

C-1014

Attachment H

COVER PAGE (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Proposal Title: Venice Island Potato Slough Habitat Creation Demonstration Project
 Applicant Name: Department of Water Resources (DWR)/FILDIN Development Company
(Project site owner)/Levine-Fricke-Recon (LFR)-primary applicant
 Mailing Address: c/o LFR, 1900 Powell Street, 12th Floor, Emeryville, CA 94608-1827
 Telephone: (510) 652-4500
 Fax: (510) 652-2246

Amount of funding requested: \$ Phase 1A \$ 247,880 1 year
 Phase 1B \$ 180,930 4 to 7 months

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page ___ of the Proposal Solicitation Package for more information.

- Fish Passage Assessment
- Floodplain and Habitat Restoration
- Fish Harvest
- Watershed Planning/Implementation
- Fish Screen Evaluations - Alternatives and Biological Priorities
- Fish Passage Improvements
- Gravel Restoration
- Species Life History Studies
- Education

Indicate the geographic area of your proposal (check only one box):

- Sacramento River Mainstream
- Delta
- Suisun Marsh and Bay
- San Joaquin River Mainstream
- Landscape (entire Bay-Delta watershed)
- Sacramento Tributary: _____
- East Side Delta Tributary: _____
- San Joaquin Tributary: _____
- Other: _____
- North Bay: _____

Indicate the primary species which the proposal addresses (check no more than two boxes):

- San Joaquin and East-side Delta tributaries fall-run chinook salmon
- Winter-run chinook salmon
- Late-fall run chinook salmon
- Delta smelt
- Splittail
- Green sturgeon
- Migratory birds
- Spring-run chinook salmon
- Fall-run chinook salmon
- Longfin smelt
- Steelhead trout
- Striped bass

COVER SHEET (PAGE 2 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Indicate the type of applicant (check only one box):

- | | |
|--|--|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input type="checkbox"/> Private party |
| <input type="checkbox"/> University | <input checked="" type="checkbox"/> Other: <u>State agency/Private party partnership</u> |

Indicate the type of project (check only one box):

- | | |
|--|---|
| <input type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Monitoring | <input type="checkbox"/> Education |
| <input checked="" type="checkbox"/> Research | |

By signing below, the applicant declares the following:

- (1) the truthfulness of all representations in their proposal;
- (2) the individual signing the form is entitled to submit the application on behalf of the applicant (if applicant is an entity or organization); and
- (3) the person submitting the application has read and understood the conflict of interest and confidentiality discussion with the PSP (Section II.K) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.



(Signature of Applicant)

PROJECT TITLE AND APPLICANT NAME. *Venice Island Potato Slough Habitat Creation Demonstration Project (VIPSHC)*, Department of Water Resources (DWR), FILDIN Development Company (FDC), site owner, and LevineFricke Recon (LFR), the primary applicant.

PROJECT DESCRIPTION AND PRIMARY BIOLOGICAL/ECOLOGICAL OBJECTIVES. The DWR, FDC, and LFR have developed the VIPSHC with the objectives to (a) solve conflicts between reductions in fish habitat and existing agricultural uses of Delta islands, (b) develop cost-effective backfill mixtures for habitat restoration, (c) apply a beneficial reuse to an agricultural waste to reduce pollutants, and (d) demonstrate to the general public how conflicting priorities can be addressed through forward thinking ecological management and design in a public/private partnership.

The DWR intends to establish a joint venture with LFR for this project, with LFR serving as the lead party to CALFED (*see Letters of Intent*). In addition, FDC has agreed, for this project, to establish a conservation easement on a 7-acre parcel of land on Venice Island, which is owned by FDC (*see Letters of Intent*). The DWR/FDC/LFR Project Team will use the site to demonstrate the creation of approximately 4 acres of new wetlands and midchannel island habitat. The project design involves building a new setback levee and achieving optimum elevations to restore spawning and rearing habitat for sensitive species of Delta fish using an innovative rice-straw/clean dredged sediment mixture to approximate natural marsh soils. The VIPSHC habitat design includes grading the existing levee to create a midchannel island using existing nearby marshes as natural analogs during design and monitoring.

VIPSHC is designed to provide spawning and rearing habitat for a variety of threatened fish species, including delta smelt, longfin smelt, and Sacramento splittail. The created wetlands will also benefit avian populations of native waterfowl, shorebirds, and Swainson's hawks. VIPSHC will also act to improve water quality by re-establishing natural marsh processes that remove contaminants in Delta Waters.

APPROACH/TASKS/SCHEDULE. The project consists of three phases: ecological and engineering design (Phase 1A and 1B); habitat restoration (Phase 2); and post-restoration monitoring (Phase 3). During Phase 1A, we will evaluate existing conditions and identify marsh analogs, and conduct field composting and laboratory studies to identify a clean dredged sediment/rice straw mixture that will provide suitable, stable substrate for restoration. During Phase 1B, we will prepare final design plans using results of those tests and studies, and obtain permits and competitive contractor bids for construction. We anticipate Phase 1A/1B can be completed within 12 to 19 months. Future construction can be completed as Phase 2 within four months. Subsequent post-restoration monitoring could be conducted as Phase 3, for at least five years to collect the data necessary to evaluate project success and enhance future restoration designs.

JUSTIFICATION FOR PROJECT AND FUNDING BY CALFED. VIPSHC establishes tidal elevations in island margins without "filling in" existing Delta waterways, as might be the case with other projects that do not combine levee modifications/stabilization and limited farmland reclamation. Thus, by restoring habitat along the margins of a subsided Delta island, VIPSHC will demonstrate how to achieve maximum restoration benefits through effective co-existence with agricultural land use interests and necessary flood control measures. The methods used in VIPSHC will be adaptable to other sites throughout the region to aid in the long-term recovery of fish habitat and stability of levees within the Delta. By using the rice straw--an agricultural by-product that is primarily disposed of by burning (which is undergoing increasing regulatory restrictions) or flooding harvested fields (which affects fresh water supplies for sensitive fish and urban users), VIPSHC will reduce effects to air quality associated with burning rice straw, preserve water supplies, and provide the "recipe" for a cost-effective backfill that can be used throughout the Delta to create wetlands habitat and suitable spawning/rearing habitat for threatened Delta fishes. Under an effective public relations program, all of these benefits can be communicated to the general public to demonstrate how a public/private partnership and forward thinking ecological management can be applied to address the conflicting priorities present in the Delta region.

COSTS AND THIRD PARTY IMPACTS. Restoration projects that require large amounts of bulk material such as dredged sediment and rice straw experience higher costs for procurement, especially pilot-scale restoration projects, because commercial processing facilities for materials rehandling and composting are not yet available. The VIPSHC would develop an approach that could be implemented in a cost-effective manner for more expansive restoration and levee stabilization efforts in the Delta. VIPSHC offers agricultural rice growers in the near vicinity an alternative to burning or flooding fields to dispose of rice straw, and some of the composted rice straw could be used as a soil amendment by the growers. The loss of noncontiguous pockets of land along Delta waterway margins would have potential third-party impacts to the agricultural community. However, those impacts would be considerably smaller than proposals involving large-scale flooding of Delta islands, and may be more readily supported by landowners.

APPLICANT QUALIFICATIONS. DWR, LFR, and the other participants/collaborators on the VIPSHC have been actively addressing restoration, land use, agriculture and water conservation, and related environmental issues in the Bay-Delta region for several decades. Currently, DWR is involved in the ongoing habitat creation work at Twitchell Island, which also involves the evaluation of sediment reuse options. The VIPSHC will provide additional data for use in the Twitchell Island project. Since 1983, LFR has been working in the region to solve difficult environmental problems, including working with leading experts to develop policies for sediment reuse for habitat restoration (the Long Term Monitoring Strategy [LTMS]) and to implement effective ecological restoration strategies (e.g., Montezuma Wetlands Restoration Project, Port of Oakland's Martin Luther King Jr. Wetlands Restoration Project, East Bay Regional Park District's Oro Loma Marsh Enhancement Project, Port of San Francisco's Pier 98 Open Space Enhancement Project).

MONITORING AND DATA EVALUATION. We have a programmatic approach to data management that will facilitate adaptive management by evaluating VIPSHC's long-term benefits to priority species, effects on stressors, durability, and effects on water quality. In addition to our team experts, an independent technical review panel will evaluate monitoring results to recommend possible project adjustments, and we will coordinate our program with the Interagency Ecological Program (IEP) to allow regional Bay-Delta data comparison.

LOCAL SUPPORT / COORDINATION WITH PROGRAMS / COMPATIBILITY WITH CALFED OBJECTIVES. **FILDIN Development Company**, a significant landowner in the area, has agreed to dedicate the project site as a conservation easement following construction. We have had discussions with the **local reclamation district** which voiced support for the project. The **California Rice Industry Association** has supplied contacts with area rice growers. **Allan Garcia**, who organically farms 1,000 acres of rice, will make rice straw available for the project, along with others. The **U.C. Davis Student Experimental Farm** has agreed to allow the use of its staff and facilities for the field composting tests. Also, we will work with Mr. Garcia and **The Nature Conservancy (TNC)** early in the project to establish a larger-scale rice straw composting facility within TNC's **Consumnes Preserve (Phase 2)**. Such a facility could also provide valuable "organic" soil amendments for rice growers within the Preserve, which would complement TNC's current efforts to transition its rice growing fields from conventional farming methods to organic methods. In addition, the LTMS is promoting beneficial reuse options for dredged sediment and the VIPSHC offers opportunities to evaluate clean dredged sediment rehandling operations that may reduce salinity in sediments dredged from the more saline San Francisco Bay. We anticipate using the Montezuma Wetlands Project's rehandling facility to generate clean dredged sediment. Finally, VIPSHC creates fish habitat, increases structural stability of levees, and restores island margins while maintaining existing land uses. These achievements support the goals of the CALFED program Category III funding efforts by restoring ecological health, improving existing water management structures, and addressing conflicts between the need to enhance fish habitat and maintain agriculture within the Delta.

A. Project Title: Venice Island Potato Slough Habitat Creation Demonstration Project

B. Applicant/ Principal Investigators:	Levine-Fricke-Recon (LFR)	Department of Water Resources
	1900 Powell Street, 12th Floor Emeryville, California 94608 Roger Leventhal, P.E. (510) 652-4500/FAX (510) 652-2246 Email: leventhal.roger@LFR.com	3251 "S" Street Sacramento, California 95816 Curt Schmutte, Chief of Planning (916) 227-7567/FAX (916) 227-7600

C. Type Of Organization & Tax Status: LFR is a duly authorized corporation based in Emeryville, CA

D. Tax Identification Number & Contractor's License Number:	LFR's TIN is 04-2806712; LFR's contractor's license, Number 507465, is held by James D. Levine, P.E.
E. Participants/Collaborators In Implementation:	<p>FILDIN Development Company (<i>Site Owner</i>) 99 Alameda Blvd., #565, San Jose, CA 95113 408-998-2460/FAX (408) 998-2404</p> <p>UC Student Farm (<i>Field Compost Study</i>) 1 Shields Avenue, Davis, CA 95616 Mark Van Horn (916) 752-7645/FAX (916) 752-7655</p> <p>Sonoma Compost Company (<i>Compost Advisors</i>) 550 Meacham Road, Petaluma, CA 94952 Will Bakx and Alan Siegel (707) 664-9113/FAX (707) 664-1943</p> <p>California Rice Industry Assoc. (<i>Advisors</i>) 701 University Ave., #205, Sacramento, CA 95825-6708 Bob Herker (916) 929-3996/FAX (916) 458-5568</p> <p>Allan Garcia (<i>Rice Grower</i>) 7772 Road 9, Orland, CA 95963 (916) 865-3865</p> <p>Garcia and Associates (GANIDA) (<i>Technical Advisor</i>) 3152 Paradise Dr., Tiburon, CA 94920 (415) 789-9242/FAX (415) 789-9245</p> <p>Levine-Fricke Restoration (<i>Sediment Rebanding</i>) 1900 Powell Street, 12th Floor Emeryville, CA 94608-1827 (510) 652-4500/(510) 652-2246</p> <p>Kjeldsen, Simnock & Associates (<i>Civil Eng./Surveying</i>) 1113 W. Fremont St., Stockton, CA 95201-0844 (209) 946-0208/FAX (209) 946-0276</p>

A. PROJECT DESCRIPTION AND APPROACH. VIPSHC proposes to create approximately 4 acres of habitat for sensitive native fishes in Potato Slough along the margins of Venice Island (Figures 1 and 2) using a 7-acre agricultural property to be dedicated as a conservation easement by FILDIN Development Company upon project completion (*see Letters of Intent*). We will relocate the existing flood protection levee "inboard," fill the subsided agricultural lands between the former levee location and its new inboard location, create a channel through the area, and then breach the existing levee in upstream and downstream locations to return Delta waters and natural flow to the site (Figure 3). In conjunction with breaching the levee, the other areas of the outboard (or existing) levee will be graded down to create a midchannel island and revegetated with riparian vegetation (e.g., willows and cottonwoods).

Because Venice Island has subsided to depths of 12 feet below mean lower low water, filling is required to achieve elevations appropriate to support both emergent and submergent vegetation critical to fish habitat creation (Figure 3). We propose to evaluate and develop combinations of rice straw (composted and uncomposted) and clean dredged sediment that can be used as fill material. We propose this combination because these materials are available in large quantities and the sediment/rice straw mixture may best approximate natural Delta peaty marsh soils.

We will use field composting and laboratory studies to identify the combination of sediment and composted or uncomposted rice straw that most closely approximates natural peaty marsh soils while minimizing water quality impacts. We will use the results of the studies to determine the optimum mixtures for evaluation during the demonstration project. Figure 5 provides a project flow chart of Phases 1A/1B and 2.

In creating the channel through the restored habitat, we will use adjacent natural midchannel islands as analogs to design the surface and channel-bed elevations (Figures 3 and 4). We will design the channel and the levee breach to promote natural flow between Potato Slough and the created habitat, so that ambient main-channel temperatures are maintained within the created habitat, and fish entrapment does not occur. We will also create small backwater areas along the new channel to significantly increase habitat variability and habitat acreage because the vegetated channel edge is known to be prime habitat for the target native fishes!

B. SCOPE OF WORK. Our scope of work consists of 11 technical tasks in three phases. Tasks 1, 2, and 3 are "stand alone" tasks, while Tasks 4 through 11 are sequential and inseparable and can only be conducted on the basis of the results of Tasks 1, 2, and 3. Phase 1A Ecological Design consists of site characterization; field composting and laboratory studies to identify a clean dredged sediment/rice straw mixture that will provide suitable, stable substrate for restoration and preparation of the preliminary demonstration project design. Phase 1B consists of preparation of plans and specifications and permitting. Phase 2 Construction of Habitat Restoration consists of sediment rehandling, rice-straw composting, setback levee construction, fill placement, breaching and grading of the outer levee, revegetation, and construction management. Phase 3 Post-Restoration Monitoring consists of short- and long-term monitoring to document project progress, implement modifications as needed, and demonstrate project success.

PHASE 1A: Ecological Design

Task 1: Site and Reference Site Characterization. We will evaluate existing biological, physical, and chemical conditions at the VIPSHC site to determine baseline conditions (Figure 6). We will complete a 1:100 scale topographic survey of the site and at least one natural reference marsh, and a hydrographic survey of the adjacent slough bed elevations. We will perform a tidal reckoning analysis to determine the site-specific tidal datum and use those datum to establish the elevations appropriate to support target species and habitats. We will also collect key biological and hydraulic information at the site and the reference site, including flow velocity, stage height, current direction, and sedimentation rate, for use in project design. During this effort, we will evaluate aerial photographs of the area to assess erosion/accretion of existing Delta features. We propose to present the results of this task in the Final Ecological Report (*see Task 4*).

Task 2: Field Composting Study. We will conduct field composting studies to develop optimum composting procedures for turning rice straw into the most "pear-like" material (Figure 7). To effectively mimic large-scale composting operations, we will conduct the test using 100 cubic yards of rice straw formed into windrows about 5 feet high. Because we need to reduce the high carbon/nitrogen ratio of the rice straw (~100:1), we will divide the windrow into sections of equal volume to test several treatment options, including nitrogen-enriched food processing wastes (from canneries and/or breweries), agricultural manures, commercial NPK fertilizer, and microbial inoculants/enzymes (from rice field soil and/or commercial sources). We will conduct the tests at the U.C. Davis Student Experimental Farm under the guidance of Sonoma Composting Company (SCC), using techniques currently employed at SCC's 50,000 cubic yards per year commercial facility. In addition to evaluating the "finished" condition of the compost using standard parameters of temperature, soluble nutrients, bulk density, and visual conditions, we will leach the compost with a dilute alkaline solution (commonly used in soil chemical extractions) to assess the "availability" (i.e., stability) of organic carbon in the composted rice straw. We will present the results of this task in the Final Ecological Report (see Task 4).

Task 3: Laboratory Water Quality Study. We will conduct laboratory "leaching" tests at our in-house laboratory in Emeryville, California, to evaluate the potential for rice straw/sediment mixtures to affect water quality compared to three pear soil samples from natural marshes near the Venice Island site. While the best measures of water quality impacts will be obtained from monitoring the VIPSHC under real hydraulic conditions (see Task 10), these laboratory tests will allow us to conservatively assess potential impacts to water quality and to design optimum combinations of rice straw (composted or uncomposted) and clean dredged sediment for testing in the VIPSHC. We will test combinations of composted and uncomposted rice straw and clean dredged sediment in batch leaching tests. We will analyze the water for the water quality parameters listed in Table 1. Based on the results of those batch leaching tests, we will further evaluate the four combinations that produce minimum water quality impacts using a "tidal simulation" (TS) test (developed by USACE Waterways Experiment Station²). The TS test reproduces tidal action by pumping water from the test system (aquarium) and by gravity feeding water into the system at set time intervals to mimic the natural schedule of the tides. We will also evaluate geotechnical properties. We propose to present the results of this task in the Final Ecological Report (see Task 4).

Task 4: Final Ecological Design Report. We will summarize the ecological and engineering design in a Final Ecological Design report for review by CALFED representatives and our technical review panel, which will consist of recognized authorities, agency personnel, and local interested parties. The report will include detailed cost estimates, preliminary design specifications, a construction schedule, and a draft monitoring plan. We anticipate finalizing this draft monitoring plan during the permitting process in Phase 1B.

We have prepared a conceptual engineering design for the demonstration project. Descriptions and associated costs for the pre-construction engineering and ecological design elements of the demonstration project are provided in Table 2. Figures 8 and 9 shows a cross-section and a plan view, respectively, of the VIPSHC.

PHASE 1B: Preparation of Plans & Specifications and Permitting

Task 5: Construction Plans and Specifications. We will prepare construction-ready plans and specifications, including materials suitable for bidding the project. We will also oversee the bidding, evaluation of bids and make a recommendation for award of the contract to a qualified contractor. The lowest qualified bids will be submitted to CALFED as the funding basis for Phase 2 of the project. We have already evaluated earthwork quantities using specific materials and sources; construction methods and equipment; costs; and schedule. Those evaluations and the associated costs are presented in Table 2; these are preliminary engineering cost estimates ($\pm 35\%$).

Task 6: Permitting. IFR will obtain all necessary permits (Table 3). Deliverables for this task include permit applications and supporting documentation needed to obtain the permits. We will finalize the draft monitoring plan during consultation with the resource and permitting agencies.

PHASE 2: Construction of Habitat Restoration

Task 7: Construction. Construction will include all tasks for direct project implementation, including composting, rehandling, creating the setback flood control levee, raising elevations of subsided lands using the preferred rice straw/sediment mixture, revegetation, and levee breaching.

Task 8: Construction Management. We will provide construction management services during this phase to ensure quality and adherence to contract documents, schedule, and budget constraints. We will use field notes to document site activities performed under Task 7.

PHASE 3: Post Restoration Monitoring

Task 9: Biological Monitoring. We will implement monitoring to evaluate VIPSHC's habitat development and to assess its benefits to priority species. As shown in Figure 6, we will focus on factors such as fish presence, abundance and composition, vegetation, and invertebrate support. We will conduct quarterly sampling and report results to the Technical Review Panel and CALFED on an annual basis for five years. As illustrated, we will apply an adaptive approach to allow us to modify management of the restored site to maximize enduring restoration efforts.

Task 10: Water Quality Monitoring. To evaluate water quality in the newly created habitat, we will collect surface water and subsurface water samples by installing hydropunch probes at different locations and elevations to evaluate the interaction of sediment/rice mixtures with the Delta waters. We will analyze the samples for the water quality parameters listed in Table 1. We will conduct quarterly sampling and report results to the Technical Review Panel and CALFED on an annual basis for five years.

Task 11: Geotechnical and Physical Monitoring. We will also monitor the physical properties of the created habitat to assess sedimentation, levee stabilization, and hydraulics. We will conduct quarterly sampling and report results to the Technical Review Panel and CALFED on an annual basis for five years.

C. LOCATION OF PROJECT. The project is located in San Joaquin County in the Sacramento-San Joaquin Delta watershed, along Potato Slough on Venice Island (Figures 1 and 2). We will conduct the composting field tests at the Student Experimental Farm at U.C. Davis, Davis, California, and the laboratory suitability studies in LFR's in-house laboratory in Emeryville, California. We will work with Allan Garcia and the Nature Conservancy to establish a rice straw composting facility within the Conservancy's Consumnes Preserve. Clean dredged sediment will be rehandled at the Montezuma Wetlands Restoration Project facilities.

D. EXPECTED BENEFITS. Stressors. VIPSHC is designed to address floodplain and marshplain changes, channel form changes, water quality, undesirable species interactions, and land use.

Species. VIPSHC focuses on juvenile delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), and Sacramento splittail (*Pogonichthys macrolepidotus*), and fall-run chinook salmon juveniles (*Oncorhynchus tshawytscha*) outmigrating from the San Joaquin and Mokelumne rivers, among other sources³. Outmigrating salmonids (primarily fry and some smolts) spend several months in shallow rearing habitat in the Delta, and have recently been documented in the San Joaquin River close to Potato Slough⁴. Delta smelt and long-fin smelt have been documented in the San Joaquin River⁵. Sacramento splittail have been documented in the San Joaquin River, where spawning is likely to occur in reaches with shallow emergent vegetation⁶.

Ecosystem Benefits. VIPSHC will create approximately 4 acres of spawning and rearing habitat for the target species identified above. Given the project's location relative to the San Joaquin and Mokelumne rivers and the primary water diversion pumps (e.g., CVP, SWP; see Figure 1), VIPSHC will provide what may be the final fish habitat opportunity in this reach of the Bay-Delta system⁷. In addition, upon completion, VIPSHC will address these identified stressors:

- *Floodplain and Marshplain Changes.* Levee construction throughout the Delta islands has physically isolated water sources from their natural flood and marshplains. VIPSHC will re-establish marshplain in lands currently supporting agriculture, thereby addressing hydrologic and physical isolation of floodplain and marshplain, and increasing floodplain and flood storage capacity.
- *Channel Form Changes.* VIPSHC will re-establish channel hydrogeomorphology and restore natural physical processes, including natural inundation cycles. Using nearby natural analogs to create the midchannel island and tidal perennial habitat, VIPSHC will increase emergent and submergent vegetation and riparian habitat along two perimeter levees. VIPSHC will demonstrate the viability of using set-back levees and habitat creation to increase channel meander and reduce pressure on levees.
- *Water Quality.* Because wetlands filter water⁸, VIPSHC wetlands should enhance reduction of contaminant concentrations in Potato Slough.
- *Undesirable Species Interactions.* To enhance native species survival, we will implement eradication or control options for exotic species during Phase 3 monitoring.
- *Land Use.* VIPSHC will employ a conservation easement to change land use in perpetuity.

Expected secondary benefits include the creation of shallow water foraging habitat for shorebirds and waterfowl, and wetland and upland foraging and rearing habitat for native waterfowl and Swainson's hawks, which have been recently documented in the area⁹.

Third Party Benefits. VIPSHC will evaluate a beneficial reuse alternative for rice growers who now rely primarily on burning or flooding fields to dispose of rice straw. VIPSHC will also provide research data on composting processes that produce the most stable rice straw compost. VIPSHC will also evaluate the beneficial reuse of clean dredged sediment and rehandling sediment from the more saline San Francisco Bay.

Benefits to Other Ecosystem Restoration Programs. VIPSHC will evaluate and develop clean dredged sediment/rice straw mixtures that can be used effectively as fill material to create wetland habitat throughout much of the Bay-Delta system. This effort reduces effects to air quality associated with burning rice straw and relieves ongoing pressure to dispose of dredged sediment in San Francisco Bay or the ocean. In addition, VIPSHC supports research into the use of agricultural by-products as fill for wetlands habitat creation.

Benefits to CALFED Non-Ecosystem Objectives. Existing Delta levees could fail during a large seismic event. Current methods for levee stabilization are expensive, and by working in aquatic areas, may be damaging to existing biota. VIPSHC will evaluate using fill placement (for wetland creation) in non-wetlands area to bolster levees, thus reducing hydrostatic pressure and wave-generated erosion.

E. BACKGROUND AND BIOLOGICAL/TECHNICAL JUSTIFICATION. Native fish populations in the Bay-Delta are rapidly declining because of habitat alterations that have dramatically reduced critical spawning and rearing habitat for special status species, such as the delta smelt and Sacramento splittail¹⁰. Many habitat alterations occurred during flood control levee construction that created islands to accommodate other land uses, primarily agriculture (Figure 4). Although flooding of Delta islands would restore natural processes to the area, the value of agricultural products from the region makes this option impractical. Therefore, it is important to develop wetlands restoration designs that can provide valuable habitat along island margins, while still supporting other land uses.

As described previously, VIPSHC involves moving the existing levee inboard, raising land between the current levee location and its new inboard location and constructing a channel to establish the fish and wetland habitat, and then breaching the levee to restore tidal action to the restoration area. Moving the levee

Endnotes (excluded from page count)

- ¹ R. Baxter, California Department of Fish and Game. Personal communication, July 1997.
- ² Simmers, J.W., R.G. Rhet, S.H. Kay, and B.L. Folsom, Jr. 1989. Synthesis of the results of the field verification program wetland disposal alternative. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. Tech. Rep. D-89-2.
- ³ U.S. Fish & Wildlife Service (USFWS). 1997. *Abundance and Survival of Juvenile Chinook Salmon in the Sacramento-San Joaquin Estuary, 1994 Annual Progress Report*. April 1997; USFWS. 1995. *Volume III: Working Paper on Restoration Needs*. "Habitat Restoration Actions to Double the Natural Productions of Anadromous Fish in the Central Valley California."; L. Meng and D.B. Moyle. 1995. *Status of Splittail in the Sacramento-San Joaquin Estuary*. Transactions of the American Fisheries Society. 124:538-549; L. Meng. Personal communication, July 1997; P.B. Moyle, B. Herbold, D.F. Stevens, and L.W. Miller. 1992. *Life history and status of the delta smelt in the Sacramento-San Joaquin estuary, California*. Transactions of the American Fisheries Society 121: 67-77; B. Herbold. Personal communication, July 1997; San Francisco Estuary Project. 1992. *Status and trends report on the aquatic resources in the San Francisco Estuary*. Prepared under cooperative agreement #CE009519-01-1 with the Environmental Protection Agency
- ⁴ U.S. Fish & Wildlife Service (USFWS). 1997. *Abundance and Survival of Juvenile Chinook Salmon in the Sacramento-San Joaquin Estuary, 1994 Annual Progress Report*. April 1997
- ⁵ B. Herbold. Personal communication, 1997. U.S. Fish and Wildlife Collection Data. 1996.
- ⁶ L. Meng. Personal communication, June 1997.
- ⁷ R. Baxter, California Department of Fish and Game. Personal communication, July 1997
- ⁸ W.J. Mitsch and J.G. Gosselink 1993. *Wetlands*. 2nd Edition. Van Nostrand Reinhold, New York City, New York.
- ⁹ S.K. Herzog. 1996. "Wintering Swainson's Hawks in California's Sacramento-San Joaquin Delta." *The Condor*. 98:876-879.
- ¹⁰ Moyle P.B., B. Herbold, D.F. Stevens, and L.W. Miller. 1992. *Life history and status of the delta smelt in the Sacramento-San Joaquin estuary, California*. Transactions of the American Fisheries Society 121: 67-77; L. Meng and D.B. Moyle. 1995. *Status of Splittail in the Sacramento-San Joaquin Estuary*. Transactions of the American Fisheries Society. 124:538-549; L. Meng. Personal communication, July 1997
- ¹¹ U.S. Fish and Wildlife Service. 1995. *Habitat Restoration Actions to Double Natural Production of Anadromous Fish in the Central Valley of California*, prepared in cooperation with the Anadromous Fish Restoration Program Core Group. May 9.
- ¹² Simmers, J.W., R.G. Rhet, S.H. Kay, and B.L. Folsom, Jr. 1989. Synthesis of the results of the field verification program wetland disposal alternative. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. Tech. Rep. D-89-2.

A. Budget Costs. The basis for CALFED funding of this project is that it serves the public good by restoring habitat while preserving agricultural land uses and stabilizing levees. Our funding request is based on the fact that restoration projects that require large amounts of bulk material such as dredged sediment and rice straw experience higher costs for procurement, especially pilot-scale restoration projects, because commercial processing facilities for materials rehandling and composting are not yet available. By funding this project, CALFED will support the development of an innovative method for achieving cost-effective, expansive restoration and levee stabilization in the Delta region. A demonstration project, by definition, must provide verification of performance against an established standard. Public funding of research projects allows greater control, through the granting agency, over both establishment of the minimum standard *and* the verification process. Funding this demonstration project with public monies under a public/private partnership brings together the entrepreneurial drive and creativity of the private sector and the stabilizing effects of public agency participation as well as the widespread dissemination of all collected data and information.

The site owner, FILDIN Development Company, is supportive of the conceptual plan and the plan has been well received by authorities on sensitive Delta fish habitat. In addition, The Nature Conservancy, local rice growers, the U.C. Davis Experimental Farm, and relevant private sector firms are supportive and committed to completing this project.

As shown on our cost table provided on the following page, we have developed our project to allow incremental funding in three phases over the course of two years, with a minimum five-year monitoring period. In requesting funding for Phase IA/IB, we note in-kind contributions, which are not shown in the attached table that include the following:

- Proposed project team labor rates are calculated at cost, which represents an approximate average discount of 20% off standard commercial rates. Based on the projected level of effort, the total value of this discount is approximately \$100,000.
- Coordination with the Venice Island Reclamation District, The Nature Conservancy, and local rice growers to gain support and promote local involvement in the project is provided at no cost, with an estimated total value of \$25,000, although efforts will vary during the course of the project.
- All field equipment will be provided at no cost to the project. Additionally, all travel and subsistence costs also are being contributed. Together, these costs are valued at approximately \$35,000.
- Our team is also contributing the land at no cost to the project through FILDIN Development Company. This contribution is valued at \$50,000.

B. Schedule Milestones. We must conduct portions of the work during specific seasons (e.g., when fish spawn; when tidal elevations are relatively low). As a result, we anticipate that the schedule of work, excluding monitoring, will extend over a period of approximately two years (Figure 10). Therefore, we anticipate negotiating funding to occur in harmony with that schedule, allowing sufficient lead time to complete contractual arrangements and effectively mobilize specific project phases. More specifically, the tasks in Phase 1A/1B if scheduled for completion, would require funding in toto within a 19-month period beginning in December 1998. Phase 2 would begin in July 2000 and continue until October 2000. Phase 3 would begin in November 2000 and continue for a five-year period. We anticipate providing CALFED with monthly invoices documenting work activities and expenditures.

C. Third-Party Impacts. We do not anticipate significant third-party impacts associated with this demonstration project.

COSTS & SCHEDULE

(2-page limit)

Phase & Task Description	Direct Labor Hours	Direct Salary & Benefits		Overhead Labor (General Admin & fee)		Fully Burdened Rates	Service Contracts	Material & Acquisition Contracts	Miscellaneous & Other Direct Costs	Total
		Hrly Rate	Total \$\$\$	Hrly Rate	Total \$\$\$					
Phase 1A Ecological Design										
1. Site Characterization	418	33.50	14,003	56.50	23,659	90.00			8,000	\$ 45,660
2. Field Composting Study	162	40.34	6,535	54.66	8,855	95.00			12,000	27,390
3. Laboratory Water Quality Study	156	34.24	13,285	48.21	18,705	82.45			22,100	54,090
4. Final Ecological Design Report	1,500	32.79	51,316	44.36	69,423	77.15			--	120,740
Phase 1A Total										\$ 247,880
Phase 1B Plans & Specs/Permitting										
5. Construction Plans & Specifications	1,660	33.59	55,759	50.70	84,162	84.29				\$ 139,920
6. Permitting	485	31.78	15,413	42.47	20,598	74.25			5,000	41,010
Phase 1B Total										\$ 180,930
Phase 2 Habitat Restoration										
7. Construction	0						1,908,800			\$1,908,800
8. Construction Management	873	32.33	28,224	47.84	41,764	80.17				69,988
Phase 2 Total										\$1,978,790
Phase 3 Post-Restoration Monitoring										
9. Biological Monitoring	616	32.25	19,866	44.02	27,116	76.27			6,000	\$52,982
10. Water Quality Monitoring	212	31.68	6,716	41.82	8,866	73.50			25,000	40,582
11. Geotech/Physical Monitoring	128	36.30	4,646	45.45	5,818	81.75			2,000	12,464
Phase 3 Total										\$73,030

680600-1

PLANNED ORGANIZATION, STAFF & RESOURCES. Figure 11 provides an organization chart for the LFR team. As shown, the DWR/FDC/LFR Team blends ecology and engineering with experience working in the Bay-Delta region. Team members have completed some of the largest and most complex restoration efforts in the Bay-Delta region, successfully restoring dynamic ecosystems (*see bio sketches that follow*). In addition to the resources identified in the organization chart, LFR employs over 400 professionals with experience in all phases of environmental resource management, regulatory negotiation, and environmental remediation. The VIPSHC team can draw upon this multi-disciplinary breadth of expertise as necessary to comprehensively address project issues or related matters.

TECHNICAL, ADMINISTRATIVE, AND PROJECT MANAGEMENT

VIPSHC integrates biology/ecology with engineering and land use planning. As a result, Douglas S. Lipton, Ph.D., Roger D. Leventhal, P.E., and Curt Schmutte will provide joint leadership of the technical aspects of VIPSHC. Dr. Lipton and Mr. Leventhal have previously worked together in similar roles on a number of other successful restoration efforts. LFR will be the contracting authority for this project and will be responsible for payments, reporting and accounting. The partnership with DWR will be as a joint venture (*see Letters of Intent*). All work products will be jointly produced, reviewed and signed-off by designated representatives of both joint venture parties. Liability will be shared 50-50 as equivalent to the joint venture.

We will draw upon the resources available from the project's collaborating participants described below (*see Nature and Extent of Collaborating Participants*) and apply the expertise of Rachel Bonnefil, Regulatory Specialist; J. Scott Seyfried, R.P.S.S., Soil Scientist; Mavis Hasey, Senior Ecologist; Joyce Ambrosius, Fisheries Biologist; Kirk Lenington, Biologist; Maya Khosla, Fisheries Biologist; Christopher Nardi, G.E., Geotechnical Engineer; Mary Alice Keeler and Claude Dragan, Design Engineers; and additional engineers, hydrogeologists/geologists, and environmental scientists as necessary to ensure superior technical project performance. Susan Kavanaugh, Contract Manager, will be responsible for administering contractual issues with CALFED. Ms. Kavanaugh will ensure that financial recordkeeping and reporting comply with CALFED funding requirements. Table 4 provides a summary of the qualifications, experience, and past performances for these project team members.

To ensure consistency throughout the life of the project, Mr. Leventhal and Mr. Schmutte will jointly manage day-to-day project functions. Mr. Leventhal, as an employee of the primary applicant, will be the primary point of contact with CALFED personnel. An experienced LFR Project Assistant will work with Mr. Leventhal to accomplish administrative management, including scheduling meetings, distributing meeting agenda, recording and distributing meeting notes, compiling and preparing deliverables, cost tracking and expenditures monitoring, and other tasks as necessary.

BIO SKETCHES/QUALIFICATIONS/EXPERIENCE/PAST PERFORMANCE

Douglas S. Lipton, Ph.D. Soil Chemistry, 1991; M.S. Soil Science, 1983; B.A. Environmental Biology, 1980; B.A. Molecular Biology, 1980. Dr. Lipton established Levine-Fricke-Recon's Ecological Services Group, which directs ecological restoration projects and conducts a wide variety of laboratory treatability studies that evaluate chemical and biological remediation technologies for restoring contaminated soils, sediments, and groundwater. Dr. Lipton directed some of the largest ecological restoration projects in the Bay-Delta region, including the 2,000-acre Montezuma Wetlands Restoration Project and the recently completed Oro Loma Marsh Enhancement Project, which has been called a "model" restoration by the San Francisco Joint Bay Venture. Through his association

with these projects, Dr. Lipton has acquired extensive experience integrating ecology with engineering, and has built strong working relationships with local, state, and federal permitting and resource agencies. His past project experience also includes directing the Port of Oakland's Martin Luther King Jr. Wetlands Restoration Project, managing the revegetation and closure of a Superfund site in California's Central Valley, and directing research at a facility dedicated to dredging and composting agricultural wastes. Dr. Lipton currently participates in the LTMS and leads a panel of technical experts working for the California Regional Water Quality Control Board. That panel is providing oversight of efforts by Bay Area refineries to develop new technologies to reduce selenium concentrations in process water before discharged to Bay waters.

Roger D. Leventhal, P.E. (*California, 42467*), *M.S. Civil Engineering, Hydraulics and Water Resources, 1985; B.A. Geology (Geochemistry Emphasis), 1983*. Mr. Leventhal has acquired unique experience in ecological restoration/environmental engineering projects as the project manager or lead engineer for Levine-Fricke-Recon's major wetlands and shoreline restoration projects in the Bay Area and Sacramento River Delta. His academic background in hydraulics and water resources coupled with practical experience in applied engineering principles have proven to be invaluable assets to LFR's many successes in the environmental field. He has evaluated design alternatives, successfully negotiated permitting, prepared plans and specifications and supervised field construction of some of the largest and most successful restoration projects on the West Coast. Through his project involvements, Mr. Leventhal has demonstrated expertise in analysis and design of tidal channels, and in tidal reckoning analysis. In addition, Mr. Leventhal has demonstrated his ability to manage multiple interdisciplinary teams in conducting civil and engineering design projects and completing projects within complex regulatory framework. His past project experience includes project manager/lead design engineer for the wetlands restoration and landfill closure project at Pier 98 in San Francisco, engineering project manager for the Montezuma Wetlands Project, and engineering project manager for the Oro Loma Marsh Enhancement Project.

NATURE AND EXTENT OF COLLABORATING PARTICIPANTS

Kjeldsen, Sinnock & Associates (KSA) will assist with final engineering design and land surveying operations. KSA has provided civil engineering and land surveying services at Venice Island for over 10 years, and is very familiar with construction on the island. Mr. Ken Kjeldsen, president of KSA, is the Bureau of Reclamation's current District Engineer for Venice Island.

Sonoma Compost Company (SCC) will provide guidance during composting of the rice straw. Established in 1985, SCC receives an average of 150 tons of yard waste per day and through its dealer network, markets over 50,000 cubic yards of compost and mulch annually throughout Northern California. SCC has worked closely with the California Integrated Waste Management Board to establish meaningful and realistic regulations for compost facilities, and has taken the lead in setting up workshops to assist local regulators in interpreting and implementing state regulations.

The **UC Davis Student Experimental Farm** will supply a site for composting and UC students will participate in the study under the direction of SCC.

The **California Rice Industry Association** will provide continuing liaison with agribusiness in the Delta and Central Valley.

Allan Garcia, who organically farms 1,000 acres of rice, will make rice straw available for the project and will work with us to develop the composting facility on his ranch.

The Nature Conservancy (TNC) has agreed to work with the team early in the project to establish a rice straw composting facility within TNC's Consumnes Preserve. This composting facility could

also provide valuable "organic" soil amendments for rice growers within the Preserve, which would complement TNC's current efforts to transition its rice growing fields from conventional farming methods to organic methods.

Garcia & Associates (GANDA) will work with the project team to further develop and implement the conceptual restoration plan. GANDA provides specific expertise in aquatic and terrestrial ecology and natural resources policy and planning applications. GANDA is a Minority-Owned Business Enterprise (MBE) that has designed and completed fish population, water quality, and habitat studies in streams, rivers, lakes, and reservoirs in the Delta, as well as in Alaska, Arizona, Idaho, Montana, Nevada, and Washington. GANDA has developed computer models to assess impacts of projects on species populations and ecosystems.

Randy Baxter and Paul Requel of the California Department of Fish and Game and **Josh Collins, Ph.D., of the San Francisco Estuary Institute**, have agreed to participate on a Technical Advisory Panel. Mr. Baxter and Mr. Richel are fisheries biologist who specialize in native Delta fishes. Dr. Collins has conducted studies in ecology, geomorphology, and land use to conserve plant, mammal, bird, and invertebrate populations and communities in marine, riverine, lacustrine, montane, and other terrestrial environments for the government and regulated industry. He also has produced guidelines sponsored by government to help translate science into public policy for ecological health of undeveloped lands. We will identify additional Technical Advisory Panel members in cooperation with CALFED and local area interested parties.

Tim Krantz, Ph.D., and Mark Reisner will serve as additional resources. Dr. Krantz is Professor of Geography at the University of the Redlands in Redlands, California, and an experienced environmental consultants who blends experience as an ecologists with over 15 years of service as a public planner with the San Bernardino Planning Commission. Mr. Reisner will liaison with CALFED personnel to foster dialogue with the myriad of interested parties involved in restoration of the Bay-Delta region. Mr. Reisner, author of *Cadillac Desert*, is an authority on water issues within the American West, especially within the California. As such, he has an in-depth understanding of the regulatory and political framework within which CALFED must operate and the goals of the Category III funding program, and how VIPSHC can best meet those needs.

Potential Conflicts of Interest. To LFR's knowledge, we have no conflicts of interest with the actions or intentions of the CALFED Funding as of the date of this proposal.

STANDARD TERMS & CONDITIONS

(1-page limit)

The LFR Team agrees to comply with the standard terms and conditions as provided with the RFP.

U.S. Department of the Interior

Certification Regarding Debarment, Suspension and
Other Responsibility Matters, Drug-Free Workplace
Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters-Primary covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used or use this form for certification and sign (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternative I. (Grantees Other Than Individual(s) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charge by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, and Other Voluntary Exclusion - Lower Tier Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

DI-2020
June 1998
(This form replace DI-1963, DI-1954,
DI-1955, DI-1956, and DI-1983)

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternative I. (Grantees Other Than Individuals)

- A. The grantee certifies that it will or continue to provide a drug-free workplace by:
- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
 - (b) Establishing an ongoing drug-free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
 - (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
 - (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;
 - (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
 - (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;
 - (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).
- B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of performance (Street address, city, county, state, zip code)

1900 Powell Street, 12th Floor, Emeryville, Alameda County, California, 94608-1827

3251 "S" Street, Sacramento, Sacramento County, California 95816

Check if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternative II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

DI-2020
June 1996
(This form replaces DI-1983, DI-1954,
DI-1955, DI-1956, and DI-1983)

PART E: Certification Regarding Lobbying
Certification for Contracts, Loans, and Cooperative Agreements

CHECK IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

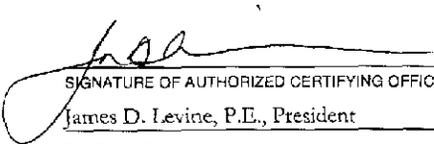
CHECK IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000 OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000 UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, of an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.


SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

James D. Levine, P.E., President

TYPE NAME AND TITLE

DATE

7/1/98

DI-2020
June 1996
(This form replaces DI-1863, DI-1954,
DI-1955, DI-1956, and DI-1983)

TABLE 1: Laboratory Analysis Methods for Phase 1 Composting Studies and Phase 3 Long-Term Monitoring

Analytes	Method
TTLIC CAM 17 Metals	EPA Method 6010/7000
Dissolved Oxygen	SM 4500G
Oxidation/Reduction	ASTM D1498-76
PH	EPA Method 9040
Organochlorine Pesticides	EPA Method 8080
Organophosphorous Pesticides	EPA Method 8140
Chlorinated Herbicides	EPA Method 8150
Biological Oxygen Demand	EPA Method 405.1
Chemical Oxygen Demand	EPA Method 410.4
Anions (Chloride, Sulfate, Nitrogen)	EPA Method 300
Alkalinity	EPA Method 310.1
TDS	EPA Method 160.1
Hardness	SM 23408
Conductivity	EPA Method 120.1
TTLIC Cam 17 Metals	EPA Method 6010/7000
Dissolved Oxygen	SM 4500G
Oxidation/Reduction	ASTM D1498-76
PH	EPA Method 9040
Organochlorine Pesticide	EPA Method 8080
Organophosphorous Pesticides	EPA Method 8140
Chlorinated Herbicides	EPA Method 8150
Biological Oxygen Demand	EPA Method 405.1
Chemical Oxygen Demand	EPA Method 410.4
Anions (Chloride, Sulfate, Nitrogen)	EPA Method 300
Alkalinity	EPA Method 310.1
TDS	EPA Method 160.1
Hardness	SM 23408
Conductivity	EPA Method 120.1
Methane	EPA Method 8015M

TABLE 2: Preliminary Construction Cost Estimate
Venice Island Potato Slough Demonstration Project, July 2, 1998

Line	Description	Quantity	Units ¹	Unit Cost	Total Cost (Dollars)
Direct Capital Costs					
General					
1	mobilization and demobilization	1	ls	\$5,000	\$5,000
2	clear and grub project, stockpile and staging areas	4	acre	\$700	\$2,800
3	cost to lease land	1	ls	\$8,000	\$8,000
4	relocate utilities	1	ls	\$10,000	\$10,000
5	post construction survey	1	ls	\$10,000	\$10,000
Lowering of Existing Levee					
6	clear and grub existing levee	2	acre	\$1,500	\$3,000
7	removal of existing rip rap	1,000	lf	\$40	\$40,000
8	excavate and place levee fill in habitat area	14,500	cy	\$3	\$43,500
9	breach construction	1	ls	\$25,000	\$25,000
Construction of New Levee					
foundation prep					
10	excavate trench (12' deep, 1:1 slopes)	1,000	lf	\$20	\$20,000
11	place geotextile for base of new levee	1,000	lf	\$160	\$160,000
12	install levee monitoring equipment	1	ls	\$20,000	\$20,000
supply levee add trench fill material					
13	dredge and barge to rehandling facility	105,000	cy	n/r	\$0
14	off load at rehandling facility	105,000	cy	\$2	\$157,500
15	dry, scarify and stockpile for loading	105,000	cy	\$3	\$262,500
16	load onto deck barge	105,000	cy	\$2	\$210,000
17	barge material to Venice	105,000	cy	\$2	\$210,000
18	off load, stockpile material at Venice	105,000	cy	\$2	\$210,000
19	construct new levee (haul, dump, compact)	105,000	cy	\$3	\$315,000
20	relocate existing irrigation ditches	1,000	lf	\$2	\$2,000
21	placement of rip-rap on new levee	2,250	tons	\$40	\$90,000
Habitat Area Construction					
supply baled rice straw to Venice					
22	bale rice straw	650	acres	\$70	\$45,500
23	pickup bales from field, stack along road	750	tons	\$12	\$9,000
24	load bales, truck to Port, unload, load to barge	750	tons	\$16	\$12,000
25	barge material to Venice	750	tons	\$21	\$15,750
26	unload bales at Venice, stockpile	750	tons	\$15	\$11,250
composting of rice straw					
27	field preparation	1	ls	\$5,000	\$5,000
28	compost rice straw (place, mix, rotate)	1,200	tons	\$30	\$36,000
29	load compost, truck to Port, unload, load to barge	1,200	tons	\$16	\$19,200
30	barge material to Venice	1,200	tons	\$21	\$25,200
31	unload compost from barge, stockpile on Venice	1,200	tons	\$15	\$18,000
32	supply dredged material to mix with rice straw	10,000	cy	\$10	\$100,000
33	place fill mixture (haul, windrow, mix, grade)	76,000	cy	\$4	\$91,000
34	supply and place sand fill material	24,090	cy	\$6	\$144,540
35	Total Direct Capital Costs:				\$1,897,800

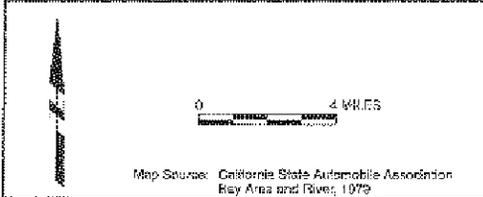
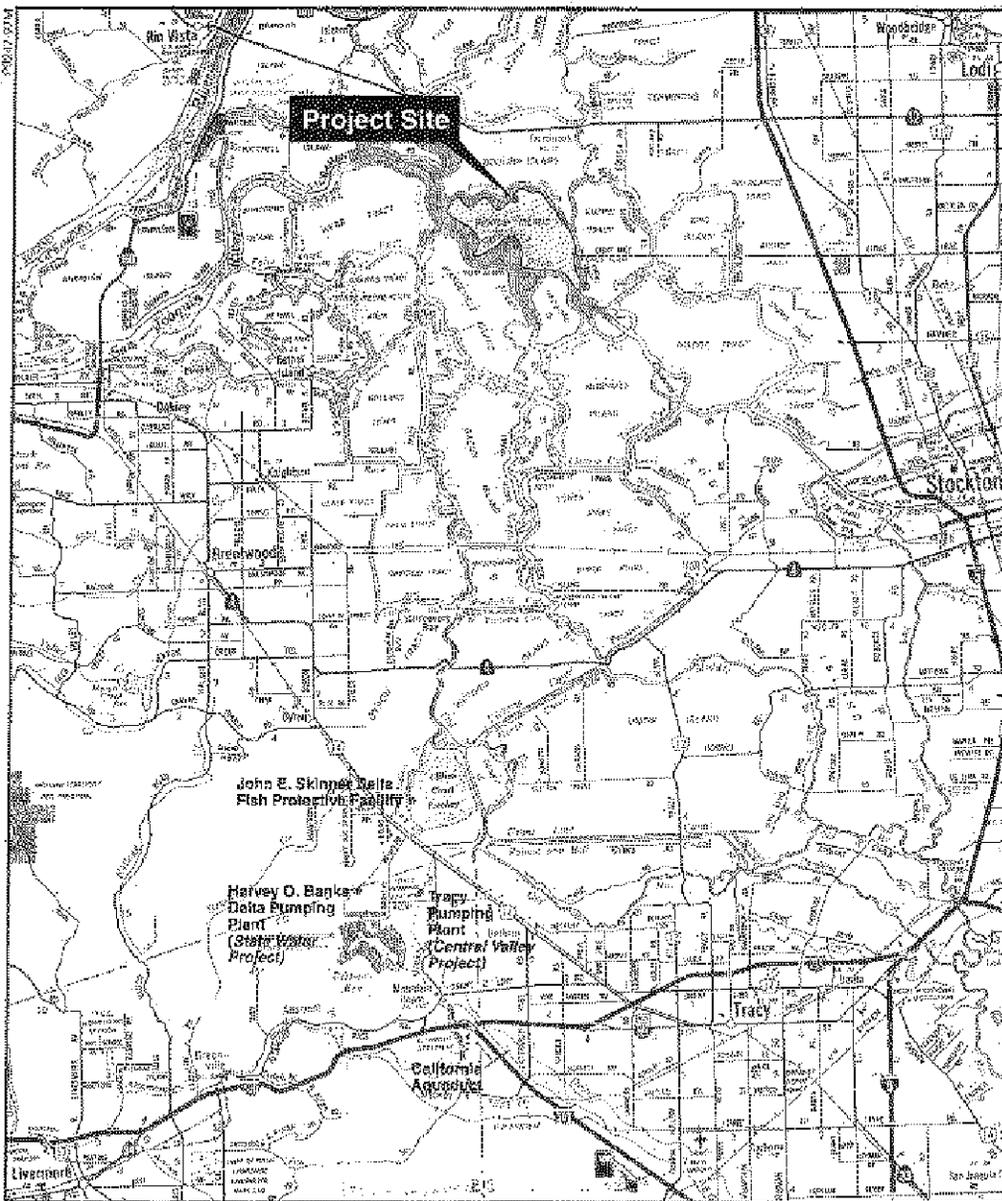
TABLE 2: Preliminary Construction Cost Estimate
Venice Island Potato Slough Demonstration Project, July 2, 1998

Line	Description	Quantity	Units ¹	Unit Cost	Total Cost (Dollars)
Indirect Capital Costs					
General					
36	construction management	1	ls	\$70,000	\$70,000
37	project man	1	ls	\$5,000	\$5,000
38	Total Indirect Capital Costs:				\$75,000
39	Total Direct and Indirect Capital Costs:				\$1,988,800

¹ls=lump sum n/c=assume no charge
 lf=linear foot
 cy=cubic yard

TABLE 3: Permit Requirements		
Agency	Required Action	Approximate Processing Time
CEQA/NEPA	Negative Declaration/Finding of No Significant Impact	3 months
U.S. Army Corps of Engineers	Section 404 (Clean Water Act)/10 (Rivers & Harbors Act) Permit	4 months
Central Valley Regional Water Quality Control Board	NPDES Permit/Waste Discharge Requirements; Water Quality Certification	1 to 3 months
State Lands Commission	Permit/Lease	4 to 6 months
California Dept. of Fish & Game	Streambed Alteration Agreement	2 months
National Marine Fisheries Service/ U.S. Fish & Wildlife Service	Section 7 (Endangered Species Act) consultation initiated by COE as part of Section 404/10 permit process	5 months
State Dept. of Water Resources/Delta Levee Flood Control Program	Reviews project for potential impacts to State Water Project facilities, and/or any work done through AB 360 program	2 months
State Reclamation Board	Reviews projects with potential to restrict flows, alter flood stage, etc.	2 months
Local Reclamation District	Reviews any levee/flood control work	2 months

TABLE 4: Summary of Personnel Qualifications, Experience and Past Performance			
Individual	Degrees	Experience	Past Performance
Susan Cavanaugh Contracts Manager	Business Administration, Santa Rosa Junior College, 1997	More than 15 years of experience with environmental services contracts in both the private and public sectors.	<ul style="list-style-type: none"> Reviewed and negotiated prime contracts, subcontracts, and property leases Created programs to enhance administrative contract performance
Rachel Bonnetti Permitting Specialist	B.A. Environmental Studies, 1991	Former employee of BCDCL Environmental review of dredging projects and major policies. Dredged materials reuse	<ul style="list-style-type: none"> Montezuma Wetlands Project Oro Loma Marsh Enhancement Project San Francisco Bay Regional Wetland Ecosystem Goals Project
J. Scott Seyfried, R.P.S.S. Soil Scientist	M.S. Water Science, 1987; B.A. Physical Geography, 1983	Fate and transport of organic and inorganic chemicals in the subsurface, soil and water chemistry, risk assessment and bioremediation of soil and groundwater	<ul style="list-style-type: none"> Marley Way Marsh Restoration Project Montezuma Wetlands Project Biological Damage Assessment, Donner Oil Spill, Donner, CA
Mavis Hasey Senior Ecologist	M.S. Plant Ecology, 1988; B.A. Environmental Biology 1982	Ecological and toxicological assessment of terrestrial and aquatic ecosystems; wetlands delineation and assessment; planning, permitting, and design of restoration projects; and quantitative ecological data analysis	<ul style="list-style-type: none"> Rogers Dry Lake Ecosystem Analysis, Edwards Air Force Base Ecological Restoration of Riparian & Oak Woodlands, Alameda County, CA
Joyce Ambrosius, Fisheries Biologist	B.S. Fisheries, 1975	Fisheries surveys and habitat restoration in the Russian River watershed; physical & biological habitat data collection of anadromous and freshwater fish; determined minimum stream flow requirements necessary for anadromous species	<ul style="list-style-type: none"> Russian River Watershed Fisheries Enhancement Program Potter Valley Project on the Eel River
Kirk Fennington Biologist	B.A. Environmental Studies/Biology, 1993	Vertebrate and plant biology; GIS; species identification and monitoring; biological damage assessment and monitoring; reference site identification and assessment; tidal reckoning; permitting	<ul style="list-style-type: none"> Biological Effects Monitoring, Valdez Oil Spill, Prince William Sound, AK Martin Luther King Jr. Wetlands Restoration Project
Maya Khosla Fisheries Biologist	M.S. Environmental Biology, 1994; M.S. Chemistry, 1988; B.S. Chemistry, 1985	Study of the long-term effects of contaminants on fish biochemistry, physiology, populations and communities, field and laboratory assessments, habitat assessments and suitability studies on endangered salmonids; ecological restoration and ecotoxicology	<ul style="list-style-type: none"> Biological Damage Assessment, Donner Oil Spill, Donner, CA Marsh Restoration, Park Boulevard, Richmond, CA
Christopher Nardi, G.E., Geotechnical Engineer	M.S. Geotechnical Engineering, 1981; B.S. Civil Engineering, 1978	Geotechnical, hazardous waste, & civil engineering for levees, dams, embankments, & related earth structures; wetlands designs; landslides; low- to mid-rise structures, R&D buildings, & office and industrial parks; & residential areas	<ul style="list-style-type: none"> Martin Luther King Jr. Wetlands Restoration Project Montezuma Wetlands Project
Maty Alice Kerler Design Engineer	B.S. Civil Engineering, 1992	Engineering design for wetland restoration, landfill closure and roadway improvement projects; AutoCAD and Sofdesk; quantity takeoffs; construction cost estimates	<ul style="list-style-type: none"> Martin Luther King Jr. Wetlands Restoration Project Pier 28 Landfill Closure & Open Space Enhancement Project
Claude Drugan Design Engineer	B.S. Environmental Engineering, 1992	Demography & geologic/hydrogeologic conditions; investigation and remediation; regulatory negotiations; permitting, compliance monitoring, and reporting	<ul style="list-style-type: none"> Walnut Creek Desilting Project



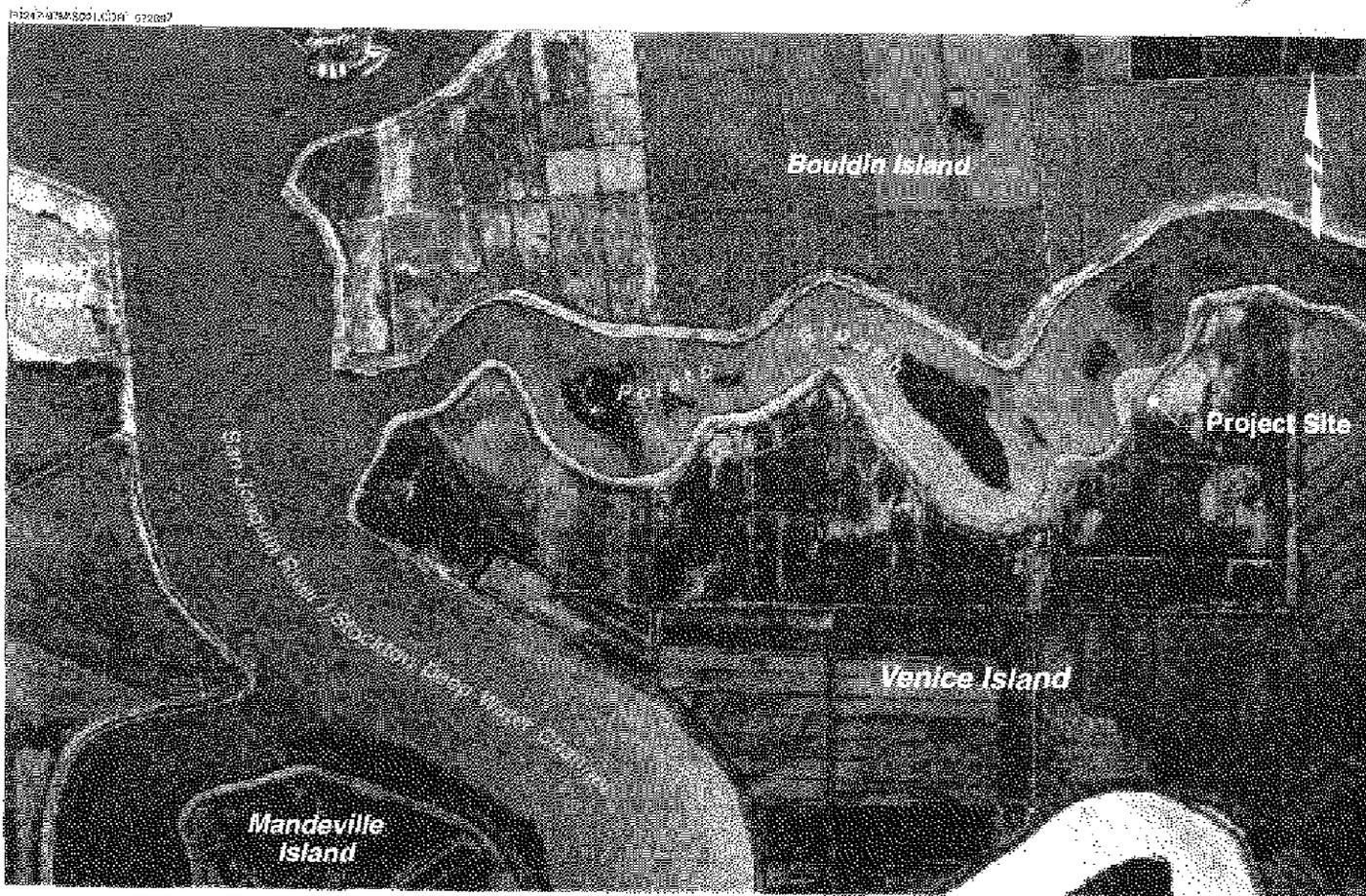
VENICE ISLAND

Site Location Map

Levine-Fricke-Recon
Project No. P0247-97M

Figure 1

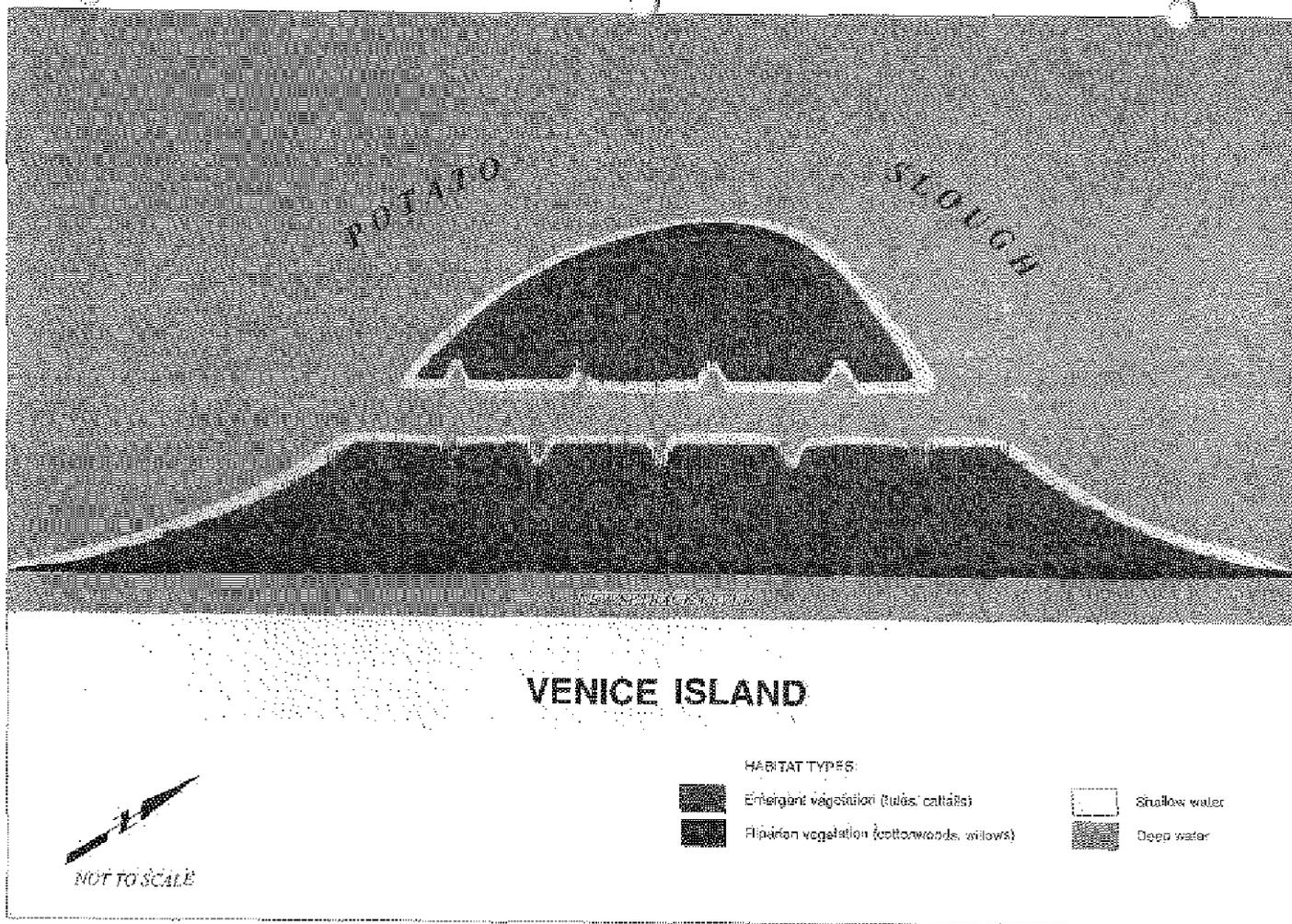
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Site Vicinity Map

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Levine-Fricke-Recon

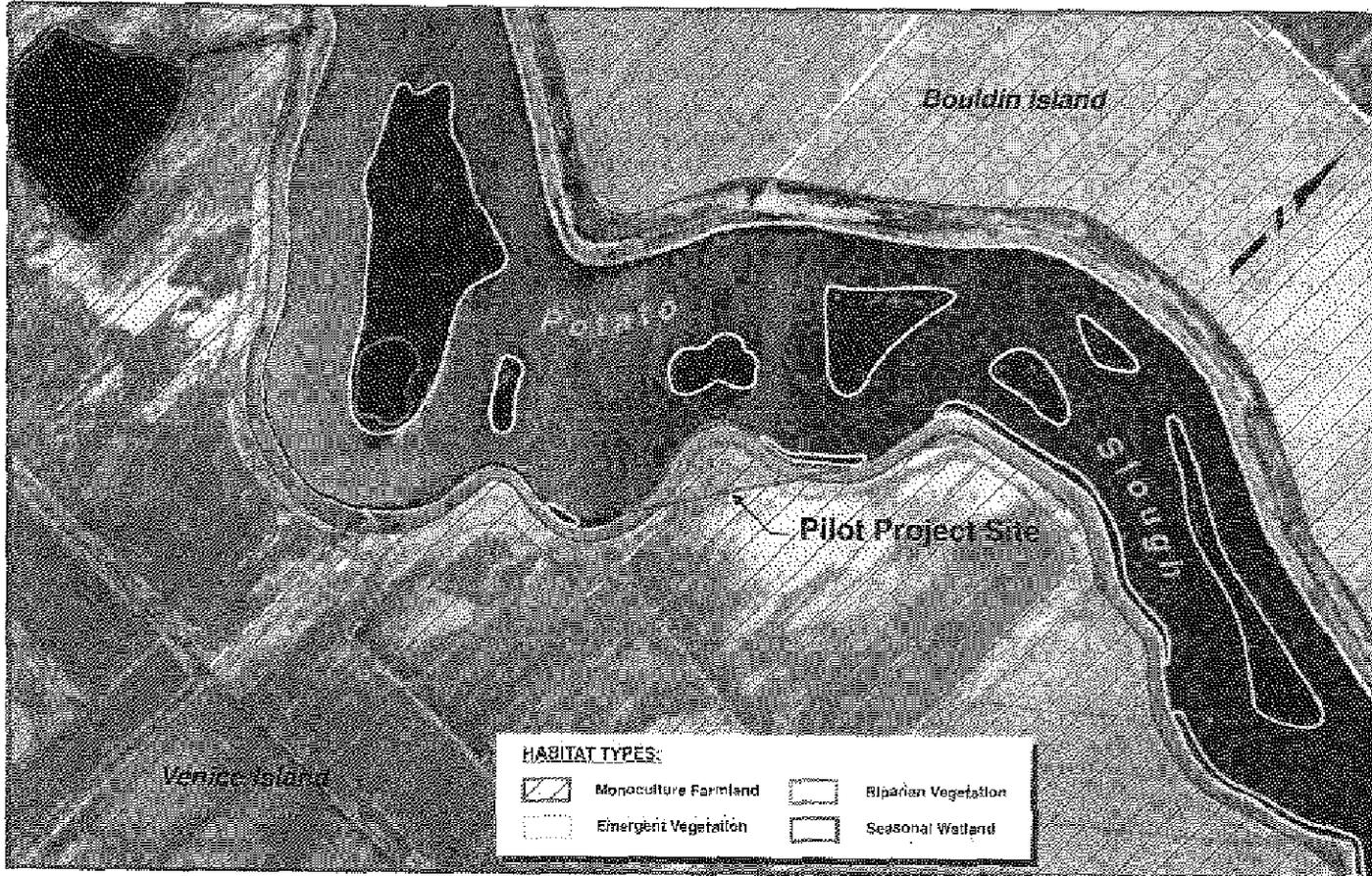
Project No. P0247-97M

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Anticipated Ecological Habitats

Figure 3

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Existing Ecological Habitats

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1-009105

Phase 1A/1B

Ecological Design

Ecological Site & Reference Site Characterization

Technical Review Panel

Ecological and Engineering Design

Laboratory Water Quality Studies

Field Composting Studies

Permitting

Phase 2

Habitat Restoration

Rice Straw

Composting

Setback Levee Construction

Sediment Rehauling

Clear Dredged Sediment

Fill Material Placement

Revegetation

Levee Breach

encumpered, hard area

I-009106

FIGURE 5: Phase 1A/1B and 2 Flow Chart

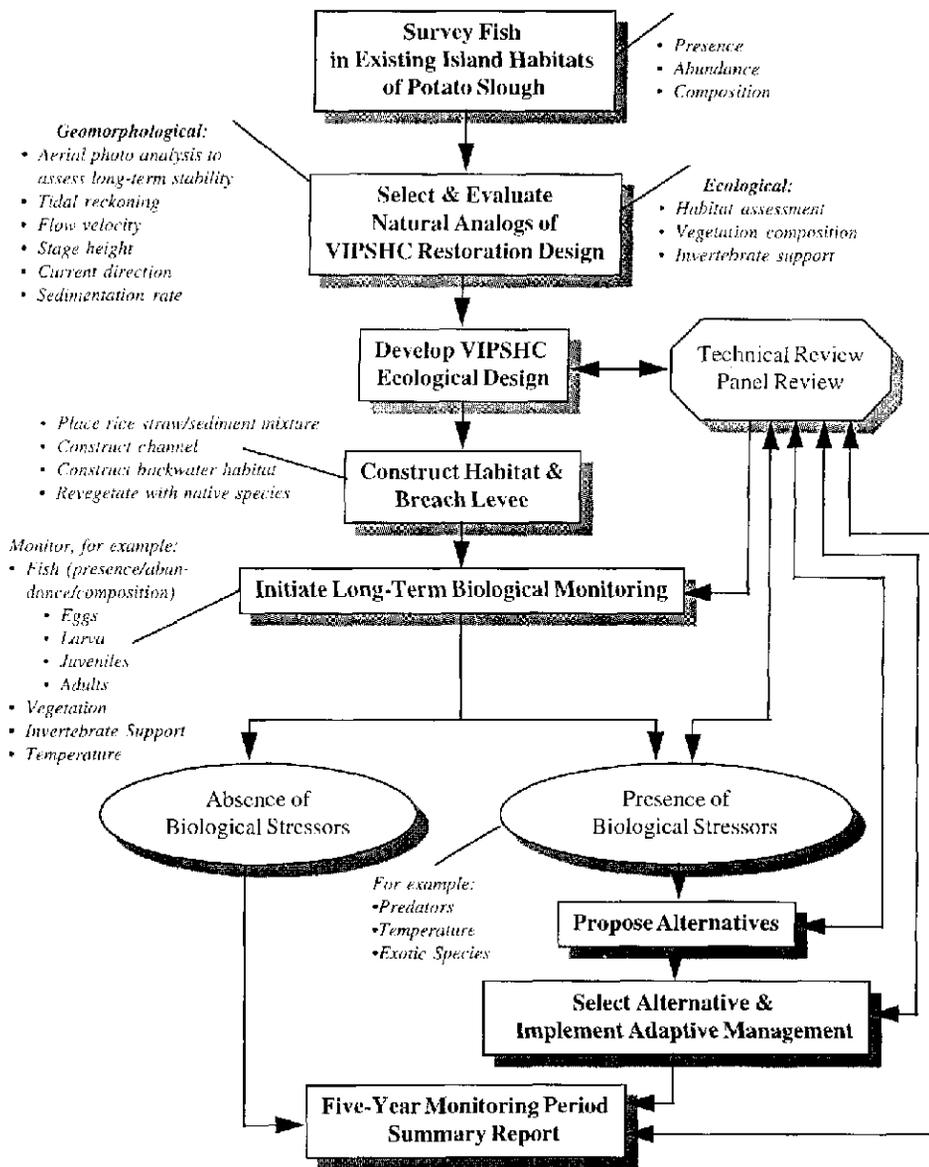


FIGURE 6: Adaptive Management Framework for Ecological Design of Venice Island/Potato Slough Habitat Creation Demonstration Project

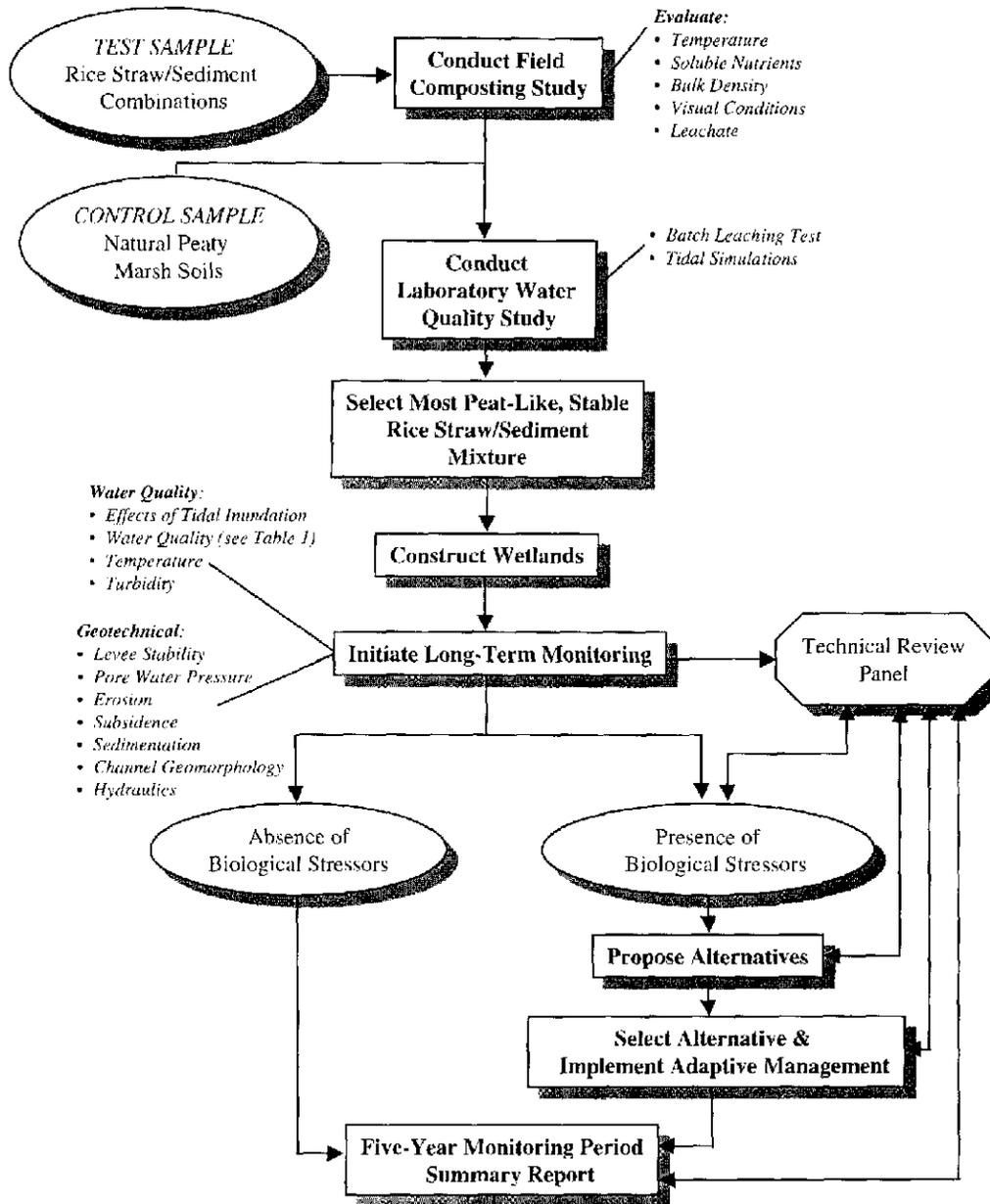
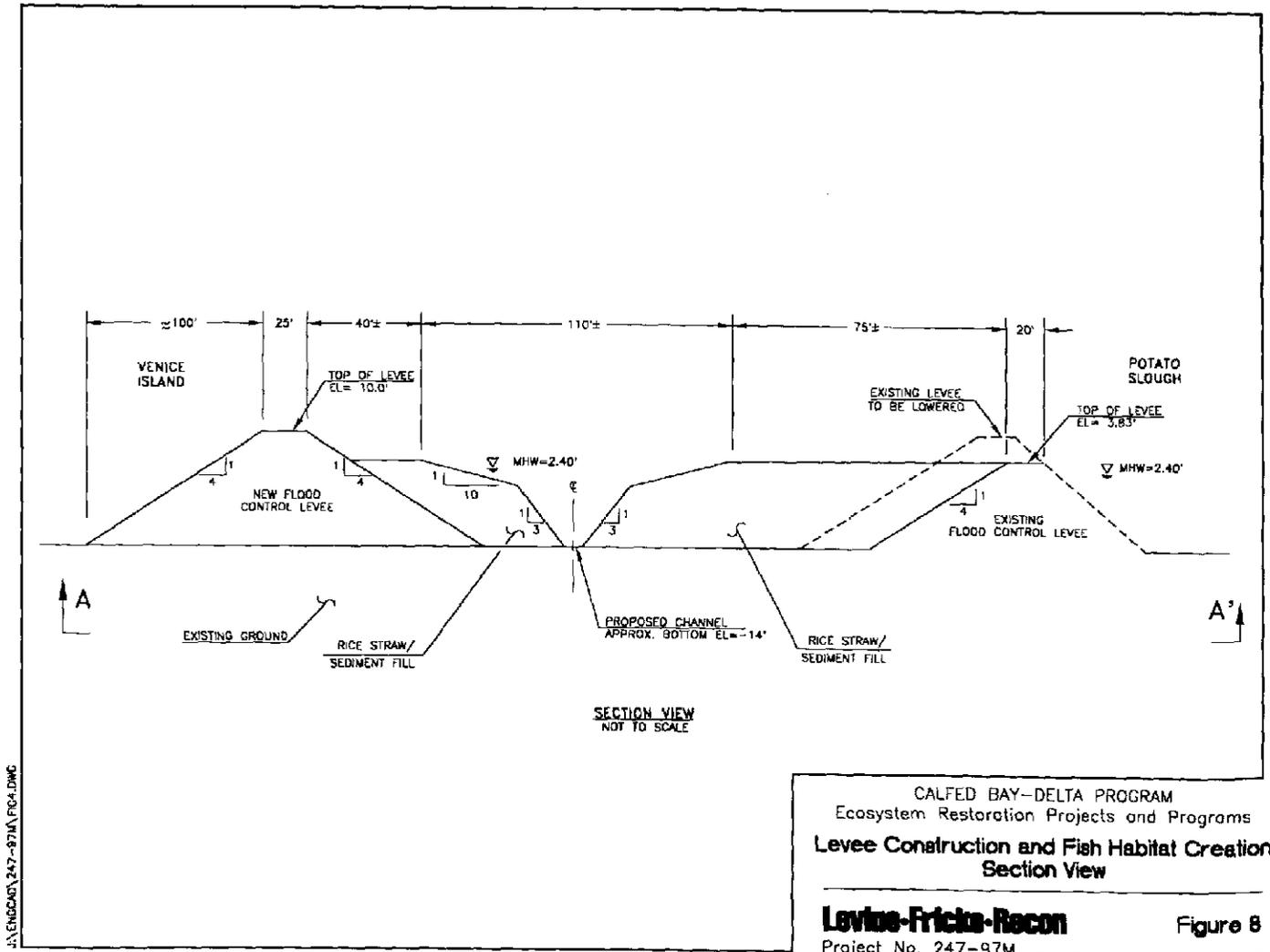


FIGURE 7: Adaptive Management Framework for
Selecting & Evaluating Rice Straw/Sediment Mixtures as Habitat Creation Material

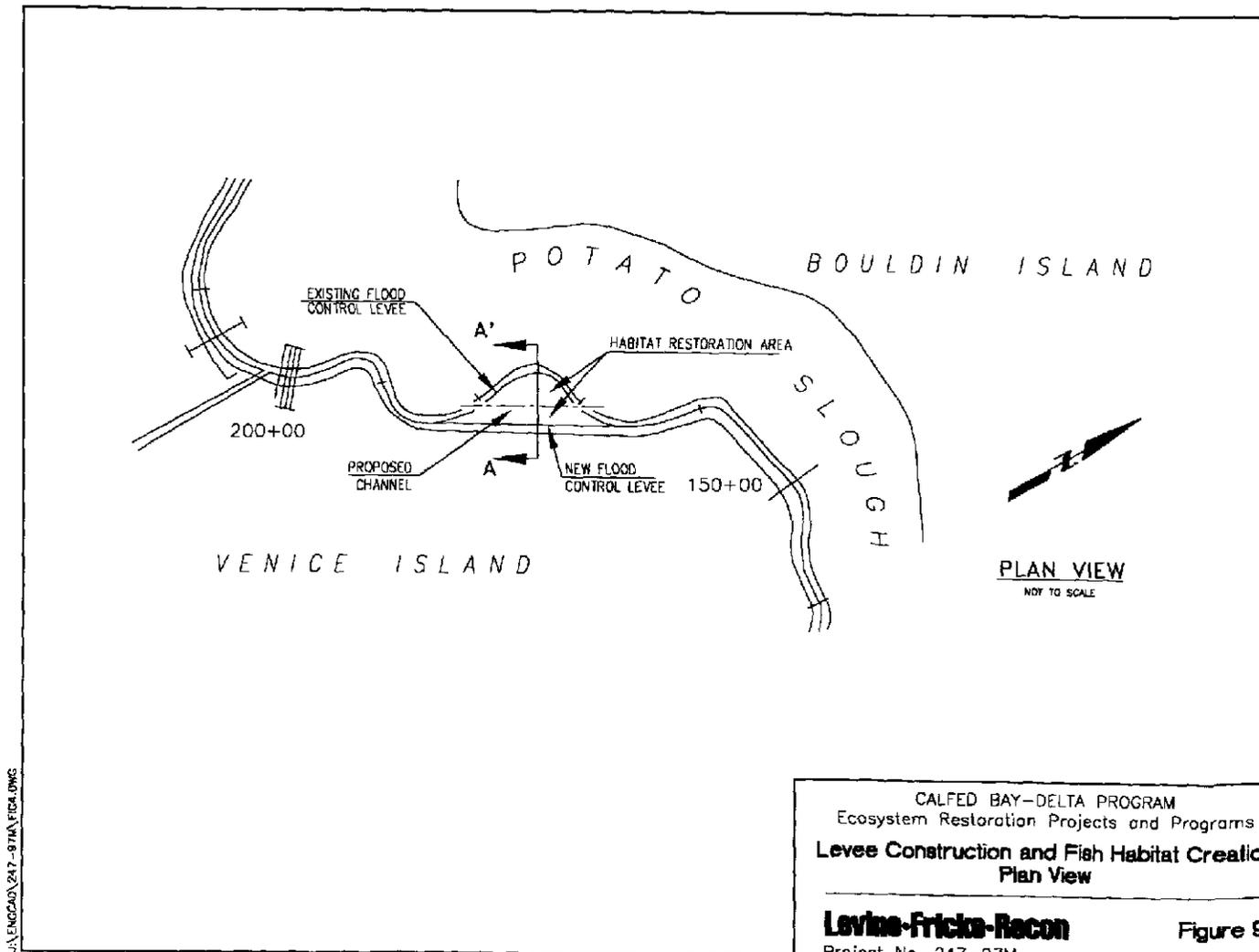
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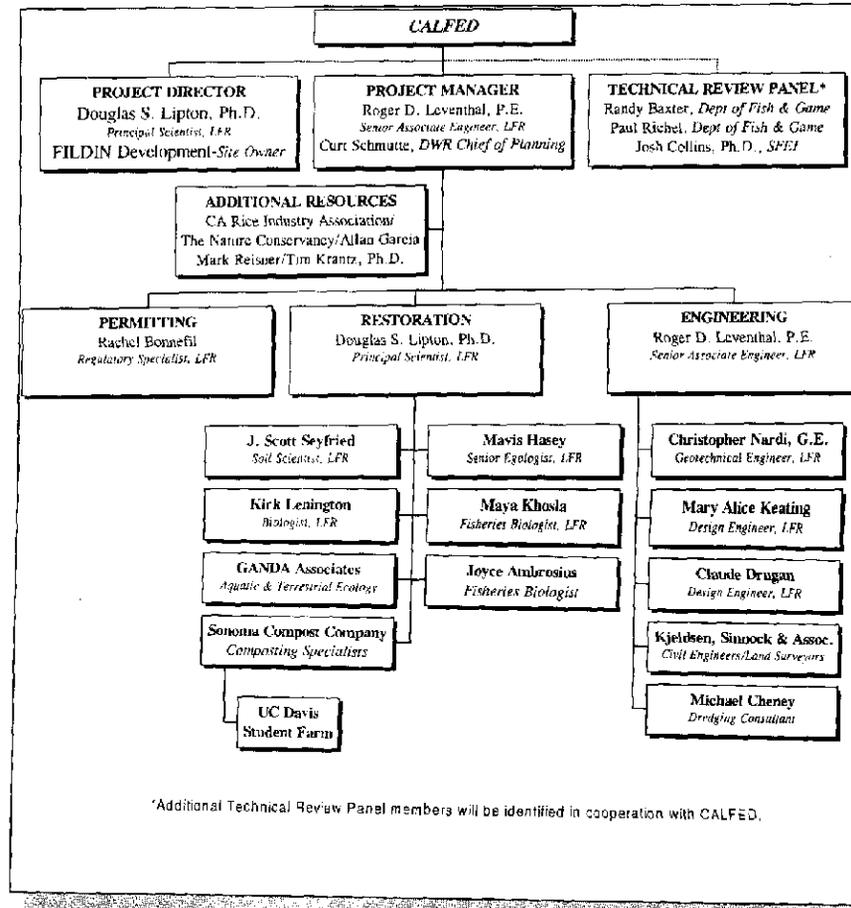
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The LFR Team blends ecology with engineering and experience working in the Bay-Delta region to successfully complete large, complex restoration efforts involving dynamic ecosystems.

FIGURE 11: Team Organization

DEPARTMENT OF WATER RESOURCESCENTRAL DISTRICT
3251 S STREET
SACRAMENTO, CA 95816-7017

JUN 26 1998



Mr. Roger Leventhal, P.E.
Senior Associate Engineer
Levine-Fricke-Recon
1900 Powell Street, 12th Floor
Emeryville, California 95608

Dear Mr. Leventhal:

This letter serves to formalize our intent to establish a joint venture between the Department of Water Resources and Levine-Fricke-Recon for implementation of the Venice Island (Potato Slough) Habitat Creation Demonstration Project submitted under the Ecosystem Restoration Projects and Program RFP dated May 1998. The joint venture will be conducted as a public/private partnership with LFR serving as the lead party to CALFED. LFR will be responsible for the contract management and will work with DWR on the technical aspects of the proposed project.

DWR is also excited to be involved as a financial partner for the implementation of this important restoration project. The project will assist our continued development of aquatic habitat improvements consistent with AB 360 and SB 900. The Venice Island Habitat Creation Project offers a unique opportunity to solve multiple environmental problems in a critically sensitive part of the Bay-Delta system. This project will evaluate the use of levee setbacks and rice straw-sediment fill mixtures to reverse subsidence and create appropriate elevations for restoring spawning and rearing habitat for threatened and endangered fish species in the Delta. Most importantly, this project can demonstrate a way to integrate habitat restoration with levee stabilization that allows for current agricultural land uses of Delta Islands.

We look forward to working with your organization on this project and are confident that the proposal will successfully complete the project goals in a timely and cost-effective manner. If you have any questions or I can be of further assistance, please do not hesitate to call me at (916) 227-7567.

Sincerely,

A handwritten signature in black ink, appearing to read "Curt Schmutte".

Curt Schmutte, Chief
Flood Protection and Geographic
Information Branch

cc: Mr. Ed Littrell
Department of Fish and Game
Region II
1701 Nimbus Road
Rancho Cordova, California 95670

July 24, 1997

LF P0247-97J

Mr. J. Philip DiNapoli
FILDIN Development Company
99 Alameda Blvd., Suite 565
San Jose, CA 95113

Subject: Letter of Intent and Teaming Agreement for the Venice Island (Potato Slough) Habitat Creation Demonstration Project, in Response to the Category III Ecosystem Restoration Projects and Programs Request for Proposal (RFP), CALFED BAY-DELTA PROGRAM

Dear Phil:

This letter serves to formalize our intent and teaming agreement for the subject RFP and to outline the development of a business partnership between Levine-Fricke-Recon Inc. (LFR) and FILDIN Development Company (FDC) in pursuit of opportunities under the Category III Ecosystem Restoration Projects and Programs initiative as proposed by the CALFED BAY-DELTA Program.

As we discussed, it is agreed that LFR and FDC will team on an exclusive basis as a business partnership working together to implement the *Venice Island (Potato Slough) Habitat Creation Demonstration Project* in response to the CALFED RFP. In order to qualify for Category III, a variety of conditions, including establishing a conservation easement must be met.

If the LFR/FDC project team's proposal is selected for Category III funding, FDC will be responsible for the following required items:

- granting, under a perpetual conservation easement, development rights for the approximate 6 acre project site onto which a portion of Potato Slough will be realigned. These lands are currently owned and managed by FILDIN Development Company.
- granting access rights to the designated project area during the demonstration project implementation and monitoring phases.
- providing a designated staging area, as required, during the demonstration project implementation Phase II - Construction.

While FDC will contribute the land, LFR contributions include preparation of the engineering preliminary and final design, permitting, construction oversight, and consulting services for the

project on an at cost basis. All FDC costs related to title transfer and associated management fees shall be included as a project cost covered by Category III funds.

This letter agreement is valid throughout the bid period for the subject RFP. If the LFR team is awarded a contract, a separate contract agreement shall be developed between LFR and FDC stipulating the details of the scope of work, areas of responsibility and other contractual conditions for execution of the project.

The teaming parties will work closely together and exchange business and technical information, as necessary. For this reason the parties agree to assist each other with obtaining relevant and pertinent information specific to the above identified business opportunity. Each party will assist the other, as necessary, and will put forth its best efforts in obtaining the identified business opportunity.

Each party shall support the proposal effort by submitting to LFR its technical, cost and management portions of the proposal, as required by the RFP, or as requested by the client.

Nothing contained herein is intended to preclude either party from independently submitting proposals or performing work related to another CALFED solicitation. The parties agree that no legal relationship of any kind exists as a result of this Agreement other than the covenants expressly contained herein. Neither party shall have the authority to create any obligations for the other except to the extent stated herein.

FDC and LFR agree that each will hold exchanged proprietary information confidential in the same manner as it holds its own proprietary information of like kind. All proprietary information exchanged between the parties shall be labeled "Confidential". Disclosures of such information shall be restricted to the Client and those individuals who are involved in the preparation of the proposal.

If you are in agreement, please sign both copies of the attached Approval and Acceptance page of this letter and return them to Levine-Fricke-Recon Inc. LFR will forward a fully executed copy for your records once all parties have signed the agreement.

We look forward to working with your organization and are confident that our teaming efforts will be mutually beneficial to each firm. If you have any questions please do not hesitate to call me or Roger Leventhal at 510 652-4500.

Sincerely,



Frank Lorincz
Senior Associate

APPROVAL AND ACCEPTANCE

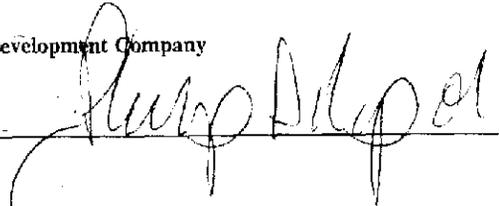
July 25, 1997

P0247-97I

Approval and acceptance of this Teaming Agreement are acknowledged by the signatures of duly authorized representatives of FILDIN Development Company and Levine-Fricke-Recon Inc.

FILDIN Development Company

Signature



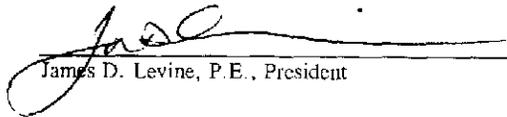
Date

7/28/97

Philip D. Napoli, General Partner
(Please print name and title)

Levine-Fricke-Recon Inc.

James D. Levine, P.E., President



Date

7/28/97