

Sierra Nevada Conservancy-Progress Report

**Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control
River and Coastal Protection Act of 2008 (Proposition 84)**

Grantee Name: Pit Resource Conservation District

Project title: Pit River Planning & Development Project

SNC Reference Number: G0812001 **Submittal Date:** 5-31-11

Report Preparer: Todd Sloat **Phone #:** (530) 336-5456

Check one:

6-Month Progress Report
 Final Report

<p>6-Month Progress Reports should reflect the previous six months. Final Reports should reflect the entire grant period.</p>

A. Progress Report Summary: (Please provide a general description of work completed during this reporting period.)

During this reporting period (November 2010 to May 2011), the Coordinator met with the landowners, conducted monitoring, prepared maps, GPS'd the project elements, and prepared reports. The landowner meetings focused on developing a solution to provide water for livestock outside of the project area. The landowner purchased water facility materials and built a spring-fed water tank system. The Coordinator also conducted photo-monitoring and assessed project effectiveness by inspecting channel stability during high flow events, and GPS'd project elements (e.g. ponds, plugs, channels) to create geo referenced maps for reports.

During previous reporting periods (i.e. start of project to October 31), the Coordinator met with landowners, developed agreements, conducted pre-construction monitoring, met with contactors, and constructed the project according to the design plan. Pre-construction monitoring included using a global positioning system (GPS) to record polygons of riparian deciduous shrub vegetation on Forest Service land and the private land upstream of the federal boundary. Monitoring also included establishing pre-project photograph locations, and taking photos from these locations prior to and during construction. Finally, cross-section surveys were recorded of the stream channel prior to and after construction, and field inspections were used to document the aquatic conditions (i.e. ground water levels and whether the stream contained pooled water or not) at the site. The landowner installed all of the fencing for the project, and all construction activities were completed on private land.

Funds provided by SNC were used for construction activities associated with the pond and plug and cross vane elements of the restoration plan (See Plan View Figure in Appendix A). SNC funds were also used for general project coordination, monitoring, and management. The NRCS also provided funds for project construction, and these funds paid for the riffle augmentation portion of the restoration plan. Overall, the SNC funds were used to leverage an additional \$82,049 for project work.

Monitoring pictures, riparian habitat polygons, and cross section information is provided in Appendix A.

B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved: (Include specific information, such as public meetings held, agency participation, partnerships developed, or acres mapped, treated or restored.)

Tasks Completed:

- Executed landowner agreements
- Pre-construction monitoring (photo points, cross-sections, GPS riparian areas)
- Construction of cross vanes, riffle augmentation, and pond and plug on Lower Roes Creek
- Post-construction monitoring (photo points, cross-sections, GPS project elements, GIS mapping)
- Newsletter produced and mailed to landowners; public tour held.

C. Challenges or Opportunities Encountered: Prior to construction, the Natural Resource Conservation Service (NRCS) decided they would not allow the Wetland Reserve Program (WRP) funds to be used for the construction of the cross vanes and ponds and plugs on private land. This required the Coordinator to use the SNC funds for these activities which depleted the construction budget within this grant. Because WRP funds cannot be used on federal land, the small segment of stream owned by the USFS was left untreated even though funds remained in the WRP budget. In addition, the USFS verbally committed to conducting the archeological surveys for the project. They did not follow through on this task until mid-way through the construction, which resulted in the RCD having to hire a private consultant to survey the private land in order to start construction and meet regulatory requirements. The NRCS later paid for this effort with the WRP funds.

D. Unanticipated Successes Achieved: N/A.

E. Compare Actual Costs to Budgeted Costs: (Please refer to your grant agreement to list your deliverables/budget categories and budgeted costs compared to actual costs incurred during this reporting period in the table below.)

PROJECT BUDGET CATEGORIES	Budgeted SNC Dollars	Actual Dollars
Administrative Costs	4,500	2,610.74
Publications and Advertising	700	281.34
Materials	10,000	3,467.23
GIS Service	2,000	840.00
Coordination	12,740	12,743.25
Construction Contractor	17,550	21,540.25
GRAND TOTAL	47,490	41,482.81

Explanation: (if needed)

F. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies. (Include digital photos, maps, media coverage of project, or other work products.) No other relevant materials were produced that were not part of the budgeted deliverables.

G. Next Steps: (Work anticipated in the next 6 months, including location and timing of any scheduled events related to the project.) The final task to complete is a public tour of the site. This tour was conducted on May 18th, 2011.

Please Complete this Section for FINAL Report ONLY

Capacity-Building Results and Collaboration and Cooperation with Stakeholders: (What partnerships did you initiate or strengthen as a result of this project? How did they affect the project outcome? If applicable, how did this grant increase your organization's capacity? What is your plan to sustain this increase?)

The RCD strengthened partnerships with NRCS, USFS, and landowners. Multiple landowner meetings were held during the design phase. This provided an opportunity for the Coordinator to meet new landowners and strengthen partnerships. Also, the NRCS partnered on one of the project sites as a result of this project, and the Coordinator was able to develop a partnership with a new area engineer because of this. The grant enabled the RCD to maintain capacity during a very difficult economic time.

Description of Project Accomplishments:

1. Most Significant Accomplishment

Describe in one concise, well-written paragraph, the most significant accomplishment that resulted from this grant.

The grant provided an opportunity to work with NRCS engineering staff to promote the “pond and plug” and other stream restoration techniques that can be supported by the NRCS. The NRCS has released some draft guidelines on how they will support this restoration technique. This is significant because landowners are not able to use NRCS funds to implement this technique on their lands to improve natural resource conditions. The successful implementation of the project has resulted in a greater comfort by NRCS staff with the techniques used for this project. This will eventually result in NRCS allowing funds to be used for greater restoration activities on private land.

2. WOW Factor

If applicable, please describe anything that happened as a result of the project or during the project that is particularly impressive.

3. Design and Implementation

When considering the design and implementation of this project, what lessons did you learn that might help other grantees implement similar work?

See response to item number one. In addition, the RCD learned that NRCS cannot use Wetland Reserve Program Funds to implement projects on federal land. This was new information to the RCD. The RCD assumed that since NRCS can use Environmental Quality Incentive Program (EQIP) funds on federal lands, that WRP funds could also be used. This was also new information to some of the NRCS staff.

4. Indirect Impact

Please describe any indirect benefits of the project such as information that has been developed as a result of the project is being used by several other organizations to improve decision-making, or a conservation easement funded by this grant that encouraged other landowners in the area to have conservation easements on their property.

See response above. Also, the landowner used the 10-year WRP Restoration Cost Share Agreement. This program was attractive to the landowner because it does not place an easement on the enrolled acres. However, the landowner enters into a grazing management plan with the NRCS as part of this program and is responsible for 25% of the restoration costs (i.e. if NRCS contributes \$7,500, the landowner contributes \$2,500). This type of WRP agreement is attractive to some landowners.

5. Collaboration and Conflict Resolution

If you worked in collaboration or cooperation with other organizations or institutions, describe those arrangements and their importance to the project. Also, describe if you encountered conflict in the project and how you dealt with it, or if there was conflict avoided as a result of the project.

The RCD collaborated with NRCS and USFS. Collaboration with the USFS was important because a small portion of the meadow was on FS land. In truth, the FS was not easy to work with and they did not follow through on verbal commitments that were made toward this project (e.g. NEPA compliance, archeological surveys). However, the project did require the Pit RCD to work with the FS much more than usual, and this has resulted in future meetings with the FS at higher levels to discuss possible collaboration on meadow restoration projects. Collaboration with the NRCS served as a “pilot project” where restoration techniques funded by the state (i.e. SNC funded pond and plug) were used with those from NRCS (funded riffle augmentation) to implement the project. Overall, the process will strengthen relationships between the NRCS, USFS, and Pit RCD.

6. Capacity-Building

SNC is interested in both the capacity of your organization, as well as local and regional capacity. Please describe the overall health of your organization including areas in need of assistance. SNC is interested in the strength and involvement of your board, significant changes to your staff, size and involvement of membership. In addition, describe how your project improved capabilities of partners, or the larger community.

This SNC grant, and other SNC grants for similar RCD projects, has been instrumental for providing viability for the RCD, their partners, and contractors in the area. Most all communities in the Pit RCD area are considered severely disadvantaged, and there is little opportunity for work in the area. The RCD’s Business Manager, and their watershed coordinator, both live locally and work on several other projects, many of which are volunteer in nature. The Pit RCD is a small RCD, but has been able to assist landowners and stakeholders with important resource projects. There has not been enough workload or opportunities for other funding sources to expand the capacity of the RCD, but the continued effort by the RCD stimulates project development with other partners and stimulates the community through economic activity.

7. Challenges

Did the project face internal or external challenges? How were they addressed? Describe each challenge and any actions that you took to address it. Was there something that SNC did or could have done to assist you? Did you have to change any of your key objectives in response to conditions “on the ground”?

Working with the USFS and NRCS was the primary challenge with this project. These two agencies do not typically work together, and this project raised many questions between the two such as whether the NRCS NEPA process was satisfactory for the USFS. This challenge is likely to result in improved communication between the two groups which will promote better understanding of each stakeholder’s goals and objectives. No changes to key objectives were required in response to conditions on the ground. However, construction was not implemented on the FS ground. This

was the result of delayed archeological surveys by the USFS and the fact that NRCS WRP funds could not be used on federally owned land. The SNC may be helpful in advocating that NRCS WRP funds should be allowed on federal land where projects such as this are co-owned.

8. Photographs

Grantees are strongly encouraged to submit photos, slides or digital images whenever possible. These images will be used for SNC publications such as annual reports or on the website. Please make sure you clearly identify location, activity, and your project with each submitted image. Images will be credited to the submitting organization, unless specified otherwise.

The RCD has approximately 200 photos documenting site conditions at the project site. The most relevant photographs have been provided in Appendix A and also on a CD.

9. Post Grant Plans

What are the post-grant plans for the project if it does not conclude with the grant? Include a description of the following (if applicable): (1) Changes in operations or scope; (2) Replication or use of findings; (3) Names of other organizations you expect to involve; (4) Plans to support the project financially, and; (5) Communication plans?

Post grant plans include securing National Forest Foundation Funds to finalize restoration activities on the federal land.

10. Post Grant Contact

Who can be contacted a few years from now to follow up on the project? Please provide name and contact information.

Todd Sloat (530-336-5456) and Sharmie Stevenson (530-299-3405).

tsloat@citlink.net

pitred@hdo.net

SNC-approved Performance Measures: (Please list each Performance Measure for your Project, as identified in your Grant Agreement, and the results/outcomes.)

1. Resources Leveraged/Number of People reached: The RCD used approximately \$5,000 of funds within their Dept. of Conservation (DOC) grant agreement to finalize coordination, monitoring, and reporting activities associated with this project. The landowner contributed \$16,883 of in-kind services (i.e. hauling rock, gathering rock, fence repair and building, use of tractor) and materials (rock) associated with building 8,595 linear feet of fence and contributing rock and labor for stream restoration. Finally, NRCS contributed

\$60,166 toward construction activities (i.e. riffle augmentation reaches) and fencing materials.

Articles published in the newspaper were estimated to reach 1,000 people (general public), and newsletter articles describing the project were sent to 100+ people (general public). Finally, the project was presented/discussed at stakeholder meetings (e.g. Pit River Watershed Alliance, Fall River-Big Valley Cattlemen's) that reached another 40 people (i.e. resource professionals, government employees, conservation groups).

- 2. Number and types of jobs created:** Types of jobs directly created included project administration, project coordination, resource assessments (archeology and hydrology), design, and construction. In addition, labor for fence construction was also created by this project. Overall, these jobs when combined were determined to equal .5 FTE (see below table). No attempt was made to estimate the number of indirect jobs creating from the project (e.g. service industry that provides equipment rental, fuel, supplies, etc.)

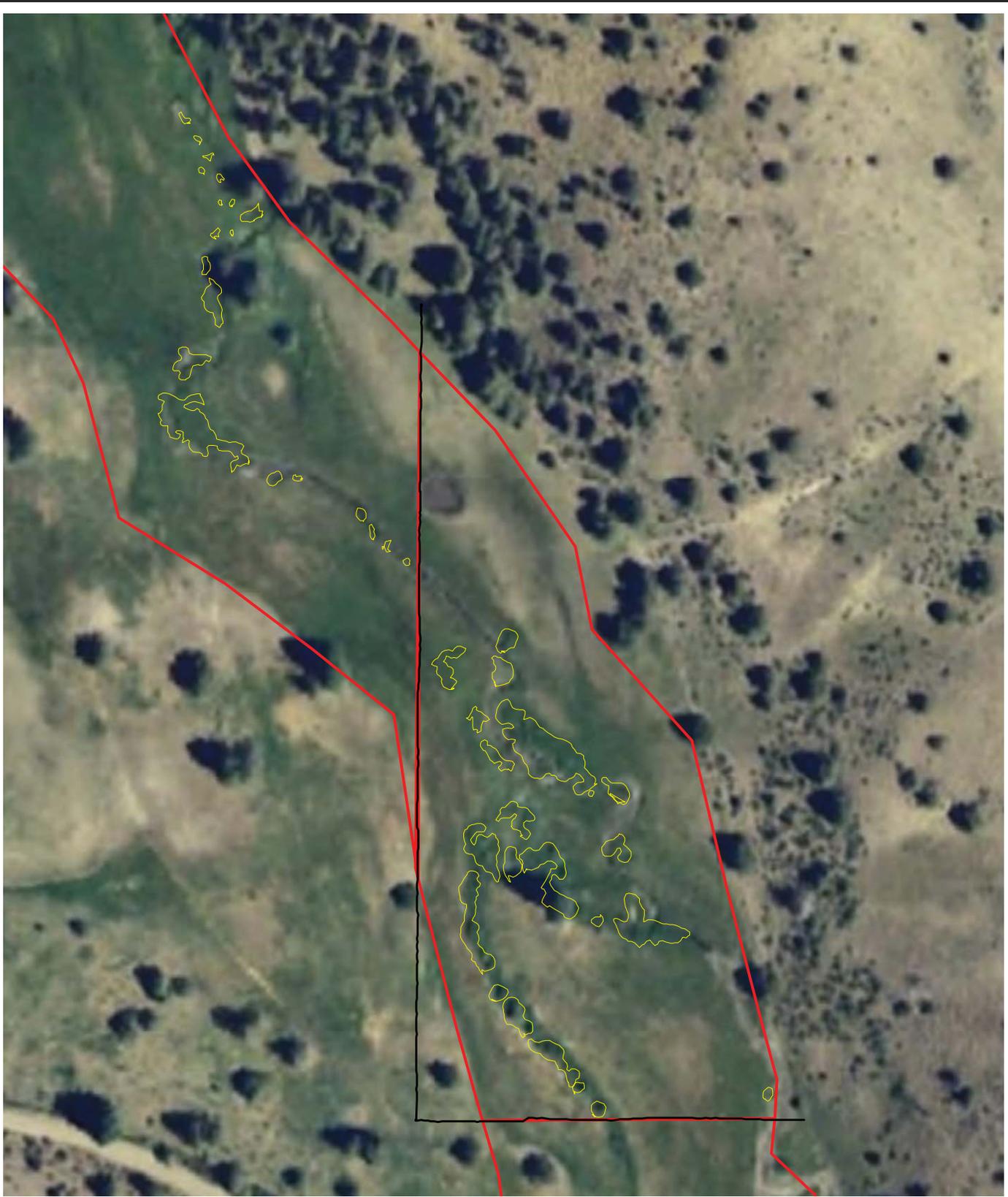
Job Type	Number	Employment Length	Avg. Hrs. worked per week	FTE	Season
Hydrologist/Equip. Operator	1	1.5 month	50	.15	fall
Archeologist	1	1 week	40	.02	fall
Coordinator	1	3 months	20	.11	fall
Administration	1	1 year	3	.15	fall
Fence contractor	2	Two weeks	40	.04	fall
Equipment Operator	1	1 month	40	.09	fall

- 3. Number and value of new, improved, or preserved economic activities.** The primary economic activities associated with this project include the improvement of a working landscape and agricultural products for the private landowner, and jobs for project activities (see item two above). The project will greatly improve the landowner's ability to manage the wet meadow system in a sustainable manner. First, the meadow has been restored and will provide greater forage value for livestock both within and outside of the project area. The existing value of this forage within the meadow is estimated to total \$10,800/year. The increase in value on a yearly basis (estimated at a 30% increase) is associated with improved hydrological connectivity between the stream and the floodplain, and also from the fencing that allows for better pasture use. Therefore, the estimated value after project implementation is \$14,040/year. This increase in value is expected to occur for at least 100 years.

- 4. Linear feet of streambank protected/restored.** The project restored approximately 8,000 linear feet of streambank, enhanced another 2,000 feet of a distributary channel, and created about an acre of seasonal ponds. This same area and acreage is also protected as a riparian fence was installed to allow for better livestock management of the stream and floodplain.

- 5. Acres of land improved/restored.** A total of eighteen acres of wet meadow habitat was restored and protected. This includes about two acres of riparian deciduous shrub restoration.

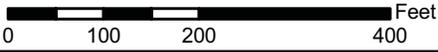
**ATTMACHMENT A. PHOTOGRAPHS, CROSS SECTIONS, AND EXTENT OF
RIPARIAN DECIDUOUS SHRUBS**



- U.S. Forest Service Boundary Fence
- ▭ Riparian Vegetation
- ▭ APE



VESTRA
SOURCE: BING 2010



**RIPARIAN VEGETATION
LOWER ROSE CREEK
PROJECT AREA**

Lower Rose Creek Restoration Project
As-Built Project Map

Legend

— Stream Channel (no construction)

— Stream Channel (riffle work)

— Cross Vanes

— Fill

— Pond



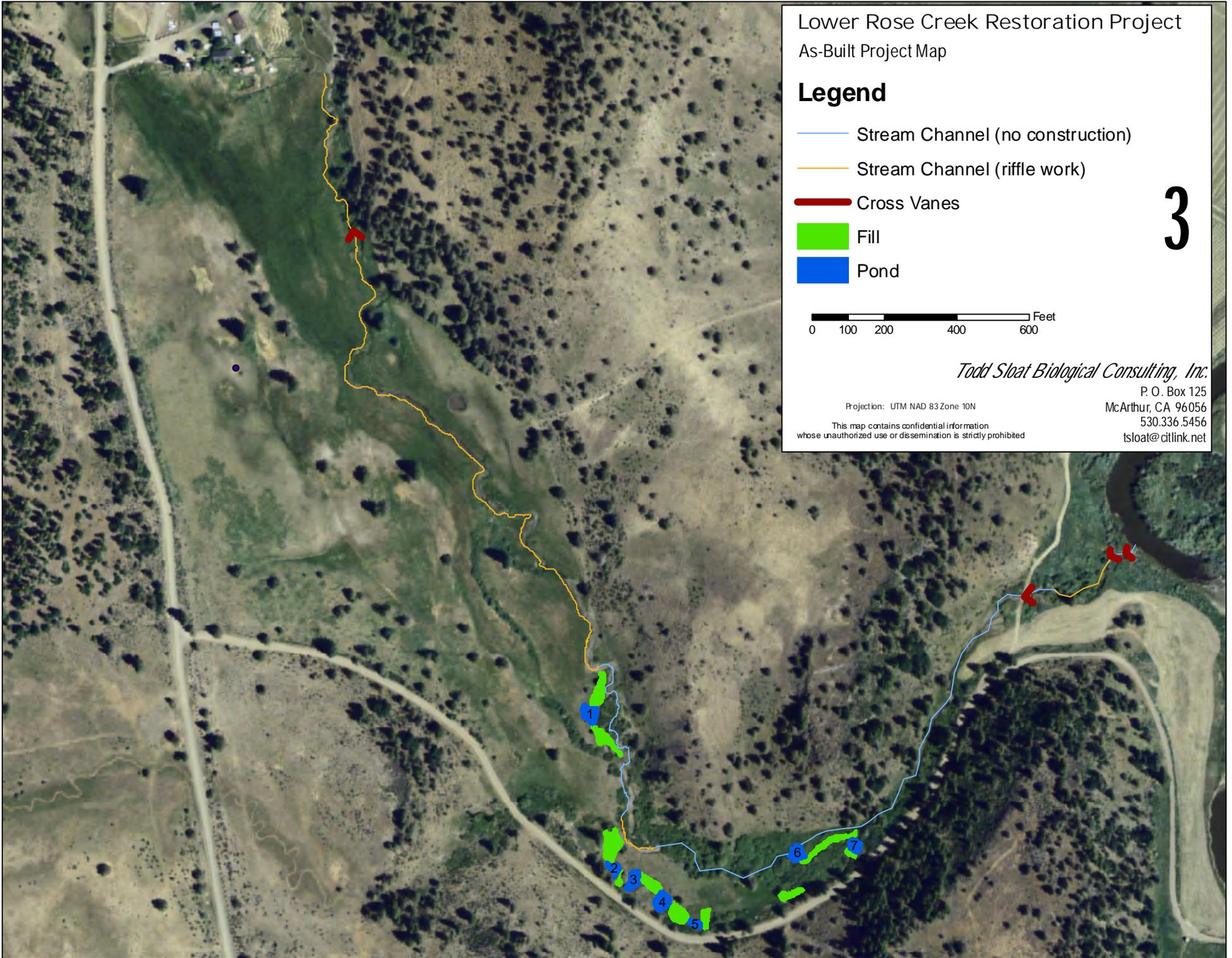
Todd Sloat Biological Consulting, Inc.

Projection: UTM NAD 83 Zone 10N

This map contains confidential information
whose unauthorized use or dissemination is strictly prohibited

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3





Upper project area prior to riffle augmentation.



Upper project area after construction.



Upper project area prior to riffle augmentation and installation of cross vane.



Same area as above after riffle work and cross vane installation.



Same area as above prior to construction. This area shows active head cutting.



Post construction shows how cross vane works and how above treatment of the stream has improved water quality.



Middle portion of project area prior to riffle augmentation.



Same area as above after construction. Riffles have been raised and the banks are stabilized with juniper trees and cobble material.



Middle project area location prior to bank stabilization with juniper trees and rock.



First, juniper trees were placed along the bank margin.



Next, cobble material was layered over the juniper trees.



Same area as above during winter flows. Note that no land was “lost” from sloping the streambank. Rather, material was added to create the slope and stabilize the bank.



This area was an overflow area that was entrenched. The pond and plug technique was used to stabilize the area.



Ponds are nearly full during the late winter from ground water recharge.



This area is just above where the creek transitions into a narrow area. Although not very visible, the channel is very unstable in this area (see below pic from the ground view).



Pre- construction above, and post construction below. This unstable channel network was filled with material excavated to create a pond, and the outlet of the pond was directed to a remnant channel.





This picture is the above view of the previous to pictures. Note the pond in the background, the water flowing within the remnant channel and upon the floodplain and the filled unstable channel area.



Sediment deposition on the floodplain in the area shown in the previous three pictures.



Last grade control structure on Lower Rose Creek. Note the Pit River in the background at high flow.



Second to last grade control structure on Lower Rose Creek in shown in the background.

LP Main channel - Lower Rose Creek Project

Sept. 14, 2010 Survey

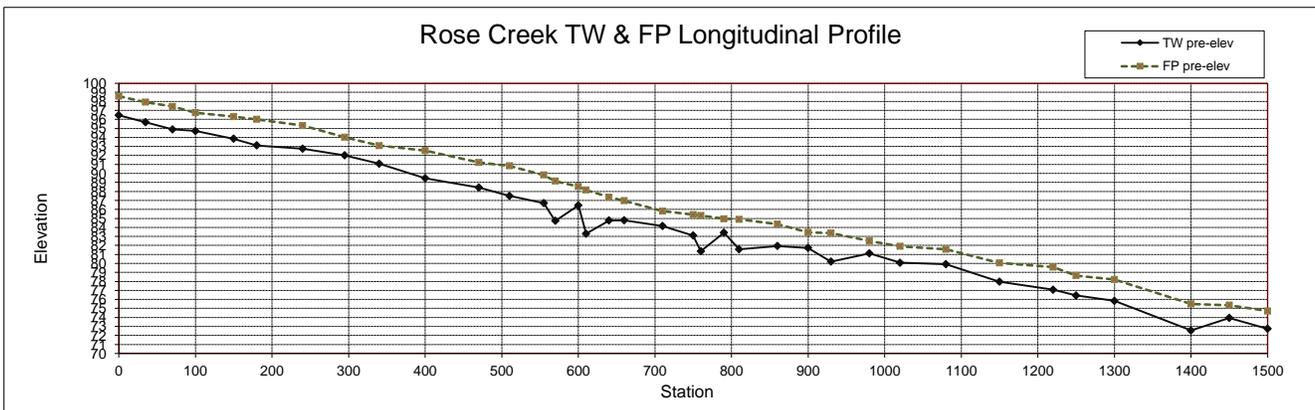
NOTES:	existing channel dimensions - pre-project	
	stations from LP 0.0' main channel	begin at upper project fence line
	R. Poore survey	
	GPS all points Trimble Geo XT by TS	

Loc	Station	rod	TW pre-elev	notes	set
tw	0.0	7.10	96.45	cobble bed	1
tw	35	7.88	95.67		1
tw	70	8.66	94.89		1
tw	100	8.84	94.71		1
tw	150	9.70	93.85		1
tw	180	10.44	93.11	pool at juniper rev rt wd	1
tw	240	10.80	92.75		1
tw	295	11.54	92.01	at RC-A XS	1
tw	340	12.48	91.07	willow / cobble	1
tw	400	14.09	89.46	pool at rt wd	1
tw	470	15.13	88.42		1
tw	510	16.05	87.50	center bend w jun. rev.	1
tw	555	16.85	86.70	15' upstrm of hdct	1
tw	570	10.42	84.73		2
tw	600	8.71	86.44	control pt	2
tw	610	11.85	83.30	deep hdct pool w rev	2
tw	640	10.38	84.77	at RC-B XS	2
tw	660	10.36	84.79	control pt - ch OK	2
tw	710	11.00	84.15		2
tw	750	12.05	83.10	top of hdct	2
tw	760	13.80	81.35	hdct pool	2
tw	790	11.74	83.41	control	2
tw	810	13.58	81.57	pool at LB rev	2
tw	860	13.22	81.93	RB rev	2
tw	900	13.44	81.71		2
tw	930	14.95	80.20	ch incised	2
tw	980	14.04	81.11	control	2
tw	1020	15.08	80.07	S- curve	2
tw	1080	15.23	79.92	rock xing control	2
tw	1150	17.18	77.97	RB rt wd jun rev	2
tw	1220	18.07	77.08	end RB rev	2
tw	1250	18.71	76.44	begin LB rt wd	2
tw	1300	19.32	75.83	next LB rt wd	2
tw	1400	22.60	72.55	deep cut w LB jun rev	2
tw	1450	21.20	73.95	control	2
tw	1500	22.41	72.74	fence at top of USFS bndry	2

Loc	Station	rod	FP pre-elev	notes	set
fp	0.0	4.98	98.57	cobble bed	1
fp	35	5.64	97.91		1
fp	70	6.12	97.43		1
fp	100	6.80	96.75		1
fp	150	7.25	96.30		1
fp	180	7.55	96.00	pool at juniper rev rt wd	1
fp	240	8.24	95.31		1
fp	295	9.55	94.00	at RC-A XS	1
fp	340	10.47	93.08	willow / cobble	1
fp	400	11.02	92.53	pool at rt wd	1
fp	470	12.34	91.21		1
fp	510	12.71	90.84	juniper stump on LB	1
fp	555	13.73	89.82	15' upstrm of hdct	1
fp	570	6.00	89.15		2
fp	600	6.61	88.54	control pt	2
fp	610	7.00	88.15	deep hdct pool w rev	2
fp	640	7.79	87.36	at RC-B XS	2
fp	660	8.19	86.96	control pt - ch OK	2
fp	710	9.35	85.80		2
fp	750	9.74	85.41	top of hdct	2
fp	760	9.84	85.31	hdct pool	2
fp	790	10.20	84.95	control	2
fp	810	10.26	84.89	pool at LB rev	2
fp	860	10.78	84.37	RB rev	2
fp	900	11.70	83.45		2
fp	930	11.78	83.37	ch incised	2
fp	980	12.66	82.49	control	2
fp	1020	13.25	81.90	S- curve	2
fp	1080	13.59	81.56	rock xing control	2
fp	1150	15.10	80.05	RB rt wd jun rev	2
fp	1220	15.56	79.59	end RB rev	2
fp	1250	16.50	78.65	begin LB rt wd	2
fp	1300	16.94	78.21	next LB rt wd	2
fp	1400	19.65	75.50	deep cut w LB jun rev	2
fp	1450	19.79	75.36	control	2
fp	1500	20.45	74.70	fence at top of USFS bndry	2

FP slope 2.04%
 Ch slope 1.58%
 Ch K 1.29

FP stations are along ch TW for comparison - measure FP dist. on map
 1171 actual FP distance from ArcView



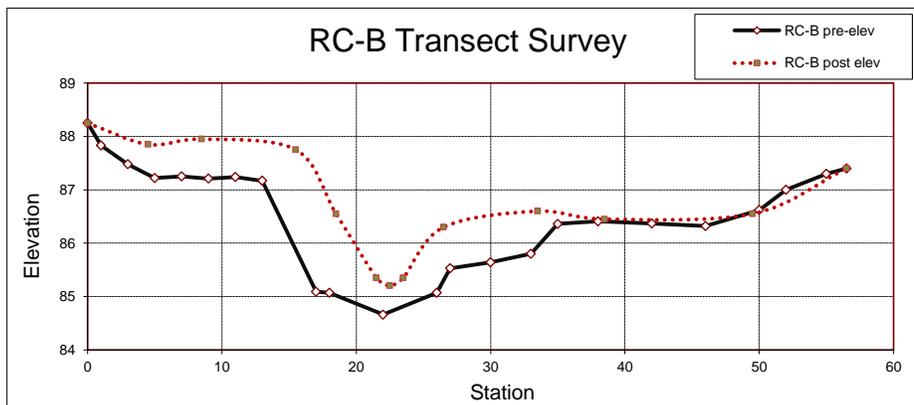
XS-2 RC-B Channel Transect - Lower Rose Ck Project

Sept. 14, 2010 Survey

NOTES:	steel pins only - no conc mon.	
	stations from LP 0.0' main channel	
	R. Poore survey	
	Top Stake LB set at	
	Top Stake RB set at	
	photo points at each XS	RULD w/ juniper only & post cble
	GPS all end points Trimble Geo XT	

	rod	elev	ref #		set #
FS	13.73	89.82	103.55	ref # set 1	1
BS	5.33	89.82	95.15	ref # set 2	2
	rod	elev	ref #		
FS	18.94	76.21	95.15	ref # set 2	2
BS	5.43	76.21	81.64	ref # set 3	3
	rod	elev	ref #		
FS		81.64	81.64	ref # set 3	3
BS		81.64	81.64	ref # set 4	4

pre-cobble placement - existing conditions						post-cobble placement			
Loc	Station	rod	RC-B pre-elev	notes	area	station	post rod	RC-C post-elev	area
TP LB	0.0	6.90	88.25	on hillslope		0	6.10	88.25	
	1.0	7.32	87.83	grassy bank		4.5	6.50	87.85	
	3.0	7.67	87.48	"		8.5	6.40	87.95	
	5.0	7.93	87.22	"		15.5	6.60	87.75	
	7.0	7.90	87.25	"		18.5	7.80	86.55	0.15
	9.0	7.94	87.21	start juniper revetment		21.5	9.00	85.35	3.75
	11.0	7.91	87.24	"		22.5	9.15	85.20	1.40
	13.0	7.98	87.17	"		23.5	9.00	85.35	1.25
	17.0	10.06	85.09	"	5.08	26.5	8.05	86.30	0.90
WS	18.0	10.08	85.07	"	1.29	33.5	7.75	86.60	0.00
TW	22.0	10.49	84.66	"	6.80	38.5	7.90	86.45	
WS	26.0	10.08	85.07	behind RB revetmnt	5.16	49.5	7.80	86.55	7.45
	27.0	9.62	85.53	grassy inset FP	0.83	56.5	6.95	87.40	
	30.0	9.51	85.64	"	2.16				
	33.0	9.35	85.80	"	1.68				
	35.0	8.79	86.36	"	0.00				
	38.0	8.74	86.41	"					
	42.0	8.78	86.37	"	23.00				
	46.0	8.83	86.32	"					
	50.0	8.53	86.62	"					
	52.0	8.15	87.00	"					
FP	55.0	7.85	87.30	FP					
TP RB	56.5	7.75	87.40						



XS-3 RC-C Channel Transect - Lower Rose Ck Project

Sept. 14, 2010 Survey

NOTES:	steel pins only - no conc mon.	
	stations from LP 0.0' main channel	
	R. Poore survey	
	Top Stake LB set at	
	Top Stake RB set at	
	photo points at each XS	RULD w/ juniper only & post cble
	GPS all end points Trimble Geo XT	

	rod	elev	ref #		set #
FS	13.73	89.82	103.55	ref # set 1	1
BS	5.33	89.82	95.15	ref # set 2	2
	rod	elev	ref #		
FS	18.94	76.21	95.15	ref # set 2	2
BS	5.43	76.21	81.64	ref # set 3	3
	rod	elev	ref #		
FS		81.64	81.64	ref # set 3	3
BS		81.64	81.64	ref # set 4	4

pre-cobble placement - existing conditions						post-cobble placement			
Loc	Station	rod	RC-C pre-elev	notes	area	station	post rod	RC-C post-elev	area
TP LB	0.0	5.51	76.13	open area of pasture		0	7.65	76.13	
	2.0	5.58	76.06	"		4.7	7.65	76.13	
	4.0	5.60	76.04	"		10.7	7.45	76.33	
	6.0	5.53	76.11	"		14.7	8.40	75.38	1
	8.0	5.50	76.14	"		17.7	9.80	73.98	4.95
	10.0	5.78	75.86	"		19.7	8.50	75.28	0.7
TB LB	11.0	6.01	75.63	start juniper revetment	0.00	22.7	7.95	75.83	
	12.0	6.92	74.72	"	0.91	28.7	7.50	76.28	6.65
	14.0	7.84	73.80	"	3.66				
TW	16.0	8.36	73.28	"	4.70				
	17.0	7.70	73.94	"	1.69				
	18.0	7.46	74.18	"	1.45				
	19.0	6.44	75.20	end juniper	0.43				
TB RB	20.0	6.05	75.59	open pasture	0.04				
	22.0	5.87	75.77	"					
	24.0	5.64	76.00	"	12.88				
	25.0	5.54	76.10	"					
	28.0	5.35	76.29	"					
TP RB	28.7	5.34	76.30	"					

