Union Soil and Water Conservation District

Catherine Creek (CC44) Parcel's 1, 2

Fish Habitat Restoration Project

Kinsley, and Shoemaker Properties

Highway 203, Union, OR 97883.

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Project Scope

This Project, phase IV of Catherine Creek (CC-44) Fish Habitat and Restoration Project, located approximately 3 miles Southwest of Union, Oregon (Tax lots 04S40E 2800 700, 04S40E 2800 800, 04S40E 2800 900) seeks to restore .56 miles of Catherine Creek, through the installation of large wood structures, revegetation of degraded stream banks, and long term project protection, specifically a 15 year exclusion easement.

The project is located along Catherine Creek with the Atlas Biological Significant Reach (BSR) CCCC3b1 which is identified as a high priority BSR with Tier 1 (highest priority) actions. The property was channelized and confined valley left in the early 1940's. The existing channel is homogenous, with minimal habitat and complexity. The lack of LWM significantly limits deep pool creation and available interstitial habitat utilized by juvenile salmonids. Additionally, segmented and poorly established riparian vegetation communities contribute to high summer water temperatures.

This proposal seeks funding for the construction on the lower properties of Kinsley and Shoemaker (Parcels 1, and 2). Through streamlining engineering designs, refining site plans, and landowner input this proposal is now for significantly less than was previously stated in the original proposal (September 2013). The current cost estimate for these properties is **$284,762.** Please see the attached updated plan set and revised budget.

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Metrics, Objectives, and Monitoring

Project Element	Specific Objectives	Measure for Evaluation
Protect and enhance riparian habitat conditions	Increase riparian plant communities through planting and seeding and natural recruitment. Develop riparian easement with landowners.	Photo points for monitoring plant survival.
Enhance in-stream structural diversity and complexity	Install 10-15 large wood complexes to increase the bank stability, pool depth and frequency, and channel roughness.	Photo points, Fish population snorkel surveys, Longitudinal profile and cross-sections, including pebble counts at permanent areas.
Reduce excessive sediment	Manage riparian grazing with exclusion fences, stabilize existing erosion sites with wood structures and re-establishment of vegetation	Photo points, % vegetation survival, water quality.
Decrease high summer water temperatures, increase winter water temperatures	Improve and increase vegetative cover and shade. Increase riparian plant communities through planting and seeding and natural recruitment. Develop riparian easement with landowners.	Collect hourly water temperature data with Hobo Pendant loggers – April to November

Monitoring for the Kinsley and Shoemaker properties following construction will consist of several elements, which will be used to determine project success. Photo monitoring will be conducted for a period of five years post implementation at established points throughout the project reach using standard protocols. Photo points will be used to document initial changes in the channel, structure stability and longevity, and as a general reference guide for riparian health. During the photo monitoring, all large wood structures will be evaluated for structural integrity and stability. A total of 6 survival plots will be established to monitor the percent survival of both transplants and cuttings. The desired survival for transplanted plants will be 85% and for cuttings 65%.

Restoration of natural streams is an evolving science that seeks to combine natural processes with engineering and construction techniques to develop a stable system while maintaining a natural dynamic equilibrium. The proposed monitoring plan will include key monitoring attributes that will provide feedback of the trends as well as a trajectory of restoration efforts. The project review team will be notified if monitoring demonstrates values outside of the below outlined thresholds. If a Monitoring Metric is a “Pass”, then there is no action required. If, however, the Monitoring Metric is a “Fail”, then the project review team will make an evaluation of the failure and a determination of potential maintenance and/or corrective actions depending upon the severity and type of failure.

Budget Changes from Original Proposal

The overall project cost has decreased by $215,134 from the original proposal of $499,896 to the current cost estimate of $284,762 (see attached budget). Changes are detailed below:

- Salaries, wages and benefits were added to the budget to account for Union SWCD project management, oversight, and administration.
- Construction staking was removed and will be provided through cost share from project partners.
- Based on updated models, basis of design, and upon review of project goals and objectives, stripping, flood plain excavation, main channel excavation, excavated material placed and compacted as fill, and in-channel habitat boulders were deemed to be excessive for the intent and function in this reach of Catherine Creek. The project is immediately downstream of Parcel 3 (Southern Cross) and seeks to enhance winter rearing and habitat for juvenile salmonids, as it is believed to function historically.
- The stabilized livestock crossings were reduced from four crossings to two, which is conducive to each landowner's long term ranching operations.
- Riffle construction was removed.
- The overall cost of the LWM structures was decreased.
- The bulk of the cost for the bank zone planting was moved to a cost share with project partners.
- The seeding budget increased slightly to account for more acreage (acreage previously estimated for affected areas was low).
- With the installation of the pipeline, it was deemed the enhanced spring channel was historically fed from irrigation return rather than a spring, and would provide a limited benefit, it was removed.

Project Timeline:

If funded, construction will commence on or about June 1, 2015 with estimated completion by November 30, 2015. This timeline includes all staking, staging, construction, planting and clean up.