Dutch Slough levee
- (SPF-2) WETLANDS: along the southeastern shoreline of the parkland
- (SPF-3) NATIVE AMERICAN SITE: (unmapped in this report)
- (SPF-4) PALEONTOLOGICAL SITE: (unmapped in this report)
- (SPF-5) LAURITZEN SITE HABITAT AREA: a mosaic of habitat areas that support listed species: alkali grasslands, tidal sloughs, fresh water and tidal marshes, riparian woodlands and mudflats
- (SPF-6) OLD WATER TOWER: at Lauritzen Site

Designate Special Management Features:

- SMF-1) 50 FOOT BUFFER: adjacent to residential neighborhood with a minimum of 20 feet of buffer in the entry corridor.
- (SMF-2) FLOOD CONTROL CHANNEL: managed by Contra Costa County Flood Control and Water Conservation District.

The following Resource Management and Facilities sections outline the Plan's recommendations to guide parkland development and operations and maintenance of the site.

B. Resource Management

Big Break is the District's only water body located on the Delta and it brings new opportunities and responsibilities to EBRPD and its partners. The significant marshland habitat, open, shallow water area and the listed species throughout the parkland require management, protection and monitoring. There are many opportunities for habitat enhancement to benefit local, migratory and listed species.

Paleontology, Archaeology and History

Big Break has a long and colorful history that will interest visitors. The parkland has various sites which contain paleontological, archaeology and historic resources which require protection and are an interpretive resource.

Recommendations

- Maintain the paleontological site, UCMPV -87047 and the Native American site, CA-CCo-538 (both part of SPF-3), in situ with minimal 50 foot buffers.

- Maintain the confidentiality of the locations of the sites, per District policy.
- Modify the archaeological site record on file at the Northwest Inventory Center to record site as a dual-component, prehistoric/historic site.
- Continue periodic patrolling of the sites to monitor their conditions. Conduct a park personnel training program by a qualified professional regarding identification of cultural resources.
- Paleontological, archaeological and historic resources should be a component of the interpretive and educational program to be established at Big Break. This could include, but not be limited to the following:
 - Undertake archival and field studies to determine the significance of the finds. Artifacts of American era will be curated for future study or interpretive uses.
 - Assemble and review historic aerial photographs to assess the status of shoreline resources and effects of tidal erosion.
 - Conduct further surveying and inventorying of the sites, including topographic mapping and inventorying in the District's Geographic Information System (GIS).
 - Develop a long-term management strategy for including treatment of encountered cultural resources and for possibly nominating the sites for the California Register.

Other cultural resources

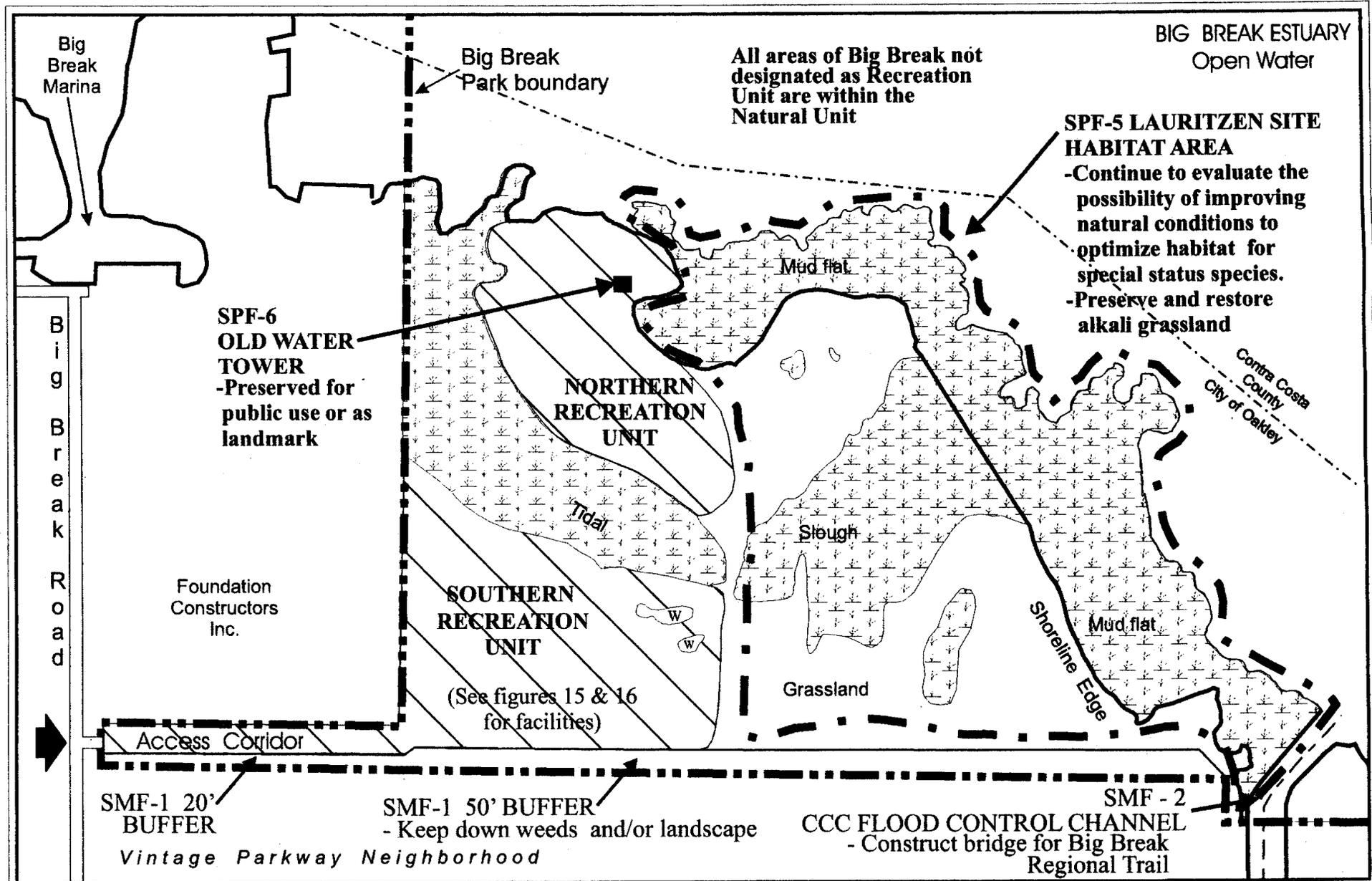
- Continue to research all aspects of the history of Big Break and vicinity for interpretive programs.
- Preserve the old water tower, built by Howard Lauritzen, that is unusual for its size and retains historic integrity. Rehabilitate it as a public viewing structure or stabilize it as a landmark, if feasible.
- To the greatest extent possible, retain for historic ambience and interpretive opportunities the unusual remnants from the Lauritzen marine salvage operation that dot the shallow water of the former Lauritzen parcel.



Hydrology

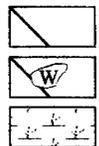
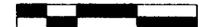
The large, shallow, open water of Big Break estuary is unique in the East Bay Regional Park District system. It is valuable, particularly for its habitat, water quality and recreational resources. It is habitat for several listed species of fish.





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100 0 100 200 Feet

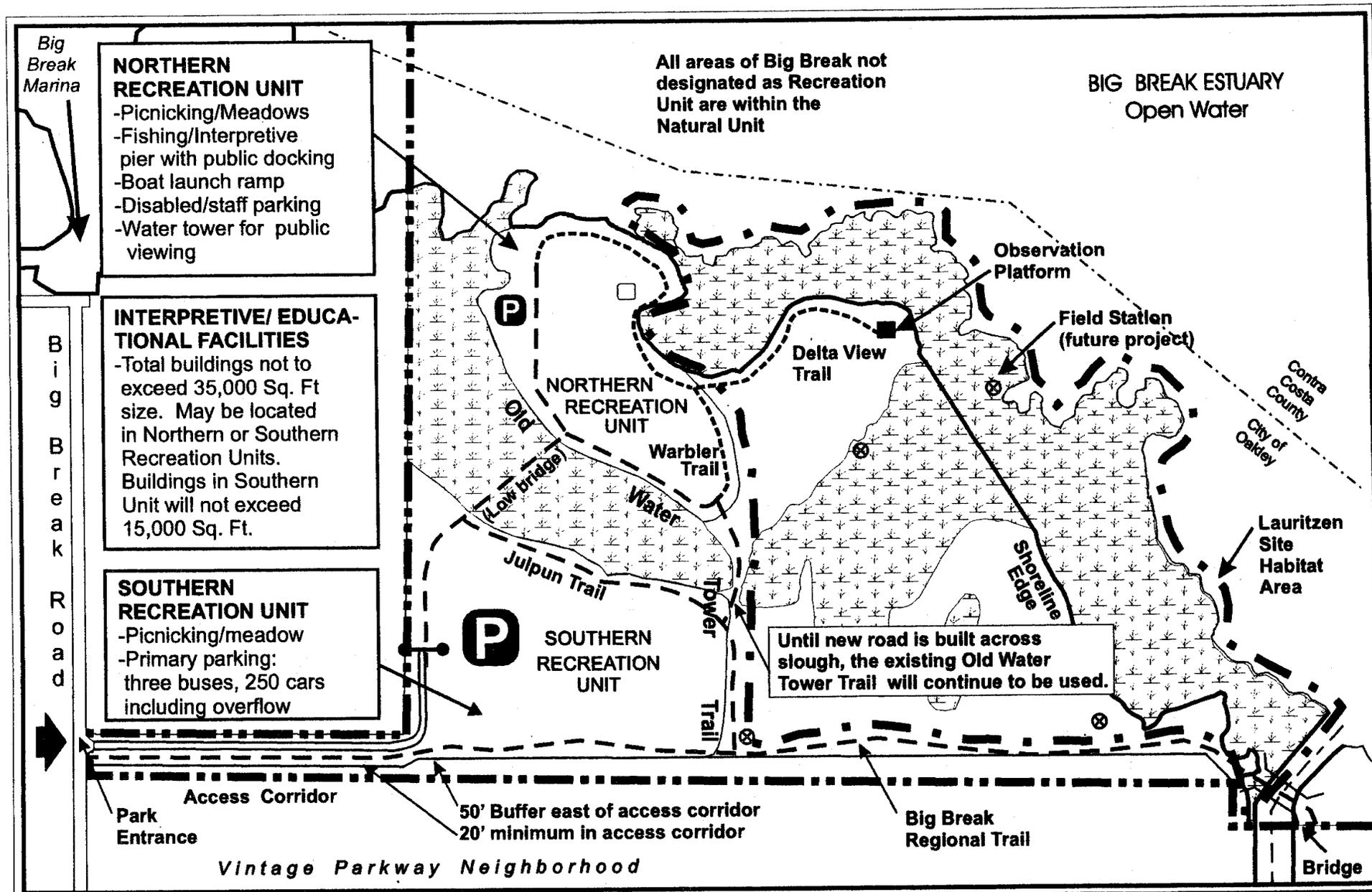


Recreation Unit
 Wetlands in Recreation Unit
 Wetlands in Natural Unit



Park Entrance
 Shoreline Edge
 SPF-5 Boundary

Figure 14
BIG BREAK LAND USE PLAN MAP
 Lauritzen Site: Land Use Designation
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California



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Figure 15
BIG BREAK LAND USE PLAN MAP
Lauritzen Site: Trails and Facilities
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

100 0 100 200 Feet

Oct. 4, 2001
 East Bay Regional Park District
 Planning/Stewardship/GIS Services

Gravel Access Rd.
 Hiking Only Trail
 Multi-use Trail

SPF-5 Boundary
 Wetlands

Recommendations

- Retain substantial open water for special-status species and for aquatic recreational activities such as boating, fishing and hunting.
- Reasonably accommodate enhancement proposals by other agencies for improvements to water quality and marsh restoration if feasible.

Vegetation and Wildlife Management

The wetland habitat quality at Little and Big Break has been ranked as excellent by the *Atlas of Tidal and Formerly Tidal Wetlands in Contra Costa County, California*, based on the diversity of the botanical and wildlife resources. This valuable plant and wildlife area requires active management strategies to preserve native habitats and species and to control and decrease unwanted exotic species. The LUP designates the areas described below and shown on Figures 13 and 14 as Special Protection Features.

Recommendations

- Maintain the native vegetation types on the eastern half of the Lauritzen Site in Special Protection Feature-5. Establish the resource management and use limits recommended in this Plan. The mosaic consists of alkali grasslands, tidal sloughs, fresh water and tidal marshes, riparian woodlands and mudflats that support a variety of special-status species. SPF-5 serves as a buffer zone for existing listed species. Within SPF-5, take the following actions:
 - Continue to evaluate the possibility of improving natural conditions within the Lauritzen site to optimize the habitat for special status species.
 - Preserve and restore the alkali grassland on the Lauritzen Site using mowing and/or prescribed burning to encourage the expansion of existing native grass populations on the site.
 - Only pedestrian access will be allowed in SPF-5 on the Lauritzen Site. General public access will be limited to the observation platform. Potential field station sites for educational use are described under "Facilities" and will be restricted to guided interpretive use only.
 - Restrict access and/or close trails, as necessary, during the breeding season of special-status bird species to protect them from human disturbance. Establish appropriate buffers to protect special-status bird nesting areas from potential human disturbance.
- Landing sites will not be developed on the islands, levee or wetlands areas designated SPF-1 and 2.

- Leashed dogs are permitted in the Recreation Units and along Big Break Regional Trail in accordance with Ordinance 38.
- Dogs are not permitted at any nature study area, wetland marsh, or posted area in accordance with Ordinance 38.
- Provide measures to control red fox, feral cat and domestic animal incursions to the site.
- Periodically conduct detailed surveys and monitor special-status plant and animal species to assess their status.
- Conduct detailed surveys to determine the extent of invasive terrestrial and aquatic weeds or animal pests, and implement integrated pest management (IPM) control programs, as needed. Implement weed control activities prior to the construction of facilities proposed for the Lauritzen Site to prevent the spread of weedy plant species into disturbed ground.
- Conduct site-specific surveys to determine the presence of any special-status plant or animal species prior to implementing weed control programs. Ensure that the treatment methods and timing of application used to control weeds at the Regional Shoreline do not adversely impact special-status plant and animal species. Restrict vegetation management work to the non-nesting season of the special-status bird species on site.
- Monitor park boundaries to detect problems involving water drainage or runoff onto the Regional Shoreline from adjacent properties, and work with neighbors to resolve these issues.
- Coordinate with state and county agencies with responsibility for performing needed services in the Regional Shoreline. Encourage the California Department of Boating and Waterways to conduct aquatic weed control in the open water areas of the Regional Shoreline to enhance recreational opportunities, most notably fishing and boating. Cooperate with the Contra Costa Mosquito and Vector Control District to control mosquito and other potential vector infestations.

C. Access and Facilities

Water Access and Activities/Facilities

The Delta and its shoreline, including Big Break, is a popular recreational area particularly for bird watchers, boaters and fishermen. The acquisition of Big Break provides opportunities for shoreline and water access for additional types of users.

Recommendations

- Retain public rights and access to Big Break estuary for boating, fishing and hunting.
- Construct a pier, boardwalk or observation platform at the Lauritzen Site, near the existing

residence, into the Big Break estuary. Possibly integrate or connect the pier with an over-the-water building. Include ancillary structures, such as a boathouse or open pavilion, to facilitate public access to the open water.

- Provide docking for shallow draft boats for the visiting public as well as berths for floating interpretive classrooms (houseboats), and maintenance/rescue vessels. [No dredged channels are proposed within Big Break estuary as a part of this project.]
- Allow boat rentals for canoe, kayak, rowboats and other suitable, non-motorized or electric engine boats for public use.
- Maintain or rebuild, if necessary, the existing boat ramp for car-top boats. Provide portage carts for conveyance of boats between parking lot and launch ramp. [No dredged channels will be constructed to this area and only shallow draft boats will be accommodated.]
- Provide a self-guided canoe/kayak interpretive water trail for the Big Break estuary along the shoreline between the Lauritzen Site and Marsh Creek. Install interpretive and directional signing and provide a corresponding interpretive brochure.
- Do not improve or construct any landing sites on islands, islets, levee or marshes.



Auto Access and Parking

The only land area of Big Break, the Lauritzen Site, is easily accessible from public roads with nearby freeway access. The following recommendations are intended to minimize roads within the site and to provide for efficient trail and road circulation and parking. (See Figure 15)

Recommendations

- Construct a suitable park-like entryway by improving the access corridor with heavy landscaping.
- Construct a paved road within the existing entry corridor from Big Break Road to the parking lot. Within the access corridor, locate the road closer to the northern edge (by Foundation Constructors Inc.) and away from residences, when feasible. Provide dense landscape buffers along the property lines, where desired by residents.
- Provide parking for a maximum of 250 spaces and for three (3) buses. Parking construction will be phased starting by serving only the initial needs of the regional shoreline, regional trail and interpretive facilities.
- Minimize parking near the shoreline only to accommodate staff, service vehicles and visitors with special needs.

- Parking will be screened from nearby residents by berms and landscaping.
- Recommend that the City of Oakley's trail plan include a Class I, separated bicycle trail, for the entire length of Big Break Road from Main Street to the Big Break Marina. This will help to provide a link of the Big Break Regional Trail to the Antioch/Oakley Regional Shoreline.

Trails

The Lauritzen Site provides an opportunity to include a link of the Big Break Regional Trail. This trail will eventually connect Marsh Creek Regional Trail and the Antioch/Oakley Regional Shoreline. The Lauritzen Site will also accommodate parkland trails.

Recommendations

- Provide a link of the multi-use Big Break Regional Trail through the Lauritzen Site from Big Break Road to the east side of the Contra Costa County Flood Control Channel (SMF-2) on the southern edge of the parkland. A new bridge will accommodate hiking, bicycling and equestrian use and, if possible, will include emergency, vehicle and maintenance (EVMA) access. The trail will be located along the southern edge of the Lauritzen Site outside of the 50 foot buffer area next to the residences on Weibel and Stonegate Circle. The trail will be closer than 50 feet to residences at the ends of the buffer where it tapers due to restricted space and in the access corridor.
- Provide a trail system through the Lauritzen Site as schematically shown on Figure 15. The loop trail system will include multi-use trails which accommodate hikers, bicycles, equestrians and emergency and maintenance vehicles (EVMA) and, in some cases, disabled and staff cars.
 - Extend a multi-use trail from the parking lot to the shoreline facilities. This will be a new road constructed across the slough near the western edge of the site. It will serve pedestrians, bicyclers and equestrians walking from the regional trail or the parking lot, as well as limited numbers of autos. When this new road is constructed, the existing road will be closed as a circulation route.
 - Until the new trail over the slough is built the existing route, Old Water Tower Trail, which crosses the slough over an existing culvert in the center of the site will continue to be used.
 - Provide a pedestrian only trail eastward from the shoreline area to a proposed observation platform on the northeastern edge of the Lauritzen Site. This observation



platform will allow bird watchers and other park users to view the Big Break estuary over the blackberries which line the edge of the shoreline.

- Install signs or interpretive panels bordering the trails along the Special Protection Feature (SPF-5) which will explain the unique resources that are being protected and the rationale for access restrictions within the area. If necessary, install minimal post and wire fencing to exclude access into SPF-5.

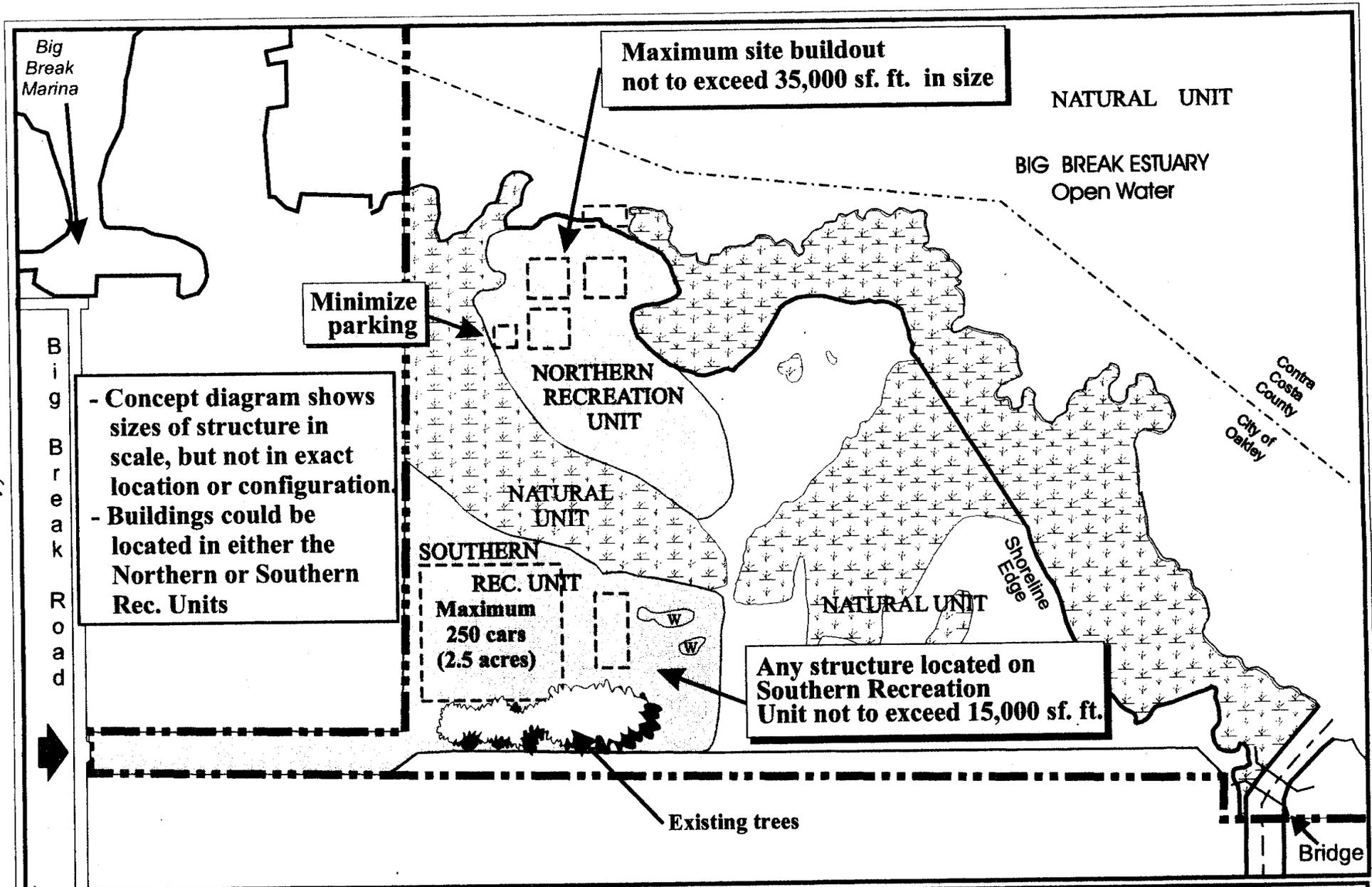
Interpretive and Recreational Facilities

Facilities will be constructed at Big Break Regional Shoreline to feature interpretive and educational programs related to Big Break and the Delta. The facilities may include several educational structures in a “campus style” cluster to maximize open space as well as structures (or portions of structures) over the water. The interpretive/educational complex may include space for reception, interpretive exhibits, observation, special events, meetings, classes, library, laboratories, staff offices, gift shop, snack bar, restrooms, boat storage, maintenance, and receiving area. No changes in the existing tidal or flood patterns will result from the proposed facilities and the adjacent neighborhood (constructed above the 100 year flood plain) will not be affected by park development.

Recommendations

- Total building square footage at the Lauritzen Site will not exceed 35,000 square feet. Buildings may only be constructed within the Northern and/or Southern Recreation Units. To the greatest extent feasible, informal public access to the shoreline will be maintained in the design of buildings in the Northern Recreation Unit. (See Figure 16 which indicates the relative size of structures but not their exact location or shape.)
- Buildings in the Southern Recreation Unit will not exceed 15,000 square feet, nor be located closer than 100 feet from the southern property line. Any buildings constructed in the Southern Recreation Unit will minimize impacts to the adjacent residences by sensitive design that places outdoor areas or patios on the northern side of the buildings, as much as feasible, to buffer activity areas from homes. Required lighting will be designed to focus on facilities and not toward the neighborhood. Windows on the southern side will be minimized or located to maintain privacy.
- Buildings and parking areas in the Southern Recreation Unit will be located to maximize the screening effect of the existing tree grove. An additional landscape buffer will be provided along the southern property line in consultation with the adjacent property owners to provide a clear edge to the parkland while maintaining privacy and views of park neighbors.





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Figure 16
Conceptual Building Footprint Diagram
Lauritzen Site
 Big Break Regional Shoreline
 Oakley, Contra Costa County, California

100 0 100 200 Feet
 Oct. 1, 2001
 East Bay Regional Park District
 Planning/Stewardship GIS Services

Natural Units
 Recreation Unit
 Wetlands in Rec. Unit

Building/parking footprints at maximum buildout

Park Entrance

- Mature trees will be retained within both Recreation Units through sensitive siting of the structures and facilities. A Mediterranean plant palette will be used emphasizing natives, and adapted plants when necessary, to attract wildlife and to provide good habitat and screening.
- The Recreation Units will also provide adequate outdoor open space for drop-in visitors to enjoy access to the open shoreline, birdwatching, trail use, picnicking and small boat launching. Picnic facilities in the Southern Recreation Unit will be located along the slough.
- Design of facilities will utilize “green architecture” and low-impact systems to reduce power consumption where feasible.
- The old water tower (Special Protection Feature 6) will be stabilized and retrofitted for public or operational uses, if feasible.
- Outdoor class platforms or field research stations will be located within Big Break on the water, in wetland areas and within the upland areas of the Lauritzen Site. These outdoor sites are areas where groups can gather to participate in classes to observe, record and measure field data in a hands-on manner. Land-based stations may have weather and shade protection.
- Activities in field research stations within the Lauritzen Special Protection Feature 5 will not conflict with the nesting season of special-status species. [Field stations have not been specifically sited as part of this project.]
- Interpretive programs will be developed that highlight the Delta and other topics such as Native Americans, endangered and native species. Do not locate or time programs that would conflict with nesting of listed species.

Utilities

Utility services for the Lauritzen Site, including electricity, water and sewer, is available at Big Break Road and the streets of the adjacent Vintage Parkway neighborhood.

Recommendations

- Provide water connections for outdoor drinking fountains and fire hydrants, as well as for proposed buildings. Cap or develop existing well as necessary.
- Provide a sewer connection and restrooms at the building sites and parking lot with vault or chemical toilets located in some outdoor locations. An on-site biological water treatment system, at the edge of the building complex, may be developed to produce reusable water on-site. The system will incorporate managed environments that include bacteria, plants and other organisms that break down and digest waste water. The system will consist of a series

of above-grade tanks (totaling 1,000 square feet of area) that will treat 25,000 gallons of untreated wastewater per day.

- Upgrade electrical and telephone service from lines at Big Break Road for proposed parkland use levels unless shorter routes can be found. Where feasible, underground utilities per District policy. Remove unneeded utility poles, when feasible.
- Provide night lighting in conformance with city regulations which will be focused on the buildings, paths and parking lot and not toward the adjacent neighborhood.
- Municipal codes will be followed to accommodate stormwater drainage. Options could include: sheet flow across the parking lot into adjacent grasslands; connection to municipal drainage system; or construction of a recharge system with increased percolation capacity below the parking lot.

D. Park Operations and Maintenance

When the Lauritzen Site is developed and opened for public use, operational duties will significantly increase, including responsibilities for the open water area. During initial park operations, day-to-day operating staff will be provided by the Antioch/Oakley Regional Shoreline staff, as part of the Shoreline Operational Unit. The Regional Trail will be operated by the Eastern Contra Costa County Trail Unit out of the East Contra Costa County Service Yard at the nearby Ironhouse Sanitary District.

Recommendations

- Remove approximately five shoreline barges along the shoreline near the existing residence that are unsightly and an attractive nuisance.
- Develop a plan for response to oil spills from the shipping channel and for dealing with floating logs and debris.
- Provide necessary marine boats and equipment for District operations.
- Demolish the existing red cabin and remove unnecessary tanks, fencing and debris. Perform work during non-nesting season to prevent disturbance to wildlife.
- Install standard District signs for entry, directions, education per the District signing program.
- Operate daily programs and special events through a reservation system.
- Provide minimal on-site maintenance facilities (small equipment and boat storage) at the Lauritzen Site. The primary maintenance facility will be located off-site with services provided from other existing EBRPD facilities.

E. Public Safety

Fire and Rescue

Public use and new buildings will increase the need for fire protection to protect park facilities, users and adjacent neighbors.

Recommendations

- Maintain a 50 foot buffer, SMF-1, along the Weibel and Stonegate Circle residential boundary. The two ends of the buffer taper and are less than 50 feet due to restricted space. Keep down weeds and/or plant with appropriate landscaping. Also maintain a minimum 20 foot landscaped buffer along the southern side of the entry corridor.
- Maintain appropriate vegetation clearances around structures and facilities to protect them in case of fire.
- Include on-site fire protection per city codes.

Police Services

Police Services will continue to be handled through cooperation of local and state agencies with an increased role by EBRPD .

Recommendations

- Provide a strong cooperative initial response from the Oakley Police Department, the Sheriff's Department and District police officers, with District officers responsible for investigative follow-up. Fish and Game enforcement will continue to be handled jointly between the District Marine Officer and wardens from the California Department of Fish and Game.
- Provide additional police resources once Big Break opens for public use.
- The parkland will be open during normal District operating hours between 5 a.m. and 10 p.m. During occasional special events, the facilities may be opened later. Public Safety will be notified of changes to normal operating hours. During closed hours the parking lot and access road will be secured at Big Break Road.
- Buildings will be alarmed and will have adequate perimeter and parking lot lighting to discourage graffiti and other illegal activities.
- Install a double gate with center post and "Tiger Spikes" guarding the exit side of the access road.

- Maintain the blackberry barrier along the shorelines of the Lauritzen Site to keep park users off of derelict barges and to protect habitat areas.
- Remove underwater navigational hazards, when feasible.

F. Coordination with Other Agencies and Organizations

Recommendations

Delta Science Center

- Complete the business plan and operating agreement.
- Cooperate on design and construction phases.
- Cooperate on operational tasks and programming.
- Cooperate on seeking additional funding for facilities and programs.
- Cooperate on public information and advertising.

Regulatory Agencies

- Work with appropriate agencies for permit approvals for construction.
- Work with appropriate agencies to further habitat and species protection, water quality and restoration goals.

City of Oakley

- Work with the City to finalize and expedite a land use permit to rectify pre-existing inconsistencies between General Plan and zoning.
- Work with City to expedite construction, flood plain and other permits to meet grant deadlines.
- Work with the City to promote Big Break and the Delta Science Center and events.
- Work with the City to require a Class I bicycle trail for the entire length of Big Break Road.

Contra Costa County

- Work with the County to finalize and expedite a land use permit, if necessary, to rectify any pre-existing inconsistencies between General Plan and zoning.

- Work with the Contra Costa County Flood Control and Water Conservation District for a permit for a bridge, crossing over the flood control channel.

Police, Firefighting and Rescue

- Refer to the Public Safety section above concerning first responders and mutual response.

Others

- Work with neighbors adjoining Lauritzen Site regarding privacy/view issues including landscape treatment during the design phase of the project and possibly fencing. Continue on-going cooperation during operation of the parkland and Delta Science Center.
- Work with Native Americans, historians, archaeologists and paleontologists concerning the management of Big Break sites.

G. Business Plan

A Business Plan will be developed to coordinate the construction of facilities and the implementation of resource management programs at the Big Break Regional Shoreline. Currently this parkland is maintained in Land Bank status. The need for additional staff will be evaluated as part of the annual District budget process to open and maintain this new Regional Shoreline.

- Identify potential capital and operating grants, endowments, donation of funds, assets and services that relate to site development and education goals.
- Establish public and private partnerships with qualified organizations to implement and manage facilities and programs.
- Identify potential revenue generating activities.
- Designate revenue from future bond acts to develop capital improvements.

EBRPD/Delta Science Center @ Big Break Partnership

The District has been one of many government and community based organizations supporting the creation and development of the Delta Science Center @ Big Break (DSC). The purpose of the District's interest is to support research, increase public awareness and foster environmental education, highlighting the importance of Delta.

The Partnership with the DSC is intended to be formalized through a lease, operating agreement, permit and/or other appropriate legal form upon satisfactory creation of the DSC as a nonprofit California corporation under Section 501(c)3. If, for what ever reasons, the DSC as currently envisioned does not come to fruition, the District remains committed to the concept of public

education and research, regarding Delta issues, in conjunction with other governmental, private and nonprofit partnerships.

The agreement proposed by the partnership between the District and the DSC is specifically focused on the Big Break Regional Shoreline property known as the Lauritzen Site, and on the facilities that the District will construct there. The Delta Science Center Board of Directors has proposed programs to make the public more aware of the Delta and its resources as well as projects designed to take practical and active steps to help solve complex Delta issues. Because Big Break is particularly well suited for this endeavor, as a microcosm of the Delta and its many issues, the District will work with the DSC to determine the most suitable structures and park design for the public programs envisioned

H. Plan Priorities

The LUP identifies a number of capital projects needed to provide initial public access, public safety and resource protection and indicates the likely first phase of the project, although priorities could change. Decisions regarding funding will be made as part of the District's annual budget process and design process.

Recommendations

Site Security and Landscape Buffers

- Construct entrance gate at Big Break Road.
- Establish landscape buffer between residences and parkland, including moving the access roadway.
- Remove barges along recreation portion of the shoreline.
- Demolish existing residence and clean-up associated debris.
- Secure water tower to prevent unauthorized access.

Initial Public Access

- Provide initial park facilities (picnic, meadows, trails) and staging area for 50 vehicles until interpretive/educational facilities can be constructed.

Appendix A. Plant Species Observed at the Lauritzen Study Site.

Plant names preceded by a single asterisk (*) are non-native species, those preceded by a double asterisk () are non-native invasive weeds. Plant names preceded by superscript SS (^{SS}) indicates special status species.**

FAMILY/Scientific Name	FAMILY/Common Name	Primary Habitat(s)	Site Occurrence	
			Lauritzen/Big Break	ISD/Marsh Creek
Dicots				
AIZOACEAE	FIG-MARIGOLD FAMILY			
* <i>Carpobrotus edulis</i>	ice plant	RH	*	
AMRANTHACEAE	AMARANTH FAMILY			
* <i>Amaranthus</i> sp.	pigweed	RH		*
ANACARDIACEAE	SUMAC FAMILY			
* <i>Schinus molle</i>	Peruvian peppertree	RH	*	
APIACEAE	CARROT FAMILY			
* <i>Foeniculum vulgare</i>	fennel	RH	*	
<i>Hydrocotyle ranunculoides</i>	floating penny-wort	TM	*	
<i>Hydrocotyle verticillata</i>	whorled penny-wort	TM	*	
^{SS} <i>Lilaeopsis masonii</i>	Mason's lilaeopsis	TM	*	
ASTERACEAE.	SUNFLOWER FAMILY			
<i>Ambrosia psilostachia</i>	western ragweed	AG/AM	*	
<i>Artemisia douglasiana</i>	mugwort	MRS	*	*
^{SS} <i>Aster lentus</i>	Suisun marsh aster	TM	*	
<i>Bidens laevis</i>	bur-marigold	TM	*	
* <i>Carduus pycnocephalus</i>	Italian thistle	RH	*	*
** <i>Centaurea solstitialis</i>	yellow star-thistle	RH	*	*
* <i>Cirsium vulgare</i>	bull thistle	RH		*
* <i>Conyza</i> sp.	horseweed	AG/RH	*	*
* <i>Cotula coronopifolia</i>	brass buttons	WWF		*
<i>Euthamnia occidentalis</i>	western golden rod	AM3/PNFM	*	*
<i>Grindella camporum</i> var. <i>camporum</i>	Great Valley gumplant	AG	*	
* <i>Gnaphalium luteo-album</i>	cudweed	AG/RH	*	
<i>Helenium puberulum</i>	rosilla	TM	*	
<i>Helianthus annuus</i>	annual sunflower	RH	*	
<i>Hemizonia pungens</i>	pungent spikeweed	RH		*
<i>Heterotheca grandiflora</i>	telegraph weed	AG/RH	*	

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

			Lauritzen/Big Break	ISD/Marsh Creek
* <i>Lactuca saligna</i>	willow-leaf lettuce	AG	*	*
** <i>Lactuca serriola</i>	prickly lettuce	AG/RH	*	*
* <i>Picris echioides</i>	bristly ox-tongue	RH	*	
<i>Pluchea odorata</i>	salt marsh fleabane	TM	*	
ASTERACEAE (cont'd)	SUNFLOWER FAMILY (cont'd)			*
* <i>Silybum marianum</i>	milk thistle	RH		*
* <i>Sonchus oleraceus</i>	sow thistle	RH		
* <i>Tragopogon dubius</i>	goat's beard	AG	*	*
* <i>Xanthium spinosum</i>	spiny cocklebur	RH		*
* <i>Xanthium strumarium</i>	cocklebur	PNFM		
BETULACEAE	BIRCH FAMILY			
<i>Alnus rubra</i>	red alder	ABS/RA	*	
BRASSICACEAE	MUSTARD FAMILY			
* <i>Hirschfeldia incana</i>	field mustard	RH		0
** <i>Lepidium latifolium</i>	broad-leaf pepper-grass	AG/AM2	0	
* <i>Raphanus sativus</i>	wild radish	RH		0
BORAGINACEAE	BORAGE FAMILY			
<i>Heliotropium curassavicum</i>	seaside heliotrope	AG/AM4	0	
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY			
* <i>Lonicera japonica</i>	Japanese honeysuckle	HBS/MRS	*	
CHENOPODIACEAE	GOOSEFOOT FAMILY			
<i>Atriplex triangularis</i>	triangular-leaved saltbush	AG/AM	*	*
<i>Salicornia virginica</i>	pickleweed	AM4	*	
* <i>Salsola tragus</i>	Russian thistle	RH	*	*
CONVOLVULACEAE	MORNING-GLORY FAMILY			
<i>Calystegia sepium</i> ssp. <i>limnophila</i>	hedge bindweed	TM	*	
<i>Cressa truxillensis</i>	alkali weed	AG/AM	*	
* <i>Convolvulus arvensis</i>	field bindweed	AG/RH	*	*
EUPHORBIACEAE	SPURGE FAMILY			
<i>Croton californicus</i>	California croton	AG/RH	*	
FABACEAE	PEA FAMILY			
<i>Hoita macrostachya</i>	leather root scurfpea	TM	*	*
* <i>Lotus corniculatus</i>	bird's-foot trefoil	RH/WWF	*	*
<i>Lotus purshianus</i> var. <i>purshianus</i>	lotus	AG	*	
* <i>Melilotus alba</i>	white sweet clover	AG/AM	*	*
* <i>Robinia pseudoacacia</i>	black locust	BL	*	
* <i>Vicia sativa</i>	spring vetch	AG	*	

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

			Lauritzen/Big Break	ISD/Marsh Creek
* <i>Vicia villosa</i>	hairy vetch	AG	*	
FAGACEAE	OAK FAMILY			
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	coast live oak	CLO	*	
GERANIACEAE	GERANIUM FAMILY			
* <i>Erodium moschatum</i>	filaree	RH	*	
HALORAGACEAE	WATER-MILFOIL FAMILY			
* <i>Myriophyllum sibiricum</i>	water milfoil	Open Water	*	
JUGLANDACEAE	WALNUT FAMILY			
<i>Juglans californica</i> var. <i>hindsii</i>	Northern California black walnut	CBW	*	*
LAMIACEAE	MINT FAMILY			
<i>Lycopus asper</i>	rough bugleweed	TM	*	
<i>Mentha arvensis</i>	field mint	TM	*	*
* <i>Mentha x piperita</i>	peppermint	TM	*	
<i>Stachys albens</i>	water nettle	TM	*	
LYTHRACEAE	LOOSESTRIFE FAMILY			
<i>Lythrum californicum</i>	California loosestrife	TM	*	
MALVACEAE	MALLOW FAMILY			
* <i>Lavatera cretica</i>	tree-mallow	RH		*
* <i>Malva neglecta</i>	cheeseweed	RH		*
MYRTACEAE	MYRTLE FAMILY			
* <i>Eucalyptus tereticormis</i>	gum tree	E	*	
ONAGRACEAE	EVENING PRIMROSE FAMILY			
<i>Epilobium brachycarpum</i>	paniculate willow-herb	AG	*	*
<i>Ludwigia pepoides</i>	water primrose	Open Water	*	*
<i>Oenothera elata</i> ssp. <i>hirsutissima</i>	hirsute evening primrose	MRS	*	
PLANTAGINACEAE	PLANTAIN FAMILY			
* <i>Plantago lanceolata</i>	English plantain	RH	*	
* <i>Plantago major</i>	common plantain	WWF		*
<i>Plantago subnuda</i>	Mexican plantain	TM	*	
POLYGONACEAE	BUCKWHEAT FAMILY			
* <i>Polygonum arenastrum</i>	common knotweed	RH	*	*
<i>Polygonum punctatum</i>	dotted smartweed	TM/PNFM	*	*
* <i>Rumex crispus</i>	curly dock	AG/PNFM	*	*
* <i>Rumex conglomeratus</i>	clustered dock	WWF	*	*
PORTULACAEAE	PURSLANE FAMILY			
<i>Montia fontana</i>	water chickweed	TM	*	
* <i>Portulaca oleracea</i>	common purslane	RH	*	

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			Lauritzen/Big Break	ISD/Marsh Creek
PRIMULACEAE	PRIMROSE FAMILY			
<i>Samolus parviflorus</i>	water-pimpernel	TM	*	
ROSACEAE	ROSE FAMILY			
* <i>Prunus sp.</i>	plum or peach	P	*	
* <i>Pyracantha angustifolia</i>	firethorn	MRS	*	
<i>Rosa californica</i>	California rose	MRS	*	
* <i>Rubus discolor</i>	Himalayan blackberry	HBS	*	*
SALICACEAE	WILLOW FAMILY			
<i>Populus fremontii ssp. fremontii</i>	Fremont cottonwood	FCF	*	
* <i>Populus alba</i>	White poplar	WP	*	
<i>Salix exigua</i>	sandbar willow	AWS	*	
<i>Salix gooddingii</i>	Goodding black willow	GBWS	*	*
<i>Salix lasiolepis</i>	arroyo willow	AWS	*	*
SAURURACEAE	LIZARD'S-TAIL FAMILY			
<i>Anemopsis californica</i>	yerba mansa	AM3	*	
SCROPHULARIACEAE	FIGWORT FAMILY			
<i>Mimulus guttatus</i>	seep monkeyflower	TM	*	
* <i>Veronica catenata</i>	chain speedwell	TM	*	
SIMBAROUBACEAE	SIMAROUBA FAMILY			
** <i>Ailanthus altissima</i>	tree of heaven	TH	*	
SOLANACEAE	NIGHTSHADE FAMILY			
<i>Datura wrightii</i>	Jimson weed	RH	*	*
* <i>Nicotiana glauca</i>	tree tobacco	RH	*	*
* <i>Solanum nigrum</i>	black nightshade	RH	*	
TAMARICACEAE	TAMARISK FAMILY			
** <i>Tamarix aphylla</i>	athel	T	*	
VERBENACEAE	VERVAIN FAMILY			
* <i>Verbena bonariensis</i>	South American vervain	TM	*	
VITACEAE	GRAPE FAMILY			
* <i>Parthenocissus vitacea</i>	woodbine	RH/DA	*	
<i>Vitis californica</i>	California wild grape	AWS	*	
* <i>Vitis vinifera</i>	wine grape	AWS	*	
ZYGOPHYLLACEAE	CALTROP FAMILY			
* <i>Tribulus terrestris</i>	puncture vine	RH	*	*
Monocots				
CYPERACEAE	SEDGE FAMILY			
<i>Cyperus eragrostis</i>	umbrella nutsedge	TM/PNFM	*	*

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

			Lauritzen/Big Break	ISD/Marsh Creek
<i>Cyperus erythrorhizos</i>	red-root nutsedge	TM	*	*
<i>Eleocharis macrostachya</i>	pale spikerush	PNFM		
<i>Scirpus acutus</i> var. <i>occidentalis</i>	tule	PEFM	*	
<i>Scirpus americanus</i>	American bulrush	PEFM	*	*
<i>Scirpus californicus</i>	California bulrush	PEFM	*	
IRIDACEAE	IRIS FAMILY			
* <i>Iris pseudacorus</i>	yellow iris	TM/PNFM	*	*
JUNCACEAE	RUSH FAMILY			
<i>Juncus balticus</i>	Baltic rush	PNFM		*
<i>Juncus bufonis</i>	toad rush	TM	*	
<i>Juncus effusus</i> var. <i>pacificus</i>	soft rush	TM/PNFM	*	
<i>Juncus mexicanus</i>	Mexican rush	AM3	*	
<i>Juncus phaeocephalus</i>	brown-head rush	TM	*	
<i>Juncus xiphioides</i>	iris-leaf rush	TM	*	
LILIACEAE	LILY FAMILY			
<i>Asparagus officinalis</i>	garden asparagus	AG/AM3	*	
POACEAE	GRASS FAMILY			
** <i>Arundo donax</i>	giant reed	GR		*
* <i>Avena fatua</i>	wild oats	AG/RH	*	*
* <i>Bromus catharticus</i>	rescue brome	RH	*	
* <i>Bromus diandrus</i>	ripgut brome	AG/RH	*	*
* <i>Bromus hordeaceus</i>	soft chess	AG/RH	*	*
** <i>Cortaderia selloana</i>	pampas grass	RH		
* <i>Cynodon dactylon</i>	Bermuda grass	RH	*	*
<i>Distichlis spicata</i>	salt grass	AG/AM1/AM2	*	*
* <i>Echinochloa crus-galli</i>	barnyard grass	WWF	*	*
* <i>Echinochloa muricata</i>	barnyard grass	PNFM		*
* <i>Festuca</i> sp.	fescue	WWF		*
* <i>Hordeum marinum</i> var. <i>gussoneanum</i>	Mediterranean barley	AG/AM	*	*
* <i>Hordeum murinum</i>	barley	RH	*	*
<i>Leersia oryzoides</i>	rice cutgrass	TM	*	
<i>Leymus triticoides</i>	alkali ryegrass	AG/AM3	*	
* <i>Lolium multiflorum</i>	Italian ryegrass	AG	*	*
* <i>Lolium perenne</i>	perennial ryegrass	AG/AM3	*	
* <i>Paspalum dilatatum</i>	dallis grass	PNFM	*	*
* <i>Paspalum distichum</i>	joint paspalum	PNFM		*
* <i>Phalaris aquatica</i>	Harding grass	PNFM		*

Exhibit 4: East Bay Regional Park Districts 2001 Mitigated Negative Declaration

			Lauritzen/Big Break	ISD/Marsh Creek
<i>Phragmites australis</i>	common reed	CRM	*	*
* <i>Polypogon monspeliensis</i>	annual beard grass	PNFM/WWF	*	*
<i>Puccinellia nutkaensis</i>	Alaska alkali grass	WWF		*
* <i>Sorghum halapense</i>	Johnson grass	PNFM		
TYPHACEAE	CATTAIL FAMILY			
<i>Typha latifolia</i>	broad-leaf cattail	PEFM	*	*

Source: East Bay Regional Park District and Vollmar Consulting, 2000. Big Break Marsh Project, Vegetation, Wetland & Botanic Studies.

Appendix B. Wildlife Species Observed at the Lauritzen Study Site¹

Reptiles and Amphibians

Bullfrog	<i>Rana catesbeiana</i>
Western fence lizard	<i>Sceloporus occidentalis</i>

Birds

American bittern	<i>Botaurus lentiginosus</i>
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch	<i>Carduelis tristis</i>
American kestrel	<i>Falco sparverius</i>
American robin	<i>Turdus migratorius</i>
Anna's hummingbird	<i>Calypte anna</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Barn swallow	<i>Hirundo rustica</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Black-necked stilt	<i>Himantopus mexicanus</i>
Black phoebe	<i>Sayornis nigricans</i>
Blue grosbeak	<i>Guiraca caerulea</i>
Brandt's cormorant	<i>Phalacrocorax penicillatus</i>
Brewer's blackbird	<i>Euphagus cyanodephalus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bullocks oriole	<i>Icterus bullockii</i>
Bushtit	<i>Psaltriparus minimus</i>
California black rail	<i>Laterallus jamaicensis coturniculus</i>
California gull	<i>Larus californicus</i>
Canada goose	<i>Branta canadensis</i>
Caspian tern	<i>Sterna caspia</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Cliff swallow	<i>Hirundo pyrrhonota</i>
Common merganser	<i>Mergus merganser</i>
Common raven	<i>Corvus corax</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Downy woodpecker	<i>Picoides pubescens</i>
European starling	<i>Sturnus vulgaris</i>
Forster's tern	<i>Sterna forsteri</i>
Gadwall	<i>Anas strepera</i>
Great blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Great horned owl	<i>Bubo virginianus</i>
Green heron	<i>Butorides virescens</i>
Hooded oriole	<i>Icterus cucullatus</i>
House finch	<i>Carpodacus mexicanus</i>
Killdeer	<i>Charadrius vociferus</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Mallard	<i>Anas platyrhynchos</i>

Marbled godwit
Marsh wren
Mourning dove
Northern flicker
Northern mockingbird
Northern rough-wing swallow
Nuttall's woodpecker
Orange-crowned warbler
Osprey
Pied-billed grebe
Red-tailed hawk
Red-winged blackbird
Rock dove
Scrub jay
Snowy egret
Song sparrow
Spotted sandpiper
Tree swallow
Western kingbird
Western/Clark's grebe
Western tanager
White-faced ibis
White-tailed kite
Willow flycatcher
Wilson's warbler
Wood duck
Yellow-breasted chat
Yellow-rumped warbler
Yellow warbler

Limosa fedoa
Cistothorus palustris
Zenaida macroura
Colaptes auratus
Mimus polyglottos
Stelgidopteryx serripennis
Picoides nuttallii
Vermivora celata
Pandion haliaetus
Podilymbus podiceps
Buteo jamaicensis
Agelaius phoeniceus
Columba livia
Aphelocoma californica
Egretta thula
Melospiza melodia
Actitis macularis
Tachycineta bicolor
Tyrannus verticalis
Aechmophorus sp.
Piranga ludoviciana
Plegadis chihi
Elanus leucurus
Empidonax traillii
Wilsonia pusilla
Aix sponsa
Icteria virens
Dendroica coronata
Dendroica petechia

Mammals

Beaver
California ground squirrel
Coyote
Domestic (feral) cat
Gray fox
Opposum
Striped skunk
Raccoon
Red fox
River otter

Castor canadensis
Spermophilus beecheyi
Canis latrans
Felis catus
Urocyon cinereoargenteus
Didelphis virginiana
Mephitis mephitis
Procyon lotor
Vulpes fulva
Lutra canadensis

¹ This list includes those species observed during our surveys and previous surveys

Source: East Bay Regional Park District and IBIS Environmental Services 2000 Wildlife Surveys at the Lauritzen Property, Contra Costa County, California.

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APPENDIX D REPORT PREPARATION

The *Big Break Regional Shoreline Draft Land Use Plan* of East Bay Regional Park District was prepared under the management of Pat O'Brien, General Manager, Thomas Mikkelsen, Assistant General Manager, Planning/Stewardship, Design & Construction, and Maxine Turner, Chief, Planning/Stewardship/GIS. Karen Parsons, Landscape Architect, led the Planning/Stewardship team. Report authors included Karen, Ken Burger, Stewardship Manager, Steve Bobzien, Ecological Services Coordinator, Ray Budzinski, Wildland Vegetation Program Manager, Pete Alexander, Fisheries Program Manager, Nancy Brownfield, IPM Specialist, Pete Small, Lieutenant of Special Operations, Scott McCaughin, Boating Officer, Jobee Farrer, Firefighter I, Ron Crane, EBRPD Park Advisory Committee Planning Subcommittee Chairman. Staff support was provided by Dan Sykes, Park Planner, Phil Webster, Jr. Planning Technician, Brad Gallup, GIS Coordinator, Wilde Legard, Administrative Analyst II, Corey Steinmetz, acting Sr. Office Specialist, Gerry Cosby and Gayle Still and Patti Zierman, Secretaries. The department received substantial ideas, information and support from many EBRPD staff members, particularly in the Operations, Land Acquisition, and Design Departments and they are hereby gratefully acknowledged. Cover photo and hand sketches are by Karen Parsons and other photos by Josephine Orozco.

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