



Reference: 008173

December 3, 2008

Serena S. McClain  
American Rivers  
1101 - 14<sup>th</sup> Street, NW, Suite 1400  
Washington, DC 20005

**Subject: American Rivers Application for Financial Support, Telegraph Creek Dam Removal, Shelter Cove, Humboldt County, CA**

Dear Ms. Serena McClain:

On behalf of the Shelter Cove Resort Improvement District #1 (District), SHN Consulting Engineers & Geologists, Inc., (SHN) is submitting an application for financial support for a feasibility study to evaluate a dam and culvert removal project on Telegraph Creek.

Telegraph Creek is approximately 2 miles long and discharges to the Pacific Ocean along the Lost Coast of California, a few miles south of Cape Mendocino. The District operates a water treatment plant with a water intake and dam structure on Telegraph Creek. The dam has been in place for over 40 years, providing a water diversion that supplies 99% of the water supply needs to the community of Shelter Cove. The Humboldt County Department of Public Works owns and maintains a triple-culvert watercourse crossing located approximately 75-feet upstream of the dam. The County culvert crossing has been classified as a barrier for juvenile and adult salmonid migration on the 5 Counties Clean-up Stream Crossing Inventory and Passage Evaluation report. This project aims to determine the feasibility of removing the District's dam and the County triple-culvert in an effort to enhance fish passage and habitat within Telegraph Creek.

Currently, there is a Settlement Agreement between the District and the National Oceanic & Atmospheric Administration (NOAA) to improve fish passage over the dam. The District began preliminary design of a fish ladder using NOAA's design criteria in the fall of 2008. During preliminary design, it was determined that design and construction of a new fish ladder would be extremely costly and would only marginally improve access to upstream habitat, due to the nearby upstream County barrier. NOAA has indicated that the County would likely put the culvert removal higher on their priority list if the dam were proposed for removal in conjunction with removal of the triple-culvert.

Dam removal is not mandated by the settlement agreement; however, during a November 3, 2008, meeting between the District, SHN, and NOAA biologists it was determined that dam removal is the option preferred by NOAA. Dam removal is above and beyond the required action dictated in the settlement agreement, but the District is willing to consider this preferred option to improve fish passage. Although it is obvious that dam removal would eliminate the obstruction to fish passage, it will negatively impact the District's water system intake and its ability to take water during the wide range of flow conditions in Telegraph Creek.

Serena S. McClain

American Rivers Application for Financial Support, Telegraph Creek Dam Removal, Shelter Cove, Humboldt County, CA

December 3, 2008

Page 2

Alternative water sources are being considered including construction of a new water intake system upstream of the existing dam and culvert, and development of the domestic groundwater wells that were installed in 2008. The District is willing to commit to NOAA's preferred option of dam removal, but not until alternative water sources have been developed, tested, and adequacy confirmed.

The proposed feasibility study is imperative in reaching a final goal of full barrier removal. The District would like to take the following approach for the development of the proposed feasibility study:

- Evaluate dam and culvert removal (that is, preliminary design, stream channel survey, identify necessary permits).
- Design, permit, and construct new upstream water intake.
- Evaluate domestic groundwater wells.

Removal of both the District barrier and the County barrier will significantly increase Telegraph Creek's ability to support northern California steelhead and other fish species.

Thank you for taking the time to consider this application. Included with the application are the following attachments:

- Vicinity Map (Figure 1)
- Preliminary New Upstream Water Intake Design (Figure 2)
- Preliminary Site Plan for Proposed Intake (Figure 3)
- Site Photographs
- Budget Spreadsheet

Please feel free to contact me at 707-441-8855 if you have any questions.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.



Patrick Barsanti  
Project Manager

PNB/EXK:lms

Attachment: American Rivers Application for Financial Support

**I. Project Information**

- A. Project phase to be funded: Feasibility Study (includes construction component for installation of new water intake)  
B. Amount of funding requested: \$35,137.00  
C. Name of barrier(s): Telegraph Creek Dam/Humboldt County Telegraph Creek Road Triple Culvert  
D. Owner of barrier(s): Shelter Cove Resort Improvement District #1/ Humboldt County Department of Public Works  
E. Watershed/River(s) affected: Telegraph Creek  
F. Project location: Shelter Cove, Humboldt County, California  
Section 10, Township 5 South, Range 1 East (See Figure 1)  
Assessor's Parcel Number: 109-011-01  
G. Project start date (mm/yy): March 1, 2009  
H. Project end date (mm/yy): October 31, 2010

**II. Applicant Information**

- A. Organization: Shelter Cove Resort Improvement District #1  
B. Address of organization: 9126 Shelter Cove Road  
Whitethorn, CA 95589  
C. Authorized Grant Signatory: Richard Culp P.E., General Manager  
D. Phone: (707) 986-7447  
E. Fax: (707) 986-7435  
F. Email: [info@sheltercove-ca.gov](mailto:info@sheltercove-ca.gov)  
G. Submission date: December 3, 2008  
H. Tax status: Tax exempt government agency  
I. Federal Tax ID #: 94-1672507  
J. Organization web page address: [www.sheltercove-ca.gov](http://www.sheltercove-ca.gov)

**III. Project Contact**

- A. Project officer: Richard Culp, P.E.  
B. Title: General Manager  
C. Address of contact: As listed above  
D. Phone: (707) 986-7447 Ext. 304  
E. Fax: As listed above  
F. Email: [gm@sheltercove-ca.gov](mailto:gm@sheltercove-ca.gov)  
G. Contact web page address: As listed above

**IV. Project Details**

- A. Longitude/latitude: N40 02.88 W124 05.24  
B. Structural dimensions of dam: 8.5 foot high x 10 ft. long x 60 ft. wide  
Structural dimensions of culvert: Triple culvert; 6 ft. diameter x 73 ft. long  
C. The location and distance in stream miles to all upstream river structures and whether each structure represents an insignificant, partial, or total barrier to fish passage:

A concrete dam is located 1.1 miles upstream from the Pacific Ocean and represents a partial barrier to adult fish passage during winter flows up to 30 cubic feet per second (cfs) and a total barrier to fish passage during the dry season due to low flows of 1.0 cfs. The dam has been in place for over 40 years and is used as part of a water treatment plant intake that provides the community of Shelter Cove with 99% of its potable water supply.

Approximately 75 ft upstream from the dam there is a triple culvert consisting of three, 6-ft diameter corrugated metal pipes owned and maintained by the Humboldt County Public Works Department. Using the passage evaluation criteria presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al., 1998) the crossing is classified as Gray; conditions may not be adequate for all salmonid species at all their life stages. Each culvert outlet is perched approximately 3 feet and fails to provide juvenile salmonid passage. The crossing represents a partial barrier to adult salmonids at high flow levels and a total barrier during low flows. See attached site photographs (attached). Both of these obstructions can also be viewed at: <http://www.sheltercove-ca.gov/water/water.htm> (copy and paste link into your browser)

- D. The location and distance to all downstream river structures and whether each structure represents an insignificant, partial, or total barrier to fish passage:

Historically, in late summer and early fall, Telegraph Creek does not enter the Pacific Ocean but disappears into sand, which acts as a natural total barrier to fish movement to and from the ocean.

- E. Distance to be opened as a result of proposed barrier removal (i.e., distance from barrier of interest to next upstream barrier):

There is approximately 4,900 ft of fish-bearing habitat in good condition upstream of the triple culvert according to the Revisited Humboldt County Migration Barrier Inventory-Humboldt County Migration Barrier Culvert Catalog (Taylor and Associates, 2003).

- F. Information on historic natural distribution of diadromous fish within the stream system:

A stream survey was conducted from 7/18/06 to 7/20/06 on Telegraph Creek by members of the California Conservation Corps and Watershed Stewards Project/Americorps. The Stream Inventory Report documents the current habitat conditions and recommends options for the potential enhancement of habitat for Chinook salmon, coho salmon, and steelhead trout.

Small populations of juvenile northern California steelhead (*Oncorhynchus mykiss irideus*), up to 9 inches long have been observed in Telegraph Creek between 1965 and 2004.

The specific observations are as follows:

- 09/24/65: California Department of Fish and Game (CDFG) found 45 Steelhead juveniles 3 to 9"
- 05/27/86: DFG fish survey found sliver (Coho) salmon fry in Course Creek less than a half mile above the dam
- 06/26/03: Taylor and Associates observed several juvenile salmonids of 3 to 6" in length in the stream channel upstream and down stream of the County crossing

- G. Names and current distribution of diadromous fishes benefiting from project within the stream system.

- northern California steelhead (*Oncorhynchus mykiss irideus*)
- Chinook salmon (*Oncorhynchus tshawytscha*)
- Coho salmon (*Oncorhynchus kisutch*)

V. Project Outreach

- A. Congressional district and member name: Congressional District #1  
Mike Thompson  
317 - 3rd Street, Suite 1  
Eureka, California 95501  
(707) 269-9595  
(707) 269-9598 (fax)  
<http://www.house.gov/mthompson/>
- B. Elected state government officials:
- Governor: Arnold Schwarzenegger  
State Capital Building  
Sacramento, CA 95814  
(916) 445-2841  
(916) 445-4633 (fax)
- State Senate: Wesley Chesbro, Senator  
District Office  
710 E Street, #150  
Eureka, CA 95501  
(707) 445-6508  
(707) 445-6511 (fax)  
Email: [Senator.Chesbro@sen.ca.gov](mailto:Senator.Chesbro@sen.ca.gov)
- State Assembly: Virginia Strom Martin  
District Office  
510 'O' Street Suite G  
Eureka, CA 95501  
(707) 445-7014  
Email: [Virginia.Strom-Martin@assembly.ca.gov](mailto:Virginia.Strom-Martin@assembly.ca.gov)
- C. Elected local government official: Johanna Rodoni, Second District  
Humboldt County Board of Supervisors  
825 - 5th Street  
Eureka, CA 95501  
Phone: (707) 476-2392  
(Clif Clendenen-Supervisor Elect)
- D. Name of newspapers and other media outlets: Times Standard, KEET-Public Television,  
KHSU-FM Public Radio
- E. Project Partners **(tentative)**:
- Humboldt County  
Chris Whitworth, Engineer  
Humboldt County Public Works  
(707) 445-7377  
Email: [cwhitworth@co.humboldt.ca.us](mailto:cwhitworth@co.humboldt.ca.us)
- Five Counties Salmonid Conservation Program  
Mark Lancaster, Program Director  
(530) 623-1458  
Email: [mlancaster@trinitycounty.org](mailto:mlancaster@trinitycounty.org)
- Christine Jordan, Assistant Program Manager  
(530) 623-1458  
Email: [cjordan@trinitycounty.org](mailto:cjordan@trinitycounty.org)

## VI. Project Goal Statement

The main project goal is the removal of a dam and triple-culvert on Telegraph Creek to re-establish fish passage and habitat for adult and juvenile salmonids to an additional 4,900 feet of stream. Full removal of the dam is contingent upon the Shelter Cove Resort Improvement District #1 (District) securing an alternative water supply. The goal of a feasibility study will be to determine funding opportunities and permitting requirements for dam and culvert removal, along with determining the technical feasibility of alternative water sources (wells and upstream intake).

## VII. Project Description and Need

- A. The proposed feasibility study is the necessary first step in the goal to remove the Telegraph Creek dam and triple-culvert. The feasibility study will evaluate the dam and culvert removal for potential benefits and shortcomings, reasonable likelihood of success, ability to be permitted by the regulatory agencies, and support by the local community. This feasibility study is consistent with the opinions of NOAA fisheries biologists for a complete barrier removal. If alternative water sources are proven to be adequate, the District fully commits itself to dam removal. If dam removal becomes feasible, it is likely that the County will partner and remove the upstream barrier. Until the dam is removed, the removal of the County barrier is of low priority. Preliminary negotiations have begun with the 5 Counties Salmonid Conservation Program and the Humboldt County Department of Public Works to investigate the feasibility of funding the removal of the County triple-culvert in conjunction with dam removal.

The CDFG recommends managing Telegraph Creek as an anadromous, natural production stream. Good water temperature and flow regimes exist in the stream offering good conditions for rearing fish. At this time, the dam and triple-culvert are in unsatisfactory condition for total fish passage. Removing the dam and culvert would reconfigure the stream to a more natural, free-flowing state reopening and improving historic habitat for diadromous fish species. Downstream sediment transport, along with other natural processes, would be able to occur unimpeded. Removal of these two unnatural obstructions would allow northern California steelhead access to approximately 1 mile of additional spawning and rearing habitat. This is a substantial increase in the carrying capacity for salmonids in the approximately 2 mile long Telegraph Creek drainage.

The continued development of domestic water wells would potentially decrease the District's need for the stream to supply water during low flow conditions. This reduction in demand on the stream to provide community water would allow more water to stay in the stream providing for better flow conditions in summer months. Improved flow conditions would potentially provide superior habitat conditions to those existing presently.

- B. Based upon the project goal, the scope of work for the proposed feasibility study includes:

**Dam and Triple-Culvert Removal Evaluation:** This task involves identifying the permitting requirements for dam and culvert removal; identifying and applying for grant funds for dam and culvert removal; coordinating with the appropriate agencies and partners involved for dam and culvert removal; and determining preliminary design of dam and culvert removal to the extent necessary to obtain permits. Additionally, the stream channel will be surveyed and stream grade control structures will be designed due to the change in elevation between the channel downstream and upstream of the barriers.

### Deliverables:

- Scope of work for permitting dam and culvert removal
- Stream channel survey report
- 50% preliminary design of dam and culvert removal

**Note:** The District is not requesting AR NOAA funds for the construction of the upstream intake and water well evaluation components of this feasibility study. It is only requesting funds associated with the restoration portion of the project. Funds are being requested for the development of preliminary design, stream channel survey, and identification of permitting requirements associated with the new intake, and the dam and triple-culvert removal. This is a necessary element to determine the feasibility of the project in its entirety.

**Upstream Intake:** The District is proposing to install a new upstream intake approximately 800 feet above the dam, which is also on property owned by the District. The new intake will include installing boulder weirs within Telegraph Creek to assist in creating a pool to divert a portion of the creek's water into a new headgate and undershot, which will provide water to a low maintenance water intake screen that filters out sediment prior to the water being gravity fed down to the existing Water Treatment Plant (Figures 2 & 3). Activities will include installing the boulder weirs, headgate and undershot; and purchasing and installing a water intake and screen system and approximately 800 feet of 8-inch piping down to the existing water treatment plant. Additionally, permitting will be included, because permits will need to be obtained prior to construction. Once the new intake has been installed, the system will need to be monitored to determine if it will deliver an appropriate quantity and quality of water throughout the year.

**Deliverables:**

- 100% design of new water intake
- Obtainment of required permits for construction of new water intake
- New water intake installed
- Quarterly monitoring reports for one year to determine the quality and quantity of water from new intake under all flow conditions

**Water Well Evaluations:** In 2008, the District had 5-domestic groundwater wells constructed next to existing water storage tanks (well information is available upon request). Prior to August of 2009, the District is planning on having 3 of the wells on-line. Department of Health Services (DHS) testing and approval has been granted on 1 well, and additional work is required to determine a sustained yield and groundwater quality from the other wells, per DHS standards. The District is planning on using the wells during the driest times of the year, when Telegraph Creek has its lowest flows.

**Deliverables:**

- Water well evaluation report documenting pumping and analytical data to determine the quality and quantity of water from the domestic water wells

- C. Changing stream flows associated with barrier removal will affect the river ecosystem, including channel formation, sediment transport, riparian communities, and wildlife. Any negative impacts to the river system as a result of barrier removal will be resolved through existing regulations, laws, and policies (e.g. Clean Water Act, Porter Cologne; and California Fish and Game Code). The feasibility study aims to determine those policies and regulations associated with the final goal of dam and culvert removal. Mitigation measures will be developed to relieve potential impacts associated with removal of the barriers.

There will be short-term negative impacts associated with the installation of the new upstream water intake structure. Installation of the intake structure will require a CDFG 1600 Streambed Alteration Agreement, U.S. Army Corps of Engineers Clean Water Act 404 permit, and Regional Water Quality Control Board 401 permit. These permits would identify potential negative impacts associated with construction and would include mitigation measures for limiting and avoiding those impacts (for example, all in-stream work would be limited in duration and during low flows to minimize potential impacts).

**D. Water Quality Control Plan for the North Coast Region (Basin Plan) :**

The Basin Plan designates the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. The project goal of dam and culvert removal will improve opportunities to protect those beneficial uses described in the Basin Plan. Existing beneficial uses designated for the Mattole River Hydrologic Area in the Cape Mendocino Hydrologic Unit (HU No. 112.00) include municipal and domestic supply, cold freshwater habitat, preservation of Areas of Special Biological Significance, wildlife habitat, rare (rare, threatened and endangered species), migration of aquatic organisms, and spawning (spawning, reproduction, and/or early development).

**Humboldt County Streamside Management Area (SMA) Ordinance:**

Pursuant to Humboldt County's Title 3, Land Use and Development, Division 1, Planning Zoning Regulation Chapter 6: General Provisions and Exceptions, Section 314-61.1 Streamside Management Area Ordinance, SMAs are sensitive habitat and need to be identified in relation to proposed developments. This ordinance serves to codify the "Interim Implementation Standards for the Open Space Element of the General Plan (Non-Coastal Zone)." The ordinance provides standards pertaining to development within streamside management areas and other wet areas. SMAs are defined as "a natural resource area along both sides of streams containing the channel and adjacent land." The ordinance identifies allowed development and prohibited activities within SMAs, stream channels, and other wet areas. No development is allowed within the SMA unless the County determines, based on specific factual findings, that such development would not result in significant adverse impacts to fish, wildlife, riparian habitat, or soil stability. The installation of the new water intake, as well as dam and culvert removal would require determination from the County. Factual findings are made with the biological report, which the County requires. The biological report shall identify potential impacts and incorporate mitigation measures that reduce potential impacts to a less than significant level. Development within the SMA or buffer is permitted by obtaining concurrence from CDFG and the County that the biological report mitigates impacts to a level of less than significant; upon such a determination, the County issues a special permit for the proposed development.

- E. The dam and water intake structures are critical components of the community water supply. The District is concerned that removal of the dam may jeopardize their existing water supply. However, residents are supportive of the dam removal project if they can be ensured that the development of an upstream water intake and domestic water wells will provide them with a viable water source, well into the future. Generally, residents are supportive of any project that aims to protect fish.
- F. The feasibility study does not require a large work force or an opportunity for public involvement. However, if this study determines that dam removal is feasible there will be opportunities for outreach and education. The public has followed the progress of the District in resolving fish passage problems through monthly reports available on the District's web site at: [www.sheltercove-ca.gov](http://www.sheltercove-ca.gov).
- G. The feasibility study will not provide any public safety improvements. However, if the goal of total barrier removal is achieved replacing the County crossing with a new and improved crossing avoids a potential blowout of the existing undersized triple-culvert. Also, the District has had concerns about residents climbing on the dam and potentially getting hurt. The District has fenced the area to deter this from happening, but dam removal will eliminate this concern entirely and enhance public safety.
- H. Preliminary work:

**Pre-Application Meeting:** On November 3, 2008, a meeting occurred between Richard Culp, General Manager (District); Dan Free and Margaret Tauzer (NOAA); Shannon Zimmerman, Patrick Barsanti, Lisa Stromme, Aaron Beavers (on conference call), and Aimee Weber of SHN. The main purpose of this meeting was to discuss options for compliance with the settlement agreement between District and NOAA. During the discussion it was made clear that dam removal is the option preferred by

NOAA biologists. Although it is obvious that dam removal would eliminate the obstruction to fish passage, it would negatively impact the District's water system intake. A thorough evaluation of the concept would resolve any issues prior to implementation of a dam removal project.

New Upstream Intake Preliminary Design: See Figure 2

Preliminary Site Plan for Proposed Intake: See Figure 3

Document Review: The CDFG Telegraph Creek Stream Inventory Report, along with the Five-County Clean-up Stream Crossing Inventory and Passage Evaluation-Humboldt County Sites report has been reviewed. This data will be useful in developing proper channel design during the feasibility study.

## VII. Building Resilient Communities

The project as proposed has the potential to reduce the local community's vulnerability to the affects of climate change.

- Relocating the existing water intake upstream and continued development of domestic wells provides the community with a more reliable municipal water supply. These viable water sources provide an opportunity for enhanced community livability.
- The District's current water intake requires extensive maintenance in the wet season due to sand, sediment, and debris accumulation. A low maintenance water intake screen would be installed on the new upstream intake. This would reduce the financial burden of the District to maintain the intake structure and in turn enhance community resiliency.
- Removal of the County triple-culvert would result in less time and money for future repairs associated with this failing structure. The reduced cost of maintenance would alleviate some of the County's funds for other necessary improvements.

## IX. Required Permits & Environmental Compliance

### A. Permits/Approvals Required (permits have not been obtained):

The first task in the feasibility study is to identify permits for the installation of the new water intake and dam/culvert removal. Permits will be obtained for the installation of the new water intake as a component of the feasibility study. The following permits are anticipated for the installation of the new upstream intake and dam/culvert removal:

CWA 404 Permit  
US Army Corp of Engineers  
David Ammerman  
P.O. Box 4863  
Eureka, CA 95502  
Phone: (707) 443-0855

1600 Streambed Alteration Agreement  
California Department of Fish and Game  
Scott Bauer  
619 Second Street  
Eureka, CA 95501  
Phone: (707) 445-6493

401 Water Quality Certification  
North Coast Regional Water Quality Control Board  
5550 Skylane Blvd., Suite A  
Santa Rosa, CA 95403  
Phone: (707) 576-2220

NOAA Informal Section 7 Consultation  
National Marine Fisheries Service  
1655 Heindon Rd  
Arcata, CA 95521  
Phone: (707) 825-5162

Special Permit (Streamside Management Area)  
Humboldt County Community Development Services  
Clark Complex  
3015 H Street  
Eureka, CA 95501-4484  
Phone: (707) 445-7541

**B. Has the State Historic Preservation Officer been consulted on the project?**

A State Historic Preservation Officer (SHPO) has not been consulted at this time. The task of identifying the permitting requirements and coordinating with the appropriate agencies will include consultation with the State Historic Preservation Officer. We do not anticipate any reservations from the SHPO.

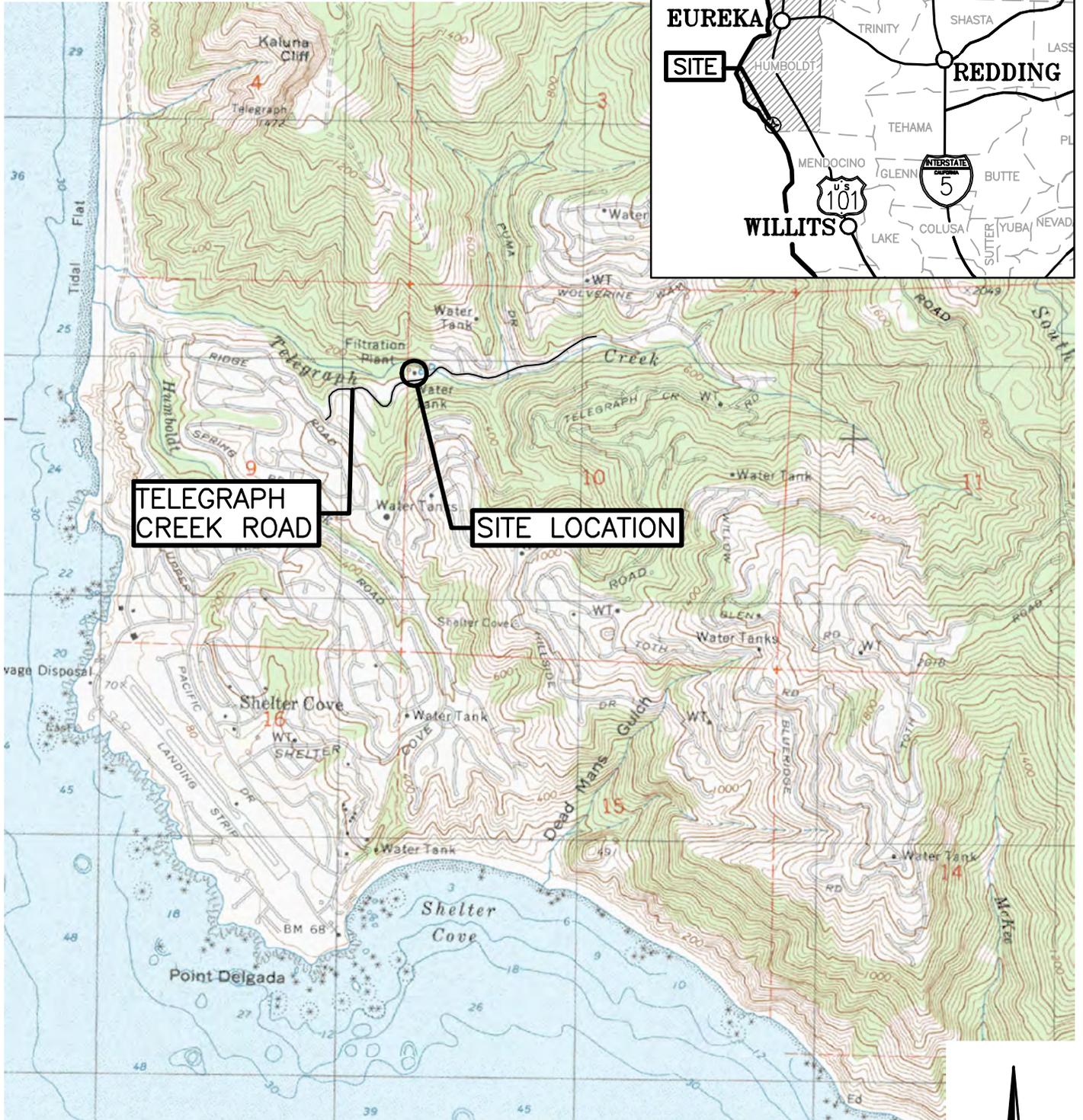
**C. NEPA Compliance Documentation:**

Construction of the new water intake structure upstream will require NEPA compliance. Along with NEPA compliance, the permit process for this project is coordinated with the environmental review process under the California Environmental Quality Act (CEQA). During the feasibility study, the project in its entirety will be analyzed to determine the potential environmental effects of the installation of a new water intake structure and dam/culvert removal. This analysis is required by state and federal law.

This documentation will be compiled during the feasibility study as a component of identifying and obtaining permits associated with the relocation of the existing water intake and dam/culvert removal

**X. Budget**

See attached spreadsheet.



**TELEGRAPH CREEK ROAD**

**SITE LOCATION**

SOURCE: SHELTER COVE  
USGS 7.5 MINUTE QUADRANGLE



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	Resort Improvement District #1 Shelter Cove, California	Site Location Map	
	December 2008	SHN 008173	Figure 1

TELEGRAPH CREEK  
FLOW DIRECTION

FLOOD PROTECTION  
BERM (100 YR)

HEADGATE AND  
UNDERSHOT

BURIED PIPE OR  
OPEN CHANNEL

DIVERTED WATER,  
8"Ø PVC TO WTP  
(800'±)

COANDA SCREEN

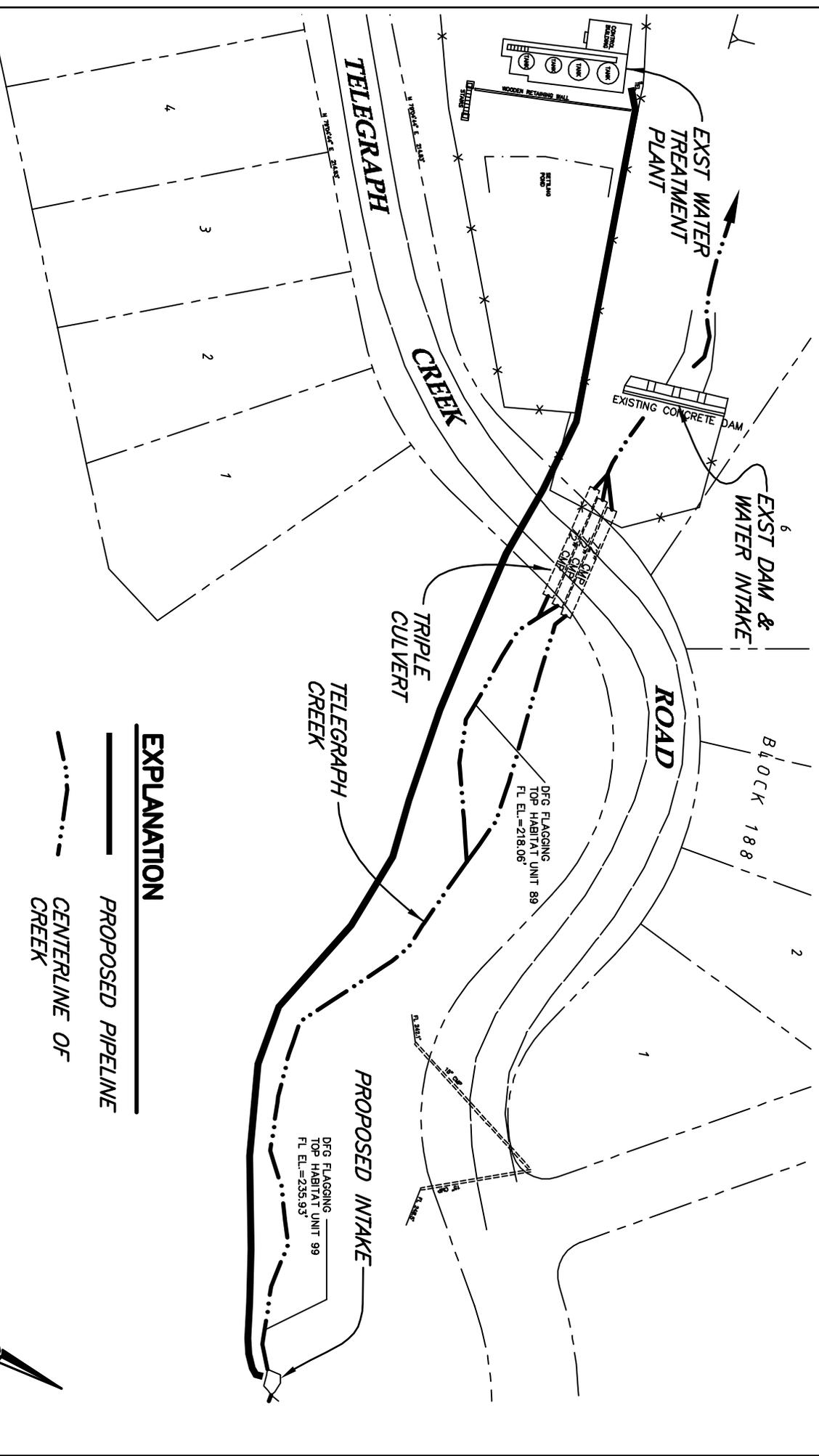
OPEN CHANNEL

FISH AND  
SEDIMENT  
DEBRIS BACK  
INTO STREAM

\* THESE ARE THE  
BASIC COMPONENTS.  
THE CONFIGURATION  
MAY CHANGE.

**POSSIBILITIES:** AUTOMATED UNDERSHOT GATE FOR CONTROLLING HEAD  
(SOLAR, POWER SOURCE)

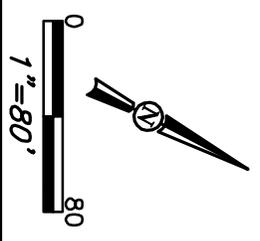
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**EXPLANATION**

- PROPOSED PIPELINE
- - - - - CENTERLINE OF CREEK

**NOTE:** FIELD SURVEY PERFORMED  
9/9/2005 AND 10/5/2005.



BASE MAP PROVIDED BY:  
LACO ASSOCIATES,  
DATED 12/22/05



December 2008	Resort Improvement District #1 Shelter Cove, California	Preliminary Site Plan for Proposed Intake	SHN 008173
			Figure 3

<b>X. Budget*</b>				
<b>Budget Item</b>	<b>Total Project Budget</b>	<b>American Rivers NOAA Request</b>	<b>Humboldt County</b>	<b>Matching Non-Federal (include source)*</b>
<b>Personnel Costs</b>				
<b>A. New Intake</b>				
District Salaries: General Manager (24 hrs x \$42/hr) WTP operator (24 hrs x \$35/hr) District personnel (24 hrs x \$25/hr)	\$2,448			\$2,448
Benefits (18%)	\$440			\$440
Volunteer time and coordination 20 volunteers x 5 hrs @ \$15/hr	\$1,500			\$1,500
Contractual Services: Consultant design/monit./reporting Proj. Mgr. (24 hrs x \$95/hr) Engr. (20 hrs x \$120/hr) Jr. Engr. (40 hrs x \$85/hr) Drafting (30 hrs x \$75/hr)	\$10,330			\$10,330 SHN current Engr. fees for preliminary design (\$5,000) not included in total for this phase of the project.
<b>B. Water Wells</b>				
District Salaries: General Manager (24 hrs x \$42/hr) WTP operator (24 hrs x \$35/hr) District personnel (40 hrs x \$25/hr)	\$2,848			\$2,848
Benefits (18%)	\$512			\$512
Volunteer time	0			0
Contractual Services: Consultant design, monitoring, reporting Proj. Mgr. (10 hrs x \$95/hr) Engr. (10 hrs x \$120/hr)	\$2,150			\$2,150
<b>C. Dam &amp; Culvert Removal</b>				
District Salaries: General Manager (40 hrs x \$42/hr) WTP operator (40 hrs x \$35/hr) District personnel (20 hrs x \$25/hr)	\$3,580			\$3,580
Benefits (18%)	\$645			\$645
Contractual Services: Consultant design, preliminary permitting Proj. Mgr. (40 hrs x \$95/hr) Engr. (40 hrs x \$120/hr) Jr. Engr. (40 hrs x \$85/hr) Drafting (60 hrs x \$75/hr) Survey team (20 hrs x \$250/hr)	\$21,500	\$21,500	Humboldt Co. preliminary design for Open Bottom Arch	\$21,500 SHN current Engr. fees for dam & culvert removal (\$6,000), not included in total for this phase of the project.

<b>X. Budget*</b>				
<b>Budget Item</b>	<b>Total Project Budget</b>	<b>American Rivers NOAA Request</b>	<b>Humboldt County</b>	<b>Matching Non-Federal (include source)*</b>
<b>Operating Costs</b>				
<b>A. New Intake</b>				
Equipment rental: Backhoe & dump truck	\$ 2,000			\$ 2,000
Purchase and install intake screen system	\$ 5,000			\$5,000
Mobilization and Demob. (5% travel costs)	\$ 1,600			\$ 1,600
Field equipment and supplies: Intake structure (\$2,000) Headgate, undershot (\$3,000) Piping and valving (\$3,500) Miscellaneous (\$2,000)	\$10,500			\$10,500
<b>B. Water Wells</b>				
Previous well installation costs; including, drilling, pumping, testing and connections to existing systems	\$280,000 not included in total costs			\$280,000 fees for drilling, developing and testing not included in total for this phase of the project.
<b>C. Dam &amp; Culvert Removal</b>				
Mobilization and Demob. (5% travel costs)	\$2,000	\$2,000		
Permits New Intake (\$8,000)	\$8,000	\$8,000		
Contingency (10% of operating costs)	\$2,910	\$1,455		\$1,455
Administrative Costs (15%)	\$4,365	\$2,182		\$2,183
<b>TOTAL</b>	<b>\$82,328</b>	<b>\$35,137</b>		<b>\$47,191</b>
<b>* All funds are pending</b>				



**Photo 1: Existing water intake and dam**



**Photo 2: Existing dam and upstream Telegraph Creek Road triple-culvert**



**Photo 3: Telegraph Creek Road triple-culvert**



**Photo 4: Triple-culvert  
side view**



**Photo 5: Dam proposed  
for removal**