



US Army Corps
of Engineers.

SAN FRANCISCO DISTRICT

PUBLIC NOTICE

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Regulatory Branch
333 Market Street
San Francisco, CA 94105-1905

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1. INTRODUCTION: The Bahia Homeowners Association (HOA), contact Marshall Levy, Receiver, through the agent, Mara Bresnick of Zentner and Zentner, 720 Sunrise Avenue, Suite 214D, Roseville, CA 95661, (916) 780-4300, is applying for Department of the Army authorization to perform a series of activities including dredging and constructing a new lock, for the purpose of regaining boat access to existing waterfront homes within Bahia Housing Development, Novato, Marin County, California. Dredged material will be pumped across the Petaluma River (river) and deposited in a non-jurisdictional area known as the Twin House Ranch. To offset the adverse environmental impacts associated with dredging a channel through quality tidal mudflat and saltmarsh habitat, as well as deepening natural sloughs within the salt marsh of the lower Petaluma River, the applicant proposes to restore a tidal salt marsh on non-jurisdictional diked land directly across the river, that will mitigate at a ratio of approximately two acres of created salt marsh for every acre impacted. This application is being evaluated under Section 10 of the River and Harbors Act of 1899 (RHA), and Section 404 of the Clean Water Act (CWA).

2. PROJECT DESCRIPTION:

LOCATION: Bahia, a waterfront community, is located along the western shore of the Petaluma River, in the easternmost portion of City of Novato in northern Marin County. It is accessed from either U.S. Highway 101 or State Route 37 along Atherton Avenue.

Land west and south of Bahia is occupied mostly by suburban/rural homes and small business associated with the Atherton Drive and Green Point/Black Point neighborhoods. The property directly south of Bahia is owned by the California Department of Fish and Game (CDFG) Toy Unit and consists of restored tidal salt marsh. To the north and west of the developed portion of Bahia are

undeveloped ridges, slopes and diked marshes owned by Debra Investment Corporation. For reference, the Bel Marin Keys development is located on the other side of the CDFG Toy Unit marsh and Highway 37 to the south.

Bahia is situated along the western shore of the Petaluma River. Directly across the river is State Lands Commission property where the compensatory mitigation is proposed. South of the State Lands property and downstream along the river is Carl's Marsh, a site also owned by the State, which will serve as a model for the tidal wetland restoration work proposed in this permit application.

PROJECT BACKGROUND AND HISTORY: The Bahia Project is a partially developed 900-acre water-oriented planned residential community. Currently, the existing homes number 288 and are concentrated in the southern portion, covering about 115 acres of mostly lowland property, where three peninsulas, Topaz, Albatross, and Patalita, were constructed in conjunction with dredge activities in 1965, 1972, and 1987. Of these existing homes, 86 are adjacent to the water. For various reasons, the original approved Master Plan of 2,250 units was never realized. To date, there are no homes on any of these peninsulas.

(There is another pending application for Section 404 authorization with the Corps of Engineers that was described in our public notice 14883N (currently Corps file no. 20869N), circulated for public comment on August 18, 1997. This separate permit application seeks authorization to fill in freshwater seasonal wetlands that have formed atop these constructed peninsulas, and to fill in wetlands on the northern portion of the property where dredged material was deposited during dredging episodes associated with the Corps' second dredging permit for maintenance of the boat channel. The applicant for a permit to build new homes, Debra Investments, proposes 424 new residential units. The comment period for that public notice closed in September 1997, and this public

notice [22880N] is not intended to address the issues associated with any wetland fill for the proposed new houses.)

The portion of Bahia that is addressed in the permit application from the Homeowners Association includes an open lagoon that was to serve as a marina for the surrounding waterfront homes along with several public access piers fronting the lagoon. This lagoon connects to the Petaluma River via an approximately 4200-foot-long (tidal) access channel (access channel). The application also includes a closed lagoon separated from the open lagoon by the Albatross peninsula and a levee with a small culvert and tide gate. High sedimentation rates in the access channel and open lagoon have resulted in the need to dredge frequently. In 1974 the Bahia HOA obtained a Department of the Army permit to perform maintenance dredging and dispose of the material on the constructed peninsulas. Authorization to perform additional dredging, placing up to 310,000 cubic yards (cy) of material in the disposal area north of the open lagoon (where houses are currently proposed by Debra Investments), was granted by the Corps of Engineers in 1977 and remained valid for 10 years. The access channel and open lagoon were last dredged in 1987 prior to the expiration of this maintenance-dredging permit. (Corps files no. 11134-39). Additional maintenance dredging has not been performed since then for several reasons, namely delayed development of the remainder of the Bahia community, lack of new dredged material deposition areas, and ongoing litigation among the homeowners concerning future dredging necessity and cost.

PURPOSE AND NEED: The project purpose is to restore navigability and boat access to the homes along the Bahia lagoon from the Petaluma River to fulfill a court order.

Based on information from studies at Port Sonoma and Carl's Marsh, also in this area of the Petaluma River, sedimentation rates in deep waters (below mean tide level [MTL]) average approximately 1.5 feet per year. The access channel and open lagoon of Bahia have now almost entirely silted in to just above MTL with the exception of several tidal channels. The edges of the access channel have silted in to just above mean high water (MHW), which is approximately 2.8 feet NGVD (National Geodetic Vertical Datum). Tidal marsh

plants have colonized this edge, which varies from 10 to 20 feet in width. This is a predictable natural condition of all constructed channels in this area. The original Bahia homeowners expected that the channel would be dredged periodically so they could enjoy continuous boat access to their homes. However there was also the expectation that the Bahia community would continue to grow which would help to finance the dredging obligation.

Homeowners in the Bahia community sued the Bahia HOA for failure to maintain navigability of the lagoon and access channel, and in 1992, the Marin County Superior Court (Case No. 146798) issued a tentative decision requiring the Bahia HOA to commence dredging no later than June 15, 1993. For various reasons, including the necessity of securing federal, state and local permits to dredge, and concerns about the costs of continual maintenance, this was never performed. On May 14, 1997, the court issued an amended order extending the time period for completing the dredging to allow the Bahia HOA to secure the required governmental approvals before proceeding.

To provide a more permanent and cost-effective solution to maintain navigability (and in compliance with a court order), the Bahia HOA, the entity that owns the lagoon and is responsible for maintaining navigability, is hereby proposing the construction of a lock in the access channel (similar to the lock at nearby Bel Marin Keys), and the construction of a new connection from the river to the houses through the proposed lock and through the closed lagoon. In this way, a large portion of the tidal access channel can remain in its silted-in condition, which greatly reduces the amount of dredging that is required.

PROPOSED ACTIVITIES TO BE AUTHORIZED:

- Dredge approximately 284,000 cubic yards (cy) of material from the open lagoon. Ambient elevations of the area to be dredged range from around 0.6 feet NGVD to 2.8 feet NGVD. Much of the lagoon will be dredged to an elevation of -8 ft NGVD. About 14.6 acres of a mix of open water, mudflat and salt marsh will be altered in the open lagoon from this activity (see sheet 1) The applicant proposes to use a hydraulic dredge and remove about 6600 cy of material daily. Assuming a 10-hour day, the dredging operation would continue for 3 to 4 months.
- Close off the open lagoon from the access channel near where the two connect (see sheet 2). This will be accomplished by driving in a

double row of sheet piles across the width of the channel (see sheet 2). Supports as might be required by the geotechnical engineer will be installed between the two rows of sheet piles and they will, in turn, be backfilled with soil material allowing for an access road (on the top of the double row of sheet piles) to the proposed lock and existing P.G.&E. towers. Construction of this tidal closure structure and access road will require the discharge of approximately 670 cy of fill. This activity will fill approximately 0.07 acres of tidal mudflat and salt marsh (combined), and will allow the access channel to continue to develop into high quality tidal marsh.

- Two adjustable weirs will control the water level of the newly closed-off lagoon (the open lagoon). One of these weirs will be placed at the center of the sheet pile access road structure/fill (see sheet 2). The other weir will be placed on the proposed lock and will effectively replace the existing culvert and tide gate. Both weirs will be equipped with box culverts and tide gates. For water quality purposes, the recommended lagoon water elevation is approximately mean higher high water, which is 3.4 feet NGVD.
- The open and closed lagoons will be connected by excavating approximately 42,000 cy of land from the peninsula that separates the two lagoons (the peninsula was once placed as fill material over bay mud), to form a channel through which boats may pass. The peninsula is owned by Debra Investments. The elevation will be lowered to approximately -8 feet NGVD. This connector channel will be about 600 feet long and 310 feet wide at the top, which is about 4.3 acres, (see sheet 2). This material will be placed on the Orient Peninsula only in the areas that are not classified as wetlands (unless Debra Investments obtains authorization to fill them).
- Construct a lock at the northeastern end of the closed lagoon at the location of an existing culvert and tide gate (see sheet 3). The lock will be comprised of the following:

- 2 holding docks, 40 ft long x 8 ft wide, each;
 - north side sheet pile wing wall, 80' x 30';
 - south side sheet pile wing wall, 80' x 20'; and
 - lock structure, 80' x 20'.

The anticipated operation of the lock as private property owners enter and exit the closed lagoon into the already-existing, lower portion of the tidal, access channel (existing channel) leading into the Petaluma River, is described briefly on the next page of this public notice.

- Construction of the lock will entail opening a connection between the closed lagoon and the existing channel leading to the Petaluma River. Sheet piles will be driven to provide a cofferdam inside of which the lock will be constructed. Temporary gates will be used to separate the river and the lagoon, and for dewatering of the work site. Inside the cofferdam, a gravel and concrete working pad will provide a surface on which to construct the lock. There will be concrete reinforcing the footings of the sheet piles structures of the lock. There will be receiving docks at both the river and lagoon sides of the lock.
- Insert two vertical sheet piles, one 50 feet long, the other 100 feet long, opposite the entrance to the lock at the base of the existing channel, to serve as shore protection from the currents generated from boat traffic and lock operation.
- Dredge approximately 34,000 cy of material out of the existing channel from the lock to the Petaluma River (see sheet 1). The channel is 1200 feet long by 60 feet wide. Currently the bottom elevation is approximately -6 feet NGVD. The desired elevation is -8 feet NGVD. Following the initial dredging of this channel, it is not anticipated that the channel will need maintenance dredging for about 10 years. Construction of the lock and channel dredging from the lock to the Petaluma River will affect about 2.1 acres of open water, which includes about 0.2 acres of fringe marsh vegetation, and approximately 0.2 acres of upland.
- Repair and raise an approximately 300-foot long section of the existing levee along the eastern edge of the closed lagoon using approximately 300 cy of clean fill material (see sheets 1 and 3)
- Hydraulically transport over 318,000 cy of dredged material from the lagoon to the Twin House Ranch, located across the Petaluma River. The vast majority of the dredged material discharged onto this primarily upland site will not require authorization under Section 404 of the CWA except for an affected jurisdictional drainage ditch on the site. Authorization is needed for approximately 800 cy of the material to be discharged into a jurisdictional ditch for levee construction. (A total of approximately 0.5 acres of jurisdictional ditches will be filled for this project - see below.) The 2-foot to 3-foot diameter conveyance pipeline that crosses the Petaluma River will require authorization under Section 10 of RHA. The pipeline will extend a total of around 6,750 linear feet (see sheet 8). The pipeline will

be placed on the bottom of the river so as to not be a hazard to navigation.

- Construct a levee around the proposed disposal site. CWA authorization is needed only for approximately 220 cy of fill that will be discharged into a drainage ditch for this levee (see sheet 4). (In all, approximately 0.5 acres of jurisdictional ditches will be filled - see above).

The applicant intends to construct a levee around the dredge disposal site to keep the material contained. Runoff from the dredged material will flow through a clarifying area before being discharged into an existing drainage ditch that ultimately feeds the water back into the river: a discharge regulated under Section 404 of the CWA (see sheet 4).

The passengers or operator of each boat will operate the lock manually. The boat will first dock outside the lock, and a rider or driver will climb onto the main lock control facility and open the near slide gates to equalize the water level. Once the level has equalized between inside the lock and out, the lock gate will be opened. Then the person returns to the boat, drives it through the gate and moors it inside the lock. The person returns to the control facility, closes the first lock gate and opens the slide gates on the opposite-side to equalize the water level with the next water body. Subsequently, the second lock gate is opened, the boat leaves the lock and again moors at the second dock to close the gate before continuing on. In this way, the closed lagoon will remain separate from the tidal dynamics of the Petaluma River, thus preventing the flow (into the lagoon) of accumulated sediment that would otherwise fill in the lagoon over time.

It is estimated that after the initial dredge operation, maintenance dredging in the existing channel from the lock to the Petaluma River may require the removal of sediment after 10 years. The existing closed lagoon has not silted in much during its current lifespan. However, suspended sediment from the existing channel to the Petaluma River can be expected to enter the closed lagoon with each application of the lock. Annual sedimentation rates have been modeled and calculated to be approximately 3300 cy assuming 9 lockages per day (which is the higher estimate of average daily use) (R.B. Krone & Associates, July 1999).

Once a dredge is placed in the open lagoon, the disposal pipe will be placed along the adjacent

upland peninsula (in the approximate location of the connection to be excavated between the open and closed lagoons). The pipe will then be floated in the closed lagoon, placed on the existing levee at the northern end of the closed lagoon, and then floated in the existing channel to the Petaluma River. The pipeline will be floated along the west shoreline parallel to the river for approximately 700 feet and then will be sunk and cross the river along the bottom, maintaining a minimum eight feet of clearance for the width of the navigable channel (so as to not impede boat access). Once the pipe emerges from the east side of the Petaluma River, it will be placed over the river levee on the State Lands parcel, across the uplands of this parcel, and finally over the levee on the disposal site (Twin House Ranch). The pipe will be designed to sit below all boating traffic in the Petaluma River. Additionally, signs will be posted both upstream and downstream notifying boaters and other interested parties of an underwater pipe. The Coast Guard shall be notified within three to four months before the dredge operation begins to allow the Coast Guard to post the appropriate notices to local mariners.

SUMMARY OF ANTICIPATED IMPACTS: The jurisdictional area affected by construction of a new lock at the Bahia existing channel, associated dredging of a portion of the existing channel from the lock to the Petaluma River, closing the tidal channel at the mouth of the open lagoon, dredging of the open lagoon and construction of the connector between the two lagoons covers a total of approximately 16.7 acres. This area includes mudflat and tidal wetlands that have established in former open water areas since the last dredging episode of 1987, which dredged the access channel and open lagoon. The access channel leading to the open lagoon (to be spared from dredging because of the construction of the proposed lock) supports about 21.5 acres of developing high-quality tidal marsh, impacts to which will thus be *avoided*.

WETLAND MITIGATION: To offset anticipated adverse impacts to the aquatic environment, the applicant proposes the following mitigation measures:

- Allow the existing 21.5 acre access channel to continue to develop as high-quality tidal marsh habitat,
- Convert 32 acres of diked dry land directly across the Petaluma River to tidal marsh with an adjacent upland fringe of native vegetation.

The State Lands Commission owns this parcel.

Much of the State Lands property is currently at an elevation of between 0.0 and 1.5 ft. NGVD. It is believed to have been diked in the 1940's, and subsequently covered with dredged material by the Corps of Engineers navigational dredging of the Petaluma River. The perimeter levee elevation is about 9.0 ft. NGVD.

Approximately 318,000 cy of dredged sediment will be deposited at the Twin House Ranch property, located adjacent to and inland of the State Lands property, about two miles upstream from the Highway 37 bridge. This site is flat farm field, also former tideland of the Petaluma River, which has been disclaimed from regulatory jurisdiction by the Corps of Engineers as prior converted cropland. Areas that do retain Corps jurisdiction on the property include several perimeter and bisecting drainage ditches, and an elongated seasonal wetland on the northeast boundary of the property.

The Twin House Ranch property is *also* the site on which Debra Investments proposes to construct its compensatory mitigation tidal salt marsh (see Corps PN 14883N, currently Corps file 20869N) to offset wetland impacts from the proposed new homes. The disposal site for the dredged material from the Bahia lagoon and existing channel, however, is not included in the Debra Investment mitigation plan. The representative for Debra Investments claims that their plan to restore the site to salt marsh may proceed whether or not the Bahia HOA place dredged material here. A detailed design of how Debra Investments plans to restore salt marsh habitat on this site has not yet been submitted to the Corps. The Corps will need to review and approve such a proposal before the final permit decision is made on that separate pending application.

Sheet 5 provides an overview of the Bahia HOA's proposed wetland mitigation project on State Lands Commission property. An approximately 32-acre basin will be formed from the existing site with material excavated from the site to re-enforce the inboard perimeter levee along the southern, eastern and northern edges of the mitigation site. The re-enforcement will require approximately 22,000 cy of material. The current exterior levee will be excavated down to high marsh elevations and a short system of primary channels in the interior of

the basin will be constructed. Two 50 foot-wide breaches will eventually be excavated through the exterior levee and adjacent tidal marsh to allow tidal waters access to the site. Currently, we have no information addressing how this proposed salt marsh restoration plan would tie into the separate but adjacent Debra Investments salt marsh restoration project on the Twin House Ranch site, which is inland of the State Lands parcel.

The Bahia mitigation project is designed to mimic the Carl's Marsh effort. The approximately 3200 feet of outboard river levee will be lowered to 4 feet NGVD. The resulting levee will be about 50 feet wide and should support about 3.7 acres of new marsh. This area will not be planted but will be allowed to revegetate naturally as occurred with Carl's Marsh, the reference site.

3. STATE APPROVALS: Under Section 401 of the Clean Water Act, an applicant for a Corps permit must obtain a State water quality certification or waiver before a Corps permit may be issued. No Corps permit will be granted until the applicant obtains the required certification or waiver. A waiver shall be explicit, or it will be deemed to have occurred if the State fails or refuses to act on a valid request for certification within 60 days after the receipt of a valid request, unless the District Engineer determines a shorter or longer period is reasonable for the State to act.

Those parties concerned with any water quality issues that may be associated with this project should write to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay St., Suite 1400, Oakland, CA 94612, by the close of the comment period of this public notice.

In addition, Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 USC 1456(c)) requires any non-federal applicant for a federal license or permit to conduct an activity affecting land or water uses in the state's coastal zone to furnish a certification that the proposed activity will comply with the state's coastal zone management program. Generally, no permit will be issued until the San Francisco Bay Conservation and Development Commission (BCDC) has concurred with the applicant's certification. If BCDC fails to act within six months of their receipt of the certification statement,

Coastal Consistency Concurrence will be presumed (33 CFR Part 325(b)(2)(ii) and 33 CFR Part 320(b)).

4. PRELIMINARY ENVIRONMENTAL ASSESSMENT: The Corps of Engineers has assessed the environmental impacts of the action proposed in accordance with the requirements of the National Environmental Policy Act of 1969 (Public Law 91-190), and pursuant to Council on Environmental Quality's Regulations 40 CFR 1500-1508 and Corps of Engineers' Regulations, 33 CFR 230 and 325, Appendix B. Unless otherwise stated, the Preliminary Environmental Assessment describes only the impacts (direct, indirect, and cumulative) resulting from activities within the jurisdiction of the Corps of Engineers.

IMPACTS ON THE AQUATIC ENVIRONMENT

a. Physical/Chemical Characteristics and Anticipated Changes

Substrate - About 2.0 acres of open water/sub tidal habitat, 6.0 acres of tidal mud flat, and 7.4 acres of tidal marsh, currently between 0.6 feet and 2.8 feet NGVD, are proposed to be dredged in the open lagoon and converted to open water with subtidal benthic substrate at -8.0 feet NGVD. The proposed lock will convert approximately 0.5 acres of mudflat and tidal marsh into a shallow basin enclosed in sheet pile. The access channel closure levee will impact about 0.35 acres. Also, about 4.3 acres of upland substrate, which is covered with scrub and annual grasses, will be excavated and converted to a connector channel between the open and the closed lagoons. The closed lagoon will also be excavated to an elevation of -8 feet NGVD in the center. The impact to upland is considered minor in magnitude and, because the substrate is made up of previously dredged bay mud that currently does not support high quality habitat, not adverse. However, the loss of approximately 15 acres of tidal mud flat and salt marsh is considered moderate to major in magnitude and adverse, principally because of the high habitat value this substrate offers to wildlife, and because, in a historical perspective, most of this kind of substrate has been filled cumulatively around the San Francisco Bay. This loss, however, will be offset by the implementation of the proposed mitigation project, namely the conversion of the diked State Lands property back to tidal marsh habitat. The potential ratio of habitat gain to loss is

approximately 3:1. The net impact is therefore less than significant.

Drainage Patterns - This proposed project should not affect drainage patterns in the area where houses exist or are proposed to be built. The total area of the closed lagoon will expand once it is connected with the portion of the open lagoon that is to be dredged. In the interest of managing water quality, the water levels within the closed lagoon will be kept around 4.0 feet NGVD. Stormwater from the hillsides and housing area will flow into the lagoon and out through the tide gates located at the boat lock and at the barrier closing off the open lagoon from the access channel. The tide gates will prevent tidal water from entering the closed lagoon; water from this area may only enter the closed lagoon through the operation of the lock. The water level in this lagoon will not fluctuate with the tides. This effect is expected to be moderate and beneficial to the closed lagoon, but major and adverse to the portion of the open lagoon that will be captured into the closed lagoon.

Suspended particles/Turbidity - The action of dredging increases levels of turbidity in the impacted water body. This will impact the portion of the open lagoon that will be closed off, as well as the access channel to the Petaluma River. The impact is expected to be localized and of duration of the extent of the construction period for approximately 4 months. The use of hydraulic dredge equipment will minimize the amount of suspended particles. The adverse impact will be moderate to major but short term and localized.

Erosion / Sedimentation Rate - Approximately 300 linear feet (0.03 acres) of existing levee on the inside of the closed lagoon will be stabilized (with excavated material), to prevent further erosion. The newly excavated channel connecting the two lagoons will likely erode slightly along with the other dredged substrata, until stability is reached. Erosion is expected to be minor due to lack of any tidal action within the closed lagoon. However boat traffic and strong winds may generate small currents and turbulence within the closed lagoon that may cause minor erosion along the shoreline. The sedimentation rate within the closed lagoon is expected to be highest close to the lock where small pulses of sediment laden water will be released from the operation of the lock for incoming boat traffic. Two sheet piles, one 50 feet and the other 100 feet in length will be placed opposite the lock within the access channel to prevent erosion from turbulence generated from the operation of the lock.

The sedimentation rate is naturally high throughout the lower Petaluma River. This is essentially the need for the dredging project in the first place. The reason for constructing the lock and closing off the open lagoon from tidal action is to prevent additional sedimentation from occurring in the area where the Bahia community utilizes the lagoon for water oriented recreation.

Water Quality – Dredging operations may affect water quality variables such as dissolved oxygen, pH, salinity, total suspended solids (TSS), and turbidity. Turbidity near the dredging site would increase because of additional TSS in the water column. Since ambient water quality conditions recur shortly after a dredging event, the associated effects of dredging operations on these water quality variables would be adverse but short-term and minor in magnitude. The use of hydraulic dredge equipment will minimize the amount of suspended particles.

To reduce the amount of sedimentation and manage against algal growth in the closed lagoon system, the water level will be managed and the lagoon flushed on a regular basis. The Bahia HOA will prepare a comprehensive lagoon/lock system operations manual for implementation. The manual will include details as to the timing and duration of lagoon flushing. The flushing will reduce the amount of sedimentation in the lagoon and access channel as well as discourage the growth of algae in the lagoon. The water level in the lagoon will also be managed at the highest level practicable in order to discourage algal growth.

Flood Control Function – The installation of the two weirs and tide gates, one at the lock and the other on the new sheet pile barrier that closes off the open lagoon to tidal action, will enable the responsible manager employed by the HOA to maintain desired lagoon water elevations to prevent flooding of the homes. Essentially the dredged lagoon will have a larger water holding capacity than it does in its current silted-in state. The effect should thus be beneficial to flood control, and moderate in magnitude.

b. Biological Characteristics and Anticipated Changes

Special Aquatic Sites – Both wetlands and mudflats. As stated in the project description above, the direct effects of the project will be a loss of approximately 16.6 acres of recently developed, but high quality

tidal brackish marsh, to be lost as a result of dredging the open lagoon, constructing the sheet pile (and fill) barrier, constructing the lock, and excavating the connecting channel. This sum does not include loss of the fringe of vegetation from dredging the existing channel from the lock to the Petaluma River. That can be considered an additional adverse impact to the marsh in this area, and was not well addressed in the City's Environmental Impact Report (EIR). These special aquatic sites are generally considered to provide quality habitat, which is highly valued throughout the Bay Area due to its relative scarcity compared to historic acreages.

To offset this loss of wetland and mudflat habitat, the applicant proposes to restore 32 acres of comparable tidal marsh habitat on a diked former wetland area across the Petaluma River owned by the State Lands Commission. Although there is a good likelihood for success restoring this former dredge material disposal site back to quality tidal salt marsh, there would be a temporal loss of habitat for the birds and wildlife and fish species that currently utilize the 15 acres of lagoon. The proposed mitigation plan may offset the "no net loss" of wetlands goal in the long term, but not in the short term. This impact is considered moderate to major and adverse. Currently the applicant and agents are working with the Corps and the US Fish and Wildlife Service (USFWS) to identify additional areas to acquire, protect and restore to more comprehensively offset this projected impact.

Endangered Species – The proposed project may affect several federally-listed endangered and threatened species that are found in the area. They include the salt marsh harvest mouse (*Reithrodontomys raviventris*), the California clapper rail (*Rallus longirostris obsoletus*), the delta smelt (*Hypomesus transpacificus*), and the Sacramento splittail (*Pogonichthys macrolepidotus*).

Delta smelt are residents of the Sacramento -San Joaquin Delta waterways. While Suisun Bay is considered the westernmost limit of its resident range, individuals can temporarily move seaward as far as San Pablo Bay when freshwater outflow from the delta is unusually high. These fish are not likely to be affected by this project.

The Sacramento splittail, a threatened fish species, has been documented to occur in the Petaluma River and has been observed during fish monitoring of the Sonoma Baylands restoration site near the mouth of the river. They are considered to be abundant in the river. This species breeds in areas where freshwater meets saltwater in riffles with

emergent or overhanging vegetation along the water's edge. The extent of the splittail's occurrence within the Bahia lagoon is not known, but construction of the lock system may lead to potential entrapment of juvenile splittails that may forage in the vicinity.

Both the California clapper rail and the San Pablo song sparrow (*Melospiza melodia samuelis*), which is a Federal and State species of concern, have been observed on the portion of the lagoon where the dredging is proposed. The survey report dated August 1999 conducted by Zentner and Zentner indicates that clapper rail were observed and heard at the project site during surveys conducted in February and March 1999. The observed clapper rail were foraging within and between clumps of rushes (*Scirpus maritimus*) on the mudflats in the open lagoon away from but on the fringe of the dense lagoon front homes, and extending into the access channel where the sheet piles are proposed to be placed to cut off the tidal portion of the access channel. A year prior to that, the clapper rail was not known to occur in this area, although they were believed to have already colonized the adjacent portion of the tidal access channel.

California clapper rails are documented to occur throughout the surrounding marsh in the Petaluma River. Essentially, because maintenance dredging has not been performed, the lagoon has developed excellent quality tidal marsh habitat and the rails have moved in. Through preliminary communication with the USFWS, the applicant was advised to continue refining and expanding the proposed compensatory mitigation plan to adequately offset potential impacts to the clapper rail.

The salt marsh harvest mouse (SMHM) occurs in the tidal marsh in the vicinity of the project area. It is not expected to be impacted directly by the proposed activities. Surveys conducted by Huffman & Associates (1996), and H.T. Harvey & Associates (1996), found no SMHM trapped in the areas within close proximity to the lagoon to be dredged and the channel to be closed. However, SMHM habitat does exist in the adjacent marsh plain. Destruction of salt marsh vegetation could result from excavation equipment and other vehicles associated with project activities, and the temporary placement of construction debris or dredged material. Staging and other areas would need to be carefully sited to avoid or minimize impacts to this habitat, and disruption of vegetation on the north side of the access channel to be closed should be kept to a minimum.

Once additional mitigation is identified and a preliminary plan developed, the Corps will initiate

Section 7 consultation with the USFWS over all four of the species listed above.

The project (channel dredging, lock construction, and slurry pipeline layout) also may affect the Central Coast steelhead trout (*Oncorhynchus mykiss*), and the winter run Chinook salmon (*O. tshawytscha*), and designated critical habitat. The Corps will consult under Section 7 of the Endangered Species Act with the National Marine Fisheries Service regarding potential impacts to these species.

An unknown number of adult threatened Central Coast steelhead trout migrate up the river between November and April to spawn in upstream tributaries. Juvenile steelhead migrating toward the Bay may utilize tidal sloughs such as the access channel at Bahia while adapting to higher salinities as they descend. Construction and operation of the Bahia lagoon lock system has potential to entrap the smolts during the winter and spring months when they are migrating to the Bay.

Habitat for Fish and Other Aquatic Organisms and Wildlife - This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The proposal would impact approximately 16.6 acres of EFH utilized by various fish species. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally-managed fisheries in California waters. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

Other aquatic species that could occur within the general vicinity that are federally listed species of concern include the green sturgeon (*Acipenser medirostris*), and the longfin smelt (*Spirinchus thaleichthys*). The sturgeon is an anadromous migrant between the Pacific Ocean and the Sacramento-San Joaquin Delta. Its migration route generally avoids the Petaluma River so they should not be affected by the proposed project. Similarly, the longfin smelt migrates between SF Bay and the Delta and would not be expected to be in the Petaluma River.

Other common small fishes that occur in the area (sculpins, gobies and stickleback) may get entrapped during operation of the proposed lock. The effect should not be of serious consequence; they are expected to be able to survive within the waters of the closed lagoon, and may be able to exit into the tidal area either through a reverse lock operation, over the weirs or through the tide gates during conditions when

water is flowing out to the river. The closed lagoon will be flushed periodically, every 28 days on a falling spring tide when the lock falls to -2.5 to -3.0 ft NGVD.

Other species of concern that occur within the project area include the California black rail (*Laterallus jamaicensis cotinuculus*), the saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) and the San Pablo song sparrow (*Melospiza melodia samuelis*). The tidal lagoon to be dredged also provides foraging opportunities for many non-special status shorebirds.

IMPACTS ON RESOURCES OUTSIDE OF THE AQUATIC ENVIRONMENT

c. Physical Characteristics and Anticipated Changes

Air Quality – A conformity determination (Clean Air Act Section 176[c] [42 USC Section 7506(c)]) is not required for maintenance dredging and disposal at an approved disposal site consistent with 40 CFR 51.853(c)(2)(ix). For the remainder of the project, activities would have minor, short-term impacts on air quality in the vicinity of the project site. Based on the relative minor size of the proposed project and limited to an evaluation of air quality impacts only within Corps of Engineers' jurisdictional areas, the Corps has determined that the total direct and non-direct project emissions would not exceed the de minimis threshold levels of 40 CFR 93.153. Therefore, the proposed project would conform to the State Air Quality Implementation Plan (SIP) for California.

Noise Conditions — Short term, adverse impacts to ambient noise levels in the local area will be expected during periods of project construction from the operation of heavy equipment engaged in dredging the lagoon, excavating the channel, driving sheet piles, grading, hauling dirt, and laying pipe. The noise impacts will be adverse to the local home residents as well as fish and wildlife, moderate to major in magnitude, but last a period of three to four months only. The dredging activities will most likely be restricted to daytime hours, and scheduled to commence after the end of the clapper rail breeding season, in the end of August.

d. Socioeconomic Characteristics and Anticipated Changes

Aesthetics – The proposed activities will affect the

appearance of the west lagoon. It will become an open water body rather than one with substantial emergent marsh vegetation encroaching from the fringes into the center. There will be a new restricted access road atop a sheet pile barrier that will traverse the neck of the west lagoon, where it is a natural, densely vegetated continual marsh channel today. The Albatross peninsula (with its high voltage power lines) will become an island, separated from the mainland by the newly excavated connecting channel. The new channel segment will have an engineered trapezoidal appearance. The new lock will be a new prominent structure at the far east end of the closed lagoon where no structures other than a levee exist presently. The dredged existing channel between the lock and the Petaluma River will be a slightly wider swath through the dense existing marsh vegetation. Impacts to the aesthetic appearance of the Bahia lagoons thus will be moderately adverse or beneficial depending on personal preference and long term.

Vigilant monitoring and management of water quality should prevent algal blooms or smelly anaerobic conditions from developing within the closed lagoon system-so that ideally, adverse odor impacts from the project will be minimal in the long term.

Historic - Cultural Resources – The areas proposed to be dredged within Bahia lagoon have all been impacted during past dredging episodes and would not be expected to contain any buried cultural material. Much of the upland portions of the lagoon area is made up of dredged sediments and would also not be expected to contain any cultural resources. The proposed wetland mitigation will be performed on a diked site that has served to accept sediment from Petaluma River maintenance dredging so it would presumably have previously been cleared under Section 106 of the National Historic Preservation Act by the Corps of Engineers. The only part of this project where unknown cultural resources might be affected is at the Twin House Ranch dredge disposal site. The Corps staff archaeologist will investigate the potential presence and avoidance of adverse impacts to historical and cultural resources that could occur within this portion of the project.

Public Health and Safety - The soft sediments that comprise the open lagoon that is proposed to be dredged are considered a safety hazard. During low tides, the soft mud surface and emergent vegetation may appear benign to the inexperienced visitor. People venturing into the marsh may become trapped as they sink in the deep soft mud and have great

difficulty retreating back to higher ground before the tide comes back in. The Bahia HOA considers the lagoon a safety hazard, and expresses that the proposed dredging will eliminate this hazardous condition, restoring the lagoon's originally intended navigability.

Recreational Opportunities – Central to this entire proposed dredging and lock project is the issue of restoring open water recreational opportunities. The Bahia development was conceived as a waterfront marina community that would provide all residents access to open water recreation in its lagoons, either by land, through the public piers or the private waterfront homes, or by water, from the Petaluma River. If the Corps authorizes the dredging and lock operation as proposed, boating and swimming activities that were enjoyed in the tidal western lagoon when it was first constructed in the 1960's, and through the 70's and '80's may be resumed, which is considered a major beneficial impact to the local community.

It should also be mentioned that under existing conditions, the closed lagoon continues to provide open water recreational opportunities, although there is no direct boat access to the Petaluma River. The open lagoon is no longer navigable by boat, except by small boats, during periods of high tide. Recreational bird watching and nature exploration, however, is highly accessible under current conditions. The proposed project would have a minor adverse effect on this form of recreation because there are many other places in the vicinity to pursue these activities.

e. Summary of Indirect Impacts – These include incremental adverse impacts to air quality, noise, and water quality from the new boat or jet ski traffic that would be introduced to the lagoon and the Petaluma River. Other indirect impacts are socioeconomic, having to do with property values of the Bahia homeowners themselves: because of the unresolved dredging issue and the court order, property values in Bahia have been depressed relative to other properties within Marin County. It is believed that once dredging is authorized and performed, the housing values will rise sharply, which will have a positive economic impact to the City of Novato and the residents of the local community.

f. Summary of Cumulative Impacts – The two impacts that have the potential to be meaningful

cumulatively are impacts to air quality from exhaust emissions from construction and dredging equipment, as well as from new boat traffic, and impacts to endangered species habitat.

In the case of the California clapper rail, several acres of newly colonized breeding and foraging habitat will be lost in the area to be dredged. In addition, if the Debra Investments housing project, which is currently pending Corps authorization, gets built, the new homes will bring more people (and boats) into the area, along with associated domestic and feral cats and dogs as well as raccoons and skunks, which pose a predatory threat to the resident clapper rail population in the surrounding marshes. Creation and acquisition of more clapper rail habitat is being proposed to offset these potential impacts to clapper rail (and associated sensitive tidal marsh species) but the development of new, replacement habitat will require several years. Thus cumulative impacts to the California clapper rail just from the two Bahia projects is expected to be adverse and could be moderate to major.

Both the Bahia Homeowners Association and Debra Investments have met with the USFWS and are pursuing identification of mitigation opportunities that will adequately offset their respective impacts to this endangered species.

g. Conclusions and Recommendations: Based on an analysis of the above-identified impacts, a preliminary determination has been made that, with the inclusion of adequate habitat mitigation, it will not be necessary to prepare an Environmental Impact Statement (EIS) for the subject permit application. However, our Environmental Assessment for the proposed action has not yet been finalized and this preliminary determination may be reconsidered if additional information is forthcoming.

5. EVALUATION OF ALTERNATIVES: Evaluation of this activity's impact on the public interest will also include, to a lesser extent, application of the guidelines promulgated by the Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act, 33 USC, Section 1344(b).

The Corps has determined that the project is water dependent and will involve placement of fill in special aquatic sites. However, most of the proposed activities fall under the permitting authority of Section 10 of the RHA and not the CWA. Fill activities only include the construction of the access road at the lagoon closure site, the construction of the lock, and a

small amount at the dredged material disposal site. Additionally, it should be noted that the HOA has already taken a large step toward minimizing impacts to existing high quality wetland habitat by opting to *not* dredge 21.5 acres of the access tidal channel and allow that to remain as an open natural tidal area. This could be considered a less damaging alternative to dredging the entire existing open lagoon regularly, as had been the agreement at the time many of the original homeowners at Bahia purchased their homes.

6. PUBLIC INTEREST EVALUATION: The most important factor determining whether or the Corps will issue a permit will be based on whether or not the proposed activities are considered to be in or contrary to the public interest. The decision will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as they relate to activities in, or affecting, the navigable waters of the United States and the discharge of dredged or fill materials into those waters. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all those factors that become relevant in each particular case. The benefits that reasonably may be expected to accrue from the proposal must be balanced against its reasonable foreseeable detriments. The decision whether to authorize a proposal, and if so the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision will reflect the national concern for both protection and utilization of important resources. All factors that may be relevant to the proposal must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

7. CONSIDERATION OF COMMENTS: The Corps of Engineers is soliciting comments from the public Federal, State and local agencies and officials, Indian Tribes, and other interested parties in order to

consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

8. SUBMISSION OF COMMENTS: Interested parties may submit in writing any comments concerning this activity. Comments should include the applicant's name, the number, and the date of this notice and should be forwarded so as to reach this office within the comment period specified on page one of this notice. Comments should be sent to: The San Francisco District, Army Corps of Engineers, Attention: Regulatory Branch, 333 Market Street, San Francisco, CA 94105. It is Corps policy to forward any such comments that include objections to the applicant for resolution or rebuttal.

The Corps is intending to hold a **public hearing** to hear the merits and detriments of this proposed action from the members of the community and general public. The public hearing will be held sometime in early spring, of 2001 and will be conducted jointly with the San Francisco Bay Conservation and Development Commission (BCDC). The Corps will circulate a public notice announcing the meeting in advance. Additional details about the upcoming hearing, or pertaining to the material presented in this public notice may be obtained by contacting the applicant whose address is indicated in the first paragraph of this notice, or by contacting **Rob Lawrence** of our office: **415-977-8447**. Details on any changes of a minor nature that are made in the final permit action will be provided on request.