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In Reply Refer To:  
FWS/CDFG-EC-BV Lagoon & Creek SEP

**Item No. 9 Doc. No. 7**

Mr. John H. Robertus  
Executive Officer  
California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, California 92123-4353

Subject: Public Hearing on Administrative Civil Liability Complaint No. R9-2007-0099:  
Buena Vista Lagoon Sewage Spill

Dear Mr. Robertus:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (Department), collectively the "Wildlife Agencies" offer the following comments and recommendations for consideration at the Investigative Hearing for Complaint No. R9-2007-0099 for Administrative Civil Liability (ACL) against the Cities of Vista and Carlsbad, developed by the San Diego Regional Water Quality Control Board (RWQCB) for the Buena Vista Lagoon Sewage Spill.

The Wildlife Agencies have been working with the Cities of Vista and Carlsbad to develop a settlement agreement. This agreement would help offset impacts incurred to our trust resources at the Department's Buena Vista Lagoon Ecological Reserve due to the 7.3 million gallons of raw sewage spilled during the incident. In our previous letter to the RWQCB dated December 3, 2007, we supported the use of a Supplemental Environmental Project (SEP) to help offset the impacts to the lagoon. We also provided an original SEP proposal that would provide engineering studies and the modeling needed to further develop the Buena Vista Lagoon restoration plan.

During the RWQCB hearing on March 11, 2008, members of the RWQCB and environmental groups expressed concerns regarding how such studies and modeling would address the spill's impacts and existing water quality problems found in Buena Vista Creek and Buena Vista Lagoon, both designated as impaired water bodies on the Section 303(d) List of Water Quality Limited Segments under the Federal Clean Water Act. Completion of the studies and modeling would further the ultimate long-term goal of restoring the lagoon. Information from engineering analyses is needed to select the estuary type that will be the ultimate configuration of the lagoon. This is needed before restoration activities can proceed.

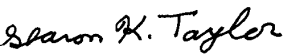


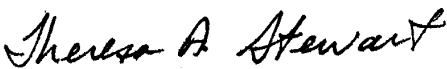
The Wildlife Agencies have been working with the Cities and environmental interests and have developed a revised combination SEP proposal for RWQCB consideration. **The Wildlife Agencies respectfully request that RWQCB consider, as a high priority, approving the combined SEP entitled “Buena Vista Lagoon Ecological Reserve Restoration Engineering Studies & Analyses and Buena Vista Creek Ecological Reserve Habitat Restoration” for the amount of \$895,000 towards the restoration of the Buena Vista Lagoon sewage spill’s impact.** This would be both of our Agencies highest preference.

If this is not possible, we have also submitted the 2 projects included in the combined SEP as separate SEPs. We request that the originally submitted “Buena Vista Lagoon Restoration – Engineering Studies and Analyses” SEP for \$500,000 be included in any settlement. We would respectfully request that, if not approved at the hearing, the “Buena Vista Creek Ecological Reserve Habitat Restoration” SEP for \$395,000 be submitted for funding through the state-wide cleanup and abatement account.

We look forward to jointly working on restoration efforts to address the spill’s impacts to natural resources with the RWQCB and the Cities. Working with our partners is essential to achieve our long term goals for the recovery of federal and state listed species. If we can provide any additional information to support this SEP proposal, please contact Dr. Sharon Taylor (Service) at (760) 431-9440 extension 220 or Mr. Warren Wong (Department) at (858) 467-4249.

Sincerely,

*acting  
for*   
Scott A. Sobiech  
Deputy Field Supervisor  
U.S. Fish and Wildlife Service

  
Theresa A. Stewart  
Supervising Biologist  
California Department of Fish and Game

Enclosures

cc:

Eric Becker, RWQCB  
Sharon K. Taylor, USFWS  
Judy Gibson, USFWS  
Therese O’Rourke, USFWS  
Karen Miner, CDFG  
Warren Wong, CDFG  
Bruce Joab, CDFG  
Julie Yamamoto, CDFG  
Bill Paznokas, CDFG  
Bryan Gollhofer, CDFG  
Noel Richards, CDFG

CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD  
SAN DIEGO REGION  
(SDRWQCB)

**SUPPLEMENTAL ENVIRONMENTAL PROJECT APPLICATION FORM**

**Project Requested by:** Natural Resource Co-Trustees - U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (DFG)

**Name of Project:** Buena Vista Creek Ecological Reserve Habitat Restoration

**Date of Request:** May 27, 2008

**Point of Contact:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

**E-Mail:** USFWS - Sharon K. Taylor [sharon\\_taylor@fws.gov](mailto:sharon_taylor@fws.gov)  
DFG - Warren Wong [wwong@dfg.ca.gov](mailto:wwong@dfg.ca.gov)

**Project Summary**

The 134 acre Buena Vista Creek Ecological Reserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG). The property is now owned in fee title by DFG and has been designated as an Ecological Reserve. Approximately 12 acres located on the property have been degraded by agricultural land use. This site needs restoration to address this fallow agricultural land in the Buena Vista Creek flood plain and riparian corridor as well as upland areas. This project addresses 4 acres of this site. Restoration of this land to native habitats will benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for Federal and state-listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Polioptila californica californica*).

This SEP proposal seeks funding for Buena Vista Creek Ecological Reserve Habitat Restoration. This SEP would provide for the restoration of 4 acres of fallow agricultural land within the Ecological Reserve, located north and south of Buena Vista Creek. Areas would be restored to riparian habitat (southern willow scrub and riparian forest) as they are adjacent to Buena Vista Creek, which currently supports these vegetation types. Approval of this SEP proposal would significantly contribute to these ongoing efforts to restore Buena Vista Creek and enhance the natural resources that it supports.

**Total Life Cycle Cost for the Project**

Cost estimates for restoration, including the administrative overhead and contingency, required for the Buena Vista Creek restoration project based on funding in FY 2008 are listed below.

Buena Vista Creek Ecological Reserve Habitat Restoration	
Site clean-up & Site preparation	\$ 150,000
Plant Installation	\$ 150,000
Site Maintenance & monitoring	<u>\$ 95,000</u>
<b>Total SEP Request</b>	<b>\$ 395,000</b>

**Watershed/Water Body/Location for Project (attach maps)**

Buena Vista Creek Ecological Reserve is located approximately 35 miles north of San Diego, on the border between the cities of Oceanside and Carlsbad in San Diego County, California. The Ecological Reserve, which is border by Highway 78 on the north, and at the terminus of Haymar Drive on the east and west, covers an area of approximately 134 acres. Buena Vista Creek is part of the El Salto Hydrological Subarea Boundary (HAS) which is within the Carlsbad Hydrologic Unit. See attached Figure1 and 2.

**Project Proposed Start Date and Time Line**

The proposed project is anticipated to commence as soon as contracts are in place, which is estimated to occur within 3-6 months of funding. All plants for the Buena Vista Creek Habitat Restoration are to be installed within 2 years, and then monitored for the subsequent three years.

**Organization Sponsoring Project (tax I.D. #):** DFG 94-1697567

**Name of Project Manager:** Natural Resource Co-Trustees - USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

**Designated Project Trustee:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Description of Project Trustee capability to ensure that the project will be complete**

As co-trustees, both the USFWS and DFG have agency mandates to protect the natural resources that are proposed under this SEP proposal. DFG has designated the Buena Vista Creek property as an ecological reserve and has direct responsibility for overseeing the site. The US Fish & Wildlife Service has trustee resource responsibilities that include threatened and endangered species, as well as migratory birds and compliance with the National Environmental Policy Act (NEPA). Both agencies have extensive documented histories and commitments in working to restore Buena Vista Lagoon and Creek.

**Statement of Project Trustee ability/authority to receive and disburse funds**

Funds are proposed to be held in the Environmental Fund for Habitat and Incident Specific Restoration Projects with the National Fish and Wildlife Foundation pursuant to the Memorandum of Agreement between the California Department of Fish and Game and the National Fish and Wildlife Foundation to Establish the Environmental Fund for Habitat and Incident-Specific Restoration Projects (attached). Funds will be placed in an Incident Specific Subaccount within the above referenced fund for the Buena Vista Lagoon Restoration Project and would be disbursed upon joint approval of the USFWS and DFG co-trustees. USFWS and DFG have jointly worked together on multiple projects as co-trustees.

## **DETAILED PROJECT INFORMATION**

### **1 and 2. PROPOSAL DESCRIPTION AND PROBLEM STATEMENT**

#### Buena Vista Creek Ecological Reserve

The 134 acre Buena Vista Creek Ecological Preserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG) and other entities. The property is now owned in fee title by DFG and has been designated as an Ecological Reserve. The proposed restoration areas have been in agricultural use for decades, leaving fallow agricultural land-subject to erosion and siltation of downstream reaches of the creek and Buena Vista Lagoon. The fallow land also allows nonnative, invasive plants to establish and spread making future restoration much more difficult and costly. Funds for restoration of the fallow agricultural lands were not included in the original land management endowment.

This project addresses restoration of 4 acres of the is fallow land to native habitats to benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for Federal and state-listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Poliophtila californica californica*). There are 2.2 acres south of the creek and 1.8 acres north of the creek. All areas would be restored to riparian habitat (southern willow scrub and riparian forest) as they are adjacent to Buena Vista Creek, which currently supports these vegetation types.

### **3. HOW WILL THE PROJECT BENEFIT WATER QUALITY AND BENEFICIAL USES?**

Buena Vista Creek Ecological Reserve is about 1.3 miles upstream from Buena Vista Lagoon. The Lagoon is on the Clean Water Act 303(d) list with impairment for siltation and bacteria. This habitat restoration project will directly benefit the downstream reaches of the creek and lagoon by reducing sediment discharge and allowing for natural filtration of upstream pollutants.

### **4. HOW WILL THE SUCCESS OF THIS PROJECT BE MEASURED?**

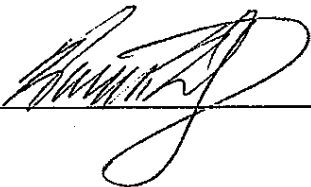
The success of the Buena Vista Creek Habitat Restoration Project will occur within 5 years based on the following success criteria of: 75-85% cover of native riparian plant species (based on visual observations; all native vegetation free of irrigation for 2 years; and less than 1% cover of state and federally listed noxious weeds (based on visual observation).

### **5. DETAILED WORK PLANS**

Please see the attached detailed work plans.

***I certify that the information provided in this application is an accurate and complete report of the costs, scope of work and expectations of this proposed project I am submitting to the SDRWQCB.***

SIGNATURE Sharon K. Taylor Date 5/30/08

SIGNATURE  Date 5/30/08



## Work Plan for Supplemental Environmental Project Proposal

### Buena Vista Creek Habitat Restoration

May 27, 2008

#### A. Scope of work

The 134 acre Buena Vista Creek Ecological Preserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG) and other entities. The property is now owned in fee title by DFG and has been designated as an Ecological Reserve.

Approximately 12 acres located on the property have been degraded by agricultural land use. This site needs restoration to address this fallow agricultural land in the Buena Vista Creek flood plain and riparian corridor as well as upland areas. This project addresses 4 acres of this site. Restoration of this land to native habitats will benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for Federally and state-listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Polioptila californica californica*).

The proposed Buena Vista Creek Habitat Restoration Project is for the restoration of 4 acres of agricultural land from its current condition (fallow, minimal native plant components), to riparian habitat. The riparian areas are 2.2 acres and 1.8 acres. The project would include trash and debris removal, soils testing and amendment addition, if needed, pre- and post-emergent herbicide application and invasive plant removal, installation of native container plants and/or cuttings, and maintenance, monitoring and reporting until achieving success criteria.

#### B. Task Descriptions

Below is a list of task descriptions of the currently unfunded habitat restoration activities for the Buena Vista Creek Habitat Restoration Project.

##### Site clean-up

At this time the site is predominately clean of trash and debris. The only cleanup would be the removal of nonnative vegetation as part of site preparation.

##### Site preparation

Soil testing will be performed on each parcel to determine if any amendments are required. Soil amendments will be added as necessary. All areas will be treated with a pre- or post-emergent herbicide prior to plant installation. Overhead irrigation will be installed in the riparian areas using water provided by the already existing on-site artesian pond.

##### Plant Installation

Approximately 2000 plant cuttings per acre will be installed. Cuttings would primarily be willows (*Salix* spp.), but may include other riparian species. All cuttings will be taken from existing vegetation on-site. Each area will also be hydroseeded with a native riparian seed mix consisting of the following species: *Salix lasiolepis*, *Platanus racemosa*, *Baccharis salicifolia*, *Rubus ursinus*, and *Rosa californica*.



### Maintenance and Monitoring

The sites would be maintained at least six times a year for the first two years after plant installation and then four times a year for the subsequent three years. This would include weed removal, any remedial measures (such as replacing willow cuttings, if deemed necessary), maintaining the irrigation system and qualitative monitoring. Qualitative monitoring will occur once per year for a period of five years, and will include photo documentation and site inspection for plant conditions and nonnative species cover.

### **C. Budget & Schedule**

Potential timeframes and budget allowances to complete the habitat restoration were developed based on prior experience with similar wetlands restoration projects in Southern California. Table 1 presents the task groupings, timeframe, and budget. Adjustments in the project plan may need to occur as the project moves forward. The total budget allowance, including overhead and contingency to complete these preliminary tasks, was estimated to be \$ 395,000.

<b>Task</b>	<b>Timeframe</b>	<b>Allowance</b>
Site clean up & Site Preparation	6-12 months	\$150,000
Plant Installation	12-24 months	\$150,000
Site Maintenance & Monitoring	12-36 months	\$95,000
<b>Total</b>		<b>\$395,000</b>

### **D. Methods and materials**

Standardized habitat restoration methods that are accepted throughout the industry will be utilized. A quality assurance/quality control review process will be developed and utilized to ensure data collected and reports provided meet the needs of the restoration effort.

### **E. Resources needed**

The co-trustees have access to the resources needed, if this SEP proposal is funded. The work will be contracted out and administered through the DFG. Both the USFWS and DFG will oversee the completion of projects as co-trustees.

### **F. Regulatory issues (environmental reviews, permits, etc.)**

Both DFG and USFWS will require a restoration plan and agency notification. However, at this time it is unlikely that regulatory permits, or California Environmental Quality Act (CEQA) or a National Environmental Quality Act (NEPA) analysis would be necessary or required based on the project description.

### **H. Work products and documents to be retained for records**

Copies of all final work products and documents will be retained for records. In addition, both the USFWS and DFG as federal and state agencies have records retention policies.

CALIFORNIA REGIONAL WATER QUALITY CONTROL  
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**SUPPLEMENTAL ENVIRONMENTAL PROJECT APPLICATION FORM**

**Project Requested by:** Natural Resource Co-Trustees - U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (DFG)

**Name of Project:** Buena Vista Lagoon Restoration – Engineering Studies and Analyses

**Date of Request:** November 30, 2007 Original, May 28, 2008 revised

**Point of Contact:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

**E-Mail:** USFWS - Sharon K. Taylor [sharon\\_taylor@fws.gov](mailto:sharon_taylor@fws.gov)  
DFG - Warren Wong [wwong@dfg.ca.gov](mailto:wwong@dfg.ca.gov)

**Project Summary**

Buena Vista Lagoon has been adversely impacted over time by a concrete weir built across the ocean entrance in the 1940's that controls the water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading, has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and has led to the decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

This SEP proposal seeks funding to provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering. Approval of this SEP proposal would significantly contribute to these ongoing efforts to restore Buena Vista Lagoon and enhance the natural resources it supports.

**Total Life Cycle Cost for the Project**

Cost estimates for engineering analyses and studies, including the administrative overhead and contingency, required for the Buena Vista Lagoon restoration based on funding in FY 2008 are listed below.

Coastal Processes	\$ <u>250,000</u>
Construction and Maintenance	\$ <u>50,000</u>
Water Quality	\$ <u>200,000</u>

**Total Project Cost** \$ 500,000

**Watershed/Water Body/Location for Project (attach maps)**

Buena Vista Lagoon is located approximately 35 miles north of San Diego, on the border between the cities of Oceanside and Carlsbad in San Diego County, California. The lagoon, which is bordered by the Pacific Ocean on the west, Vista Way / Freeway 78 on the north, and Jefferson Street on the east and south, covers an area of approximately 225 acres. The lagoon is part of the El Salto Watershed. See attached Figures 1 and 2.

**Project Proposed Start Date and Time Line**

The proposed project is anticipated to commence as soon as contracts are in place, which is estimated to occur within 3-6 months of funding. Some of the studies are sequential in nature, so these would be initiated upon completion of others. Studies and analyses are estimated to be completed within 2 years upon funding.

**Organization Sponsoring Project (tax I.D. #):** DFG 94-1697567

**Name of Project Manager:** Natural Resource Co-Trustees - USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

**Designated Project Trustee:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Description of Project Trustee capability to ensure that the project will be complete**

As co-trustees, both the USFWS and DFG have agency mandates to protect the natural resources that are proposed under this SEP proposal. DFG has the mandate to manage Buena Vista Lagoon as an ecological reserve and has direct responsibility for overseeing the site. The US Fish & Wildlife Service has trustee resource responsibilities that include threatened and endangered species, as well as migratory birds and compliance with the National Environmental Policy Act (NEPA). Both agencies have extensive documented histories and commitments in working to restore Buena Vista Lagoon.

### **Statement of Project Trustee ability/authority to receive and disburse funds**

Funds are proposed to be held in the Environmental Fund for Habitat and Incident Specific Restoration Projects with the National Fish and Wildlife Foundation pursuant to the Memorandum of Agreement between the California Department of Fish and Game and the National Fish and Wildlife Foundation to Establish the Environmental Fund for Habitat and Incident-Specific Restoration Projects (attached). Funds will be placed in an Incident Specific Subaccount within the above referenced fund for the Buena Vista Lagoon Restoration Project and would be disbursed upon joint approval of the USFWS and DFG co-trustees. USFWS and DFG have jointly worked together on multiple projects as co-trustees.

## **DETAILED PROJECT INFORMATION**

### **1 and 2. PROPOSAL DESCRIPTION AND PROBLEM STATEMENT**

Buena Vista Lagoon has been adversely impacted over time by a concrete weir built across the ocean entrance in the 1940's that controls the minimum water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and led to the decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

The first phase of the restoration effort was completed in 1999 and consisted of a field program to collect data on the fauna, flora, and water quality of the lagoon. The second phase, initiated in 2004, would characterize existing conditions, identify constraints, develop restoration alternatives, analyze the restoration alternative, and would prepare and apply potential alternative evaluation methodology in determining the ultimate configuration of the lagoon and its hydrologic regime. Initial studies and analyses required in this second phase have been funded by the USFWS and State Coastal Conservancy (SCC), yet additional engineering studies and analyses are required for the completion of the lagoon restoration plan and have not been completed due to the lack of a funding source. Without completion of these studies, restoration of Buena Vista Lagoon cannot proceed.

This SEP proposal seeks funding to provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering that will result in plans and specifications to then implement the restoration. Specifically, these engineering analyses include:

- I) Coastal Processes
  - a. Ebb and Flood Bar Growth
  - b. Shoreline Morphology
  - c. Coastal Erosion Protection

- II) Construction and Maintenance
  - a. Construction Cost Estimates
  - b. Maintenance Cost Estimates
  
- III) Water Quality
  - a. Lagoon Water Quality
  - b. Nearshore Water Quality

### **3. HOW WILL THE PROJECT BENEFIT WATER QUALITY AND BENEFICIAL USES?**

Historically, Buena Vista Lagoon had periodic tidal influence. A weir installed at the ocean inlet in the 1940's isolates the lagoon from tidal influence and regulates water levels. Thus the lagoon has become a very efficient sediment trap. Estimates of the 1940-1982 sedimentation rate, based on cores of the lagoon bed, was 35,000 tons accrued per year.

If funded, this SEP will provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. Approval of the project would provide information necessary to develop a long-term, sustainable configuration for the lagoon. Beneficial Uses identified in the Basin Plan are: REC1, REC2, BIOL, WILD, RARE, MAR, and WARM. Restoration would provide habitat for sensitive wildlife including light-footed clapper rail, California least tern and Belding's savannah sparrow and other wildlife. Removal of sediment and nutrients from the lagoon would provide additional habitat for fish and recreational opportunities for users and would also reduce fish die-offs. Water quality would be enhanced through a reduction in turbidity and nutrient load and the reduced potential for eutrophication. Depending on the final hydrologic regime, restoration could also potentially add EST, MIGR, and SPAWN uses to the lagoon.

### **4. HOW WILL THE SUCCESS OF THIS PROJECT BE MEASURED?**

The success of this project will be measured by the completion and acceptance by the co-trustees of the engineering studies and analyses reports. These studies will be included in environmental documents to be circulated for agency and public review.

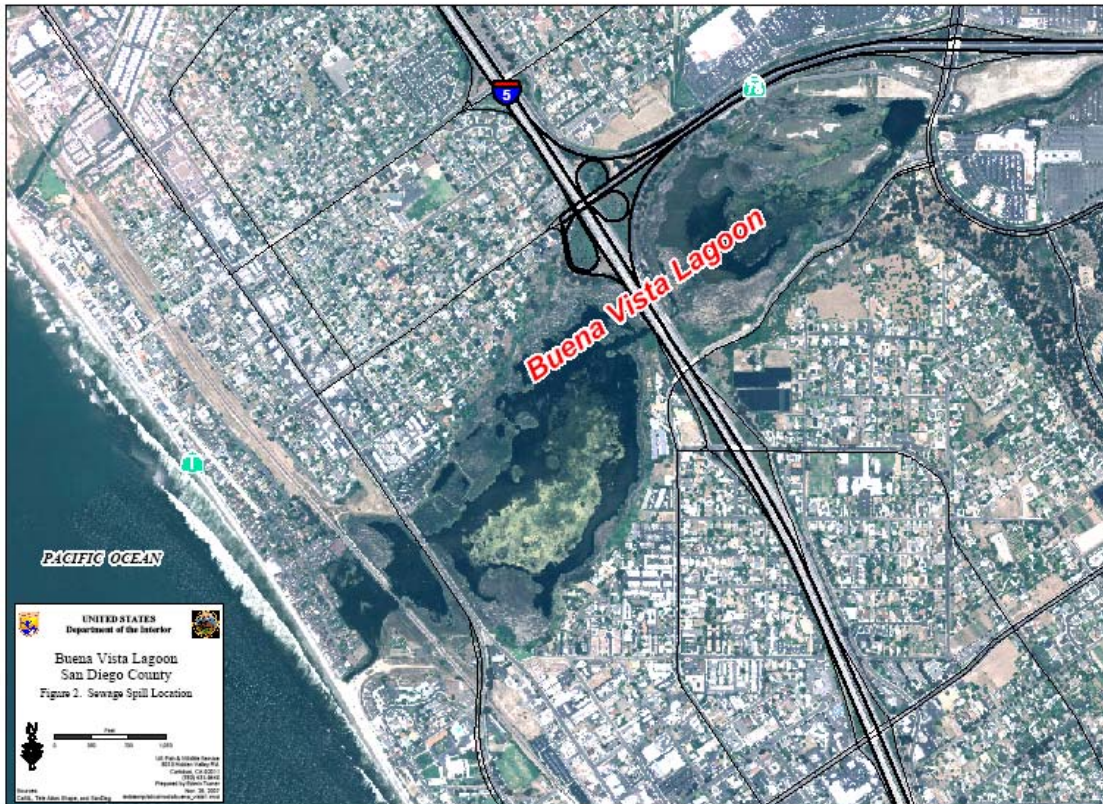
### **5. DETAILED WORK PLAN**

Please see the attached detailed work plan.

***I certify that the information provided in this application is an accurate and complete report of the costs, scope of work and expectations of this proposed project I am submitting to the SDRWQCB.***

**SIGNATURE** Sharon K. Taylor **Date** 5/30/08

**SIGNATURE**  **Date** 5/30/08



## **Work Plan for Supplemental Environmental Project Proposal**

### **Buena Vista Lagoon Restoration – Engineering Studies and Analyses January 8, 2008**

#### **A. Scope of work**

Buena Vista Lagoon has been adversely impacted over time by a concrete weir built across the ocean entrance in 1940's that controls the water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and lead to the decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

The first phase of the restoration effort was completed in 1999 and consisted of a field program to collect data on the fauna, flora, and water quality of the lagoon. The second phase, initiated in 2004, would characterize existing conditions, identify constraints, develop restoration alternatives, analyze the restoration alternative, and would prepare and apply potential alternative evaluation methodology in determining the ultimate configuration of the lagoon and its hydrologic regime. Initial studies and analyses required in this second phase have been funded by the USFWS and State Coastal Conservancy (SCC), yet additional engineering studies and analyses required for the completion of the lagoon restoration plan and have not been completed due to a lack of a funding source.

This SEP proposal seeks funding to provide critical engineering analysis and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering.

#### **B. Task descriptions**

Below is a list of task descriptions of the currently unfunded engineering studies and analysis for the Buena Vista Lagoon Restoration Project. Descriptions are excerpted from the Everest International Consultants, Inc. Buena Vista Lagoon Restoration Report.

##### Coastal Processes

###### Ebb and Flood Bar Growth

This task consists of analyses aimed at estimating the volume and growth rate of the ebb bar and flood bar that would form after opening the new tidal inlet. This information is needed to evaluate maintenance (dredging, excavation, and disposal) as well as to assess impacts to upcoast and downcoast beaches associated with sand trapped in the bar system. This task is interrelated with the shoreline morphology task described below.



### Shoreline Morphology

This task consists of numerical modeling aimed at estimating the change in shoreline position (e.g., mean sea level shoreline) due to project-related changes to the littoral processes. This information is needed to assess the impacts of inlet channel stabilization structures (e.g., jetties) as well as the impacts of the ebb and flood bar system on upcoast and downcoast beaches. This task is interrelated with the ebb bar and flood bar growth task above.

### Coastal Erosion Protection

This task consists of analyses aimed at designing erosion protection for the area in the immediate vicinity of the tidal inlet. This information is needed to protect the properties on either side of the tidal inlet from project-induced erosion associated with the jetties and ebb/flood bar system. This task is interrelated with the shoreline morphology task described above.

## Construction & Maintenance

### Construction Cost Estimates

This task consists of the preparation of construction cost estimates for the three restoration alternatives. This information is needed to assess the funding requirements for construction of the various restoration alternatives.

### Maintenance Cost Estimates

This task consists of the preparation of maintenance cost estimates for the three restoration alternatives. This information is needed to assess the funding requirements for long-term maintenance of the various restoration alternatives as well as to help establish maintenance responsibilities for the various agencies and organizations. This task is interrelated with the ebb/flood bar task described above.

## Water Quality

### Lagoon Water Quality

This task consists of numerical modeling and/or empirical analyses aimed at estimating the concentration of water quality constituents within the lagoon under the three restoration alternatives. This information is needed to help assess the project-related impacts on lagoon water quality.

### Nearshore Water Quality

This task consists of numerical modeling and/or empirical analyses aimed at estimating the concentration of water quality constituents within the nearshore coastal waters near the project site under the three restoration alternatives. This information is needed to help assess the project-related impacts on nearshore water quality. This task is interrelated with the ebb/flood bar task described above.

## **C. Budget & Schedule**

Potential timeframes and budget allowances to complete the engineering analyses were developed based on prior experience with similar wetlands restoration projects in Southern California. The analyses were also grouped according to work type. The results of this effort are shown in Table 1, which presents the grouping, timeframe, and allowance for each analysis. Adjustments in the project plan may need to occur based on initial studies. The total budget allowance, including overhead and contingency to complete these preliminary engineering tasks, was estimated to be \$ 500,000.

**Table 1. Timeframe and Budget Allowance Estimates for Engineering Analyses**

<b>Analysis</b>	<b>Grouping</b>	<b>Timeframe</b>	<b>Allowance</b>
Ebb & Flood Bar Growth Shoreline Morphology Coastal Erosion Protection	Coastal Processes	6-12 months	\$250,000
Construction Cost Estimates Maintenance Cost Estimates	Construction & Maintenance	1 - 2 months	\$50,000
Lagoon Water Quality Nearshore Water Quality	Water Quality	3 - 6 months	\$200,000
<b>TOTAL:</b>		<b>18 -24 months</b>	<b>\$500,000</b>

\* Based on simultaneous completion of parallel tasks with full funding.

#### **D. Methods and materials**

Standardized engineering methods that are accepted throughout the industry will be utilized. A quality assurance/quality control review process will be developed and utilized to ensure data collected and reports provided meet the needs of the restoration effort.

#### **E. Resources needed**

The co-trustees have access to the resources needed, if this SEP proposal is funded. The engineering work will be contracted out and administered through the DFG. Both the FWS and DFG will oversee the completion of projects as co-trustees.

#### **F. Regulatory issues (environmental reviews, permits, etc.)**

In spring 2006, work began on the environmental review process required to comply with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). A public meeting was held in April 2007 to solicit input regarding the scope of the environmental document. Preparation of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is underway and is the next step in the CEQA/NEPA process. The analyses/studies must be completed in order to provide the information necessary to prepare the EIR/EIS.

#### **H. Work products and documents to be retained for records**

Copies of all final work products and documents will be retained for records. In addition, both the USFWS and DFG as federal and state agencies have records retention policies.

CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD  
SAN DIEGO REGION  
(SDRWQCB)

**SUPPLEMENTAL ENVIRONMENTAL PROJECT APPLICATION FORM**

**Project Requested by:** Natural Resource Co-Trustees - U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (DFG)

**Name of Project:** Buena Vista Lagoon Ecological Reserve Restoration Engineering Studies & Analyses and Buena Vista Creek Ecological Reserve Habitat Restoration

**Date of Request:** May 27, 2008

**Point of Contact:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

**E-Mail:** USFWS - Sharon K. Taylor [sharon\\_taylor@fws.gov](mailto:sharon_taylor@fws.gov)  
DFG - Warren Wong [wwong@dfg.ca.gov](mailto:wwong@dfg.ca.gov)

**Project Summary**

Buena Vista Lagoon Ecological Reserve has been adversely impacted over time by a concrete weir built across the ocean entrance in the 1940s that controls the water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading, has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and led to the decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

The 134 acre Buena Vista Creek Ecological Reserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG). Approximately 12 acres located on the property have been degraded by agricultural land use. This acreage needs restoration to address this fallow agricultural land in the Buena Vista Creek flood plain and riparian corridor as well as upland areas. This project addresses 4 acres of this site. Restoration of this land to native habitats will benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers and habitat in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for federally and State listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Poliioptila californica californica*).

This SEP proposal seeks funding for Buena Vista Lagoon Ecological Reserve Restoration Engineering Studies & Analyses and Buena Vista Creek Ecological Reserve Habitat Restoration. For Buena Vista Lagoon this SEP would provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering. For Buena Vista Creek, this SEP would provide improved habitat value within the Reserve, located north and south of the Buena Vista Creek. Areas would be restored to riparian habitat (southern willow scrub and riparian forest) as they are adjacent to Buena Vista Creek, which currently supports these vegetation types. Approval of this SEP proposal would significantly contribute to these restoration of Buena Vista Lagoon and Creek and enhance the natural resources they support.

**Total Life Cycle Cost for the Project**

Cost estimates for engineering analyses and studies, including the administrative overhead and contingency required for the Buena Vista Lagoon and Buena Vista Creek restoration based on funding in FY 2008 are listed below.

Buena Vista Lagoon Ecological Reserve			
Coastal Processes	\$	250,000	
Construction and Maintenance	\$	50,000	
Water Quality	\$	<u>200,000</u>	
			\$ 500,000
Buena Vista Creek Ecological Reserve			
Site clean-up & Site preparation	\$	150,000	
Plant Installation	\$	150,000	
Site Maintenance & monitoring	\$	<u>95,000</u>	
			\$ <u>395,000</u>
		<b>Total Sep Request</b>	<b>\$ 895,000</b>

**Watershed/Water Body/Location for Project (attach maps)**

Buena Vista Lagoon Ecological Reserve is located approximately 35 miles north of San Diego, on the border between the cities of Oceanside and Carlsbad in San Diego County, California. The lagoon, which is bordered by the Pacific Ocean on the west, Vista Way / Highway 78 on the north, and Jefferson Street on the east and south, covers an area of approximately 225 acres. The lagoon is part of the El Salto Watershed. See attached Figures 1 and 2.

Buena Vista Creek Ecological Reserve is located approximately 35 miles north of San Diego, on the border between the cities of Oceanside and Carlsbad in San Diego County, California. The Ecological Reserve, which is bordered by Highway 78 on the north, Flower Fields Way on the south and at the terminus of Hayman Drive on the east and west, covers an area of approximately 134 acres. Buena Vista Creek is part of the El Salto Hydrological Sensitive Area which is within the Carlsbad Hydrologic Unit. See attached Figure 3.

**Project Proposed Start Date and Time Line**

The proposed project is anticipated to commence as soon as contracts are in place, which is estimated to occur within 3-6 months of funding. Some of the studies are sequential in nature, so these would be initiated upon completion of others. The Buena Vista Lagoon Engineering studies and analyses are estimated to be completed within 2 years upon funding. The Buena Vista Creek Habitat Restoration is estimated to be completed also within 2 years followed by 3 years of monitoring.

**Organization Sponsoring Project (tax I.D. #):** DFG 94-1697567

**Name of Project Manager:** Natural Resource Co-Trustees - USFWS (Sharon K. Taylor) and DFG (Warren Wong)

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**Phone:** USFWS - Sharon K. Taylor (760) 431-9440 ext 220  
DFG - Warren Wong (858) 467-4249

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**Designated Project Trustee:** Natural Resource Co-Trustees USFWS (Sharon K. Taylor) and DFG (Warren Wong)

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**Description of Project Trustee capability to ensure that the project will be complete**

As co-trustees, both the USFWS and DFG have agency mandates to protect the natural resources that are proposed under this SEP proposal. DFG has the mandate to manage Buena Vista Lagoon as an ecological reserve and has direct responsibility for overseeing the site. The US Fish & Wildlife Service has trustee resource responsibilities that include threatened and endangered species, as well as migratory birds and compliance with the National Environmental Policy Act (NEPA). Both agencies have extensive documented histories and commitments in working to restore Buena Vista Lagoon and Creek.

**Statement of Project Trustee ability/authority to receive and disburse funds**

Funds are proposed to be held in the Environmental Fund for Habitat and Incident Specific Restoration Projects with the National Fish and Wildlife Foundation pursuant to the Memorandum of Agreement between the California Department of Fish and Game and the National Fish and Wildlife Foundation to Establish the Environmental Fund for Habitat and Incident-Specific Restoration Projects (attached). Funds will be placed in an Incident Specific Subaccount within the above referenced fund for the Buena Vista Lagoon Restoration Project and would be disbursed upon joint approval of the USFWS and DFG co-trustees. USFWS and DFG have jointly worked together on multiple projects as co-trustees.

**DETAILED PROJECT INFORMATION**

**1 and 2. PROPOSAL DESCRIPTION AND PROBLEM STATEMENT**

Buena Vista Lagoon Ecological Reserve

Buena Vista Lagoon has been adversely impacted over time by a concrete weir built across the ocean entrance in the 1940s that controls the minimum water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and lead to the

decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

The first phase of the restoration effort was completed in 1999 and consisted of a field program to collect data on the fauna, flora, and water quality of the lagoon. The second phase, initiated in 2004, would characterize existing conditions, identify constraints, develop restoration alternatives, analyze the restoration alternative, and would prepare and apply potential alternative evaluation methodology in determining the ultimate configuration of the lagoon and its hydrologic regime. Initial studies and analyses required in this second phase have been funded by the USFWS and State Coastal Conservancy (SCC), yet additional engineering studies and analyses are required for the completion of the lagoon restoration plan and have not been completed due to the lack of a funding source. Without completion of these studies, restoration of Buena Vista Lagoon cannot proceed.

This SEP proposal seeks funding to provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering that will result in plans and specifications to then implement the restoration. Specifically, these engineering analyses include:

- I) Coastal Processes
  - a. Ebb and Flood Bar Growth
  - b. Shoreline Morphology
  - c. Coastal Erosion Protection
- II) Construction and Maintenance
  - a. Construction Cost Estimates
  - b. Maintenance Cost Estimates
- III) Water Quality
  - a. Lagoon Water Quality
  - b. Nearshore Water Quality

#### Buena Vista Creek Ecological Reserve

The 134 acre Buena Vista Creek Ecological Preserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG). The proposed restoration areas have been in agricultural use for decades, leaving fallow agricultural land subject to erosion and siltation of downstream reaches of the creek and Buena Vista Lagoon. It also allows non-native, invasive plants to establish and spread making future restoration much more difficult and costly. Funds for restoration of the fallow agricultural lands were not included in the original land management endowment.

This project addresses 4 acres of this fallow land, and the restoration of this land to native habitats to benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for federally and State listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Polioptila californica californica*). There are 2.2 acres south of the creek and 1.8 acres north of the creek. All areas would be restored to riparian habitat (southern

willow scrub and riparian forest) as they are adjacent to Buena Vista Creek, which currently supports these vegetation types.

### **3. HOW WILL THE PROJECT BENEFIT WATER QUALITY AND BENEFICIAL USES?**

Historically, Buena Vista Lagoon had periodic tidal influence. A weir installed at the ocean inlet in the 1940s isolates the lagoon from tidal influence and regulates water levels. Thus the lagoon has become a very efficient sediment trap. Estimates of the 1940-1982 sedimentation rate, based on cores of the lagoon bed, was 35,000 tons accrued per year.

If funded, this SEP will provide critical engineering analyses and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. Approval of the project would provide information necessary to develop a long-term, sustainable configuration for the lagoon. Beneficial Uses identified in the Basin Plan are: REC1, REC2, BIOL, WILD, RARE, MAR, and WARM. Restoration would provide habitat for sensitive wildlife including light-footed clapper rail, California least tern and Belding's savannah sparrow and other wildlife. Removal of sediment and nutrients from the lagoon would provide additional habitat for fish and recreational opportunities for users and would also reduce fish die-offs. Water quality would be enhanced through a reduction in turbidity and nutrient load and the reduced potential for eutrophication. Depending on the final hydrologic regime, restoration could also potentially add EST, MIGR, and SPAWN uses to the lagoon.

Buena Vista Creek Ecological Reserve is about 1.3 miles upstream from Buena Vista Lagoon. The Lagoon is on the Clean Water Act 303(d) list with impairment for siltation and bacteria. This habitat restoration project will directly benefit the downstream reaches of the creek and lagoon by reducing sediment discharge and allowing for natural filtration of upstream pollutants.

### **4. HOW WILL THE SUCCESS OF THIS PROJECT BE MEASURED?**

The success of the Buena Vista Lagoon project will be measured by the completion and acceptance by the co-trustees of the engineering studies and analyses reports. These studies will be included in environmental documents to be circulated for agency and public review. The success of the Buena Vista Creek Project will be measured by that it is estimated that restoration of the riparian areas will occur within 5 years based on the following success criteria of: 75-85% cover of native riparian plant species (based on visual observations; all native vegetation free of irrigation for 2 years; and less than 1% cover of state and federally listed noxious weeds (based on visual observation).

### **5. DETAILED WORK PLANS**

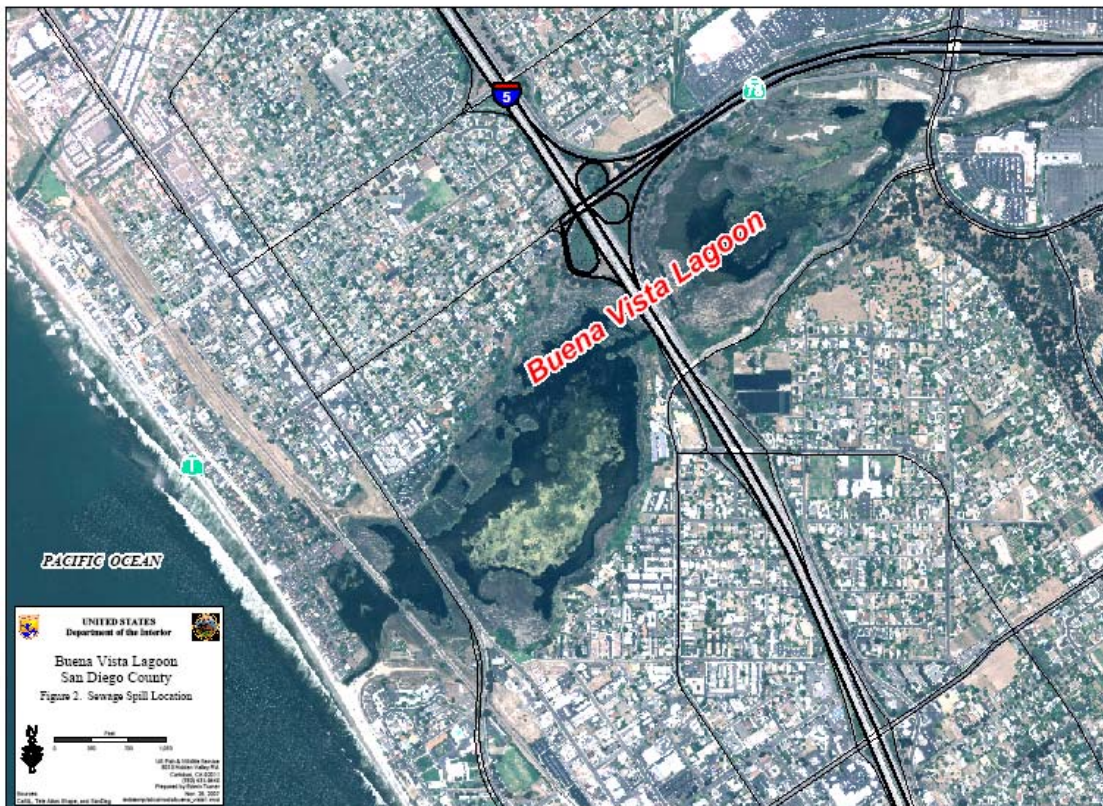
Please see the attached detailed work plans.

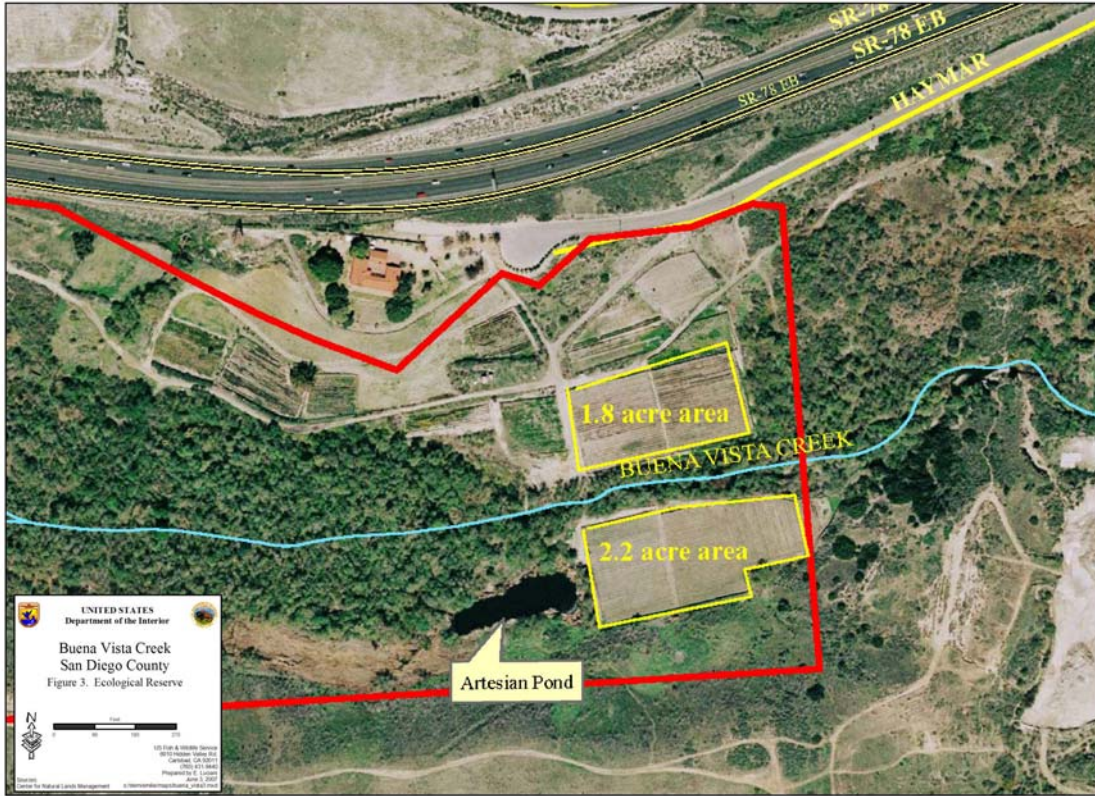
***I certify that the information provided in this application is an accurate and complete report of the costs, scope of work and expectations of this proposed project I am submitting to the SDRWQCB.***

**SIGNATURE** Shawn K. Taylor **Date** 5/30/08

**SIGNATURE**  **Date** 5/30/08







## **Work Plan for Supplemental Environmental Project Proposal**

### **Buena Vista Lagoon Restoration – Engineering Studies and Analyses January 8, 2008**

#### **A. Scope of work**

Buena Vista Lagoon has been adversely impacted over time by a concrete weir built across the ocean entrance in 1940's that controls the water level. Unique among the county's six coastal lagoons, Buena Vista Lagoon currently has no tidal flushing due to its present elevation and configuration. Historically, the lagoon was a tidal system. The presence of the weir at the mouth of the lagoon, combined with increasing sediment and nutrient loading has reduced the depth and circulation of the lagoon, accelerated the growth of cattail, bulrush, and algal growth, and lead to the decline of biodiversity and increased vector problems. Numerous agencies and organizations have been working toward restoring the lagoon including, but not limited to, the USFWS, DFG, State Coastal Conservancy, Southern California Wetlands Recovery Project, and the Carlsbad Watershed Network.

The first phase of the restoration effort was completed in 1999 and consisted of a field program to collect data on the fauna, flora, and water quality of the lagoon. The second phase, initiated in 2004, would characterize existing conditions, identify constraints, develop restoration alternatives, analyze the restoration alternative, and would prepare and apply potential alternative evaluation methodology in determining the ultimate configuration of the lagoon and its hydrologic regime. Initial studies and analyses required in this second phase have been funded by the USFWS and State Coastal Conservancy (SCC), yet additional engineering studies and analyses required for the completion of the lagoon restoration plan and have not been completed due to a lack of a funding source.

This SEP proposal seeks funding to provide critical engineering analysis and studies to help restore the habitat and recreational resources of Buena Vista Lagoon. These studies would include coastal and fluvial processes and wetlands engineering.

#### **B. Task descriptions**

Below is a list of task descriptions of the currently unfunded engineering studies and analysis for the Buena Vista Lagoon Restoration Project. Descriptions are excerpted from the Everest International Consultants, Inc. Buena Vista Lagoon Restoration Report.

##### Coastal Processes

###### Ebb and Flood Bar Growth

This task consists of analyses aimed at estimating the volume and growth rate of the ebb bar and flood bar that would form after opening the new tidal inlet. This information is needed to evaluate maintenance (dredging, excavation, and disposal) as well as to assess impacts to upcoast and downcoast beaches associated with sand trapped in the bar system. This task is interrelated with the shoreline morphology task described below.

### Shoreline Morphology

This task consists of numerical modeling aimed at estimating the change in shoreline position (e.g., mean sea level shoreline) due to project-related changes to the littoral processes. This information is needed to assess the impacts of inlet channel stabilization structures (e.g., jetties) as well as the impacts of the ebb and flood bar system on upcoast and downcoast beaches. This task is interrelated with the ebb bar and flood bar growth task above.

### Coastal Erosion Protection

This task consists of analyses aimed at designing erosion protection for the area in the immediate vicinity of the tidal inlet. This information is needed to protect the properties on either side of the tidal inlet from project-induced erosion associated with the jetties and ebb/flood bar system. This task is interrelated with the shoreline morphology task described above.

## Construction & Maintenance

### Construction Cost Estimates

This task consists of the preparation of construction cost estimates for the three restoration alternatives. This information is needed to assess the funding requirements for construction of the various restoration alternatives.

### Maintenance Cost Estimates

This task consists of the preparation of maintenance cost estimates for the three restoration alternatives. This information is needed to assess the funding requirements for long-term maintenance of the various restoration alternatives as well as to help establish maintenance responsibilities for the various agencies and organizations. This task is interrelated with the ebb/flood bar task described above.

## Water Quality

### Lagoon Water Quality

This task consists of numerical modeling and/or empirical analyses aimed at estimating the concentration of water quality constituents within the lagoon under the three restoration alternatives. This information is needed to help assess the project-related impacts on lagoon water quality.

### Nearshore Water Quality

This task consists of numerical modeling and/or empirical analyses aimed at estimating the concentration of water quality constituents within the nearshore coastal waters near the project site under the three restoration alternatives. This information is needed to help assess the project-related impacts on nearshore water quality. This task is interrelated with the ebb/flood bar task described above.

## **C. Budget & Schedule**

Potential timeframes and budget allowances to complete the engineering analyses were developed based on prior experience with similar wetlands restoration projects in Southern California. The analyses were also grouped according to work type. The results of this effort are shown in Table 1, which presents the grouping, timeframe, and allowance for each analysis. Adjustments in the project plan may need to occur based on initial studies. The total budget allowance, including overhead and contingency to complete these preliminary engineering tasks, was estimated to be \$ 500,000.

**Table 1. Timeframe and Budget Allowance Estimates for Engineering Analyses**

Analysis	Grouping	Timeframe	Allowance
Ebb & Flood Bar Growth Shoreline Morphology Coastal Erosion Protection	Coastal Processes	6-12 months	\$250,000
Construction Cost Estimates Maintenance Cost Estimates	Construction & Maintenance	1 - 2 months	\$50,000
Lagoon Water Quality Nearshore Water Quality	Water Quality	3 - 6 months	\$200,000
<b>TOTAL:</b>		<b>18 -24 months</b>	<b>\$500,000</b>

\* Based on simultaneous completion of parallel tasks with full funding.

#### **D. Methods and materials**

Standardized engineering methods that are accepted throughout the industry will be utilized. A quality assurance/quality control review process will be developed and utilized to ensure data collected and reports provided meet the needs of the restoration effort.

#### **E. Resources needed**

The co-trustees have access to the resources needed, if this SEP proposal is funded. The engineering work will be contracted out and administered through the DFG. Both the USFWS and DFG will oversee the completion of projects as co-trustees.

#### **F. Regulatory issues (environmental reviews, permits, etc.)**

In spring 2006, work began on the environmental review process required to comply with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). A public meeting was held in April 2007 to solicit input regarding the scope of the environmental document. Preparation of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is underway and is the next step in the CEQA/NEPA process. The analyses/studies must be completed in order to provide the information necessary to prepare the EIR/EIS.

#### **H. Work products and documents to be retained for records**

Copies of all final work products and documents will be retained for records. In addition, both the USFWS and DFG as federal and state agencies have records retention policies.

## **Work Plan for Supplemental Environmental Project Proposal**

### **Buena Vista Creek Habitat Restoration**

**May 27, 2008**

#### **A. Scope of work**

The 134 acre Buena Vista Creek Ecological Reserve was acquired for conservation in March 2007 by the California Department of Fish and Game (DFG). Approximately 12 acres located on the property have been degraded by agricultural land use. This site needs restoration to address this fallow agricultural land in the Buena Vista Creek flood plain and riparian corridor as well as upland areas. This project addresses 4 acres of this site. Restoration of this land to native habitats will benefit water quality in the downstream portions of the creek and Buena Vista Lagoon; improve riparian buffers in this reach of Buena Vista Creek; decrease excessive siltation and sedimentation; and create habitat for federally and State listed wildlife species such as the least Bell's vireo (*Vireo bellii pusillus*) and the coastal California gnatcatcher (*Polioptila californica californica*).

The proposed Buena Vista Creek Habitat Restoration Project is for the restoration of 4 acres of agricultural land from its current condition (fallow, minimal native plant components) to riparian habitat. The riparian areas are 2.2 acres and 1.8 acres. The project would include trash and debris removal, soils testing and amendment addition, if needed, pre- and post-emergent herbicide application and invasive plant removal, installation of native container plants and cuttings, and maintenance, monitoring and reporting until achieving success criteria.

#### **B. Task Descriptions**

Below is a list of task descriptions of the currently unfunded habitat restoration for the Buena Vista Creek Habitat Restoration Project.

##### Site clean-up

At this time the site is predominately clean of trash and debris. The only cleanup would be the removal of nonnative vegetation as part of site preparation.

##### Site preparation

Soil testing will be performed on each parcel to determine if any amendments are required. Soil amendments will be added as necessary. All areas will be treated with a pre- or post-emergent herbicide prior to plant installation. Overhead irrigation will be installed in the riparian areas using water provided by the already existing on-site artesian pond.

##### Plant Installation

Approximately 2000 plant cuttings per acre will be installed. Cuttings would primarily be willows (*Salix* spp.), but may include other riparian species. All cuttings will be taken from existing vegetation on-site. Each area will also be hydroseeded with a native riparian seed mix consisting of the following species: *Salix lasiolepis*, *Platanus racemosa*, *Baccharis salicifolia*, *Rubus ursinus*, and *Rosa californica*.

### Maintenance and Monitoring

The sites would be maintained at least six times a year for the first two years after plant installation and then four times a year for the subsequent three years. This would include weed removal, any remedial measures (such as replacing willow cuttings, if deemed necessary), maintaining the irrigation system and qualitative monitoring. Qualitative monitoring will occur once per year for a period of five years, and will include photo documentation and site inspection for plant conditions and non-native species cover.

### **C. Budget & Schedule**

Potential timeframes and budget allowances to complete the habitat restoration were developed based on prior experience with similar wetlands restoration projects in Southern California. Table 1 presents the task groupings, timeframe, and budget. Adjustments in the project plan may need to occur as the project moves forward. The total budget allowance, including overhead and contingency to complete these preliminary tasks, is estimated to be \$395,000.

<b>Task</b>	<b>Timeframe</b>	<b>Allowance</b>
Site clean up & Site Preparation	6-12 months	\$150,000
Plant Installation	12-24 months	\$150,000
Site Maintenance & Monitoring	36 months	\$95,000
<b>Total</b>		<b>\$395,000</b>

### **D. Methods and materials**

Standardized habitat restoration methods that are accepted throughout the industry will be used. A quality assurance/quality control review process will be developed and utilized to ensure data collected and reports provided meet the needs of the restoration effort.

### **E. Resources needed**

The co-trustees have access to the resources needed, if this SEP proposal is funded. The work will be contracted out and administered through the DFG. Both the USFWS and DFG will oversee the completion of projects as co-trustees.

### **F. Regulatory issues (environmental reviews, permits, etc.)**

Both DFG and USFWS would request a restoration plan and agency notification. However, at this time, it is unlikely that regulatory permits, or California Environmental Quality Act (CEQA) or a National Environmental Quality Act (NEPA) analysis would be necessary or required based on the project description.

### **H. Work products and documents to be retained for records**

Copies of all final work products and documents will be retained for records. In addition, both the USFWS and DFG as federal and state agencies have records retention policies.