McNear Peninsula Habitat Restoration Project

Project Information

1. **Proposal Title:**

   McNear Peninsula Habitat Restoration Project

2. **Proposal applicants:**

   Pamela Tuft, City of Petaluma

3. **Corresponding Contact Person:**

   Pamela Tuft
   City of Petaluma
   11 English Street Petaluma, CA 94952-2610
   707 778-4345
   ptuft@ci.petaluma.ca.us

4. **Project Keywords:**

   Endangered Species
   Habitat Restoration, Estuarine shallow water
   Habitat Restoration, Riparian

5. **Type of project:**

   Implementation_Full

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   Yes

   If yes, is there an existing specific restoration plan for this site?

   Yes

7. **Topic Area**:

   Riparian Habitat

8. **Type of applicant:**

   Local Agency

9. **Location - GIS coordinates:**

Latitude:	38.241
Longitude:	-122.625
Datum:	NAD83

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

Petaluma River Mile 12.8; 34 acre former dredge disposal site.

10. **Location - Ecozone:**

    2.4 Petaluma River

11. **Location - County:**

    Sonoma

12. **Location - City:**

    Does your project fall within a city jurisdiction?

    Yes

    If yes, please list the city: City of Petaluma

13. **Location - Tribal Lands:**

    Does your project fall on or adjacent to tribal lands?

    No

14. **Location - Congressional District:**

    6th

15. **Location:**

    California State Senate District Number: 3rd

    California Assembly District Number: 6th

16. **How many years of funding are you requesting?**

    3

17. **Requested Funds:**
    a) Are your overhead rates different depending on whether funds are state or federal?

       No

       If no, list single overhead rate and total requested funds:

       Single Overhead Rate: 11.86

       Total Requested Funds: $ 2,827,000

b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

Sonoma County Agricultural Preservation and Open Space District $2.0 Million

c) Do you have potential cost share partners?

No

d) Are you specifically seeking non-federal cost share funds through this solicitation?

No

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**

No

Have you previously received funding from CALFED for other projects not listed above?

No

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

No

Have you previously received funding from CVPIA for other projects not listed above?

No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

No

Please list suggested reviewers for your proposal. (optional)

David Keller	**Petaluma River Council**	**707-763-9336**	**kelmarks@svn.net**
Jim Bybee	**National Marine Fisheries Service**	**707-575-6050**	**jim.bybee@nowaa.gov**

Bill Cox	**California Department of Fish and Game**	**707-823-1001**	**bcox@dfg.ca.gov**
Paul Sheffer	**Southern Sonoma Resource Conservation District**	**707-794-1242**	**paul-sheffer@ca.nacdnet.org**

21. **Comments:**

Environmental Compliance Checklist

McNear Peninsula Habitat Restoration Project

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      Yes
   b) Will this project require compliance with NEPA?

      Yes
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*

   CEQA Lead Agency: California Department of Fish and Game
   NEPA Lead Agency (or co-lead:) National Marine Fisheries Service or U.S. Army Corps of Engineers
   NEPA Co-Lead Agency (if applicable):

3. **Please check which type of CEQA/NEPA documentation is anticipated.**

   CEQA
   -Categorical Exemption
   XNegative Declaration or Mitigated Negative Declaration
   -EIR
   -none

   NEPA
   -Categorical Exclusion
   XEnvironmental Assessment/FONSI
   -EIS
   -none

   If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

   Not applicable

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      No

      If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

Draft CEQA/NEPA documents will be prepared in tandem with collection of baseline environmental data and preparation of preliminary construction plans and specifications. Assuming that the timeline contained in the PSP is followed, draft documents will be available for agency review within 120 days of receipt of authorization to proceed - approximately by September 2002.

b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

LOCAL PERMITS AND APPROVALS

Conditional use permit	
Variance	
Subdivision Map Act	
Grading Permit	Required
General Plan Amendment	Obtained
Specific Plan Approval	Obtained
Rezone	
Williamson Act Contract Cancellation	
Other	

STATE PERMITS AND APPROVALS

Scientific Collecting Permit	Required
CESA Compliance: 2081	Required
CESA Compliance: NCCP	
1601/03	Required
CWA 401 certification	Required
Coastal Development Permit	
Reclamation Board Approval	
Notification of DPC or BCDC	Required
Other	

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation	Required
ESA Compliance Section 10 Permit	Required
Rivers and Harbors Act	
CWA 404	Required
Other	

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land. Agency Name: City of Petaluma	Obtained
Permission to access state land. Agency Name:	
Permission to access federal land. Agency Name:	
Permission to access private land. Landowner Name:	

6. **Comments.**

8: Is it recognized that while substantial benefit will accrue from this project in terms of public awareness of the need to restore habitat to an area that has been essentially stripped of its habitat value as a result of over a century of development activity, perhaps the greatest benefits will be in terms of mitigating the single largest source of non-flood event sediment into the Petaluma River: threatend salmon and steelhead populations.

Land Use Checklist

McNear Peninsula Habitat Restoration Project

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   Yes

   If you answered yes to #1, please answer the following questions:

   a) **How many acres will be acquired?**

      Fee: Conservation Easement only
      Easement: 2.1
      Total: 2.1

   b) Will existing water rights be acquired?

      No

   c) Are any changes to water rights or delivery of water proposed?

      Yes If yes, please describe proposed changes.

      The McNear Peninsula currently has no City water service. A 6-inch water main will be installed as part of this project to provide drip irrigation water for riparian species nursery stock. Consideration will be made to convert this line to reclaimed wastewater as an element of an on-going reclaimed wastewater master plan, which is being prepared as part of the update the City's General Plan.

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**

   No

3. **Do the actions in the proposal involve physical changes in the land use?**

   Yes

   If you answered yes to #3, please answer the following questions:

   a) How many acres of land will be subject to a land use change under the proposal?

      34

   b) Describe what changes will occur on the land involved in the proposal.

      Conversion from low-value hay production and livestock grazing to productive brackish water and riparian fringe habitat in a low-impact park and recreational setting.

   c) List current and proposed land use, zoning and general plan designations of the area subject to a land use change under the proposal.

Category	Current	Proposed (if no change, specify "none")
Land Use	Low value hay growing and livestock grazing	Habitat restoration and passive public recreation
Zoning	Light industrial	No change required
General Plan Designation	Proposed park	Public park

d) Is the land currently under a Williamson Act contract?

No

e) Is the land mapped as Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program?

No

f) Describe what entity or organization will manage the property and provide operations and maintenance services.

City of Petaluma, Parks and Recreation Department

4. Comments.

Conflict of Interest Checklist

McNear Peninsula Habitat Restoration Project

Please list below the full names and organizations of all individuals in the following categories:

- **Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.**
- **Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.**
- **Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.**

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Pamela Tuft, City of Petaluma

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

If yes, please list the name(s) and organization(s):

Lawrence Magura Black & Veatch Corporation

Comments:

Budget Summary

McNear Peninsula Habitat Restoration Project

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

Federal Funds

Year 1												
Task No.	Task Description	Direct Labor Hours	Salary *(per year)*	Benefits *(per year)*	Travel	Supplies & Expendables	Services or Consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Grant Administration	320	16,720	2,280	0	0	0	0	0	19000.0	0	19000.00
2	Site Reconnaissance-Baseline Establishment	0	0	0	0	0	20,000	0	0	20000.0	0	20000.00
3	Topo Survey-base map preparation	0	0	0	0	0	35,000	0	0	35000.0	0	35000.00
4	Evaluation and Selection of Bio-engineering Alternatives	0	0	0	0	0	25,000	0	0	25000.0	0	25000.00
5	Environmental Permitting/Regulatory Compliance	0	0	0	0	0	75,000	0	0	75000.0	0	75000.00
6	Public Involvement and Participation in Design Process	0	0	0	0	0	50,000	0	0	50000.0	0	50000.00
7	Preliminary Design Development and Review	0	0	0	0	0	60,000	0	0	60000.0	0	60000.00
8	Final Design: Preparation of Plans and Specifications	0	0	0	0	0	70,000	0	0	70000.0	0	70000.00
9	Advertise and Award Construction Contract	0	0	0	0	0	10,000	0	0	10000.0	0	10000.00
10	Project Management	0	0	0	0	0	35,000	0	0	35000.0	0	35000.00
		320	16720.00	2280.00	0.00	0.00	380000.00	0.00	0.00	399000.00	0.00	399000.00

Year 2												
Task No.	Task Description	Direct Labor Hours	Salary *(per year)*	Benefits *(per year)*	Travel	Supplies & Expendables	Services or Consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Project Construction	0	0	0	0	0	2,314,000	0	0	2314000.0	0	2314000.00
2	Construction Inspection/Progress Meetings	0	0	0	0	0	68,000	0	0	68000.0	0	68000.00
3	Construction Contract Close Out	0	0	0	0	0	10,000	0	0	10000.0	0	10000.00
4	Post-Construction Monitoring and Reporting	0	0	0	0	0	17,000	0	0	17000.0	0	17000.00
5	Grant Administration	320	16,720	2,280	0	0	0	0	0	19000.0	0	19000.00
		320	16720.00	2280.00	0.00	0.00	2409000.00	0.00	0.00	2428000.00	0.00	2428000.00

Year 3												
Task No.	Task Description	Direct Labor Hours	Salary *(per year)*	Benefits *(per year)*	Travel	Supplies & Expendables	Services or Consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Post-Construction Monitoring and Reporting	0	0	0	0	0	45,000	0	0	45000.0	0	45000.00
2	Grant Administration	100	4,400	600	0	0	0	0	0	5000.0	0	5000.00
		100	4400.00	600.00	0.00	0.00	45000.00	0.00	0.00	50000.00	0.00	50000.00

Grand Total=2877000.00

Comments.

Budget Justification

McNear Peninsula Habitat Restoration Project

Direct Labor Hours. Provide estimated hours proposed for each individual.

Pamela Tuft, Director of General Plan Administration - 320 hours

Salary. Provide estimated rate of compensation proposed for each individual.

$52.00 per hour

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

$7.00 per hour

Travel. Provide purpose and estimate costs for all non-local travel.

None required

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

None required

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Project Design and Permitting. Estimated time - 2,606 hours at an average hourly rate of $85.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

None required

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

35,000

Other Direct Costs. Provide any other direct costs not already covered.

10,000

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

Grant Administration - $43,000 over three years

Executive Summary

McNear Peninsula Habitat Restoration Project

This project will implement a key element of the City of Petaluma's Petaluma River Access and Enhancement Plan, which was adopted by the City Council in May 1996 following an intensive, 3-year planning process that included extensive public participation and a citizen's advisory committee. The project will restore both shallow water brackish habitat and a riparian buffer zone to the McNear Penninsula in downtown Petaluma. The project site consists of 34 acres of land filled by over a centurys' worth of material dredged from the channel of the Petaluma River. The dredging deposits have raised average ground elevations on the site to 12-14 feet, msl-well above 100-year flood levels. Average slopes along the approximately 6000 linear feet of shoreline on the peninsula are 1H to 1V. Soils on the site are predominantly clayey-silts, and are considered to be highly erodible. Additionally, boat wakes continually wash fine-grained sediment into the river. The peninsula, under present conditions, is nearly devoid of shallow brackish water or riparian fringe habitat and is a major source for fine-grained sediment entering the river. The objective of this project will be to select appropriate bio-engineering solutions to re-create shallow brackish water habitat suitable for endangered Sacramento Split Tail Minnow, other species of fish and shore birds. Adjacent stabilized riparian slopes will be planted with a combination of native willows and grasses and woody shrubs and rooted stock of appropriate riparian native trees such as oak and bay that were present on the site before European settlement in the area. The project will also include a drip irrigation system to help assure survival of the plantings, and the development of a graveled pathway in the riparian buffer zone with informational kiosks to provide both access and information to the public regarding the restoration of the site to a functioning and diverse natural habitat for fish, birds and small animals in the midst of an intensively developed urban area.

Proposal

City of Petaluma

McNear Peninsula Habitat Restoration Project

Pamela Tuft, City of Petaluma

City of Petaluma, California
McNear Peninsula Habitat Restoration Project

A. Project Description: Project Goals and Scope of Work

1. Problem Description.

The City of Petaluma is seeking grant funds under the CALFED program to restore McNear Peninsula to a healthy and diverse brackish water ecosystem community with an upland riparian buffer composed of planted native oak, bay, and willow trees. The site consists of three parcels totaling 34 acres of undeveloped land located near the center of the City between the Petaluma River and the McNear Channel (see aerial vicinity photo, Figure 1). The site is presently used for low-value agricultural purposes (hay growing and livestock grazing). The City currently owns 10 acres of the site and has received a unanimous recommendation of approval from the Advisory Committee of the Sonoma County Agricultural Preservation and Open Space District for a $2 million grant application to acquire a 20-acre parcel that comprises the main, central portion of the peninsula. The grant process for this acquisition should be completed by the end of 2001. The owner of the remaining 3.5-acre parcel has agreed to either deed it to the City, or grant a permanent open space easement to the City when acquisition of the Open Space District 20-acre grant parcel has been completed. This action will closely follow the anticipated end of year closing on the central tract, and will give the City control of the entire peninsula.

The McNear Peninsula was created over the course of the last 100 years by placement of dredging spoils on a former marshland area adjacent to the Petaluma River. The site has long been the focus of City master planning efforts that would restore and preserve it as a distinctive natural area that could combine low-impact passive recreational pursuits (hiking, bird-watching, boating, etc.) with aquatic and riparian habitat restoration efforts. The site's location near the center of the City of Petaluma gives it incredible potential as a nature study area for local school children at all grade levels, as well as a place where community residents of all ages can come to enjoy a brief respite in the middle of a bustling urban area.

The majority of the site is a flat plateau, and lies between elevation 10 and 14 feet, NGVD. The edges of the plateau consist of steep slopes that face the Petaluma River and McNear Channel. Soils on the site are predominantly clayey silts that were originally dredged from the Petaluma River and are lacking in internal structure. Due to livestock overgrazing and lack of fencing, the entire site has been virtually denuded of all vegetation except for hay straw and some non-native brush species. No significant populations of any native plant species exist on the site at the present time. Aquatic vegetative habitat consists of a narrow band of alkali bullrush and other brackish water plants growing in a constricted intertidal zone at the toe of slope around the perimeter of the peninsula. The threatened Sacramento split-tail minnow can occasionally be observed cruising in a few

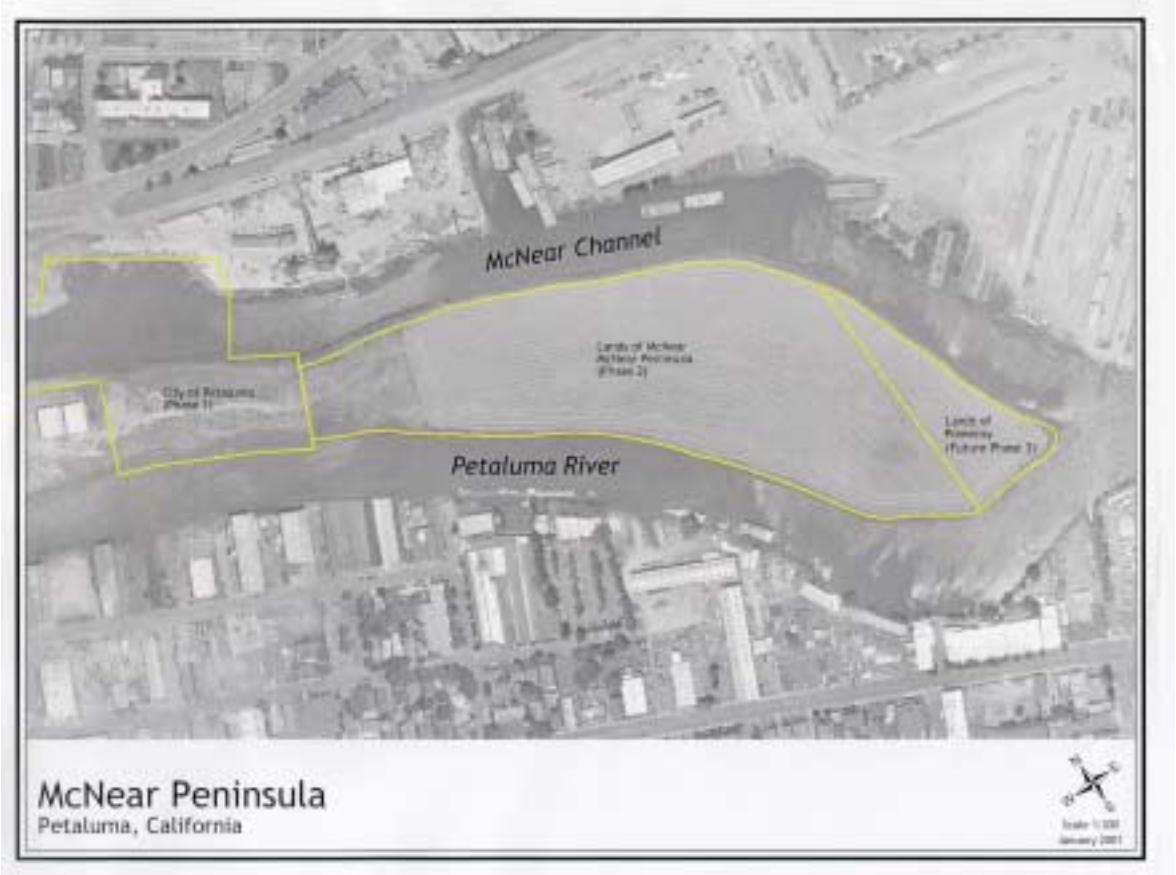

Figure 1 – Site Vicinity Aerial Photo

plants, offering a tantalizing glimpse of what might be a much more numerous local resident, if this sheltering habitat were more extensive.

Livestock grazing over the years has contributed to the degradation of all sideslopes facing the river and McNear Channel. Slopes average 1H to1V or steeper, are prone to localized slope failures, and are nearly vertical at many locations. The combination of steep slopes composed of very fine clay soils with no significant structural development or vegetative cover makes the site the source of a very significant amount of fine particulate sediment entering the river. As the soil dries, it forms into small clods, crumbs or granules that move by either wind action, boat wakes washing up on the unprotected shoreline, gravity, or direct raindrop impact. The hooves of grazing livestock also easily dislodge the soil. Once mobilized, the granules quickly move downslope and are deposited directly into the river, where the granules dissolve, dispersing large quantities of fine colloidal sediment that chokes the water column, giving it an ink-like appearance. The near total lack of vegetation on the site offers only paltry cover for rodents and other small animals and provides virtually no shading over the water or cover for waterfowl.

The photographs of the site that appear below, as Figures 2 through 5, document existing conditions at McNear Peninsula.

Figure 2 – Typical denuded riverbank slope caused by unrestricted livestock grazing activities

Figure 3 – Eastern tip of McNear Peninsula showing narrow band of marsh habitat Zone at toe of slope

Figure 4 – Soil disturbance caused by livestock hooves

Figure 5 – Localized slope failure precipitated by boat wake washing

The primary objective of this project will be to stabilize the existing oversteepened riparian slopes by permanently closing the area to livestock

grazing, re-grading the slopes to softer, more stable gradients, and providing additional slope stability and soil retention through the application of appropriate bioengineering techniques and the creation of a riparian buffer strip composed of native oaks, bays and willows. In addition, the project will create extensive new areas of brackish and tidal marshland to serve as sheltering habitat for the threatened Sacramento split-tail minnow, the waterfowl that are attracted to marshlands, and seasonal visits by threatened salmon and steelhead populations. The proposed project will also accomplish two important secondary goals: (1) educate the public about the values of creating a diverse aquatic habitat near the center of a thriving city; and (2) Implement an important element of the City's River Plan (see Section 2, below).

2. Project Justification

The City of Petaluma's interest in acquiring the McNear Peninsula as a habitat restoration and passive recreational park site dates back several decades. Efforts to commence preservation and enhancement of the site were initiated with the genesis of the ***Petaluma River Access and Enhancement Plan.*** The "River Plan", as it is known locally, was developed over a 4-year period with a major emphasis on public participation and involvement in the planning process. The Petaluma City Council adopted the Plan officially in May 1996 as the official long-range planning document for the portion of the Petaluma River that flows through the City of Petaluma. The River Plan was an outgrowth of the ***Petaluma General Plan 1987-2005,*** which established several ambitious goals for the Petaluma River. The most important of these goals (Goal 2) called for the City to "Preserve and protect the Petaluma River and streams in their natural state as open spaces, natural resources and habitats." The City's acquisition of a 10-acre tract at the isthmus of the peninsula through a grant from the Sonoma County Agricultural Preservation and Open Space District in 1996 marked the initial City investment towards preserving the peninsula as a recreational open space and habitat area. The City's desire to complete acquisition of the peninsula and develop it into a passive recreational area with significant habitat restoration and environmental education features has widespread support within the community.

As has been indicated previously, the proposed McNear Peninsula Habitat Restoration Project will be a full-scale restoration project, as defined in Figure 2 of the August 2001 Ecosystem Restoration Program Draft Stage 1 Implementation Plan. The proposed project is fully consistent with the following CALFED programmatic priorities:

Goal MR-3, "Implement environmental education actions throughout the geographic scope"
This priority will be specifically addressed through a combination of public education/outreach opportunities during the project design phase. When completed, the project will include two informative kiosks that will tell the project's "story", of how an environmental wasteland was turned into a restored, thriving aquatic habitat area. Numerous opportunities for hands-on environmental study field visits by schoolchildren in grades K-12 will be created by the project

site's convenient location near the center of the city. Student participation in the restoration efforts through planting projects is anticipated.

Goal MR-5, "Ensure that restoration is not threatened by degraded environmental water quality"
This priority specifically relates to reducing pollutant loads in the Bay-Delta region. One of the specific pollutants referenced in the discussion of this priority is fine sediment, and several waterways including the Petaluma River, are specifically targeted for potential sediment control actions. The McNear Peninsula Habitat Restoration Project will make a major contribution towards reducing the volume of fine sediment that enters the Petaluma River by essentially eliminating the site as a sediment source area.

Goal BR-5: "Restore shallow water, local stream and riparian habitats for the benefit of at-risk species while minimizing potential constraints to successful restoration efforts"
This goal specifically focuses on the reduction of fine sediment loads, *"especially in the Napa and Petaluma rivers and Sonoma Creek"*, which will be a primary objective of the proposed project.

3. Approach

The McNear Peninsula Habitat Rehabilitation Project will be accomplished over a three-year period and will consist of the following tasks. A breakdown of estimated project costs for each year is contained in Worksheet VI.

Year 1: Project Design and Regulatory Approvals
Year 1 is anticipated to commence with the award of the CALFED grant for the McNear Peninsula Habitat Restoration Project to the City of Petaluma on or about April 1, 2002.

Task 1, Grant Administration. The City of Petaluma, as the CALFED grant applicant, will use the budget allocated to this task to coordinate and manage the efforts of a consultant team led by Black & Veatch Corporation that will be responsible for the design, permitting, construction, and post-construction monitoring of the proposed project. The City has previously selected Black & Veatch Corporation to provide engineering and planning services to the city for preparation of the 2000-2020 Petaluma General Plan Update. Ms Pamela Tuft, AICP, Director of General Plan Administration for the City of Petaluma will serve as grant administrator.

Task 2, Site Reconnaissance and Environmental Baseline Establishment.
This task includes conducting an intense reconnaissance of the site by members of the Black & Veatch design team, the project surveying subconsultant, Fitzgerald & Associates, and the project team's environmental subconsultant, Hanson Environmental, Inc. to verify site conditions, challenges, and the opportunities for habitat restoration that exist there.

Task 3, Topographic Surveying and Base Map Preparation. Under this task, our project surveying subconsultant, Fitzgerald & Associates, Petaluma, California, will perform an in-water and terrestrial topographic survey of the McNear Peninsula site using both photogrametric and land surveying methods to prepare a base map of the project site. The base map will be used both in the preparation of engineering plans for the construction of the project, and in the development of the project environmental monitoring plan.

Task 4, Evaluation and Selection of Bioengineering Alternatives. To accomplish this task, key members of the Black & Veatch team (Lawrence Magura, P.E., project manager; Charles Hanson, Ph.D., habitat restoration and regulatory permitting; Hsieh Wen Shen, Ph.D., sediment transport specialist; and Ralph Brooks, Ph.D., plant ecologist, wetlands specialist) and City staff representatives will meet with staff representatives from the U.S. Army Corps of Engineers, CALFED, National Marine Fisheries Service, and the California Department of Fish and Game. The meeting will be preceded by a tour of the McNear Peninsula site, which will be followed by a design charette that will identify the suite of slope stabilization and bioengineering alternatives that will be utilized in the habitat restoration process. Some of the alternatives that will be considered are presented below as figures 6 – 9. A memorandum summarizing the results of the charette, which will serve as the basis for design and permitting for the project will be prepared following the meeting and distributed to attendees.

Task 5, Environmental Permitting/Regulatory Compliance. Charles Hanson, Ph.D., of Hanson Environmental, Inc., Walnut Creek, California Creek, will lead this task. Mr. Hanson is acknowledged as an authority in regulatory permitting and compliance measures, with an emphasis on Bay-Delta riparian wetland ecosystems. Mr. Hanson will prepare all required CEQA and NEPA environmental documentation and permit applications in tandem with collection of baseline environmental data. It is anticipated that the permitting process will go forward concurrently with the design phase of the project (Tasks 7 and 8), but will in all likelihood start as early in the project as possible.

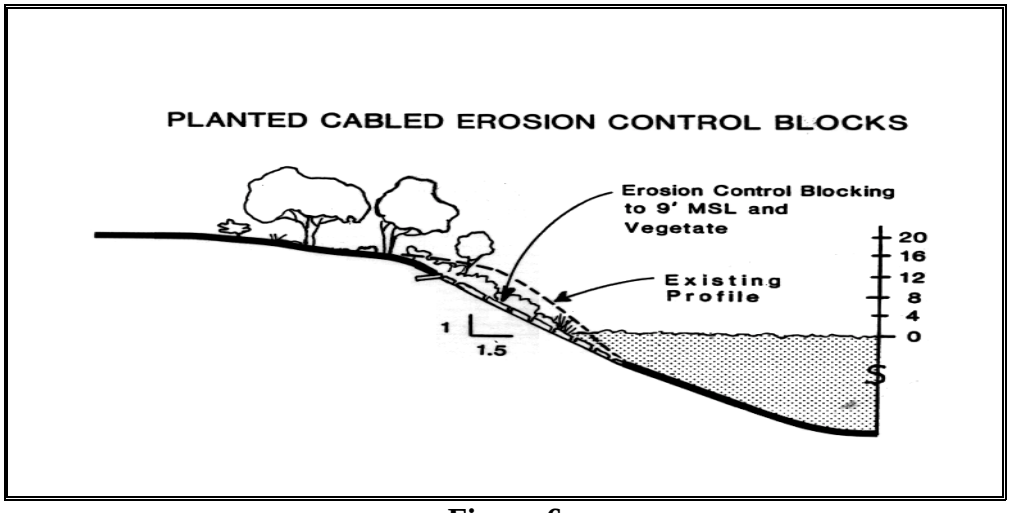

Figure 6

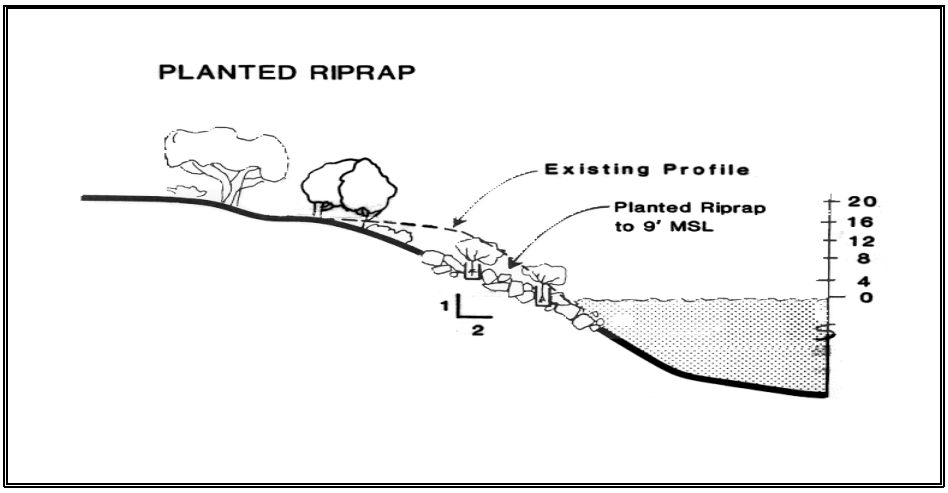

Figure 7

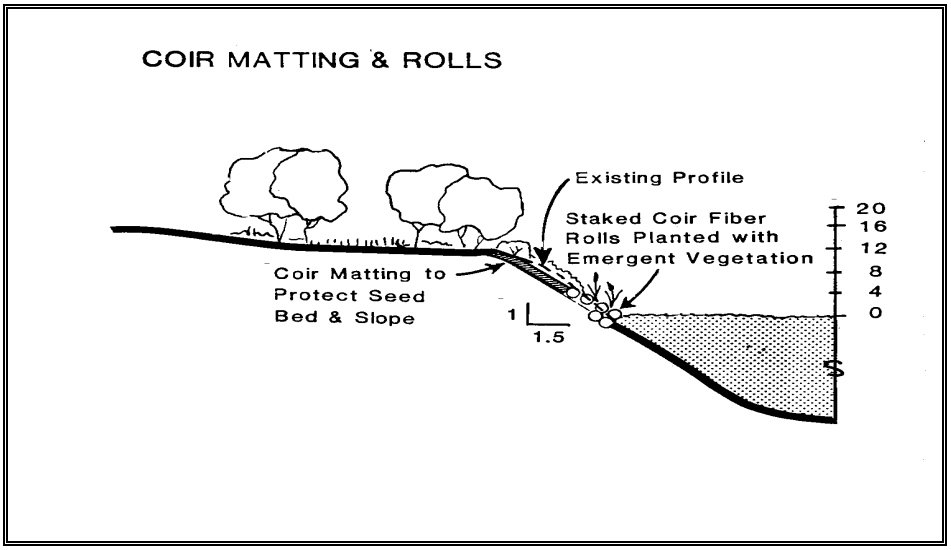

Figure 8

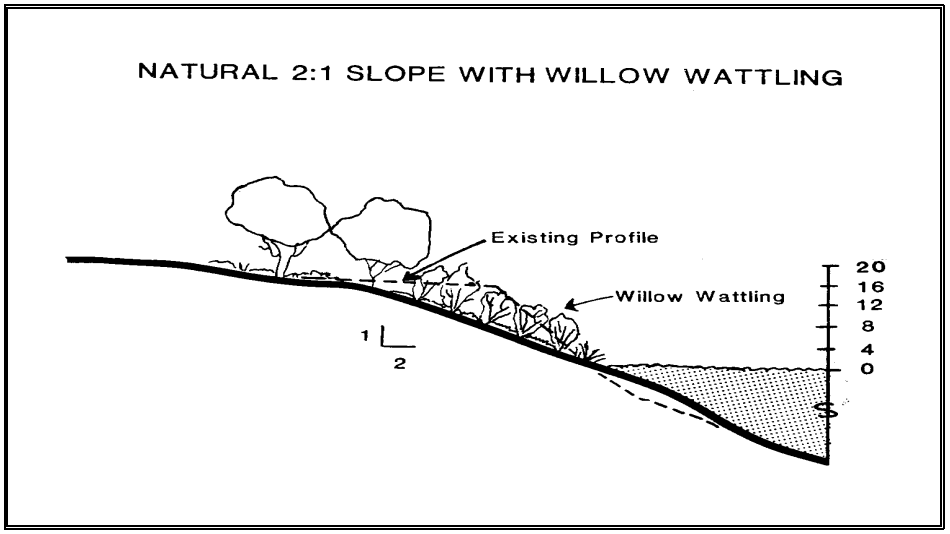

Figure 9

Task 6, Public Involvement and Participation in the Design process. The key to Petaluma's success in the preparation of the Petaluma River Plan was an extensive public involvement and visioning process. As a result, there is a high degree of ownership in the plan ("Our Plan") by the community. A similar process is proposed for development of the design for the McNear Peninsula Habitat Restoration Project. The process will begin with a series of public visioning sessions, in which citizens will have the opportunity to express their views concerning what goals they would like to see the project address, and what they would like the restored site to look like. The process will also include a public workshop at the 50% (preliminary design) level, to present the preliminary design for the project and solicit public comment on it. The process will conclude with a second public workshop where the proposed project final design will be presented to the public.

The Black & Veatch project manager, Lawrence Magura, P.E., utilized this process a few years ago to incorporate citizen input into the design of an important bridge replacement project in the City of Ashland, Oregon, with great success. The resultant bridge project was completed in record time, and local residents refer to the new structure as "Our New Bridge", indicating their high degree of vesting in the resultant design that emerged from this process.

Task 7, Preliminary (50%) Design Development and Review. Under this task, the results of the work completed under Tasks 1 – 4, plus a geotechnical investigation that was recently prepared by another consultant for the City for use in preparation of the purchase agreement for the central portion of the site will be evaluated and a preliminary design concept (or concepts) prepared. A typical cross-section of what the preliminary habitat restoration design might look like appears below as Figure 10. After review and concurrence by City staff and key resource and regulatory agency representatives, the preliminary design will be presented to the public at a workshop (see the description for Task 6, above). This task will conclude with preparation of a technical memorandum summarizing the features contained in the project's preliminary design, how they need to be refined, and what additional features need to be incorporated into the project during Task 8, Final Design. The memorandum will also include a summary of public comments made at the preliminary design workshop.

Task 8, Final Design: Preparation of Plans and Specifications. The objective of Task 8 is to complete project design and prepare a final set of construction documents (plans, specifications, and engineer's opinion of probable project cost) that can be advertised for bids. Final construction documents will be reviewed and approved by City staff, and all environmental documentation and required permits will be in place prior to advertising the project for construction bids.

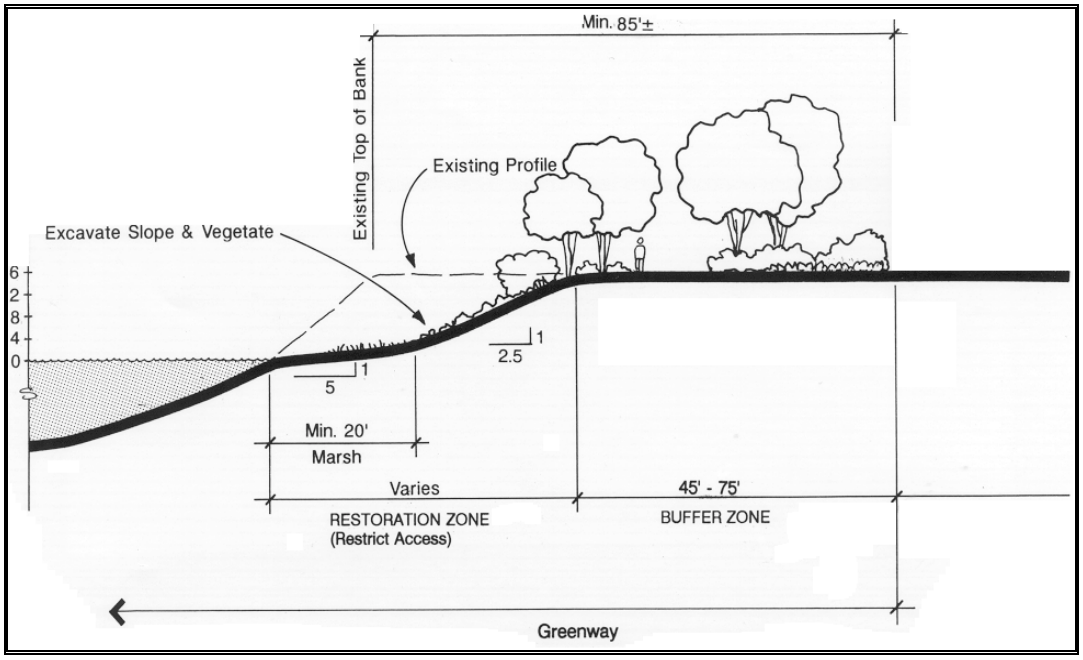

Figure 10

Task 9, Advertise and Award Construction Contract. This task includes advertising the project for bids, responding to plan holder questions during the bidding period, and issuance of addenda, if necessary. It also includes preparation for and attendance at a non-mandatory pre-bid meeting, opening and reviewing contractor's bids, and preparation of a recommendation for award of a construction contract to the lowest responsive bidder.

Task 10, Project Management. This task includes overall management of the project team, preparation of monthly invoices to the City, review of subconsultant invoices, preparation of progress reports, and attendance at periodic project review meetings with the City of Petaluma.

Year 2: Project Construction Phase

Year 2 will commence on or about April 1, 2003 (approximately 12 months after project initiation) with issuance of Notice to Proceed to the selected contractor and will be approximately 8 months in duration.

The primary task to be accomplished in Year 2 is **Task 1, Project Construction.** A project estimated construction cost is presented in Worksheet VI. Year 2 of the project will also include three supporting tasks, Tasks 2 – 4, plus an allowance to cover the City of Petaluma's costs for continuing CALFED grant administration.

Task 2, Construction Inspection/Progress Meetings. This task will cover all construction inspection activity, review of contractor submittals and progress payment requests, and attendance at periodic (every 2 weeks) construction progress meetings.

Task 3, Construction Contract Closeout. This task includes conducting the final inspection of the contractor's work, preparation of a completion item punchlist and preparation of a recommendation to the City for final payment and acceptance of the project as functionally complete. Issuance of final payment to the contractor will effectively start a 3-year contractor warranty period, during which the contractor will be responsible for replacement of any plantings that do not survive.

Task 4, Post Construction Monitoring and Reporting. This task includes preparation of a post-construction monitoring plan for the completed project by Hanson Environmental, Inc., and preparation of as-built drawings from contractor mark-ups of the construction plans.

Year 3: Post Construction Monitoring

The focus of Year 3 activity will be to begin the measurement and evaluation of how successful the completed project is in terms of habitat creation and reduction in the amount of sediment entering the Petaluma River from McNear Peninsula. Please refer to Section 5 of this proposal for a discussion of the proposed monitoring plan. The budget for this year includes an allowance to cover the City of Petaluma's costs for continuing CALFED grant administration.

Developing a Monitoring Plan

The short-term objective of the monitoring program is to develop a water-quality database and document current conditions that will assess existing water quality, zooplankton and aquatic habitat species including endangered species. The long-term goal is to assess the impact of the restoration project on water quality and aquatic habitat. The data developed can be used as a gauge to the success of the project and hence as an example for other restoration efforts.

Water quality sampling sites will be selected upstream and downstream of the Peninsula as well as a site reflecting conditions in the River directly adjacent to the Peninsula. The frequency of sampling will be monthly with special samples collected to study special events such as storm events. Water quality parameters will include: Turbidity, TSS, TDS, temperature, and pH. One sample will be collected for trace metals evaluation.

4. Feasibility

The field of bioengineering has, in recent years, become widely accepted as an acceptable alternative to more conventional riprap-based erosion control design concepts for streambank stabilization projects, particularly for areas where high scouring velocities are not expected. The feasibility of the proposed McNear Peninsula habitat restoration project, utilizing bioengineering concepts is well accepted based both on the accumulated experience of the project team from previous work on other successful projects, and on the technical literature. The recent literature is replent with examples and case studies describing successful projects that were based on bioengineered erosion control approaches. A few illustrative examples include the following:

Larson, Marit, and Goldsmith, Wendi, "Incised Channel Stabilization and Enhancement Integrating Geomorphology and Bioengineering", in Proceedings of Conference on Management of Landscapes Disturbed by Channel Incision: May 20-22, 1997, Oxford, Mississippi.

Goldsmith, Wendi, and Buchanan, David, "Practical Bioengineering Applications in Watershed Management", published in Land and Water Magazine, July/August 1999 pp11-15.

Goldsmith, Wendi, Barrett, Kirk R., and Larson, Marit, "Urban Channel Restoration: Design and Monitoring", in Proceedings of the Conference on Wetlands Engineering and River Restoration, American Society of Civil Engineers, 1998.

Franti, Thomas G., "Bioengineering for Hillslope, Streambank and Lakeshore Erosion Control", International Erosion Control Association, Steamboat Springs, Colorado, 1995-96 Products and Services Directory.

Roley, Ken, and Magura, Lawrence M., "Enter the Brave New World of Endangered Species", presentation at 2001 APWA International Congress and Exposition, Philadelphia, PA, September 9-12, 2001.

The completed PSP Form III – Environmental Compliance Checklist, submitted as part of this application outlines the regulatory permitting strategy that will be used for this project. The CEQA/NEPA process will proceed in tandem with design development during Year 1 of the three-year project.

The need for the project (Petaluma River habitat restoration and sediment control) is clearly identified in the CALFED Bay-Delta Ecosystem Restoration Program goals. It is also worth noting that the entire project site is anticipated to be under City of Petaluma ownership by the time CALFED grants are awarded in March 2002. Given these facts, no unusual obstacles or delays are anticipated to achieving full regulatory approval for the project by the time the City will be ready to start construction in April 2003.

5. Performance Measures/Monitoring Plan

Fisheries and Benthic Macroinvertebrate Monitoring

Biological sampling of fisheries and macroinvertebrate populations, including epibenthic and benthic invertebrates, within the Petaluma Marsh restoration area will be performed to evaluate biological benefits associated with the project. The basic experimental design for the performance evaluation includes comparative surveys of habitat quality and availability, in addition to sampling of fisheries and macroinvertebrate populations; prior to project construction (baseline) and after the restoration project has been completed and established. Project-specific data

will be combined with data collected from other monitoring activities in the area to (1) provide a regional perspective on species occurrence, abundance, and habitat availability for comparison with project-specific monitoring results, and (2) evaluate interannual variability in the seasonal occurrence, species composition, and abundance of various fish and macroinvertebrates for use, in part, as additional background information on baseline conditions and for comparison with site-specific monitoring results. Regional information used as part of the monitoring program includes extensive bay studies performed since 1980 by the California Department of Fish and Game, in addition to fisheries investigations conducted specifically within the Petaluma Marsh and River area.

Development of the project-specific monitoring plan will include (1) identification of specific sampling sites and monitoring transects within the restoration area; (2) identification of sampling methods and data collection protocols; (3) preparation of a written study plan identifying the experimental design for sampling activities, the hypotheses to be tested for evaluating biological benefits associated with the proposed restoration project (e.g., the density (number per cubic meter) of juvenile Chinook salmon utilizing the project area is equal between pre-project and post-project conditions; alternative hypothesis: the density of juvenile Chinook salmon utilizing the project area is significantly greater after completion of the restoration effort), the statistical and analytical methods to be used for evaluating resulting monitoring data and hypothesis testing; (5) submittal of the draft study plan to resource agencies (e.g., CDFandG, USFWS, NMFS, DWR) and other interested parties for peer review and comment; and (6) finalization of the study plan and implementation of the pre-project baseline fisheries and macroinvertebrate monitoring.

The site-specific monitoring program will include (1) fisheries sampling using various collection methods to assess seasonal occurrence and habitat usage, abundance (density), size and age frequency, and species diversity; (2) sampling of epibenthic macroinvertebrates (e.g., bay shrimp) to determine relative abundance (density), species composition, habitat usage, and species diversity; (3) benthic grab samples to determine species composition, relative abundance (density), and habitat usage; (4) transect surveys to assess characteristics of the quality and availability of aquatic habitat including ground level photographs, in addition to measurements of habitat parameters; (4) comparison and quantification of habitat conditions using aerial photographs of pre- and post-project conditions; and (5) documentation of changes in habitat conditions seasonally and in response to enhancement measures using GIS mapping techniques and other analytical tools. Fisheries sampling conducted as part of the project monitoring will include consideration of various species guilds including, but not limited to, resident estuarine fish and macroinvertebrates (e.g., starry flounder, goby, bay shrimp, and crabs), pelagic fish species (e.g., Pacific herring, northern anchovy), anadromous fish species (e.g., various races of Chinook salmon, steelhead, striped bass), and special status species (e.g., Delta smelt, Sacramento splittail, longfin smelt). All biological sampling will be performed in accordance with approved scientific collection permits for fisheries and aquatic monitoring as authorized by CDFandG, USFWS, and NMFS since monitoring

within the proposed project area will include potential collection of fish species listed for protection under the California and Federal Endangered Species Acts.

The pre-project baseline sampling will occur quarterly over a 1-year period. Post-project monitoring is scheduled quarterly over a 2-year period. Technical status reports will be prepared documenting results of biological monitoring, and comparing and evaluating the pre-project and post-project aquatic habitat availability, quality, and use by fish and macroinvertebrate populations. Draft technical reports will be provided to CALFED, resource agencies, and other interested parties for review and comment.

6. Data Handling and Storage

Record copies of all engineering memoranda, plans, specifications and opinions of probable project cost prepared for this project will remain in the permanent files of the City of Petaluma Department of Water Resources and Conservation. All design drawings will be produced in the latest version of Autocad and archived at the City of Petaluma as both hard copies and on compact discs. Information copies of all final work products (memoranda, plans, specifications, etc.) will be provided to the CALFED program office at U C Davis.

Copies of all environmental data and test results collected to establish the pre-construction project environmental baseline will also be sent to CALFED, along with copies of the draft and final project monitoring plan and all data collected under the monitoring plan. An annual report summarizing progress towards achieving habitat restoration goals identified in the monitoring plan will also be prepared and distributed to all stakeholders and participating regulatory agencies.

7. Expected Products/Outcomes

The McNear Peninsula Habitat Restoration Project will produce a variety of both tangible and intangible products. Chief among the tangible products coming from the project will be dramatic reductions in the volume of fine sediment entering the Petaluma River from the project site, and expected significant increases in a variety of terrestrial and aquatic animal species visiting and taking up residence in the area. The reintroduction of native riparian plants and trees to the site will, over time, make it much more visually appealing as the plants and trees grow. This will dramatically alter the visual appearance of the site as it assumes a more varied and natural form in contrast to the stark emptiness that pervades it today.

The list of intangible benefits and products accruing from the completed project is a measure of community pride and delight associated with the long-anticipated conversion of an urban eyesore into a community asset and urban amenity:

- A key element of the Petaluma River Plan, which was developed with substantial community input, will finally come to fruition, and the City will have a new, low-impact recreational area to enjoy, literally in the center of the community. As Golden Gate Park serves San Francisco and Central Park

serves New York City, the McNear Peninsula has the opportunity to create an urban oasis that will enhance both the environment and the lives of those who visit it for generations to come.

- School children of all ages will have a readily accessible nature study area that is also a quiet testimonial about wise stewardship of natural resources.
- Community residents and visitors alike will have a new location within easy walking distance of many homes and businesses to quietly contemplate the beauty of the restored environment.
- When the project is complete, the City of Petaluma will be making a clear and unequivocal statement that, as a community, it cares about the quality of life and the natural environment in which its residents live.
- Beyond making a strong pro-environment statement, the completed project will, in all likelihood serve by example as a catalyst for additional habitat restoration projects in the community, which may be funded by a variety of private-public partnerships.

8. Work Schedule

As has been noted elsewhere in the grant application, the proposed project will span a three-year period. Year 1 activities consist of project design and permitting, and are expected to occupy the remainder of the calendar year, assuming that funding is in place by April 1, 2002. Task 9 of the Year 1 program may be delayed until early February 2003, so that the start of construction activity can follow immediately the award of the construction contract.

Project construction will be the primary focus of Year 2. The desired date for giving the selected contractor Notice to Proceed is late March of 2003. It is estimated that restoration of the entire 6000 linear feet of riverbank and canal frontage will require six months to accomplish. If the contractor starts work in March, the entire project could be complete by October 2003. Starting work in March would also allow all in-water work to be completed during the 2003 regulatory in-water work window.

If the full amount of requested funding for Year 2 is not available, the City will reduce the scope of the project so that a portion of it can be constructed. First priority under a reduced funding scenario would be to complete the portion of the project that faces the Petaluma River and leave the McNear Channel portion of the project for possible funding under a future CALFED grant.

Year 3 will begin the post-construction monitoring phase of the project. Some baseline data will be collected during the actual project construction period, but the real work effort is expected to start after the bulk of the winter rainy season has passed. Post-construction project monitoring will probably span the April to June 2004 timeframe, with the report of first year monitoring results being available for distribution by September 2004.

9. (Additional Information) Key Project Personnel

Black & Veatch Corporation, acting as the City of Petaluma's consultant, has assembled a team with outstanding qualifications to lend their expertise to the McNear Peninsula Habitat Restoration Project. Capsule resumes of some of the key members of the project team appear below. Full resumes for all team members can be supplied upon request.

Lawrence M. Magura, P.E., Black & Veatch Corporation, will serve as project manager. Mr. Magura received his BS degree from UC Davis in Renewable Natural Resources. He also holds two MS degrees from UC Berkeley in Forestry (Watershed Management), and Civil Engineering (water resources option). He has 28 years of water resources engineering experience and is a registered professional engineer in the states of California, Oregon and Washington, and has managed the design and construction of more than 50 streambank protection and habitat restoration projects, many of them employing bioengineered solutions. He is currently serving as project manager for development of a surface water master plan for the City of Petaluma.

Hsieh Wen Shen, Ph.D., University of California, Berkeley Emeritus Professor of Civil Engineering. Dr. Shen is a recognized expert in the field of sediment transport and stream ecology. He will lend his expertise to the project team as a technical advisor during the critical early brainstorming period of the project when design alternatives are being considered.

Donald W. Baker, P.E., is a senior water resources engineer with Black & Veatch who holds BS degrees in both Engineering Physics (Colorado School of Mines), and Agricultural Engineering (Colorado State University) and is completing his MS in Civil Engineering from the University of Kansas. Mr. Baker has 12 years of water resources engineering experience and is a registered professional engineer in California, Kansas, and Missouri. He has worked on a number of bioengineered streambank stabilization projects and will provide quality control for project plans and specifications.

Ralph E. Brooks, Ph.D., Black & Veatch Corporation, is a former professor of Botany at the University of Kansas, and is a recognized authority on vegetation analysis and assessment and wetland evaluations. Ralph will provide assistance in the evaluation of brackish water wetland habitat and identification of invasive non-native plant species for the project site.

Charles H. Hanson, Ph.D., Hanson Environmental, Inc., holds BS and MS degrees from the University of Washington in Fisheries Biology, and a Ph.D. from UC Davis in Ecology and Fisheries Biology. Dr. Hanson is a Certified Fisheries Biologist and has over 25 years of experience in both freshwater and marine biological studies. He will be responsible for all environmental permitting for the project and will lead the effort to prepare the project-monitoring plan. He has extensive experience working on fisheries and habitat issues in the San Francisco Bay-Delta area.

B. Applicability to CALFED ERP and Science Program Goals and Implementation Plan and CVPIA Priorities

1. ERP, Science Program and CVPIA Priorities. *The proposed Petaluma River habitat restoration project specifically addresses and responds to the following draft Stage I PSP priorities:*

MR-5: Ensure that restoration is not threatened by degraded environmental water quality. Fine Sediment (Sedimentation) pg. 23 of the ERP, is identified as a pollutant of concern for several streams in the S.F. Bay-Delta region. The Petaluma River is listed by name in this section as a focal stream for Stage I actions that will, among other things, "develop, test, implement, and evaluate management actions to reduce fine sediment loads…". The proposed project, if fully implemented, would largely eliminate the single largest non-point source of fine sediment in the Petaluma River basin. The detrimental effects of high-suspended sediment loads on anadromous fish migration and spawning success for listed steelhead is already well accepted. This listed species does not thrive in highly turbid water. No quantitative studies of Petaluma River sedimentation rates and turbidity levels have been reported in the scientific literature. However, it is obvious that substantial elimination of fine sediment generation from 6000 linear feet of unprotected and unstable shoreline in the middle of the Petaluma River basin, and replacing it with a like amount of created riparian habitat will be highly beneficial to future steelhead runs in the basin.

BR-1: Restore Wetlands In Critical Areas Throughout The Bay, Either Via New Projects Or Improvements That Add To Or Help Sustain Existing projects. This PSP priority specifically discusses on page 46 of the ERP the need for *riparian and riverine aquatic habitat restoration* in tributaries to San Pablo Bay (such as the Petaluma River), particularly when the proposed project shall be capable of generating multiple ecosystem benefits. This proposed project will create over 6000 linear feet of new tidal marsh and shallow water riverine wetland habitat, which is the desired habitat for the endangered Sacramento Split tail minnow, and the various aquatic birds that feed on them. By itself, this is a significant contribution of new habitat area, but the prominent and highly visible location of the project site in the middle of the City may serve to inspire citizen groups to sponsor similar habitat restoration efforts at other locations in the watershed. It is likely to have a synergistic effect for other habitat creation projects, and the ultimate cumulative benefits to habitat restoration efforts in the Petaluma River basin are likely to be substantially in excess to those that can be attributed to this project alone.

BR-5: Restore shallow water, local stream and riparian habitats for the benefit of at-risk species while minimizing potential constraints to successful restoration efforts. Page 48 of the ERP specifically lists the need t o reduce *fine sediment loadings, especially in the Napa and Petaluma Rivers and Sonoma Creek.* As has already been stated, the proposed project will not only essentially eliminate the largest non-point source of fine sediment currently impacting the Petaluma River, it will also create some 6000 linear feet of tidal riparian habitat. It is rare that a single project can not only eliminate an environmental negative, while at the same time replacing it with such a clear positive (new habitat creation), but that is precisely what this project will deliver.

2. Relationship to Other Ecosystem Restoration Projects. This is the first project of its type ever to be sponsored by the City of Petaluma, and the first habitat restoration

project ever attempted on the mainstem of the Petaluma River. The Southern Sonoma County Resource Conservation District has undertaken several small-scale habitat enhancement and restoration projects over the years on various tributaries of the Petaluma River. These project usually consisted of channel debris clearance and planting of willows and other woody riparian species. However, all of these previous efforts were confined to free-flowing tributaries. The United Anglers, associated with Casa Grande High School, have been successful in their efforts to restore Adobe Creek for the reestablishment of steelhead habitat. Adobe Creek enters the Petaluma River downstream of the McNear Peninsula property. Reduction of sediment upstream of the Adobe Creek confluence will greatly reduce the amount of sediment that collects at the mouth of Adobe Creek at the River. To date, no habit restoration work has been attempted in the tidal portion of the river below Payran Street. The City has not received CALFED grant funds in the past for habitat restoration purposes.

3. Requests for Next-Phase Funding. Not applicable. This proposal is the initial funding request by the City of Petaluma for this project.

4. Previous Recipients of CALFED Program or CVPIA funding. Not applicable. The City of Petaluma has not previously used CALFED funds for a project of this type.

5. System-Wide Ecosystem Benefits. The McNear Peninsula riparian habitat restoration project is being developed by the City of Petaluma in conjunction with an integrated water resources planning effort that is currently underway. The water resources element of the Petaluma General Plan 2000 - 2020 consists of a water system master plan, a reclaimed wastewater master plan, and a surface water master plan. When complete, the three plans will comprise the "water element" of a comprehensive update of the City's General Plan. All of the plans contain a heavy emphasis on sustainability and ecosystem enhancement. This environmental planning emphasis was first identified as a key objective for all future City planning efforts during the public involvement efforts that were conducted as part of the Petaluma River Access and Enhancement Plan development, which was adopted by the City Council in 1996. The subsequent ESA listing of coastal steelhead, Sacramento split tail minnow, and other threatened species that all require a healthy riparian ecosystem in which to thrive has reinforced citizen support for this objective. The opportunity to initiate the McNear Peninsula Habitat Restoration Project at this time through a CALFED grant comes at an extremely fortunate time in terms of anticipated community support for the project. If funded, the project is expected to serve as a catalyst for many other more modest efforts by volunteer groups such as the Boy Scouts, high school groups, and other agencies such as the Southern Sonoma County Resource Conservation District, which will benefit the entire Petaluma River ecosystem.

6. Additional Information for Proposals Containing Land Acquisition. The City of Petaluma is not seeking CALFED funds for property acquisition. Sonoma County Agricultural Preservation and Open Space District funds were previously used to acquire ownership of one parcel of land (1/3rd of the peninsula), and a new application is pending for acquisition of a large percentage of the remainder (nearly 2/3rd of the peninsula). The owner of a small (3.5 acre) residual parcel, at the tip of the Peninsula, has agreed in principal to donate the parcel to the City when the second open space grant-funded transaction has been completed.

SUMMARY

Quoting from the adopted Petaluma River Access and Enhancement Plan, the history of the Peninsula is offered, “Long used for livestock grazing, it thrusts a flat 3,200 foot long treeless landform into the heart of the river. Visitors to the peninsula are treated with striking panoramic views of the downstream industrial activity, river shorelines, central Petaluma and its hills to the west, and the Sonoma Mountains to the east.” Creating the peninsula habitat as called for in the Plan, and enabled through this grant application, creates an incredible opportunity, directly in the center of an urban community, which will serve as an educational and environmental showcase of restoration efforts.