Tahoe Sierra IRWMP

Attachment #3

Work Plan

Tahoe Sierra IRWMP

Attachment 3: Work Plan

Proposal Introduction

In the following pages, the Tahoe Sierra IRWM presents detailed descriptions for the suite of 10 projects that are a part of this proposal. Each individual project has also provided an introduction that includes goals and objectives, purpose and need, existing data and studies, maps (if appropriate) and any other information pertinent to each project.

Goals and Objectives

The Tahoe Sierra IRWMP partnership was formed in 2004. Since the inception, it has grown significantly and thus the goals and objectives have changed as new partners and agencies have brought resources and integration challenges to the attention of the partnership. The current partnership, which consists of approximately 28 agencies, established the following goals and objectives for our region:

Goals:

1) Protect and improve water quality, 2) Protect the community water supply, 3) Manage groundwater for sustainable yield, 4) Contribute to ecosystem restoration, and 5) Implement integrated watershed management throughout the region.

Objectives:

1)Foster a collaborative water management planning environment; 2)Promote integration of water management across geographies of the region; 3) Recommend priorities for implementation projects; 4) Cooperatively apply for and obtain funding for implementation projects; 5) Revise and update the Tahoe Sierra IRWM Plan as needed; and, 6) Communicate the best available information to decision makers, stakeholders and the public.

In order to meet the goals and objectives above, the Tahoe Sierra IRWM has adopted the following water management strategies:

1.) Ecosystem restoration
2.) Environmental and Habitat Protection and Improvement
3.) Water Supply Reliability
4.) Flood Management
5.) Groundwater Management
6.) Recreation and Public Access
7.) Stormwater Capture and Management
8.) Water Conservation
9.) Water Quality Protection and Improvement
10.) Water Recycling

11.) Wetlands Enhancement and Creation
12.) Land Use Planning
13.) NPS Pollution Control
14.) Surface Storage
15.) Watershed Planning
16.) Water and Wastewater Treatment
17.) Water Transfers

The suite of 10 projects proposed in this application meet the goals and objectives by implementing one or more of the 17 water management strategies listed above, as further described in the individual work plans, as well as the Performance Measures and Program Preferences section of this application.

Purpose and Need

The Tahoe Sierra IRWM contains approximately 78 projects as proposed by members of the partnership. Each partner can submit projects for evaluation and ranking annually. The projects are divided into three subcategories: water supply, water quality/restoration, and stormwater/floodwater. The partnership gives each subcategory equal weight in ranking distribution as we believe these three subcategories must be integrated to address water issues in our region. The suite of projects chosen for this application represent those ranked at the top of each subgroup category, as well as an equity distribution among the subgroups. In addition, the top ranked projects are evaluated by the partnership for need, readiness to proceed, agency interest in the grant funding available, and those that also meet the criteria as established for the Proposition 84 IRWM funding.

Further information regarding project purpose and need is provided in the individual project work plans below.

Project List

Project:	Implementing Agency:	Abstract:	Current Status:
1. Community Watershed Planning for the Environmental Improvement Plan Best Management Practices Retrofit	Tahoe Resource Conservation District	Community Watershed Planning will be conducted on select watersheds within the Tahoe Basin to address inter-related natural resource issues at a watershed level and to enable residents and agencies to collaborate on strategies, solutions and programmatic environmental improvement	EIP Best Management Retrofit project at approximately 30% implementation; community watershed planning to be utilized to bring implementation

		implementation.	to 90%
2. Water Quality Monitoring (Truckee River Water Quality Monitoring Plan – TRWQMP)	Town of Truckee	The TRWQMP is a tool to monitor the effectiveness of storm water programs and improvement projects in the Truckee River Watershed. Both the County and the Town have developed and are implementing Storm water Management Programs (SWMPs). The respective SWMPs detail the specific actions each jurisdiction (County and Town) will implement in order to protect surface water. Each jurisdiction is responsible for the water quality monitoring on waters within their boundaries.	Phase I implemented; Phase II requires additional funding to continue implementation of the full plan
3. Little Truckee River Bridge Replacement	Sierra County	Replacement of a structurally-impaired bridge over the Little Truckee River that is seriously constricting the flow of the river, especially the flood flows resulting in the scouring of the river channel below the bridge and immediately downstream from the project. This scouring has moved substantial sediment downstream filling the river channel and causing braiding of downstream meadows areas.	Engineering, design and construction pending.
4. Negro Canyon Restoration	Truckee River Watershed Council	The Negro Canyon Restoration project will lead to water quality improvements by restoring hydrologic and geomorphic function to tributary streams in the watershed.	Concept-level design has been completed for the entire project. 100% design plans are completed for two of the six restoration sites

			included in the project. Permitting and CEQA/NEPA needs will be identified by the grant award date.
5. Regional Water Conservation Program	South Tahoe Public Utility District (STPUD); Truckee Donner Public Utility District (TCPUD); Tahoe City Public Utility District (TCPUD) and North Tahoe Public Utility District (NTPUD)	This project will be utilizing resources in a regional approach to water conservation efforts. Integrated elements include: turf buyback; outreach and educational components; water savings appliances and fixtures; training and mentoring.	Agency water conservation programs in place; regional program would integrate current programs. Program design still needs to be completed, utilizing existing elements.
6. Olympic Valley Aquifer Study	Squaw Valley Public Service District	The proposed project will quantify the impact of groundwater pumping on flows in Squaw Creek, and increases the amount of water that could be stored in local aquifers by developing and implementing different creek and/or pumping management strategies. It advances water supply reliability, promotes groundwater storage, promotes fisheries restoration and protection, and addresses impacts from anticipated climate change.	Permitting and land owner agreements 100% complete; RFQ pending.
7. Bijou Creek Environmental Improvement Program	City of South Lake Tahoe	The Bijou Creek Culvert Replacement Project (Project) will repair and upgrade, an old, failing	90% plans included with this application

		existing storm drainage system located in an extremely dense commercial area in the center of the City of South Lake Tahoe (City). The project will focus on beneficial use of storm water for infiltration and recharge of groundwater, as well as improving storm water quality discharging to Lake Tahoe, by constructing Best Management Practices on the site.	
8. Montgomery Estates Environmental Improvement Program	El Dorado County	Urban development and the concentration of stormwater in the Montgomery Estates subdivision has resulted in a concentrated flow of stormwater from the County of El Dorado Department of Transportation (EDOT) Right-Of-Way (ROW) directed to pervious forested land as well as Trout and Cold Creeks. A portion of the flow originating within regions of Montgomery Estates reaches Lake Tahoe resulting in the transport of fine sediment to Lake Tahoe without infiltration or treatment. The objective of the Project is the reduction in the transport of fine sediment from the Project area by constructing water quality Best Management Practices (BMPs) within the Project area.	50% plans and specs included with application
9. Griff Creek Stream Environment Improvement Project	Placer County	Griff Creek is located within the Kings Beach Watershed on the north shore of Lake Tahoe. Due to development in the urbanized area of Kings Beach, the once	30% plans included with application

		braided stream channel system of Griff Creek with natural flood control zones has been forced into a single channel that has resulted in significant bank erosion and incised channels. In addition, the watershed currently has no urban water treatment facilities and the untreated urban runoff flows directly into Griff Creek, The eroding creek and untreated urban runoff is contributing to nutrient and sediment deposition into the creeks outlet, Lake Tahoe. The purpose of the project is to improve the water quality in the Griff Creek subwatershed within the residential area of Kings Beach by preventing further stream degradation, reduce flooding, installing water quality enhancement features, and restoring stream environmental zones were feasible.	
10. Replacement of Bunker Water Tank	Tahoe City Public Utility District	The Tahoe City Public Utility District (TCPUD) Bunker Water Tank Replacement Project (BWTR) is a water supply enhancement project involving the replacement of a seismically unstable water storage tank with inherent leak issues as well as capacity deficiencies. the current capacity of 0.5 M has been determined to be inadequate to provide the water service area with proper fire flow storage and offers very little operational	Engineering, design and construction pending.

		storage during peak demand months. Tahoe City Public Utility District is not the sole provider of water in the area, and additional capacity will also be required if consolidation or interconnections with other systems occur in the future.	

Integrated Elements of Projects

Synergies and linkages exist between many of the projects as proposed above. Projects 1,7, 8 and 9 are all environmental improvement projects (EIP) and part of a larger land management plan as proposed by the Tahoe Resource Planning Agency, a bi-state environmental land steward and regulatory agency. Coordinated implementation of these EIP's occurs among the IRWMP partnership level, as well as regionally with regulatory agencies, local stakeholders and public agencies. Although these projects implement a regional water quality/land management plan, they are individual projects in terms of construction/implementation.

The Regional Water Conservation Project (Project 5) requires coordination between four implementing urban water suppliers and was developed specifically to develop synergies and linkages by sharing resources within the region and among implementing agencies.

Regional Map

Please refer to map enclosed with this attachment.

Existing Data and Studies

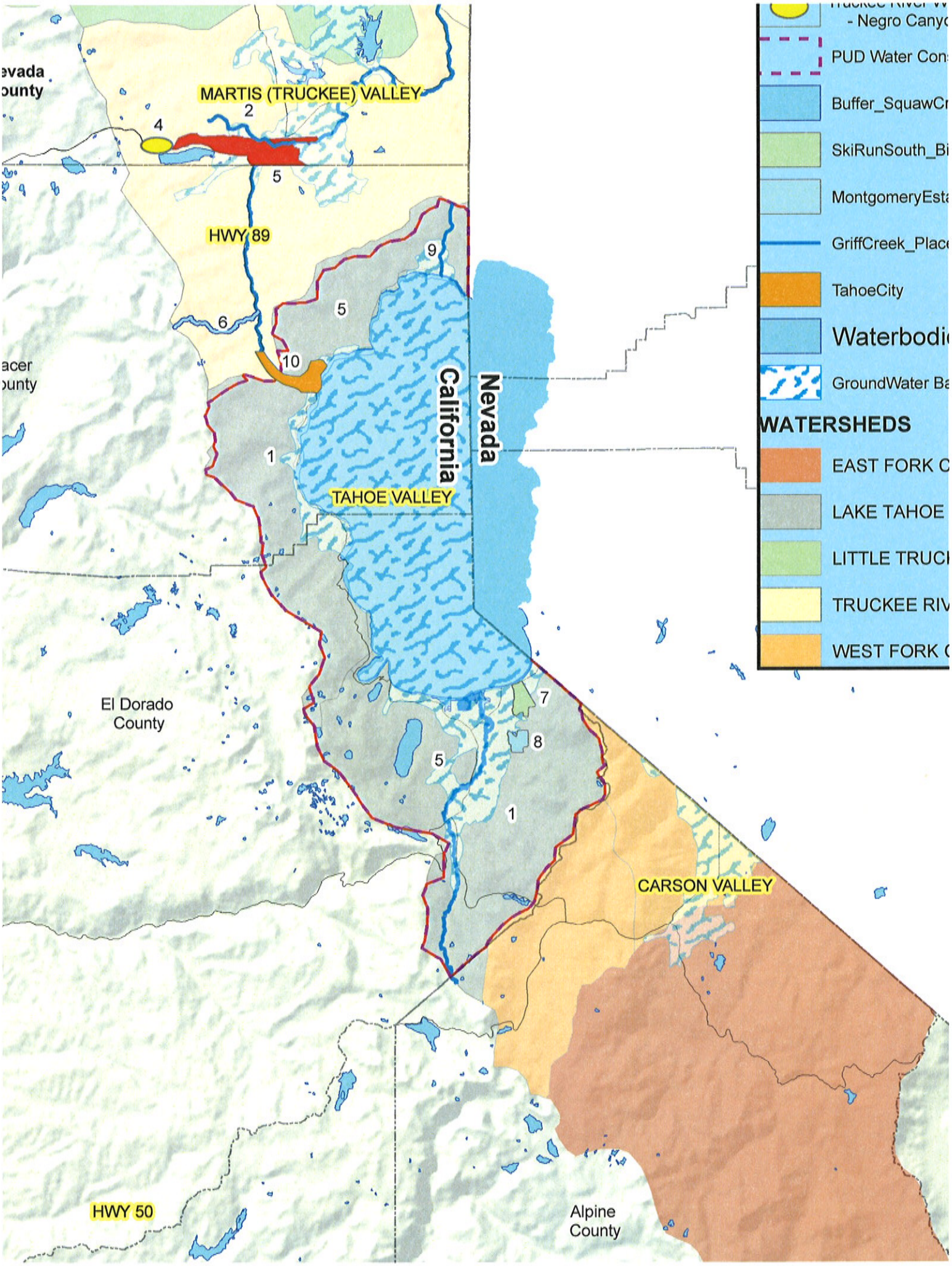
Provided with each individual project work plan below.

Project Map

Individual project maps were provided for construction projects. For implementation of monitoring, water conservation or other non-construction projects, please refer to the regional map for project locations within the region.

Project Timing and Phasing

Provided with each individual project work plan below.


MARTIS (TRUCKEE) VALLEY
2
4
5
HWY 89
9
5
6
10
1
California
Nevada
TAHOE VALLEY
El Dorado
County
7
8
5
1
CARSON VALLEY
HWY 50
Alpine
County
PUD Water Con
Buffer_SquawCr
SkiRunSouth_Bi
MontgomeryEsta
GriffCreek_Place
TahoeCity
Waterbodi
GroundWater Ba
WATERSHEDS
EAST FORK C
LAKE TAHOE
LITTLE TRUCK
TRUCKEE RIV
WEST FORK C

Project #1 Community Watershed Planning, Tahoe Resource Conservation District

Introduction

Through this project, Community Watershed Planning will be conducted on select watersheds within the Tahoe Basin to address inter-related natural resource issues at a watershed level and to enable residents and agencies to collaborate on strategies, solutions and programmatic environmental improvement implementation. This project will implement outreach and coordination efforts at the watershed scale and will provide technical assistance to landowners, community members and other stakeholder groups as related to pollutant load reductions, fire defensible space, water conservation measures, invasive species control and management and other natural resource issues present within selected watershed areas. Ultimately comprehensive plans will be developed for selected watersheds that will identify and detail natural resource issues and will propose potential solutions that will address these issues.

Goals and Objectives

The goal of this project is to implement an innovative process through the initiation of a comprehensive Community Conservation Planning and Implementation effort to address natural resource management on a watershed or sub-watershed level. Primary outcomes of proposed project include:

- Coordination and improved efficiency and effectiveness of conservation efforts
- Create opportunities for load reductions of significant pollutants affecting the clarity of Lake Tahoe.
- Implementation of Basin wide mandates including implementation of BMPs, fire defensible space activities and invasive species control.
- Increase participation in conservation efforts by area landowners/stakeholders

Purpose and Need

Currently, specific Environmental Improvement Program (EIP) projects such as BMP Retrofit, local erosion control projects, fire defensible space practices and invasive species management are delivered on a basis of land ownership. Each property owner is responsible for independently delivering their "share" of EIP projects. This approach misses opportunities for collaboration among adjacent interests to work cooperatively to achieve mutually beneficial results. On the other extreme, the broader scale of watershed planning is typically completed for the entire Lake Tahoe Basin, as in the TMDL process. The broad planning approach does not identify opportunities linked to the distinctive nature and composition of individual communities and natural resources found within a watershed. There is a need to conduct planning and facilitate TMDL implementation at a watershed scale to effectively deliver environmental improvements specific to watersheds and their communities.

Project List

- ✓ Conduct assessment of natural resource issues within selected watershed
- ✓ Provision of technical assistance related to identified natural resource issues within selected watershed areas.
- ✓ Development of outreach material and multi-media resources.
- ✓ Host public forums to solicit feedback and input from key stakeholders within selected watersheds.
- ✓ Develop load reduction scenarios to utilize as outreach and planning tools.
- ✓ *Map and control priority invasive weeds within selected watershed areas.*
- ✓ Develop site specific conservation plans for property owners within selected watershed areas.
- ✓ Create and distribute comprehensive watershed plans for selected areas.

Integrated Elements of Projects

The watershed-focus approach proposed through this project will provide a greater opportunity to foster community participation in support of EIP/TMDL project implementation. Through targeted outreach efforts, citizens are encouraged to play a central and substantive role in the stewardship of the watershed in which they live, and to take action to complete projects where they are integral to resource management success such as BMP Retrofit projects, fire defensible space, and controlling the spread of noxious weeds. Watershed scale emphasis will also provide for a greater ability to effectively coordinate among agencies for accelerated attainment of environmental thresholds and strategically contribute to the reduction of source category pollutant loads. Targeted watersheds will be selected based on priorities from the science community, the regulatory community, and the implementing jurisdictions, on an appropriate scale to match available resources and permit effective collaboration, interest of communities in participating, and a mixture of proposed Environmental Improvement Program (EIP) projects and TMDL implementation opportunities that will benefit from enhanced coordination efforts.

Regional Map

Enclosed with this attachment.

Completed Work

The Community Watershed Planning approach has direct linkage to past programmatic activities as developed through the Backyard Conservation Program. The implementation of conservation planning objectives will be an extension of past efforts that have been made to raise environmental awareness and to increase public participation and agency collaboration.

Existing Data & Studies

Community Watershed Planning is a nationally recognized effort established by the Natural Resource Conservation Service to identify and address specific natural resource issues within a given area (watershed) and to bring key stakeholders together to initiate discussion and to formulate potential solutions to the natural resource issues identified.

Budget Category (a): Direct Administration Costs
Task 1.1: Administration

1.1.1: Tahoe RCD shall provide all technical and administrative services as needed for project completion, review all worked performed, and coordinate budgeting and scheduling to assure that the project is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

Deliverable: Preparation of invoices and other deliverables as required.

Task 1.2: Labor Compliance Program

1.2.1: Tahoe RCD will pay State Prevailing Wage for all construction activities. Tahoe RCD will be responsible for complying with all Labor Code requirements under Senate Bill X2-9 and for paying associated fees within this Code. Tahoe RCD will provide all necessary documentation of compliance to grant manager prior to finalizing contract.

Deliverable: Compliance with Labor Code requirements as stated in grant agreement.

Task 1.3: Reporting

1.3.1: Tahoe RCD shall meet project requirements through regular communication with regional and state grant managers and the completion of monthly progress reports submitted to STPUD by the 30th of each month. The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work completed for the project. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts. All subcontractor activities and expenditures shall be documented in progress reports.

1.3.2: Prepare Draft Project Report. Tahoe RCD shall prepare a draft project report that includes the results of the tasks listed above. The report shall include the following narrative sections:

- A brief introduction including a statement of purpose, the objectives of the project, and a description of the approach, accomplishments, and lessons learned during the project.

- A list of the task deliverables previously submitted as outlined in the Work Tasks.
- Any additional information that is deemed appropriate by grant managers.

1.3.3: Submit Draft Project Report. Tahoe RCD shall submit copies of the draft project report to grant managers for review and comment.

1.3.2: Prepare Final Project Report. Tahoe RCD shall prepare and submit a final project report that incorporates comments made by grant manager(s) on the draft project report.

Deliverables: Monthly Progress Reports & Invoicing, Draft Project Report, Final Project Report as specified in the Grant Agreement

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation

Task 1.4: Assessment and Evaluation

1.4.1: Tahoe RCD shall prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval at the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverables: Completion and submittal of Project Assessment and Evaluation Plan.

Task 1.5: Final Design

There are no applicable work items for this project under this task.

Task 1.6: Environmental Documentation

1.6.1: Project is expected to be exempt from CEQA documentation through articles 15304 - Minor Alterations to Land and 15307- Actions by Regulatory Agencies for Protection of Natural Resources. Tahoe RCD will file a notice of exemption with California State Clearing House. Project implementation and deliverables through this grant agreement are not expected to entail significant disturbance to natural resources within the Tahoe Basin. A review of the project tasks will be completed and all necessary environmental documentation will be submitted to State Clearing House and to DWR grant manager for approval prior to implementation of project tasks and deliverables.

Deliverable: Approved and adopted CEQA/NEPA documentation

Task 1.7: Permitting

1.7.1: Permits will be obtained and landowner agreements will be established as necessary for work conducted on public lands and for control and eradication of invasive weed populations.

Deliverables: Permits to be submitted as obtained and approved through length of project.

Budget Category (d): Construction/ Implementation

Task 1.8: Construction Contracting

1.8.1: Construction bid will be established and posted by the Tahoe RCD for work related to herbicide use, heavy equipment operation and control of priority invasive weeds.

Deliverables: Advertisement for bids, pre-bid contractors meeting minutes, evaluation of bids, award contract

Task 1.9: Implementation

The goal of this project is to implement an innovative process through the initiation of a comprehensive Community Conservation Planning and Implementation effort to address natural resource management on a watershed or sub-watershed level. A minimum of 2 key watersheds in California will be identified and will integrate natural resource management and agency/community participation to optimize the benefits of combining project implementation for prioritized local natural resource issues. Planning processes and project implementation will focus on community input and agency coordination to integrate specific management activities including water resource management, fuels management/fire defensible space, conservation landscaping techniques and invasive weed control.

Subtask 1.9.1 Mobilization and Site Preparation

1.9.1.1: Site preparation will include a complete survey and mapping of priority invasive weeds. All materials (soil, rock, plants, etc) will be weed-free certified and procedures for equipment decontamination will be followed prior to entering the construction site.

Subtask 1.9.2 Project Construction

The following objectives and tasks will help to achieve the project goal(s) for Community Watershed Planning:

1.9.2.1: Identify natural resource issues for targeted areas and complete community watershed plans for two sub-watersheds in the Tahoe Basin.

a) Conduct community watershed needs assessment on selected watersheds and develop solutions/alternatives to integrate projects and address the identified needs within targeted watershed.

b) Identify opportunities for conservation of multiple resources and community enhancement.

c) Complete neighborhood-wide watershed plans that identify natural resource issues and propose solutions/alternatives that address these issues.

1.9.2.2: Increase community participation in, and support for, the implementation of Environmental Improvement Program.

a) Host a minimum of 4 public forums (two per selected watershed) allowing community members the opportunity to give input to participating agencies for the development of a comprehensive community level, watershed-based plan for implementation of specified environmental targets.

b) Solicit participation from a minimum of 200 community members through public forums and outreach activities.

1.9.2.3: Implement multiple agency, integrated resource outreach efforts.

a) Conduct education and outreach to a minimum of 1000 property owners through the medium of the nationally recognized Backyard Conservation Program.

b) Initiate dialog between local agency representatives and community members on identified natural resource issues and proposed solutions.

1. 9.2.4: Accelerate community participation and support for agency mandated objectives for integrated resource management.

a) Develop outreach campaign to increase participation and support. Implement Best Management Practices on 250 to 500 private parcels.
b) Utilize Pollutant Load Reduction Model (PLRM) to show load reductions based on various watershed scenarios and treatment/control of non-point source and point source pollutants.

1.9.2.5: Work with property owners and managers to better control and manage populations of invasive species.

a) Map and control priority invasive weeds throughout the selected neighborhood-wide treatments sites, including the urban forest interface on private, state and federal land. This information will be integrated into existing invasive plant control efforts by state and federal agencies.

1.9.2.6: Provide technical assistance to property owners related to conservation landscaping practices, fire defensible space, conservation landscaping and noxious weed management.

a) Assist a minimum of 125 private property owners with direct technical assistance targeting noxious and invasive biological species of concern in the Lake Tahoe Basin
b) Develop site specific conservation plans that, to the extent possible, will provide a holistic approach to the integration of multiple natural resource issues including BMPs, fire defensible space, water conservation practices and invasive species control and restoration measures.

Deliverables:1) Outreach materials, brochures and mailers; **2)** Sign up sheets, agendas and meeting minutes for public forums; **3)** BMP site plans, conservation landscaping plans and listing of property APN numbers for those homeowners implementing BMPs or developing conservation landscaping practices on their properties; **4)** Load reduction modeling efforts and developed scenarios; **5)** Initial watershed needs assessment; **6)** Community Watershed Plans (draft and final); **7)** Mapped areas of invasive weed infestation, control methods and documentation of management practices.

Subtask 1.9.3 Performance Testing and Demobilization

1.9.3.1: Performance measures for work item tasks will be evaluated throughout the length of project implementation and will rely on the measurement tools and methodology, outcome indicators and targets described in the Project Assessment and Evaluation Plan (PEAP).

1.9.3.2: Demobilization: All equipment utilized for project construction and/or invasive weed control and management will be inspected and decontamination procedures will be followed as necessary and as mandated by local regulatory agencies.

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement

Task 1.10: Environmental Compliance/Mitigation/Enhancement

1.10.1: There is no expected mitigation and environmental compliance as per Lahontan RWQCB will be followed and included in the Specifications and Contract Documents.

Budget Category (f): Construction Administration

Task 1.11: Construction Administration

1.11.1: Tahoe RCD shall provide all technical and administrative staffing services as needed for construction oversight, including reviewing invoices for accuracy, ensuring timely construction progress, processing payment and meeting all applicable procurement policies and regulations.

Project #2 Town of Truckee – Water Quality Monitoring Program

Introduction

The Town of Truckee is an active and participating partner in the Tahoe Sierra Integrated Regional Water Management Plan. The Town is seeking funds to implement and operate the Truckee River Water Quality Monitoring Plan.

The Truckee River Water Quality Monitoring Plan (TRWQMP) has been created in response to an order issued by the Lahontan Regional Water Quality Control Board (the Board). The California Water Code Section 13267 Board order, issued to both Placer County (the County) and the Town of Truckee (the Town) on March 9, 2007 and July 3, 2007, respectively, required the creation of a comprehensive monitoring plan for the middle Truckee River. Though regulated under separate board orders, the County and Town chose to coordinate efforts in the development of a monitoring program to ensure the cost-effective collection, integration and analysis of water quality data within the watershed. The TRWQMP has been completed and approved. In 2009, the Town voluntarily started implementing Phase I of the TRWQMP, but requires additional funds for implementation and operation of Phase II of the plan.

The TRWQMP is a tool to monitor the effectiveness of storm water programs and improvement projects in the Truckee River Watershed. Both the County and the Town have developed and are implementing Storm water Management Programs (SWMPs). The respective SWMPs detail the specific actions each jurisdiction (County and Town) will implement in order to protect surface water. Each jurisdiction is responsible for the water quality monitoring on waters within their boundaries.

The project area covered under the TRWQMP includes the main stem of the middle Truckee River and all areas contributing surface water runoff between its outlet from Lake Tahoe and its confluence with Juniper Creek. This area includes 15 sub-watersheds, which drain to the main stem of the Truckee River either through tributaries, direct runoff, or stormwater infrastructure. Preliminary screening for potential source

areas was conducted using an integration of GIS data on land use, land condition and other human disturbances. The analysis resulted in the classification of each sub-watershed as low, medium or high disturbance. Of the seven identified high disturbance sub-watersheds, three are in Truckee including Truckee Town Corridor, Donner/Cold Creeks and Trout Creek. The TRWQMP was subsequently designed to focus monitoring resources and efforts on those high disturbance sub-watersheds where water quality is expected to be the most impaired and where the majority of actions under the Town's SWMPs are expected to be implemented.

The Town seeks funds to implement and operate Phase I and II of the TRWQMP within Truckee.

Goals

- Ensure regulatory compliance with NPDES permits, Middle Truckee River TMDL, Lahontan Board Orders.
- Develop scientifically defensible water quality monitoring datasets of surface water resources that can be used to evaluate the effectiveness of Stormwater Management Programs and efforts, target appropriate user groups, and provide information to make Land Use decisions.
- Ensure collaboration and integration of multiple monitoring efforts.

Objectives

- Provide a comprehensive and integrated data collection analysis and reporting framework to evaluate and track resources spatially and over time.
- Focus monitoring resources on pollutants of concern and greatest risk of land use activity sources.
- Maximize monitoring resources by including a range of monitoring types that very in frequency, collection, relative cost and statistical accuracy.
- Focus monitoring resources on times of greatest expected deviation from minimally impacted locations.
- Coordinate, collaborate, and integrate with other monitoring efforts.

Purpose and Need

The purpose of this project is to implement and operate Phase I and II of the TRWQMP. This project addresses the following objectives contained in the Tahoe Sierra IRWMP:

- WQ2. Reduce nutrient and sediment loads to receiving water bodies.
- WQ3. Meet nutrient and sediment standards for tributary streams and stormwater runoff.

- WQ6. Increase public awareness of regional water quality issues and their role in improving the quality of local water bodies.
- GWM2. Protect groundwater quality.
- IWM1. Ensure sound planning that is based on watershed science.
- IWM1. Encourage collaboration among multiple jurisdictions within a watershed.
- IWM3. Form partnerships to share resources, take advantage of cost sharing opportunities and exchange information.

Project List

The Town of Truckee Water Quality Monitoring Project includes the following sub-watersheds:

Truckee Town Corridor – The urbanized corridor containing the Town of Truckee (14.1 mi) contains a high density of commercial and residential development adjacent to the Truckee River main stem. The Town Corridor contains heavily trafficked roads that receive significant road abrasive application, including I-80, State Highway 267, and State Highway 89. The hydrologic connectivity of the urban areas and local highways within the corridor to the Truckee River poses a risk of high urban pollutant loading from these areas. There are five golf courses within Town limits (3 within this sub-watershed) and an additional 5 within the watershed, creating potential sources of nutrients and pesticides to surface waters. The Truckee River Sediment TMDL, also identified significant legacy site impacts from historic development within this area.
Donner Creek/Cold Creek – The Donner Creek and Cold Creek sub-watersheds convene downstream of the Donner Lake dam before connecting to the main stem of the Truckee River. The Donner Creek portion of the sub-watershed contains a high level of residential/commercial development adjacent to surface waters resources. Interstate 80 runs in a close proximity to portions of Donner Creek and Donner Lake and is a potential source of sediment and other pollutants due to high traffic density and road abrasive application. The Cold Creek sub-watershed is relatively undeveloped, but several legacy sites associated with past railroad construction, gravel mining, and logging exist. In particular, an undersized culvert underneath a railroad bridge over Cold Creek is known to cause a significant amount of localized stream bank erosion. These legacy sites continue to contribute to water quality impairment in this sub-watershed. The Donner Creek/Cold Creek sub-watershed also contains a moderate amount of dirt roads (2.3 mi) and is considered a legacy area due to the age of the developments and buildings.

The Trout Creek sub-watershed (4.9 mi) is a relatively small but highly developed area within the Town of Truckee jurisdiction. Medium to high density development and associated impervious surfaces pose the risk of increased generation and transport of urban pollutants to surface waters. The Tahoe Donner Golf Course and Coyote Moon Golf Course are located within this small sub-watershed and are potential sources of nutrients and pesticides to Trout Creek. In addition, this Trout Creek was highly

modified through Downtown Truckee and is anticipated to be modified in the near future to restore the creek.

Integrated Elements of Project

The TRWQMP was developed in partnership with Placer County and with input from community stakeholders including Placer County (partner), Town of Truckee (partner), Truckee River Watershed Council (community participant), Lahontan Regional Water Quality Control Board (regulatory agency, community participant), Contractors Association of Tahoe Truckee (community participant), Squaw Valley and Martis Valley stakeholders (partners, community participants) along with many other businesses, residents, developers and organizations.

The TRWQMP was developed in partnership with Placer County and in order to coordinate other efforts in the area (Squaw Creek TMDL requirements, Martis Valley monitoring requirements, Middle Truckee River TMDL, Storm Water Management Programs for Placer County and the Town of Truckee.

Completed Work:

CEQA Categorical Exemption for the Truckee River Watershed Monitoring Project is complete and filed with the State Clearing House.

The Town in partnership with Placer County procured the services of Camp Dresser & McKee, Inc. (CDM) to begin the implementation of the TRWQMP. The Town has started the implementation of Phase I.

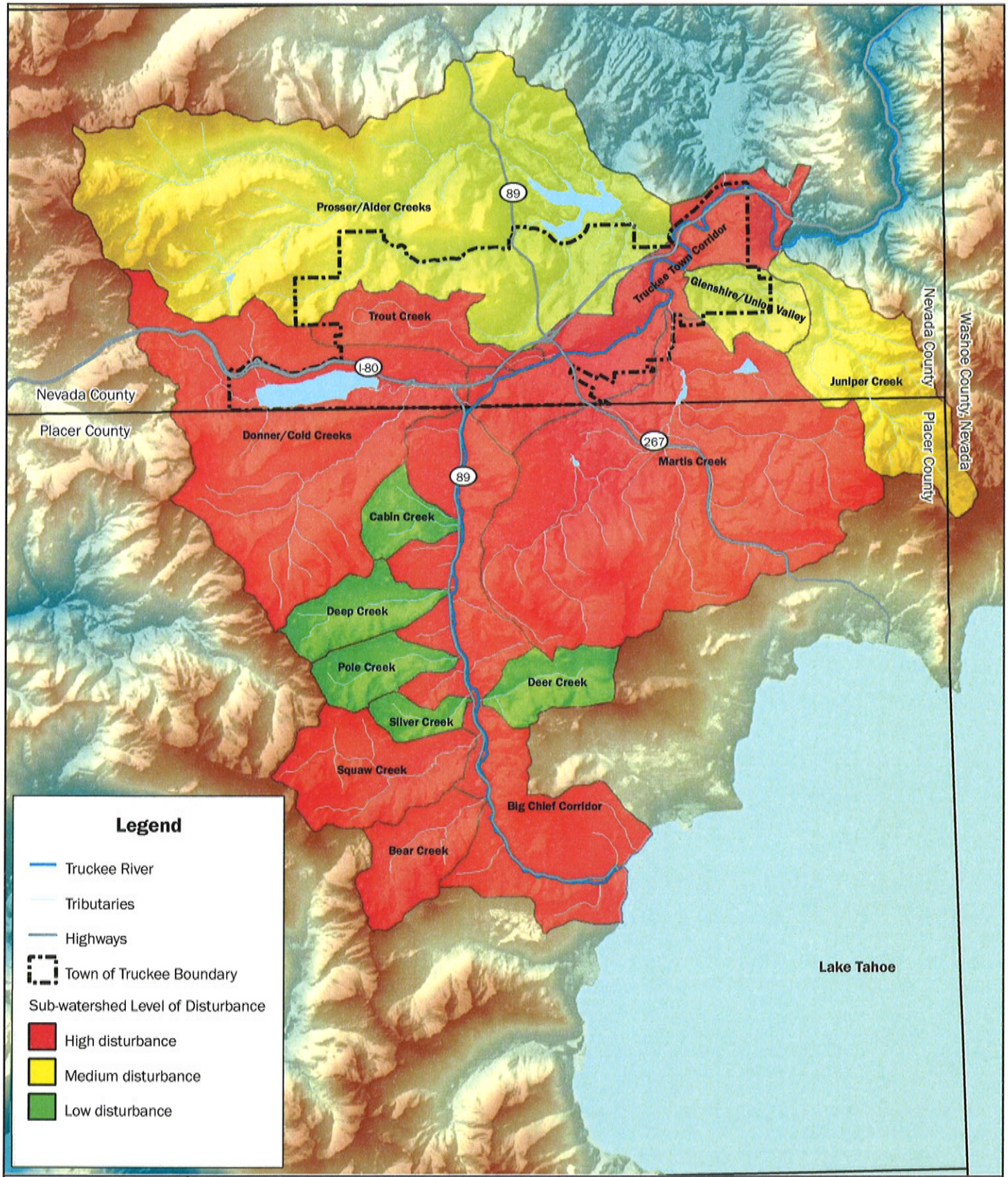
Existing Data and Studies

- Truckee River Water Quality Monitoring Plan, 2nd Nature, September 2008 for Placer County and Town of Truckee.
- Truckee River TMDL, Lahontan Regional Water Quality Control Board.
- Storm Water Management Program, Town of Truckee, December 6, 2007.
- 2009/10 Annual Report for TRWQMP, CDM for the Town of Truckee, January 2011.
- Many existing studies, data, and resources were used in the creation of the TRWQMP and are cited with the plan.

The TRWQMP documents spatial scale of observations, assessment types, data collection and management protocols by assessment type and data management and reporting.

Project Map:

Attached are figures 3.2, 5.4, 5.8 and 5.5 from the TRWQMP, project maps.

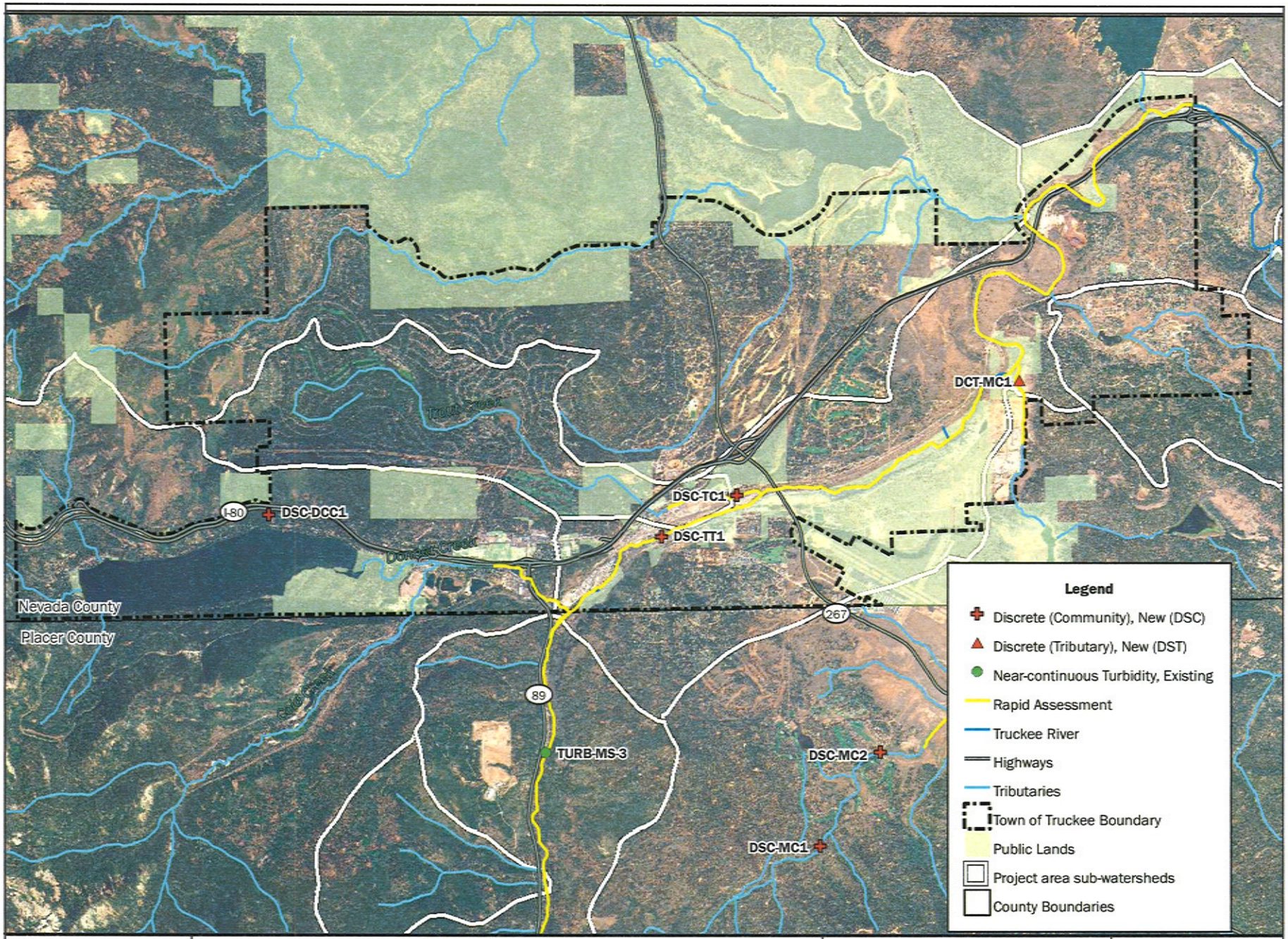


2NDNATURE LLC

Relative level of disturbance for each sub-watershed based on a GIS analysis of potential source areas.

0 1 2 3 4 Miles N

FIGURE 3.2

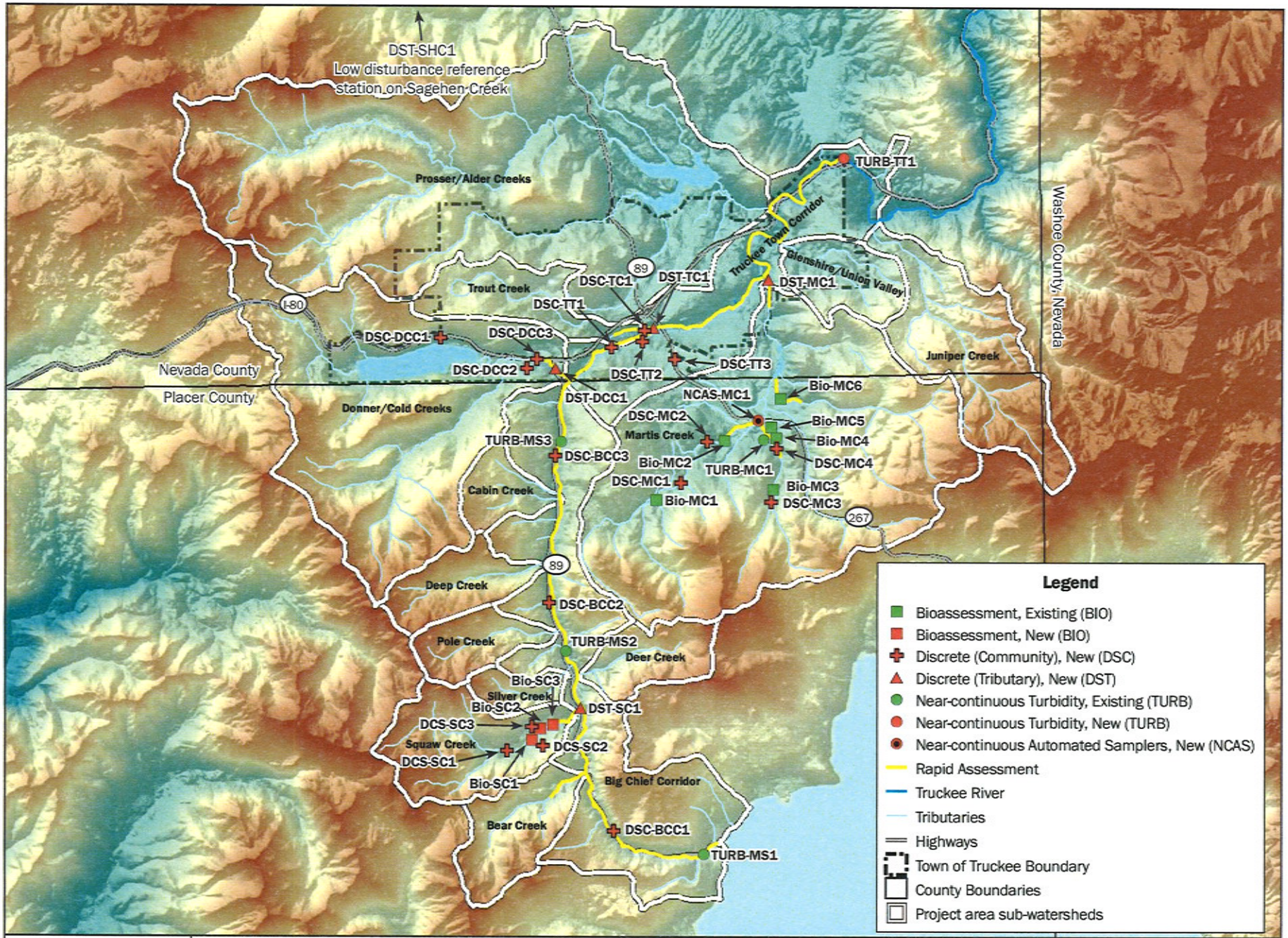


2NDNATURE LLC

Town of Truckee Phase I Monitoring. Station locations based on available information in 2008. Final station locations will be determined during the actual implementation of each independent assessment effort.

0 0.5 1 1.5 2 Miles N

FIGURE 5.4



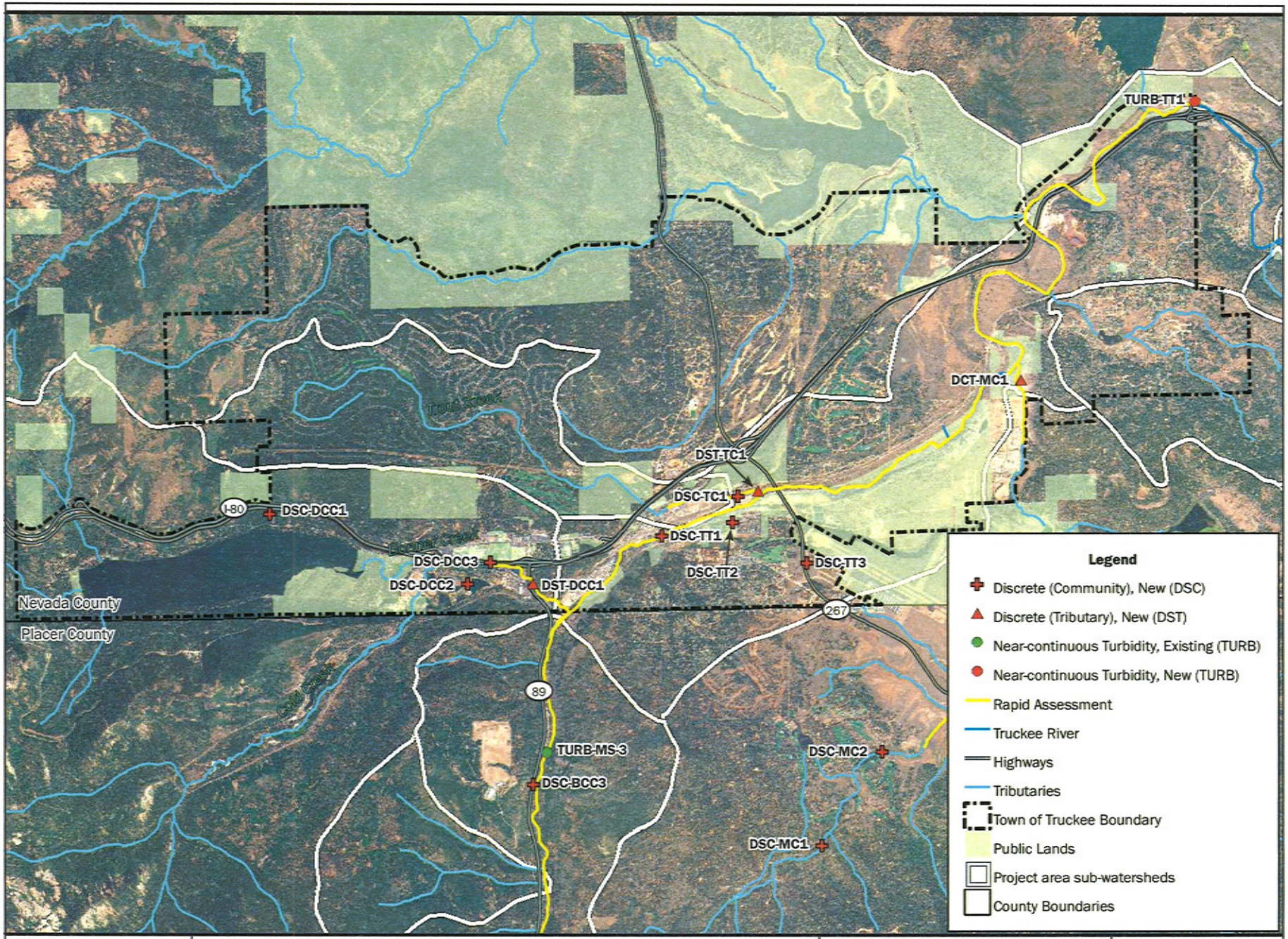
2NDNATURE LLC

TRWQMP Phase II Monitoring. Station locations based on available information in 2008. Final station locations will be determined during the actual implementation of each independent assessment effort.

0 1 2 3 4 Miles

N

FIGURE 5.5



2NDNATURE LLC

Town of Truckee Phase II Monitoring. Station locations based on available information in 2008. Final station locations will be determined during the actual implementation of each independent assessment effort.

0 0.5 1 1.5 2 Miles N

FIGURE 5.8

Project Timing and Phasing:

Implementation of Phase I includes both rapid assessment and discrete stormwater sampling from communities of concern. Phase II adds an additional near-continuous turbidity station at downstream end of the Town of Truckee and additional community and tributary discrete sampling stations in high-disturbance sub-watersheds. Phase II is ready to implement and operate upon successful funding.

Three years of monitoring data are anticipated to be completed based on the budget estimated in the TRWQMP.

Proposed Work

The Town of Truckee will implement and operate a water quality monitoring program based on the TRWQMP within Truckee. The proposed work will include the implementation and operation of Phase I and II of the TRWQMP.

TRWQMP Phase I			
Town of Truckee			
Sub-watershed	Component	Stations	Station Justifications, Assumptions and Notes
Truckee Town Corridor	Rapid Assessment	10 stream miles along main stem between Placer/Nevada county line and downstream boundary of project area	Cost effective method to track fine sediment deposition in priority areas. Assess distribution of fine sediment in main stem to Truckee River along Truckee Town Corridor.
	Discrete Sampling (Community)	1 station: Confirm sites, install, operate and maintain (DSC-TT1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Sample stormwater quality from a primary drainage point within the developed area of downtown Truckee.
	Data Management and Reporting		Assumes 20% of data management and reporting costs allocated to the Town of Truckee.
Donner/Cold Creeks	Rapid Assessment	1 stream mile upstream from confluence with Truckee River	Cost-effective method to track fine sediment deposition in priority stream reaches. Assess distribution of fine sediment in downstream mile of Donner Creek.
	Discrete Sampling (Community)	1 station: Confirm sites, install, operate and maintain (DSC-DCC1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Simple stormwater quality from a primary drainage point within the developed are of the Donner Creek sub-watershed.
Trout Creek	Rapid Assessment	1 stream mile upstream from confluence with Truckee River	Cost effective method to track fine sediment deposition in priority stream reaches. Assess distribution of fine sediment in downstream mile of Trout Creek.

	Discrete Sampling (Community)	1 station: Confirm sites, install, operate and maintain (DSC-TC1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Sample stormwater quality from a primary drainage point within the developed area of the Trout Creek sub-watershed.

TRWQMP Phase 2			
Town of Truckee			
Sub-watershed	Component	Stations	Station Justifications, Assumptions and Notes
Truckee Town Corridor	Rapid Assessment	10 stream miles along main stem between Placer/Nevada county line and downstream boundary of project area	Cost effective method to track fine sediment deposition in priority areas. Assess distribution of fine sediment in main stem to Truckee River along Truckee Town Corridor.
	Discrete Sampling (Community)	**2 new stations:** Confirm sits, install, operate and maintain (DSC-TT2, DSC-TT3)	Standardize stormwater sampling across sites and over time by sapling first flush using passive samplers. Sample stormwater quality from primary drainage points from 2 new or future planned developments.
		1 station: Confirm sites, install, operate and maintain (DSC-TT1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Sample stormwater quality from a primary drainage point within the developed area of downtown Truckee.
	Near-continuous Automated Turbidity Probes	**1 station:** Install, operate and maintain station at downstream end of Town boundary (TURB-TT1)	Evaluate sediment loads along main stem of Truckee River near downstream end of project area using high resolution data.
	Data Management and Reporting		Assumes 20% of data management and reporting costs allocated to the Town of Truckee.
Donner/Cold Creeks	Rapid Assessment	1 stream mile upstream from confluence with Truckee River	Cost-effective method to track fine sediment deposition in priority stream reaches. Assess distribution of fine sediment in downstream mile of Donner Creek.
	Discrete Sampling (Community)	**2 new stations:** Confirm sites, install, operate and maintain (DSC-DCC2, DSC-DCC3)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Sample stormwater quality of rad runoff along I-80 as well as primary drainage point from urban development, impacts of road sanding will be evaluated.
		1 station: Confirm sites, install, operate and maintain (DSC-DCC1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Simple stormwater quality from a primary drainage point within the developed are of the Donner Creek sub-watershed.

Trout Creek	Rapid Assessment	1 stream mile upstream from confluence with Truckee River	Cost effective method to track fine sediment deposition in priority stream reaches. Assess distribution of fine sediment in downstream mile of Trout Creek.
	Discrete Sampling (Community)	**1 station:** Confirm sites, install, operate and maintain (DSC-TC1)	Standardize stormwater sampling across sites and over time by sampling first flush using passive samplers. Sample stormwater quality from a primary drainage point within the developed area of the Trout Creek sub-watershed.
	Discrete Sampling (Tributary)	**1 station:** Confirm site, install, operate and maintain (DST-TC1)	Stream water sample collection focusing on water quality and pollutants of concern during elevated stream flow conditions, when pollutants are most likely to be mobilized from source and transported in streams. Track tributary water quality at downstream end of high disturbance sub-watershed.

The project work includes the implementation of three different performance assessment types. The results of each assessment type provide a different evaluation of the surface water resource condition with the project area. When integrated, the results from the various assessment types address a number of key questions regarding water quality and biotic health in the project area, the pollutant load contribution of a number of key community developments, and the effectiveness of the SWMPs. Collectively, these assessment types are designed to meet the goals and objectives of the water quality monitoring program.

Rapid Assessment Methodologies rely on simple and repeatable observations of site or habitat conditions. Rapid assessment protocols are designed to produce relatively-accurate, low-cost, quantitative spatial data that are consistent with, and comparable to, data from more rigorous evaluations. The rapid assessment observations focus upon the density and distribution of fine sediment within the stream channels themselves. These evaluations are a cost-effective means of tracking changes in relative fine sediment distribution at specific locations over time on a relative scale. The low cost allows for data collection over a much greater spatial area.

Discrete Water Quality measurements include the collection of grab samples for submission to an analytical laboratory 8 times per year during rain or snow melt events ideally after longer dry spells.

Discrete water quality measurements are used to characterize both storm water quality emanating from specific community developments (community level) and surface water quality in tributaries (tributary level) throughout the project area. Community level discrete water quality assessments are designed to capture the "worst-case scenario" of storm water quality from localized areas of development. These first flush samples can be analyzed for a range of pollutants depending upon the catchment land use and associated pollutants of concern.

Tributary level discrete water quality assessments compare and track the cumulative water quality impacts on a sub-watershed scale. This discrete stream sampling technique focuses on evaluating the pollutant concentration and estimates of event loads during high flow conditions when pollutant transport is most likely. Tributary level discrete water quality assessments combine strategically placed passive sampling devices and continuous hydrology to capture in-stream water quality signals during the rising limbs of high flow events, including summer thunderstorms, winter rains and rain or snow events. Spring snow melt will be sampled manually using comparable techniques to minimize hydrologic variability in the observations. Long-term seasonal and annual tributary level assessments will allow comparisons of sub-watershed water quality over time as a result of human activities and SWMP actions to mitigate potential water quality impacts.

Near-continuous water quality monitoring includes two distinct types of water quality observations:

- In situ water quality probes that conduct automated measurements at specific locations or nearly any time interval and store the time-series data internally.
- Automated water sampling instruments that collect water samples at specific locations on either specific time intervals or during specified flow conditions. Automated sample collection can be linked to measurement of stage (depth) or turbidity. This improves the accuracy and precision of total load estimates.

The continuous datasets provided by in situ probes are extremely valuable to evaluate processes and long-term trends. In situ monitoring will be used to track the status and trends for the priority pollutant of concern – sediment – within the Truckee River. Continuous turbidity records along the main stem will be used to estimate event, season, and annual loads of suspended sediment.

Automated sampling instruments allow for the remote collection of flow-weighted water samples during specific flow conditions and/or at predetermined times. Water sample collection during known flow conditions allows representative calculations of flow-weighted event mean concentrations (EMCs) and pollutant loading for pollutants of concern.

To ensure the collection of a consistent and integrated data set, it is critical that data are collected in a consistent format using standardized methods. The project will implement the protocols and standards documented in the TRWQMP for data generation, management and reporting.

Samples will be collected using standardized sampling strategies and field protocols, laboratory analyses must focus on the same pollutants of concern and repot to the same units, and data storage and reporting will be centralized and consistent.

By evaluating and analyzing the data in a comprehensive manner, a better overall picture of the watershed is anticipated spatially and over time. The data will be used to make

Land Use decisions, Stormwater Management Program effectiveness evaluations, and stormwater capital improvement project recommendations.

The base of this project is the Truckee River Water Quality Management Plan (TRWQMP) which references many existing documents such as the USGS National Field Manual for the Collection of Water-Quality Data, SWAMP Program, Middle Truckee River TMDL and Truckee's SWMP.

Monitoring Deliverables - Areas to be monitored focus on areas of the Truckee River Watershed within the Town of Truckee with the greatest risk of pollutants of concern. The TRWQMP was developed using SWAMP protocols, existing USGS National Field Manual for the collection of Water-Quality Data protocols, as well as other methods for data collection, reporting and QA/QC that are scientifically defensible and repeatable.

Some of the water quality monitoring activities will require access to land not owned by the Town. The Town will seek voluntary access from the property owners as needed.

CEQA Categorical Exemption has been completed and approved by the Town for this project. The Town will apply for and secure a 404 permit through Fish and Game as a condition of this project for stations located within waterways.

Budget Category (a): Direct Administration Costs

Task 2.1: Administration

2.1.1: The Town will enter into a memorandum of understanding with the lead partner agency and will submit all required grant invoicing, reporting and documentation to the lead partner for submittal as required.

Deliverables: Grant reporting and invoicing as required.

Task 2.2: Labor Compliance

2.2.1: There is no construction proposed for this project.

Task 2.3: Reporting

2.3.1: Performance Measures - The TRWQMP provides a framework for reporting data and comprehensive analysis. An annual report will be produced every year and results of the monitoring data coordinated with the annual reporting and effectiveness evaluation for the Stormwater Management Programs. Annual reports will be posted on the Town's website. Data will be reported to the Truckee River Information Gateway (TRIG) and will be available to other agencies and the public.

Deliverables: Annual Report

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation

Task 2.4: Assessment & Evaluation

2.4.1: Project Assessment and Evaluation Plan (PAEP). Town of Truckee will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverable: PAEP

Task 2.5: Final Design
N/A

Task 2.6: Environmental Documentation

2.6.1: CEQA Categorical Exemption has been completed and filed with the State Clearinghouse.

Deliverable: Approved and adopted CEQA documentation.

Task 2.7: Permitting

2.7.1: Obtain 404 Permit from Fish and Game.

Deliverable: 404 Permit obtained.

Budget category (d): Construction/ Implementation
Task 2.8: Construction/Implementation Contracting

2.8.1: Implementation of Phase I started. Professional services contract will be amended to include implementation of Phase II.

Deliverable: Professional services contract

Task 2.9: Construction/Implementation

Subtask 2.9.1: Mobilization & Site Preparation

2.9.1.1.: Strategically place passive sampling devices

Subtask 2.9.2: Project Implementation

2.9.2.1: Implement Phase I (see description in "Proposed Work")
2.9.2.2: Implement Phase II (see description in "Proposed Work")
2.9.2.3: Rapid Assessment Identified sub-watersheds
2.9.2.4: Discrete Sampling (Community)Six stations
2.9.2.5: Discrete Sampling (Tributary)Two Stations
2.9.2.6: Near-continuous Automated Turbidity probes-One new station

Subtask 2.9.3: Performance Testing and Demobilization

2.9.3.1: Data Analysis and reporting.

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement

Task 2.10: Environmental Compliance/Mitigation/Enhancement

2.10.1: CEQA is complete

Budget Category (f): Construction Administration

Task 2.11: Construction/Implementation Administration

2.11.1: Town of Truckee shall provide all technical and administrative staffing services as needed for any implementation oversight, including reviewing invoices for accuracy, ensuring timely construction progress, processing payment and meeting all applicable procurement policies and regulations.

Project #3: Little Truckee River Restoration Project

Introduction

Sierra County Department of Transportation maintains a County bridge over the Little Truckee River in Sierra County, CA. This bridge serves the Independence Lake recreation area as well as private land holdings and USFS land tracts. This bridge utilizes a railroad flat car for its structure. Because the bridge length is short, a constriction of the river at the bridge has caused increased flow velocities, increased high water elevations and caused channel bed and bank scour. The County has been notified by Caltrans that this bridge is rated as "Scour Critical", indicating loss of support around the abutments affecting the structural integrity of the bridge.

The approved replacement in the Project Study Report (PSR) utilizes the existing bridge structure as a temporary bridge detour. Following construction of the new bridge, the detour span becomes available for reuse at the Independence Creek tributary low water crossing, just over 1 mile from the Little Truckee River Bridge site. This reuse represents significant cost savings to the low water crossing project, and is an example of using Low Impact Design to obtain several of the project goals.

Goals and Objectives

There are three basic goals and objectives of this project: 1) Reduce or remove sedimentation in "Kyburz-Ranz" meadows by reducing or removing scour upstream of the meadows in the Little Truckee River; 2) Reduce or remove sedimentation and turbidity from a low water crossing of a tributary of Independence Creek; and, 3) Installation of a United States Geological Survey stream gauge in the Little Truckee River to allow monitoring of river flows.

To reach the first goal will require replacement of a bridge over the Little Truckee River that is seriously constricting the flow of the river, especially the flood flows resulting in the scouring of the river channel below the bridge and immediately downstream from the project. This scouring has moved substantial sediment downstream filling the river channel and causing braiding of downstream "Kyburz-Ranz" meadows area. Further down cutting occurs increasing the sediment movement towards Bickford Meadows and Stampede Reservoir.

The river downstream from the main bridge is in a state of grave degradation. No serious effort at downstream restoration can begin until the constriction caused by the bridge is removed. Following use of the existing bridge as a temporary detour over the river during construction of the Little Truckee River Bridge, it is planned to take the existing bridge, move it about a mile and one-half toward Independence Lake on the Sierra County Road and permanently place it over a crossing of a perennial stream.

The second goal of the project will be met by removing the low-water crossing of the Independence Creek tributary (tributary). Presently all traffic on the Independence Lake Road, including logging trucks and heavy equipment, passes through the stream in a low-water crossing of the tributary to Independence Creek, itself a tributary of the Little Truckee River. The Lahontan Regional Water Quality Control Board has been concerned with this crossing for some time and has instructed both the USFS and Sierra County to alleviate this problem. Reuse of the Little Truckee River Bridge will eliminate an erosion and sedimentation issue, significantly reduce the turbidity at the crossing and improve downstream water quality and aquatic habitat below this crossing.

Finally, the third goal of this project is the placement of a United States Geological Survey stream gauge in the Little Truckee River. This will allow for future monitoring of the results of bridge replacement component of the project and collect river flow data to assist with the basin-wide knowledge base. Since the work plan shows the installation of the stream gauge prior to the replacement of the Little Truckee Bridge, the data to be collected will also allow for additional pre-replacement monitoring of river flows.

Purpose and Need

The replacement of the bridge across the Little Truckee River with a bridge that is much longer will allow flood flows to pass without an unnatural constriction of the river, restore the river to its natural flood plain, and end the downstream scouring, sediment movement, and braiding of meadow area. This will improve water quality and stop further degradation of the river environment.

The placement of the existing bridge over the low water crossing will improve water quality, remove a cause of erosion and sedimentation and remove the potential for motorized vehicle-born toxics to enter the water course. This will meet the water quality improvement need as requested by the Lahontan RWQCB and USFS.

The placement of the stream gauge will allow for monitoring of the results of the replacement of the main bridge and the development of data on the Little Truckee River flows year round. To date there is no collection of flow data for the Little Truckee River above Stampede Reservoir. An obvious need for data collection exists as water is diverted at the Little Truckee Summit and the Bureau of Reclamation is presently studying raising Stampede Dam and Reservoir.

This project meets each of the objectives of the Tahoe-Sierra IRWM Plan. The project also addresses the water quality, ecosystem restoration, and integrated watershed management objectives of the plan.

Project List

While this component of the "Work Plan" addresses the Tahoe-Sierra region's overall application, Sierra County is listing here the components of this project. The first component is the replacement of the bridge on the Independence Lake Road across the Little Truckee River. This component has been added to the Sierra County Regional Transportation Plan addressing the transportation needs of the county for the next twenty years. The Project Study Report (PSR) has been completed and the project was programmed into the Federal Highway Bridge Program. The second component, the relocation of the existing bridge to the low-water crossing of the perennial tributary stream on the Independence Lake Road has been reviewed by the United States Forest Service NEPA employees and the USFS has subsequently scheduled the Federal environmental studies and permits into their 2011 work plan. The third component, the placement of the stream gauge in the Little Truckee River, has been adopted by the USGS and is scheduled to be placed in operation in 2011 if this grant funding is awarded.

Integrated Elements of Projects

This project is a component of and directly supports the Tahoe-Sierra IRWM. The individual components of this project support Sierra County's Transportation Improvement Plan and enhances the County's recreational and tourism activities. The low-water crossing element of the project supports the Lahontan RQWCB and USFS

habitat improvement goals. The installation of the stream gauge supports the USGS river data collection program. The second component of this project, the bridge over the low water crossing, can only occur if the Little Truckee River Bridge is replaced, making reuse of the bridge span feasible.

Regional Map

Please find attached regional map and a detailed map of the subject project.

Completed Work

The Project Study Report (PSR) has been completed for the main bridge across the Little Truckee River. This project has been added to Sierra County's state required twenty year transportation plan and programmed into the Federal Transportation Improvement Plan. The initial engineering cost estimate for the design and construction of the main bridge was completed in 2009. These estimated costs and approved funding are included in Table 7 of the Project Budget. The approved Project Study Report is also attached to provide additional information on the approved Bridge Replacement component of this project.

For the low water crossing, the initial field review for the NEPA process was completed in September 2010 and the Federal environmental clearance and permits have been programmed by the USFS. The USFS has agreed to obtain the Lahontan RWQC Board's permits for this component of the project.

The river gauge station installation component has been adopted by the USGS, and an agreement has been reached with Sierra County concerning design, construction, and on-going monitoring and maintenance.

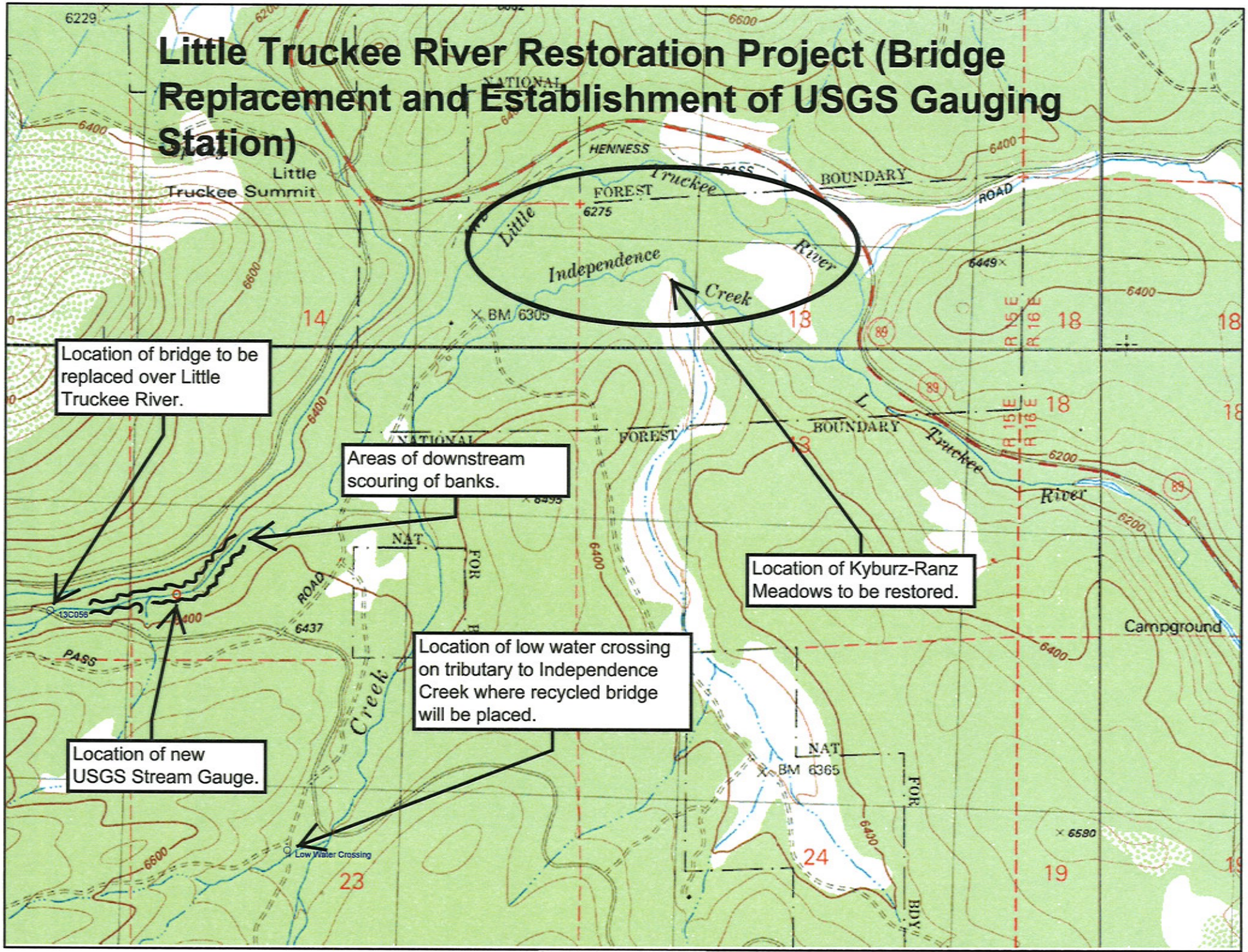
Existing Data and Studies

The engineering estimates for the replacement of the bridge are attached. The Project Study Report is also attached as is the Sierra County Regional Transportation Plan. Please reference pg.67, Table 15, "Sierra County STIP/RTIP Improvement Projects 20 Year Vision" for discussion about the Independence Lake Road Bridge in the plan. This project has been given a priority of 1 and a start time of 2011.

Project Timing and Phasing

This project is not a part of a multi-phased project complex. All components of this project will be completed by the end of 2013 with the final monitoring and report expected in 2014. The main bridge over the river will be removed and replaced by a longer single-span bridge. Construction of this bridge is expected in 2013. The existing bridge will be moved to the low water crossing and placed over this stream. This

Little Truckee River Restoration Project (Bridge Replacement and Establishment of USGS Gauging Station)



crossing is expected to be completed in 2013. The stream gauge will be installed in 2011 and will go into immediate operation.

Table 6- Work Plan Outline
Budget Category (a): Direct Project Administration Costs
Task 3.1: Administration
3.1.1: Sierra County will be responsible for project administration throughout the expected 3-year duration of the project. This work will include preparation of all necessary documents for the administration of the grant, project administration including preparation of contracts, hiring of consultants and advertisement, bidding and award of the construction contract(s) as well as contract close-out, data collection and assembly and progress and final reporting. The County will also be responsible for preparation of requests for reimbursement and all accounting necessary for the administration of the project. Sierra County will work closely with the partner agencies through the formal MOU. **3.1.2:** Sierra County, the USFS and the USGS will use best management practices concerning construction standards, health and safety standards, laboratory analyses and methods of classification. Sierra County, as administrator, will develop expected performance measures and plans for monitoring the progress of the project. The county has determined that new land acquisition or right-of-way will not be required and all construction will take place within existing or new easements. Under a conditional agreement, the USGS gauge will be placed on USFS land. **3.1.3:** Sierra County will be hiring an engineering firm to ensure that all construction meets State of California, Department of Transportation Standards for bridge and roadway design and construction. The necessary permits--Army Corp of Engineers 404 permit, the NEPA documents, California Fish and Game Streambed Alteration Agreement, California Regional Water Quality Control Board, Lahontan Region Section 401 Water Quality Certification and CEQA documents--will be obtained during 2011 and 2012. All tasks necessary to comply with CEQA and NEPA and any other environmental compliance requirements will be administered by the County. Presently, other than the initial field trip for a review of the second bridge over the perennial stream for the purposes of starting the NEPA process, none of the environmental compliance efforts have begun. **3.1.4:** Initial contact has been made with the Piute Tribe of Pyramid Lake, Nevada concerning this project and the Piute Tribe is a member of the Little Truckee River Working Group. No GWMP is to be prepared for this project. **3.1.5:** As the prime stakeholder of the project, administrative tasks will be the responsibility of Sierra County. The County will provide DWR with all progress reports including quarterly and final reports. Sierra County will develop all the proper specifications and plans for this project subject to the funding requested in this application.

Task 3.2: Labor Compliance Program:

3.2.1: Sierra County will monitor labor compliance throughout the consultant and construction management contract phases of the project.

Task 3.3: Reporting

3.3.1: Quarterly Reports will be filed by the County with the State beginning the end of quarter following Grant award, and will continue until approximately 6-months following construction completion.
3.3.2: Final Report will be filed by the County at the end of 2014 and will include approximately 2 years of river gauge data and final certification of river and tributary channel stability and verification of downstream water quality improvements.

Deliverables: Quarterly Reports, Final Report

Budget Category (b): Land Purchase/Easement

It is anticipated that a temporary construction easement will be required for the detour bridge over the Little Truckee River. This easement will be acquired during the design phase of the bridge replacement. No other acquisitions or easements will be required for this project.

Budget Category (c): Planning/Design

Task 3.4: Assessment and Evaluation:

The assessment and planning for the Little Truckee River Bridge Replacement portion of the project has been completed with the filing of the January 2010 Project Study Report.

The Low Water Crossing assessment and evaluation was completed by the USFS and culminated with the attached letter, indicating division of labor between Sierra County and USFS.

The river gauging station assessment and evaluation has been completed by the USGS at the request of Sierra County.
3.4.1: Surveying, topographic mapping, geotechnical investigations

Task 3.5: Final Design
3.5.1: Preliminary Design for Environmental Documentation (50% design)
3.5.2: Design Development Plans, and Estimate (65% complete)
3.5.3: Hydraulic and hydrologic investigation, analysis, report and recommendations
3.5.4: 95% Plans, Specification and Estimate
3.5.5: Final Plans, Specifications and Estimate

Task 3.6: Environmental Documentation:

3.6.1: Initial Studies, field review and mapping
3.6.2: Biological Studies and Consultations
Task 3.6.3: Archeological and Cultural Resources Studies
Task 3.6.4: Aquatic Organism passage evaluation and geomorphology analysis and recommendations
3.6.5: Prepare and circulate project Environmental Documents

3.6.6: Approve Environmental Document and Findings
Task 3.7: Permitting **3.7.1:** Section 404 Permit (USACE) **3.7.2:** Streambed Alternation Permit (California Department of Fish and Game) **3.7.3:** Section 401 Water Quality Control Board (Lahontan Regional Water Quality Control Board) **3.7.4:** NOI and SWPPP for Construction activities
Budget Category (d): Construction/Implementation
Task 3.8: Construction Contracting **3.8.1:** Obtain consultant construction administration contract
Task 3.9: Construction/Implementation **3.9.1:** Advertise, bid and award construction contract **3.9.2:** Construction **3.9.3:** Construction close-out and assumption of improvements by County
Budget Category (e): Environmental Compliance/Mitigation/Enhancement
Task 3.10: Environmental Compliance/Mitigation/Enhancement **3.10.1:** Install Gauging Station (by USGS) **3.10.2:** Collect base line water quality samples at low water crossing site and downstream of Little Truckee River Bridge **3.10.3:** Install bank and channel stabilization at low water crossing site **3.10.4:** Collect and organize stream gauge data **3.10.5:** Collect and analyze post construction water quality samples **3.10.6:** Prepare and submit final report
Budget Category (f): Construction Administration
Task 3.11: Construction Administration **3.11.1:** Establish construction site support facilities **3.11.2:** Receive, review Contractor submittals **3.11.3:** Construction administration, observation, materials testing and inspection **3.11.4:** Punch list **3.11.5:** Final contract close-out activities

Project #4: Negro Canyon Restoration Project

Introduction

Goals & Objectives

The goal of the Negro Canyon Restoration Project is to reduce erosion and improve habitat in the Truckee River watershed. The Negro Canyon Restoration project will help to reduce flood flows in Gregory Creek, will improve water quality and reduce sedimentation by decreasing erosion, and will increase and improve riparian habitat

through restoring natural drainage patterns. These objectives will be achieved through restoration of six restoration sites (D, E, F, G, H, and I) and improving drainage on existing roads in Negro Canyon.

Purpose and Need

The Negro Canyon Restoration project meets the following goals of the adopted Tahoe Sierra IRWM: protecting water quality, restoring ecosystems, and integrating watershed management. The Truckee River is listed as impaired for fine sediment and the adopted TMDL identifies restoration of legacy erosion sites as a means of achieving sediment reductions. Negro Canyon is located within the Donner Lake basin of the Truckee River watershed; the Donner Lake basin has been identified as a high priority for restoration by stakeholders of the Truckee River Watershed Council. Degradation in Negro Canyon has been largely caused by historic timber harvesting and the development of an associated road network. The Negro Canyon Restoration project will lead to water quality improvements by restoring hydrologic and geomorphic function to tributary streams in the watershed.

Integrated Elements of Projects

The Negro Canyon Restoration project meets several of the goals of the Tahoe Sierra IRWM including improving water quality in the Tahoe-Truckee watershed.

Regional Map

The project is generally centered on: 39°20.168 N, 120°17.392W; NAD 27 datum.

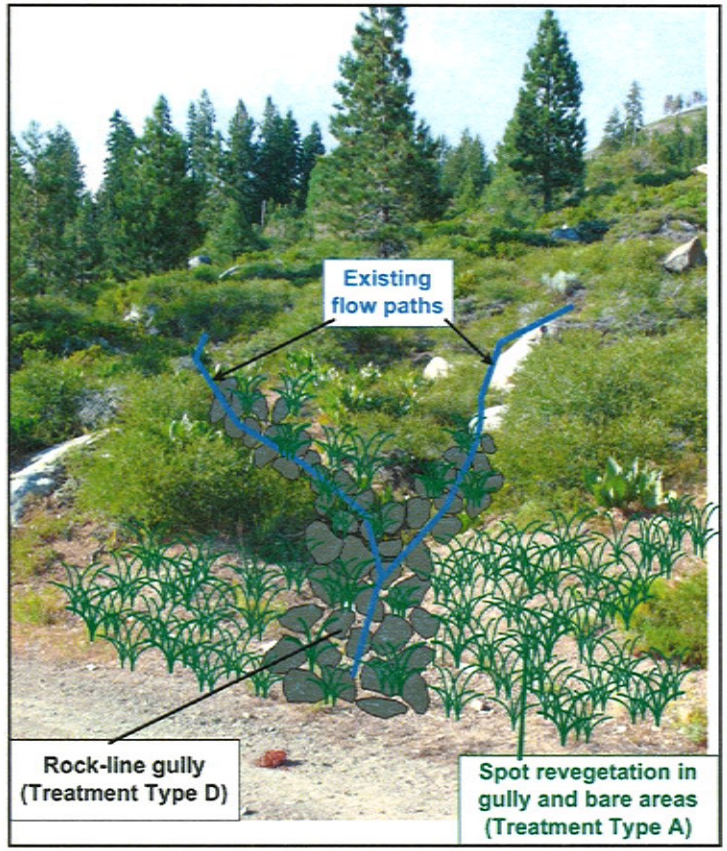
Completed Work

Concept-level design has been completed for the entire project. 100% design plans are completed for two of the six restoration sites included in the project. Permitting and CEQA/NEPA needs will be identified by the grant award date.

Existing Data and Studies

TRWC completed a watershed assessment in May 2010 (Negro Canyon Watershed Assessment, IERS, 2010a). The assessment included an analysis of the geology, hydrology, geomorphic processes, and stream reaches. From the assessment, areas of anthropogenically caused erosion were identified and then grouped into "projects". Conceptual design (30% design level) was completed for all the identified projects. The watershed assessment identified general restoration actions for each project and developed a logical sequencing order for implementation based on hydrologic function and construction access. We have completed final design work on two of the projects (Negro Canyon Restoration Plan: Phase I- Projects G and H, IERS, 2010b).
Project Timing and Phasing: The Negro Canyon Restoration project can be phased. We are requesting funding for implementation of six individual projects. Design work is

Project H1 photo detail.



Project H2 photo detail.

Legend

- Access Road
- Existing Drainages
- Rock armor and reveg drainage
- Rock armor drainage and spot reveg bare areas

completed on two of the projects. These can be completed as stand-alone projects; however it is much more cost effective to address all six sites at once.

Budget Category (a): Direct Administration Costs

Task 4.1: Administration

4.1.1: Project Administration. TRWC shall provide all technical and administrative services as needed for project completion, review all work performed, and coordinate budgeting and scheduling to assure that the project is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations. TRWC shall prepare quarterly invoices and submit them to TRCD.

Deliverables: Quarterly Invoices

Task 4.2: Labor Compliance Program

4.2.1: TRWC's Labor Compliance Officer shall complete all labor certification requirements as required by the granting agency according to the policies of the TRWCs Labor Compliance Program. The Labor Compliance program includes such activities as wage interviews and quarterly compliance reporting.

Deliverables: Complete labor compliance forms as required.

Task 4.3: Reporting

4.3.1: Quarterly Reporting. TRWC shall complete quarterly reports and submit them to TRCD by the 10th of the month following the end of each calendar quarter. The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work completed for the project. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts. All subcontractor activities and expenditures shall be documented in progress reports.

4.3.2: Draft Project Report. TRWC shall prepare a draft project report that will include at a minimum:

- Brief description of the project purpose, objectives, description of methods, accomplishments, and lessons learned during the project
- Summary of deliverables submitted
- Any additional information as deemed necessary by TRCD

4.3.3: Final Project Report. TRWC shall incorporate feedback on the draft project report from TRCD and finalize the Project Report.

Deliverables: Quarterly Reports, Draft Project Report, Final Project Report

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation

Task 4.4: Assessment and Evaluation

9.4.1: Project Assessment and Evaluation Plan (PAEP). TRWC will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverable: PAEP

Task 4.5: Final Design

4.5.1: TRWC shall complete final design work for Sites D, E, F, and I. Conceptual design work has been completed for these sites, and final design work has been completed for Sites G & H. Final design work for sites D, E, F, and I will consist of site topographic surveys, detailed mapping, determination of treatment types and placement, determination of cut and fill quantities, and construction schematics.

4.5.2: Projects shall be designed to restore natural hydrologic and geomorphic function. A majority of the degradation in Negro Canyon is due to disrupted drainage patterns, including road-stream interactions. At each site, techniques will be used that are minimally invasive, cost-effective, and self-sustaining. Techniques that are likely to be used are full-hillside re-contouring, drainage reconnection, headcut repair, biotechnical stabilization (brush-mattressing, willow wattles), and revegetation with native plants. In similar restoration projects, these techniques have been found to be effective. Other work to take place in the canyon includes correcting drainage patterns on roads; these sites were identified in the concept design. TRWC shall hold a meeting to present the final design plans to restoration professionals, stakeholders, and the general public.

Deliverables: Final Design Plans for Sites D, E, F, G, H, and I.

Task 4.6: Environmental Documentation

4.6.1: CEQA will be completed for the entire project including all six construction sites. The project should qualify for a Categorical Exemption:

15333, Small Habitat Restoration Projects. NEPA may be required for some of the work taking place on the road network, which is maintained by the U.S. Forest Service.

Deliverables: Approved and adopted CEQA and/or NEPA document.

Task 4.7: Permitting

4.7.1: TRWC shall secure all necessary environmental permits for the project. It is anticipated that permits may be necessary from the following agencies: Lahontan Regional Water Quality Control Board (401 Water Quality Cert); U.S. Army Corps of Engineers (Nationwide 27); State Water Resources Control Board (NPDES); and California Department of Fish & Game (Section 1600).

Deliverables: Copies of all permits.

Budget Category (d): Construction/ Implementation
Task 4.8: Construction Contracting

4.8.1: TRWC shall develop a bid package or RFP for construction services, and advertise the construction work.

4.8.2: A mandatory pre-bid meeting will take place on-site. A contractor will be hired to complete the work using an evaluation process.

4.8.3: Evaluation of the bids will be performed by a qualified team, bids will be ranked using standard score sheets taking both cost and experience into account.

4.8.4: The top 1-2 ranked companies may be interviewed before selection. The contract will be awarded to the top qualified applicant.

Deliverables: Bid package/RFP,Sign-in sheet from pre-bid meeting, Bid evaluation forms, Copy of signed contract (award of contract).

Task 4.9: Construction/Implementation

Subtask 4.9.1: Mobilization and Site Preparation. Equipment will be trailered to the bottom of the canyon. Access roads may need to be improved before all equipment can be walked to work sites. Site preparation will include access road improvements (as needed), material stockpile and staging, and placement of construction BMPs.

Subtask 4.9.2: Project Construction. Project construction will begin in the summer after seasonal drainages are dry. Construction will consist of grading, some re-vegetation work, rock placement, and fill. Construction will be supervised in the field by qualified personnel. Work at restoration sites D, E, F,

G, H, and I shall be completed along with associated road work in the watershed to reduce erosion. TRWC shall hold a site tour of the completed project for stakeholders and the general public. The project will also be presented in a public meeting after completion. TRWC shall develop and place interpretive signage at the project site.

Subtask 4.9.3: Demobilization and Re-vegetation. All sites will be stabilized before the onset of winter. Stabilization will include seeding, mulching, and planting using native materials. All equipment will be moved out as projects are completed in sequential order. Final re-vegetation work will be accomplished during an annual volunteer work day in October of each year after construction. TRWC shall recruit and train volunteers to participate in the volunteer work day through extensive outreach.

Subtask 4.9.4: Performance Monitoring. The project will be monitored for success including measurements of erosion rates and estimates of sediment load reduction, both pre- and post-project, as outlined in the Project Assessment and Evaluation Tables. Monitoring activities will include direct measurements of soil erosion such as pre- and post- project cross sections and measurement of pre- and post- project runoff using a rainfall simulator.

4.9.4.1: Photo-monitoring locations will be established at each project site to document pre- and post-project condition.

Deliverables: Photo-record of construction activities, Final monitoring report

Task 4.10: Environmental Compliance/ mitigation/ enhancement

No mitigation will be required for this project.

Task 4.11: Construction Administration

4.11.1: Construction Administration. TRWC shall provide all technical and administrative staffing services as needed for construction oversight, including reviewing invoices for accuracy, ensuring timely construction progress, processing payment, and meeting all applicable procurement policies and regulations. TRWC also conduct outreach related to project implementation.

4.11.2: Other Costs. There are no other costs associated with this project.

4.11.3 Budgeting for Construction Contingency. The Negro Canyon project is budgeted with a 10% construction contingency budget. Contingency may be used if construction costs are higher than initially estimated or for any adaptive management actions that might be necessary after project implementation.

Project #5: Regional Water Conservation Program

Introduction

Urban water suppliers within the Tahoe Sierra IRWM region, including South Tahoe Public Utility District (STPUD), Truckee Donner Public Utility District (TDPUD), Tahoe City Public Utility District (TCPUD), and North Tahoe Public Utility District (NTPUD), plan on implementing a regional approach to water conservation practices. Currently, each agency has individual approaches to water conservation, but the agencies can save money by utilizing several regional approaches to include: ordering water saving appliances and fixtures in bulk; utilizing a single website to advertise programs; utilizing agency water specialists to train each other on implementing new programs within the region, and unifying efforts within the region.

Goal and objectives

The goal of the Water Conservation Program is to provide incentives through rebates for water efficient appliances, leak repair, Turf Buy Back and Smart Controller Irrigation to reduce water consumption. By focusing on indoor retrofits and outdoor landscaping improvements significant water savings can be realized. Utilizing the Water Use Efficiency Program at a regional level will allow partners to share resources and send a unified message to consumers regarding the importance of water conservation.

Purpose and Need

In our region water use nearly triples due to landscape irrigation. Turf grass is the most water intensive landscaping option a homeowner can choose. On average residents use 40 percent more water on their grass than most turf requires. The Turf Buy Back Program will offer landowners $1.00 per square foot to replace irrigated turf grass with water efficient landscaping. Studies indicate that installing Smart Irrigation Controllers save up to 25 percent on total outdoor water use. Rebates for Smart Irrigation Controllers will be offered to qualifying commercial properties for $2500 each.

Rebates will be offered at $100 each for High Efficiency Toilets, Clothes Washers and for leak repair. Toilets account for the largest indoor water consumption, about 27%. Subsequently Clothes washers account for the second largest indoor water consumption at 22%. In an average household water leaks account for about 10,000 gallons of water loss per year. By offering a broad range of rebates and incentives for indoor and outdoor water conservation a large number of consumers can benefit from the Water Use Efficiency Program.

Integrated Elements of the Project

As described above, the integrated elements of this project will be utilizing resources in a regional approach to water conservation efforts. Integrated elements include: turf buyback; outreach and educational components; water savings appliances and fixtures; training and mentoring.

Project (Regional) Map

Please refer to the regional project map that is included with this attachment. The project map includes the region in which the water conservation program will be implemented and includes the service areas for all four urban water suppliers: STPUD, TCPUD, TDPUD and NTPUD. Essentially, the entire region will benefit from the water conservation program.

Completed Work

Many elements of a water conservation program have already been implemented at each individual agency; however, there has been no regional integration of those programs. This project will utilize work completed by each individual agency to design the regional program and implement a broader based outreach.

Existing Data and Studies

The feasibility, technical methods and cost effectiveness of this program is supported by data from the California Urban Water Conservation Councils, Best Management Practices which can be found on their website, www.cuwcc.org. Supporting data for the Turf Buy Back Program is found in the study by Sylvan Addink, PhD, "Cash for Grass-A Cost Effective Method to Conserve Landscape Water?"

Budget Category (a): Direct Administration Costs

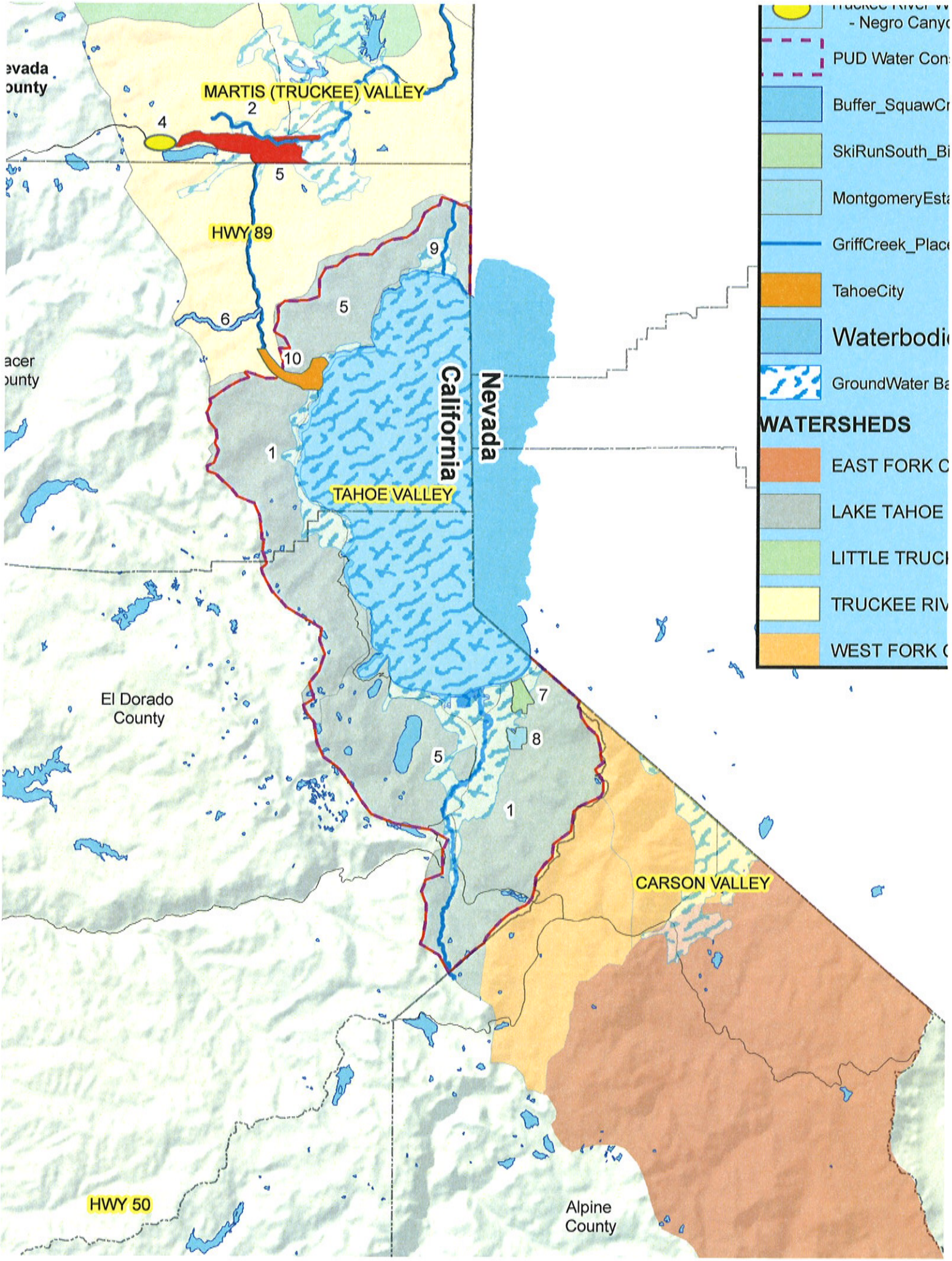
Task 5.1 :Administration

5.1.1: Project Administration. Tahoe Sierra Group Partners shall provide all technical and administrative services as needed for project completion, review all worked performed, and coordinate budgeting and scheduling to assure that the project is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

TASK 5.2: Labor Compliance Program

5.2.1: STPUD will pay the State Prevailing Wage for all construction activities. Tahoe RCD will be responsible for complying with all Labor Code requirements under Senate Bill X2-9 and for paying associated fees within this Code. STPUD will provide all necessary documentation of compliance to grant manager prior to finalizing contract.

Task 5.3:Reporting


MARTIS (TRUCKEE) VALLEY
HWY 89
TAHOE VALLEY
CARSON VALLEY
California
Nevada
El Dorado County
Alpine County
HWY 50
- Negro Canyo
PUD Water Cons
Buffer_SquawCr
SkiRunSouth_Bi
MontgomeryEsta
GriffCreek_Place
TahoeCity
Waterbodi
GroundWater Ba
WATERSHEDS
EAST FORK C
LAKE TAHOE
LITTLE TRUCI
TRUCKEE RIV
WEST FORK C

5.3.1 Quarterly Progress Reports . Tahoe Sierra Group Partners shall meet project requirements through regular communication with DWR and the completion of quarterly progress reports submitted to DWR by the 30th of the month at the end of the calendar quarter (March, June, September, and December). The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work completed for the project. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts. All subcontractor activities and expenditures shall be documented in progress reports.

5.3.2 Prepare Draft Project Report. Tahoe Sierra Group Partners shall prepare a draft project report that includes the results of the tasks listed under
Work Item: Water-Use Efficiency Program Implementation. The report shall include the following narrative sections:

- A brief introduction including a statement of purpose, the objectives of the project, and a description of the approach, accomplishments, and lessons learned during the project.
- A list of the task deliverables previously submitted as outlined in the Work Tasks.
- Any additional information that is deemed appropriate by DWR

5.3.3 Submit Draft Project Report. Tahoe Sierra Group Partners shall submit copies of the draft project report to DWR for review and comment.

5.3.4 Prepare Final Project Report. Tahoe Sierra Group Partners shall prepare and submit a final project report that incorporates comments made by DWR on the draft project report.

Deliverables: Quarterly Progress Reports, Draft Project Report, Final Project Report.

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation

Task 5.4: Assessment and Evaluation

5.4.1 Work Item: Submit PAEP. Tahoe Sierra Group Partners shall prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval at the start of project implementation and

shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverable: PAEP

Task 5.5: Final Design

5.5.1: Coordinate and Plan Regional Water-Use Efficiency Program with Tahoe Sierra Group Partners. The Tahoe Sierra IRWMP partners shall stay connected through emails and quarterly group meetings to coordinate the Regional Water-Use Efficiency Program which will utilize existing conservation measures. STPUD will provide administrative oversight for the program and Water Conservation Specialist staff time.

5.5.1.1: Update and design an effective regional brochure for advertising the program
5.5.1.2: Update and print regional applications for consumers
5.5.1.3: Schedule meeting with TRCD staff to discuss regulations and program requirements regarding landscaping within the region
5.5.1.4: Update and develop landowner contracts
5.5.1.5: Circulate flyers for program through billing inserts of regional partners, partner agencies, and other interested parties.
5.5.1.6: Update and submit regional media publications
Update regional Homeowner information packet
5.5.1.7: Provide local nurseries, landscape contractors, hardware stores and local hardware/appliance stores a list of updated water savings rebate information

Deliverables: Program Brochure, Program Flyer, Program applications, Landowner Contracts, Media Publications, Information Packet, Rebate List

Task 5.6: Environmental Documentation

5.6.1 Work Item: Provide environmental documentation
Deliverable: CEQA exempt form

Task 5.7:Permitting

No permits are required

Budget category (d): Construction/ Implementation
Task 8: Construction Contracting

5.8.1: Host Turf Buy Back Workshop

5.8.1.1: Create flyer and distribute for a one day workshop to certify landscape contractors to participate in the Water-Use Efficiency Workshop.
5.8.1.2: Certification will be given to participants who attend this one day workshop in which they will be updated on the requirements of the Turf Buy Back Program and water efficient irrigation practices and rebates.

Deliverables: flyer, workshop certificate of completion

Task 5.9: Construction/Implementation

Subtask 5.9.1: Mobilization and Site Preparation

5.9.1.1: Site Evaluation, Turf Buy Back Program

a) Gather data on landowner water usage and input into Site Inspection Data Worksheet.
b) Develop water conservation landscape plan per site with landowner.
c) Take a pre-conversion and post- conversion digital photo of property.

Deliverables: Site Inspection Data Worksheet, Landscape water conservation plan,

5.9.1.2: Process rebates for water savings i.e. HET toilet rebates, smart controller rebates, clothes washers and leak repair.

a) Provide applications for interested participants.
b) Check eligibility to approve rebate applications

Subtask 5.9.2: Project Construction

5.9.2.1: Implement Turf Buy Back Program

a) Provide consultation for landowner throughout implementation of landscape water conservation plan.
b) Perform final site visit and gather data to provide landowner with estimated total annual water savings.
c) Provide landowner with individual water savings report.
d) Input data from site inspection database, water conservation plan and final site visit into Irrigation database.

Deliverables: Landowner Water Savings Report, Irrigation Database

5.9.2.2: Provide Water Savings Rebates

a) Issue 360, $100.00 rebates for High-Efficiency toilets
b) Issue 68, $100.00 rebates for water efficient clothes washers
c) Issue 16 rebates for up to $2500,Smart Irrigation Controllers
d) Issue 295 rebates at $100 each for leak repairs
e) Rebate $1.00 per square foot of turf grass removed for 190,859 square feet.
f) Issue rebate payments and track in database

Deliverable: Rebate tracking Database

Subtask 5.9.3: Performance Testing

5.9.3.1 Performance Testing/ Data Analysis

a) Input data collected from the Irrigation and Rebate databases into Water-Use Efficiency Program database to calculate total program water savings in gallons.
b) Perform 25 post audits to monitor water savings from the program
c) Compile annual water savings from the program including monitoring/auditing results into a report format to be submitted with annual grant reporting requirements and final report including Turf Buy Back landscape photos.

Deliverables: Water-Efficiency Program Database, Auditing/ Monitoring results report

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement
Task 5.10: Environmental compliance/mitgation/enhancement

5.10.1: Mitigation Assessment. There is no expected mitigation and environmental compliance as per Lahontan RWQCB will be followed and included in the Specifications and Contract Documents.

Deliverable: Lahontan permit (as deemed necessary by the agency)

Budget Category (f): Construction Administration

Task 5.11: Construction Administration

5.11.1: Construction Administration. Tahoe Sierra Group Partners shall provide all technical and administrative staffing services as needed for program oversight, including

reviewing invoices for accuracy, ensuring timely program progress, processing payment and meeting all applicable procurement policies and regulations.

5.11.2: Budgeting for construction contingency. STPUD will budget for the project with a 10% construction contingency.

Project #6 Olympic Valley Creek/Aquifer Interaction Project

Introduction

The Olympic Valley Creek/Aquifer Interaction Project was initiated in response to the State Water Resources Control Board's Resolution No. 2007-0008, which resolved to direct the Lahontan Water Board to continue to support the efforts of entities pumping groundwater as well as other stakeholders in Olympic Valley to: (1) minimize effects on the creek, (2) develop a groundwater management plan that recognizes potential effects of pumping on the creek and seeks to minimize or eliminate adverse effects on Squaw Creek, and (3) conduct a study of potential interaction between groundwater pumping and flows in Squaw Creek.

The proposed project will quantify the impact of groundwater pumping on flows in Squaw Creek, and increases the amount of water that could be stored in local aquifers by developing and implementing different creek and/or pumping management strategies. It advances water supply reliability, promotes groundwater storage, promotes fisheries restoration and protection, and addresses impacts from anticipated climate change.

The final product will be a document that implements objectives of both the Tahoe Sierra Integrated Regional Water Management Plan and the Olympic Valley Groundwater Management Plan. Pumping and stream management guidelines for different climate and hydrologic conditions will be developed with the overall goal of maximizing aquifer storage and minimizing stream impacts.

The project being instrumental in implementing portions of the IRWM and Groundwater Management Plan is also consistent with the Water Quality Control Plan for the Lahontan Region, North and South Basins.

This eligible project yields multiple benefits and includes the following elements:

- Water supply reliability, water conservation and water use efficiency
- Groundwater recharge and management projects
- Watershed protection and management
- Ecosystem and fisheries restoration and protection
- The analyses will assist in implementing portions of the IRWM and groundwater management plan.

Goals and Objectives

The project's goals are twofold:

1. Diminish groundwater pumping impacts on Squaw Creek and the associated Truckee River;
2. Increase groundwater storage in Olympic Valley;

The project meets numerous objectives that are listed in the adopted IRWM. This project addresses the objectives by implementing a number of management strategies that are outlined in the IRWM. Specific IRWM objectives and management strategies include:

IRWM Objective	**IRWM Management Strategy**
Water Quality Objective WQ5: Restore degraded streams and wetlands to re-establish natural water filtering processes.	– Ecosystem restoration – Environmental and habitat protection and improvement – Groundwater management
Water Supply Objective WS1: Provide adequate water supply for a 20-year management window.	– Water supply reliability – Groundwater management
Groundwater Management Objective GWM1: Create reliable groundwater supply. Groundwater Management Objective GWM3: Manage groundwater for multiple uses.	– Water supply reliability – Groundwater management
Ecosystem Restoration Objective ER1: Enhance and restore degraded stream environment zones (SEZs) to support healthy and viable native fish populations. Ecosystem Restoration Objective ER5: Minimize disturbance caused by urban development.	– Ecosystem restoration – Environmental and habitat protection and improvement – Groundwater management
Integrated Watershed Management Objective IWM1: Ensure sound planning that is based on watershed science.	– Ecosystem restoration – Environmental and habitat protection and improvement – Water supply reliability – Groundwater management – Water quality protection and improvement

Additionally, the project implements actions that address many Basin Management Objectives (BMOs) in the *Olympic Valley Groundwater Management Plan*, including:

- BMO 1-1: Maintain groundwater supplies sufficient to provide water for current and future domestic, municipal, commercial, private, and fire protection uses during summer and autumn of the second consecutive year of low rainfall
- BMO 1-2: Minimize drawdown and maximize use of basin storage
- BMO 1-4: Estimate and acknowledge likely future water demands in management decisions
- BMO 2-1: Comply with existing water quality standards
- BMO 3-2: Promote viable and healthy riparian and aquatic habitats by avoiding or minimizing future impacts from pumping on stream flows
- BMO 3-3: Minimize future impacts from pumping on identified wetlands
- BMO 3-4: Support ongoing stream restoration efforts as they relate to groundwater management

Purpose and Need

Limited water supplies in Olympic Valley have resulted in a perceived competition between water needed for municipal and irrigation supplies and water needed for environmental sustainability. Additionally, the channelization of Squaw Creek in the late 1950s by the Army Corp of Engineers improved drainage, but resulted in the unintended consequence of draining shallow groundwater away from the aquifer. This resulted in two problems; first the trapezoidal channel quickly depletes the available water for in-stream flows much earlier in the season than a natural creek bed would, and secondly the channel drains water away from the well field reducing the available water in the a aquifer for water supply.

This project will implement scientifically based guidelines for cooperatively managing the limited water resources and mitigating the unintended consequences of the trapezoidal channel. The Olympic Valley Creek/Aquifer Interaction Project quantifies the impact of groundwater pumping on stream flows in Squaw Creek, minimizes future pumping impacts to Squaw Creek, quantifies the impact of the trapezoidal channel, and increases the amount of water that could be stored in local aquifers by developing and implementing different stream and/or pumping management strategies. It advances water supply reliability, promotes groundwater storage, promotes fisheries restoration and protection, and addresses impacts from anticipated climate change.

The final product will be a document that implements objectives of both the Tahoe Sierra Integrated Regional Water Management Plan and the Olympic Valley Groundwater Management Plan. Pumping and stream management guidelines for different climate and hydrologic conditions will be developed with the overall goal of maximizing aquifer storage and minimizing stream impacts.

Completed Work

This project proposal is for the final phase of the Olympic Valley Creek/Aquifer Interaction Project. Well permitting, well installation, monitoring equipment purchase

A CEQA categorical exemption was filed during the previous project phase. This categorical exemption covers the entire project, including all tasks and activities described in this scope of work.

All necessary land use agreements were finalized during the previous project phase. The land use agreements were necessary for the well installation and data collection activities. The land use agreements remain in effect, and no additional land use agreements are needed for this phase.

Existing Data

A substantial quantity of data has been collected in the previous two years to support the actions that will be taken in this project. These data will be used to quantify the creek/aquifer interaction dynamic that forms the basis of the proposed management actions. Data from Phase I of the Olympic Valley Creek/Aquifer Interaction Project collected over the previous two years include:

- Long-term groundwater level data from paired shallow and deep monitoring wells adjacent to Squaw Creek.
- Approximately eight months of shallow groundwater temperature data from eighteen sensors installed in six probes in Squaw Creek. These temperature data show the seasonal interaction between the water in Squaw Creek and the shallow groundwater system.
- Groundwater level data collected from seven wells, four shallow piezometers, and eighteen temperature probes during a 53-hour aquifer test conducted while Squaw Creek was flowing.
- Groundwater level data collected from seven wells, four shallow piezometers, and eighteen temperature probes during a 52-hour aquifer test conducted while Squaw Creek was dry.
- Squaw Creek flow data.

Data collected by LLNL, which was not part of Phase I but is considered in-kind services are:

- In-stream temperature data along the middle reach of Squaw Creek.
- Geochemical data (dissolved Radon, major ions, and carbon isotopes)

Project Map

A project map showing the boundaries of Olympic Valley is attached. The locations of recently collected groundwater data are shown in Figure 1.

Project Timing

This is the final phase of the project. All other phases have been completed.

Budget Category (a): Direct Administration Costs

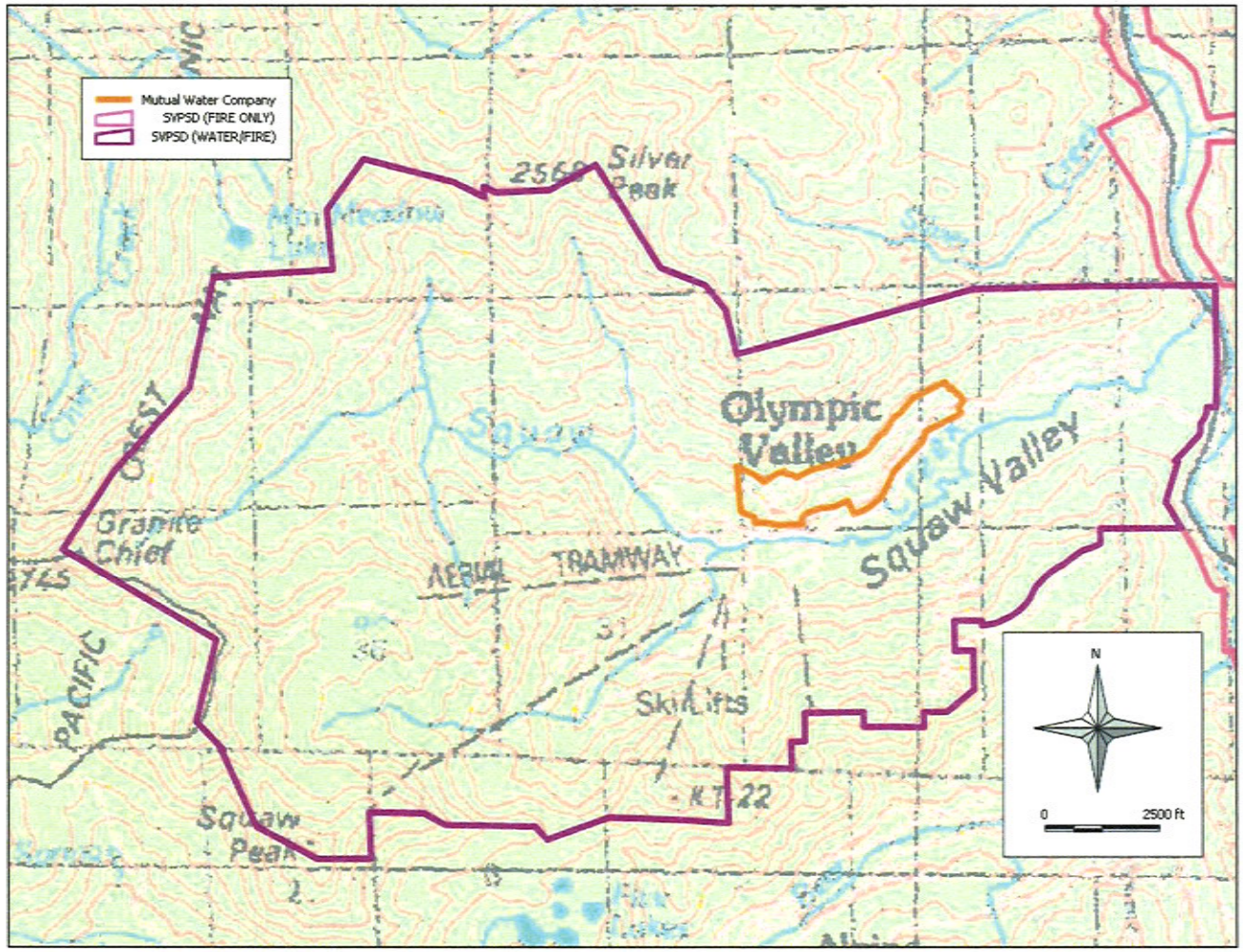


Figure 2: Water Company Service Areas

This is the final phase of the project. All other phases have been completed.

Budget Category (a): Direct Administration Costs

Task 6.1: Administration

6.1.1: Project Management. Project management for the project will include preparing the grant application, preparing and submitting monthly invoices, budget and schedule tracking, and day-to-day communication with contractors and partners, as necessary. Most of these management tasks will continue throughout the duration of the project.

Project management will additionally include project progress and percent completion tracking All reimbursable time spent on this project will be recorded in standard accounting software such as QuickBooks, and the project schedule will be updated regularly using Microsoft Project. Any project delays or overruns will immediately be brought to the attention of the State, and the project budget and schedule will be immediately modified to ensure that the project is completed on time and within budget.

6.1.2: Contract Administration. This subtask ensures close coordination with contractors and partner agencies that receive funding from this grant. Work will involve preparing agreements with all contractors, including HydroMetrics WRI, Dr. Andy Fisher of UC Santa Cruz, and Dr. Jean Moran of Lawrence Livermore Laboratory (LLNL) / California State University East Bay (CSUEB). The task will additionally involve reviewing and approving subcontractor invoices, as they are submitted. Review of subcontractor change orders is also included under this task.

6.1.3: Meetings. Regular interaction with the District's staff, Board of Directors, and DWR staff is needed to ensure the project remains on budget and schedule. This task includes preparation for and attendance at four meetings and/or presentations to keep interested parties apprised of the project's progress.

Deliverables: Preparation of grant application, invoices, agreements with subcontractors, and meeting handouts.

Task 6.2: Labor Compliance Program

PRC §75075 requires the body awarding a contract for a public works project financed in any part with funds made available by Proposition 84 to adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b).

6.2.1: A labor compliance program pursuant to California Labor Code §1771.5(b) will be prepared by the District as may be applicable to the Olympic Valley Creek/Aquifer Interaction Study. The Labor compliance program will be prepared

by District counsel and approved by the Board of Directors prior to contracting the project.

Deliverable: Submission of Labor Compliance Program

Task 6.3: Reporting

6.3.1: Quarterly Reports. Three quarterly progress reports required by DWR will be prepared and submitted under this task. These reports demonstrate that the project is proceeding as planned, and that the grant funding is being expended in accordance with the grant requirements. The reports will include a description of progress made for the reported quarter, an update on the budget for each project task, an update on the status of each project task, and a description of work expected to be completed in the subsequent quarter.

6.3.2: Annual and Final Report. Because the project is anticipated to last one year, the final report will coincide with the first annual report. This report will describe all analyses, results and recommendations from Task 4. The draft report will be distributed to the Board of Directors, DWR, and interested parties. After a reasonable review period, comments provided will be addressed and incorporated into the final report.

Deliverables: Quarterly and annual/final reports.

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation
Task 6.4: Assessment and Evaluation:

6.4.1: Quantify Creek/Aquifer Interaction using Depth Specific Temperature Data. As a first step towards reducing pumping impacts on Squaw Creek, we will quantify seasonal and long-term creek/aquifer interactions using heat (temperature) as a tracer to track the movement of water between Squaw Creek and the underlying groundwater system. The method is based on quantifying changes in phase and amplitude of temperature variations between pairs of subsurface sensors set below the streambed. The figure below illustrates the temperature sensors at different depths and the resultant temperature data plotted from data stored on the loggers.

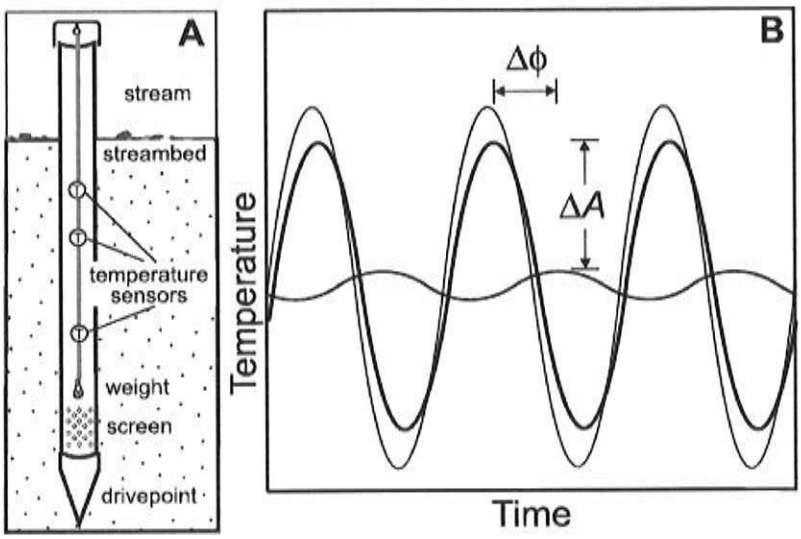


Figure 1. Diagrams illustrating acquisition of streambed temperature records and basis for new analytical method. (a) Streambed piezometer with temperature sensors at various depths. (b) Temperature versus time records showing reduction in amplitude (ΔA) and shift in phase ($\Delta\phi$) with greater depth.

Source: Hatch, *et al.* (2006)

The following published scientific papers document the development and application of our methodology:

Constantz, J., Su, G.W., and Hatch, C., 2006, Heat as a ground water tracer at the Russian River RBF facility, Sonoma County, California, in Hubbs, S.A., ed., Riverbank Filtration Hydrology: Dordrecht, Springer, p. 243-259.

Hatch, C.E., Fisher, A.T., Revenaugh, J. S., Constantz, J., and Ruehl, C, 2006, Quantifying surface water - groundwater interactions using time series analysis of streambed thermal records: Methods development : Water Resources Research, v. 42, W10410, doi: 10.1029/2005WR004787.

Sun, M., and Fisher, A., 1992, WSTP/Origin, Graphical Software for Windows-based processing of temperature data from the Water-sampling Temperature Probe.

USGS Fact Sheet 2004-3010, February 2004. Using temperature to study stream-ground water exchanges.

Andy Fisher at UC Santa Cruz, is one of the developers of this technique, and has successfully applied it in a number of studies. We will draw on his expertise to assist us with analyzing the depth-specific temperature data collected over the past two years in Squaw Creek.

The available data for this subtask are eight months of 15-minute interval temperature measurements from six probes that were installed in Squaw Creek. In addition to the depth-specific temperature loggers, stilling wells and groundwater piezometers were installed next to the temperature probes. These were equipped with pressure transducers that recorded water levels. From these data, it is possible to identify accurately when the creek was flowing and what the vertical hydraulic gradients were at any point in time. These data will be used in conjunction with the temperature data, and other nearby well groundwater level, to develop a conceptual understanding of when the monitored reach of Squaw Creek is gaining water from the aquifer and when it is losing water to the aquifer.

It is envisioned that the order of work for this task will be as follows:

1. Initial meeting with Dr. Andy Fisher to establish working protocol.
2. Manually filter already compiled temperature data according to defined protocols and water level data.
3. Apply frequency bandpass filter to extract daily temperature signal, and resample.
4. Run data through creek/aquifer software used to calculate time series of amplitude ratio and phase shift.
5. Iterate for seepage rates from amplitude ratio and phase shift.
6. Determine final daily seepage rates between Squaw Creek and the underlying aquifers.

6.4.2: Establish Pumping Impacts on Squaw Creek by Analyzing Aquifer Test Data. Pumping impacts on Squaw Creek can be directly measured by analyzing results from two similar aquifer tests. Two controlled aquifer tests were conducted on Squaw Valley Public Service District Well 2 in 2009 and 2010. The first test in June 2009 was designed to collect data while Squaw Creek was flowing. A second, similar test took place in September 2010 after Squaw Creek had dried up and before winter rain started. Data collected during the tests include SCADA groundwater level and pumping data from SVPSD Well 2; groundwater level data for Squaw Valley Mutual Water Company Well 2, five monitoring wells and four streambed piezometers.

By conducting two similar aquifer tests under different hydrologic conditions, it is possible to compare the drawdown characteristics of the two tests to determine whether there are differences in the response curve. It is expected this comparative analysis will indicate whether and when Squaw Creek is a source of water to the well when it pumps. We will first analyze the two aquifer tests using standard hydrogeologic techniques such as Theis analyses, Cooper-Jacob analyses, and Hantush leaky-aquifer analyses. These analyses will be used to estimate the aquifer's hydraulic properties such as transmissivity, storage, and leakance from the aquifer tests. The transmissivity and storage properties estimated from the test when Squaw Creek is not flowing constrain the hydraulic properties of the test when Squaw Creek is flowing. This allows us to compare

the two tests and establish exactly how much of the Well 2 pumping was directly extracted from Squaw Creek.

6.4.3: Integrate Results from Tasks 4.1 and 4.2 with LLNL Climate Change and Tracer Study. Jean Moran was a principal investigator during the Olympic Valley groundwater study carried out and funded by Lawrence Livermore National Laboratory (LLNL) in 2008 and 2009. Dr. Moran will be brought in as a collaborator in the proposed project to integrate and interpret data generated in 2008 and 2009 by LLNL during experiments designed to delineate groundwater inflow to Squaw Creek. These data were not included in the Water Resources Research publication which focused on groundwater residence time and recharge area determination. For this project, Dr. Moran will compile and evaluate temperature data collected during the Distributed Temperature Sensor experiment in the middle reach of Squaw Creek, which took place in July, 2009, along with geochemical data such as dissolved Radon, major ions, and carbon isotopes collected during Squaw Creek sampling in June and July of 2009 (approximately 100 sample results). These tracers can be interpreted to identify locations of groundwater inflow and potentially to quantify groundwater inflow to Squaw Creek during the time period over which the sampling took place. Dr. Moran will supervise a graduate student who will be engaged in an effort to model Radon gas loss at the stream water-air interface during transport downstream from groundwater input locations.

In addition, Dr. Moran will work with staff from Hydrometrics to integrate all data generated during the surface water and groundwater LLNL studies with data collected by Hydrometrics and SVPSD. Interpretation of results will center on seasonal creek/aquifer interaction, groundwater recharge, and the effects of climate change (higher snowline, more precipitation as rain) on runoff, groundwater recharge, and the water budget for the basin.

6.4.4: Project Assessment and Evaluation Plan (PAEP). Placer DPW will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

6.4.5: Integrate the Creek/Aquifer Interaction Results into the Olympic Valley Groundwater Flow Model. Integrating the results of the seasonal temperature data and aquifer test data into the Olympic Valley groundwater flow model will allow the model to accurately predict seasonal interactions between shallow aquifers and Squaw Creek, and the impact of pumping on Squaw Creek flows. This will then allow us to use the model to establish groundwater

management guidelines that minimize pumping impacts on Squaw Creek and maximize groundwater storage.

The Olympic Valley groundwater flow model was developed 11 years ago, using the USGS's MODFLOW code. This model will be updated to the end of 2009 using data already stored in the Olympic Valley groundwater database. The conceptual understanding of the basin will be updated based on the results of the temperature data, results of the aquifer test analysis, and findings of the LLNL climate change study discussed in Task 4.3. This will require that some of the input terms, such as boundary conditions, horizontal flow barriers, and spatial distribution of recharge be changed. Aquifer parameters may also be revised based on properties estimated from the aquifer tests (Task 4.2).

The model will be re-calibrated according to industry standard methods, such as those discussed in *Applied Groundwater Modeling* (Anderson and Woessner, 1992), *Groundwater Flow Modeling Guideline* (Murray Darling Basin Commission, 2000), and *Effective Groundwater Model Calibration* (Hill and Tiedeman, 2007). Hydrographs showing both modeled and measured groundwater levels for key wells will be used to demonstrate the effectiveness of the model for simulating historical conditions in the Olympic Valley.

Up to 10 scenarios will be run with the updated groundwater model to answer a combination of the following questions:

1. During times when the creek flows, how much water is drawn from the creek into the aquifer when all municipal wells are pumping?
2. How much water is flowing from the aquifer into the creek and what impact does that have on groundwater storage?
3. What are the recommended pumping scenarios to reduce pumping impacts on the stream and to maximize the use of aquifer storage?
4. What climatic conditions will result in critical conditions when flow in Squaw Creek is minimal but still sustains biota?
5. What is the maximum sustainable groundwater yield, without significantly impacting Squaw Creek?
6. What modifications to Squaw Creek can be made to increase groundwater storage?

6.4.6: Technical Reports. Task 4's deliverables will include three technical memoranda that report on the analyses conducted in Tasks 4.1 through 4.4:

6.4.6.1: Technical Memorandum on seasonal stream/aquifer interactions
6.4.6.2: Technical Memorandum on pumping impacts on Squaw Creek
6.4.6.3: Technical Memorandum on the groundwater model update and scenario results

All three technical memoranda will be included as appendices to the project's final report described in Task 3.3.

6.4.7: Data Deliverable. In addition to the technical memoranda deliverables, all groundwater level data used for the creek/aquifer interaction technical memorandum and the pumping impacts on Squaw Creek memorandum will be supplied to the state in a separate, electronic, Data Deliverable. The data will be in a format similar to the format being developed for the state's CASGEM (SBx7-6) program. This format is intended to be easily imported into the state's Water Data Library. A completed PAEP will also be submitted.

Task 6.5: Final Design
Not applicable

Task 6.6: Environmental Documentation

6.6.1: A CEQA categorical exemption was filed during a previous project phase. This categorical exemption covers all tasks listed in this current scope of work. No additional CEQA compliance is required.

Deliverable: CEQA exempt document

Task 6.7: Permits

6.7.1: All permitting has been completed. No additional permits are required.

Budget Category (d): Construction/Implementation
Task 6.8: Construction Contracting
Not applicable

Task 6.9: Construction /Implementation

Subtask 6.9.1: Mobilization and Site Preparation.
Not applicable

Subtask 6.9.2: Program Implementation

6.9.2.1: Based on the findings from Task 4, a guideline document will be prepared that outlines different pumping situations for different hydrologic conditions in Squaw Creek. The guidelines will be developed with the goal of sustainably using groundwater for water supply purposes, while maximizing aquifer storage and minimizing creek impacts.

The guideline document will include creek mitigation measures that could be implemented to counter pumping impacts. Based on the results of modeling (Task 4.4) impacts to the trapezoidal channel, SVPSD will work cooperatively with the property owner to identify potential mitigation measures that could be considered. Mitigation measures will only be

included in the guideline document if they improve annual pumping capacity and in-stream flows.

Subtask 6.9.3: Performance Testing and Demobilization.

6.9.3.1: Performance Measures and Monitoring Plans are already in place. The Olympic Valley Biennial Report and Review monitors and reports on groundwater conditions, production, and groundwater levels every two years. Water quality, production, and groundwater level data are collected and stored in the Olympic Valley Groundwater Database.

Deliverables: Pumping and stream mitigation guidelines for groundwater users in Olympic Valley.

Budget Category (e): Environmental Compliance/Mitigation/Enhancement
Not applicable

Budget Category (f): Construction Administration
Not applicable

For reference, the Olympic Valley Groundwater Management Plan is included.

Project #7 Bijou Creek Culvert Replacement Project, Bijou Area Erosion Control Project

Introduction

Goals and Objectives

The Bijou Creek Culvert Replacement Project (Project) will repair and upgrade, an old, failing existing storm drainage system located in an extremely dense commercial area in the center of the City of South Lake Tahoe (City). The existing storm drain system is undersized (can only convey approximately 20% of the 10-year design flow) and in a failing condition (portions of the existing corrugated metal pipe have no invert of the pipe remaining). The Bijou Creek Culvert Replacement Project will replace the existing storm drain with a new double box culvert to convey adequate flows (10-year design storm per El Dorado County Drainage Manual requirements) from the upper watershed, through the commercial area to Lake Tahoe. The replacement will improve the quality of storm water discharging to Lake Tahoe and allow for upstream Best Management Practices (BMPs) to be implemented. BMPS will focus on beneficial use of storm water for infiltration and recharge of groundwater, as well as improving storm water quality discharging to Lake Tahoe. Both of these goals are addressed in the water quality and groundwater objectives listed in the Tahoe Sierra IRWMP.

Purpose and Need

The proposed Project is being planned and designed in conjunction with the Bijou Area Erosion Control Project (ECP). The Bijou Area ECP is part of the Tahoe Regional Planning Agency's (TRPA) Environmental Improvement Program (EIP). The purpose of the EIP is to improve the clarity of Lake Tahoe through implementation of water quality improvement projects.

The first phase of the Bijou Area ECP is focused on treatment of storm water discharging to Lake Tahoe at the Bijou Creek outfall. The Bijou Creek outfall has been determined to be a high priority outfall for treatment by both the Lahontan Regional Water Quality Control Board (Lahontan), the City, and the TRPA. The ECP proposes to implement BMPs to mitigate sediment generation and collect and treat sediment impacted runoff in the Bijou Creek watershed, to improve the quality of storm water discharging to Lake Tahoe

The first step in implementing the ECP is to remove the drainage "choke", which is created by the failing conveyance system from the upper watershed to Lake Tahoe. Replacing the failing conveyance will allow the City to install BMPs in the commercial core and the upper watershed, without concern for worsening the existing drainage condition. Specifically, following construction of BMP improvement in the commercial core (proposed as the first phase for ECP project construction), the new culvert will allow for separation of 'clean' storm water runoff from the upper watershed to be conveyed to Lake Tahoe, without interception from 'dirty' runoff from the Highway 50 commercial core. The commercial core runoff will be collected in a separate system and treated to remove pollutants, prior to discharge.
The Bijou Creek Culvert Replacement Project, while a critical first step for the overall ECP project, is also a stand-alone project that can function on its own, and provide substantial benefit aside from the larger ECP. The Project has been identified as a high priority drainage need in the City's Drainage Master Plan. It will provide both the City and Caltrans with adequate capacity to convey storm water runoff to Lake Tahoe, without concern for damage to private property in the commercial core, due to the potential for collapse of the existing failing drainage system. It also will alleviate flooding which occurs under storm events more frequent than the 10-year recurrence interval storm.

Project List

Abstract for Bijou Creek Culvert Replacement Project:
The City is the implementing agency for the Bijou Creek Culvert Replacement Project. The Project includes replacement of an existing forty-year old storm drain system that conveys drainage from the 1,300-acre Bijou Creek Watershed to Lake Tahoe, in the eastern portion of the City.

The State of California Department of Transportation (Caltrans) and the City's Public Works Department have determined that the existing drainage system is failing (i.e., the bottom of the drainage pipes have rusted away) and has inadequate conveyance capacity. Additionally, the discharge to Lake Tahoe is unsightly and of poor water quality (second

worst constituent levels of any outfall within the Tahoe Basin, as document by the TRPA "snap-shot day" water quality monitoring data).

The Project proposes to replace the existing, failing drainage system with an underground double box culvert (7-foot wide x 2.5-foot wide) from the Bijou meadow to Lake Tahoe. The new system will be designed to convey the 10-year, 24-hour storm runoff event at average lake stand, in compliance the El Dorado County Drainage Manual.

Current status for Bijou Creek Culvert Replacement Project:
90% design plans and construction specifications are complete. Permits will be submitted in January 2011. Final construction documents will be developed upon receipt of permit conditions and are anticipated to be completed in the spring of 2011. Construction is scheduled for fall of 2011, pending availability of construction funding.

Integrated Elements of the Project

The City has developed and implemented a groundwater monitoring program for the larger Bijou Area Erosion Control Project. The groundwater monitoring program is funded by the State of California, Department of Water Resources (DWR) for approximately two years. The data will be used to determine baseline groundwater quality and groundwater elevations (shallow, near surface groundwater) in the ECP project area. This information will be used to assist in the development of area wide BMPs and provide important pre-project baseline conditions.

Regional Map

The following pages include maps depicting the Bijou Creek Culvert Replacement Project area and vicinity maps. Additionally included are the Photo, Groundwater and Surface Water Monitoring locations for the overall Bijou Area Erosion Control Project.

CITY OF SOUTH LAKE TAHOE
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SOUTH LAKE TAHOE, CA 96150

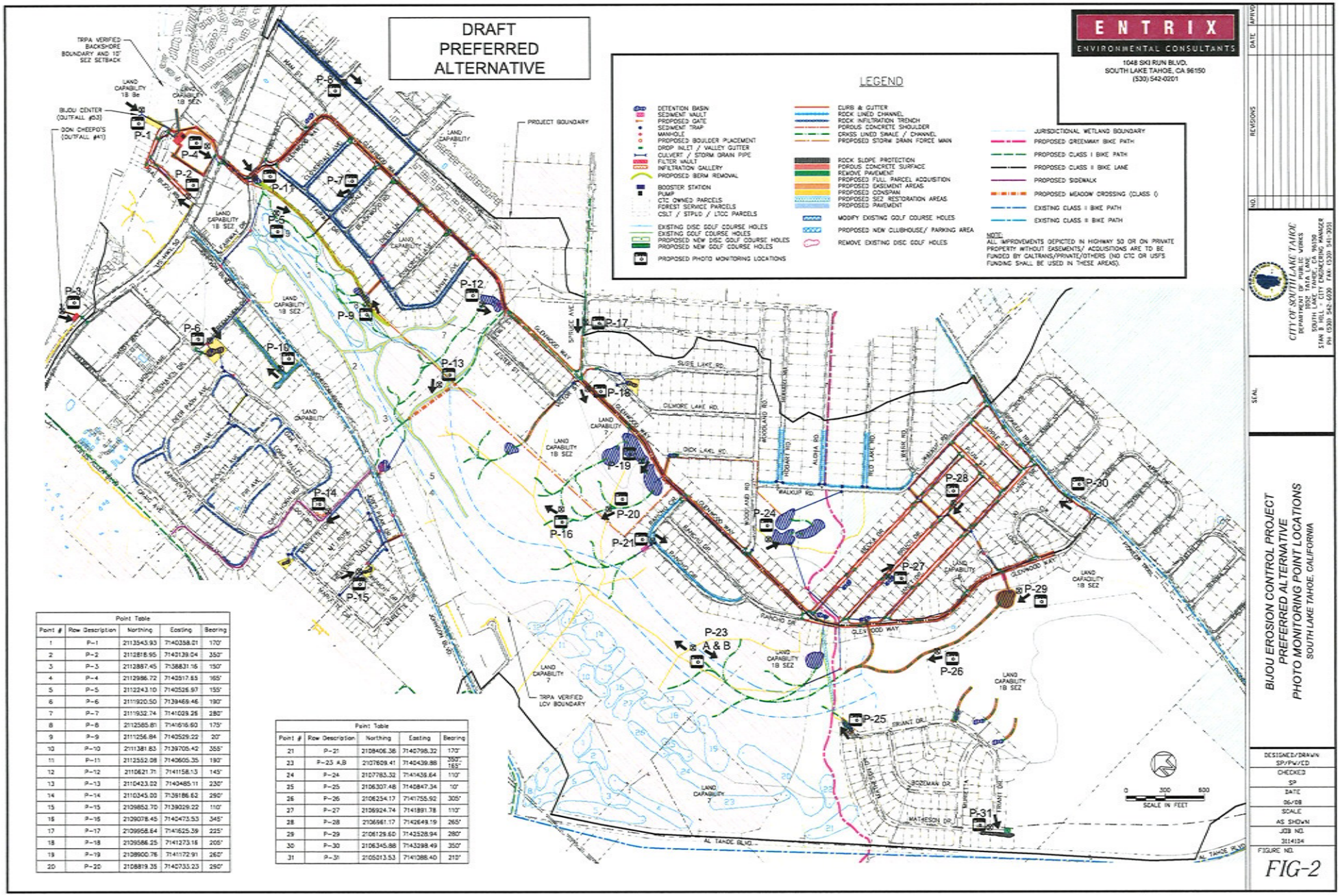
BIJOU CREEK CULVERT REPLACEMENT PROJECT
VICINITY MAP

SOUTH LAKE TAHOE, CALIFORNIA

ENTRIX

DATE: 08/04/2010
PROJECT No: 31141040.00
BY: JFD

FIGURE
1



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2	P-2	2112818.95	7140139.04	350°
3	P-3	2112887.45	7138831.16	150°
4	P-4	2112986.72	7140517.85	165°
5	P-5	2112243.10	7140525.97	155°
6	P-6	2111920.50	7139469.46	190°
7	P-7	2111932.74	7141029.26	280°
8	P-8	2112585.81	7141616.60	175°
9	P-9	2111256.84	7140529.22	20°
10	P-10	2111381.83	7139705.42	355°
11	P-11	2112552.08	7140605.35	190°
12	P-12	2110621.71	7141158.13	145°
13	P-13	2110423.02	7140485.11	230°
14	P-14	2110345.00	7139186.62	290°
15	P-15	2109852.70	7139029.22	110°
16	P-16	2109078.45	7140475.53	345°
17	P-17	2109958.64	7141625.39	225°
18	P-18	2109586.25	7141273.16	205°
19	P-19	2108900.76	7141172.91	260°
20	P-20	2108819.35	7140735.23	290°

Point Table				
Point #	Row Description	Northing	Easting	Bearing
21	P-21	2108406.36	7140798.32	170°
23	P-23 A,B	2107609.41	7140439.88	350°, 165°
24	P-24	2107783.32	7141436.64	110°
25	P-25	2106307.48	7140847.34	10°
26	P-26	2106254.17	7141755.92	305°
27	P-27	2106924.74	7141891.78	110°
28	P-28	2106961.17	7142649.19	265°
29	P-29	2106129.60	7143528.94	280°
30	P-30	2106345.88	7143298.49	350°
31	P-31	2105213.53	7141088.40	212°

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(530) 542-0201

NO. | REVISIONS | DATE | APP'VD

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DEPARTMENT OF PUBLIC WORKS
1052 TATA LANE
SOUTH LAKE TAHOE, CA 96150
STAN B HILL - CITY ENGINEERING MANAGER
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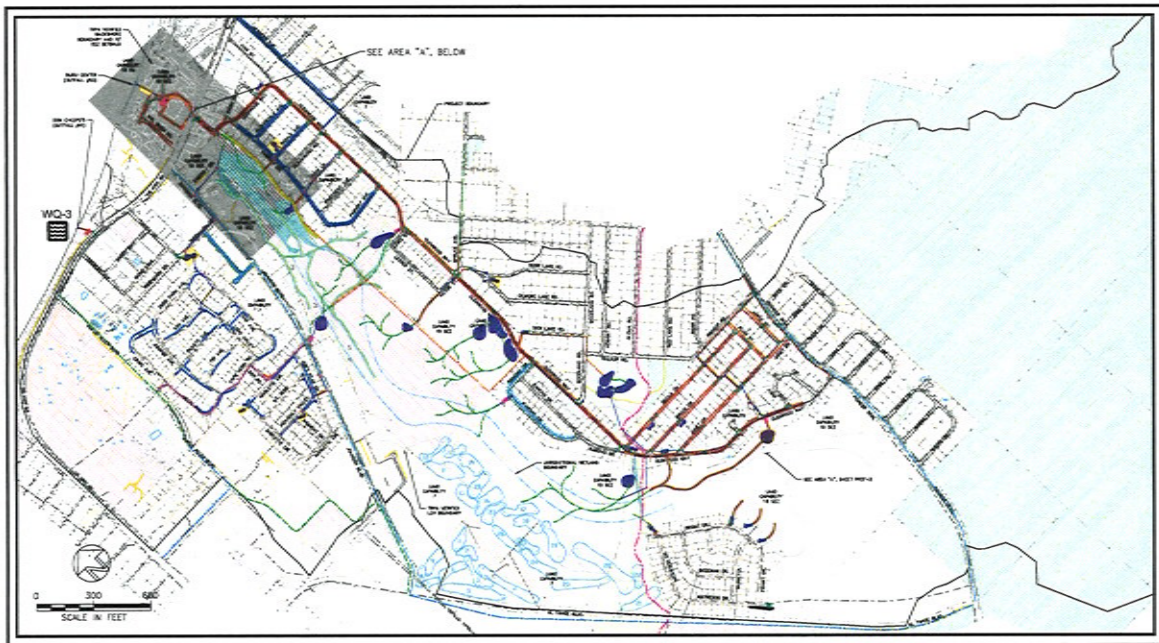
SEAL

BIJOU EROSION CONTROL PROJECT
PREFERRED ALTERNATIVE
PHOTO MONITORING POINT LOCATIONS
SOUTH LAKE TAHOE, CALIFORNIA

DESIGNED/DRAWN	SP/PW/CD
CHECKED	SP
DATE	06/08
SCALE	AS SHOWN
JOB NO.	3114124
FIGURE NO.	FIG-2



DRAFT PREFERRED ALTERNATIVE

ENTRIX
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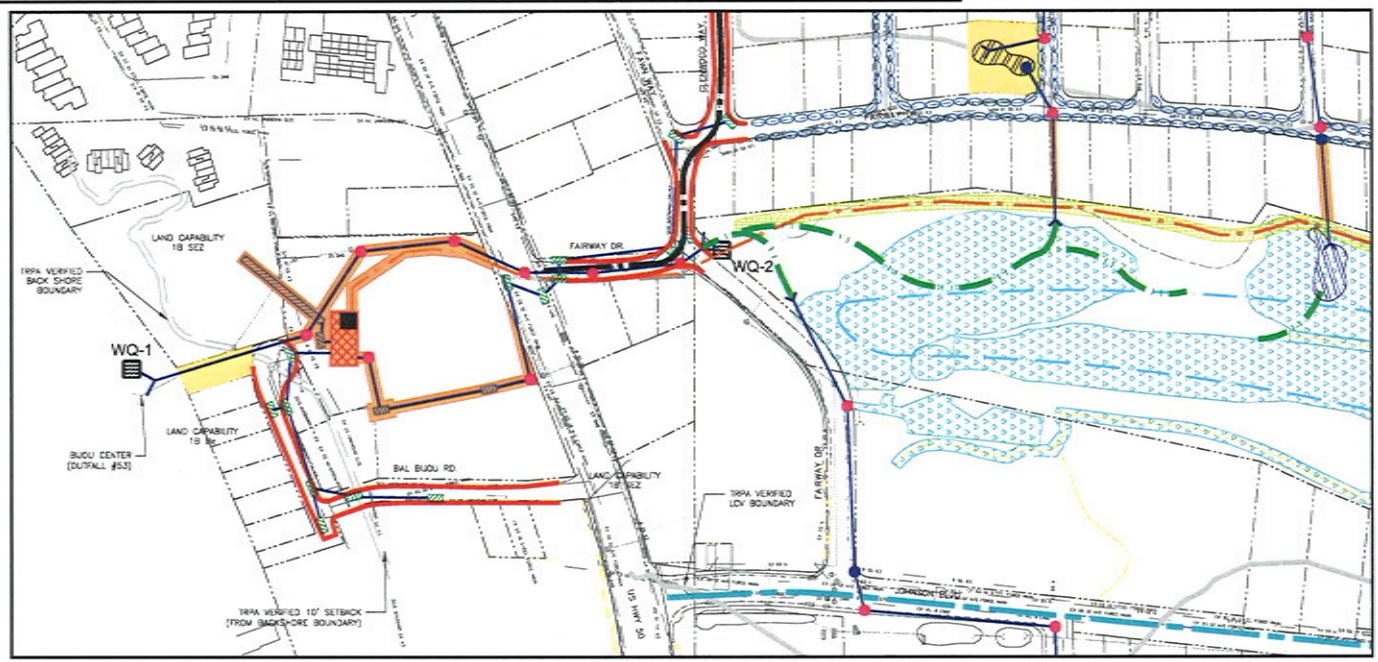
(530) 542-0201

LEGEND

- DETENTION BASIN
- SEDIMENT VAULT
- PROPOSED GATE
- SEDIMENT TRAP
- MANHOLE
- PROPOSED BOULDER PLACEMENT
- DRAINAGE INLET
- CULVERT / STORM DRAIN PIPE
- FILTER VAULT
- INFILTRATION GALLERY
- PROPOSED BERM REMOVAL
- BOOSTER STATION
- PUMP
- EXISTING DISC GOLF COURSE HOLES
- EXISTING GOLF COURSE HOLES
- PROPOSED WATER QUALITY SAMPLING LOCATIONS
- CURB & GUTTER
- ROCK LINED CHANNEL
- ROCK INFILTRATION TRENCH
- POROUS CONCRETE SHOULDER
- GRASS LINED SWALE / CHANNEL
- PROPOSED STORM DRAIN FORCE MAIN
- PROPOSED CREEKWAY BIKE PATH
- ROCK SLOPE PROTECTION
- POROUS CONCRETE SURFACE
- REMOVE PAVEMENT
- PROPOSED FULL PARCEL ACQUISITION
- PROPOSED EASEMENT AREAS
- PROPOSED CONSPAN BRIDGE
- PROPOSED REVEGETATION
- CTC OWNED PARCELS
- FOREST SERVICE PARCELS
- CSLT / STPUD / LTCC PARCELS
- JURISDICTIONAL WETLAND BOUNDARY
- PROPOSED CLASS II BIKE PATH
- EXISTING CLASS II BIKE PATH

NOTE:
ALL IMPROVEMENTS DEPICTED IN HIGHWAY 50 OR ON PRIVATE PROPERTY WITHOUT EASEMENTS/ ACQUISITIONS ARE TO BE FUNDED BY CALTRANS/PRIVATE/OTHERS (NO CTC OR LISFS FUNDING SHALL BE USED IN THESE AREAS).



AREA A

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100
200
SCALE IN FEET

NO.	REVISIONS	DATE	APP'VD

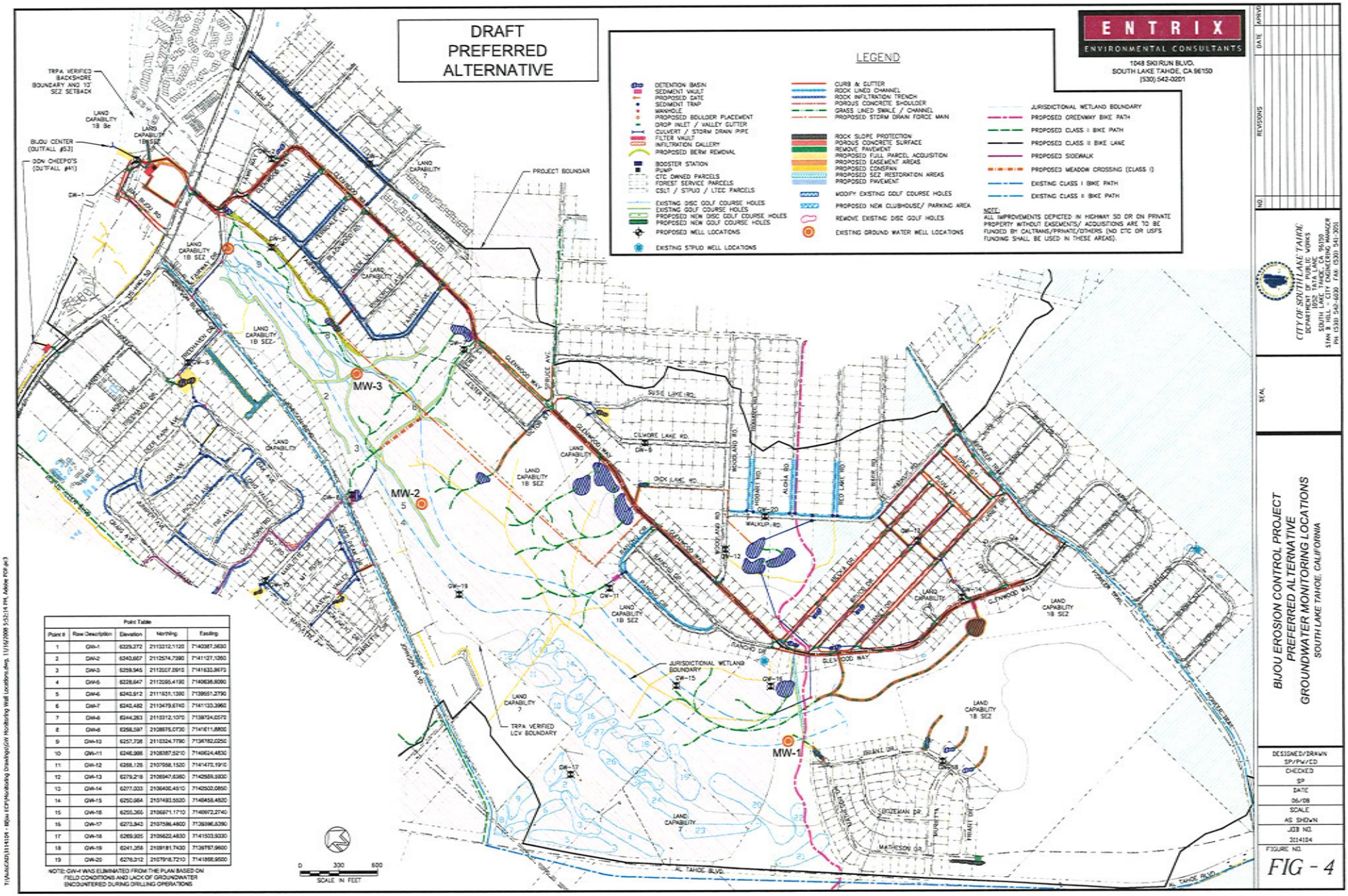
SEAL

CITY OF SOUTH LAKE TAHOE
DEPARTMENT OF PUBLIC WORKS
1052 TAMARACK AVENUE
SOUTH LAKE TAHOE, CA 96150
STAN B HILL - CITY ENGINEERING MANAGER
PH (530) 542-6039 FAX (530) 541-3051

BIJOU EROSION CONTROL PROJECT
PREFERRED ALTERNATIVE
SURFACE WATER QUALITY MONITORING LOCATIONS
SOUTH LAKE TAHOE, CALIFORNIA

DESIGNED/DRAWN	SP/PW/ED
CHECKED	SP
DATE	04/08
SCALE	AS SHOWN
JOB NO.	3114104

FIGURE NO.
FIG-3



Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1	GW-1	6329.272	2113312.1120	7140387.3630
2	GW-2	6343.667	2112574.7390	7141127.1260
3	GW-3	6259.945	2112507.2910	7141633.8670
4	GW-5	6228.647	2112095.4190	7140838.8090
5	GW-6	6240.912	2111921.1390	7139951.2790
6	GW-7	6242.482	2113479.6740	7141133.3960
7	GW-8	6244.263	2113312.1070	7139734.0570
8	GW-9	6258.597	2108875.0730	7141611.8800
9	GW-10	6257.728	2113324.7790	7139782.0250
10	GW-11	6246.986	2108387.5210	7140624.4830
11	GW-12	6268.128	2107958.1520	7141473.1910
12	GW-13	6279.218	2106947.6360	7142569.9300
13	GW-14	6277.033	2106400.4510	7142502.0850
14	GW-15	6250.064	2107493.5520	7140458.4520
15	GW-16	6255.366	2106871.1710	7140972.2740
16	GW-17	6273.943	2107586.4800	7139396.8290
17	GW-18	6269.935	2106822.4830	7141503.9030
18	GW-19	6241.258	2108181.7430	7139787.9600
19	GW-20	6276.212	2107916.7210	7141898.9500

NOTE: GW-4 WAS ELIMINATED FROM THE PLAN BASED ON FIELD CONDITIONS AND LACK OF GROUNDWATER ENCOUNTERED DURING DRILLING OPERATIONS

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BIJOU EROSION CONTROL PROJECT
PREFERRED ALTERNATIVE
GROUNDWATER MONITORING LOCATIONS
SOUTH LAKE TAHOE, CALIFORNIA

DESIGNED/DRAWN	SP/PW/ED
CHECKED	SP
DATE	06/08
SCALE	AS SHOWN
JOB NO.	2014124
FIGURE NO.	FIG - 4

T:\AutoCAD\2014124 - Bijou ECP\Monitoring Drawings\GW Monitoring Well Locations.dwg, 11/16/2009 3:52:14 PM, Adobe PDF.pc3

Completed Work/Existing Data and Studies

As part of the Bijou Area ECP the City has been developing planning level documents since 2007. These documents include the following:

- Existing Conditions Analysis Memorandum
- Development and Evaluation of Alternatives
- Recommended Alternative Memorandum
- Monitoring Plan
- Initial Groundwater Monitoring Report

Following the Recommended Alternative Memorandum, it was determined that the first phase of the Bijou Area ECP would be the improvements within the Bijou commercial core. These improvements were defined as two key elements, a conveyance system (now known as the Bijou Creek Culvert Replacement Project) and the treatment system for the commercial core (now known as the Bijou Commercial Core Project). The existing information and efforts developed for these two projects include the following:

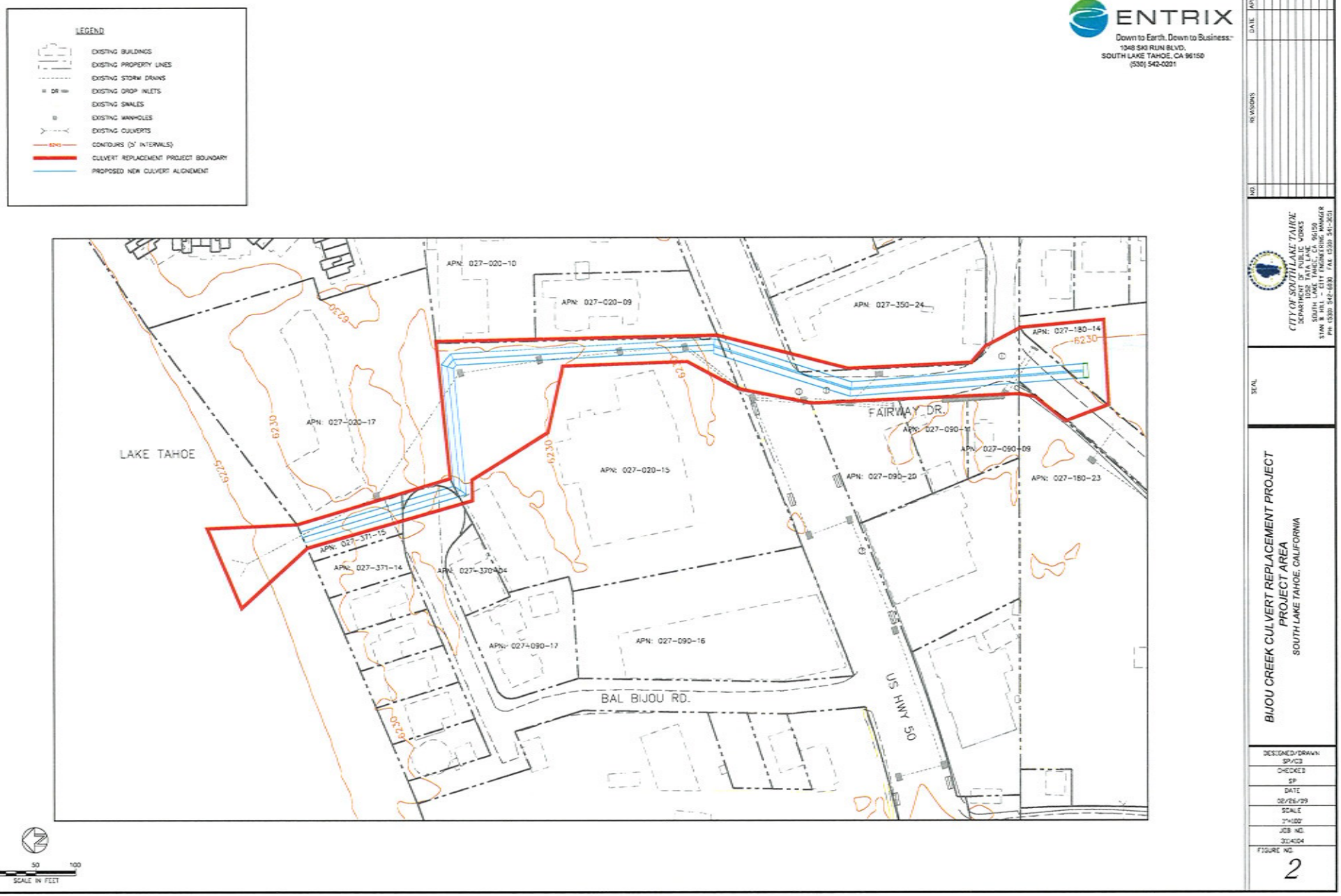
- Commercial Core Feasibility Study
- 90% Design Plans, Bijou Creek Culvert Replacement Project
- 90% Construction Specifications, Bijou Creek Culvert Replacement Project
- 90% Storm Water Pollution Prevention Plan, Bijou Creek Culvert Replacement Project
- 50% Design Plans, Bijou Commercial Core Project

Finally, the following documents will completed in advance of construction of the first phase of the Bijou Area ECP (scheduled for fall 2011, pending funding):

- Final Construction Documents, Bijou Creek Culvert Replacement Project
- All required construction permits, Bijou Creek Culvert Replacement Project
- Recorded environmental compliance documentation (CEQA)
- 50% Design Plans, Bijou Commercial Core Project
- Draft Environmental Document (Mitigated Negative Declaration/Environmental Assessment), Bijou Commercial Core Project

Project Map

The following page includes a map depicting the Bijou Creek Culvert Replacement Project area.


LEGEND
EXISTING BUILDINGS
EXISTING PROPERTY LINES
EXISTING STORM DRAINS
EXISTING DROP INLETS
EXISTING SWALES
EXISTING MANHOLES
EXISTING CULVERTS
CONTOURS (5' INTERVALS)
CULVERT REPLACEMENT PROJECT BOUNDARY
PROPOSED NEW CULVERT ALIGNMENT
ENTRIX
Down to Earth. Down to Business.
1048 SKI RUN BLVD.
SOUTH LAKE TAHOE, CA 96150
(530) 542-0231
APN: 027-020-10
APN: 027-020-09
APN: 027-350-24
APN: 027-180-14
APN: 027-020-17
APN: 027-020-15
APN: 027-371-15
APN: 027-371-14
APN: 027-370-04
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APN: 027-090-16
APN: 027-090-11
APN: 027-090-09
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APN: 027-180-23
LAKE TAHOE
FAIRWAY DR.
BAL BIJOU RD.
US HWY 50
6230
6235
0
50
100
SCALE IN FEET
NO.
REVISIONS
DATE
APPVD
SEAL
CITY OF SOUTH LAKE TAHOE
DEPARTMENT OF PUBLIC WORKS
1901 AVIATION DRIVE
SOUTH LAKE TAHOE, CA 96150
STAN B HILL - CITY ENGINEERING MANAGER
PH (530) 542-6033 FAX (530) 541-2651
BIJOU CREEK CULVERT REPLACEMENT PROJECT
PROJECT AREA
SOUTH LAKE TAHOE, CALIFORNIA
DESIGNED/DRAWN
SP/CB
CHECKED
SP
DATE
02/26/09
SCALE
1"=100'
JOB NO.
304004
FIGURE NO.
2

Budget Category (a): Direct Administration Costs

Task 7.1: Administration

7.1.1: The City of South Lake Tahoe shall provide all technical and administrative services as needed for project completion, review all worked performed, and coordinate budgeting and scheduling to assure that the project is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

Deliverable: Preparation of invoices and other deliverables as required.

Task 7.2: Labor Compliance Program

7.2.1: will pay State Prevailing Wage for all construction activities. Tahoe RCD will be responsible for complying with all Labor Code requirements under Senate Bill X2-9 and for paying associated fees within this Code. Tahoe RCD will provide all necessary documentation of compliance to grant manager prior to finalizing contract.

Deliverable: Compliance with Labor Code requirements as stated in grant agreement.

Task 7.3: Reporting

7.3.1: City of South Lake Tahoe shall meet project requirements through regular communication with regional and state grant managers and the completion of monthly progress reports submitted to STPUD by the 30th of each month. The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work completed for the project. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts. All subcontractor activities and expenditures shall be documented in progress reports.

7.3.2: Prepare Draft Project Report. The City of South Lake Tahoe shall prepare a draft project report that includes the results of the tasks listed above. The report shall include the following narrative sections:

- A brief introduction including a statement of purpose, the objectives of the project, and a description of the approach, accomplishments, and lessons learned during the project.
- A list of the task deliverables previously submitted as outlined in the Work Tasks.
- Any additional information that is deemed appropriate by grant managers.

7.3.3: Submit Draft Project Report. The City of South Lake Tahoe shall submit copies of the draft project report to grant managers for review and comment.

7.3.2: Prepare Final Project Report. The City of South Lake Tahoe shall prepare and submit a final project report that incorporates comments made by grant manager(s) on the draft project report.

Deliverables: Monthly Progress Reports & Invoicing, Draft Project Report, Final Project Report as specified in the Grant Agreement

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation
Task 7.4: Assessment and Evaluation

7.4.1: Project Assessment and Evaluation Plan (PAEP). Cit of South Lake Tahoe will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverable: PAEP

Task 7.5: Final Design

7.5.1: The Bijou Creek Culvert Replacement Project, as described above, has been in the planning and design phases since 2009. Therefore, a majority of the pre-construction efforts have been completed, or will be completed prior to the acceptance of this grant. The tasks described in this Workplan, and requested for grant funding, are for construction of the project and other construction related efforts. However, for clarity, all project tasks, including design tasks currently underway and funded (Budget Categories A, B and C) are shown in the Project Budget Table 7.

Deliverable: Final Construction Documents, Bijou Creek Culvert Replacement Project

Task 7.6: Environmental Documentation

7.6.1: The Lahontan Basin Plan specifies that municipalities must operate under a municipal National Pollutant Discharge Elimination System (NPDES) Stormwater Permit (Municipal Permit), which regulates the management of construction activities in the permittee's jurisdiction. The City of South Lake Tahoe has implemented a Storm Water Management Program (SWMP) to manage the requirements of the City's Municipal Permit, including but not limited

to inspection and monitoring of construction sites that discharge into municipal storm sewers. As scoped in Budget Category E *Environmental Compliance/Mitigation/Enhancement* (above), the Project will be subject to the requirements of the City's SWMP to ensure the project meets all permit requirements.

Task 7.7: Permits

7.7.1: The Lahontan Basin Plan specifies that municipalities must operate under a municipal National Pollutant Discharge Elimination System (NPDES) Stormwater Permit (Municipal Permit), which regulates the management of construction activities in the permittee's jurisdiction. The City of South Lake Tahoe has implemented a Storm Water Management Program (SWMP) to manage the requirements of the City's Municipal Permit, including but not limited to inspection and monitoring of construction sites that discharge into municipal storm sewers. As scoped in Budget Category E *Environmental Compliance/Mitigation/Enhancement* (below), the Project will be subject to the requirements of the City's SWMP to ensure the project meets all permit requirements.

Deliverable: Required Permits

Budget category (d): Construction/ Implementation

Task 7.8: Construction Contracting

7.8.1: The work associated with this task will include the bidding of the construction contract for the Bijou Creek Culvert Replacement Project. This work will be conducted in accordance with public bidding protocol, as established by the State of California Public Contract Code. These efforts will include, but not be limited to the following items:

7.8.1.1 : Advertisement of bids
7.8.1.2 : Notice to contractors and local/regional building exchanges
7.8.1.3: Pre-bid meeting/conference
7.8.1.4 :Receipt of bids
7.8.1.5 :Evaluation of bids
7.8.1.6: Recommendation of award
7.8.1.7: Award of construction contract

Task 7.9: Construction/Implementation

The work associated with this task will include the actual construction of the Bijou Creek Culvert Replacement Project in accordance with the project plans, specifications, permits and storm water pollution prevention plan. The key elements involved in the construction of the Bijou Creek Culvert Replacement Project are the following:

Subtask 7.9.1: Site Preparation and Mobilization

7.9.1.1: Mobilization

Subtask 7.9.2: Construction

7.9.2.1: Manufacturing of Pre-cast concrete structures and drainage culverts
7.9.2.2: Implementation of Temporary Erosion Control Measures
7.9.2.3: Relocation of existing utilities (water, gas, electric and sanitary sewer)
7.9.2.4: Establishment of traffic control system
7.9.2.5: Installation of shotcrete headwall at Lake Tahoe
7.9.2.6: Installation of drainage culvert
7.9.2.7: Installation of Concrete headwall at northern project limit

Subtask 7.9.3: Performance Measures and Demobilization

7.9.3.1: Restoration of all disturbed areas (paving and revegetation)
7.9.3.1: As part of the overall construction of the Project, the City of South Lake Tahoe will oversee and/or retain the services of a materials testing firm and construction management and inspection

services to assure the Project is constructed in accordance with all requirements. These efforts will be covered under tasks e and f below.

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement

Task 7.10: Environmental Compliance/Mitigation/Enhancement

7.10.1: The work associated with this task will includes the required compliance assurance that the Bijou Creek Culvert Replacement Project is being implemented/constructed in accordance with the approved environmental measures required and permitted for the Project. These efforts include the following:

7.10.1.1: Storm Water Pollution Prevention Plan monitoring
7.10.1.2: Storm Water Pollution Prevention Plan inspection

Budget Category (f): Construction Administration

Task 7.11: Construction Administration

7.11.1: The work associated with this task will include all of the necessary and required construction administration, oversight, management, inspection and materials testing to assure that the Bijou Creek Culvert Replacement Project is constructed in accordance with the construction documents. These efforts specifically include the following:

7.11.1.2: Construction administration
7.11.1.3: Grant administration
7.11.1.4: Project management
7.11.1.5: Construction management
7.11.1.6: Construction inspection
7.11.1.7: Materials testing
7.11.1.8: Compaction testing

Project #8 Montgomery Estates Erosion Control Project, El Dorado County Department of Transportation

Introduction

Goals and Objectives

The goal of the Project is to improve the clarity of Lake Tahoe by reducing the detrimental water quality impacts of the Montgomery Estates subdivision (EIP 701) on Lake Tahoe clarity. The objective of the Project is the reduction in the transport of fine

sediment from the Project area by constructing water quality Best Management Practices (BMPs) within the Project area. The more specific Project goals are as follows:

Table 1 – Project Goals and Objectives

Goals		Objectives
1.	Reduce the amount of very fine sediment, fine sediment, and coarse inorganic sediment from the urbanized watershed bounded by the Project boundary by 33% or to the maximum extent practicable prior to discharging into Cold Creek. Very fine sediment is defined as particles with a diameter of 20 microns or less (<20 μm), fine sediment is defined as particles which pass a #200 sieve (<74 μm), and coarse sediment is defined as particles retained on or greater than the #200 sieve (>74 μm).	1. Stabilize eroding slopes with County approved slope stabilization (Source Control) BMPs. 2. Stabilize eroding channels/ditches with County approved channel or road treatment source control BMPs. 3. Utilize various County approved sediment trapping BMPs (Sediment Traps, Infiltration, Sedimentation/Infiltration Basins, etc.) to capture sediment from impervious surfaces and eroding areas. 4. Capture de-icing abrasives to prevent discharge to watercourses. 5. Define and maximize the sweeping frequency within the ROW as funding and resources are available. Current County sweeping frequency is approximately twice per year. 6. Utilize various media filters and other treatment techniques to remove very fine particles from runoff effluent.
2.	Reduce the 25-year, 1-hour storm surface water volume from the urbanized watershed bounded by the Project boundary by 33% or to the maximum extent practicable prior to discharging into Cold Creek.	1. Utilize County ROW and publicly owned parcels to capture, store, and infiltrate a portion of the 25-year, 1-hour stormwater volume, which are at main discharge points within the watersheds. 2. Utilize various County approved infiltration and storage BMP's prior to discharging into Trout or Cold Creeks.

3.	Reduce the 25-year, 1-hour storm surface water peak flow from the urbanized watershed bounded by the Project boundary by 33% or to the maximum extent practicable prior to discharging into Cold Creek.	1. Utilize County ROW and publicly owned parcels to detain, spread, and infiltrate the stormwater within the watershed prior to discharging into Trout and Cold Creeks without violating drainage laws. 2. Utilize various stormwater drainage systems, which increase the time of concentration and reduce the peak discharge to the main discharge points into Trout and Cold Creeks.

Purpose and Need

Urban development and the concentration of stormwater in the Montgomery Estates subdivision has resulted in a concentrated flow of stormwater from the County of El Dorado Department of Transportation (EDOT) Right-Of-Way (ROW) directed to pervious forested land as well as Trout and Cold Creeks. A portion of the flow originating within regions of Montgomery Estates reaches Lake Tahoe resulting in the transport of fine sediment to Lake Tahoe without infiltration or treatment. The partial connectivity between Lake Tahoe and the Montgomery Estates subdivision resulted in a high to moderate potential to deliver fine sediment to Lake Tahoe. The Montgomery Estates area of concern is within the Tahoe Regional Planning Agency (TRPA) Plan Area Statement area #106-Montgomery Estates and includes Environmental Improvement Program (EIP) #701 [(1)]. The Montgomery Estates Erosion Control Project (Project) has been divided into three project areas as presented in Figure A, which also shows the proximity of the Project area to Cold and Trout Creeks.

Table 2 – Project Impacts on Threshold Indicators

Project	Threshold Index	Threshold Indicators	Accomplishment Units (AU) Definitions[1]	Estimated AU Values
EIP 701	WQ-2-F	Pelagic Lake Tahoe Winter Clarity (Runoff Treated)	Miles of conveyance treated	2.2 Miles
	WQ-2-C	Pelagic Lake Tahoe Winter Clarity (Road BMPs)	Miles improved	1.1 Miles

Notes:

(1) The Accomplishment Unit Definitions will be further defined as part of the TRPA Pathway Process, therefore, the definitions within Table 1 are subject to change.

Pollutant Load Reduction

A Pollutant Load Reduction (PLR) analysis was completed for the stormwater originating from the Montgomery Estates Project area [(2)]. The volume of runoff from the Project area was estimated from the product of average annual precipitation, watershed area, and directly connected imperviousness. The concentration of total suspended solids (TSS) was estimated based on Event Mean Concentrations (EMC) as a function of land use. The estimated annual sediment load in pounds of TSS from the entire Project area is 36,500 (Area 1); 53,500 (Area 2); and 7,400 (Area 3) with approximately half of the TSS being less than 20 microns. These total estimated loads are comprised of loads from County Right of Way, County parcels, California Tahoe Conservancy (CTC) parcels, United States Forest Service (USFS) parcels, and Private parcels. Based on the connectivity of the Montgomery Estates outfall pipes, EDOT will focus its planned treatment BMP's in the Project areas that convey stormwater to Cold and Trout Creeks and eventually Lake Tahoe. The County of El Dorado will primarily focus on treating stormwater from its area of responsibility, which includes the County of El Dorado ROW and County of El Dorado owned parcels.

Table 3 – Pollutant Load Reduction Strategy – Project Watershed Summary[1]

	WS	Area (acres)	Volume (cubic feet)	TSS Mass (pounds)
ME1	A	111.3	2,703,454	9,599
	B	308	7,165,264	18,087
	C	11.8	440,925	2,330
	D	12.1	453,430	2,372
	E	1.6	60,376	324
	F	16.5	588,025	2,976
	G	1.8	64,161	377
	H	0.5	18,262	115
	I	0.6	26,594	159
	J	2.2	97,951	234
	TOTAL	**466.4**	**11,618,441**	**36,572**
ME2	73	23.10	987230	6,054
	74	46.50	1970170	12,469
	75	8.40	371339	2,348
	76	2.70	94555	631
	77	0.48	26816	227
	78	0.87	38405	273
	79	1.80	64738	520
	80	1.80	61855	362
	81	4.00	145393	955
	82	4.20	163933	1,058
	83	0.64	33830	304
	84	32.30	1209540	10,948
	85	49.70	1314277	17,364
	TOTAL	**176.5**	**6,482,081**	**53,512**
ME3	98	5.70	262230	1,709
	99	8.60	401169	2,183
	100	6.40	270764	1,490
	101	5.10	239159	1,385
	102	1.90	106630	642
	TOTAL	**27.70**	**1,279,951**	**7,407**

Notes:

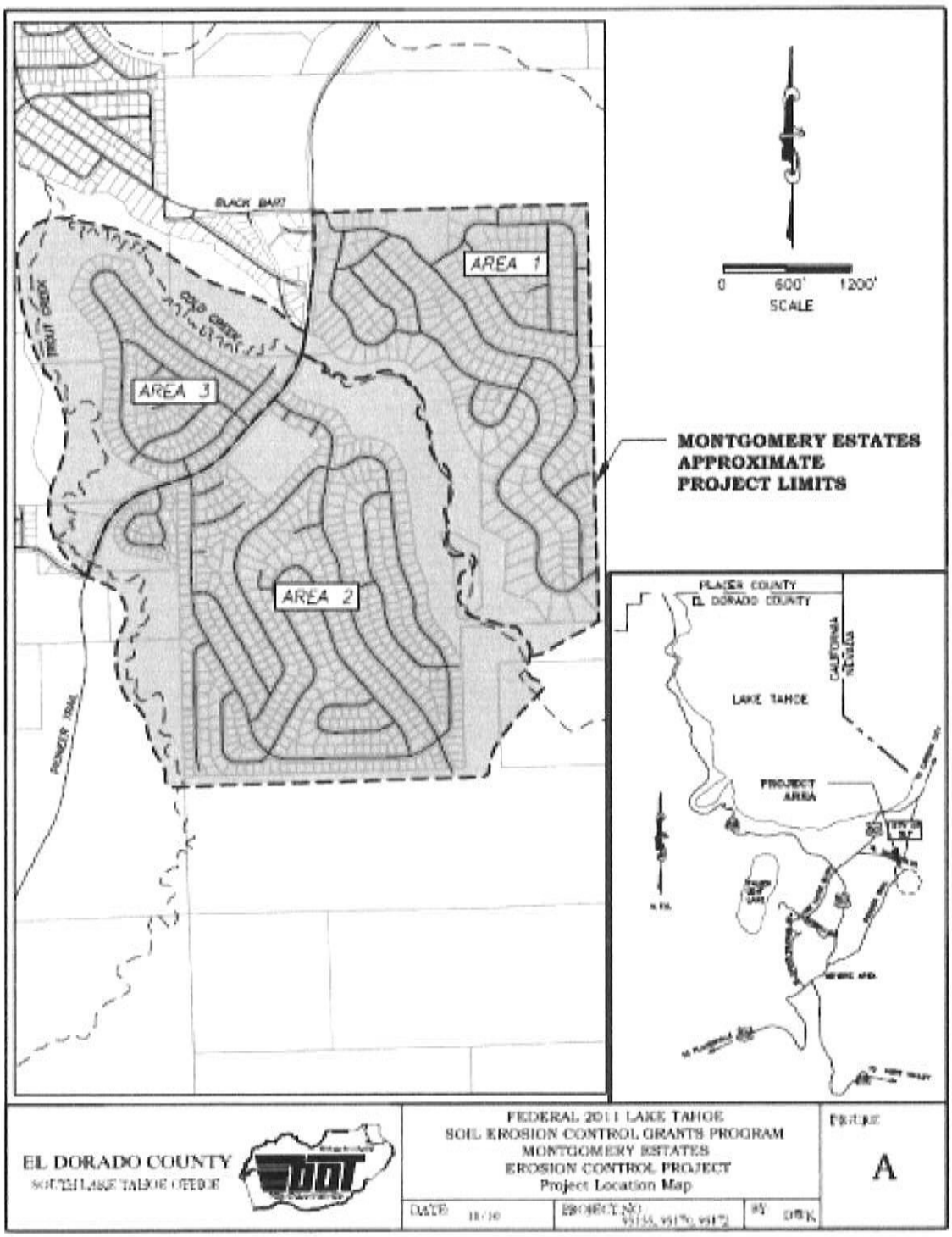
1. Project watershed area includes County Right of Way, in addition to public and private parcels

Project List

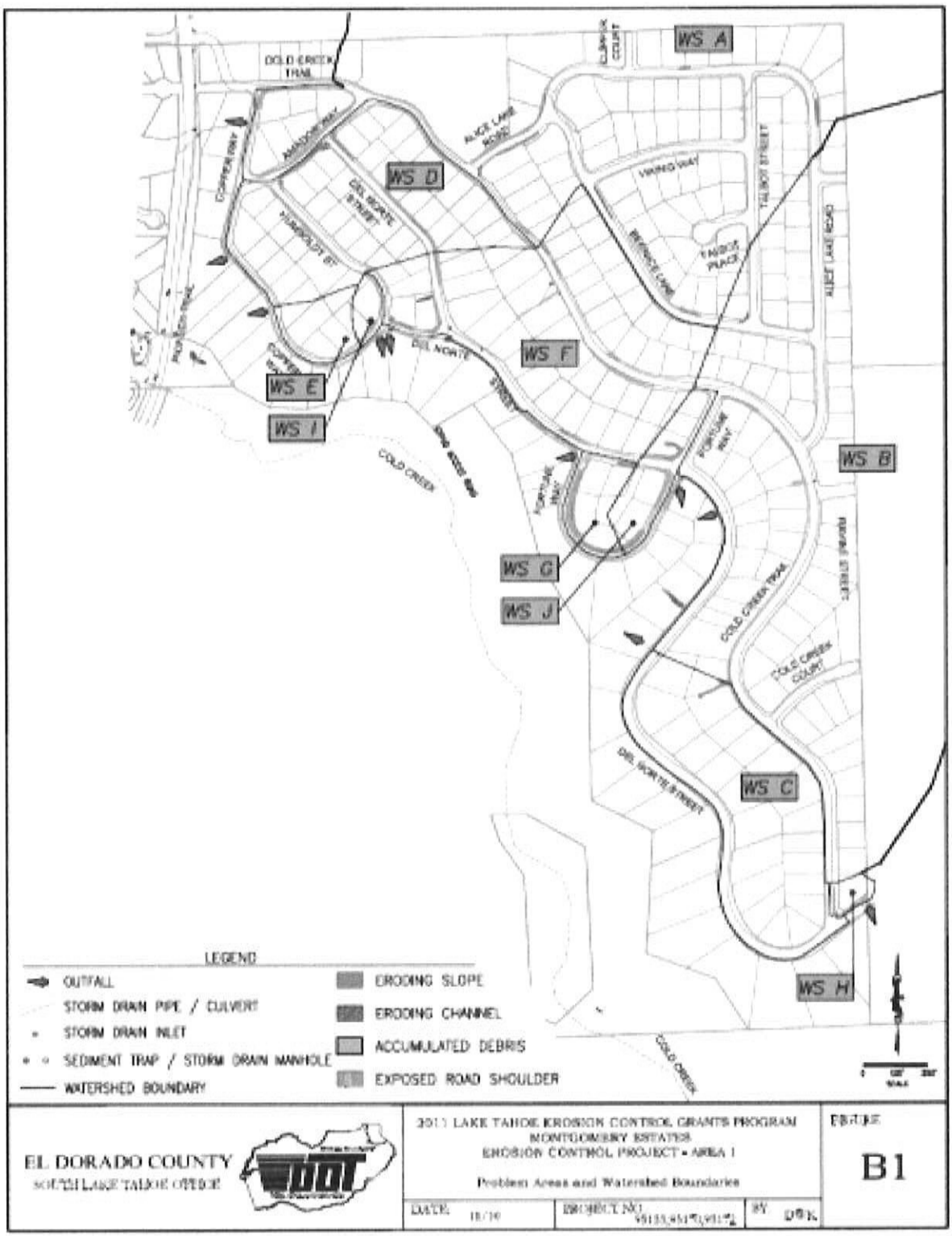
Area 1 of Montgomery Estates is bordered by Cold Creek to the south and southwest, Pioneer Trail on the northwest and undeveloped USFS land to the north and east. Area 2 is bordered by Cold Creek to the northeast, Trout Creek to the southwest, Pioneer Trail to the north, and undeveloped USFS land to the south. Area 3 is bordered by Trout Creek to the west, Cold Creek to the north, and Pioneer Trail to the south (Figure A).

INTEGRATED ELEMENTS OF PROJECT

REGIONAL MAP



PROJECT MAP


WS A
WS B
WS C
WS D
WS E
WS F
WS G
WS H
WS I
WS J
COLD CREEK TRAIL
ALICE LAKE ROAD
GIL NORTE STREET
TALBOT STREET
FORTUNE WAY
COLE CREEK TRAIL
COLE CREEK COURT
COLD CREEK
LEGEND
OUTFALL
STORM DRAIN PIPE / CULVERT
STORM DRAIN INLET
SEDIMENT TRAP / STORM DRAIN MANHOLE
WATERSHED BOUNDARY
ERODING SLOPE
ERODING CHANNEL
ACCUMULATED DEBRIS
EXPOSED ROAD SHOULDER
EL DORADO COUNTY
SOUTH LAKE TAHOE OFFICE
DOT
2011 LAKE TAHOE EROSION CONTROL GRANTS PROGRAM
MONTGOMERY ESTATES
EROSION CONTROL PROJECT - AREA 1
Problem Areas and Watershed Boundaries
DATE
10/10
BY
DRK
SHEET
B1

Completed Work

To date, EDOT has completed an Existing Conditions Analysis for Areas 1, 2, and 3 [(3)], Formulating Alternatives Memorandum for Area 1 [(4)], Project Alternatives Evaluation Report for Area 1 [(5)], a Preferred Alternative Report for Area 1 [(6)], and 60% plans for Area 1. The Environmental Documents are also complete and adopted for Area 1 with subsequent United States Forest Service (USFS) National Environmental Policy Act (NEPA) and TRPA submittals soon to follow. The Engineers Estimate for the 60% plan set for Area 1 is approximately $1,470,000. Due to the current funding climate, EDOT is going to construct this Project in phases with the first phase targeting the areas which will provide the largest benefit. EDOT received funding from the Round 10 Southern Nevada Public Land Management Act (SNPLMA) to construct the first phase of the proposed improvements for Area 1. That grant is not expected to cover all improvements. Therefore, EDOT is requesting additional funding with this implementation grant to cover the additional erosion control improvements within the Project area. The total requested amount for this grant will be **$500,000**. This grant will be used to fund the implementation of Montgomery Estates Area 1 Phase B.

Existing Data and Studies

Several reports were developed as part of this projects development. These include the Existing Conditions Analysis, Preferred Alternative Report and a Project Design Report. The Existing Conditions Analysis Report defines the scope of work as it relates to potential alternative solutions to the problems identified for future phases of the project delivery process (PDP). This includes evaluating topography, slope, land use, land capability, utilities, environmental resources, existing maintenance, hydrology, hydraulics, stormwater quality, erosion, and opportunities & constraints. The preferred alternative report included watershed characteristics, public opinion & outreach, the preferred design approach and engineer estimates. The project design report included site characteristics, geotechnical, hydrology / hydraulics and structural analysis. These reports are available from the County of El Dorado Department of Transportation upon request.

EVALUATION AND MONITORING

In March 2006, EDOT completed an Existing Conditions Report for Montgomery Estates Areas 1, 2 and 3. Area 1 was selected as the highest priority based on the necessity to address source control issues and in November 2007, EDOT completed a Formulating Alternatives Memorandum for Area 1. In August 2008, EDOT prepared a Project Alternative Evaluation Report[(13)] and a Preferred Alternatives Report[(14)] for Area 1 that presented the preferred design approach for mitigating the water quality impacts of the Project area.

In the summer of 2008, EDOT completed an outfall/infrastructure inventory as part of the Pollutant Load Reduction Strategy. It was determined that a majority of the conveyance systems within Areas 2 and 3 are functioning as designed. These systems are comprised

of curb and gutter, drainage inlets with no sumps, and concrete pipe. Though they are functioning as designed in terms of conveyance, there is minimal treatment of the stormwater prior to discharging from the outfalls. This problem is amplified by the distance between outfall and surface water, ranging from 650 feet to 0 feet (always connected).

The monitoring goals for the Project will be:

Hydrologic/Water Quality (H/WQ)

- To provide hydrologic and loading baseline data to be utilized for evaluating post-construction watershed BMP retrofits.

Photographic (P)

- To provide pre-construction, construction, and post-construction photographic documentation as required by the State grant guidelines and TRPA/Lahontan regulatory permit requirements (this effort will be funded by other funds).

EDOT has maintained a meteorological station at Sierra House Elementary School since 2000. Additional flow gauges (pressure transducers) will be installed at selected outfalls of the newly constructed BMP's within the Project area. EDOT staff will collect stormwater grab samples from post-construction storm events in order to determine the correlation between precipitation, flow, and the concentration of fine sediment. This will allow for an accurate estimation of the annual fine sediment load captured by the Project improvements and measure the volume / flow reduction as a result of the Project as well.

Project Timing and Phasing

Area 1 is the first of several phases of the Project for implementation. It is bordered by Cold Creek to the south and southwest, Pioneer Trail on the northwest and undeveloped USFS land to the north and east. This is planned for construction in 2011/2012. With approximately $600,000 funding already secured for Montgomery Estates Area 1 Phase A, the funding from this grant will be used to construct the remaining project (Phase B) in its entirety with Phase B scheduled for construction the following spring, 2012.

Area 2 is the second phase that is bordered by Cold Creek to the northeast, Trout Creek to the southwest, Pioneer Trail to the north, and undeveloped USFS land to the south. This phase is currently funded for design through 2011 with construction planned for 2012/2013.

Area 3 is bordered by Trout Creek to the west, Cold Creek to the north, and Pioneer Trail to the south. The Project area encompasses EDOT ROW, CTC, USFS, and privately owned property. This phase is partially funded for design with construction scheduled for 2013/2014.

Budget Category (a): Direct Administration Costs
Task 8.1: Administration

County of El Dorado Department of Transportation will complete all work with regard to developing / receiving contracts, bidding, awarding, construction management, construction inspection, and timing. The Project will be monitored to assure all contracting code is followed to ensure it is constructed within budget and on schedule.

8.1.1: Project Administration. Project administration will include a project manager, resident engineer, construction Inspector and office management. Quarterly invoices will be sent for reimbursement which details the total cost including but not limited to, itemized materials, labor, and equipment. A construction schedule will be developed and submitted as part of the grant deliverables upon execution of the grant contract.

8.1.2 - Project Management. The project manager will track all expenses, budgets, and material costs and report information in terms of the total budget, budget spent, budget remaining, wage law requirements and scheduling. Under the project manager will be a resident engineer (RE) whose responsibilities will include addressing any issues that may occur in the field. A construction inspector will also be present on site to oversee the operations of construction and document all activities with regard to the contractor hours, wages, equipment, timing, technical details and construction as-builts.

Deliverables: Copy of quarterly invoices, copy of the detailed construction schedule, Final Construction Report and Construction As-Builts

Task 8.2: Labor Compliance Program

8.2.1: County of El Dorado adheres to and will conform to California Public Contract Code. As required by Proposition 84, the County of El Dorado will adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). Compliance with applicable laws, including California Labor Code provisions, will become an obligation of the grant recipient and sub-recipients (i.e., individual project proponents that will receive grant funds) under the terms of the grant agreement between the grant recipient and the granting agency. The County of El Dorado requires contractors to pay prevailing wage on all projects awarded by the County.

Task 8.3: Reporting

8.3.1: Reports submitted as part of this grant will include a progress and a Final Construction Report. Progress reports will include all information pertinent to the timing, phasing, scheduling, budgeting, and inspections of the Project. It is anticipated that the Project construction will stay on schedule and within budget, however if changes do occur as a result of unanticipated field scenarios it will be reported as appropriate. A copy of inspection field records, daily notes, and resident engineer records will be available upon request. Detailed photographic monitoring will be conducted showing the pre and post Project condition including successes and challenges.

Deliverables: Quarterly, Annual and Final Reports as required in the grant contract conditions.

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation
Task 8.4: Assessment and Evaluation

Many detailed assessments have already been completed as a component of the Projects design and development. These include the Existing Conditions Analysis, and Preferred Alternative Report. These were discussed in the existing data / studies section earlier in the Workplan.

8.4.1: The construction and post Project condition will be assessed via photographic records to visually demonstrate the success and benefit of the Project.

8.4.2: Project Assessment and Evaluation Plan (PAEP). EDOT will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The

PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverable: A copy of the Final Plan Set and Contract Specifications including engineer estimates for the Project area, PAEP

Task 8.6: Environmental Documentation

8.6.1: The Notice of Determination (NOD) for the Montgomery Estates Project was received by the State Clearinghouse on December 10, 2009 and adopted by the County of El Dorado Board of Supervisors on December 8, 2009.

Deliverables: Copy of the filed NO, Copy of the categorical exclusion

Task 8.7: Permitting

8.7.1: Tahoe Regional Planning Agency (TRPA). An initial Project checklist for determination of environmental impact was submitted and approved by the TRPA. A soils hydro approval was also obtained to approve the proposed excavation depths. All land capability verifications have been completed.

8.7.2: Lahontan Regional Water Quality Control Board Permit (Lahontan). As required by Lahontan, an NOI for projects greater than 1 acre will be completed if the total disturbance is greater than 1 acre. The County of El Dorado shall prepare and submit all permit requirements including a Stormwater Pollution Prevention Plan (SWPPP) to Lahontan.

Deliverables: TRPA approvals, Lahontan approvals as needed and required.

Budget category (d): Construction/ Implementation
Task 8.8: Construction Contracting

8.8.1: All contracting and bid processes will be completed as required by State and County contracting requirements. The County of El Dorado will administer the contract bid process. Bid meeting including pre bid meetings, bid opening, and closing will be conducted by County staff.

8.8.2: The County of El Dorado will resolve any issues requiring an addendum during the advertisement of bids with the preparation of addenda to the technical specifications and/or plans as necessary to correct any issue requiring resolution prior to receipt of bids.

8.8.3: County of El Dorado will publicly advertise the Project a minimum of three weeks prior to the opening bid date and upon award; will issue the Notice to Proceed.

Deliverables: Revisions to the technical specifications and/or plans as necessary to be incorporated in addenda during the bid advertisement process.

Task 8.9: Construction/Implementation

The County of El Dorado Department of Transportation will oversee the construction of the Project including inspections. Grant funds requested from the Proposition 84 (IRWMP) sources will be used for this task (Task 9) only.

Subtask 8.9.1 – Mobilization and Site Preparation

a) The County of El Dorado shall prepare the Contractor for work in the Project site through a pre-construction meeting

b) The County of El Dorado will provide construction staking pursuant to the Contract Specifications for the contractor to construct the Project.

Subtask 8.9.2 – Project Construction

a) Improvements will be constructed in Montgomery Estates Area 1 Project Area only.

Subtask 8.9.3 – Performance Testing and Demobilization

a) The County of El Dorado will provide construction materials testing services for the Project. These services include applicable observation and testing services for soil, Portland Cement Concrete, revegetation, and asphalt concrete for compliance with contract documents and relevant County specifications.

b) The County of El Dorado will assess compliance with revegetation and Project site restoration when construction work is complete. Demobilization will be supervised so that the Project is completed per specifications.

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement
Task 8.10: Environmental Compliance/Mitigation/Enhancement

8.10.1: The County of El Dorado will manage environmental compliance under the terms and conditions of the Projects permits. No additional mitigation or environmental compliance will be necessary above and beyond those measures outlined and included in the Specifications and Contract Documents.

Budget Category (f): Construction Administration

Task 8.11: Construction Administration (Construction Management)

8.11.1: Construction management will be completed by the project manager with assistance from the resident engineer on the Project. All submittals and billings will be reviewed for compliance with the standard specifications and preferred design. The County of El Dorado will perform construction oversight and resident engineer responsibilities including all Project construction inspections.

BIBLIOGRAHPY

1. Environmental Improvement Program: The Cooperative Effort to Preserve, Restore, and Enhance the Unique Natural and Human Environment of the Lake Tahoe Region. Master List of Threshold Needs. Tahoe Regional Planning Agency (TRPA). Volume 2. May 2001.
2. El Dorado County – Tahoe Basin: 2009 Pollutant Load Reduction Strategy. Board Order No. R6T-2005-0026; NPDES Permit No. CAG616001; WDID No. 6A099110003. May 2009.
3. Montgomery Estates Erosion Control Project and Cold Creek Fisheries Enhancement Project. JN 95155. El Dorado County Department of Transportation, Tahoe Engineering Division. Existing Conditions Project Report. March 2006.
4. Montgomery Estates Area 1 Erosion Control Project. JN 95155. El Dorado County Department of Transportation, Tahoe Engineering Division. Formulating Alternatives Memorandum. November 2007.
5. Montgomery Estates Area 1 Erosion Control Project. JN 95155. El Dorado County Department of Transportation, Tahoe Engineering Division. Project Alternative Evaluation Report. August 2008.
6. Montgomery Estates Area 1 Erosion Control Project. Project Number 95155. El Dorado County Department of Transportation, Tahoe Engineering Division. Final Project Alternatives Evaluation Report (PAER). August 2008.

Project #9 Griff Creek Water Quality Improvements

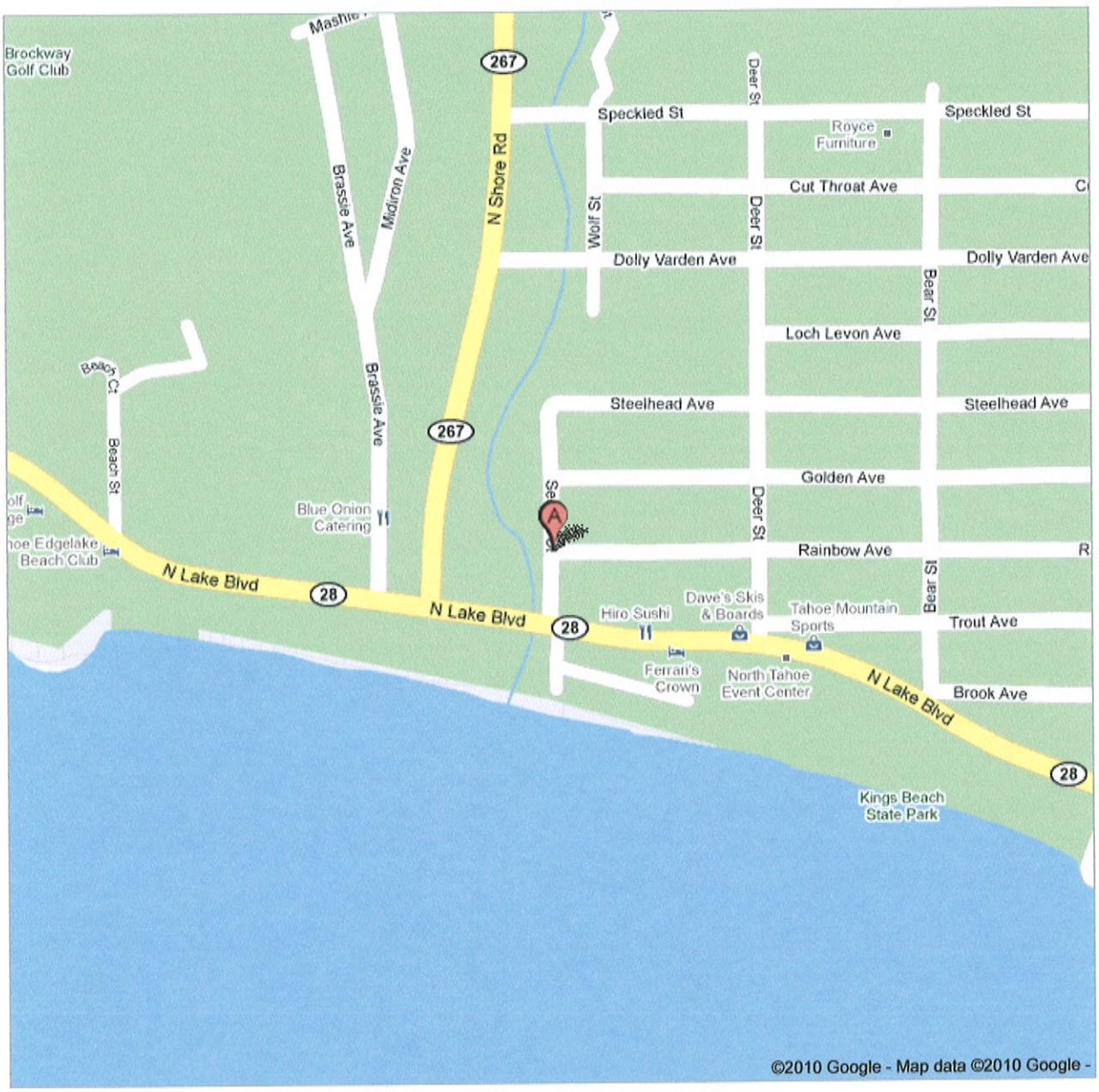
Introduction

Placer County Department of Public Works will perform and/or provide all required engineering services necessary to prepare final design and construction documents of the Griff Creek Water Quality Project. Placer County will complete the design, publicly bid the project per California Contract Code and have the project constructed.

This Work Plan outlines the Construction contracting tasks that will be completed as part of the grant award. This proposal is for funds related to the construction of the project.

Google maps Address **Secline St**
Kings Beach, CA

Notes Griff Creek restoration area is Secline Ave and Rainbow Ave. A further description of the exact project sites can be found in the plans and specifications included with this application.



Griff Creek is located within the Kings Beach Watershed on the north shore of Lake Tahoe. Due to development in the urbanized area of Kings Beach, the once braided stream channel system of Griff Creek with natural flood control zones has been forced into a single channel that has resulted in significant bank erosion and incised channels. In addition, the watershed currently has no urban water treatment facilities and the untreated urban runoff flows directly into Griff Creek, The eroding creek and untreated urban runoff is contributing to nutrient and sediment deposition into the creeks outlet, Lake Tahoe. The purpose of the project is to improve the water quality in the Griff Creek subwatershed within the residential area of Kings Beach by preventing further stream degradation, reduce flooding, installing water quality enhancement features, and restoring stream environmental zones were feasible.

Please Note: There is no Land Purchase/Easement acquisition costs or associated land acquisition activities related to this project; Budget Category (b) is not applicable.

Project administration and related engineering services and construction contracting costs shall include the following tasks described in the next section.

Budget Category (a): Direct Administration Costs
Task 9.1: Administration

Placer County Department of Public Works (Placer DPW) will perform all technical and administrative services as needed for project completion, review all worked performed, and coordinate budgeting and scheduling to assure that the project is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

9.1.1: Project Administration. Project administration includes ongoing project-related management, scheduling and administrative responsibilities and development of monthly invoices and progress reports. Placer DPW will assign a Project Manager to serve as the primary point of contact throughout the project

The Project Manager will attend progress meetings as defined herein with individual agencies to gather information, coordinate project planning, discuss current project issues, and resolve project constraints. The Project Manager will attend agency coordination meetings outlined in this phase of the scope.

A detailed schedule for the Griff Creek Water Quality Improvement Project will be submitted to the TRCD within ten (10) working days of receiving the grant agreement. The project schedule will be maintained and updated at progress meetings, or as necessary.

Placer DPW will prepare invoices against the grant agreement. Invoices shall show a breakdown of hours and charge rates for each individual for all work tasks. The invoice will reflect the task budget, previously billed amount, current

amount billed, amount billed to date, budget remaining, percent of budget expended, and percent complete for each task.

9.1.2: Project Management. Placer DPW will perform general project management activities including tracking project budget and completion status, project invoice preparation, and project billing status. Placer DPW will maintain continuous communication between TRCD to provide progress updates, discuss current project issues, and guide and assist Placer County staff with completion of work.

Deliverables: One (1) hard copy of monthly invoices. One (1) electronic copy of detailed construction schedule, updated monthly, or as appropriate. Microsoft Project 2000 or compatible.

Task 9.2: Labor Compliance Program

9.2.1: Placer County Department of Public Works adheres to and will conform with California Public Contract Code.

As required by Proposition 84, Placer DPW will adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). Compliance with applicable laws, including California Labor Code provisions, will become an obligation of the grant recipient and sub-recipients (i.e., individual project proponents that will receive grant funds) under the terms of the grant agreement between the grant recipient and the granting agency.

A Compliance Program at Placer County is currently in place, and will remain effective at the time of awarding of a contract for a public works project by the grant recipient. Placer County requires Contractors awarded projects to pay prevailing wage to employees.

Task 9.3: Reporting

9.3.1: Project administration includes ongoing project-related management, scheduling an administrative responsibilities and development of monthly invoices and progress reports. Placer DPW will assign a Project Manager to serve as the primary point of contact throughout the project

9.3.2: Placer DPW Project Manager will prepare a daily field observation report documenting field activities, field crews, contractor equipment, field problems, and weather conditions. The Project Manager will compare notes with the contractor's representative at the end of each working day to confirm that work accomplished and quantities completed are the same. Special situations will be documented by the Project Manager by photograph or video. The Project Manager will document defective work until it is repaired to be in conformance with the project plans and specifications.

Deliverables:
Daily inspection reports will include, at a minimum, the following items:

- The number, classification, and hourly summary of activity of each of the contractor's employees working.
- Material deliveries.
- Number, type of equipment, and hourly summary of equipment working and not working.
- Weather conditions.
- Discussions with the contractor.
- Problems, changes, and issues dealt with.
- Any other information necessary to create a satisfactory record of the day's activities at the project site in general accordance with accepted construction management practice.

Additionally, Placer County will complete and submit any annual and final reports as specified in the grant Agreement. Placer DPW will provide TRCD with a complete set of maintained record documents. At a minimum, these will include maps, plans, written correspondence, submittals, RFIs, CCOs, and other appropriate construction documents and records. As-Built drawings will also be submitted in electronic or hard copy form, if requested.

Budget Category (b): Land Purchase/ Easement
There are no applicable work items for this project under this category.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation
Task 9.4: Assessment and Evaluation

This project will be ready for construction in Spring (May 1) 2012. No additional field studies, assessments or evaluations are needed at this time.

9.4.1: Project Assessment and Evaluation Plan (PAEP). Placer DPW will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Task 9.5: Final Design

9.5.1: Currently, funds awarded to this project from the Bureau of Reclamation are being utilized for design costs. Current work is progressing on the 50% Design level plans and specifications. The 90% Design level plans and specifications will be reviewed by Placer County as well as an inter-agency peer group. Final design plans will be completed next summer 2011. No monies requested from the IRWMP grant award will be used in Final Design. All costs

for design have been secured. The final design documents shall consist of final project set of drawings, technical specifications, and engineer's cost estimate.

9.5.2: The plan set shall consist of graphic representations reviewed and sealed by a Registered Civil Engineer showing necessary plans, elevations, sections, and details for use by the Contractor to complete construction. All drawings shall be black ink on paper to facilitate photocopying. All drawings and details shall be consistent with Placer County DPW standards (which may include Caltrans standards) or as approved by Placer County for submittal during project reviews.

Deliverables:

1. Two (2) set of original 24 in. x 36 in. construction drawings, sealed and signed by a Professional Engineer licensed in the State of California shall be provided to TRCD by Placer County, if requested.
2. One (1) electronic copy of the construction document package (including full-size hard copy sets of drawings, specifications, and the engineer's cost estimate) complete for construction bidding purposes shall be provided. Plan sheets shall be provided in AutoCAD format at appropriate scale for the size of the copy. The electronic copy of the specifications shall be in Microsoft Word format. The electronic copy of the engineer's cost estimate shall be in Microsoft Excel format.

Task 9.6: Environmental Documentation

9.6.1: The Griff Creek Water Quality Improvement Project is a phase of the overall, comprehensive Kings Beach Watershed Improvement Plan. The Notice of Determination (NOD) for the comprehensive project was received by the California Clearinghouse on December 15, 2008 and adopted by the Placer County Board of Supervisors on December 9th 2008. A copy of the project NOD is attached with this submittal. A copy of the combined CEQA/NEPA environmental document completed for the project entitled, "Kings Beach Water Quality and Stream Environmental Zone Improvement Project – Final Environmental Compliance Document" is available for review upon request.

Task 9.7: Permitting

Placer County DPW will obtain all necessary permits and written agency approvals to complete this project. Funds from the US Bureau of Reclamation will be used for all permitting activities. No grant funds from Proposition 84 (IRWMP) sources will be used for these tasks.

9.7.1: Tahoe Regional Planning Agency (TRPA) . Placer County staff will review the TRPA file for the project area and obtain verifications for Land Capability and Existing Coverage. A TRPA Public Service Permit application will be prepared and all supporting documentation submitted to the agency for project approval. A Banking of Existing Land Coverage application will also be

prepared and submitted to TRPA as needed to document Stream Environment Zone restoration credit and banking for further public use.
Placer County will apply to TRPA for a Public Service permit for the project once plans are at 50 percent development. Scenic Impact Assessment and Change of Operation forms will also accompany the submittal as well as all the items required on the submittal checklist. Placer County will respond to comments from the TRPA after initial review of the permit application and revise plans and permit submittal documents as needed in order to secure the final permit prior to construction. Permit conditions will be included in final plans and specifications as needed.

9.7.2: Lahontan Regional Water Quality Control Board Permit. County shall prepare permit applications including supporting documentation which will include a SWPPP and submit to the agency. Permits and approvals are anticipated to include:

- NPDES Permit for Discharges of Storm Water Runoff Associated with Construction Activity in the Lake Tahoe Basin (basin-specific permit).
- An exemption for disturbance within the Stream Environment Zone (SEZ).
- Clean Water Act Section 401 Water Quality Certification.

9.7.3: U.S. Army Corp of Engineers. For work within Waters of the United States, this project requires authorization by the U.S. Army Corps of Engineers under the Clean Water Act Section 404. An application for Nationwide Permit 16 shall be prepared and submitted to the U.S. Army Corp of Engineers for all work within jurisdictional waters. A Wetlands Delineation map and report shall be prepared for submittal to Corp. A pre-application meeting with the Corps of Engineers shall be conducted to determine the need for a 404 permit.

Placer County shall map wetlands and prepare a certified Wetlands Delineation Report to be submitted to the Corps of Engineers. This information is required for completion of 404 permit and 401 Water Quality Certification processes.

9.7.4: Project Assessment and Evaluation Plan (PAEP). Placer DPW will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverables:

1. TRPA Land Capability Verification, Soils Hydrology Report and Public Services Permit.
2. Lahontan NPDES Construction Permit, Prohibition exemption for work in the SEZ and 401 Water Quality Certification.

3. US Army Corps of Engineers Section 404 Permit.
4. PAEP

Budget category (d): Construction/ Implementation

Task 9.8: Construction Contracting

9.8.1: Placer County DPW will administer the contract bid process. The design engineers and the Project Manager will provide bidding assistance during the bidding process. Services during this phase will include responding to bidders' questions, providing information and clarification regarding the project design and technical specifications, and attending one pre-bid meeting.

9.8.2: The County will resolve issues requiring an addendum during the advertisement of bids with the preparation of addenda to the technical specifications and/or plans as necessary to correct any issue requiring resolution prior to receipt of bids.

Placer County will publicly advertise the project a minimum of six weeks prior to the opening bid date.

Placer County Project Manager will conduct a mandatory pre-bid project walk-through.

Placer County will be responsible for contracting, award, licensing and bonds for the winning Contractor. Placer County will issue the Notice to Proceed.

Deliverables:

1. Written answers and notes of verbal answers to questions raised during the bidding process shall be prepared by the COUNTY immediately prior to opening of bids.
2. Revisions to the technical specifications and/or plans as necessary to be incorporated in addenda during the bid advertisement process.

Task 9.9: Construction/ Implementation

Placer County DPW will manage the construction and oversee construction of the project. All grant funds requested form the Proposition 84 (IRWMP) sources will be used for this task (Task 9) only.

Subtask 9.9.1: Mobilization and Site Preparation

a) Placer County shall prepare the Contractor for work in the project site through pre-construction meetings, RFPs, and construction mobilization.

b) Placer County DPW will arrange for and provide one (1) set of field construction stakes for clearing limits, rough grade, slope cuts, banks, culverts, drain inlets, and other proposed improvements. Placer County will provide construction staking in sufficient detail and in a timely manner for the contractor to construction the project.

Subtask 9.9.2: Project Construction

Improvements will be constructed in this project phase.

Subtask 9.9.3: Performance Testing and Demobilization

a) Placer DPW will arrange for and provide construction materials testing services for the project. These services include applicable observation and testing services for soil, Portland Cement Concrete, wetlands revegetation, and asphalt concrete for compliance with contract documents and relevant Placer County Department of Public Works specifications.

b) Placer County DPW will assess compliance with revegetation and project site restoration when construction work is complete. Demobilization will be supervised so that the project is completed per specifications.

Budget Category (e): Environmental Compliance/ Mitigation/ Enhancement

Task 9.10: Environmental Compliance/Mitigation/Enhancement

9.10.1: Placer County DPW will manage environmental compliance under the terms and conditions of the project permits. No additional mitigation or environmental compliance will be necessary above and beyond those measures outlined and included in the Specifications and Contract Documents.

Budget Category (f): Construction Administration

Task 9.11: Construction Administration (Construction Management)

9.11.1: Placer County DPW will perform construction oversight on the Contractor for the project.

Project #10 Bunker Tank Replacement, Tahoe City Public Utility District

Introduction

The Tahoe City Public Utility District (TCPUD) Bunker Water Tank Replacement Project (BWTR) is a water supply enhancement project involving the replacement of a seismically unstable water storage tank with inherent leak issues as well as capacity deficiencies. The 0.5 Million Gallon tank was constructed in the 1950's and is of redwood construction. The tank has long suffered from leakage due to redwood construction issues, bird and animal damage and operation beyond its useful lifespan. A very recent seismic analysis has determined that the current tank does not meet current seismic codes. This fact along with other observed conditions has led to the recommendation of replacement of the tank. Lastly, the current capacity of 0.5 M has been determined to be inadequate to provide the water service area with proper fire flow storage and offers very little operational storage during peak demand months. Tahoe City Public Utility District is not the sole provider of water in the area, and additional capacity will also be required if consolidation or interconnections with other systems occur in the future.

Budget Category (a): Direct Administration Costs

Task 10.1: Administration

10.1.1: Project Administration. Tahoe City Public Utility District (TCPUD) will be responsible to prepare invoicing and other documentation necessary for the administration of its Bunker Water Tank Replacement (BWTR) project. Invoicing and all other proposal oriented administrative documents will be forwarded to South Tahoe Public Utility District (STPUD) who will then roll up all invoicing and documents for the partners for submission to the granting agency as a package.

Deliverables: Preparation of invoices and other deliverables as required.

Task 10.2: Labor Compliance Program

10.2.1: TCPUD will be responsible to enforce the proper labor compliance rules with respect to its existing policies as well as any other policies as required under the conditions of the grant program. All proper documentation will be submitted to STPUD for inclusion in the partnership submittals to the granting agency.

Deliverable: Submission of Labor Compliance Program

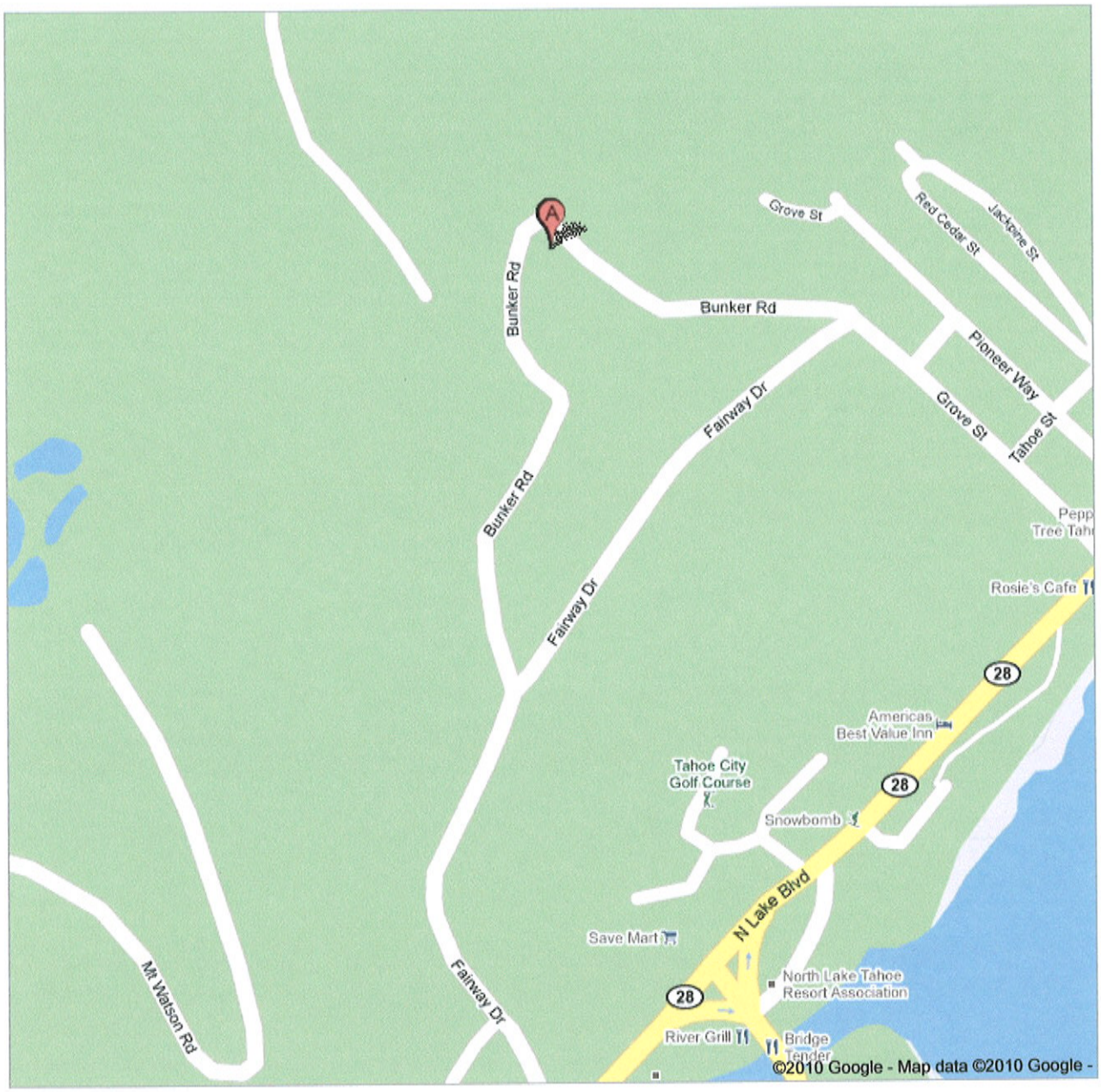
Task 10.3: Reporting

10.3.1: TCPUD will produce all necessary reports for the BWTR project. Necessary reporting will be forwarded to STPUD to be included in the overall partnership


655 Bunker Dr, Tahoe City, CA 96146
Bunker Rd
Grove St
© 2010 Google
Image © 2011 DigitalGlobe
Google
Imagery Dates: May 9, 2004 - Jun 28, 2007 39°10'31.83" N 120°08'50.66" W elev 6381 ft Eye alt 9662 ft

Google maps Address **655 Bunker Dr**
Sunnyside-Tahoe City, CA 96146

Notes Project site is current water tank site and involves a replacement on the same property.



submittals to the granting agency.

Deliverables: Submission of quarterly, annual and final reports as specified in the Grant Agreement.

Budget Category (c): Planning/ Design/Engineering/Environmental Documentation

Budget Category (b):Land Purchase/Easement

There are no land purchase or easement acquisitions anticipated for the BWTR project.

Task 10.4: Assessment and Evaluation

10.4.1: TCPUD will secure the services of an engineering consultant to produce preliminary site assessments and feasibility studies to locate the project site and allow all permits and environmental clearance processes to begin.

> **10.4.2: 9.4.1: Project Assessment and Evaluation Plan (PAEP).** TCPUD will prepare a Project Assessment and Evaluation Plan (PAEP). The PAEP shall include a Project Summary, Goals and Desired Outcomes, as well as Project Performance Measures Tables for each category of activities identified in the project. The PAEP shall be submitted for approval prior to the start of project implementation and shall be used to monitor project progress, measure success, and evaluate environmental benefits resulting from the project.

Deliverables: Technical studies, PAEP

Task 10.5: Final Design

10.5.1: TCPUD and its engineering consultant will prepare project plans and specification for this project. A similar project has already been constructed by TCPUD and will assist in minimizing the time and effort in designing the BWTR project.

Deliverables: Completion of project plans and specifications at the 90 percent and final level.

Task 10.6: Environmental Documentation

10.6.1: TCPUD in conjunction worth its engineering consultant for the BWTR project will complete all necessary environmental documentation including CEQA and NEPA documents.

Deliverable: Approved and adopted CEQA/NEPA documentation

Task 10.7: Permitting

This BWTR project is scheduled to be constructed on US Forest Service (USFS) lands. Thus, as part of the design and permitting tasks, TCPUD will be required to obtain a special use permit through the USFS for this project.

10.7.1: TCPUD and its design consultant will provide all necessary permit applications and environmental clearances necessary to obtain a special use permit. This particular project will be replacing an existing water storage tank which already is located on USFS lands and has a special use permit. It is unknown at this time if a new permit or a revised permit will be necessary for the BWTR project. Other necessary permits include Tahoe Regional Planning Agency (TRPA) permits, Regional Water Quality Control Board permits and a Placer County Encroachment permit.

Deliverables: Section 1602, 404, 402, NPDES, etc.

Budget Category (d): Construction/Implementation

Task 10.8: Construction Contracting

10.8.1: TCPUD and its design consultant will perform all bid advertisement, conduct a mandatory pre-bid contractors meeting and will receive, open, evaluate and award the bid in accordance with all applicable public contracting codes as well as any special provisions required by the granting agency.

Deliverables: Advertisement for bids; prebid contractors meeting; evaluation of bids; award contract

Task 10.9: Construction/ Implementation

The contractor awarded the bid will be responsible for all aspects of the construction of the awarded project.

Subtask 10.9.1 Mobilization and Site Preparation

This work will include of all mobilization of the contractor resources, installation of necessary erosion control measures, and receipt of the necessary pre grade approvals by the TRPA prior to commencing any excavation or earthwork.

Subtask 10.9.2 Project Construction

The BWTR project includes the installation of a replacement water storage tank facility. The project will require site work, foundation work, erection of tank structure and all necessary pipelines and electrical and controls to integrate the

facility into TCPUD's existing water system.8

Subtask 10.9.3 Performance Testing and Demobilization
Performance testing will include all proper structural inspections, weld inspections, concrete and materials testing, tank integrity testing and VOC and bacteriological clearance tests. Demobilization of the site will include all proper site restoration activities in accordance with applicable permits and design specifications and will conclude with final demobilization of the contract forces.

Budget Category (e): Environmental Compliance/Mitigation/Enhancement

Task 10.10: Environmental Compliance/Mitigation/Enhancement

10.10.1: It is anticipated the facility will likely require permanent erosion control improvements for both the tank site and access road facility in accordance with all applicable permits and local agency requirements. Further mitigation and compliance activities may be necessary when all permits and environmental documents are received or filed.

Budget Category (f): Construction Administration

Task 10.11: Construction Administration

10.11.1: TCPUD shall provide all technical and administrative staffing services as needed for construction oversight, including reviewing invoices for accuracy, ensuring timely construction progress, processing payment and meeting all applicable procurement policies and regulations.