Mendocino County Fish & Game Project Proposal Summary Sheet
(This must be the first page of the submitted proposal)

1. Contractor: Eel River Recovery Project

2. Type of Contractor: Education/Restoration Planning

3. Taxpayer/Organizational ID/EID Number: 47-4811332

4. Street Mailing Address: P.O. Box 214

5. City, State, Zip Code: Loleta, CA 95551

6. Contact Person: Patrick Higgins

7. Telephone Number: 707 839-4987

8. Email address: phiggins@humboldt1.com

9. Website address(es): www.eelriverrecovery.org

10. Project Title: Town Creek Restoration Planning and Education Project

11. Fish and Game Code Section 13103 Category: Education and Restoration

12. Amount Requested ($): 7469

13. Objectives: Create a Town Creek Restoration Plan, prepare grant request for implementing retoration specific project using bioengineering near Round Valley Elementary School, involve students in restoration planning as part of their studies, get the community involved and excited about restoring Town Creek, and foster better community stewardship of streams on the Round Valley Reservation.

14. Specie(s) Benefited: Steelhead, Chinook and Pacific lamprey

15. Work Schedule: June 2017-June 2018

16. Site Location (include reference to nearest city, town, and/or prominent landmark:
The reach of Town Creek targeted for a pilot restoration project is within the town of Covelo within walking distance of Round Valley Elementary School (see map as Figure 1 in proposal).

17. Site Location – GPS Coordinates: lat 39.790700 degrees, lon -123.225025

18. **We would also like to be considered for funding** from the Ft. Bragg-based Salmon Restoration Association http://www.salmonrestoration.com/ (*for salmon habitat enhancement/restoration, salmon conservation, or salmon education projects*). _____ YES X No.

Please also fill out the following, if applicable:

19. Stream: Town Creek

20. Tributary to: Mill Creek

21. Major Drainage System: Middle Fork Eel River

The deadline for receiving proposals is 5:00pm, December 31, 2016.

Proposals must be submitted by email as a PDF, .DOC, .DOCX, .TXT, or ZIP file to the Commission at: mendofishgamecommission@gmail.com. **Applicants must also mail or hand-deliver eight double-sided copies** to the Commission c/o County Planning & Building Services.

Grant applicants are encouraged to attend the Tuesday, January 17, 2017 meeting of the Commission, location to be announced, beginning 5:00pm, to make a brief (5 minute) presentation regarding their proposal.

Applicants without personal computers or internet access to the Commission website can request assistance from County branch libraries in Ukiah, Ft. Bragg, Willits, Coast Community (Pt. Arena), and Round Valley (Covelo) to download and print the application materials. *Note: County library personnel can also assist with scanning and emailing completed proposals.*

For additional information, please call Fish and Game Commission at (707) 234-6094, or email the Commission at mendofishgamecommission@gmail.com.

Mendocino County Fish and Game Commission 2016-2017 Grant Application – 12/31/16

Eel River Recovery Project Town Creek Restoration Planning and Education Grant Proposal

Background

The Eel River Recovery Project (ERRP) is a grassroots group formed in 2011 to support citizen monitoring, education and organizing throughout the Eel River watershed (www.eelriverrecovery.org). After operating as a sponsored group of the Trees Foundation for four years, ERRP became its own 501c3 non-profit corporation (IRS EIN #47-4811332) in March 2016. The ERRP mission is: "To empower communities to collaborate in monitoring the ecological conditions of the Eel River; to share information about the health of the watershed; and work together to formulate and implement a restoration strategy."

This grant is a continuation of the successful 2015-2016 MCFGC education grant that taught and trained Round Valley Elementary School (RVES) teachers about how to teach students about streams in the field and also supplied Project Wild curriculums for use in their classrooms. Hundreds of RVES students visited Mill Creek in March 2016. Two classes also studied nearby Town Creek and placed a water temperature probe to help assess the stream's health. While in the field in early June 2016, it became apparent that this reach of stream very near RVES had major environmental problems with truck tires and car bodies being used for bank stabilization. RVES 6th grade teacher Hannah Scherzer asked whether ERRP might help RVES and the community of Covelo to restore this stream reach. This proposal would plan for reach specific restoration but also opportunities throughout the watershed.

Town Creek is a tributary of Grist Creek that joins Mill Creek, a major Middle Fork Eel River tributary (Figure 1). The headwaters of Town Creek include tributaries Doan Creek and Little Valley Creek that, along with upper Town Creek itself, supply several miles of steelhead and Pacific lamprey spawning and rearing habitat. Chinook salmon may also use Town Creek for spawning in wet years. Large numbers of Pacific lamprey were noted to have spawned in Town Creek in 2016 and a live lamprey was sighted during the June field trip in an isolated pool. This project would create a *Town Creek Watershed Restoration Plan* as well as detailed plans for a specific restoration project of a Town Creek reach that is within walking distance of the RVES (Figure 2). Although the reach of Town Creek slated for restoration loses surface flow during summer, it is a very important migration corridor and season habitat for steelhead, Chinook and Pacific lamprey. In the longer term, restoration of perennial flow will be examined in the *Restoration Plan*. An additional major grant benefit will be the lesson of stewardship. In addition to planning for removal of tires and car bodies in Town Creek, a car abandoned in nearby Mill Creek in 2015 will also be removed as part of this grant.

Part of the proposed pilot implementation project area is on the Round Valley Indian Tribe (RVIT) Reservation and the RVIT favors the project. BioEngineering Associates (BE) will implement the restoration project (http://bioengineers.com/), when funded and also teach and train staff. They are the foremost practitioners of use of living willow material for restoring stream banks and riparian zones in northern California and Oregon. BE will contribute their services, as part of a match for this grant, to assist with proposals to various grant sources for funding project construction.

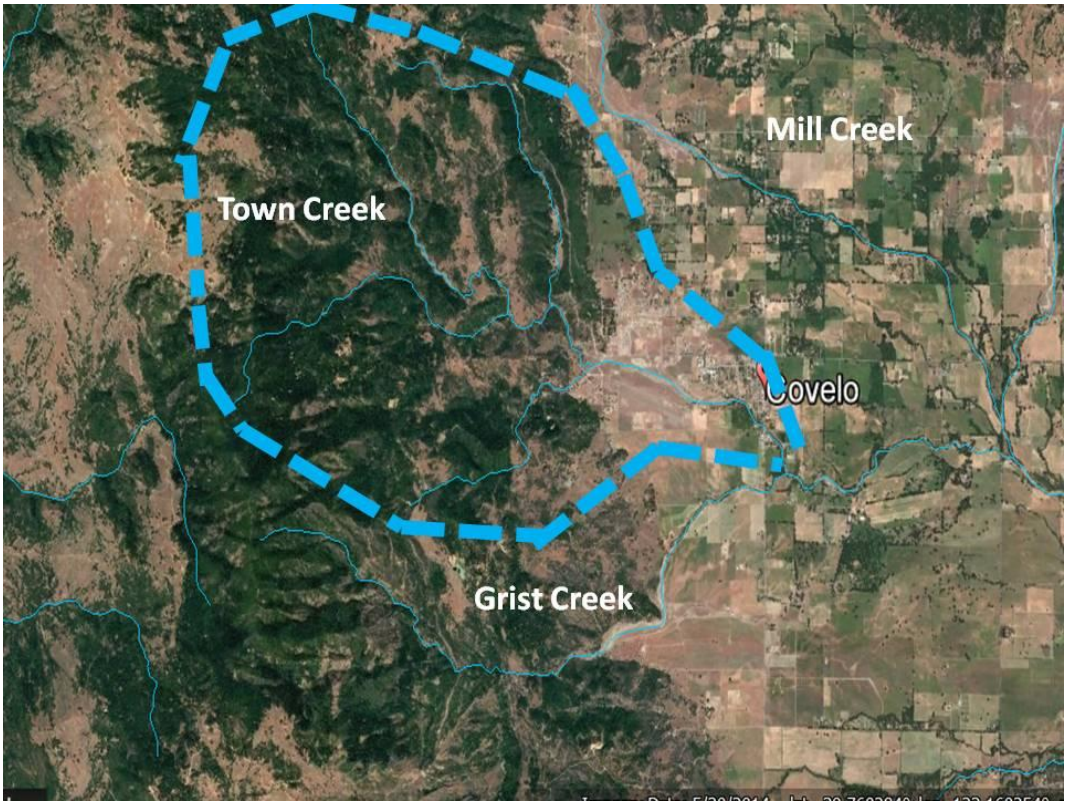

Figure 1. Town Creek watershed and the town of Covelo, California. Image from Google Earth.

Figure 2. Town Creek reach targeted for restoration in Covelo, California. Image from Google Earth.

Proposal/Work Plan

This grant proposal has two distinct elements, restoration of Town Creek and youth and community education. Both restoration and education are desired goals of Fish and Game Code Section 13103.

Town Creek Restoration Planning: Town Creek is an important tributary to Mill Creek and has substantial ecological function in upstream reaches, but is impaired in the reaches where it flows through Covelo. This grant would create a *Town Creek Watershed Restoration Plan* that would encourage protection and management of upland areas to maintain and enhance cold water streams there, but also propose specific measures to restore the stream within Covelo and in downstream reaches. The restoration planning effort should foster partnerships and coordination between agencies and RVIT that should lead to improved management and Town Creek conditions over time.

The Covelo Community Service District is concerned about a remaining unused sewer structure at Highway 162 that changes bedload movement and has the potential to be a partial migration barrier to fish at certain flows. CalTrans is a natural partner in this project and there has been some discussion. ERRP will explore promoting cooperation between these agencies that could bring in subsequent additional funding resources that resolve problems and help Town Creek aquatic function. Improving fish passage will allow migration during a wider range of flows and allowing gravel movement will likely promote improved spawning conditions.

In addition, the Round Valley Water District and the California Department of Fish and Wildlife have developed an existing program of small permits for landowner stream gravel removal. ERRP would work with the RVWD and cooperating land owners to look at gravel extraction and compatibility with Town Creek recovery, including exploring sources of gravel for community maintenance of the restoration project.

RVIT and the Mendocino County Transportation Department have key streamside properties as well as responsibility for roads and bridges that cross or abut Town Creek upstream of the pilot restoration project. Their crossings tend to cause degraded stream conditions at some locations and winning the cooperation of these agencies is key. ERRP will work with RVIT and MCTD during the formulation of the *Restoration Plan* and include recommendations agreed upon by both parties.

Pilot Restoration Project Near RVES: Creeks within and near the town of Covelo and on the RVIT Reservation are often despoiled. Stream bank erosion problems are often misguidedly address by placement of truck tires (Figure 3) and car bodies (Figure 4) for stabilization. This project would work with the RVIT, RVES, BE, local land owners, and the citizens of Covelo to remove environmentally hazardous materials from a reach of Town Creek and instead plant willow and use bioengineering techniques to stabilize the stream banks. Also, riparian vegetation is sparse on the upper segment of the reach to be treated, so more extensive planting will take place there, even if there are no tires or car bodies in the area. While there is preliminary indication of support from the RVIT that owns part of Town Creek slated for restoration. This grant would also work with all the other land owners along the creek to win their cooperation for study of restoration under this grant and for pilot project implementation under a subsequent grant.

As a first step, Bioengineering Associates will visit Town Creek and a map of the reach will be created to mark the location of these hazardous materials. BE will next make diagrams of willow structures and other bioengineering techniques that will be employed to stabilize banks where cars and tires have been removed, and to improve the riparian canopy and bank stability elsewhere. The field visit will include RVIT, California Department of Fish and Wildlife, North Coast Regional Water Quality Control Board and the National Marine Fisheries Service staff to make them aware of the project's potential. We would be consulting with the agencies in terms of permitting concerns they might have, and to also learn of potential funding sources and try to line up support for grant applications. During the course of this grant students will plant some willow sprigs in bare soil areas of Town Creek's banks and will grow native willows in a nearby RVIT native plant nursery.

The resources available under this grant are not sufficient to design and build this project, so grant proposals to other sources will be submitted to the most appropriate targets as deliverables to try to insure construction in the future. Fisheries biologist and restoration planning specialist Patrick Higgins will create the proposals with assistance from BE. ERRP will work closely with RVIT and applications on behalf of the Tribe to the Bureau of Indian Affairs or Bureau of Reclamation will also be considered. Mr. Higgins would provide technical assistance for applications to these sources under this grant.

In addition to the restoration project planning and the educational elements described below, ERRP wishes to also assist the RVIT Environmental Protection Agency with removal of an automobile abandoned in Mill Creek in December 2015 (Figure 5). ERRP Board Member and RVIT Tribal elder Ernie Merrifield has asked for assistance in the removal of the car body and for a community education effort to teach people not to drive in creeks and or to dump motor oil there. That message will also be included in the school program and in a public outreach campaign.

Figure 3. Car body partially embedded in Town Creek with RVES students. 6/07/16.

Figure 4. Truck tires cabled together to stabilize the banks of Town Creek. June 7, 2016.

Figure 5. Abandoned vehicle in Mill Creek that would be removed as part of this project. May 1, 2016.

Education: ERRP will work closely with 6th grade RVES teacher Hannah Scherzer and two other grade levels to provide curriculum materials so that the studies of stream restoration align with science standards and common core standards. Classes will collect stream data like water temperature and turbidity (How many days is Town Brown?) and aquatic insect diversity. Water temperature gauges were purchased with the 2015-2016 MCFGC grant and they will be deployed in Town Creek and its tributaries so students become aware of the health of Town Creek higher in the watershed, not just in the reach near their school. Students will do a color check of streams on the Round Valley floor and photo document to see which streams clear most quickly. Checking aquatic insect diversity at the site slated for restoration, but also in a perennial reach upstream on Town Creek to see the difference in community structure in a seasonal versus a perennial stream. Adult salmon and steelhead migration will be noted, including spawning.

Students will also map stream habitats during high flow and low flow conditions, make drawings of restoration projects, and prepare a community demonstration/open house on stream care. ERRP will also line up natural resource experts, artists and Native American elders to come into classes and provide different perspectives on restoration and how the students can work together to enlighten the community. Field trips to the Town Creek reach to be restored will be lead by fisheries biologist Patrick Higgins in two different seasons. Efforts will be made to also have RVIT Natural Resource staff and CDFW and NCRWQCB staff to participate in the field trips. A main purpose of ERRP work with RVES is to interest students in natural resource career paths, so having different agency and natural resource experts as presenters gives them some role models.

The students will also get a chance to do some willow planting using sprigs during the winter when the chances are highest for survival without irrigation. Places where students plant will be directed by experts and local willow stock will be used. Students will also get "hands on" experience working with RVIT staff that operates a native plant nursery and the students will grow some will and cottonwood stock for possible use in future years.

The adult/community educational aspect of this project will include press releases, one public meeting/open house, videos on the ERRP Vimeo channel, updates on the ERRP Face Book page and radio interviews on KYBU and KZYX. There will be at least two press releases, five Vimeo videos, five radio segments and ERRP web and Face Book pages will be updated to include grant progress at least 3 times. Press outlets will include the Willits News, Willits Weekly, Ukiah Daily Journal and the Fort Bragg Advocate. Work with RVIT may also have the benefit of opening discussion of the restoration of another reach of Town Creek near the airport immediately upstream of the current proposed project. This area by the airport has almost no riparian vegetation and would be an ideal candidate for also being restored using bioengineering.

Equipment: In order for students to do habitat mapping, a field tape measure and a GPS will be acquired. Clip boards for student use in the field and Write-in-the-Rain notebooks will also be purchased. Nursery supplies like gloves, hand trowels, pots and garden supplies to support the student training at RVIT nursery will also be purchased with grant funds.

Project Benefits

The *Town Creek Watershed Restoration Plan* will help the community and stakeholders understand the health of the watershed and how the community can work together to maintain and improve its condition. This will help agencies coordinate activities and point out all aspects of restoration, including improving forest health, water conservation, and pollution prevention.

Conduct planning for Town Creek restoration implementation within the town of Covelo and file grant applications for funding of engineering design and implementation of a bioengineering project after removal of car bodies and tires.

Getting students involved in restoration planning and implementation is a hands-on outdoor education activity likely to motivate students who may be disinterested and struggling to achieve in the classroom.

Promoting specific critical thinking skills central to "good science"—questioning, investigating, forming hypotheses, interpreting data, analyzing, developing conclusions, and solving problems.

Connecting students in a real way to their home watershed and thereby raising community consciousness about the health of the local environment.

By planting willow starts and planning restoration, the project encourages wise stewardship of the river and fish that the Round Valley community relies upon for its well being.

Removal of one abandoned car on Mill Creek in coordination with the Humboldt County Sheriff's Department, the RVIT EPA, RVIT Tribal Police and other appropriate authorities.

Press releases, media coverage, and web site and social media updates will help enlighten the community on the need for restoration, why to keep cars and oil out of creeks, and encourage them to get involved.

Cooperation with the RVIT will allow this project to go forward and opens a door for potential additional Town Creek restoration on Tribal lands upstream,

Matching Resources

The MCFGC grant creates a nucleus that allows many local residents and ERRP volunteers and contractors to visit RVES classrooms to impart their special knowledge and to inspire students. Contractors Bruce Hilbach-Barger and Patrick Higgins anticipate contributing one hour for every two they are paid as contractors, which amounts to $1665. Six volunteers will come into RVES classrooms (120 hours = $1440). The contributions of BE, however, are the greatest source of match for this project. BE will provide 40 hours of consulting for preparation of grant applications and participation in a field visit at the beginning of the project. These services are valued at $4000. Therefore, we anticipate a 1:1 match for the MCFGC grant.

Project Evaluation

Criteria for evaluation are: 1) Was a *Town Creek Watershed Restoration Plan* completed? 2) Did ERRP work cooperatively with RVIT and agencies on the formulation of the *Restoration* Plan and the pilot restoration project? 3) Did two or more applications for Town Creek restoration funding for site near RVES get filed? 3) Did three classes of RVES students get involved in restoration planning and help build community awareness about stream care? 4) Was a car removed from Mill Creek? 5) Was the project publicized in the press, on-line, in social media, and on local public broadcasting radio stations? 6) Were two field trips with students to local creeks and rivers held? 7) Were supplies for the field purchased and utilized by students to document restoration and did they collect useful scientific data? 8) Did ERRP members and local experts come into classrooms to teach about their special area of knowledge? 9) Did the final report include a discussion of potential Town Creek restoration at other sites and recommendations for future projects?

Budget

Task or Item	**Contrator**	**Amount**
Task 1 - RVES Class Room Coordination: Curriculum Development in cooperation with teacher(s) Hanna Scherzer to align next generation science standards and common core with stream ecology and restoration plan participation. Data Analysis format work with class. Field Observations and Data Collection with class. Professional Presentation work with class. Work with classes for community stream health open house.	BHB	$1750
Task 2 RVES Involvement in Restoration Project and Direct Stream Studies - Work with Bioengineering Associates to understand data needs for restoration planning. Involve community and students. Conduct student field trips, assist data collection and continuing observation. Classroom presentations on stream biology and hydrology, and ecology principles. Coordinate with Round Valley team and RVES. Direct where student volunteer willow plantings will take place.	PTH/BHB	$1250
Task 3- *Town Creek Watershed Restoration Plan* – Work with CDFW, NCRWQCB, RVIT, CalTrans, Round Valley Water District, Mendocino County Public Works, and private land owners.	PTH/BHB	$1500
Task 4- Generate Grant Proposals for Pilot Town Creek Restoration Funding – State, federal, Tribal and private foundations sources will all be explored. Work with BE, RVIT and cooperating agencies.	PTH	$1000
Travel: Three trips to Covelo @ 340 each round trip, $0.56 per mile, $125/per diem		$950
Stream monitoring equipment for school: 100 meter field measuring tape 12 Clip Boards 120 Write-in-the-Rain Notebooks for students		$340
Sub total		$6790
ERRP Administration @ 10%		$679
Total Grant Request		**$ 7469**
Total Match Amount		**$6860**
Total Services Including Match		**$14329**