

York Creek Fish Passage Improvement and Stream Restoration Project

Project Information

1. Proposal Title:

York Creek Fish Passage Improvement and Stream Restoration Project

2. Proposal applicants:

Myke Praul, City of St. Helena

William Bennett, DWR - Fish Passage Improvement Program

Tom Taylor, Entrix, Inc.

3. Corresponding Contact Person:

Ted Frink

DWR - Fish Passage Improvement Program

California Dept. of Water Resources Division of Planning and Local Assistance Fish Passage Improvement Program PO BOX 942836 Sacramento, CA 94236-0001

916 651-9630

tfrink@water.ca.gov

4. Project Keywords:

Anadromous salmonids

Fish Passage/Fish Screens

Habitat Restoration, Riparian

5. Type of project:

Fish Screen

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

No

7. Topic Area:

Fish Passage

8. Type of applicant:

Local Agency

9. Location - GIS coordinates:

Latitude: 38.509

Longitude: -122.496

Datum:

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

York Creek diversion structure and York Creek Dam and Upper Reservoir on York Creek. West of the City of St. Helena along Spring Mountain Road. Diversion structure is approximately one mile west of St. Helena on river mile 2.5; York Dam is approximately 0.5 miles upstream at river mile 3.0. The Upper Reservoir area is approximately 1.4 acres.

10. Location - Ecozone:

2.2 Napa River

11. Location - County:

Napa

12. Location - City:

Does your project fall within a city jurisdiction?

Yes

If yes, please list the city: St. Helena

13. Location - Tribal Lands:

Does your project fall on or adjacent to tribal lands?

No

14. Location - Congressional District:

Mike Thompson

15. Location:

California State Senate District Number: 2

California Assembly District Number: 7

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: 28.5

Total Requested Funds: 1500000

b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

DWR in kind services

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)

Marcin Whitman DFG

Steven Thomas NMFS

Steve Rothert American Rivers

21. **Comments:**

Environmental Compliance Checklist

York Creek Fish Passage Improvement and Stream 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: City of St. Helena

NEPA Lead Agency (or co-lead:) Army Corps of Engineers

NEPA Co-Lead Agency (if applicable):

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

CEQA

- Categorical Exemption

X Negative Declaration or Mitigated Negative Declaration

- EIR

- none

NEPA

- Categorical Exclusion

X Environmental 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.

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.

CEQA initial study Dec. 1, 2001 Draft Mitigated Negative Declaration Jan. 2002 Final CEQA/NEPA July 1, 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

General Plan Amendment

Specific Plan Approval

Rezone

Williamson Act Contract Cancellation

Other

STATE PERMITS AND APPROVALS

Scientific Collecting Permit

CESA Compliance: 2081

CESA Compliance: NCCP

1601/03 Required

CWA 401 certification Required

Coastal Development Permit

Reclamation Board Approval

Notification of DPC or BCDC

Other

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation Required

ESA Compliance Section 10 Permit

Rivers and Harbors Act

CWA 404 Required

Other

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land.

Agency Name:

Permission to access state land.

Agency Name:

Permission to access federal land.

Agency Name:

Permission to access private land.

Landowner Name: Scott & Michelle Kerbs

Required

6. Comments.

Private land owner permission is only needed for the Diversion Structure portion of the proposal.

Land Use Checklist

York Creek Fish Passage Improvement and Stream Restoration Project

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

No

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

Yes

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

No

If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

Fish passage improvement

4. **Comments.**

Access to private property will be needed only on the Diversion Structure portion of the proposal.

Conflict of Interest Checklist

York Creek Fish Passage Improvement and Stream 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):

Myke Praul, City of St. Helena
William Bennett, DWR - Fish Passage Improvement Program
Tom Taylor, Entrix, Inc.

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):

William Bennett DWR Fish Passage Improvement Program

Ted Frink DWR Fish Passage Improvement Program

Chris Wilkinson DWR Fish Passage Improvement Program

Erika Kegel DWR Fish Passage Improvement Program

Matt Filice DWR Central District

Ginger Lu DWR Central District

Comments:

Entrix, Inc. staff also assisted in proposal development.

Budget Summary

York Creek Fish Passage Improvement and Stream 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.

Independent of Fund Source

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	York Creek Dam De-Construction	-	-	-	-	-	435725	-	-	435725.0	-	435725.00
2	Diversion Structure Construction	-	-	-	-	-	94000	-	-	94000.0	-	94000.00
3	Construction Mgmt and Inspection	1280	163420	46580	-	-	13200	-	-	223200.0	-	223200.00
4	Revegetation/Restoration						60050			60050.0		60050.00
5	Post-Construction Monitoring Yr. 1						218383			218383.0		218383.00
		1280	163420.00	46580.00	0.00	0.00	821358.00	0.00	0.00	1031358.00	0.00	1031358.00

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	Post construction Monitoring Yr. 2	-	-	-	-	-	173028	-	-	173028.0	-	173028.00
		0	0.00	0.00	0.00	0.00	173028.00	0.00	0.00	173028.00	0.00	173028.00

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 Yr 3		-	-	-	-	173028			173028.0		173028.00
		0	0.00	0.00	0.00	0.00	173028.00	0.00	0.00	173028.00	0.00	173028.00

Grand Total=1377414.00

Comments.

See Table 4 in body of proposal.

Budget Justification

York Creek Fish Passage Improvement and Stream Restoration Project

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

unknown

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

Mike Praul 95.72/hr Janet (Asst) 67.70/hr

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

Mike Praul 27.28/hr Janet (Asst) 19.20/hr

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

see table 4

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

see table 4

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.

see table 4

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.

see table 4

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 presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

see table 4

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

see table 4

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.

See Table 4

Executive Summary

York Creek Fish Passage Improvement and Stream Restoration Project

York Creek originates on the western side of the Napa Valley and joins the Napa River northeast of the City of St. Helena. There are two structures owned by the City of St. Helena that have been identified as major obstacles for passage of steelhead (*Oncorhynchus mykiss*) on York Creek. The first structure is the Diversion Structure that diverts water to the City's main reservoir for municipal and agricultural uses. The second structure is the St. Helena Upper Dam and Reservoir, approximately 0.5 miles (0.8 km) upstream of the Diversion Structure. The purpose of this project is to modify the Diversion Structure and remove the dam thereby improving steelhead passage to 2.5 miles of pristine shaded riverine aquatic habitat and restoring ecological stream function for this Napa River tributary. The project is a full-scale restoration project that will meet goals and objectives of the CALFED ERP Implementation Plan as identified in the Strategic Goals (SG 1, SG 2, SG 3, SG 4). Steelhead are federally listed fish species in the CALFED ERP Bay Region Ecological Management Zone. It would help restore the natural channel dynamics and connectivity to a stream system and thereby assist in the recovery of at-risk species (steelhead) by restoring access to anadromous fish habitat. The proposed monitoring program for the project will make it possible to evaluate the success of the project or identify problems in the approach.

Proposal

City of St. Helena

York Creek Fish Passage Improvement and Stream Restoration Project

Myke Praul, City of St. Helena

William Bennett, DWR - Fish Passage Improvement Program

Tom Taylor, Entrix, Inc.

York Creek Dam

York Creek Dam is an earthfill dam approximately 0.5 miles (0.8 km) upstream of the Diversion Structure. The Dam creates an impassable barrier to anadromous steelhead that can get upstream of the Diversion Structure. A 2.3 square mile (6 km²) area drains to the creek above the dam. The dam was built in 1900, is 140 feet (43 m) long, rises 50 feet (15 m) above the streambed with a crest elevation of 620 feet (189 m), and was originally made up of 12,670 yd³ (9,690 m³) of fill material (DWR 1966). A concrete side channel spillway is located on the eastern side of the dam, and runs adjacent and parallel to Spring Mountain Road. Prior to 1985, the reservoir had a capacity of 40 acre-feet (49,400 m³), but a spillway alteration performed in the autumn of that year reduced the capacity to 11.4 acre-feet (14,100 m³) and removed the structure from the jurisdiction of the Department of Water Resources (DWR) Division of Safety of Dams. The outlet is a slotted corrugated metal pipe riser with a trash rack that connects to a masonry culvert running under the dam and ending on the downstream side.

Since the City has owned York Creek Dam, four documented silt discharges from the dam into York Creek have occurred: in 1965, 1973, 1975, and 1992. After the 1992 discharge, the DFG filed a complaint with the Napa County District Attorneys Office. In 1993, DFG and the Napa County District Attorney's Office obtained an injunction in State Superior Court ordering the City to remove York Creek Dam. As a result of the legal action, the City agreed to a settlement in 1993 that mandated the removal of York Dam. Recently, the Superior Court of Napa County dismissed the injunction against the City (see Attachment A). Since 1993, the City has not used Upper Reservoir as a water source, but the reservoir had been dredged and it currently operates as an attenuation basin. Sediment has re-deposited in the reservoir since the 1993 dredging following several years of above average rainfall. York Creek meanders and braids as it flows through the sediment in Upper Reservoir and forms shallow pools in some areas.

In a letter to the DFG Regional office, NMFS identified York Creek Dam as "a complete barrier to nearly 2 miles of high quality steelhead habitat..." in the upper portion of the watershed (NMFS 2000a; Attachment B). A survey by the NMFS and DFG in September 2000 indicated that steelhead were abundant in York Creek below York Creek Dam (DFG 2000; Attachment C). In addition, York Creek contains high quality spawning and rearing habitat and has been designated as critical habitat for federally listed threatened Central California Coast (CCC) steelhead (NMFS 2000) within the ERP Bay Region Ecological Management Zone. York Creek Dam represents an impassable barrier to steelhead migration, and *O. mykiss* occurring in the two miles of suitable habitat above York Creek Dam are considered a resident population of rainbow trout.

Project Goals and Objectives

The York Creek Fish Passage Improvement and Stream Restoration Project **GOALS** are to:

- (1) increase steelhead production by restoring access to 2.5 miles (4 km) of spawning and rearing habitat and reducing diversion entrainment losses of juvenile fish;
- (2) restore more natural biological and fluvial processes to York Creek at and downstream of the York Creek Dam and Upper Reservoir site; and
- (3) restore approximately 2 acres (0.8 hectare) of shaded aquatic riverine habitat to the York Creek corridor.

The **OBJECTIVES** of the project are to:

- (1) remove York Creek Dam and accumulated sediment behind the dam to increase access for steelhead to historical spawning and rearing habitat upstream of the dam site (Meets CALFED Objectives: BR5, SG1, SG2, SG3, SG4);
- (2) restore a dynamically stable creek channel adjusted to the natural hydrologic regime throughout the Upper Reservoir and Diversion site and revegetate the riparian area throughout the restored channel with native plant species (BR5, BR1, SG4);
- (3) improve adult steelhead passage at the York Creek Diversion Structure site (BR8, SG4, SG1);
- (4) eliminate entrainment of juvenile steelhead into a municipal diversion while maintaining diversion operability (BR4, SG1, SG2O5); and
- (5) modify lentic habitats to restore lotic habitats throughout the project site, thereby reducing bullfrog reproductive success and beneficial habitats (BR3, SG4, SG5O7).

DWR-Fish Passage Improvement Program is currently providing planning, design and permitting services, and feasibility level engineering studies to the City to determine the best approach to improve fish passage at the City's Diversion Structure, remove York Creek Dam and restore the creek channel in the Upper Reservoir. The environmental documentation is ongoing for both the York Creek Diversion Structure fish passage alternatives and York Creek Dam removal project. Permits will be obtained upon completion of engineering design plans for both projects and final environmental documents by the late spring or summer 2002.

2. Justification

The project is a full-scale restoration project that will meet goals and objectives of the CALFED ERP Implementation Plan as identified in the Strategic Goals (SG 1, SG 2, SG 3, and SG 4). It would help restore the natural channel dynamics and contiguity to a stream system and thereby assist in the recovery of at-risk species by restoring access to anadromous fish habitat. The proposed monitoring program for the project will make it possible to evaluate the success of the project or identify problems in the approach.

It is well documented that structures that bisect natural stream channels impact natural physical and biological processes within watersheds (Johnson 1992; Olson et al eds. 1985; Baxter 1977). Dams alter recruitment and succession of riparian vegetation (Johnson 1992) and affect fish population distribution and abundance (Sale 1985; Pringle 1997); reduce or eliminate access to rearing and spawning habitat for fishes (Pringle 1997); change river erosion patterns and sediment distribution affecting river meander patterns and rates (Johnson 1992; Milhous 1985; Williams and Wolman 1984; Pringle 1997; Mount 1995); and alter flood flow distribution and frequency (Bradley and Smith 1986).

The channel of York Creek that is impacted by the current diversion configuration is known to provide spawning and rearing habitat for CCC steelhead (*O. mykiss*) and is designated as Critical Habitat for the recovery of the species (NMFS 2000b). The DFG and NMFS acknowledge habitat conditions above the Diversion Structure as prime suitable habitat for spawning and rearing steelhead in the Napa River watershed. Agency biologists have documented use of York Creek below the Diversion Structure by young-of-year *O. mykiss* based on recent electrofishing surveys from below the Diversion Structure to the base of York Creek Dam. Additionally, the Friends of the Napa River conducted snorkeling counts of *O. mykiss* in 53 Napa Valley tributaries as part of their "Total Basin Fish Survey Project" during the summer

of 2001 and documented juvenile and adult *O. mykiss* occupying pools in York Creek (C. Malan, Friends of the Napa River, pers. comm. 2001).

Improving passage at the Diversion Structure and removing York Creek Dam will provide consistent access to approximately 0.5 and 2.0 creek miles (0.8 and 3.2 km) respectively, for a total of about 2.5 miles (4 km) of pristine, high quality, shaded riverine aquatic habitat suitable for holding, spawning and rearing of steelhead. Screening the intake pipe at the Diversion Structure will also provide protection of juvenile steelhead and trout from entrainment. This project is the first step in ongoing and planned stream restoration efforts occurring in York Creek as well as other tributaries in the Napa River watershed. The City and the DWR Fish Passage Improvement Program are planning for the removal of York Creek Dam, improving passage at the Diversion Structure and restoration of the stream channel by fall 2002. This is in addition to multiple programs funded by CALFED and federal and local authorities for habitat assessments, sediment source evaluations, and fish population investigations related to river restoration or flood control planning efforts. The U.S. Army Corps of Engineers (Corps) Napa Valley Watershed Planning program has also identified the York Creek Diversion Structure and York Creek Dam as priority remediation projects.

3. Approach

The engineering and environmental approach for the project is a coordinated iterative design and environmental review/permitting process. Coordination of environmental review with the engineering design will facilitate incorporation specific construction methods and phasing construction activities with revegetation or channel restoration measures such that adverse environmental impacts can be avoided or prevented.

York Creek Dam Removal – Reference Objectives (1), (2), and (5)

Three engineering designs for the removal of York Creek Dam and restoration of the creek channel through the upper reservoir are under consideration. Alternatives range from partial removal of the dam and sediments with the natural creek flows creating the new channel to complete removal of the dam and all accumulated sediments and constructing the new streambed.

Engineering Design Evaluation

The following engineering design activities will be performed prior to award of construction and monitoring funding:

a) Topographic land surveys

Topographic surveys of York Creek Dam and Upper Reservoir were performed in 1993. Surveys are underway (October 2001) to obtain current and expanded topographic information for the key features of the project area. These features include the dam, spillway, outlet culvert, three (3) downstream channel cross-sections, five (5) cross-sections within the reservoir, four (4) channel cross-sections upstream of the reservoir, creek thalweg from the upper most creek cross-section to the reservoir and for 100 feet downstream of the dam, the scour hole downstream of the spillway, drainage inlets/outlets crossing Spring Mountain Road, trees larger than 12 in (0.3 m) dbh in the dam area and within 75 feet (23 m) downstream, and the landslide area across Spring Mountain Road from the spillway.

b) Baseline data for developing design alternatives

In addition to the topographic information indicated above, data that is still needed or is being gathered includes sampling and analysis of reservoir sediments to determine whether

contaminated, geotechnical stability analysis of the landslide area adjacent to the road passing the dam site, and hydrologic/hydraulic analysis. Topographic information is necessary to estimate grading quantities, design re-contoured creek channel, and provide necessary information for the geotechnical stability and hydrologic/hydraulic analyses. Sediment analysis information will determine whether the accumulated material is suitable for placement in the creek channel, use in other local restoration efforts, sale to a gravel company, or disposal. Geotechnical stability analysis is needed to determine if the removal of York Creek Dam will affect the stability of the landslide area. Hydrologic/hydraulic analysis is necessary to assess changes in flood risk that may result from the proposed alternatives. This will be addressed through use of HEC-RAS modeling to determine effects of dam removal on possible high flow events.

c) Development of design alternatives

Three concept-level designs have been developed for the removal of York Creek Dam and restoration of the creek channel through the reservoir. These alternatives (explained below) are based on information from 1993 topographic surveys and historic information. The volume of the dam fill material is assumed to be approximately 13,000 yd³ (9,900 m³), and the volume of accumulated sediment is estimated to be approximately 7,000 yd³ (5,400 m³). The conceptual design alternatives will be developed and analyzed based on current information, as it becomes available.

Design alternative 1: Removal of dam and partial removal of sediment within reservoir, stabilization of remaining material.

This alternative will remove most of the existing dam embankment and a portion of the sediment, debris, and vegetation within the reservoir, and allow the natural creek flows to define the stream morphology. Because less material will be removed under this scenario (approximately 4000 yd³ [3,100 m³] of sediment and 12,000 yd³ [9,200 m³] of dam fill for a total of 16,000 yd³ [12,200 m³]), there would be lower impact to existing vegetation within the reservoir area and lower costs for earth moving and disposal. This alternative is expected to have unknown impacts to the downstream area, with concerns that the erodible sediments and dam fill material will potentially reduce the overall quality of the restoration project.

Design alternative 2: Complete removal of dam and stored sediment behind dam, slope stabilization and revegetation.

The second alternative includes complete removal of York Creek Dam, appurtenances and accumulated sediment, restoring a streambed through the reservoir area, and re-vegetating disturbed areas. Under this scenario the most material will be removed, estimated at approximately 20,000 cubic yards (15,290 m³). This is composed of approximately 7000 yd³ (5400 m³) of reservoir sediments and 13,000 yd³ (9,900 m³) of dam fill. This alternative should alleviate most concerns about sufficient stabilization of sediment and embankment materials by completely removing those soils. An extensive revegetation effort will also be required as this alternative will necessitate the removal of all vegetation within the reservoir and dam area and will take the seed bank with the reservoir sediments.

Design alternative 3: Complete removal of dam, re-grading and reconfiguration of reservoir area to simulate the natural creek channel, slope stabilization, revegetation and restoration.

This alternative includes complete removal of York Creek Dam, appurtenances and accumulated sediment, re-grading and restoring the creek through the reservoir area. Rather than merely removing the dam and accumulated sediments, this alternative would use a portion of the

material to re-grade the reservoir area to simulate the configuration of the undisturbed creek channel upstream. Material could also be used to fill in and bury the spillway and to fill in the scour hole immediately downstream of the spillway. Use of material on site will greatly reduce hauling and disposal costs, as well as recreating a more natural creek channel through the project area. The amount of material that will be used for the channel re-contouring will depend on the side slopes and the creek bed and bank configuration selected, and is expected to be between 2500 and 7500 yd³ (1,900 and 5,700 m³). The final design dimensions will be based on the upstream and downstream cross-section information gathered from topographic surveys.

York Creek Diversion Structure - Reference Objectives (2), (3), and (4)

The engineering designs to improve fish passage at the Diversion Structure being considered include a standard fish ladder design with a screened diversion and an alternative incorporating natural rock weir step-pools that would replace the existing concrete Diversion Structure and a gravel bed interceptor for the diversion.

Engineering Design Evaluation

a) Topographic land surveys

Topographic surveys of the Diversion Structure are currently underway (October 2001). Surveys will include measurements to characterize the structure, determination of the elevation of the diversion pipe inlet at the creek and outlet at the Lower Reservoir, elevation of the creek bed 100 ft upstream and downstream of the structure, and location of trees larger than 12 in (0.3 m) dbh in the immediate project area.

b) Baseline data for developing design alternatives

Creek flow data is needed to properly design the fish passage structure and size the diversion pipe. York Creek is an ungaged stream so hydrographs will be synthesized from flow data available from any adjacent or nearby gauged watershed of similar size. Design of intake screens and pipes will be based on the best available information. If surface diversion is maintained, all fish screen designs will meet DFG and NMFS fish screen criteria for steelhead. Diversion flow volume and scheduling will be coordinated to minimize impacts to steelhead while still meeting the City's annual water needs and water right.

Design alternative 1: Vertical slot weir ladder and flat plate screen

The proposed vertical slot ladder design features a rectangular structure 40 ft (12 m) long by 5 ft (1.5 m) wide. Eight baffles are needed in this design at regular intervals of 5 ft (1.5 m) along the length to create a series of pools, which create areas for fish to rest within each pool before proceeding through the next slot.

The flat plate screen design will be based on a maximum diversion rate of 2 cfs (0.05 m³/s). The maximum approach velocity at the screen to meet regulatory agency requirements is 0.33 fps (0.1 m/s), therefore the minimum continually cleaned screen size to meet the above requirements is 6 ft² (0.6 m²). A passive screen (without mechanical cleaning) would require approximately 24 ft² (2.2 m²) of wetted screen area plus freeboard and additional area obstructed by structural members. The initial passive screen proposed is 5 ft (1.5 m) high and 6 ft (1.8 m) long.

Design alternative 2: Boulder weir step-pools and gravel bed interceptor

An innovative alternative fish passage design will be developed as a possible option for improving fish passage at the City's diversion. A design will be developed that incorporates

large rock or boulder weirs to create step-pools that would provide the head for diversion of flow into a gravel bed interceptor pipe.

The boulder weir step-pool design consists of a number of pools arranged in a stepped pattern separated by low boulder weir structures that span the creek width, each of which is higher than the one immediately downstream. Weir structures would have an arch-shape pointing upstream and the “legs” of the arch keyed into the creek banks. This configuration would allow the boulders to brace against each other along the arch and distribute the force of the creek flows. The low point of the weir would occur roughly mid-stream at the top of the arch and would get gradually higher closer to the creek banks. The drop in elevation between the weirs would be approximately one foot (0.3 m). Design of dimensions and spacing of the weirs and pools will be performed once topographic and suitable creek flow information is obtained.

The gravel bed interceptor is proposed to consist of 3 in (0.07 m) PVC perforated pipe overlain by a blanket of drainrock. The length of the perforated pipe will be sized to provide a minimum flow of 2 cfs (0.05 m³/s). The gravel bed interceptor is proposed to be located within the streambed at an elevation above the existing St. Helena diversion pipeline. The interceptor system will have the capability of being backwashed by water pumped into the perforated pipe in the event the flows are diminished by siltation within the drainrock.

Revegetation/Riparian Restoration Plan

The York Creek dam removal site occupies a steep-walled valley that contains riparian and upland vegetation typical of Napa Valley streams, and is also host to a number of nonnative plant species. Relatively undisturbed vegetation is found both upstream and downstream of the dam area, in both the riparian and upland zones, and can be used as reference sites to determine goals for the revegetation. In order to meet the stream restoration objectives for fish habitat, revegetation with appropriate native species is an essential component of riparian restoration on York Creek. Revegetation planning and implementation will follow guideline and objectives identified in the San Pablo Bay Watershed Restoration Program (Coastal Conservancy and Corps, November 2000).

The revegetation plan for the site following removal of the earthen dam and excavation of accumulated sediments will restore a self-sustaining native plant community that is sufficiently established to exclude nonnative invasive plants. Revegetation will replace vegetation that is removed due to construction and stabilize sediments in the stream channel riparian corridor and upper bank slopes. The species composition of the re-vegetated site will be designed to match that of (relatively) undisturbed sites both above and below the project site. Revegetation with woody riparian plant species will be accomplished with pole-cuttings – cut from healthy donor riparian trees that are growing in the reservoir sediments to be removed or adjacent populations. The use of locally growing material will provide individuals that are adapted to local conditions and whose genetic makeup may favor survival at that site. Revegetation of slopes is more problematic, due to the potential need for supplemental water during the first years of establishment, the slower growth rates of upland species, and the steep slopes. Revegetation of the upland areas will focus on establishing native grasses whose roots will stabilize sediments; natural recruitment of local species will be allowed to occur, with effort being made to control invasive species. An appropriate erosion control product for the slope and soil conditions will be applied to check erosion and hold seeds during the grass establishment phase.

Revegetation Plan and Tasks

Procuring and planting

Pole cuttings of alder (*Alnus rhombifolia*) and red willow (*Salix laevigata*) will be obtained from existing stands of these species both above and below the revegetation site; if insufficient material is available then nursery saplings will be used. Sufficient number of cuttings will be collected to plant 2 to 3 rows of saplings at a density of approx. one cutting per 4 to 5 linear feet of streambed; for the approximately 1000 ft (300 m) of planned streambed this will require approximately 1500 tree cuttings. Cuttings will be collected and planted during the dormant season (November to February). Seed mix of grasses and forbs that are native to the area and appropriate for the habitat will be obtained from a commercial source for seeding of slopes. Efforts will be made to obtain seeds from the local geographic area. All grading will be completed prior to planting, and soil surface will be loosened to allow root penetration. Planting will be carried out in late winter (January to February). Alders will be planted in 1 to 2 rows parallel to the stream channel edges. Willows will be planted in 1 to 2 rows at the stream edge and on floodplain terraces. Poles will be planted in the riparian zone in holes augured to a sufficient depth to contact subsurface water. Slope revegetation will be accomplished by applying an appropriate seed mix and erosion control material to slopes in late fall before the onset of the seasonal rains, which is a favorable time for seed germination and establishment. A contractor specializing in revegetation and erosion control will carry out planting and hydroseeding of slopes.

Weeding and maintenance

Poles, saplings and hydroseeded slopes will be monitored after planting for sufficient moisture and watered if necessary. Animal grazing damage will be monitored, and appropriate protective devices installed as necessary (e.g. collars or sapling protectors). Particular attention will be paid to weed control, which interferes with plant survivorship by competing with the planted species for water and space. Certain specific nonnative plant species that are very invasive and known problems in this area, particularly periwinkle (*Vinca major*), giant reed (*Arundo donax*) and English ivy (*Hedera helix*), will be more carefully monitored and particular effort will be made to eradicate them from the entire vicinity of the project. Saplings that die will be replaced during the first year, and patches of grass planting that do not germinate will be re-seeded.

4. Feasibility

DWR will be using engineering and restoration approaches that previously have been demonstrated as feasible and appropriate for the work proposed (e.g., FISRWG 1998, DFG 1998). In addition, Entrix has demonstrated through past stream restoration projects that their approach to project monitoring is also feasible and appropriate. The staffing level and resources available for the project from both DWR and Entrix will help ensure that the project deadlines can be met. However, if funding for project construction cannot be obtained prior to July 2002 then the project timeline would be delayed by approximately one year with construction occurring during summer 2003.

Memorandum of Agreement

DWR has drafted a Memorandum of Agreement (MOA) that outlines the services it will provide to the City in the form of engineering design and environmental planning and documentation for the project. The MOA is currently under review by the City. Additionally, DWR has met with NMFS, DFG, and the Corps (collectively referred to as "the resource

agencies” hereafter) regarding the project, and will be coordinating with these and other resource agencies throughout planning and implementation of the project.

CEQA/NEPA Compliance

DWR has begun conducting an Initial Study/Environmental Assessment and anticipates preparing a Mitigated Negative Declaration pursuant to the California Environmental Quality Act (CEQA). Responding to concerns from the resource agencies about the potential for contaminants in the sediment behind York Creek Dam, DWR’s Site Assessment Unit has sampled sediments and is having them tested for heavy metals, organochlorine pesticides and chromium. Results of the testing will help determine where sediments will be disposed. Potential flooding and increased stream bank erosion following York Creek Dam removal will also be addressed during project planning and is not anticipated to delay project implementation. DWR will follow all CEQA requirements through filing a Notice of Determination for the Project on behalf of the City as Lead Agency. DWR and the City expect to hold a public review meeting to present the proposed dam removal design plans and approach as well as the preferred option for improving anadromous fish passage at the Diversion Structure.

DWR archaeologists will survey the project vicinity for cultural resources and will consult architectural historians from Sonoma State University to determine whether York Creek Dam or the Diversion Structure meets criteria for historical significance. To ensure compliance with the National Environmental Policy Act (NEPA), DWR archaeologists will work with the Corps and will consult the State Historic Preservation Officer pursuant to Section 106 of the National Historic Preservation Act. In 1993, the Federal Emergency Management Agency (FEMA) consulted with the SHPO and determined that York Creek Dam did not meet criteria for listing on the National Register of Historic Places (NRHP) (Attachment D). It is anticipated that neither of the structures currently meets criteria for historical significance and that their removal can be mitigated through adequate documentation.

Environmental Permits

DWR will apply to DFG for a Streambed Alteration Agreement after completion of CEQA documentation for the project. NEPA will be triggered through the Corps authority to issue a 404 permit for the project. We anticipate that the proposed fish passage project will require a Clean Water Act (CWA) Section 404 permit (404 permit) from the San Francisco District of the Corps. Construction activities that may result in discharge of fill into the creek include the placement of cofferdams for temporary de-watering of the stream or temporary stockpiling of excavated sediment. Pursuant to CWA Section 401, the San Francisco Regional Water Quality Control Board (Regional Board) must certify that a project requiring a 404 permit complies with all pertinent water quality standards. The Regional Board will be consulted during project planning and an application for 401 certification will be submitted after CEQA-compliance is completed. The threatened CCC steelhead is one species listed pursuant to the Federal Endangered Species Act (ESA) that is known to occur within York Creek (DFG 2000). Because the potential exists that steelhead in York Creek, particularly rearing juveniles, could be incidentally “taken” (i.e., harmed) during the project, DWR will obtain ESA clearance from NMFS prior to construction. Because the project will require a 404 permit, NMFS has recommended that clearance for potential project related impacts to steelhead should be obtained through section 7 consultation between the Corps and NMFS.

The U. S. Fish and Wildlife Service identified the threatened California red-legged frog (*Rana aurora draytonii*), the threatened northern spotted owl (*Strix occidentalis caurina*), and the endangered California freshwater shrimp (*Syncaris pacifica*) as other federally listed animal

species with reasonable potential to occur in the vicinity of York Creek. However, surveys for red-legged frogs indicate that the species is not present at the project site and a habitat assessment conducted by DFG biologist Bill Cox indicates that the site does not contain suitable habitat for freshwater shrimp (DWR 2000). In addition, DWR has obtained information that a pair of northern spotted owls in the watershed maintains a territory approximately one mile upstream from York Creek Dam but would not be affected by the project (Attachment E). Table 1 summarizes need and status for listed species clearances.

5. Performance Measures

Monitoring Approach

The York Creek Fish Passage Improvement and Stream Restoration project performance evaluation will be completed using a Monitoring Plan that includes specific observations and measures to document the project activities and track parameters expected to be affected by project activities. The Monitoring Plan will include a range of administrative, implementation, outcome, and environmental change performance measures, as is typical for a restoration project. The administrative and implementation level performance measures are primarily items that are defined and tested during development of design criteria, approval of construction specifications, and verification of as-built condition. The outcome and environmental change performance measures are generally more complex. The desired outcome must be monitored throughout the direct and indirect project area, over an adequate period of time, and use proxy indicators for parameters that are linked to the objectives. Specific knowledge of the baseline (before) condition, changes during project implementation (and as-built), and the post-project (after) response are required.

Monitoring will be conducted during each year beginning in the fall of 2001 (funded by DWR) and continue for approximately three years after project completion. We anticipate that project sponsors and regulatory agencies will annually review monitoring results and assess the need for further monitoring. Confounding environmental conditions (e.g., floods, droughts, fire) during project implementation or the monitoring period can make interpretation of monitoring results challenging. Therefore, a local reference (control) site is proposed to be included in the Monitoring Plan to provide information on response to non-project factors.

To monitor anticipated environmental change related to each of the project goals and objectives, the various components of the ecosystem directly and indirectly affected by the project are evaluated. These components include: Hydrology, Channel Morphology, Fish Resources, Aquatic Invertebrates, Frogs, and Vegetation. The indicators of success vary by discipline or issue area, but observable, measurable parameters will be tracked as part of the 'before, during, after, and control' monitoring approach within each component.

Monitoring Plan Components

Hydrology

A modified streamflow regime is an anticipated result of the project, and the streamflow conditions during project implementation and the post-project monitoring period will affect other parameters to be monitored (e.g., sediment transport, fish movement). The hydrology monitoring component will provide baseline and post-project streamflow data, including the magnitude and duration of peak and base flows. At least three sites would be monitored: 1) the upstream end of the reservoir impoundment zone, to represent the unimpaired hydrology entering the project reach, 2) downstream of the York Dam site in the project reach (near or at the City diversion), and 3) in the nearby control site. Automated water level data loggers would be deployed at each site to continuously record changes in water stage (height) during the study

period. Periodic field measurements of streamflow at each site would be used to develop and update the stage-discharge relationship for each site. Correlation to nearby gauged streams may be used to supplement the site-specific flow data, particularly to place the implementation and monitoring period in historical context.

Channel Morphology

Recreating a dynamically stable stream channel within the former impoundment zone is a specific objective of the project, and channel conditions within the project reach during project implementation and the post-project monitoring period may affect other parameters to be monitored (e.g., riparian vegetation, aquatic invertebrates). The channel morphology component will include observation and measurement of several related parameters, including:

- ◆ channel planform, profile, and cross-section shape
- ◆ bed forms and bed composition,
- ◆ bank height, angle, composition, and stability,
- ◆ riparian vegetation density and vigor,
- ◆ woody debris presence and function,
- ◆ evidence of scour, erosion, flooding

The field monitoring of these parameters would include qualitative surveys of entire project affected and control reaches, with specific transects selected for quantitative data collection. Transects selected for long-term monitoring would be marked and monumented during the baseline surveys using benchmarks located outside the anticipated influence of project activities. The quantitative surveys at transect locations would use detailed geomorphic survey methods to document bed elevation profiles and cross sections, describe substrate composition and particle size distribution, and assess lateral and vertical channel stability. The geomorphic assessment of channel condition would be performed in coordination with a stream mesohabitat classification (DFG 1998).

Fish Resources

Increasing access for steelhead to historical spawning and rearing habitat upstream of York Dam and improving adult steelhead passage and eliminating entrainment of juvenile steelhead at the York Creek Diversion Structure site are direct project objectives. The focus of the monitoring will be to ascertain whether access is improved and to what degree anadromous steelhead use the stream channel upstream of the former barriers. Monitoring will determine the amount of use by adult spawners and rearing juvenile steelhead in the 0.5 mile (0.8 km) reach with improved access, the restored impoundment zone, and the newly accessible 2.0 miles (3.2 km) upper York Creek. Monitoring of a control site will provide a indication of what steelhead populations are doing in another similar tributary within the Napa River watershed during the baseline, implementation, and post-project period. Final field protocol for the steelhead-monitoring plan will be developed in conjunction with DFG and NMFS.

Mesohabitat typing of the study reaches will be performed in coordination with the channel morphology study during the baseline period to establish habitat characteristics and locations used in conducting the fish and invertebrate monitoring studies.

Population sampling to document juvenile steelhead abundance will be conducted for steelhead trout in each reach of York Creek and in the reference stream. Population sampling will be conducted by snorkeling or by multiple pass electrofishing in the fall. Sampling will be by habitat unit within each reach.

A winter/spring spawner and redd survey will document adult steelhead access and use in each reach of York Creek and in the reference stream. Survey crews will walk upstream from the mouth at the Napa River to locate spawning areas and redds. Subsequent surveys will then be conducted on focused areas every two weeks during the steelhead spawning season and will be timed such that weather and water conditions are suitable for observation of redds or adult fish.

Aquatic Invertebrates

The removal of York Creek Dam is expected to change sediment transport and composition in the reaches downstream of the dam. Subsequent habitat changes may affect the composition of invertebrate populations in York Creek. Because of their integral role in stream ecology, invertebrates are a component of the Monitoring Plan. Invertebrates are valuable for monitoring because they are ubiquitous and responsive to a wide variety of habitat influences and they respond relatively quickly compared to other aquatic organisms._

Ideally, the sampling will include two collection periods in each of two seasons (fall and spring) during the baseline and implementation years. Post-project sampling would include one collection in each of two seasons (fall and spring). A total of about six invertebrate sampling sites would be on York Creek (above York Creek Dam, in the impoundment zone, and below York Creek Dam), with three sites on the reference stream. Sample collection will take place in randomly chosen riffles following the non-point source sampling design and sample collection protocols from DFG's California Stream Bioassessment Procedures (CSBP) (Harrington and Born 2000). The sample riffles will be selected to have the most similar characteristics possible (based on the mesohabitat classification). Samples will be processed by an experienced, qualified lab according to CSBP protocols. Macroinvertebrates will be identified to the taxonomic level currently recommended by the Level III CSBP. Physical habitat and water quality parameters will be measured at each sampling location in conjunction with sampling efforts and according to CSBP protocols. Anticipated metrics to be calculated from the invertebrate data set include taxa richness, EPT richness, tolerance and sensitivity measures, and functional feeding group composition.

Frogs

Reducing bullfrog reproductive success and habitats beneficial to bullfrogs are specific project objectives. Monitoring of channel morphology and mesohabitat types (see above) provide measures of project success related to these objectives, but frog population studies are also part of the Monitoring Plan.

Baseline data on the numbers of bullfrogs and other frogs will be collected during the spring to late-summer period. Nocturnal surveys will be conducted to determine the presence of adults, and daytime surveys will be performed to determine the presence of tadpoles. Surveys will be conducted in the York Creek project reaches and at the control stream. At least four surveys will be performed during each monitoring year. Observers will carefully survey the water, vegetation, and stream banks. The location and species of each frog will be documented. A density index of frogs will be calculated based on the number of observed frogs per 100 feet. Repeat surveys will be performed after project implementation. The frog population and habitat changes will be used to determine project effectiveness.

Vegetation

Restoring native plants to the area along the restored channel in the impoundment zone is an objective of the project, including both the riparian and upland areas in the project site.

Determining the success of the re-vegetation plan is an important component of project monitoring.

Baseline monitoring of the project area will be used to document pre-project plant community status. Baseline conditions will be determined by conducting a survey of vegetation in the riparian and slope areas of the project area, and representative adjacent undisturbed areas that provide an indication of likely target conditions. Permanent transects and photographic points will be established for the monitoring program. Species composition and density will be documented.

Assessments of the re-vegetated area at the time of implementation will document areas of active planting and seeding. Pole and tree plantings will be inventoried and labeled to facilitate the survivorship monitoring.

Post-project site surveys will be used to record survivorship of planted trees in the riparian zone, germination and establishment of grasses and forbs planted from a seed mix, natural recruitment in the riparian and slope areas, and the presence of non-native, invasive species. Monthly review of the plantings would be conducted during the first year, with quarterly checks during the remainder of the monitoring period.

Monitoring of natural vegetation recruitment, as well as the germination and establishment of plants from a seed mix will be accomplished by repeat surveys of established transects and comparing photos taken at permanent photographic points. Species composition and percent cover will be monitored on a quarterly basis.

Non-native, invasive species will be identified throughout the re-vegetated area on a monthly basis during the first year. Species composition and number will be identified prior to their removal. Removal will be typically performed by hand-pulling.

6. Data Handling and Storage

Data for all surveys and technical studies will be available from City staff and will be provided to CALFED program staff or the public upon request. Results will be written in technical reports that will be made available to CALFED program staff and resource agencies and other stakeholders. Results of steelhead, macroinvertebrate, frog, riparian vegetation and post-dam removal sediment monitoring will be written in peer-reviewed reports and submitted to CALFED program staff upon completion of monitoring. The evaluation of structures constructed to improve fish passage at the York Creek diversion will also be written in a peer-reviewed report submitted to CALFED program staff. In addition, interim results for different components of the monitoring plan will be submitted to CALFED program staff as part of quarterly reporting.

7. Expected Products/Outcomes

- A) Fish Passage at Diversion: project will improve access for adult and juvenile steelhead to 0.5 miles (0.8 km) of habitat upstream of the Diversion to York Creek Dam.
- B) York Creek Dam removal: will open an additional 2 miles (3.2 km) of steelhead habitat upstream of the dam.
- C) Channel restoration: will reestablish natural channel fluvial geomorphologic processes and restore construction site riparian vegetation.
- D) Construction Progress and Post-construction reports for Dam removal and Diversion fish passage improvement.

- E) Stream channel restoration weekly construction progress reports: restoration construction progress on channel recontouring and reconfiguration.
- F) Project site revegetation activities weekly or biweekly progress reports.
- G) Monitoring reports: quarterly technical memorandum on the monitoring data collected.
- H) Final annual reports on monitoring for all restoration objectives

8. Work Schedule

DWR and the City of St. Helena began project planning during winter 2001 and anticipate having a preliminary design plan completed by October 24, 2001 and a final design plan by November 15, 2001. Environmental clearances and permits are planned for completion by July 1, 2002 and project construction is planned to begin in July 2002 with completion by September 15, 2002. Construction costs for (1) York Creek Dam removal, (2) fish passage improvements at the York Creek Diversion Structure, and (3) riparian re-vegetation could be funded separately though ideally they would be funded simultaneously. Additionally, the DWR Fish Passage Improvement Program will fund pre-project monitoring with funding for post-project monitoring being supplied by CALFED ERP. Task breakdown and schedule is shown in Table 2.

B. APPLICABILITY TO CALFED ERP AND SCIENCE PROGRAM GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

1. ERP, Science Program and CVPIA Priorities.

York Creek is a tributary to the Napa River in ERP Ecological Management Unit 2.2 (Suisun Marsh and North San Francisco Bay). Our proposed fish passage improvements and stream restoration project in York Creek specifically address ERP Strategic Goal 1 (At-Risk Species) Strategic Goal 3 (Harvestable Species) and Strategic Goal 4 (Habitats), because it would assist in the recovery of steelhead by increasing the amount of spawning and rearing habitat available to the species (See Project Goals and Objectives). Removal of the dam will open an additional 2.5 miles (4 km) of spawning and rearing habitat for CCC steelhead and improving fish passage at the York Creek diversion will make the additional habitat reliably accessible to steelhead. Furthermore, the York Creek diversion is located within critical habitat for CCC steelhead (NMFS 2000b) and once York Creek Dam is removed all of the additional accessible habitat will be considered critical habitat. Additionally, the project addresses Strategic Goal 2 (Ecosystem Processes and Biotic Communities) because it would help restore the natural fluvial geomorphology and hydrologic regime to York Creek, particularly in the case that the Diversion Structure is entirely removed. Furthermore, the development of an operations schedule for the diversion that optimizes the timing and duration of water diversion would also assist the York Creek biotic community by providing more reliable flows during the driest periods of the year.

2. Relationship to Other Ecosystem Restoration Projects.

The project to remove York Creek Dam was identified as a specific restoration opportunity in the Napa Valley Watershed Management Feasibility Study Project Management Plan and improving fish passage at the York Creek Diversion Structure was considered a measure that would enhance overall restoration of York Creek (Corps 2001). NMFS and other independent evaluations have determined that the Diversion Structure is a significant impediment to steelhead movements in the creek.

Friends of the Napa River has been funded by the Rose Foundation to conduct juvenile steelhead counts for distribution and abundance in 53 tributaries in the Napa River Watershed for 2001. This data will be available in a GIS database format in the future and FNR is seeking additional funding to conduct continuing surveys in subsequent years.

The San Pablo Bay Watershed Restoration Program (WRP) supported by the Coastal Conservancy and the Corps is directed to facilitate rejuvenation of streams, rivers, wetlands and uplands areas within the watershed that drains to the San Pablo Bay. The Napa River is part of the San Pablo Bay watershed and CALFED and WRP has funded stream restoration activities such as bank stabilization and riparian restoration on Napa River tributaries. The Napa County Resource Conservation District (RCD) funded by a CALFED grant, has been working with landowners in Sulphur Creek (adjacent tributary to York Creek) to improve steelhead habitat. Projects have included looking at removing a damaged concrete fish ladder, redefining a flow channel for fish migration, constructing pools and riffles, and re-vegetating stream banks (San Pablo Bay Watershed Restoration Program Final Report, Nov. 2000).

Under the Napa County Flood Protection and Watershed Improvement Authority there are County-wide watershed improvement/flood protection projects identified for York Creek and other tributaries that are funded by local taxes and are planned in accordance with guidelines developed by the Napa County RCD (County of Napa Watershed Authority Ordinance 2001). These projects include floodplain and open space management and protection or restoration.

3. System-wide Ecosystem Benefits.

The Napa River and its tributaries, including York Creek, provide the largest ecologically rich and diverse riverine system within the San Pablo Bay watershed ecosystem. The Corps Napa Valley Watershed Management Feasibility Study (WMFS) identifies problems and opportunities for implementing environmentally beneficial projects in Napa Valley, with an emphasis on watershed restoration. The WMFS identifies York Creek Dam as being a contributing factor in the degradation of riparian habitat because of sediment releases on downstream habitat. The WMFS also identifies the lack of riparian cover in the York Dam area, which has increased water temperature and sedimentation along the creek and has resulted in poor water quality. The proposed modifications of the Diversion Structure, the removal of York Creek Dam would reverse those problems. The proposed project would reconnect the Napa River with approximately 2.5 miles (4 km) of critical spawning and rearing habitat, and would restore approximately 2 acres (0.8 hectare) of riparian habitat, which would benefit numerous species of plants, fish, and wildlife in the CALFED ERP Bay Region Ecological Management Zone.

C. QUALIFICATIONS

See Table X

D. COST

Cost Sharing

DWR Fish Passage Improvement Program is a cost-share partner with the City of St. Helena by providing staff time to coordinate planning and design of the Dam removal and enhancing anadromous fish passage at the Diversion Structure. DWR staff is producing all environmental documents and engineering design alternatives as necessary for the dam removal and fish passage improvement at the Diversion Structure. The City is also providing in-kind

services to the project through funding contracts for specific items of engineering data development. DWR will have contributed approximately \$XX to prepare and provide all documents necessary to move the projects to construction. The City will have contributed \$XX up through project construction and monitoring.

E. LOCAL INVOLVEMENT

Though currently there are no organized watershed groups or land stewardships in the York Creek watershed, DWR has contacted the Natural Resources Conservation Service (NRCS) and will work through NRCS and the Napa County RCD to coordinate with landowners in the watershed so that all stakeholder concerns will be addressed. Friends of the Napa River included York Creek as part of their “Total Basin Fish Survey Project” and have voiced their support for the project because of the benefits the project would provide to steelhead. The City and DWR will hold a public review meeting in St. Helena to discuss the plans for the proposed project. The public meeting will provide local individuals the opportunity to become familiar with the approach and alternatives and have questions and concerns addressed. This meeting will be coordinated with the Napa County RCD, NRCS and other State, federal and local agencies as appropriate.

F. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The City of St. Helena will comply with the state and federal standard terms.

G. LITERATURE CITED

- Baxter, R. M. 1977. Environmental effects of dams and impoundments. Pages 255-283. In: R. F. Johnson, ed. Annual Review of Ecology and Systematics, Vol. 8.
- Bradley, C. E., and D. G. Smith. 1986. Plains cottonwood recruitment and survival on a prairie meandering river floodplain, Milk River, southern Alberta and northern Montana. Canadian Journal of Botany. 64(7):1433-1442.
- Corps (U. S. Army Corps of Engineers). 2001. Napa Valley Watershed Management Feasibility Study Project Management Plan. San Francisco District, U. S. Army Corps of Engineers. April 2001.
- DFG (California Department of Fish and Game). 1998. California Salmonid Stream Habitat Restoration Manual, prepared by Flosi, G. S. Downie, J. Hopelain, M. Byrd, R. Coy, and B. Collins.
- DFG (California Department of Fish and Game). 2000. Memo from Bill Cox, District Fishery Biologist, Department of Fish and Game, to Region 3 office files. Yountville, California, September 29, 2000.
- DFG and CDF (California Department of Fish and Game and California Department of Forestry and Fire Protection). 2000. Northern spotted owl database management system. Version 2.0. CDFG, Habitat Conservation Planning Branch, Sacramento, California.
- DWR (California Department of Water Resources). 2001. York Creek Dam removal and stream restoration project, York Creek, Napa County. California red-legged frog (*Rana aurora draytonii*) field survey results and California freshwater shrimp (*Syncaris pacifica*) habitat assessment. Prepared for the City of St. Helena.
- FISRWG (Federal Interagency Stream Restoration Working Group). 1998. Stream corridor restoration: principles, processes, and practices. By FISRWG (15 Federal agencies of the U. S. Government). GPO Item No. 0120-A; SuDocs No. A 57.6/2:EN 3/PT.653. ISBN-0-934213-59-3. Available on-line at http://www.usda.gov/stream_restoration/.
- Hanson Environmental, Inc. 2000. Assessment of potential upstream passage of anadromous salmonids at the City of St. Helena dam site on York Creek, Napa County. Prepared for the City of St. Helena by Hanson Environmental, Inc., Walnut Creek, California.
- Harrington, J. and M. Born 2000. Measuring the Health of California Streams and Rivers: A methods manual for water resource professionals, citizen monitors, and natural resources students. Sustainable Land Stewardship International Institute, Sacramento, CA 166pp.
- Johnson, W. C. 1992. Dams and riparian forests: case study from the upper Missouri River. Rivers. Vol. 3, No. 4.: 229-242. S.E.L. and Associates, Fort Collins, CO.

- Milhous, Robert T. 1985. Sediment transport, instream flows, and the small hydro project. In: Olson et al. eds. 1985. Proceedings of the Symposium on Small Hydropower and Fisheries, May 1-3, 1985, Aurora, CO. American Fisheries Society, Bethesda, Maryland.
- Mount, J. F. 1995. California rivers and streams: the conflict between fluvial processes and land use. University of California Press, Berkeley.
- NMFS (National Marine Fisheries Service). 2000. Designated critical habitat: critical habitat for 19 evolutionarily significant units of salmon and steelhead in Washington, Oregon, Idaho, and California. Federal Register 65: 7764-7787
- Olson, F. W., R. G. White, and R. H. Hamre, eds. 1985. Proceedings of the Symposium on Small Hydropower and Fisheries, May 1-3, 1985, Aurora, CO. American Fisheries Society, Bethesda, Maryland.
- Pringle, C. M. 1997. Exploring how disturbance is transmitted upstream: going against the flow. J. N. Am. Benthological Soc. 16(2):425-438.
- Sale, Michael J. 1985. Aquatic ecosystem response to flow modification: An overview of the issues. In: Olson et al. eds. 1985. Proceedings of the Symposium on Small Hydropower and Fisheries, May 1-3, 1985, Aurora, CO. American Fisheries Society, Bethesda, Maryland.
- Williams, G. P. and M. Gordon Wolman. 1984. Downstream effects of dams on alluvial rivers. Geological Survey Professional Paper 1286, 83p. U.S. Government Printing Office, Washington D.C.

TABLES AND FIGURES

Table 1. Listed species with reasonable potential to occur in York Creek and status of regulatory compliance for York Creek Dam removal and fish passage improvement project.

	Listing Status		Survey status for York Creek Watershed	Anticipated Regulatory Action
	Federal	State		
Steelhead	T	---	Surveys positive	Section 7 Consultation
Northern Spotted Owl	T	---	Surveys positive	Letter of Concurrence
Red-Legged Frog	T	---	Surveys negative	Letter of Concurrence
California Freshwater Shrimp	E	E	Habitat assessment negative	Letter of Concurrence

Table 2. York Creek Fish Passage Improvement and Stream Restoration Project Work Schedule

	2001			2002				2003				2004				2005	
TASK	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring
Environmental Compliance & Permitting																	
Biological Surveys																	
Phase II Site Assessment																	
Environmental Documents & Permits																	
Engineering																	
Topographic Surveys																	
Conceptual Plan/Preliminary Design																	
Final Design and Plans & Specs																	
Construction Contract Bid Process																	
Construction for Dam Removal																	
Construction for Diversion Improvements																	
Riparian Revegetation																	
Construction Management																	
Monitoring																	
Project Evaluation & Monitoring																	
Fish & Aquatic Invertebrate Monitoring																	
Bullfrog Monitoring																	
Riparian Revegetation Monitoring																	
Fluvial Geomorphology Monitoring																	
Project Management																	
Quarterly Reports																	
Final Monitoring Reports																	

CALFED ERP funds

DWR Fish Passage Improvement funds

City of St. Helena funds

Table 4: Budget Summary

Quant.	Unit	Description	Unit Price	Extension
Dam De-Construction				
1 L.S.		Mobilization	\$12,500	\$12,500
1 L.S.		Clear & Grub (incl. Tree removal)	\$12,500	\$12,500
3000 C.Y.		Grading – onsite (fill ramps and spillway)	\$10	\$30,000
17000 C.Y.		Grading – export	\$20	\$340,000
1 L.S.		Remove misc concrete structures	\$9,500	\$9,500
1 L.S.		Remove existing inlet structure & arch culvert	\$2,500	\$2,500
45 L.F.		Temporary K-Railing	\$70	\$3,150
1 L.S.		Traffic control/signing	\$12,500	\$12,500
1 L.S.		Concrete wall in spillway	\$5,600	\$5,600
30 L.F.		Remove portions of existing concrete wall	\$75	\$2,250
55 L.F.		Install type A-77A guardrail	\$95	\$5,225
Construction Subtotal				\$435,725
Diversion Construction				
1 L.S.		Gravel Bed Interceptor Diversion Construction	\$10,000	\$10,000
1 L.S.		Existing Diversion Structure Demolition	\$30,000	\$30,000
300 Tons		Boulder Weir Materials	\$80	\$24,000
1 L.S.		Boulder Weir Construction	\$30,000	\$30,000
Diversion subtotal				\$94,000
Overall Construction Management and Inspection				
16 Wk		Construction Management	\$3,200	\$51,200
		Verification Construction Specs met		\$13,200
Construction Mgmt & Inspec. Subtotal				\$64,400
Revegetation/Restoration				
250 Tons		Rock slope protection (1/4 ton)	\$95	\$23,750
1 L.S.		Erosion control	\$6,300	\$6,300
1 L.S.		Revegetation/Restoration		\$30,000
Restoration Subtotal				\$60,050
Post-Construction Monitoring - Yr. 1				
		Hydrology		\$22,049
		Geomorphology		\$37,404
		Fish		\$81,142
		Invertebrates		\$29,472
		Frogs		\$13,233
		Vegetation		\$35,083
Monitoring Yr 1 Subtotal				\$218,383
Year 1 Subtotal				\$872,558

Table 4: Budget Summary (Cont.)

Quant.	Unit	Description	Unit Price	Extension
		Post-Construction Monitoring - Yr. 2		
		Hydrology		\$15,434
		Geomorphology		\$26,183
		Fish		\$56,799
		Invertebrates		\$20,630
		Frogs		\$9,263
		Vegetation		\$24,558
		Year 2 Project Oversight		\$20,160
		Year 2 Subtotal		\$173,028
		Post-Construction Monitoring - Yr. 3		
		Hydrology		\$15,434
		Geomorphology		\$26,183
		Fish		\$56,799
		Invertebrates		\$20,630
		Frogs		\$9,263
		Vegetation		\$24,558
		Year 3 Project Oversight		\$20,160
		Year 3 Subtotal		\$173,028
		3-Year Project Subtotal		\$1,218,614
		Contingencies (20%)		\$243,723
		Total Estimated Cost		\$1,462,337

York Creek Watershed

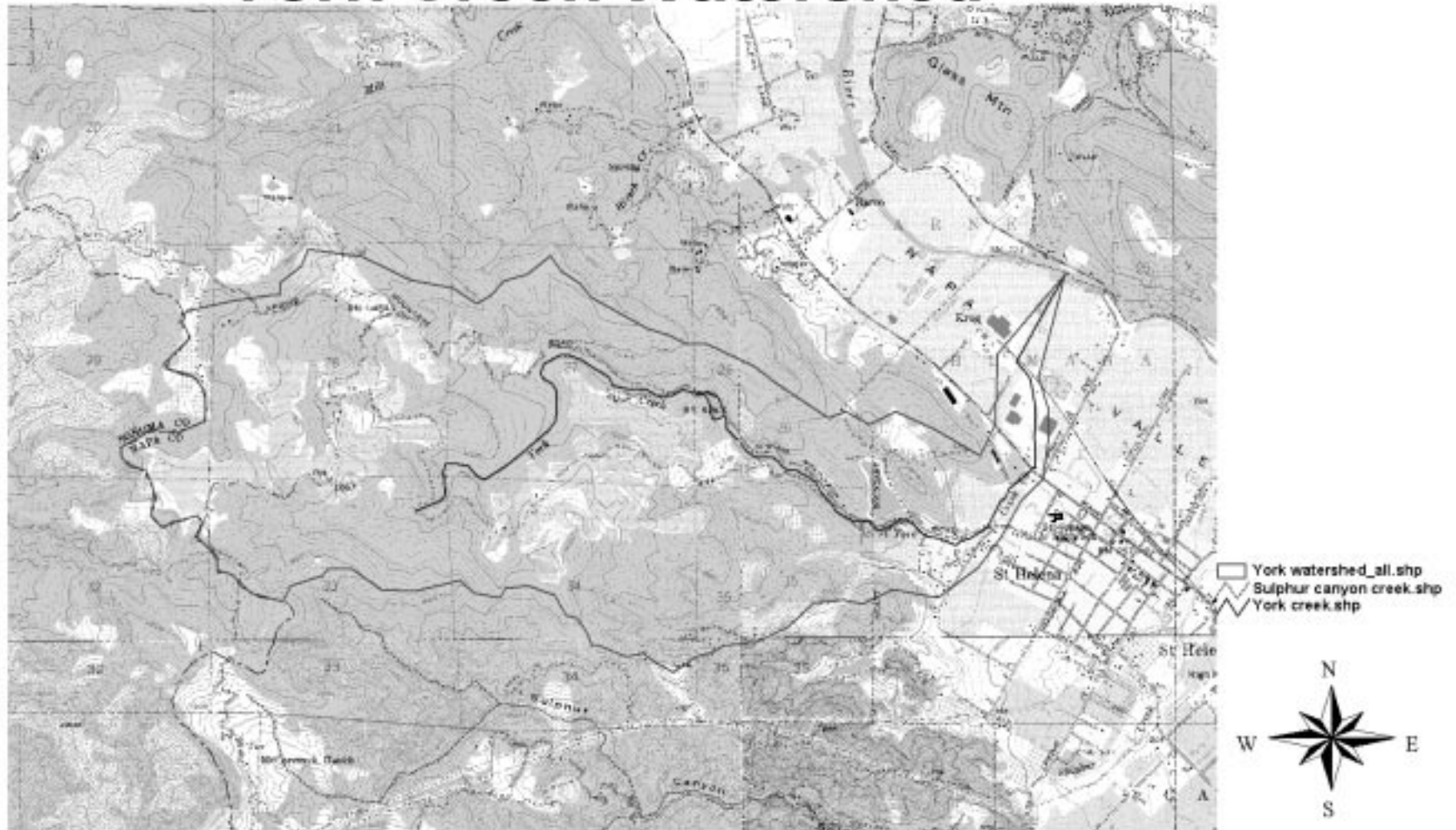


Figure 1. York Creek Watershed.

Table 4: Budget Summary (Cont.)

Quant.	Unit	Description	Unit Price	Extension
		Post-Construction Monitoring - Yr. 2		
		Hydrology		\$15,434
		Geomorphology		\$26,183
		Fish		\$56,799
		Invertebrates		\$20,630
		Frogs		\$9,263
		Vegetation		\$24,558
		Year 2 Project Oversight		\$20,160
		Year 2 Subtotal		\$173,028
		Post-Construction Monitoring - Yr. 3		
		Hydrology		\$15,434
		Geomorphology		\$26,183
		Fish		\$56,799
		Invertebrates		\$20,630
		Frogs		\$9,263
		Vegetation		\$24,558
		Year 3 Project Oversight		\$20,160
		Year 3 Subtotal		\$173,028
		3-Year Project Subtotal		\$1,218,614
		Contingencies (20%)		\$243,723
		Total Estimated Cost		\$1,462,337

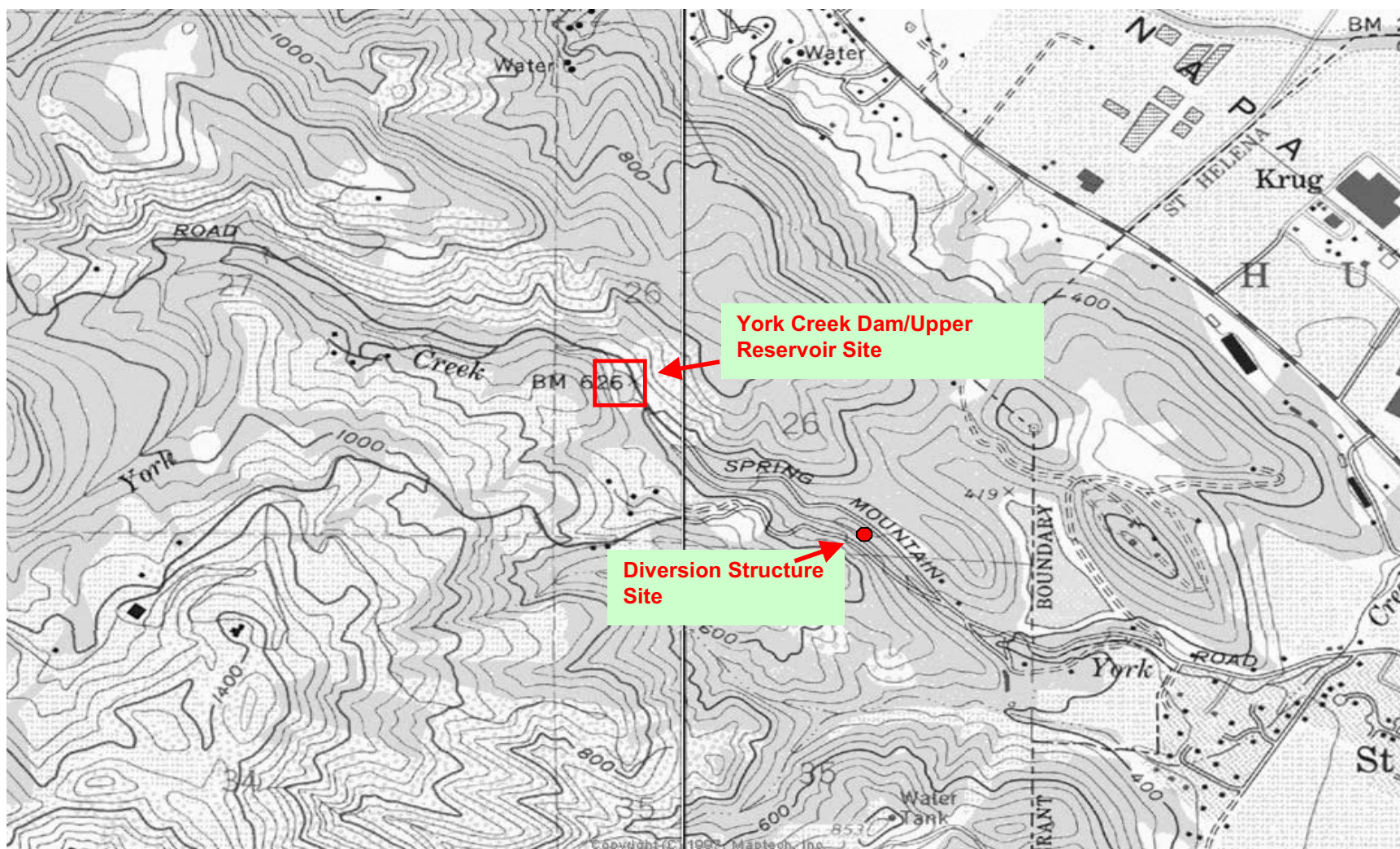


Figure 2. Project location on USGS 7.5" topographic maps. York Creek Dam/Upper Reservoir Site: Calistoga quadrangle T8N R6W SECT 26 1/4 SW 1/16 NW 1/32 SW and Diversion Structure Site: St. Helena quadrangle T8N R6W SECT 26 1/4 SE 1/16 SW (approximate).

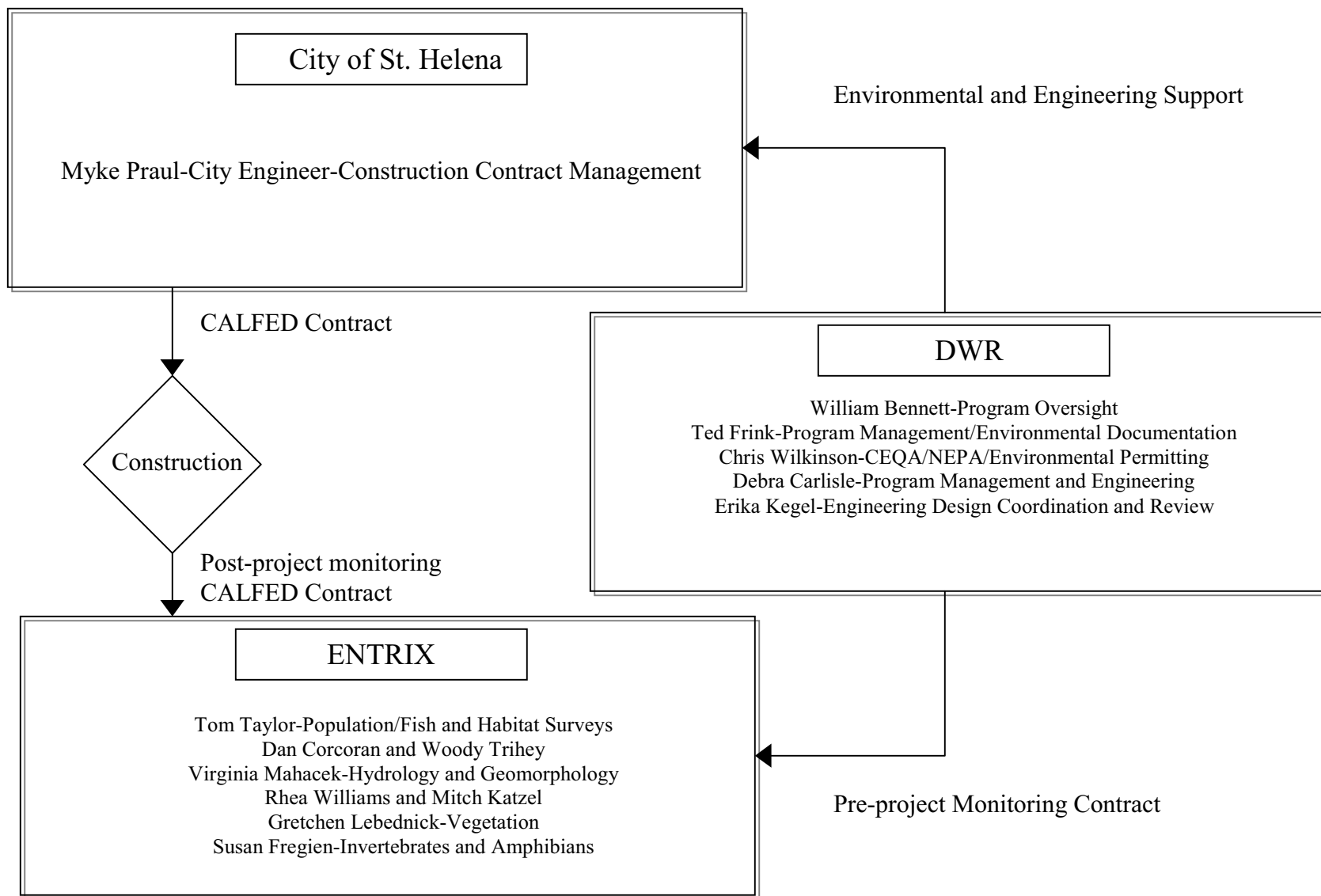


Figure 3. Project organization.

ATTACHMENT A

Diane M. Price, SBN 88155
Coombs & Dunlap, LLP
1211 Division Street
Napa, California 94559
Telephone: (707) 252-9100
Facsimile: (707) 252-8516

Attorneys for City of St. Helena

SUPERIOR COURT OF CALIFORNIA
COUNTY OF NAPA

The People of the State of California

Plaintiff,

vs.

The City of St. Helena, et al.

Defendant.

No. 66477

**STIPULATION AND ORDER
FOR DISMISSAL OF ACTION**

The parties hereto stipulate as follows:

- 1. On May 6, 1993, a Final Judgment Pursuant to Stipulation was filed in this matter.**
- 2. The Judgment shall be deemed null and void and the Court shall dismiss this action without prejudice forthwith.**
- 3. The People may retain the civil penalty and natural resource damages paid by Defendant to the People pursuant to the Judgment and Defendant City of St. Helena waives any interest therein.**

4. If the People file a new action based upon the same causes of action as set forth in the complaint on file in this action, dated 5/3/93, and seek as one of the remedies an injunction ordering the removal of the York Creek dam, each party reserves to itself all causes of actions and defenses that could have been raised in the original action, except for the following:

- A. Defendant City of St. Helena waives any statute of limitation defenses;**
- B. Defendant City of St. Helena waives any argument that the continued presence of the York Creek dam on York Creek does not constitute a violation of Fish & Game Code §5650 or is not a public nuisance.**

THE FOREGOING IS AGREED TO BY:

Date: _____, 2001

GARY LIEBERSTEIN
NAPA COUNTY DISTRICT ATTORNEY

By: _____
Daryl A. Roberts,
Deputy District Attorney

Date: _____, 2001 CITY OF ST. HELENA

By: _____
Bonnie Long, City Manager

APPROVED AS TO FORM:

By: _____
Diane M. Price
Attorneys for City of St. Helena

ORDER OF DISMISSAL

IT IS ORDERED that the Judgment entered on May 6, 1993 is declared null and void and this action is dismissed without prejudice in accordance with the provisions of the foregoing Stipulation.

Dated: _____
JUDGE OF THE SUPERIOR COURT

ATTACHMENT B

10/25/00 09:28 FAX 7075763435



NMFS SANTA ROSA

2003

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

October 4, 2000 F/SWR4:SE

Mr. Bob Snyder
California Department of Fish & Game
P.O. Box 47
Yountville, California 94599

Dear Mr. Snyder:

This letter responds to your request for clarification of the steelhead 4(d) rule and how it might apply to York Creek Dam. In June 2000, the National Marine Fisheries Service (NMFS) adopted protective regulations under section 4(d) of the Endangered Species Act (ESA) prohibiting "take" of 14 groups of salmon and steelhead listed as threatened under the ESA.

Take is defined within the ESA as: harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The definition of harm is further expanded to include altering the essential behavior patterns of spawning, rearing, and migrating. Habitat modification or degradation can be considered take if the modification actually kills or injures a protected species. It is important to note that the injury can include the death of future generations of the listed species. The consequences of take under the ESA can result in either civil or criminal penalties.

The 4(d) protective regulations went into effect on September 8, 2000. The protective regulations describe certain activities that are most likely to cause harm resulting in a violation of the ESA. These activities, which may pertain to York Dam, include, in part:

Constructing or maintaining barriers that eliminate or impede a listed species' access to habitat or ability to migrate...Constructing or operating dams or water diversion structures with inadequate fish screens or fish passage facilities in a listed species' habitat...Conducting land-use activities in riparian areas and areas susceptible to mass wasting and surface erosion, which may disturb soil and increase sediment delivered to streams...

How does the 4(d) rule apply to York Dam? Basically, there must be a listed species, and/or its designated critical habitat, specified under the 4(d) rule and affected by the dam. Central California Coast steelhead trout (CCC steelhead) (*Oncorhynchus mykiss*), listed as threatened under the ESA, are included in the 4(d) rule and are known historically to inhabit York Creek. Steelhead habitat reconnaissance surveys were conducted in 1999 for the City by Hanson



10/25/00 09:29 FAX 7075793435

NMFS SANTA ROSA

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Environmental Inc. The results of these surveys and subsequent site investigations conducted by NMFS and the California Department of Fish and Game (CDFG) staff indicate that steelhead are abundant in York Creek and that York Creek contains high quality spawning and rearing habitat. Also, York Creek is designated critical habitat for CCC steelhead. Critical habitat elements potentially impacted by the dam include, the channel, substrate, and water quality.

On July 28, 1992, large volumes of water discharged from the dam carried a considerable quantity of silt which had built up over time. The effects reached a mile or more downstream; silt suffocated and buried fish and aquatic invertebrates, and damaged fish habitat by filling in pools and covering riffles. According to the CDFG there is a history of this type of problem going back to 1969. Recognizing the potential for future occurrences, CDFG sought and received a court order in 1993 requiring the City to remove York Creek Dam and restore the stream.

The reservoir above the dam is again filled with silt and debris. Therefore, based on a history of chronic sedimentation events and considering the volume of material currently stored behind the dam, heavy rains could result in another large discharge of sediment that would destroy steelhead habitat and result in an unlawful taking. As described above, harm to steelhead (rising to the level of take) can be either mortality as a direct result of turbidity (i.e., a dead fish) or the loss or alteration of habitat. Should the sediment impair downstream spawning habitat, we assume that future generations are likely to be impacted. This could subject the owner of the dam to liability under the enforcement provisions of the ESA.

In addition to ongoing impacts associated with sedimentation and turbidity, the dam acts a complete barrier to nearly 2 miles of high quality steelhead habitat. In its report to the City, Hanson Environmental Inc. estimated that the dam blocks access to potential habitat for 5,000 juvenile steelhead. By preventing access to upstream spawning and rearing habitat, the dam is harming steelhead. The City also operates a diversion structure located approximately 1/2 mile downstream from York Dam. During an electrofishing survey conducted by CDFG and NMFS on September 28, 2000, large numbers of steelhead, including young of the year, were collected from the 1/2 mile reach below the dam, including the immediate vicinity of the City's intake screen. This diversion clearly hinders fish passage and has fish screens that do not meet NMFS or CDFG criteria. Because the City's intake is in an area where steelhead are vulnerable to entrainment, it is likely that the City's operation of its intake facility is also resulting in entrainment related mortality (take) of steelhead.

I realize the implications of the ESA can be confusing, and I therefore emphasize the importance of the dam's owner (1) understanding his/her ESA obligations and liabilities, and (2) fully understanding and eliminating any impacts.

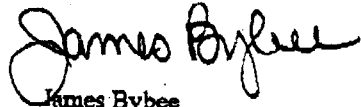
10/25/00 09:29 FAX 7075785435

NMFS SANTA ROSA

005

If you have any questions regarding this letter, please contact Steve Edmondson at (707) 575-6080.

Sincerely,



James Bybee
Habitat Conservation Manager
Northern California

cc: Lt. Colonel Timothy S. O'Rourke - SFCOE
D. Torquemada - NMFS, Law Enforcement
G. Stern - NMFS
D. Andrews-McIntosh, NMFS
Don Richardson - DF&G
Chuck Bonham - Trout Unlimited
Friends of the Napa River

ATTACHMENT C

Mr. Richard Ray
Acting Governor's Authorized Representative
Office of Emergency Services
2800 Meadowview Road
Sacramento, CA 95832-1499

Dear Mr. Ray

Subject: Winter Storms Repairs to York Creek Earth Dam
FEMA 979-DR; P.A. 055-64140
Subgrantee: City of Saint Helena

Prior to funding for repairs to disaster related damage for the Subject Property, FEMA was obligated to initiate the Section 106 Historic Review Process required in the National Historic Preservation Act.

That process is now complete and it has been determined that the York Creek Earth Dam does not meet the criteria for the National Register and therefore is not eligible for listing on the National Register of Historic Places (NRHP).

By not responding to the FEMA letter of August 10, 1993 within the time frame established in 36 CFR 800.1(c)(i)(ii) and 36 CFR 800.4(c)(5) it is assumed that SHPO agrees with that determination.

Therefore, FEMA has complied with the provisions of 36 CFR 800.4(c)(2) and the Section 106 process is complete.

FEMA will now release the DSR for repairs to the Subject Project from suspension.

If you have any questions please call Joseph Angello at
(818) 405-7509.

Sincerely,

Frank Kishton
Federal Coordinating Officer

cc: Steade R. Craigo, AIA
Acting State Historic Preservation Officer
Gene Armsteade, Public Works, City of Saint Helena

coupled with the particularly good physical environment of small but deep pools, abundant large

Conserving California's Wildlife Since 1870

woody debris, and very deeply undercut stable banks, provides an environmental well suited to growing a larger than usual number of larger than usual fish.

While no effort was made to capture and count all the steelhead in the stream, my estimate is that we easily saw over 200 fish in the approximately one mile sampled. If I had attempted to capture or observe all steelhead present in the sampled reach, the number would have been very much greater.

In addition to the steelhead, I also observed a small number of sculpin (*Cottus sp.*) which are common to cobble and boulder bottom streams used by steelhead. No other fish species were observed. Given the habitat I would not have expected other species. I also observed two crayfish (*Pacifasticus leniusculus*), which are also common in steelhead streams.

It is interesting to note that the abundance and size distribution of fish appeared no different upstream of the old diversion dam than downstream of the dam. While this dam poses a substantial impediment to the upstream passage of adult steelhead, I believe it is likely that during periods of heavy flow in the winter, when the adult steelhead are migrating, there periods when the fish can get over the dam. York Dam itself, however, is a total barrier to all migrating steelhead.



Bill Cox
District Fishery Biologist
Sonoma / Marin

Conserving California's Wildlife Since 1870

ATTACHMENT D

M e m o r a n d u m

To: CalFed Grant Program, Ted Frink, DWR

Date: 10-3-01

From: Department of Fish and Game: Lt. Don Richardson, Central Coast Region

Subject: Proposed grant for the City of St. Helena

This note is in support of the grant proposal by the City of St. Helena for the removal of a non-functional dam on York Creek. This is an old dam that has completely silted up and has had several silt discharges in the past. The dam is a total blockage for fish migration (Steelhead) and continues to be a threat of more silt discharges in the future. The creek below the dam has a good population of fish and with the blockage removed, approximately 2 miles of habitat will again be available to migrating fish. Removal of this dam and modification of a small water diversion structure below the dam (barrier at low flows) will help improve and restore some of the historic steelhead habitat. I encourage the approval of this grant so this project can be completed in the summer of 2002.

ATTACHMENT D

ATTACHMENT E

Theodore W. Wooster
Consulting Biologist and Designated Biologist-Retired
6645 Yount Street, Yountville, CA 94599
Telephone and Fax Number (707) 944-8451

July 30, 2001

Christopher Wilkinson
Environmental Specialist II
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Dear Mr. Wilkinson:

I received your July 20, 2001 letter regarding your planned removal of York Creek Dam and modification or removal of the downstream diversion.

Enclosed are copies of my calling records for NP33. Last time I got one of the pair was on March 16, 2001. There is a pair of Great-Horned owls in the area that may be keeping the owls quiet.

Your project as proposed should not affect the overall habitat base of these owls. The U. S. Fish and Wildlife Service basically is not concerned with land operations that are at least 1000 feet from the activity center, which I have pinpointed on your map.

If you need clearance from the Service, I can prepare a memo for you directed to Ken Hoffman of the U. S. Fish and Wildlife Service in Arcata. I will be continuing to monitor this territory this year and next.

If you have any questions, please call me at 707-944-8451.

Sincerely,



Theodore W. Wooster
Consulting Biologist and
Designated Biologist-Retired