SIERRA NEVADA
CONSERVANCY

September 3-4, 2014
Board Meeting

Bridgeport Memorial Hall
73 N. School Street
Bridgeport, CA 93517

September 3-4, 2014
Bridgeport Memorial Hall
73 N. School Street
Bridgeport, CA 93517

SIERRA NEVADA CONSERVANCY

September 3, 2014
Board Tour **1:30 - 5:00 PM**
Members of the Board and staff will participate in a field trip to explore issues, activities and locations relevant to the value of recreation and tourism in the East Subregion. Members of the public are invited to participate in the field tour but are responsible for their own transportation and lunch. The tour will start in the main parking lot of the Walker River Lodge, 100 Main Street, Bridgeport, CA 93517.

Reception **5:30 - 8:00 PM**
Following the Board tour, Boardmembers and staff will attend a reception open to the public. The reception will be held at the Bridgeport Barn & Terrace, 68 Twin Lakes Road, Bridgeport, CA 93517.

September 4, 2014
Board Meeting **9:00 – 1:00 PM**
(End time of the meeting is approximate)

I. Call to Order

II. Roll Call

III. Approval of June 12, 2014 Meeting Minutes (ACTION)

IV. Public Comments
Provide an opportunity for the public to comment on non-agenda items.

V. Board Chair's Report
The Chair of the Board will provide an update on matters of interest to the Governing Board.

VI. Executive Officer's Report (INFORMATIONAL)
a. Administrative Update
b. Policy and Outreach Update
c. Rim Fire Grants Update
d. Miscellaneous Updates
e. Recreation and Tourism Presentation

VII. Deputy Attorney General's Report (INFORMATIONAL)

VIII. 2013-14 Annual Report (ACTION)

Staff will provide an overview of plans to produce the 2013-14 Annual Report. The Board may act to authorize staff to proceed with the production of the Annual Report.

IX. 2013-14 Healthy Forests/Abandoned Mine Lands Grant Awards (ACTION)

The Board may take action on recommended grants to be awarded under the 2013-14 Grant Program. Staff will present the following projects and their related California environmental Quality Act (CEQA) document to the Board for Action:

- Project #775 – Providence Mine Remediation Project with Notice of Determination
- Project #805 – Environs Mining Legacy Assessment Project with Notice of Exemption from CEQA
- Project #806 – Robinson Mine Project with Notice of Exemption from CEQA
- Project #802 – Upper Stevens Meadow Restoration Project with Notice of Exemption from CEQA
- Project #794 – Lily Gap Forest Health Project, Phase II with Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program (MMRP)
- Project #798 – Alpine County Hazardous Fuels Reduction and Healthy Watershed Project with Notice of Exemption from CEQA

X. Sierra Nevada Forest and Community Initiative Action Plan (ACTION)

Staff will present a Draft Action Plan for the Forest and Community Initiative, per Board direction.

XI. Boardmembers' Comments

Provide an opportunity for members of the Board to make comments on items not on the agenda.

XII. Public Comments

Provide an opportunity for the public to comment on non-agenda items.

XIII. Adjournment

Meeting Materials are available on the SNC Web site at www.sierranevada.ca.gov. For additional information or to submit written comment on any agenda item, please contact Ms. Armstrong at (530) 823-4700, toll free at (877) 257-1212; or via email at Tristyn.armstrong@sierranevada.ca.gov, or in person or by mail at: 11521 Blocker Drive, Suite 205, Auburn CA 95603. If you need reasonable accommodations please contact Ms. Armstrong at least five (5) working days in advance, including documents in alternative formats.

Closed Session: Following, or at any time during the meeting, the Board may recess or adjourn to closed session to consider pending or potential litigation; property negotiations; or personnel-related matters. Authority: Government Code Section 11126, subdivision (e)(2)(B)(i).

Board Meeting Minutes
June 11- 12, 2014
Inter-Mountain Fairgrounds, Ingram Hall
44218 A Street
McArthur, CA 96056

SIERRA NEVADA CONSERVANCY

I. Call to Order

Board Chair BJ Kirwan called the meeting to order at 9:04 AM and thanked Sierra Nevada Conservancy (SNC) staff and partners for a great field tour, reception, and dinner.

Kirwan noted that project 802 Upper Stevens Meadow had been pulled from the agenda for this meeting.

II. Roll Call

Present: BJ Kirwan, Todd Ferrara, Bob Kirkwood, Bob Johnston, John Brissenden, Pam Giacomini, Sherrie Thrall, Byng Hunt, Louis Boitano, Barnie Gyant, Ruben Leal (alternate for Este Stifel, Bureau of Land Management), and Woody Smeck (alternate for Don Neubacher, National Parks Service)

Absent: Ron Briggs and Allen Ishida

III. Approval of March 12, 2014 Joint Board Meeting Minutes (ACTION)

ACTION: Boardmember Hunt moved and Boardmember Thrall seconded a motion to approve the March 12, 2014 Joint Board Meeting Minutes. The motion passed unanimously.

IV. Approval of March 13, 2014 Board Meeting Minutes (ACTION)

Boardmember Boitano requested a correction in the spelling of his name in the oath of office section of the minutes.

ACTION: Boardmember Kirkwood moved and Boardmember Brissenden seconded a motion to approve the March 13, 2014 Meeting Minutes with Boardmember Boitano's edits incorporated. The motion was passed unanimously.

V. Public Comments

Steve Munson, Far West Biopower and Green cloud Data Parks discussed a variety of projects that his company has been involved in, including efforts to bring the Loyalton biomass facility back online. He opined that two of the things needed to support bioenergy are (1) large scale thinning projects and (2) a carve-out for biomass energy as part of the Renewable Portfolio Standards.

VI. Board Chair's Report

Board Chair Kirwan asked Executive Officer Jim Branham to update the Board on what had occurred since the last meeting to address concerns that were raised regarding the need to improve understanding of the role and value of Conservancies in California, particularly among some members of the Legislature.

Branham said that staff have been meeting with members of the legislature and legislative staff to address the issue with some positive results, particularly in terms of favorable amendments to water bond legislation. He acknowledged the assistance of Assemblyman Brian Dahle for his assistance in arranging key meetings and speaking favorably in regards to the SNC. He indicated that no letter was sent as previously directed by the Board, given the positive developments resulting from the meetings.

VII. Executive Officer's Report (INFORMATIONAL)

Branham updated the Board on Board Liaison Theresa Burgess' status and discussed the reassignment of some of her workload while she is out of the office.

a. Administrative Update

Branham introduced Amy Lussier, SNC's Chief of Administrative Services Division, and noted that the type of resources used by the SNC to perform work has been changing over time, mostly as a result of changes in Administration policies, particularly policies related to the use of contracts and retired annuitants. He said this has resulted in hiring additional temporary help.

Lussier introduced 3 new staff: Danna Stroud, Elissa Brown, and Sarah Campe.

Lussier presented the Board with the SNC's current organization chart and discussed how staffing has changed at SNC over the last 10 years. In response to questions from Boardmember Brissenden she described work currently being performed by John Gussman (retired annuitant providing legal services) and said other conservancies are also assessing their staff resources. Branham noted that some other conservancies have a much larger staff than SNC.

Boardmember Kirkwood asked Lussier if the Board could get an updated profile list of SNC Staff at the next Board meeting.

Boardmember Smeck said that embedding SNC Staff within other agency and non-profit office locations throughout the Sierra has been very effective and offered office space in a National Park office for new staff member Campe in Three Rivers.

b. Policy and Outreach Update

Branham gave the Board an update on the various water bond efforts that are currently being considered by the legislature, including an amendment made

earlier this week to Senator Wolk's bill that would include $115 million to the SNC.

Board Chair Kirwan asked what the likelihood would be that a water bond would be on the ballot in November, and if there is a water bond, how long the money would be available. Branham commented that is seems very unlikely that there won't be a water bond in November, but said that the dollar amount voters would accept is still in question. Branham also said that it is unclear how long the funding would be available and discussed funding availability timelines from past bonds.

Branham updated the Board on Cap and Trade Auction Revenue and discussed SNC's ongoing efforts to encourage funding be allocated to forestry projects. He indicated that the SNC has been unsuccessful in securing funding, but is working closely with Cal Fire to assist in the expenditure of funds that they received.

Boardmember Ferrara said that The Sacramento Bee reported that the Governor and the legislature recently came to an agreement on Cap and Trade funding allocations. Ferrara said that according to The Bee, 25% of the funding would be allocated to high-speed rail, 15% to other transportation projects, 20% to housing projects, and 40% to natural resources, energy, and other projects.

Boardmember Johnston commented that it is anticipated that the funding available through Cap and Trade will increase next year. Boardmember Ferrara noted that this year revenue is estimated at about $1 billion.

Branham introduced Angela Avery, Regional Policy and Programs Manager, who updated the Board on outreach and policy efforts in which staff have been engaged. Avery introduced a sample of one of the interactive story maps staff have been developing, the new Sierra Wildfire Wire blog, the new Rim Fire web page, and discussed efforts that staff would be kicking off for the SNC's 10 year anniversary in September.

Boardmember Gyant suggested changing the Lake Oroville photo to show the lake's current level in the story map.

Boardmember Johnston suggested that staff reduce the number of slides in the story map, or have a short and long version. He also suggested that options be added to the last slide so that users can see specific management options with approximate dollar amounts within the watershed that could be applied to improve water supply and quality issues.

Branham said that staff can address Johnston's suggestions, but need to be careful about taking a policy position through the content of the presentation.

Gyant asked whether SNC has the staff resources to address the Board's suggestions related to the story map. Avery and Branham noted that SNC Staff can do some of the updates, but may not have the capacity to do all. Branham also mentioned staff can use any help they can get.

Boardmember Brissenden asked whether more details could be added to the story map around sedimentation in reservoirs. Avery said that it could and Branham mentioned that SNC recently entered in to a contract to complete a more in depth study on that issue.

Boardmember Thrall suggested that fire history over the last 10 years be added to the story map to help illustrate the risks to the watershed.

c. Ranching and Agricultural Lands
Assistant Executive Officer Joan Keegan introduced guest speaker Penny Leff, Agritourism Coordinator, for the UC ANR Small Farm Program, who provided the Board with a presentation on the UC Small Farm Program's agritourism efforts.

Boardmembers and staff engaged Leff in discussions regarding liability costs and related options for producers, efforts to encourage agritourism in Marin County and SNC staff efforts to incorporate agritourism into the Sierra Nevada Geotourism Web site.

Keegan introduced Bobby Kamansky, Mt. Whitney Area Representative, who provided the Board with a presentation on a variety of issues relating to grazing in the Sierra Nevada.

Boardmember Giacomini asked about the potential for the SNC supporting water development projects on US Forest Service lands to help support grazing, while protecting riparian areas. The Board also engaged in a discussion about issues relating to grazing on public lands, strategies for grazing near riparian areas and the important role grazing permittees play in educating the public about its benefits.

d. Miscellaneous Updates
Branham updated the Board on the Rim Fire restoration funding that the Board authorized in December, indicating that while no projects have come forward yet, he expects there to be progress in the coming weeks.

VIII. Deputy Attorney General's Report (INFORMATIONAL)
Christine Sproul, Deputy Attorney General, updated the Board on actions related to California Environmental Quality Act (CEQA) reform.

IX. 2013-14 Healthy Forests/Abandoned Mine Lands Grant Awards (ACTION)

Branham reminded the Board that Project #802 has been removed from consideration for this meeting, and introduced Mt. Lassen Area Manager, Bob Kingman and Julie Griffith-Flatter, Mt. Lassen Area Representative, to give the Board a presentation on the recommended projects.

Griffith-Flatter introduced Project #791, Oro De Amador Removal Action Workplan located near Jackson. Kingman introduced Project #781 Camptonville Forest Biomass Business Center Feasibility Study, located in Yuba County.

Boardmember Ferrara asked if other funding sources have been identified that would help complete the Camptonville Biomass Project. Kingman responded that in-kind contributions have been identified, as well as grant funding from other sources.

Boardmember Hunt asked how many other biomass projects SNC has been working to fund. Kingman responded this is the first feasibility study the SNC has recommended for a grant, but that staff have been working on many other projects throughout the Sierra in different capacities.

Boardmember Gyant asked whether the biomass project was linked to SB 1122 (Rubio 2012). Kingman said that it is intent of the project proponents to make certain the project is eligible for incentives in SB 1122.

Public Comment:

Cathy LeBlanc, Co-Executive Director for the Camptonville Community Partnership, thanked the Board for their consideration of the Camptonville Forest Biomass Business Center Feasibility Study and invited the Board to attend a site visit on June 24th.

Steve Munson, Far West Biopower and Green Cloud Data Parks mentioned efforts that his company has been involved in reconditioning existing biomass sites and his investment bankers are currently available. If you have areas that may be good biomass sites that need substantial fuel thinning please let him know.

ACTION: Boardmember Kirkwood moved and Boardmember Brissenden seconded the motion to (a) approve, and authorize the Executive Officer to file, Notices of Exemption for the Oro De Amador Removal Action Workplan Project (SNC 791); and, the Camptonville Forest Biomass Business Center Feasibility Study Project (SNC 781). The motion passed unanimously.

X. Review of 2013-14 Action Plan Accomplishments (INFORMATIONAL)

Keegan gave the Board an overview of SNC's accomplishments over the past fiscal year and thanked staff and partners in the Region for their efforts in moving the

mission of the SNC forward. She indicated that for the most part, all of the actions identified in the 2013-14 Plan were accomplished.

Boardmember Kirkwood commented that the Action Plan reflects a huge amount of work that was well done, and that the work contributes to one of the state's greatest needs right now, particularly relating to water reliability.

Gyant commented on work SNC has done that has been instrumental for the US Forest Service. He mentioned more education is still needed to connect Sierra landscapes to the urban population.

XI. 2014-15 Proposed Action Plan (ACTION)

Keegan introduced the Proposed Action Plan for the coming fiscal year.

Boardmember Kirkwood discussed the role that the SNC should play in addressing fire and water issues in California. He indicated that this should be the organization's top priority and the necessary resources be devoted to making greater progress in restoring forest health and reducing the risk of large fires. He suggested that this prioritization may mean that some of the actions identified in the Action Plan are not completed.

Kirkwood recommended the Board not approve the current plan, but instead ask staff to re-draft the plan with a focus on a watershed by watershed strategy for increasing the pace and scale of forest health and water related work in the Sierra.

Boardmembers discussed Kirkwood's recommendation, and the role that SNC should play in water and fire issues for the next few years. There was general support for the idea of making this the top priority. Boardmember Gyant expressed some concern that the wood/biomass processing infrastructure was not adequate to handle the increase and that more work was needed in that area. Boardmember Ferrara urged the SNC to consider how its efforts were consistent with other State plans including the California Water Action Plan.

Branham responded to Boardmember comments indicating that this issue was already a top priority for the organization and that an additional focus and effort was appropriate. He did suggest that the Board approve the Action Plan as presented, with the understanding that staff will develop a plan for a more bold approach to the issue of forest health and would bring any needed modifications to the Action Plan to the Board in September.

ACTION: Boardmember Kirkwood moved and Boardmember Hunt seconded the motion to approve the proposed Sierra Nevada Conservancy 2014-15 Action Plan, with the direction that staff will provide a recommendation at the September Board meeting as to any adjustments to the Plan necessary to adequately address the priority

issues related to forest health, fire, and water. The motion passed unanimously.

Public Comment:
Chuck Henderson, Shasta Forests Timberlands commented that perfection not be the enemy of the good, and encouraged the SNC to move forward with the Board's recommendation to encourage the increase in the pace and scale of forest work in the Sierra.

XII. Mokelumne Watershed Avoided Cost Analysis (INFORMATIONAL)
Branham introduced Kim Carr, SNC's Sustainability Specialist, who gave the Board a presentation on the findings from the Mokelumne Avoided Cost Analysis. Carr also updated the Board on the media and marketing opportunities staff have been considering related to the study.

Kirkwood commented on Carr's presentation and encouraged staff to continue to research the benefits of forest thinning related to water yield. Kirkwood suggested that staff present the Mokelumne Avoided Cost Analysis to the various irrigation districts whose supply originates in the Sierra and incorporate information about the connection between forest management and reservoir management.

Boardmember Brissenden asked who was at the table during the cost analysis, and who should be at the table moving forward with this study. Carr commented on other audiences being identified and efforts that are being made to expand on the study. Boardmembers Boitano and Gyant suggested several other audiences that should be included.

Boardmember Johnston commented on current activities related to Clean Water Act regulations for watersheds that need to be treated for sediment and suggested a more developed watershed study in the future.

XIII. Boardmembers' Comments
Boardmember Hunt indicated he looked forward to the Board meeting in Bridgeport in Mono County in September.

XIV. Public Comments
Burt Bundy, President of the Mill Creek Conservancy and a member of the Los Molinos Mutual Water Board, commented on the potential impacts of regulations related to the drought and encouraged SNC to be involved in discussions around water management moving forward.

XV. Adjournment
Board Chair Kirwan adjourned the meeting at 12:54 PM.

Current Status-Budget

The Sierra Nevada Conservancy's (SNC) 2013-14 budget closed as anticipated spending 99 percent of our $4,248,000 million. On June 20, 2014, Governor Brown signed the 2014-15 budget, making it the earliest on record in nearly 30 years. The 2014-15 budget assumes State revenues will increase, thus triggering the pay raises negotiated by Service Employees International Union (SEIU) in 2013. All SNC Staff received a 2% salary increase on July 1, 2014, and will receive another increase of 2.5% on July 1, 2015. Our base funding which pays for staff, programs, and operations remains stable. It is assumed that we will be funded for the 2% salary increase, although the mechanism to do this has not been announced. There was no new appropriation of Proposition 84 funds as all of those funds available to the SNC have already been allocated. We expect to award remaining Proposition 84 funds by the end of this fiscal year. The current status of SNC's 2014-15 budget can be viewed on page 2 of this report.

Current Status-Human Resources

Attachment A to this report is a picture organization chart which includes staff names and titles. For staff that serve as a county Area Representative or county Project Lead, we have also included that information. If a staff member is not located in our Auburn Headquarters office their location is listed as well. This chart does not include retired annuitants or students.

Current Status-Stewardship Council

Since 2010, the SNC has been working with the Pacific Forest and Watershed Lands Stewardship Council (Stewardship Council) to establish conservation covenants on approximately ten parcels of land to be donated by Pacific Gas & Electric to the U.S. Forest Service. The Stewardship Council will reimburse SNC, the agreed-upon covenant holder, for all expenses to monitor the properties. The first covenant, which is for the Deer Creek Property, was signed in July 2014 and we expect escrow to close on the property transfer by the end of August. Additional covenants and property transfers are expected to happen this fiscal year. Prior to the transfers being completed, baseline reports to establish monitoring locations and protocols will be prepared. To assist with performing the monitoring work, SNC has hired retired annuitant Kent Smith. Kent worked for the California Department of Fish and Wildlife for over 30 years holding a variety management positions, including serving as the North Central Regional Manager. Kent also has 13 years of experience working in the private sector as an Environmental Consultant. All costs associated with Kent's tasks for the Stewardship Council will be fully reimbursed.

2014-15 SNC EXPENDITURES AND ENCUMBRANCES
Through July 18, 2014

State Operations				
Personal Services	***Budgeted***	***Expended***	***Balance***	***% Spent***
SALARIES AND WAGES	2,177,519	0	2,177,519	0%
STAFF BENEFITS	834,135	0	834,135	0%
Personal Services, Totals	***$3,011,654***	***$0***	***$3,011,654***	***$0***

Operating Expenses & Equipment	***Budgeted***	***Expended***	***Balance***	***% Spent***
GENERAL EXPENSE	163,453	1,810	161,643	1%
TRAVEL - IS	57,567	0	57,567	0%
TRAVEL - OS	3,574	0	3,574	0%
TRAINING	25,000	850	24,150	3%
FACILITIES	288,495	21,846	266,649	8%
UTILITIES	16,800	0	16,800	0%
CONTRACTS- INTERAGENCY AGREEMENT	485,399	0	485,399	0%
CONTRACTS- EXTERNAL	158,635	0	158,635	0%
INFORMATION TECHNOLOGY	79,820	1,532	78,288	2%
EQUIPMENT	-	-	-	0%
OTHER ITEMS OF EXPENSE	23,000	0	23,000	0%
PRO RATA (control agency costs)	238,603	0	238,603	0%
Operating Expenses & Equipment, Totals	***$1,540,346***	***$26,037***	***$1,514,308***	***2%***

Local Assistance				
Appropriation	***Budgeted***	***Expended***	***Balance***	***% Spent***
2014 Appropriation; Reverted 2007 & 2008 funds *(14/15 Yr 1 of 3)*	1,550,000		1,550,000	0%

	Budgeted	***Expended***	***Balance***	***% Spent***
State Operations	***4,552,000***	*26,037*	*4,525,963*	1%
Local Assistance	***1,550,000***		***1,550,000***	0%
SNC EXPENDITURES, TOTALS	***$6,102,000***	***$26,037***	***$6,075,963***	***0.4%***

Agenda Item VIa
Administrative Update
Attachment A

SIERRA NEVADA CONSERVANCY

7/28/2014

Jim Branham
Executive Officer

Joan Keegan
Assistant Executive Officer

Amy Lussier
Division Chief
Administrative Services & Grants Administration

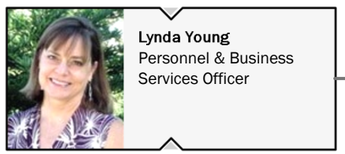
Angela Avery
Division Chief
Regional Policy & Programs

Bob Kingman
Division Chief
Mt. Lassen Area

Julie Bear
Division Chief
Mt. Whitney Area

Located in Mariposa

Tristyn Armstrong
Administrative Assistant



Lynda Young
Personnel & Business Services Officer

Matthew Daley
Grants Analyst

Dave Madrigal
Information Technician Analyst

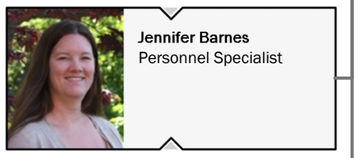
Lisa Forma
Grants Analyst
PL: Calaveras

No Picture Available

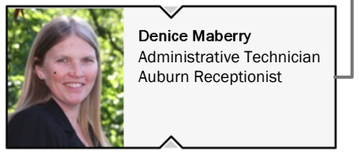
Lisa Primeaux
Budget Analyst

Barbara Harriman
Grants Technician

Donna Martinez
Contracts & Procurement Analyst



Jennifer Barnes
Personnel Specialist



Denice Maberry
Administrative Technician
Auburn Receptionist

Brittany Covich
Communication & Outreach Coordinator

Brandon Sanders
Legislative Coordinator
AR: Amador

Nic Enstice
Regional Science Coordinator

Theresa Burgess
Board Liaison

Marji Feliz
GSRC Coordinator

Belinda Gutierrez
Communication Support Analyst

Linda Hansen
Mt. Lassen Analyst
AR & PL: Lassen, Modoc, Plumas, Sierra
Located in Susanville

Chris Dallas
Mt. Lassen Analyst
AR & PL: Butte, Shasta, Tehama
PL: Amador, Tuolumne

Lynn Campbell
Mt. Lassen Analyst
AR & PL: El Dorado, Nevada, Sierra

Julie Griffith-Flatter
Mt. Lassen Analyst
AR & PL: Placer, Yuba

Mandy Vance
Mt. Whitney Analyst
AR: Calaveras, Tuolumne

Located in Mariposa

Danna Stroud
Mt. Whitney Analyst
AR & PL: Alpine, Inyo, Mono,
Located in Bishop

Autumn Hutchings
Mt. Whitney Technician
AR: Mariposa

Located in Mariposa

Sarah Campe
Mt. Whitney Analyst
AR & PL: Fresno, Kern, Madera, Tulare
Located in Three Rivers

Kim Carr
Sustainability Specalist

Located in So. Lake Tahoe

Elissa Brown
Fund Development Analyst

Located in Mariposa

No Picture Available

Liz vanWagtendonk
GIS Analyst

Located in Mariposa

AR = Area Representative
PL = Project Lead

Background

In June, the Sierra Nevada Conservancy (SNC) Governing Board approved the SNC Fiscal Year (FY) 2014-15 Action Plan (Plan). The Plan provides staff with guidance and focus on continued outreach activities to encourage key target audiences to support Sierra investment and sound policy; establish secure funding for project work in the Region; and support the SNC as a critical funding delivery mechanism for the Region and the State. Categories of activities identified in the Plan include:

1. Elevating the profile of the SNC as a resource for information regarding the link between upper watersheds, forest health, climate change, clean water, clean air, and sustainable communities;
2. Meeting with local/state/federal agencies, legislators and other decision-makers to ensure investment in the Region where more than 60 percent of the State's developed water supply originates;
3. Utilizing events, and new and traditional media to communicate the value of the Sierra Nevada Region to the rest of the State;
4. Tracking and analyzing current Sierra Nevada scientific research to inform the development of sound science-based policy that protects and restores the Sierra Nevada Region;
5. Partnering with allies to complete Regional tours that demonstrate the value of SNC Initiatives and the importance of investment in watershed and forest health projects; and,
6. Creating and distributing the FY 2013-14 Annual Report.

The Board also requested that the SNC, as its highest priority, develop a watershed by watershed analysis of the Region with the goal of adequately addressing issues related to forest health, fire, and water.

Current Status

In accordance with the priority set by the Board, staff developed a Draft Sierra Nevada Forest and Community Initiative Action Plan (SNFCI Plan) for Board consideration at this meeting. The SNFCI Plan describes current forest conditions and issues and, when complete, will identify projects and activities necessary within each watershed to address the issues. In conjunction with the development of the SNFCI Plan, an outreach and communications plan is being developed to ensure that key policy and decision-makers receive the information, understand the urgency of the situation and take action within the Region.

Based on Action Plan guidance, SNC staff continue to conduct outreach focused on increasing awareness of the Sierra Nevada Region's important role in in the State by engaging in activities to support the focus areas approved by the Board. Progress has been made in the following areas:

Meeting with local/state/federal agencies and other key decision-makers

Water Bond
On Wednesday, August 13th the Legislature and Governor approved a new $7.5 billion water bond measure (AB 1471 – Rendon). This bond will replace the measure passed in 2009 and will go before voters in November. As a reminder, that bond contained $75 million for the SNC out of a total of $11.5 billion. At various stages of the legislative process the SNC's allocation ranged from $0 to $115 million. The final bond contains an allocation of $25 million for the SNC.

Final conservancy/council allocations are as follows:

- Baldwin Hills - $10 million
- Tahoe - $15 million
- Coachella Valley - $10 million
- Ocean Protection Council - $30 million
- San Diego River - $17 million
- San Gabriel/Lower Los Angeles Rivers and Mountains - $30 million
- San Joaquin River - $10 million
- Santa Monica Mountains - $30 million
- Sierra Nevada Conservancy - $25 million
- Coastal - $100 million
- Delta - $50 million

Additionally, Wildlife Conservation Board will receive $200 million to enhance stream flows and there is $120 million available for urban stream projects. The Department of Fish and Wildlife will receive $285 million for a wide range of watershed restoration projects, some of which could potentially be located in the Region. The new bond also includes language specifically calling out the remediation of mercury contamination from legacy mines.

Integrated Regional Water Management (IRWM) funds for the hydrologic regions identified in the California Water Action Plan amount to $510 million. The Mountain Counties Overlay, representing a significant portion of our Region will receive $13 million. The final storage figure came to $2.7 billion.

Cap and Trade Auction Revenue
SNC has engaged in ongoing discussions with key decision-makers in the allocation of cap and trade auction revenue, including California Air Resources Board (CARB) Chair Mary Nichols and leadership at CalFire. To date, the SNC has been unsuccessful in receiving an allocation of Cap and Trade funds for the 2014-15 or 2015-16 fiscal years. However, we continue to make the case for expanding opportunities to address and mitigate climate change through effective restoration of our forested landscapes and the utilization of biomass as a means of reducing greenhouse gas emissions associated with large damaging wildfire.

The SNC is working with CalFire to determine ways that we may assist in the expenditure of the funds they have received from Cap and Trade. This includes exploring ways in which the utilization of biomass resulting from forest restoration efforts can be increased.

Utilizing events, and new and traditional media

SNC Story Maps
Staff utilized Board guidance and input from the June meeting, as well as training in new GIS technology, to update and finalize the SNC story maps making them more interactive and compelling. The maps were released in early August and are available on the SNC Web site.

Media
Staff have been working with producers at Capitol Public Radio to provide content for a wildfire series that, at the time of this writing, is scheduled to run the week of August 17th. This series will look at wildfires in California and whether they are being dealt with in the right way. The Mokelumne Avoided Cost Analysis was featured in the series.

Staff continue to post to the Sierra Wildfire Wire. Since the last Board meeting, blog posts have focused on resources at risk during the Shirley Fire in the Southern Sierra, and the role that forests play in buffering the effects of climate change. There are currently more than 60 subscribers representing the following categories: Sierra residents, forest industry professionals, water district managers, legislative staff, ranching and agricultural professionals, CalFire, Tribes, the U.S. Forest Service, land trusts, and the media. Staff will continue to look for ways to talk about the variety of long and short-term impacts of wildfires in the Sierra and will continue to expand the audience through the end of the 2014 fire season.

To commemorate the 10th anniversary of the creation of the SNC, staff reached out to partners and stakeholders soliciting feedback how we're doing and how the SNC has impacted the Region we serve. We are receiving stories, pictures, video, and audio clips of projects throughout the Region that demonstrate the impact of the SNC. Staff will utilize these stories and images in a social media campaign (Facebook and Twitter) that will run through the month of September.

At the time of this writing, staff is developing talking points to share with Boardmembers, partners and grantees for inclusion in Op Eds that highlight the value and contribution of the SNC in the Region in the 10 years of our existence. September 24th marks the 10 year anniversary of the signing of the legislation creating the SNC.

Great Sierra River Clean Up
The 6th annual Great Sierra River Cleanup (GSRC) will occur on Saturday, September 20th. Media efforts around the 2014 event will focus on:

- Connecting the Sierra and the Delta to build on the Resolution signed by the SNC and the Delta Conservancy at the Joint Board Meeting in March, 2014; and,
- Highlighting the importance of watersheds in the Sierra Nevada to urban water users.

We're expecting more than 60 groups to be involved on September 20th, with a number of multi-party cleanups planned. A new approach for us this year has included working with the Delta Conservancy to promote not just the GSRC, but also their same-day Delta Waterways Cleanup and the connections we share.

To date, Legislative outreach efforts for the event have yielded a total of fifteen legislative co-chairs, including:

Senators
- Ellen Corbett (D – East Bay)
- Ted Gaines (R – Rocklin)
- Jim Nielsen (R – Gerber)
- Fran Pavley (D – Agoura Hills)

Assembly Members
- Tom Ammiano (D – San Francisco)
- Rob Bonta (D – Oakland)
- Joan Buchanan (D – Alamo)
- Connie Conway (R – Tulare)
- Ken Cooley (D – Rancho Cordova)
- Beth Gaines (R – Roseville)
- Richard Gordon (D – Menlo Park)
- Richard Pan (D – Sacramento)
- Jim Patterson (R – Fresno)
- Henry Perea (D – Fresno)
- Susan Talamantes Eggman (D – Stockton)

As co-chairs, these representatives have agreed to assist with SNC outreach efforts by letting their constituents know about the event, and agreed to be listed as Cleanup supporters in SNC promotional materials.

SNC is actively using Facebook to help promote the Cleanup. Staff is utilizing this social media tool to connect with potential volunteers and cleanup coordinators by sharing photos of our beautiful Region, past cleanup efforts, publicizing efforts of our cleanup partners, and acknowledging our event sponsors.

As always, Boardmembers are encouraged to participate in the Great Sierra River Cleanup. Please let staff know if you would like to participate so that we can help you locate a cleanup site near you. GSRC T-shirts are also available for purchase at the Board meeting.

Partnering with allies to complete Regional tours:
In late July, the SNC partnered with the Forest Foundation and Sierra Pacific Industries on a legislative staff tour of the Rim Fire. The purpose of the tour was to expose legislative staff to the range of issues confronting private and public lands in the Rim Fire burn area. Legislative staff in attendance ranged from those working for urban legislators to key committee and caucus staff. The tour included stops at Sierra Pacific lands being harvested and reforested, U.S. Forest Service lands being restored and stabilized, and Yosemite National Park where the legislative staff delegation were able to view the benefits of prescribed fire in protecting key resources and facilities.

On August 8th we conducted a media tour of the Rim Fire in partnership with the California Forestry Association and the Sierra Foothill Conservancy. The focus of the tour was to provide reporters with a look at the Rim Fire one year later, and to discuss the urgency with which we need to address current forest health conditions in order to protect water, air, habitat, economic, and recreational resources. Reporters from Capital Public Radio, The Modesto Bee, and KQED attended and the tour resulted in an article in The Modesto Bee, web and radio coverage on KQED, and coverage in Capital Public Radio's wildfire series. Those articles are attached in the back of your packet.

Creating and distributing the fiscal year 2013-14 Annual Report:
See Agenda Item VIII for a detailed update.

Next Steps
Staff will continue to develop and utilize traditional and social media, the SNC Web site, the Sierra Wildfire Wire, and current events to educate water users, policy and other decision-makers about the Region and its value and importance to the State.

Recommendation
This is an information item only; no formal action is needed by the Board at this time, although Boardmembers are encouraged to share their thoughts and comments.

Agenda Item VIe
Recreation and Tourism Presentation

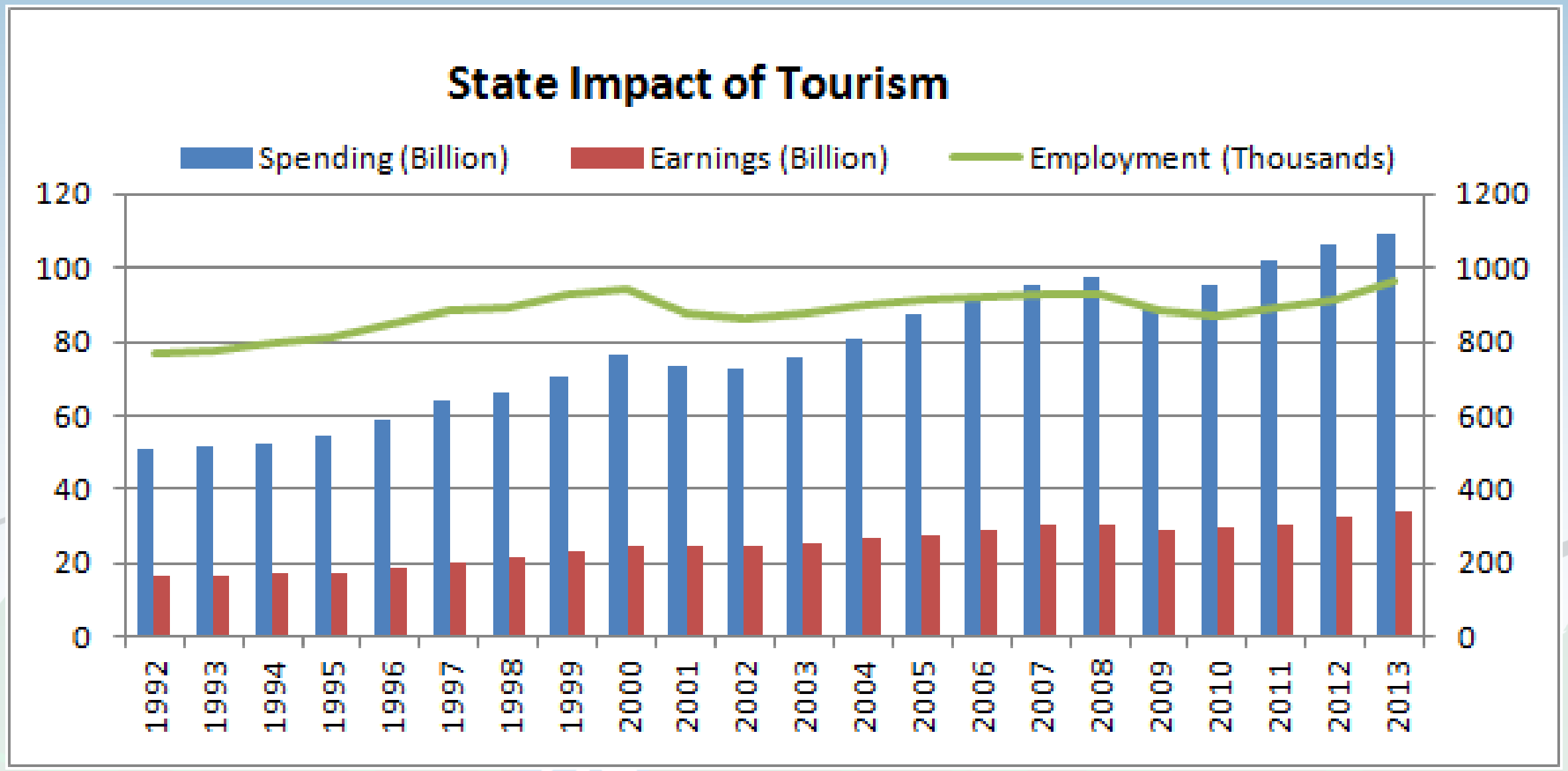
Presented by:
Mt. Lassen Area Manager, Bob Kingman

Promoting Recreation and Tourism …

- A mandate that integrates and complements all other Conservancy Areas of Focus.
- Supports and promotes a critical segment of Sierra Nevada Economy.
- Connects Californians to regional issues through a common appreciation of recreation and travel experiences.

Economic Impacts of Tourism

- California – $109.6 Billion in 2013
- Sierra Nevada – $7.6 Billion in 2012



The Sierra Nevada offers a huge diversity of recreation and tourism opportunities

State Parks
National Parks and Monuments
Forests and Wilderness Areas
Historic Communities
Cultural and Native American Resources
Agriculture, Wine and Culinary Experiences

Threats to Sierra Nevada Tourism Economy

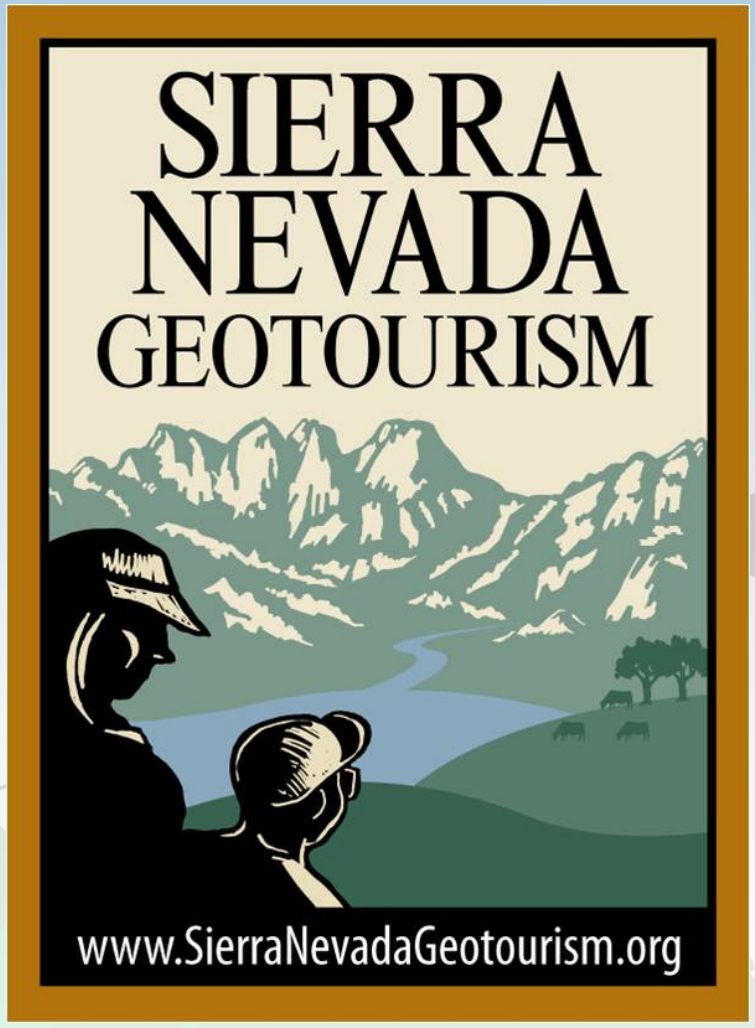
- General Economy
- Gas prices
- Weather
  - No snow or bad weather
- Catastrophes
  - Fire
  - Landslides
- Competition

Changing Trends in Recreation and Tourism

- Types of Recreation
- Demographics/User Groups

SNC Actions to Promote Tourism and Recreation

- Promotion / Marketing



SNC Actions to Promote Tourism and Recreation

- Capacity Building / Partnerships
- Product Development
  - Agritourism Development and Promotion
  - Water Trail Development and Promotion

Developing Sierra Nevada Water Trails

Delivering the Blue Network to Sierra Recreation

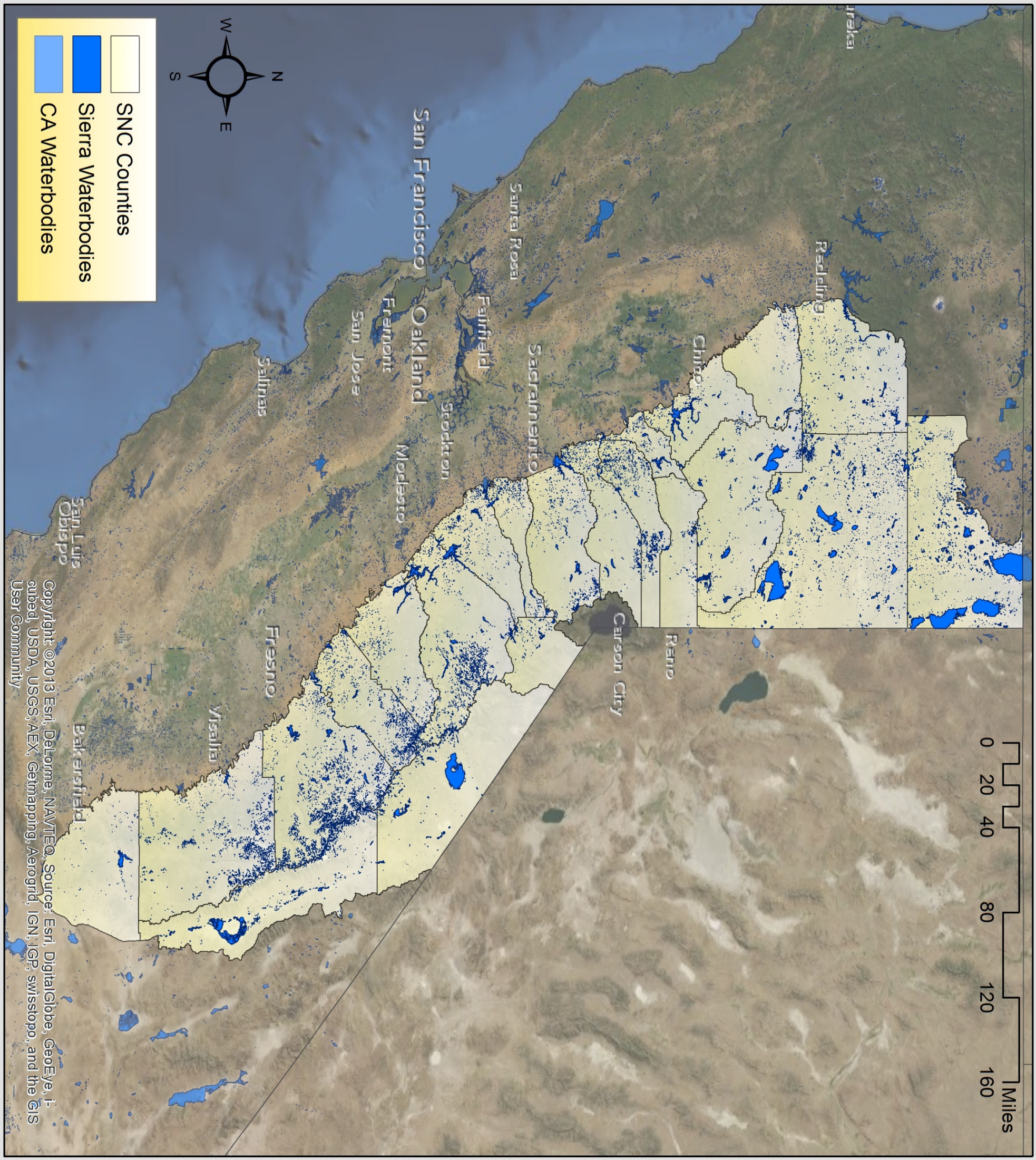
- Research
- Analysis
- Outreach

By Jaryd Block: Sierra Nevada AmeriCorps Partnership

Sierra Waterbodies

National Hydrography Database

35,588 Waterbodies within the Sierra

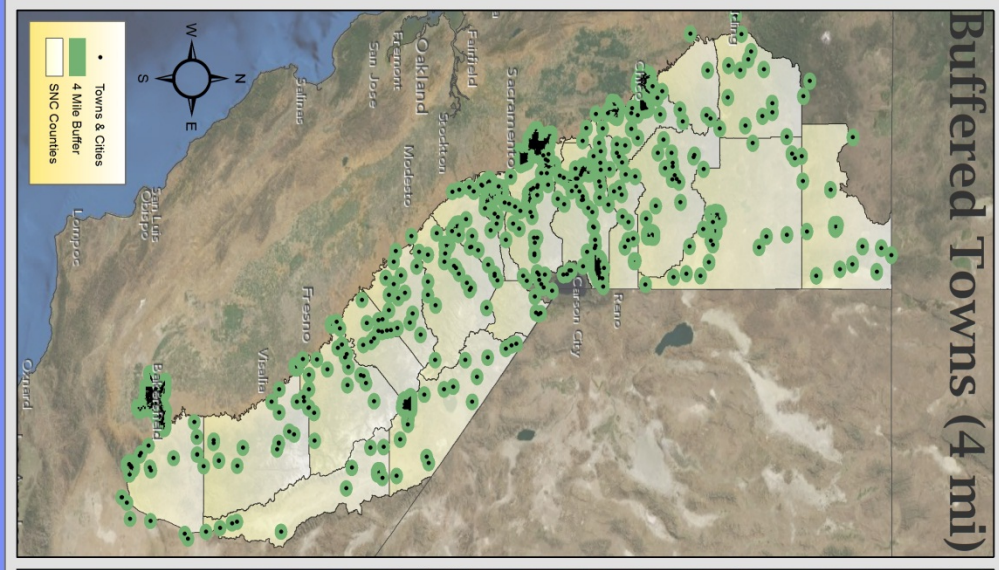


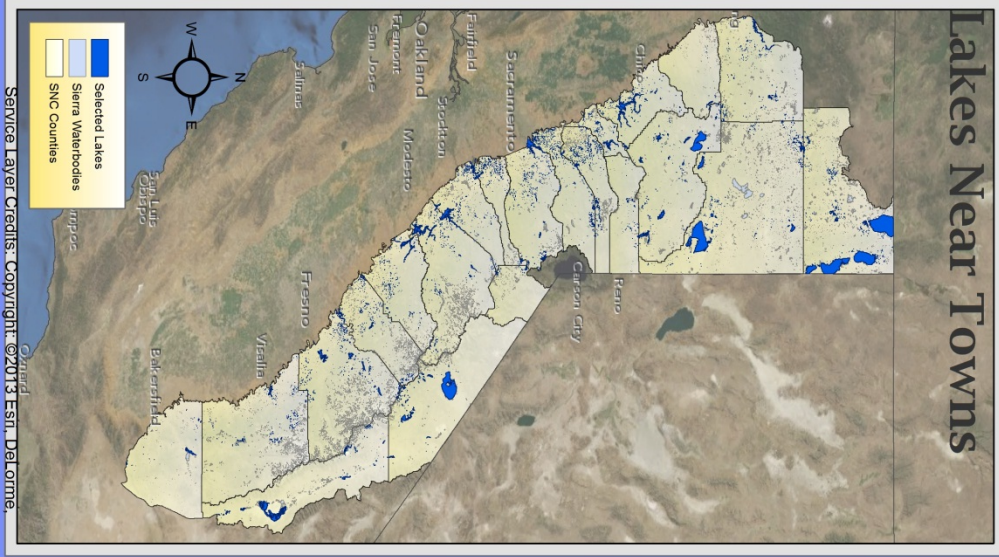
Copyright: ©2013 Esri, DeLorme, NAVTEQ, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Buffer Analysis

Population Base Proximity (4 mi)

9,854 Waterbodies Selected from 35,588



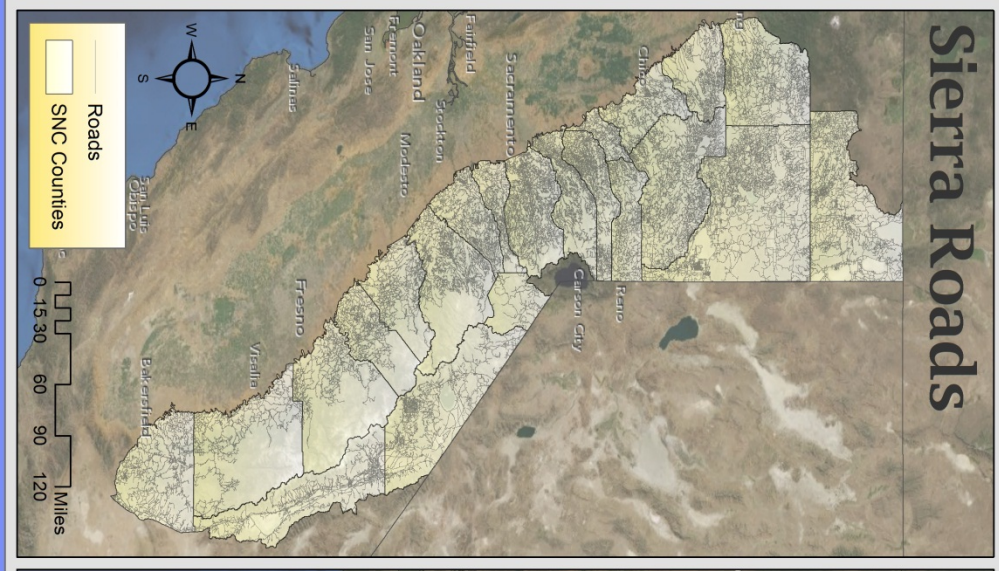


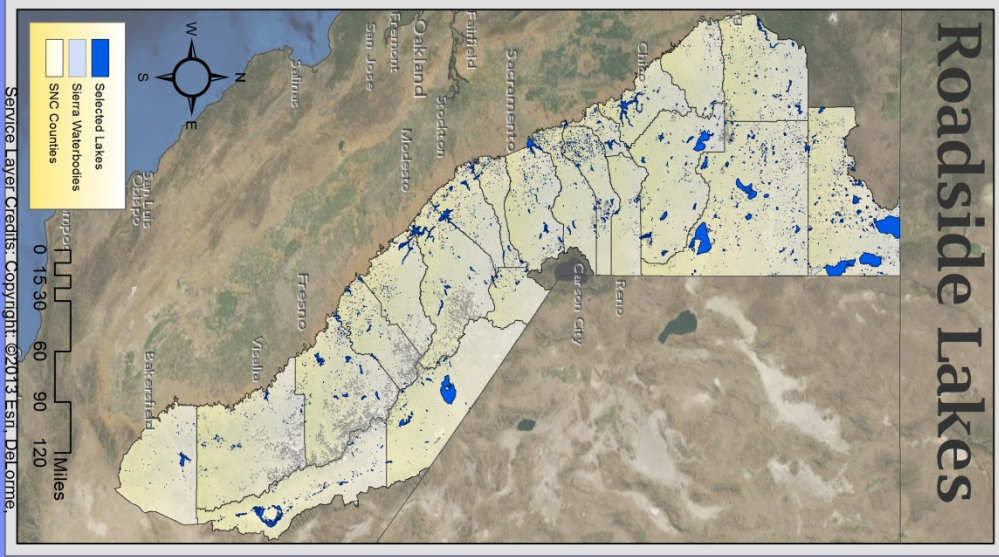
Service Layer Credits: Copyright: ©2013 Esri, DeLorme.

Buffer Analysis

Roadside Access (150ft)

7,535 Waterbodies Selected from 35,588



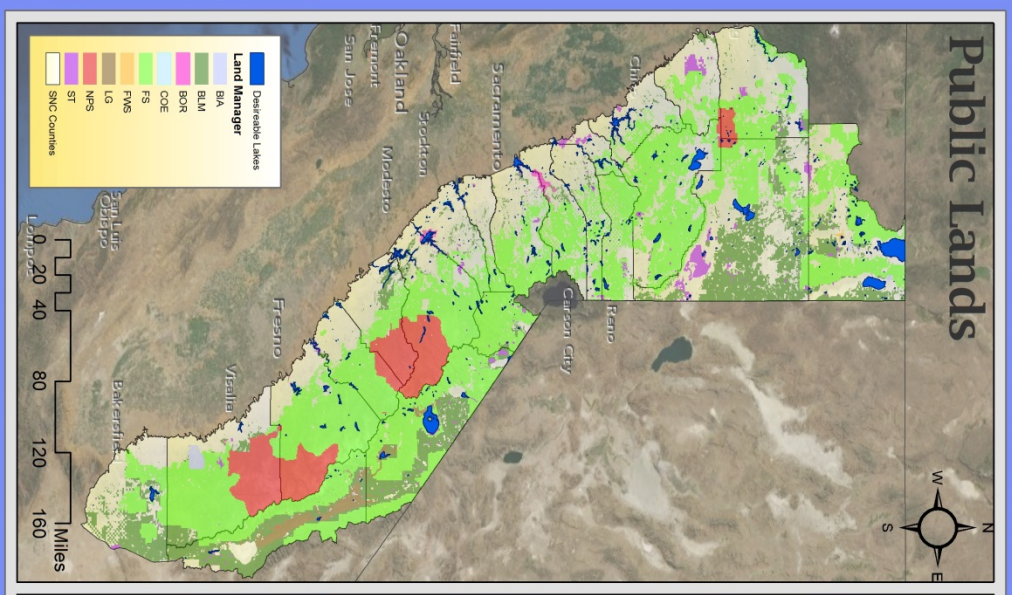


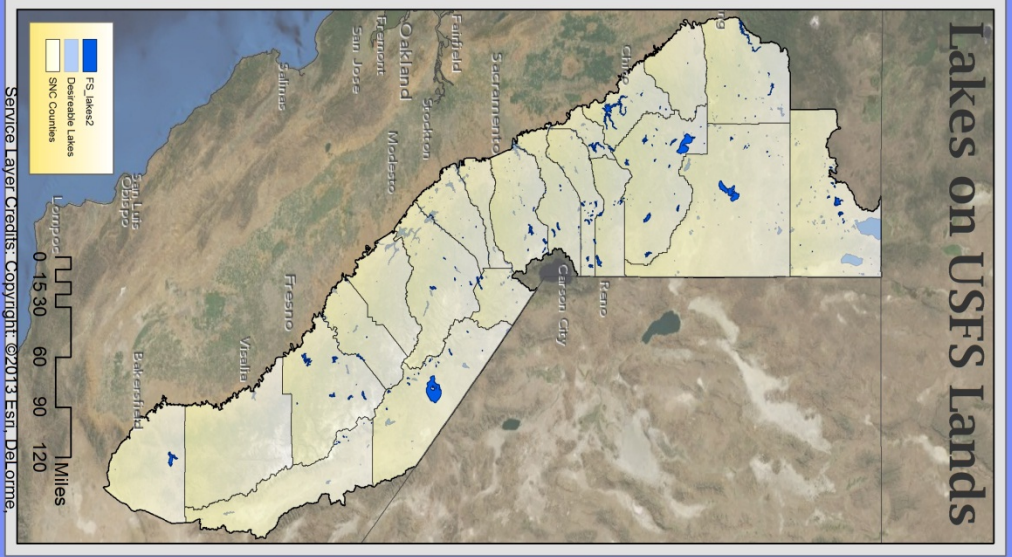
Service Layer Credits: Copyright: ©2013 Esri, DeLorme.

Public Access

Lakes Managed by the USFS

175 Waterbodies Selected from 530



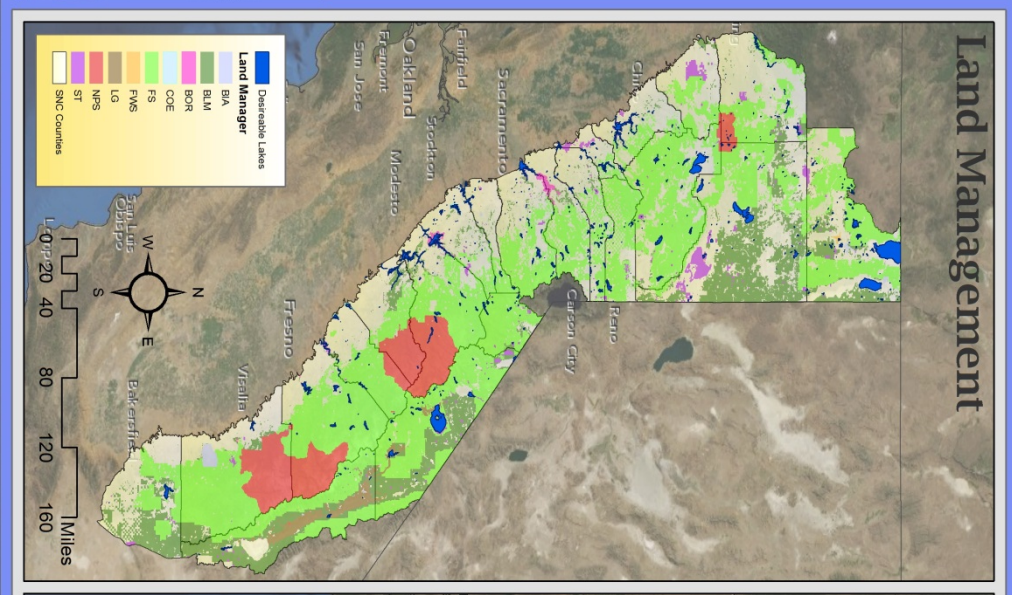


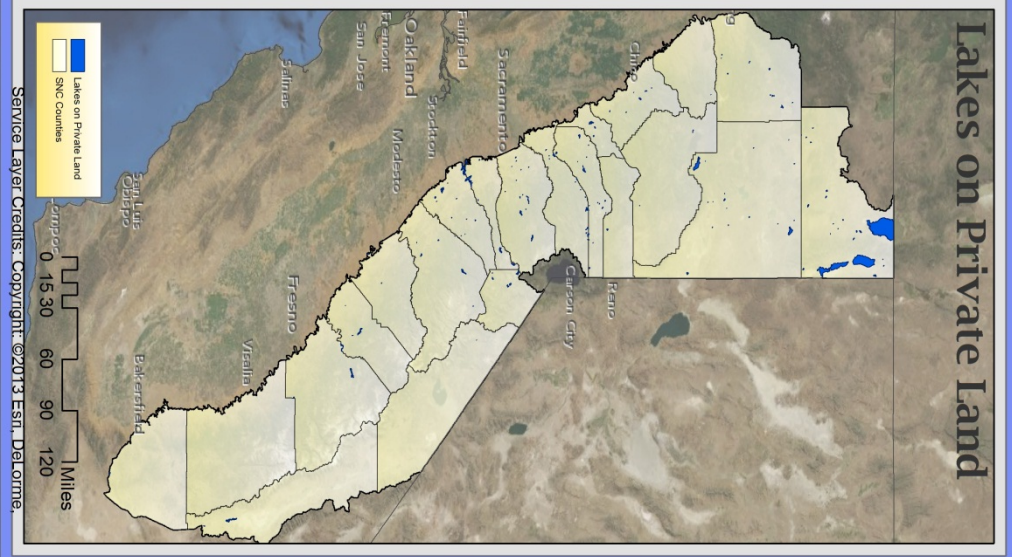
Service Layer Credits: Copyright: ©2013 Esri, DeLorme.

Public Access

Waterbodies on Private Land

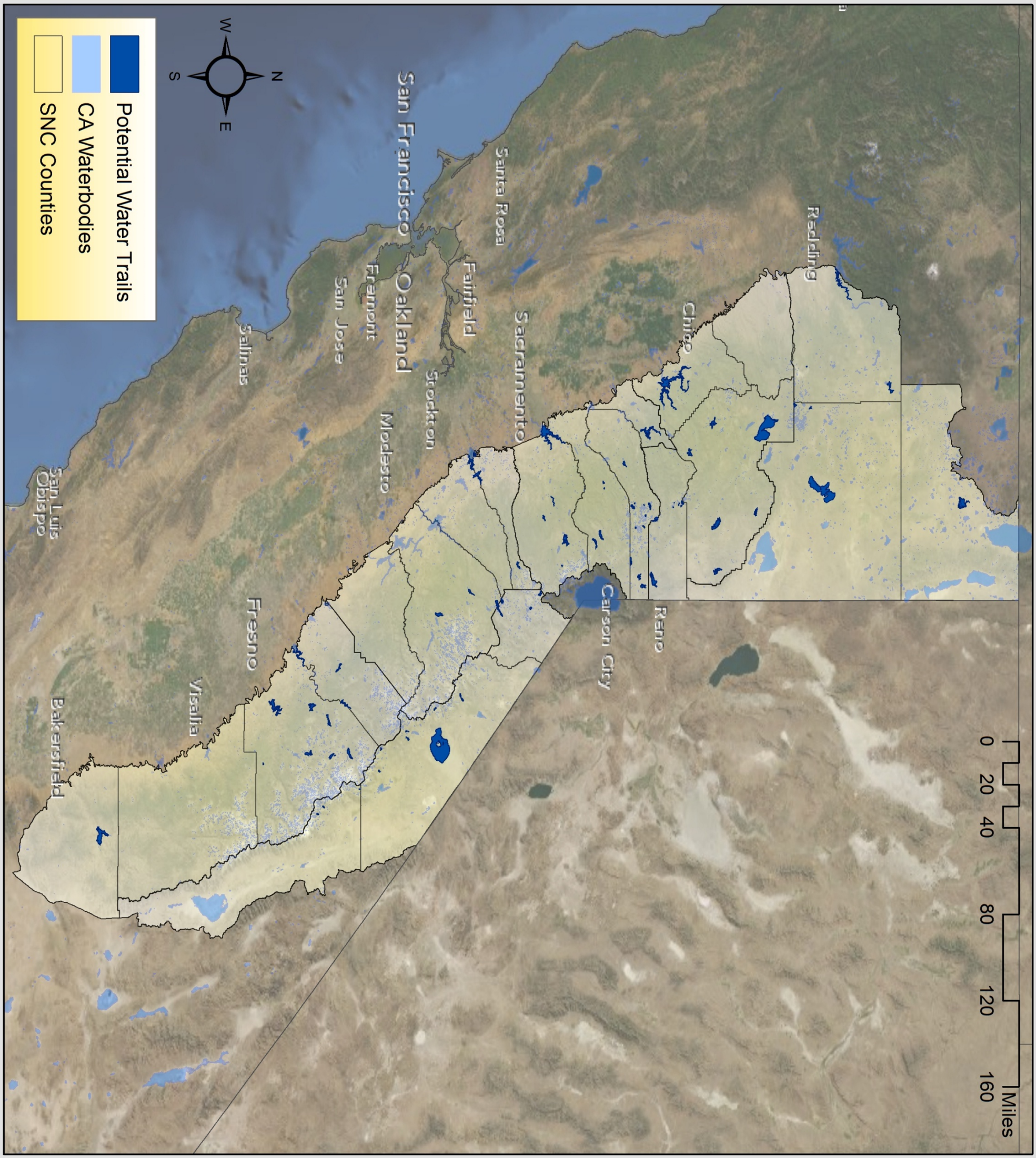
153 Waterbodies Selected from 530





Service Layer Credits: Copyright: ©2013 Esri, DeLorme.

Elevated Potential
Water Trail Candidates
82 of 20,976 Waterbodies within the Sierra



Lake Almanor
Plumas County
Drawn by Dewayne Hight
Chester
To Susanville
Clear Creek
Little Dyer Mtn.
Westwood
Dyer Mtn.
Lake
Almanor
Peninsula Dr.
A13
36
89
147
To Cyote Flat & Red Bluff
Mud
No Fee
Plumas Pines
Prattville
Note
All trips will depart from the Canyon Dam Boat Launch Facility, located just North of the dam on Hwy. 89.
Map Provided By: The Fish Sniffer
=Resorts
Canyon Dam Boat Launch
To Greenville
No. Fork Feather River
Butte Valley Res.

Thank you!

Questions or Comments?

Crystal Basin
Loon Lake
Desolation Wilderness
Union Valley Reservoir
Wrights Lake

Background

The Sierra Nevada Conservancy (SNC) is required by statute, Public Resource Code Section 33350, to "make an annual report to the Legislature and to the Secretary of the Natural Resources Agency regarding expenditures, land management costs, and administrative costs."

In the early years of the SNC, the Annual Report was produced as an expanded education and outreach tool. In more recent years, due to budget and operational constraints, the Annual Report has been scaled down in scope while still satisfying statutory requirements and providing an overview of key activities.

Current Status

Staff is in the process of producing another in-house Annual Report for FY 2013-14. The report, which will be approximately six pages in length and designed primarily for electronic distribution, will fulfill statutory requirements while highlighting the SNC's commitment and benefit to the Region and its communities.

September, 2014 marks the SNC's 10 year anniversary so the FY 2013-14 Annual Report will focus on the SNC and the Region with a 10 year perspective. On June 17th, staff sent a survey to approximately 2,100 people – SNC Boardmembers, stakeholders, grantees, partners and others - asking for assistance in telling our story. Staff will use some of the quotes and images received in response in this year's report.

Proposed Outline:

- A word from the Executive Officer – The past 10 years
- A word from the Board Chair, BJ Kirwan – SNC Regional accomplishments over the past 10 years (linking to the accomplishment document distributed at June 2014 meeting)
- Report topics:
  - Protecting and Restoring the Sierra
    - Sierra Nevada Forest and Community Initiative
    - Biomass Utilization – including the grant program focus
    - Rim Fire Restoration – Board allocation of $1m
    - Abandoned Mine Lands – including the grant program focus
  - Enjoying in the Sierra
    - Great Sierra River Cleanup
    - Geotourism – launching of agritourism and water trails development
  - Investing in the Sierra
    - Ecosystem Services Initiative – focusing on the Moke Avoided Cost Analysis
    - Sierra to the Sea, Resolution #03-14-01

- Budget and Fiscal information
- Grant Program Information
  - 10 year perspective of awarded grants
    - Awarded amount by year
  - Number of closed out projects
  - Aggregated Performance Measures

Next Steps

Staff will draft the Annual Report as described above and will complete design, layout, and illustrations in-house. Graphics may include budget charts or graphs, a small number of photos and quotes from legislators, partners, stakeholders and/or Boardmembers. With Board concurrence, staff will prepare the Annual Report and distribute it appropriately. Anticipated distribution and posting on the SNC Web site is mid November 2014.

Recommendation

Staff recommends the Board approve the proposed approach for completing the 2013-14 Annual Report and direct staff to develop and distribute the report.

Background

In June 2013, the Sierra Nevada Conservancy (SNC) Governing Board (Board) approved Grant Guidelines for the 2013-14 Grant Round. This will be the SNC's final grant round using funding from Proposition 84, The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006. Staff released public notification of the SNC 2013-14 Grant Round on June 27, 2013. Estimated funding available for this grant round is approximately $2.9 million.

This grant round has no final application due date. Projects that have provided a complete grant application and that receive a minimum score of 85 out of 100 may be presented to the Board for approval.

At the December 2013 Board meeting, the Board authorized one (1) grant in the amount of $250,000. At the March 2014 Board meeting, four (4) projects totaling $1.2 million were authorized. At the June 2014 meeting, two (2) projects totaling $143,590 were authorized. For the September 2014 meeting, six (6) projects totaling $963,276 are being recommended to the Board for approval. Staff expects that the remainder of funds, approximately $400,000, will be recommended for authorization at the December 2014 Board meeting (this does not include the $1 million allocated for the Rim Fire Restoration effort).

Current Status

Staff has completed review of the following six (6) projects and has found that they meet or exceed the threshold scoring level of 85 points:

Abandoned Mine Lands Remediation (Three (3) projects totaling $492,191)

- Project 775, Providence Mine Remediation Project
- Project 805, Environs Mining Legacy Assessment Project
- Project 806, Robinson Mine Project

Healthy Forests (Three (3) projects totaling $471,085)

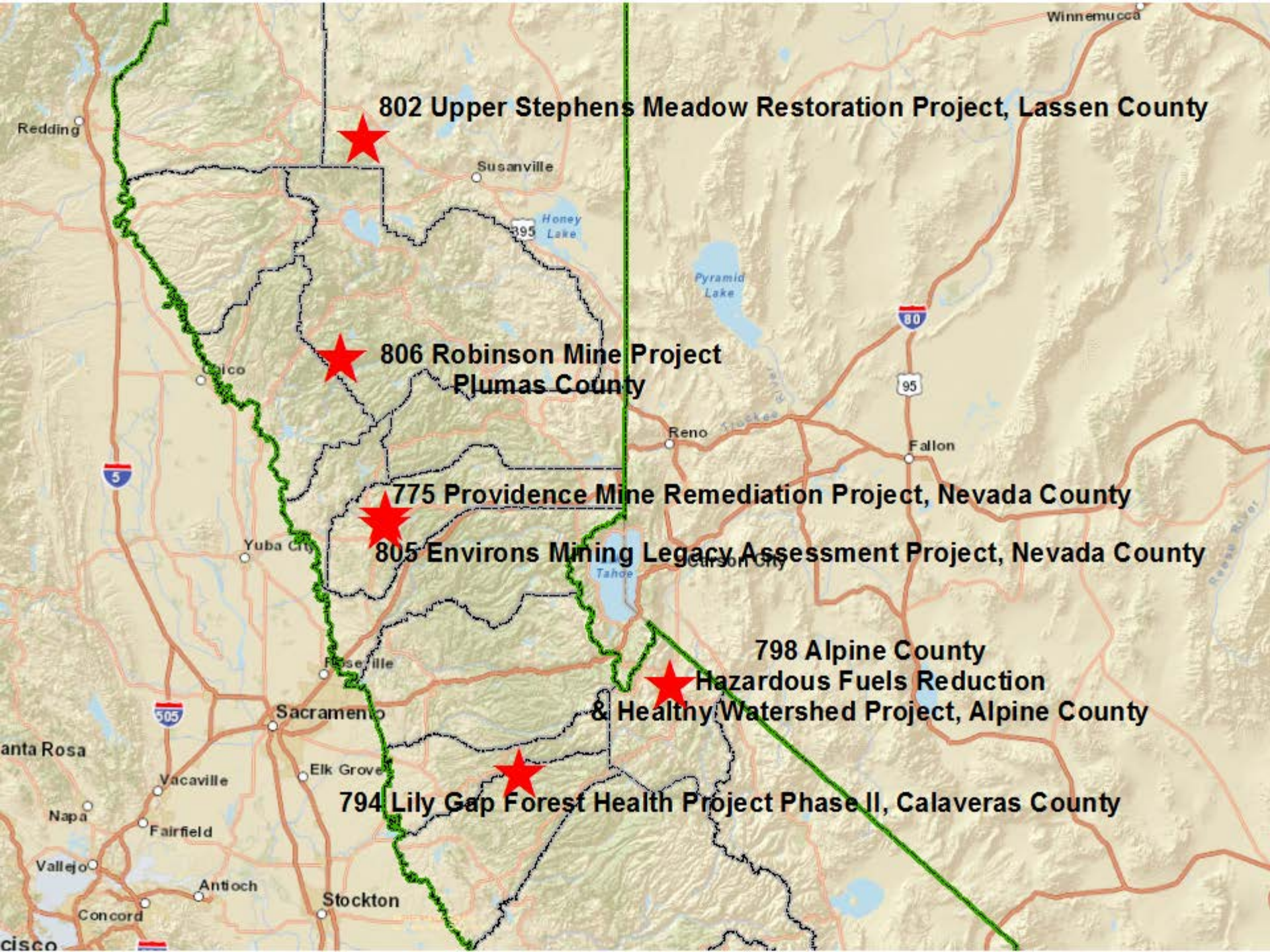
- Project 802, Upper Stevens Meadow Restoration Project
- Project 794, Lily Gap Forest Health Project, Phase II
- Project 798, Alpine County Hazardous Fuels Reduction and Healthy Watershed Project

Staff is recommending Board approval of these six (6) projects totaling $963,276. Project specific information including project descriptions, maps and California Environmental Quality Act (CEQA) documentation is provided in the attached Exhibit A to this item.

Attachments:

Exhibit A**,** Project Descriptions, Maps and CEQA Documentation

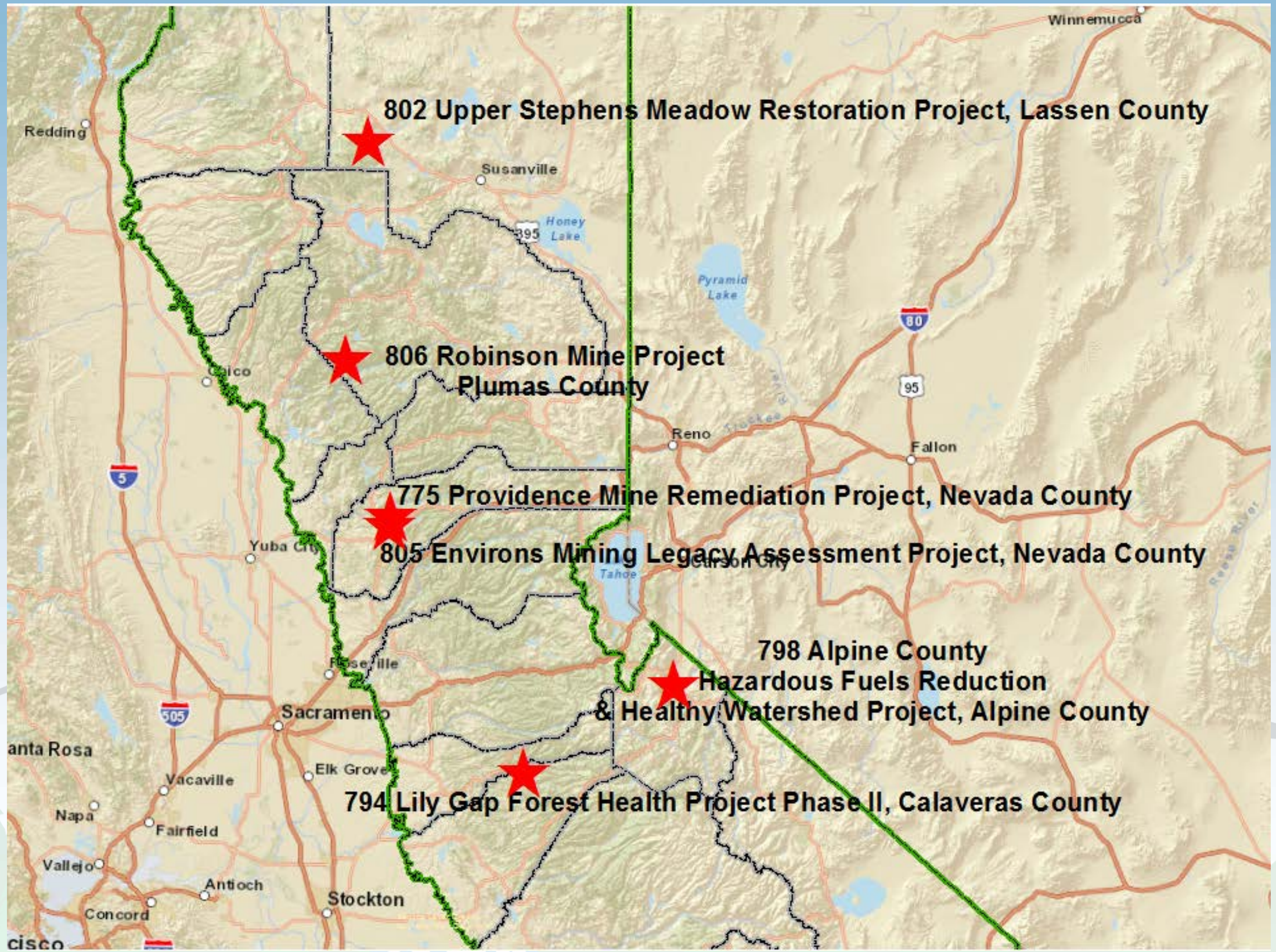
<u>Recommendation</u>
Staff recommends the Board (a) make findings that there is no substantial evidence that the Lily Gap Forest Health Project, Phase II (SNC 794), with mitigation measures, may have a significant effect on the environment and adopt the Initial Study/Mitigated Negative Declaration and the related Mitigation Monitoring and Reporting Program, and authorize the Executive Officer to file a Notice of Determination for this project; (b) make findings that there is no substantial evidence that the Providence Mine Remediation Project (SNC 775), with mitigation measures, may have a significant effect on the environment and adopt the Initial Study/Mitigated Negative Declaration and the related Mitigation Monitoring and Reporting Program, and authorize the Executive Officer to file a Notice of Determination for this project; (c) authorize the Executive Officer to file Notices of Exemption for the Alpine County Hazardous Fuels Reduction and Healthy Watershed Project (SNC 798); the Upper Stevens Meadow Restoration Project (SNC802); the Environs Mining Legacy Assessment Project (SNC 805); the Robinson Mine Project (SNC 806); and (d) authorize a grant award to each of the above listed projects for the amounts recommended by staff, and further authorize staff to enter into the necessary agreements for the recommended projects.


802 Upper Stephens Meadow Restoration Project, Lassen County
806 Robinson Mine Project
Plumas County
775 Providence Mine Remediation Project, Nevada County
805 Environs Mining Legacy Assessment Project, Nevada County
798 Alpine County
Hazardous Fuels Reduction
& Healthy Watershed Project, Alpine County
794 Lily Gap Forest Health Project Phase II, Calaveras County
Winnemucca
Redding
Susanville
Honey Lake
Pyramid Lake
Reno
Fallon
Yuba City
Tahoe
Sacramento
Elk Grove
Vacaville
Napa
Fairfield
Vallejo
Antioch
Concord
Stockton

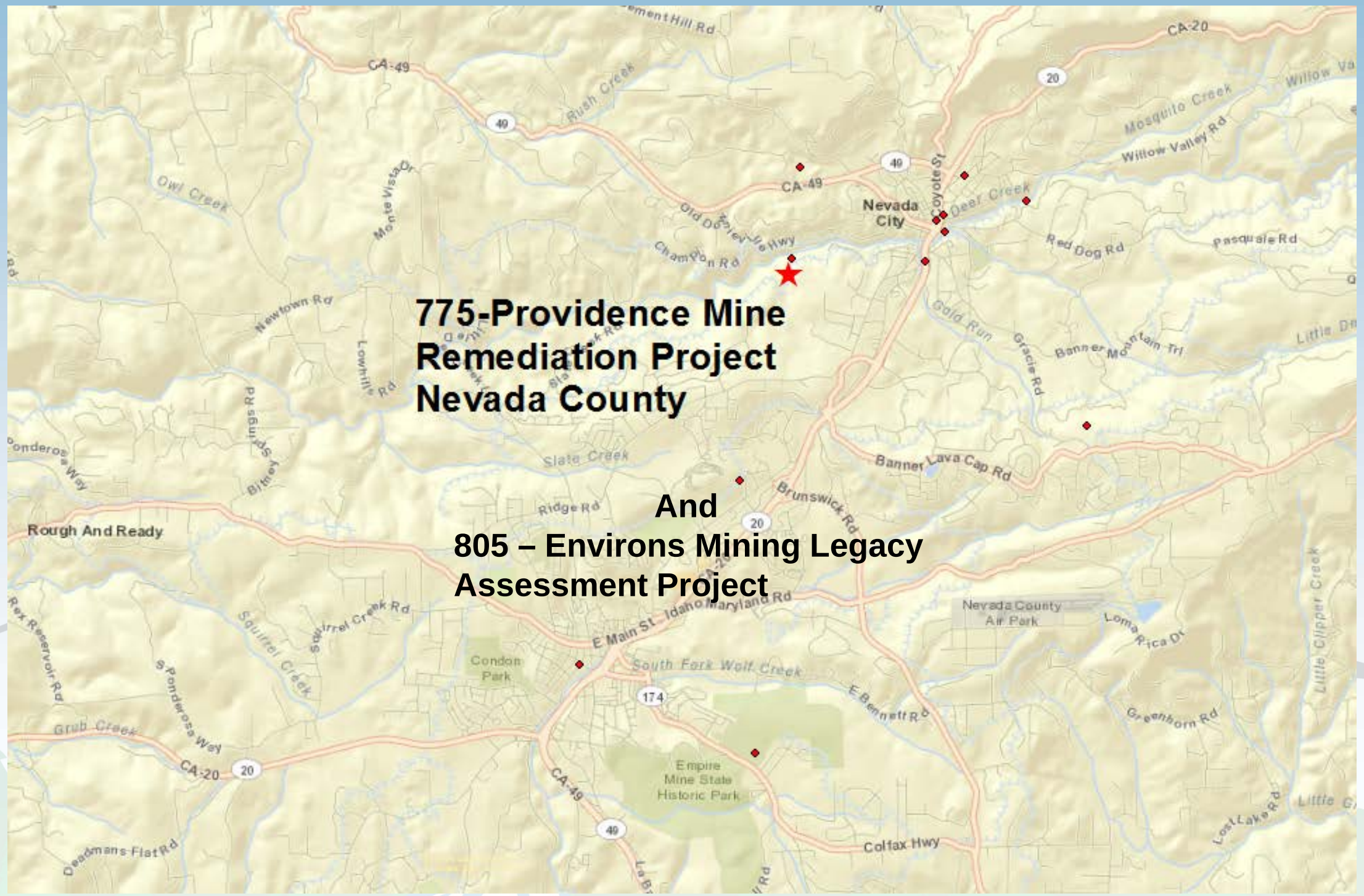
Agenda Item IX
Healthy Forests/Abandoned Mine Lands Grant Awards

Presented by:
Mt. Whitney Area Manager, Julie Bear
and
Mt. Lassen Area Manager, Bob Kingman

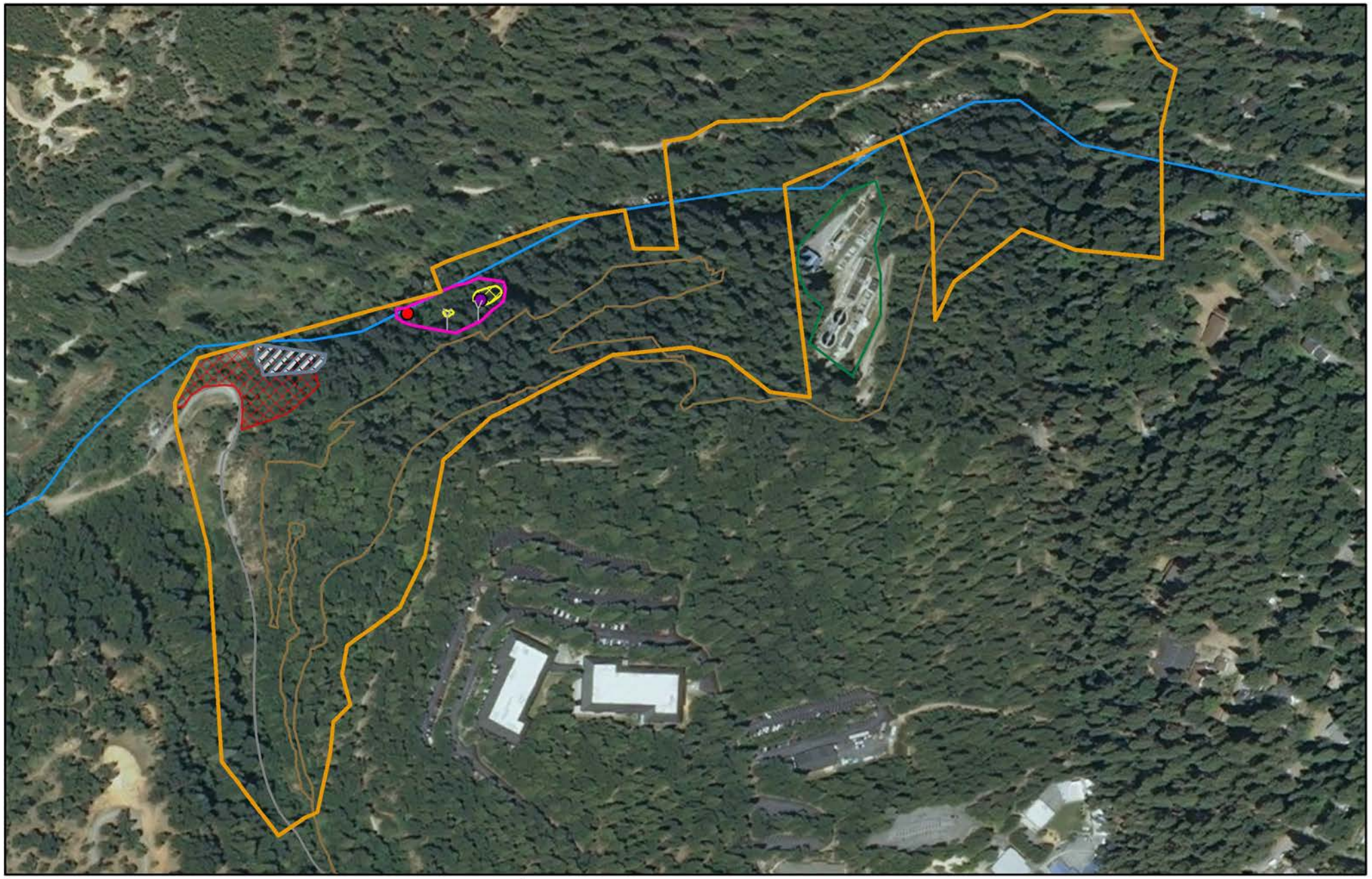
Proposed Grant Project Locations



Providence Mine Remediation Project and Environs Mining Legacy Assessment Project Location Map



Providence Mine Remediation Project and Environs Mining Legacy Assessment Project



Legend

- Environs Parcel
- SNC Providence Project Boundary (775)
- SNC Environs Assessment Project Boundary (805)
- Providence Mine Brownfield Site
- Mine Tunnel
- Drain Tunnel
- Pipe
- Mine Waste Pile
- Deer Creek
- Environs Trail
- Providence Mine Road
- Waste Water Treatment Facility

Sierra Streams Institute
SNC Project Boundaries Map

SNC Providence Mine Project Boundary
SNC Environs Mining Legacy Assessment Project Boundary
Nevada City Quadrangle
T16N; R9E; Sec 11, 12, 13

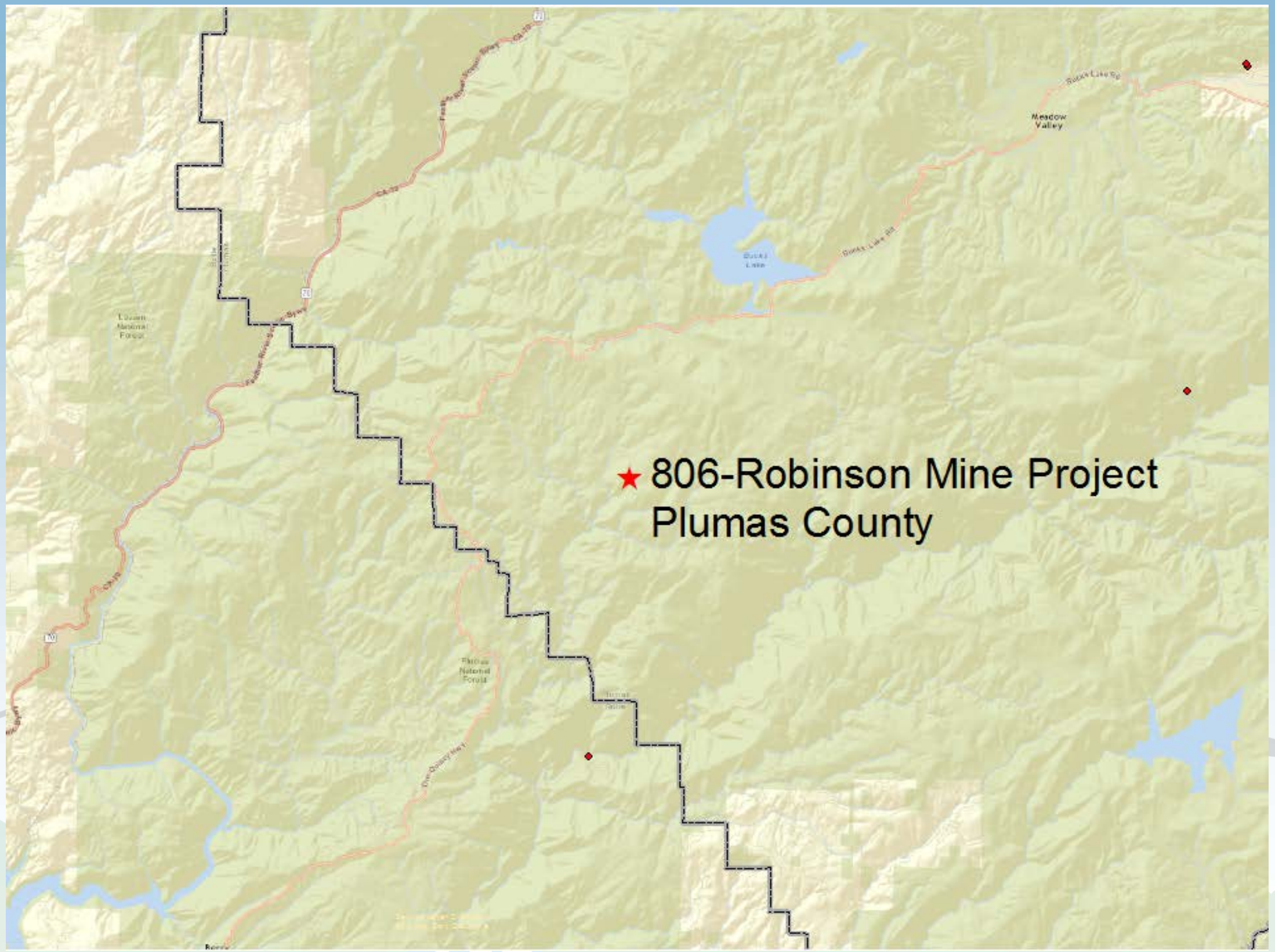
N

1 inch = 350 feet
Miles
0 0.0375 0.075 0.15

Discharge Pipe at Environs Project Site

Providence Mine Tailings in Deer Creek

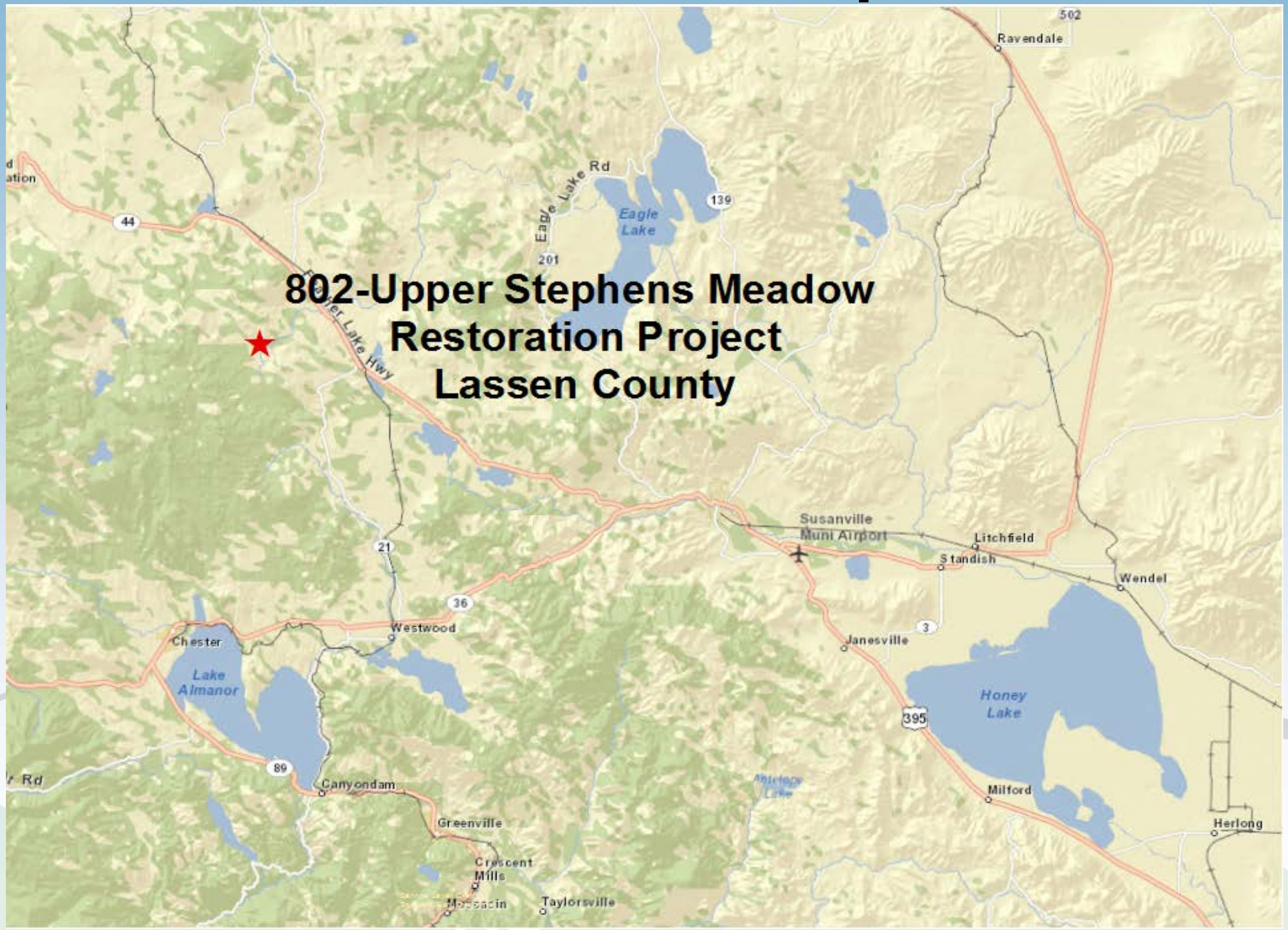
Robinson Mine Project – Location Map



Robinson Mine Project

Tailings and Debris at Robinson Mine

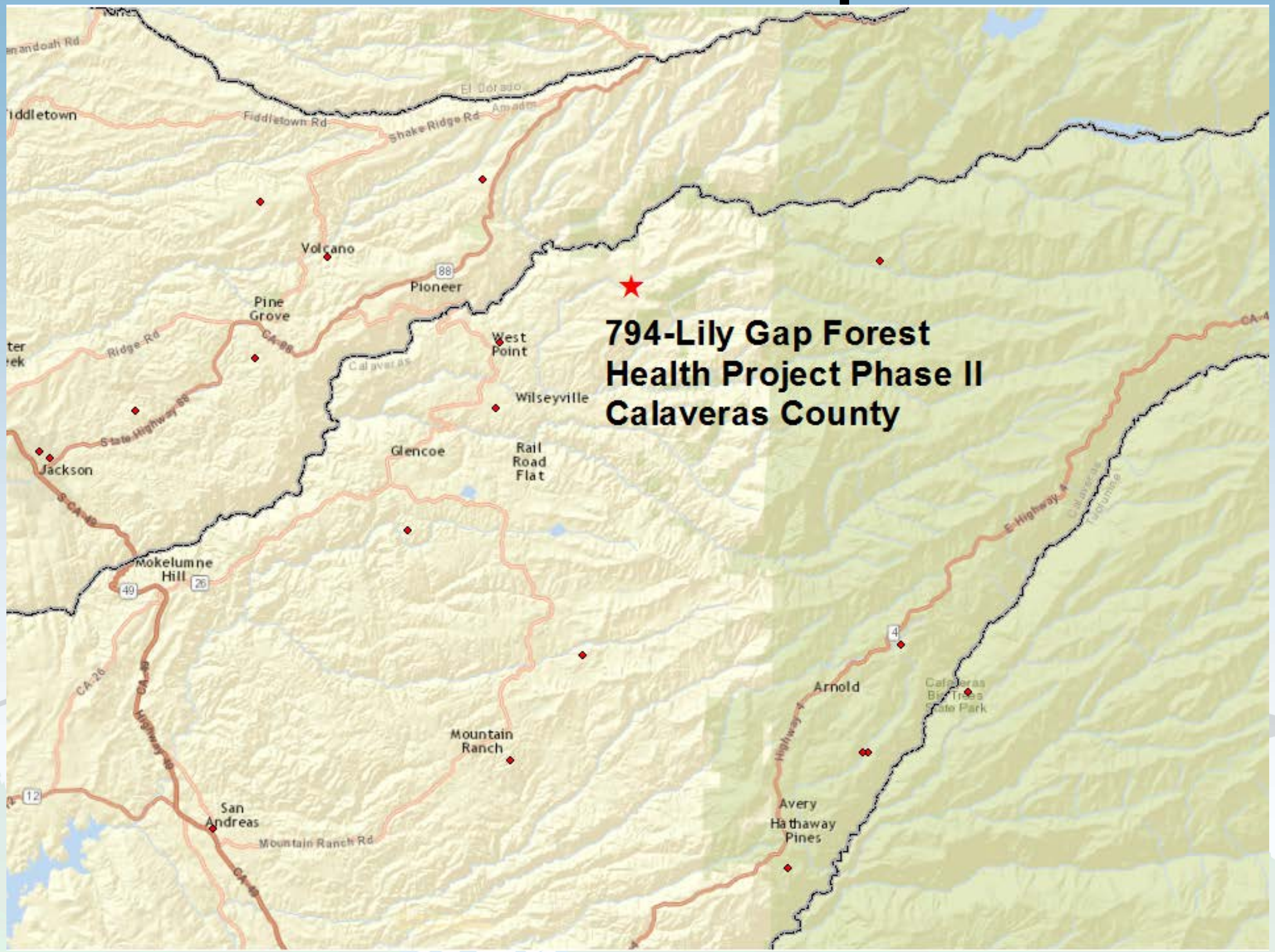
Upper Stevens Meadow Restoration Project Location Map



Upper Stevens Meadow Restoration Project

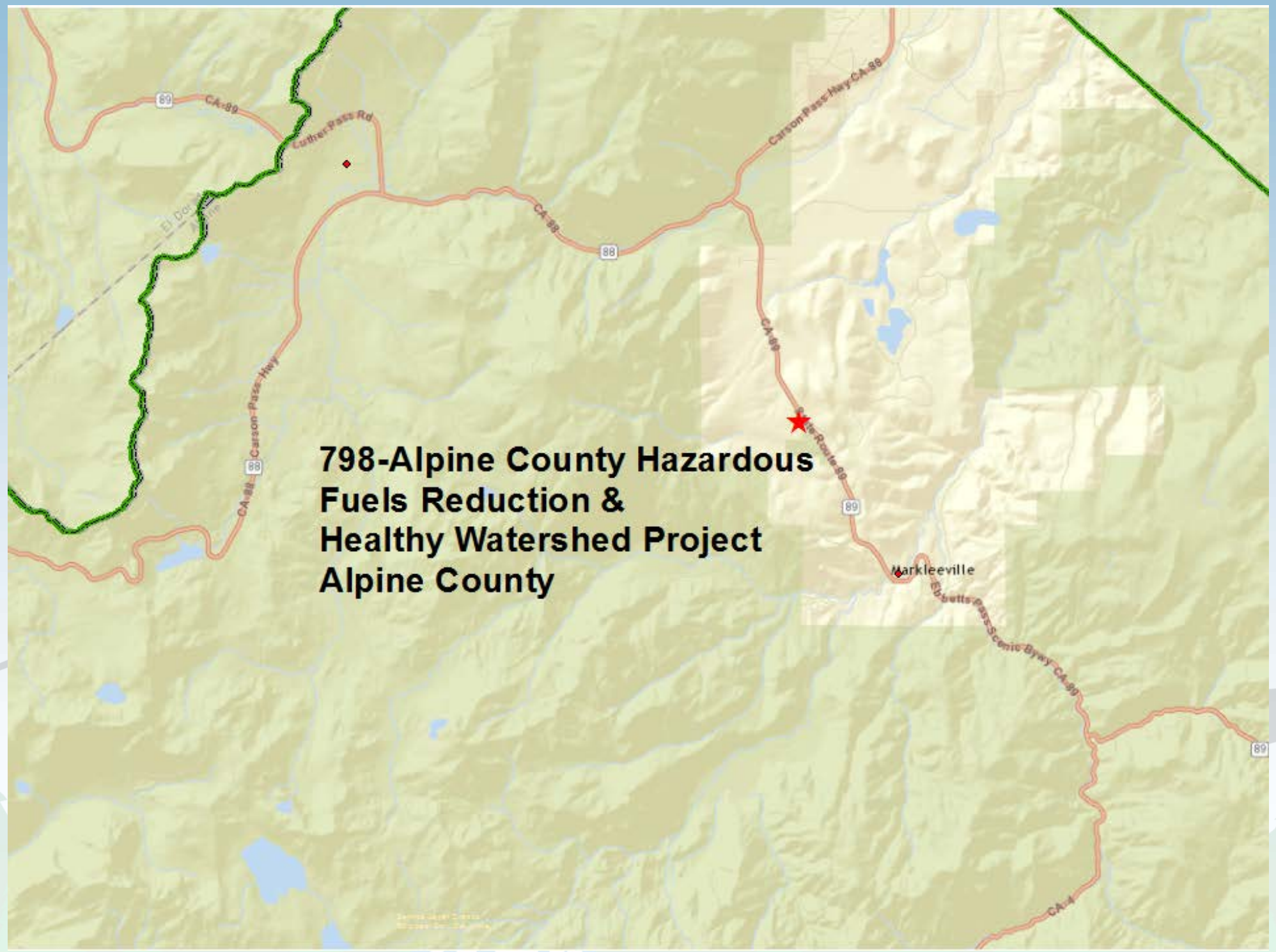
Encroaching Lodgepole Pine in Stevens Meadow

Lily Gap Forest Health Project, Phase II – Location Map



Lily Gap Forest Health Project, Phase II

Alpine County Hazardous Fuels Reduction and Healthy Watershed Project Location Map



Alpine County Hazardous Fuels Reduction and Healthy Watershed Project

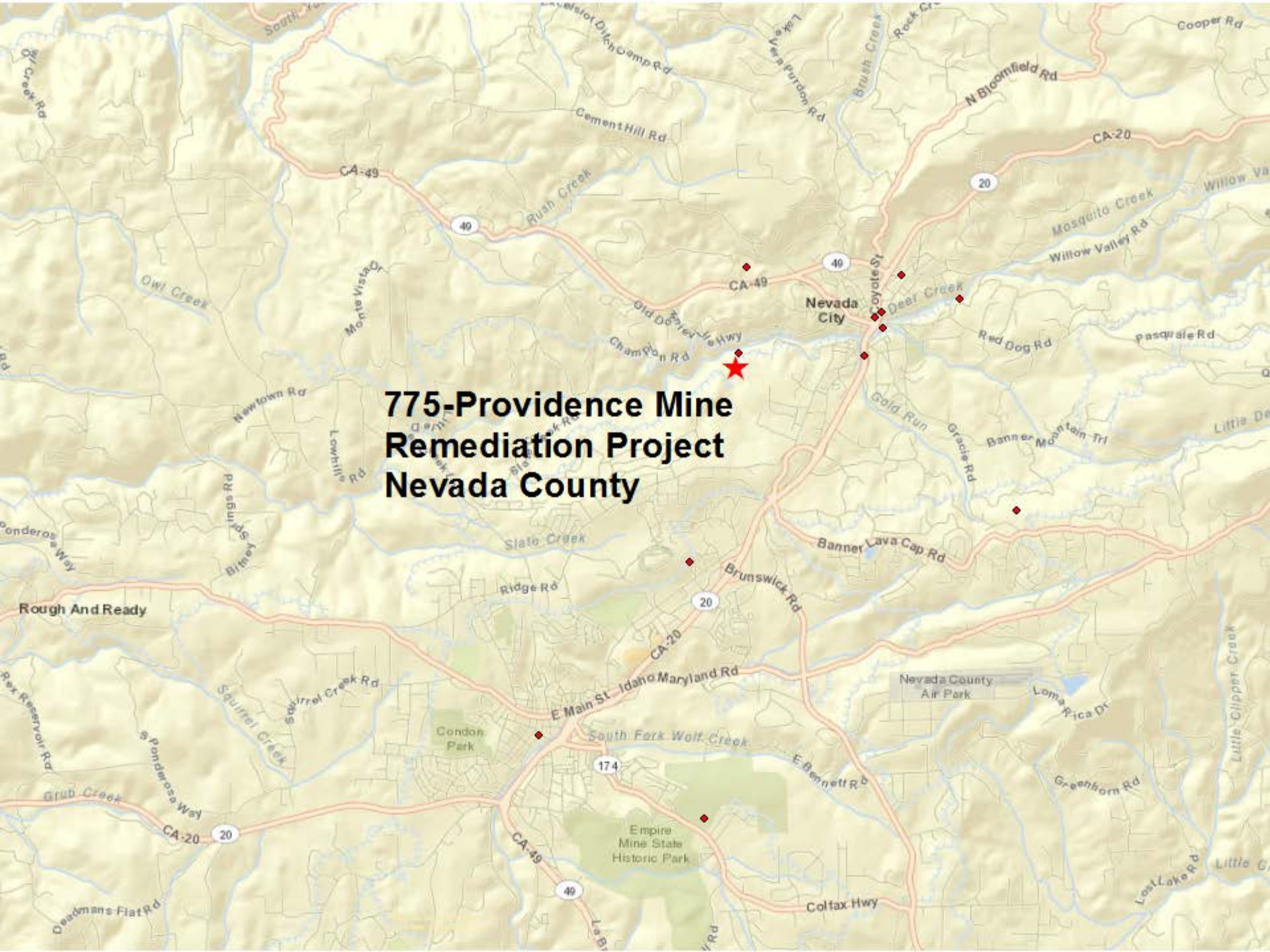
www.SIERRANEVADA.ca.gov

Recommendation

Staff recommends the Board (a) make findings that there is no substantial evidence that the Lily Gap Forest Health Project, Phase II (SNC 794), with mitigation measures, may have a significant effect on the environment and adopt the Initial Study/Mitigated Negative Declaration and the related Mitigation Monitoring and Reporting Program, and authorize the Executive Officer to file a Notice of Determination for this project; (b) make findings that there is no substantial evidence that the Providence Mine Remediation Project (SNC 775), with mitigation measures, may have a significant effect on the environment and adopt the Initial Study/Mitigated Negative Declaration and the related Mitigation Monitoring and Reporting Program, and authorize the Executive Officer to file a Notice of Determination for this project; (c) authorize the Executive Officer to file Notices of Exemption for the Alpine County Hazardous Fuels Reduction and Healthy Watershed Project (SNC 798); the Upper Stevens Meadow Restoration Project (SNC802); the Environs Mining Legacy Assessment Project (SNC 805); the Robinson Mine Project (SNC 806); and (d) authorize a grant award to each of the above listed projects for the amounts recommended by staff, and further authorize staff to enter into the necessary agreements for the recommended projects.

Agenda Item IX
2013-14 Healthy Forests/ Abandoned Mine Lands Grant Award

Exhibit A


775-Providence Mine
Remediation Project
Nevada County
Nevada City
Rough And Ready
CA-49
CA-20
N Bloomfield Rd
Cement Hill Rd
Rush Creek
Owl Creek
Monte Vista Dr
Newtown Rd
Lowhills Rd
Brittey Springs Rd
Ponderosa Way
Slate Creek
Ridge Rd
Old Downieville Hwy
Champion Rd
Coyote St
Deer Creek
Mosquito Creek
Willow Valley Rd
Red Dog Rd
Pasquale Rd
Gold Run
Gracie Rd
Banner Mountain Trl
Banner Lava Cap Rd
Brunswick Rd
E Main St
Idaho Maryland Rd
Squirrel Creek Rd
Squirrel Creek
Condon Park
South Fork Wolf Creek
E Bennett Rd
Nevada County Air Park
Loma Rica Dr
Greenhorn Rd
Little Clipper Creek
Rex Reservoir Rd
S Ponderosa Way
Grub Creek
Deadmans Flat Rd
Empire Mine State Historic Park
Colfax Hwy
Lost Lake Rd
Cooper Rd
Brush Creek
Vera Purdon Rd
Lake
Rock Cr
Excelsior Ditch Camp Rd
Oil Creek Rd
Willow Va
Little De
Little Cr

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**Sierra Streams Institute**
Project Title:	**Providence Mine Remediation Project**
Subregion:	**Central**
County:	**Nevada**
SNC Funding:	**$342,211.00**
Total Project Cost:	**$551,715.00**
Application Number:	**775**
Final Score:	**91**

PROJECT SCOPE

The Providence Mine Site is located in the northwestern portion of a 38-acre property owned by the city of Nevada City (APN 05-100-87), known as the “Environs Property”. The site is located adjacent to Deer Creek, a tributary of the Yuba River, approximately one (1) mile downstream of downtown Nevada City, California. The property is the subject of a US Environmental Protection Agency (EPA) funded Brownfields cleanup effort to remove lead, arsenic and cadmium, for which a Removal Action Workplan was developed in August 2013. The California Department of Toxic Substances Control (DTSC) has provided technical assistance to Sierra Streams Institute and the City of Nevada City with regulatory oversight and California Environmental Quality Act (CEQA) permitting for the project.

The SNC funding will complement $200,000 from US EPA to complete the cleanup and stabilization of the eastern portion of the waste rock pile, stabilize and fill the mine shaft area, revegetate the site for erosion control, continue an ongoing study of native plants’ uptake of heavy metals, and develop interpretive signage about the remediation for The Environs Trail that crosses through the area.

The project supports the goals of Proposition 84 and of the Sierra Nevada Conservancy (SNC) by contributing to the protection and restoration of rivers and streams, their watersheds and associated land, water and other natural resources. The project targets Deer Creek, a drinking water source for Nevada City, and provides for its protection by preventing erosion of contaminated material resulting from historic gold mining practices.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Engineering evaluation and Landslide stabilization design report	November 2014
Engineering evaluation report and shaft plug design	November 2014
Interpretive sign (draft)	December 2014
Subcontracts (Mobilization/Demobilization, Excavation, Gabion wall, Shotcrete Facing, Plug Construction, Engineering and Const Mangt, City of Nevada City, Interpretive Sign install)	December 2014
Shaft plug/As-Built plans	March 2015
Monitoring Field Reports (monthly)	March 2015 and monthly
Monitoring Plan	May 2015
Field Reports and compaction test results during shaft backfill	May - July 2015
2 Reports: Microbial Community Characterization and Plant Selection; Prelimanary Amendment, Uptake Erosion Control	July 2015
Erosion Control and revegetation As-Built diagrams	August 2015
Retaining wall and shotcrete facing As-Built diagrams	August 2015
Final Phytoremediation Report	June 2016
Lab Reports	July 2016
Operation and Maintenance Agreement (CofNC)	July 2016
Six month Progress Reports	April 2015, October 2015, April 2016, October 2016
FINAL PAYMENT/FINAL PAYMENT REQUEST	**March 1, 2017**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	
Project Management	$40,000.00
Staff Scientists	$25,000.00
Contract Work (Mobilization/Demobilization, Excavation, Gabion Wall, Shotcrete Facing, Plug Construction,City of Nevada City)	$160,075.00
Consultants (Engineering and Construction Management, Geotechnical Study)	$16,500.00
Construction Materials Testing	$10,000.00
DTSC Oversight	$7,500.00
Revegetation Plants and Supplies	$6,000.00
Erosion Control Materials	$5,000.00
Indirect**	
Monitoring Staff	$10,000.00
Monitoring Supplies	$10,000.00
Heavy Metal Sampling	$5,000.00
Publications, Printing, Public Relations, Interpretive Signage	$2,500.00
Administrative***	
Overhead @ 15%	$44,636.00
GRAND TOTAL	**$342,211.00**

* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

** Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

*** Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

PROJECT LETTERS SUPPORT/OPPOSITION

- Support
  - City of Nevada City

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Acres of Land Improved or Restored
- Linear Feet of Stream Bank Protected or Restored
- Mass of Pollutant Reduced Per Year

NOTICE OF DETERMINATION

To: Office of Planning and Research
State Clearinghouse
P.O. Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Subject: **FILING OF NOTICE OF DETERMINATION IN COMPLIANCE WITH SECTION 21108 OR 21152 OF THE PUBLIC RESOURCES CODE**

Project Title: Providence Mine Remediation Project (SNC 775)

State Clearinghouse No.: SCH # 2014062072

Project Location: The proposed project is a one-half (0.5)-acre area within a 2.64-acre Brownfield Assessment Site owned by Nevada City in the northwest portion of a 38-acre parcel (Assessor's Parcel Number [APN] 05-100-87), adjacent to Deer Creek, north and east of Providence Mine Road, approximately 0.8 mile west of State Route (SR) 20, approximately 0.6 mile south of SR-49, west of Zion Street, one mile downstream from downtown Nevada City, Nevada County, California. Township (T) 16 North (N), Range (R) 9 East (E), Sections 11, 12, and 13. Approximate Latitude / Longitude: 39° 15' 32.60" N / 121° 02' 05.23" W.

County: Nevada County

Project Description: The Sierra Streams Institute is requesting $342,211 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to begin to implement the Removal Action Workplan (RAW) approved by the Department of Toxic Substances Control for this Nevada City property in order to eliminate a significant source of contamination resulting from historic gold mining practices at the Providence Mine Remediation Project area in Nevada City, Nevada County, California. This project would plug the existing mine shaft depression; excavate loose, unstable mine waste in the eastern slope down to native soil; stabilize the active landslide on the eastern slope by installing an earth retaining structure (gabion wall); and stabilize the mine waste slope by revegetating and regarding. The proposed project would also install interpretive signs to introduce the public to the history and legacy of the Providence Mine. The project would cleanup the abandoned Providence Mine, protecting water quality and public health (Deer Creek is a drinking water source) and resulting in the safe reuse as a recreational trail corridor.

As ☐ Lead Agency ☒ a Responsible Agency under the California Environmental Quality Act (CEQA), the Sierra Nevada Conservancy has approved the above described project on September 4, 2013, and has made the following determinations regarding the above described project:

1. The project ☐ will ☒ will not have a significant effect on the environment.
2. A ☐ Negative Declaration ☒ Mitigated Negative Declaration ☐ Environmental Impact Report (EIR) accompanied by an Initial Study (CEQA Guidelines Section 15177) was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☒ were ☐ were not made a condition of project approval.
4. A mitigation reporting or monitoring plan ☒ was ☐ was not adopted for this project.
5. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.
6. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

This is to certify that the Mitigated Negative Declaration, with attached Initial Study, Mitigation Monitoring and Reporting Plan, and record of project approval are available to the General Public at the following location:

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

_____

Jim Branham	Executive Officer	(530) 823-4670 Phone #

TO BE COMPLETED BY OPR ONLY
Date Received For Filing and Posting at OPR:

RESPONSIBLE AGENCY
ENVIRONMENTAL DETERMINATION

PROJECT INFORMATION

1. Project Title:
   Providence Mine Remediation Project (SNC 775)

2. Responsible Agency Name and Address:
   Sierra Nevada Conservancy
   11521 Blocker Drive, Suite 205
   Auburn, CA 95603

3. Contact Person and Phone Number:
   Matthew Daley, Program Coordinator (530) 823-4698

4. Project Location:
   The proposed project is a one-half (0.5)-acre area within a 2.64-acre Brownfield Assessment Site in the northwest portion of a 38-acre parcel (Assessor's Parcel Number [APN] 05-100-87), adjacent to Deer Creek, north and east of Providence Mine Road, approximately 0.8 mile west of State Route (SR) 20, approximately 0.6 mile south of SR-49, west of Zion Street, one mile downstream from downtown Nevada City, Nevada County, California. Township (T) 16 North (N), Range (R) 9 East (E), Sections 11, 12, and 13. Approximate Latitude / Longitude: 39° 15' 32.60" N / 121° 02' 05.23" W.

5. Project Sponsor's Name and Address:
   Sierra Streams Institute
   431 Uren Street, Suite C
   Nevada City, CA 95959

6. General Plan Designation:
   Open Space Preserve (OS)

7. Zoning:
   Open Space

8. Description of Project:
   The Sierra Streams Institute is requesting $342,211 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to begin to implement the Removal Action Workplan (RAW) in order to eliminate a significant source of contamination resulting from historic gold mining practices at the Providence Mine Remediation Project area in Nevada City, Nevada County, California. This project would plug the existing mine shaft depression; excavate loose, unstable mine waste in the eastern slope down to native soil; stabilize the active landslide on the eastern slope by installing an earth retaining structure (gabion wall); and stabilize the mine waste slope by revegetating and regarding. The proposed project would also install interpretive signs to introduce the public to the history and legacy of the Providence Mine. The project would cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor and protecting stream (Deer Creek) health.

The inclined mine shaft depression would be cleared of vegetation and organic debris. This would include clearing and grubbing of underbrush, trees less than six inches in diameter at breast height (DBH), and the removal of up to 12 trees greater than six inches DBH. The woody material would be chipped and used as mulch on-site. An exploratory excavation would be advanced at the base of the east end of the depression to determine the presence of a previously installed plug, voids or open inclined shaft. A concrete plug would be installed at the base of the collapsed shaft depression prior to depositing material in order to prevent migration of backfilled mine waste down the shaft.

Accessible areas of loose, unstable mine waste in the eastern slope would be excavated to native soil surface using special excavation techniques suitable for the extremely steep slopes in the area. Excavation would be limited to areas above the 100-year flood elevation for Deer Creek and would include the mine waste from the eastern slope as well as landslide debris fan. Excavated mine waste from the eastern slope and slide debris fan would be placed as fill in the shaft depression.

An earth retaining structure (gabion wall) would be installed adjacent to Deer Creek at the toe of the landslide on the eastern slope, above the 100-year flood elevation. The gabion wall would be approximately 30 feet long, 3 feet wide, and 9 feet high. A shotcrete facing would be applied to the exposed landslide scarp face to minimize erosion and promote long-term stabilization of the landslide.

The mine waste slope would be stabilized by revegetation as well as regrading by excavation and on-site placement, in order to reduce the slope gradient and eliminate the potential for erosion into the creek. Erosion control and revegetation would include the installation of anchored coir fiber mats and rolls, hydroseeding or other methods to accelerate plant growth would reduce the extent of erosion and contamination during and after construction. Native vegetation, particularly plants with known capacity to uptake target contaminants, would be used for revegetation.

During the proposed project activities, any stockpiles would be covered with an anchoring system and vehicles and other equipment would not be allowed to travel or stage near the stockpiles. Signs would be posted on the project site to alert visitors on prohibited activities while on the premises.

9. Surrounding Land Uses and Setting:
   The project area is within the City of Nevada City boundaries, and is surrounded by the following land uses: Open Space Preserve (OS), Employment Center (EC), Rural (R), and Single Family (SF). Deer Creek flows adjacent to the northern project boundary.

10. Other public agencies whose approval is required:
    California Department of Fish and Wildlife (CDFW)
    Nevada City Department of Public Works
    Nevada City Planning Department
    Northern Sierra Air Quality Management District (NSAQMD)
    California Air Resources Board (CARB)
    California Department of Toxic Substance Control (DTSC)*
    *Approved the Mitigated Negative Declaration (CEQA)

PROJECT BACKGROUND

The proposed project is located on the Providence Mine site. The Providence Mine was one of the largest and most productive gold mines in the Sierra, with excavation of approximately $20 million worth of gold that was extracted between 1851 and 1918. Once abandoned, the mine structures and shaft were abandoned and the forest vegetation began to grow in and around the abandoned mine. This masked the toxic areas left from the mining activities. The entire 38-acre parcel, known as the Environs Site, was acquired by the City of Nevada City in 1983 to be used as open space. The property has been the subject of extensive restoration and recreational development over the past four years. Recreational development in the area includes the development of a trail system, which includes the Environs Trail.

Providence Mine was the subject of a U.S. Environmental Protection Agency (EPA) Brownsfield assessment, which was completed in 2009 by the City of Nevada City. The samples during the assessment revealed high levels of three main constituents of concern: lead, arsenic, and cadmium.

The cleanup of Providence Mine consists of several phases. The California Department of Toxic Substance Control (DTSC) has finalized a Site Characterization Report and Final Removal Action Workplan (RAW) for the proposed project site. The DTSC acted as Lead Agency under CEQA in June 2014 and prepared an Initial Study and adopted a Mitigated Negative Declaration in August 2014.

The proposed project would cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor, the revegetation of the area with native plants, and the protection of water quality, and ultimately the protection of stream (Deer Creek) health.

PREVIOUS ENVIRONMENTAL DOCUMENTATION

Providence Mine Cleanup Project Initial Study/Mitigated Negative Declaration

Department of Toxic Substance Control, *Providence Mine Cleanup Project Initial Study/Mitigated Negative Declaration*. SCH 2014062072. August 2014.

Basic Features of the Project

The goal of the proposed project is to cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor, the revegetation of the area with native plants, and the protection of water quality, and ultimately the protection of stream (Deer Creek) health.

The Providence Mine Cleanup Project Initial Study/Mitigated Negative Declaration (IS/MND) includes environmental impact analysis as related to the implementation of the RAW, which includes: (1) plugging the existing mine shaft depression; (2) excavating loose, unstable mine waste in the eastern slope down to native soil; (3) stabilizing the active landslide on the eastern slope by installing an earth retaining structure (gabion wall); and stabilize the mine waste slope by revegetating and regrading.

Permits that are anticipated for the proposed project include the CDFW (Lake and Streambed Alteration Agreement 1602 Permit), CDFW (Riparian Vegetation Mitigation Monitoring Plan), City of Nevada City (Tree Removal Plan, Grading and Erosion Control Plan), NSAQMD (Rule 401 [Visible Emissions], Rule 402 [Nuisance], Rule 403 [Fugitive Dust]), and California Air Resources Board (Portable Equipment Registration).

Impacts Identified Relevant to the Sierra Nevada Conservancy Grant Request

The action before the Sierra Nevada Conservancy is providing $342,211 from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to fund the implementation of the Removal Action Workplan (RAW) in order to eliminate a significant source of contamination resulting from historic gold mining practices at the Providence Mine Remediation Project area in Nevada City. The Providence Mine Cleanup Project IS/MND identifies potential resource impacts related to air quality, biological resources, cultural resources, greenhouse gas emissions, and hydrology and water quality. Specifically, the proposed project may result in temporary increases in air pollutants, including greenhouse gas emissions, during proposed project activities,; the indirect disturbance of Deer Creek (riparian area disturbance); temporary habitat disruption; temporary disturbance of special-status plant and animal species; the potential to inadvertently disturb unknown cultural resources or human remains during ground-disturbing activities. Based on the IS/MND, the project would not cause any additional significant effects on the environment not previously examined in the Providence Mine Cleanup Project IS/MND. The project proponent would implement measures identified in the IS/MND, and described below, to lessen potential impacts to air quality, biological and cultural resources, greenhouse gas emissions, and hydrology and water quality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact.

☐ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology / Soils
☒ Greenhouse Gas Emissions	☐ Hazards / Hazardous Materials	☒ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Responsible Agency)

On the basis of this evaluation:

The SNC Board determined that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by, or agreed to by, the project proponent. An **INITIAL STUDY/MITIGATED NEGATIVE DECLARATION** was prepared that adequately analyzed the action for which the Sierra Nevada Conservancy will provide grant funding, mitigation measures have been incorporated into the project, and the SNC Board has adopted findings pursuant to CEQA Guidelines Sections 15096(h) and 15091. The California Department of Toxic Substance Control, as the lead agency, also adopted a Mitigation Monitoring and Reporting Program that identifies the timing of mitigation measures and which parties will be responsible for implementing them; the SNC is not responsible for implementing any of these measures and is not proposing any additional mitigation measures.

Signature	Date
Jim Branham	Executive Officer
Printed Name	Title
Sierra Nevada Conservancy	
Responsible Agency	

CALIFORNIA ENVIRONMENTAL QUALITY ACT
RESPONSIBLE AGENCY
STATEMENT OF FINDINGS

Project Title: Providence Mine Remediation Project (SNC 775)

State Clearinghouse Number: SCH# 2014062072

Project Location: The proposed project is a one-half (0.5)-acre area within a 2.64-acre Brownfield Assessment Site in the northwest portion of a 38-acre parcel (Assessor's Parcel Number [APN] 05-100-87), adjacent to Deer Creek, north and east of Providence Mine Road, approximately 0.8 mile west of State Route (SR) 20, approximately 0.6 mile south of SR-49, west of Zion Street, one mile downstream from downtown Nevada City, Nevada County, California. Township (T) 16 North (N), Range (R) 9 East (E), Sections 11, 12, and 13. Approximate Latitude / Longitude: 39° 15' 32.60" N / 121° 02' 05.23" W.

Description of Project: The Sierra Streams Institute is requesting $342,211 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to begin to implement the Removal Action Workplan (RAW) in order to eliminate a significant source of contamination resulting from historic gold mining practices at the Providence Mine Remediation Project area in Nevada City, Nevada County, California. This project would plug the existing mine shaft depression; excavate loose, unstable mine waste in the eastern slope down to native soil; stabilize the active landslide on the eastern slope by installing an earth retaining structure (gabion wall); and stabilize the mine waste slope by revegetating and regarding. The proposed project would also install interpretive signs to introduce the public to the history and legacy of the Providence Mine. The project would cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor and protecting stream (Deer Creek) health.

Findings: Pursuant to Public Resources Code Section 21002.1(d) and CEQA Guidelines Section 15096(g) and (h), the Sierra Nevada Conservancy (SNC), as a Responsible Agency, has reviewed and considered the following documents prepared by the Lead Agency (CEQA):

Department of Toxic Substance Control, *Providence Mine Cleanup Project Initial Study/Mitigated Negative Declaration*. SCH 2014062072. August 2014.

Using its independent judgment, the SNC makes the following finding:

> The above listed document: a) adequately addresses the potential impacts of the project, and b) is adequate for use by the Sierra Nevada Conservancy (SNC) for assessing the potential impacts of funding the grant request now before the SNC for approval.

The Sierra Nevada Conservancy hereby makes the following findings regarding the significant effects of the proposed project, pursuant to Public Resources Code 21081 and Section 15091 of the State CEQA Guidelines.

1. AIR QUALITY

The proposed project would cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor, the revegetation of the area with native plants, and the protection of water quality, and ultimately the protection of stream (Deer Creek) health. The implementation

of the RAW would require temporary, ground disturbing activities, that could create fugitive dust. Equipment used for the proposed project could produce particulate matter 10 microns or less in diameter and/or 2.5 microns or less in diameter (PM_{10} and $PM_{2.5}$), as well as ozone precursors, including nitrogen oxides (NO_x) and reactive organic gases (ROGs). These emissions from the proposed project activities would have the potential to exceed the NSAQMD's threshold limits for air pollutants. Impacts are considered potentially significant. The IS/MND for the Providence Mine Cleanup Project covers air quality impacts for the proposed project and provides mitigation measures. Those mitigation measures that apply specifically to the proposed project are listed below.

Finding: Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid significant effects on the environment.

Facts in Support of the Finding: The Sierra Nevada Conservancy concurs with the lead agency that the following mitigation measures will reduce the project's environmental effects to a less-than-significant level.

Mitigation Measures:

MM-3.1 Standard Mitigation Measures to Reduce PM_{10} and $PM_{2.5}$ include the following:

- During grading, ground disturbance or excavation operations, fugitive dust emissions will be controlled by regular watering or other dust preventative measures.
- Dust monitoring (visible monitoring) will be conducted to determine whether contaminated soils are released off-site during remedial work, to protect on-site workers, and to ensure the project complies with the state and federal air quality regulations. Work will be stopped if dust is visible or present in the worker breathing zone or Site boundary.
- Work areas and haul routes will be periodically swept to prevent dust generation during soil hauling activities.
- All grading or open excavating activities shall cease when winds exceed 15 miles per hour averaged over one (1) hour.
- Plastic sheets or tarps will be used to cover stockpiled soil and may be used to cover other exposed areas, if necessary.
- If dust levels cannot be controlled to below action levels with implementation of these measures, the work will stop until additional controls are implemented to reduce dust generation from the work area.

MM-3.2 Standard Mitigation Measures to reduce ozone and ozone precursors. Project activities including excavation, grading, backfilling, and soil transport that require the use of heavy equipment and trucks will generate ozone and ozone precursor(s). The following standard mitigation measures will reduce the amount of ozone and ozone precursors (NO_x and ROG) generated by the project:

- Reducing heavy equipment idling time. Reduce diesel equipment idling time to no more than 10 minutes of inactivity.
- Reducing truck idling time. Reduce truck idling time to a maximum of five (5) minutes while on-site waiting to load or unload.

- Use properly sized equipment. Equipment engines too large for an application burn more fuel by adding unnecessary weight. In addition, drivers may be prone to use the excess horsepower needlessly, causing additional fuel consumption. An undersized engine easily becomes overworked, leading to excess fuel consumption and accelerated engine wear. Equipment selection will be based on the anticipated requirements of the remedial action.
- Improving equipment maintenance. Improper wheel alignment and improperly inflated ties on trucks can adversely affect fuel efficiency by three (3) to four (4) percent. Hauling will be maintained in accordance with the manufacturer's recommendations. Truck drivers will be instructed to check their tire inflation in accordance with tire manufacturer's recommendations.
- Improving operator training. Example – An excavator operator who needlessly shifts hydraulic levers to lift additional weight when the equipment is already operating at its maximum capacity can save 225 gallons of fuel a year by eliminating this practice one (1) hour per day. During Site health and safety meetings, equipment operators will be provided with an overview of ways to minimize excessive fuel consumption.
- Use heavy equipment and trucks that are either equipped with a diesel oxidation catalyst and diesel particulate filter or that meet Tier 3 emissions standards.
- Where possible, use transport trucks with a model year of 2006 or newer.

MM-3.3 The NSAQMD adopted Rule 226 (Dust Control), which addresses fugitive dust emissions and applies to construction Sites (CARB, 2008). The General requirements of Rule 226 state, "any person shall take all reasonable precautions to prevent dust emissions. Reasonable precautions may include, but are not limited to, cessation of operations, cleanup, sweeping, sprinkling, compacting, enclosure, chemical or asphalt sealing, and use of wind screens or snow fences (CARB, 2008)." Several elements of Rule 226 have been incorporated into this document. The NSAQMD requires that specified projects submit a Dust Control Plan to the Air Pollution Control Officer before topsoil is disturbed on any project where more than one (1) acre of natural surface area is to be altered or where natural ground cover is removed. The Dust Control Plan will incorporate the use of reasonably available control measures to minimize fugitive dust. The project proponent will comply with the applicable provisions of NSAQMD Rule 226 for fugitive dust emissions, will consult with the NSAQMD regarding permitting requirements for the project, and will obtain all necessary permits prior to construction activities.

2. BIOLOGICAL RESOURCES

The proposed project would cleanup the abandoned Providence Mine, protecting the water quality of Deer Creek from mining contamination, resulting in the safe reuse of the area as a recreational trail corridor, and revegetating the area with native plants. Deer Creek, a water supply source, is adjacent to the project site and construction activities. The area is forest land, with riparian habitat. Special-status species that are known to occur in the region include: great grey owl, Cooper's hawk, northern goshawk, sharp-shinned hawk, willow flycatcher, California yellow warbler, yellow-breasted chat, tricolored blackbird, Pale Townsend's big-eared bat, greater western mastiff bat, spotted bat, Sierra Nevada red fox, and the California red-legged frog.

Proposed project activities would include removal of soils, construction of a gabion wall, removal of shrubs and trees, and work within the riparian area, but outside the 100-year floodplain. The

City of Nevada City Municipal Code Section 18 provides the requirements for tree removal and requires approval from the City's Planner for removal of trees greater than six inches DBH within the city limits.

Based on habitat surveys prepared for the IS/MND, no suitable habitat for any federal or state special-status species were observed to be present during. No special status species were identified during field reconnaissance. However, the proposed project area could potentially provide suitable habitat. The nearest special-status species observed on record is 10.3 miles southeast of the project site. CDFW has indicated that the lack of an occurrence within a 5- or 10-mile radius is not always the appropriate way to determine absence.

Based on surveys, there is suitable habitat and thus the potential for presence of bird species; however, there is no suitable habitat for any of the bat species, Sierra Nevada red fox, or California red-legged frog. Thus, mitigation is required to prevent disturbance to unknown special-status species in the area. In addition, based on conversations between DTSC and CDFW, mitigation measures to reduce potential impacts to the great grey owl and active nests for raptors and songbirds are required.

Impacts are considered potentially significant. The IS/MND for the Providence Mine Cleanup Project covers biological resources impacts for the proposed project and provides mitigation measures. Those mitigation measures that apply specifically to the proposed project are listed below.

Finding: Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid significant effects on the environment.

Facts in Support of the Finding: The Sierra Nevada Conservancy concurs with the lead agency that the following mitigation measures will reduce the project's environmental effects to a less-than-significant level.

Mitigation Measures:

MM-4.1 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – A qualified biologist shall conduct a preconstruction survey prior to the beginning of construction activities. The biologist in consultation with CDFW will determine whether additional surveys will be needed during construction activities (and their recommended frequency). The biologist shall re-inventory animals and plants subject to vegetation clearance and/or grading for the occurrence of listed species and species of concern. The locations for listed plant and/or animal populations shall be flagged for avoidance. If special-status species are observed during any surveys, CDFW requests that California Natural Diversity Database (CNDDB) forms be filled out and sent to Sacramento and a copy of the form be sent to CDFW. Instructions for providing data to the CNDDB can be found at http://www.dfg.ca.gov/biogeodata/cnddb/.

MM-4.2 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – Avian surveys will be conducted each spring from along the Environs Trail, adjacent to the mine site. These have been ongoing since 2010. Surveys will follow the point-count protocols used by PRBO (Ballard et al., 2003), with slight modifications to adjust the distance between points to meet survey length and number of points surveyed criteria. If the project will occur during the nesting season (March 1 through

July 31), pre-construction surveys by a qualified avian biologist shall be conducted no more than two weeks prior to construction to verify the absence of nesting birds, and that the construction and potential disturbance zones do not support nesting migratory birds or raptors.

MM-4.3 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – A qualified biologist shall conduct great grey owl surveys, following the protocol outlined in Beck and Winter (2000). Five night-time calling surveys will be conducted by June 15, 2014, and one visual meadow survey will be conducted between August 1 and October 15, 2014, to determine if any great grey owls are present in the project area. The results of these surveys will be provided to CDFW upon their completion. If any great grey owls are detected during this survey period, the biologist will immediately contact CDFW Staff Environmental Scientist Angela Calderaro.

MM-4.4 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) –If a qualified biologist discussed in Mitigation Measure 4.1 finds active nests (nests containing eggs or young) for raptors within a 0.5-mile radius from the site, then a no-disturbance buffer zone will be established around the nest site. Auditory and visual surveys for songbirds will follow those described in Ballard et al. 2003, and raptor surveys will follow the protocol of the WRFO Diurnal Raptor Survey Protocol (2012). The width of the buffer zone will be determined by the qualified biologist. The buffer zone will be delineated with exclusionary fencing and flagging and/or signage, as appropriate. Work will be allowed to continue as long as no abandonment behavior is noted by the biologist. No trees that contain active nests of birds shall be disturbed until all eggs have hatched and young birds have fledged without prior consultation and approval from a CDFW representative. No-disturbance buffer zone will be developed in conjunction with the CDFW. Surveys for nesting raptors and birds protected by the Migratory Bird Treaty Act must occur between February 1st and August 31st, no more than one week prior to the beginning of construction activities. If special-status species are observed during surveys, CDFW requests that CNDDB forms be filled out and sent to Sacramento and a copy of the form be sent to CDFW. Instruction for providing data to the CNDDB can be found at http://www.dfg.ca.gov/biogeodata/cnddb/.

MM-4.5 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – Prior to beginning construction of landslide mitigation measures, a qualified wetlands biologist will delineated the 100-year flood hazard elevation along Deer Creek. Excavation and gabion wall construction will take place above the 100-year flood hazard elevation and no heavy equipment will enter the flood hazard zone. Construction will be confined to the dry season (June 15 - October 15). Best Management Practices (BMPs) including silt fencing and waddles (non-monofilament) placed between the gabion wall construction area and the active stream channel and will be removed after the gabion wall is complete.

MM-4.6 (Sierra Stream Institute responsible for this mitigation measure, DTSC, CDFW advisory) – Construction Timing/Weather: The project will be implemented during periods of low stream flow and dry weather and shall be confined to the period of June 15 to October 15. Project activities will be times with awareness of precipitation forecasts and likely increases in stream flow. Project activities shall cease until all reasonable erosion control measures have been implemented prior to all storm events. No work shall occur during wet weather, defined as when 0.25 inches of

rain is forecast or occurs within a 24-hour period. Revegetation and erosion control work will not be confined to this time period.

MM-4.7 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – The use of monofilament-based erosion blankets/netting material that could trap aquatic-dependent wildlife shall not be used within the stream zone or riparian zones of the Project Site.

MM-4.8 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) –If impacts to riparian and other sensitive natural communities are not avoidable, and on-site preservation is not possible, then habitat compensation shall be required at a 2:1 (two acres of preserved habitat for every acre impacted) impact preservation ratio. The Applicant shall prepare and implement riparian vegetation mitigation and monitoring plan for disturbed riparian habitat. The plan shall include:

- Onsite and/or offsite location(s) for replacement shrubs and trees.
- Protection measures for replacement shrubs and trees that shall ensure that 80 percent of replacement plantings are alive five years following site revegetation.
- Monitoring measures, including construction monitoring, by a qualified biologist, arborist, or ecologist.

MM-4.9 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – The best available technology in BMPs to reduce sedimentation, erosion, water pollution, and dust to the greatest extent practicable shall be employed on all work sites during construction. A Grading and Erosion Control Plan shall be prepared by the contractor and submitted to the Nevada City Planning Department for approval prior to the start of project construction, including clearing and grubbing. In areas where wetlands are within 250 feet of the construction activities, erosion control measures and construction fencing shall be emplaced, monitored for effectiveness, and maintained throughout the construction operations.

MM-4.10 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – Prior to working near wetlands and other waters of the U.S., all heavy equipment shall be closely examined for oil and fuel discharges. All equipment operated adjacent to these areas shall be checked and maintained daily, to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life. Petroleum from project-related activities shall be prevented from contaminating the soil and/or entering the riparian areas. Any of these materials placed within or where they may enter the wetland habitats shall be removed immediately. Regulating agencies shall be notified immediately if a spill occurs, and shall provide consultation regarding clean-up procedures.

MM-4.11 (Sierra Stream Institute responsible for this mitigation measure, CDFW advisory) – Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil, or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering the riparian areas and other waters of the U.S. Any of these materials placed within or where they may enter these areas shall be removed immediately.

MM-4.12 (Sierra Stream Institute responsible for this mitigation measure, DTSC, CDFW advisory) – The CDFW and DTSC shall be contacted after taking appropriate action

regarding emergency response in the event of an emergency on the project, which has the potential to affect listed species or significantly affect other wildlife species. During subsequent activities related to the emergency, the CDFW and DTSC may require additional biological resource protection measures.

MM-4.13 (Sierra Stream Institute responsible for this mitigation measure, DTSC, CDFW advisory) – Within 45 calendar days of completion of the project, a brief post-construction report shall be submitted to the CDFW and DTSC. The report shall include the following information:

- Dates that the project construction occurred.
- Pertinent data concerning the applicant's success in meeting biological mitigation measures and an explanation of failure to meet such measures, if any.
- Known occurrences of incidental take effects on listed species habitat including the specific number of habitat acres disturbed and specific number destroyed, if any.
- Any other pertinent information.

MM-4.14 (Sierra Stream Institute responsible for this mitigation measure, DTSC advisory) – Approval for tree removal will be obtained from the Nevada City, City Planner prior to the start of the project.

3. CULTURAL RESOURCES

The following prehistoric site types can be expected to occur within the general area based on the results of previous survey work and ethnographic accounts: major occupation sites, temporary encampments, bedrock milling stations, hunting blinds, lithic scatters, tool stone quarries, and mortuary sites. Historic resource types expected to occur within the proposed project vicinity include sites related to mining, water management, transportation (roads and railroads), logging, and early homesteads/settlements.

Record searches revealed that there are no known Native American cultural resources within the project site. The California Historical Resources Information System (CHRIS) record search identified no prehistoric cultural resources, but did identify eight listed historic-period cultural resources within the record search radius.

Providence Mine was established in 1852 and began operations between 1861 and 1867. It began being profitable in 1870 with changes in ore processing, and operated continuously from 1870 to 1895. Record searches and analysis of Sanborn Fire Insurance Maps and historic photographs show the Providence Mine Site as having two large buildings, including the hoisting works building, which covers the shaft area, a blacksmith shop, changing house, a waste dump area, and a quartz mill with associated structures.

Current site conditions are limited to a number of foundations in the mine features area to the west of the former shaft location. The shaft location now consists of an elongated depression approximately 60 feet by 20 feet and up to 15 feet deep. Scattered rusting metal debris was observed by DTSC staff in the mine waste rock area. No foundations or other mine features are apparent at the former mill site location.

Although Providence Mine may be eligible for the National Register of Historic Properties, the implementation of the RAW would result in no historic properties adversely affected in accordance with 36 Code of Federal Regulations (CFR) 800.5(d)(1). Additionally, no historic resources would undergo a substantial adverse change and be "materially impaired", as defined by CEQA Guidelines, Section 15064.5(b)(2).

Impacts are considered potentially significant. The IS/MND for the Providence Mine Cleanup Project covers cultural resources impacts for the proposed project and provides mitigation measures. Those mitigation measures that apply specifically to the proposed project are listed below.

Finding: Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid significant effects on the environment.

Facts in Support of the Finding: The Sierra Nevada Conservancy concurs with the lead agency that the following mitigation measures will reduce the project's environmental effects to a less-than-significant level.

Mitigation Measures: The Sierra Stream Institute is responsible for implementing the following mitigation measures prior to initiating remediation activities.

MM-5.1 - A qualified archaeologist will be identified to respond to accidental discoveries during ground-disturbing activities. A qualified archaeologist will need to be HAZWHOPER trained and currently field certified to enter the exclusion zone.

MM-5.2 - The extant of historic features will be fenced off and flagged for avoidance by the qualified archaeologist.

MM-5.3 - A qualified professional architectural historian and/or archaeologist will conduct cultural resources orientations for all construction Site workers.

MM-5.4 - Prepare a cultural resource protection plan to address unforeseen discoveries during project activities. DTSC will be immediately notified and participate in the implementation of any mitigation measures deemed necessary to record and/or protect the historical and/or cultural resource(s) in accordance to 36 CFR Part 800.13 and CEQA Guidelines Section 15064.5

4. GREENHOUSE GAS EMISSIONS

As discussed in Item 1, *Air Quality*, above, excavation equipment for removal of impacted soil and vehicle emissions during excavation and transportation activities would cause greenhouse gas (GHG) emissions. No stationary sources or operational emissions would be generated by the proposed project. GHG emissions directly generated during construction activities would result in short-term impacts. The proposed project is located within the jurisdiction of the NSAQMD, which has a significance threshold of 900 metric tons of carbon dioxide equivalent (CO_2e) per year. The proposed project activities would have negligible GHG emissions.

However, with the NSAQMD in a designated nonattainment for State PM_{10} and Nevada County is designated nonattainment for ozone standards. Therefore, impacts are considered potentially significant. The IS/MND for the Providence Mine Cleanup Project covers greenhouse gas

emission impacts for the proposed project and provides mitigation measures. Those mitigation measures that apply specifically to the proposed project are listed below.

Finding: Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid significant effects on the environment.

Facts in Support of the Finding: The Sierra Nevada Conservancy concurs with the lead agency that the following mitigation measures will reduce the project's environmental effects to a less-than-significant level.

Mitigation Measures:

MM-7.1 The following measures will be used at the Project Site during project activities to minimize the generation of GHG emissions include:

- Reducing heavy equipment idling time. Reduce diesel equipment idling time to no more than 5 minutes of inactivity.
- Reducing truck idling time. Reduce truck idling time to a maximum of 5 minutes while on-site waiting to load or unload.
- Properly sized equipment. Equipment engines too large for an application burn more furl by adding unnecessary weight. In addition, drivers may be prone to use the excess horsepower needlessly, causing additional fuel consumption. An undersized engine easily becomes overworked, leading to excess fuel consumption and accelerated engine wear. Equipment selection will be based on the anticipated requirements of the remedial action.
- Improving equipment maintenance. Improper wheel alignment and improperly inflated tires on trucks can adversely affect fuel efficiency by 3 to 4 percent. Hauling trucks will be maintained in accordance with the manufacturer's recommendations. Truck drivers will be instructed to check their tire inflation in accordance with the manufacturer's recommendations.
- Improving operator training. Example – An excavator operator who needlessly shifts hydraulic levers to lift additional weight when the equipment is already operating at its maximum capacity can save can save 225 gallons of fuel a year by eliminating this practice 1 hour per day. During the tailgate safety meetings, equipment operators will be provided overview training on ways to minimize excessive fuel consumption.

5. Hydrology/Water Quality

The proposed project would cleanup the abandoned Providence Mine, resulting in the safe reuse as a recreational trail corridor, the revegetation of the area with native plants, and the protection of water quality, and ultimately the protection of stream (Deer Creek) health. Deer Creek is adjacent to the project site and construction activities. No ephemeral drainages or stormwater structures are located on-site. Deer Creek generally flows toward the west, to its confluence with the Yuba River approximately 17 miles downstream. Groundwater at the project site is typically encountered within bedrock fractures.

Groundwater would not be impacted because excavation activities would not extend to the depth of groundwater. Excavation activities would occur above the 100-year flood hazard elevation of Deer Creek and would not be performed during the rainy season (November through May). The

proposed project's excavation activities would not alter existing drainage patterns nor would they alter Deer Creek.

The proposed project would be required to obtain a Lake and Streambed Alteration Agreement (1602 Permit) through CDFW in order to address potential disturbance during construction of a gabion wall at the toe of the landslide on the eastern slope, above the 100-year flood elevation. No excavation, fill placement, or other disturbance would occur within the Deer Creek stream channel or below the 100-year flood hazard elevation.

Water quality impacts would be less than significant with the installation of the erosion control measures as identified within the IS/MND for the Providence Mine Cleanup Project both within the Mitigation Measures, as well as within the DTSC's best management practices (BMPs).

Because of the close proximity to Deer Creek and the need for the 1602 Permit, impacts are considered potentially significant. The IS/MND for the Providence Mine Cleanup Project covers hydrology and water quality impacts for the proposed project and provides mitigation measures. Those mitigation measures that apply specifically to the proposed project are listed below.

Finding: Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid significant effects on the environment.

Facts in Support of the Finding: The Sierra Nevada Conservancy concurs with the lead agency that the following mitigation measures will reduce the project's environmental effects to a less-than-significant level.

Mitigation Measures: Implement Mitigation Measures 4.5 through 4.13 discussed in Item 2, *Biological Resources,* above.

Certification:

I hereby certify that the statements furnished above present the data and information used to support the findings made herein pursuant to California Code of Regulations, Title 14, Section 15091 or 15096(h), and the facts, statements, and information presented herein, are true and correct to the best of my knowledge and belief.

Signature _____ Date _____

Name Jim Branham Title Executive Officer

a. Project Description

Project Summary

The Providence Mine Remediation Project is an effort to restore the abandoned Providence Mine site along Deer Creek in Nevada City, as part of a long-term effort to protect stream health and to return the site to safe reuse as a recreational trail corridor. Deer Creek is the source of the city's drinking water and remains one of the most highly impacted waterways in the Sierra, with dozens of abandoned gold mines along its 34 mile length as well as extensive diversions and three dams. Providence Mine, located a mile downstream from downtown Nevada City on the banks of Deer Creek, was a highly productive gold mine from which $20 million worth of gold was extracted between 1851 and 1919. Once abandoned, the mine structures and shaft were left to crumble, and forest took over the once bustling industrial site, masking but not healing the toxic damage. The 38 acre parcel known as the Environs on which the mine sits was acquired by the city in 1983 for use as open space, and is used for hiking and fishing access. A new trail system within the Environs was recently completed with funds from Sierra Nevada Conservancy, which will link to the nine mile Deer Creek Tribute Trail system on both sides of Deer Creek via a planned new pedestrian bridge. The trail system will include a spur that runs alongside Providence Mine once the abandoned mine site is made safe for the public.

Providence Mine was the subject of a US EPA Brownfields assessment completed in 2009 by Sierra Streams Institute in partnership with the City of Nevada City. 29 of 31 samples taken from the large waste rock pile adjacent to the creek revealed high levels of all three constituents of concern, namely lead, arsenic and cadmium, with lead levels at a maximum of 550ppm. The waste rock pile is over 350' long and highly prone to erosion. In the eastern portion of the waste rock pile, which is the subject of this proposal, the slope is extremely steep and unstable, and includes an active landslide. Eroded material from the pile is entering the creek, contaminating the water and harming the fish and other wildlife.

The cleanup of Providence Mine consists of the following phases: i. Assessment; ii. Development of Remediation Action Workplan (RAW); iii. Hazardous waste removal from mining features area; iv. Regrading, soil placement, erosion control, and revegetation of west slope of mine waste pile; v. Mitigation of shaft depression area; vi. Regrading, soil placement, erosion control, and revegetation of east slope of mine waste pile; and vii. Mitigation of active landslide. Phases i-iv are funded by the US EPA. In this proposal, we seek funding of approximately $342,211 for phases v.-vii, in which we plan to regrade and stabilize approximately 100' of steep, erodible mine waste slope along Deer Creek including an active land slide, and to plug and fill a collapsed mine shaft.

The overall **goal** of the Providence Mine Remediation Project is to protect Deer Creek by eliminating a significant source of contamination resulting from historic gold mining practices, with resulting water quality improvements that extend to downstream waterways.

Specific **goals** of the project are as follows:

1. Mitigation of mining contamination: a) Stabilize the steep and unstable waste rock pile along Deer Creek; and b) Remove the public hazard posed by the open mine shaft.

2. Water quality improvements: a) Reduce contamination entering Deer Creek; and b) Improve water quality downstream of the site

3. Native revegetation: a) Plant native plants with aggressive root systems to stabilize soil; b) Reduce erosion from slope; c) Restore native biodiversity; and d) Introduce native grasses and other plants known to accumulate the target contaminants through application of phytoremediation methods

4. Recreational Benefits: Protect recreational users of the area from incidental exposure to toxins, in particular lead, arsenic and cadmium.

5. Economic Benefits: 1. Enhance Nevada City's recreational appeal by restoring the Environs; 2. Increase hiking opportunities in the vicinity of tourism-dependent downtown Nevada City; 3. Increase pedestrian traffic for businesses in the downtown area.

6. Alignment with SNC Program Goals: The project clearly aligns with SNC's mission and addresses SNC's "triple bottom line" of environmental, economic and social well-being, by protecting Deer Creek, source of Nevada City's drinking water, while enhancing recreational and tourism opportunities. Specific SNC program areas addressed by the project are: 1.Provide increased opportunities for tourism and recreation by restoring public open space close to downtown Nevada City; 2. Protect, conserve and restore the region's physical and living resources by improving complexity of native vegetation and water quality; 3. Protect and improve water quality by stabilizing an erodible and contaminated mine waste pile along Deer Creek; 4. Undertake efforts to enhance public use and enjoyment of lands owned by the public by reducing risk of exposure to contamination for recreational users of city-owned open space and by creating interpretive signage that explains the history, environmental impact, and restoration of Providence Mine.

7. Consistency with Prop 84 goals: The project directly supports the goals of Proposition 84 by contributing to the protection and restoration of rivers, streams, their watersheds and associated land, water, and other natural resources. The project targets Deer Creek and provides for its protection by preventing erosion into the creek of contaminated material resulting from historic gold mining.

8. Contribution to SNC Action Plan items: The project fulfills an action plan item identified in the 2013-14 Action Plan, by improving water quality through removal of toxins associated with historic abandoned mines and preventing them from entering Deer Creek.

Location: The Providence Mine site is located in the northwestern portion of a 38 acre property owned by the city of Nevada City, which comprises APN 05-100-87, and is known as the Environs Property. The site is located to the north and east of Providence Mine Road along the south side of Deer Creek, approximately one mile downstream of downtown Nevada City, California.

Scope: The property is the subject of a US EPA-funded Brownfields cleanup, for which a Draft Removal Action Workplan was finalized in August 2013. Sierra Streams Institute on behalf of the City of Nevada City entered into a Voluntary Cleanup Agreement with CA DTSC to provide regulatory oversight and CEQA permitting. US EPA funds are being applied to cleanup of the mine area and the western portion of the waste rock pile. Sierra Nevada Conservancy funding is requested to complete the cleanup and stabilization of the eastern portion of the waste rock pile, stabilize and fill the mine shaft area, revegetate the site for maximum control of erosion, continue a study of the effectiveness of native plants to uptake heavy metals, and develop interpretive signage.

b. Workplan and Schedule Narrative

The cleanup for this site will implement a Removal Action Workplan (RAW) developed from the recommendations outlined in the Providence Mine Phase II Final Report completed as part of the Brownfield Hazardous Substances Community-wide Assessment Grant awarded to Nevada City in 2006. The draft RAW was completed in August 2013 with DTSC approval pending, expected December 2013.

The draft RAW includes and details the following activities for the project elements for which SNC funding is requested:

1. Mine shaft plug

The inclined mine shaft depression will first be cleared of vegetation and organic debris. An exploratory excavation will be advanced at the base of the east end of the depression to determine the presence of a previously installed plug, voids or open inclined shaft. If warranted, a concrete plug or retaining wall will be constructed to prevent migration of backfilled mine waste down the shaft.

2. Mine waste excavation and onsite placement

Accessible areas of loose, unstable mine waste in the Eastern Slope will be excavated to the native soil surface using special excavation techniques suitable for the extremely steep slopes in

this area. Excavation will be limited to areas above the 100-year flood elevation. Re-grading of the eastern slope will not be possible due to the slope's steepness and the proximity of the top of the slope to the shaft depression placement area. A portion of the debris fan at the toe of the active landslide above the 100-year flood elevation will also be excavated. Excavated mine waste from the Eastern Slope and slide debris fan will be placed as fill in the shaft depression.

3. Landslide stabilization

Landslide mitigation will be performed to stabilize the active landslide on the Eastern Slope and limit further erosion of mine waste into Deer Creek. Additional engineering evaluation will be performed to finalize landslide mitigation design. An earth retaining structure will be installed at the base of the slide and above the 100-year flood elevation. This will be a Gabion wall constructed from rock-filled wire baskets. Additionally, a shotcrete facing will be applied to the slide scarp face.

4. Erosion control and revegetation

The mine waste slope will be stabilized by revegetating as well as regrading by excavation and on-site placement, in order to reduce the slope gradient and eliminate the potential for erosion into the creek. The use of best management practices including installation of anchored coir fiber mats and rolls, hydroseeding or other methods to accelerate plant growth will reduce the extent of erosion and contamination during and after construction. Native vegetation, particularly plants with known capacity to uptake target contaminants, will be used in revegetation efforts. Please see attached Providence Mine Erosion Control and Revegetation Plan for details and plant list.

As part of the revegetation effort, we propose applying the findings of a pilot phytoremediation study conducted in the Environs in 2011-2012. "Phytoremediation" refers to methods that use plants to solve environmental problems. This particular case focuses on phytoextraction (the use of plants to physically extract contaminants from the soil) and phytostabilization (the use of plants to render contaminants chemically stable and less prone to movement), as well as simple erosion control by plants with substantial root systems. The pilot study demonstrated significant uptake of lead, arsenic, and cadmium in three native plants: Fescue, Purple Needlegrass (the state grass of California), and Sunflower. Fescue and Needlegrass also showed significant root growth in the contaminated soil, indicating potential for stabilizing erosion prone slopes in heavy metal contaminated areas.

The focus of the next phase of the study will be to characterize the microbial community associated with the selected plants, both mycorrhizal and bacterial, to determine whether augmenting the microbial community with the use of amendments will increase the plant's uptake capacity along with its growth rate, total biomass production, and root length and strength. We hypothesize that use of inexpensive amendments will significantly increase uptake

of contaminants and root length and strength, making this potentially a highly effective strategy for implementation across the rest of the site and at future cleanup sites.

Finally, we will create an interpretive sign that will introduce the public to the history and legacy of Providence Mine. The signage will coordinate with the signage created as part of the Environs Trail and the greater Tribute Trail system.

Workplan:

1. Project Management 1.1 Convene project team meetings 1.2 Finalize workplan and budget 1.3 Draft and finalize subcontracts/grants 1.4 Manage project budget 1.5 Submit financial and performance reports 1.6 Draft and submit final report 1.7 Coordinate and manage implementation
2. Mitigation of Shaft Depression Area 2.1 Engineering evaluation and shaft plug design 2.2 Geotechnical evaluation and engineering 2.3 Clear, grub and prepare shaft depression for backfill 2.4 Plug shaft opening with concrete 2.5 Back fill with non-hazardous contaminated soil excavated from landslide and eastern slope area cleanup
3. Mitigation of East Slope of Waste Rock Pile 3.1 Excavate loose and unstable mine waste from slope 3.2 Implement erosion control measures and revegetate with native plants identified in phytoremediation study
4. Land slide Mitigation 4.1 Complete geotechnical engineering evaluation and design 4.2 Excavate debris fan at toe of slide 4.3 Install earth retaining structure (gabion or concrete retaining wall) at toe of slide above 100 year flood elevation 4.4 Install shotcrete facing on slide scarp 4.5 Oversee engineering and construction
5. Interpretive Signage 5.1 Develop, produce and install one interpretive sign describing Providence Mine history, environmental impacts, and remediation efforts
6. Phytoremediation Study and Revegetation 6.1 Differentiate microbial communities found at the site via polymerase chain reaction (PCR) amplification 6.2 Assess the effect on root and shoot growth, biomass production and metal uptake of enhanced microbial communities compared with control microbial communities 6.3 Revegetate East Slope using most productive combinations identified in assessment 6.4 Conduct final monitoring and assessment to validate impact of revegetation with the

selected combinations on slope stability and plant vigor
7. Pre-, Mid- and Post-Project Monitoring 7.1 Monthly water quality monitoring at three sites upstream, within and downstream of the project area 7.2 Periodic heavy metal sampling at three sites before, during and after implementation 7.3 Storm sampling of sediment at three sites during each significant storm event for two years 7.4 Development and implementation of Operations and Maintenance Agreement with DTSC 7.5 Periodic terrestrial and avian wildlife usage surveys before, during, and after implementation

Detailed Project Deliverables	Timeline
	Task 1
Finalized workplan and budget	May 2014
Finalized subcontracts/grants	July 2014
Financial and performance reports to SNC	November 2014, May 2015, November 2015, May 2016
Draft Final Report	September 2016
Final Report	November 2016
	Task 2
Engineering evaluation report and shaft plug design recommendations	June 2014
Shaft Plug As-Built	August 2014
Daily Field Reports and compaction test results during shaft backfill	August-September 2014
	Task 3
Daily Field Reports during mine waste excavation	August, 2014
Erosion control and re vegetation As-built diagrams	November, 2014
	Task 4
Engineering evaluation and Landslide stabilization design recommendations	June, 2014
Daily Field Reports during construction	August - September, 2014
Retaining wall and shotcrete facing As-Built diagrams	August 2014
	Task 5
Interpretive Sign draft	December 2014

Contract with sign manufacturer	January 2015
Sign Installation As-Built	May 2015
Task 6	
Microbial Community Characterization and Candidate Plant Selection Report	July 2014 (email update)
Preliminary Amendment, Uptake, Erosion Control Report	October 2014 (email update)
Final Phytoremediation Report	June 2016
Task 7	
Monitoring Plan	May 2014
Monitoring Field reports	May 2014 and then monthly
Analytical Laboratory reports	July 2016
Operation and Maintenance Agreement	July 2016

c. Restrictions, Technical/Environmental Documents and Agreements Narrative

There are no known property restrictions or encumbrances that could adversely impact project completion. The overall project developed by Sierra Streams Institute with project partner the City of Nevada City is in the advanced planning stages with US EPA funding and DTSC oversight.

The property is owned by the city of Nevada City, who awarded a subgrant (attached) to Sierra Streams Institute to implement the cleanup of the Providence Mine site.

The Environs are restricted to open space use. Our project supports this restriction. There are no other known restrictions, easements or mineral rights.

The project implementation will be guided by the Removal Action Workplan, developed by Sierra Streams Institute with approval pending from DTSC.

d. Organizational Capacity Narrative

Project partners have the experience, expertise and capacity to complete the proposed project. **Sierra Streams Institute** (SSI) is a non-profit watershed science organization, founded in 1996 as Friends of Deer Creek to monitor Deer Creek on behalf of Nevada City during the construction of a road bridge over the creek. Since our founding, we have collected 13 years of monthly water quality monitoring data and have implemented numerous projects that address the issues affecting the creek, successfully working within time and budget constraints. We have successfully completed several assessment and remediation efforts throughout the watershed, including abandoned mine assessment of city owned properties, restoration of

Stiles Mill abandoned mine site (completion scheduled in October 2013), numerous revegetation projects and gravel augmentation for restoration of salmon habitat. SSI staff includes biologists, botanist, geologist, hydrologist and chemist, all with considerable expertise in project management. Among SSI's board members and volunteers are a microbiologist, hydrogeologist, former agency head at the State Water Quality Control Board, and the former manager of Nevada City's wastewater treatment plant. The proposed project will be managed by Kyle Leach, Professional Geologist, who has managed the cleanup of Stiles Mill mine site in Nevada City, developed the Removal Action Workplan for Providence Mine, and is project manager for the US EPA-funded cleanup of Providence Mine. Mr. Leach brings twenty years of assessment and remediation experience in a variety of abandoned mine land projects.

Project partner **Nevada City** is a small city that enjoys successful working relationships with local non-profits to complete projects. The City has over 150 years of experience managing projects for the public. Sierra Streams Institute has partnered with the city on many projects over the course of eighteen years, including abandoned mine assessment and remediation projects, watershed restoration, trail development, and extensive water quality monitoring.

Sierra Streams has established excellent working relationships with a number of local contractors with relevant expertise, including **Holdrege & Kull**, a Nevada City-based engineering firm who assisted with the Removal Action Workplan and will provide geotechnical expertise for modifications to the RAW and for site design plans. **Porter Engineering** will provide assistance preparing project plan, specifications, and cost estimates for project implementation. Two local firms, **Hansen Brothers** and **Robinson Enterprises**, experienced in implementation of cleanup including working in highly contaminated conditions, will be requested to bid on project implementation.

e. Cooperation and Community Support Narrative

The project was developed as a collaborative partnership with the **City of Nevada City**, the owners of the land on which the mine is located. The City of Nevada City entered a subgrant agreement with Sierra Streams Institute for implementation of the Providence Mine cleanup. Throughout the assessment and plan development period, the community has been engaged in the project through frequent public meetings at City Hall. There is widespread support of efforts to assess and remediate our mining legacy. Project progress will be communicated by media releases, Sierra Streams Institute website updates, updates at city council meetings, DTSC community participation mailings, and communication through the **Tribute Trail Forum,** an organization of stakeholders that meets quarterly to discuss issues related to the Deer Creek Tribute Trail.

We have consulted with **The Sierra Fund** on methodology employed in their mining reclamation work, with a guided site visit to their Humbug Creek Watershed Assessment and Management

Plan project. We have also engaged the services of local engineering firm **Holdrege and Kull,** who have prepared geotechnical recommendations and a Human Health Risk Assessment for the Providence Mine site.

Abandoned mine land remediation in the Deer Creek watershed was identified as a key priority of the Deer Creek Restoration Plan (2011), developed by **SSI, The Sierra Fund**, and **the Maidu**, with SNC funding.

Sierra Nevada AmeriCorps Partnership provides service members to our organization each year, and fully supports the conservation and restoration goals of this project. AmeriCorps members will assist with revegetation planning.

The local community has been involved since the project's inception in 2005 with the proposed reuse of the Providence Mine area as a recreational interpretive trail. Construction of the completed sections of the Tribute Trail, to which the Providence Mine loop will connect, was accomplished using volunteer labor organized by trail partners, with community outreach coordinated by the Tribute Trail Forum. Trail development has required many neighborhood meetings throughout the project planning and implementation stages, and extensive media coverage in the local and regional media.

The Nisenan Tribe is a project partner on the Sierra Nevada Conservancy-funded Tribute Trail project, which targets the left bank of Deer Creek including the Providence Mine site. The role of the tribe in this project is to develop interpretive signage that educates trail users on the ten thousand year history of the tribe in the Deer Creek watershed. The tribe has identified the remediation of its ancestral lands as its highest priority.

f. Long term Management and Sustainability Narrative

DTSC requires that a Land Use Covenant (Deed Restriction) be placed on the property after completion of remediation to limit future land use to recreational or open space uses. DTSC will also require an Operation and Maintenance Agreement which will include yearly inspection reports documenting the continuing integrity of the remediation efforts. Sierra Streams Institute will continue monitoring water quality in Deer Creek upstream and downstream of the project site in perpetuity, with thirteen years of monthly data collected to date.

The Environs property in which Providence Mine is located is owned by the City of Nevada City and was originally acquired to be opened up for recreational use as open space. Accordingly, the city Parks and Recreation Department has oversight of the property in perpetuity, with an interest in protecting the value of the resources.

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Providence Mine Remediation Project
Applicant: Sierra Streams Institute

SECTION ONE DIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Project Management Costs	$30,000.00	$10,000.00				$40,000.00
Staff scientists	$15,000.00	$10,000.00				$25,000.00
Contractor: Mobilization/Demobilization	$22,000.00					$22,000.00
Contractor: Excavation	$19,250.00					$19,250.00
Contractor: Gabion wall	$21,450.00					$21,450.00
Contractor: Shotcrete Facing	$78,375.00					$78,375.00
Contractor: Plug Construction for Mine Shaft	$14,000.00					$14,000.00
Consultant: Engineering and Construction Management	$6,500.00					$6,500.00
Construction Materials Testing	$10,000.00					$10,000.00
Consultant: Geotechnical Study	$10,000.00					$10,000.00
DTSC oversight	$5,000.00	$2,500.00				$7,500.00
Revegetation plants and supplies	$5,000.00	$1,000.00				$6,000.00
Erosion control materials	$4,000.00	$1,000.00				$5,000.00
Contractor - City of Nevada City	$3,000.00	$2,000.00				$5,000.00
DIRECT COSTS SUBTOTAL:	$243,575.00	$26,500.00	$0.00	$0.00	$0.00	$270,075.00

SECTION TWO INDIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Staff time for monitoring	$5,000.00	$5,000.00				$10,000.00
Monitoring supplies	$5,000.00	$5,000.00				$10,000.00
Heavy Metal Sampling	$3,000.00	$2,000.00				$5,000.00
Publications, Printing, Public Relations, interpretive signage	$1,500.00	$1,000.00				$2,500.00
						$0.00
INDIRECT COSTS SUBTOTAL:	$14,500.00	$13,000.00	$0.00	$0.00	$0.00	$27,500.00
PROJECT TOTAL:	$258,075.00	$39,500.00	$0.00	$0.00	$0.00	$297,575.00

SECTION THREE Administrative Costs (Costs may *not to exceed 15% of total Project Cost*) :						Total
Overhead at 15%	$38,711.00	$5,925.00				$44,636.00
						$0.00
						$0.00
						$0.00
						$0.00
ADMINISTRATIVE TOTAL:	$38,711.00	$5,925.00	$0.00	$0.00	$0.00	$44,636.00
SNC TOTAL GRANT REQUEST:	$296,786.00	$45,425.00	$0.00	$0.00	$0.00	$342,211.00

SECTION FOUR OTHER PROJECT CONTRIBUTIONS	Year One	Year Two	Year Three	Year Four	Year Five	Total
List other funding or in-kind contibutors to project (i.e. Sierra Business Council, Department of Water Resources, etc.)						
US EPA Brownfields cleanup grant	$200,000.00					$200,000.00
Water quality monitoring volunteers (mon	$4,752.00	$4,752.00				$9,504.00
						$0.00
						$0.00
						$0.00
						$0.00
Total Other Contributions:	$204,752.00	$4,752.00	$0.00	$0.00	$0.00	$209,504.00

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.

* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Sierra Streams Institute

COST ALLOCATION PLAN

The purpose of this cost allocation plan is to summarize, in writing, the methods and procedures that this organization will use to allocate administrative costs to various programs, grants, contracts and agreements.

Direct costs are those that can be identified specifically with a particular final cost objective. Indirect costs are those that have been incurred for common or joint objectives and cannot be readily identified with a particular final cost objective.

Only costs that are allowable, in accordance with the cost principles, will be allocated to benefiting programs by Sierra Streams Institute.

The general approach of Sierra Streams Institute in allocating costs to particular grants and contracts is as follows:

A. All allowable direct costs are charged directly to programs, grants, activity, etc.
B. Allowable direct costs that can be identified to more than one program are prorated individually as direct costs using a base most appropriate to the particular cost being prorated.
C. All other allowable general and administrative costs (costs that benefit all programs and cannot be identified to a specific program) are allocated to programs, grants, etc. using a base that results in an equitable distribution.

ALLOCATION OF COSTS

The following information summarizes the procedures that will be used by Sierra Streams Institute beginning October 1, 2013:

A. Compensation for Personal Services – Documented with timesheets showing time distribution for all employees and allocated based on time spent on each program or grant. Salaries and wages are charged directly to the program for which work has been done. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).
1. Fringe benefits (FICA, UC, and Worker's Compensation) are allocated in the same manner as salaries and wages. Health insurance, dental insurance, life and disability and other fringe benefits are also allocated in the same manner as salaries and wages.
2. Vacation, holiday, and sick pay are allocated in the same manner as salaries and wages.
B. Travel Costs – Allocated based on purpose of travel. All travel costs (local and out-of-town) are charged directly to the program for which the travel was incurred. Travel costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Travel costs that benefit all

programs will be allocated based in the ratio of each program's salaries to total salaries (see Example 2).

C. Professional Services Costs (such as consultants, accounting and auditing services) – Allocated to the program benefitting from the service. All professional service costs are charged directly to the program for which the service was incurred. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

D. Office Expense and Supplies (including office supplies and postage) – Allocated based on usage. Expenses used for a specific program will be charged directly to that program. Postage expenses are charged directly to the extent possible. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

E. Equipment – Sierra Streams Institute depreciates equipment when the initial acquisition costs exceeds $500. Items below $500 are reflected in the supplies category and expensed in the current year. Unless allowed by the awarding agency, equipment purchases are recovered through depreciation. Depreciation costs for allowable equipment used solely by one program are charged directly to the program using the equipment. If more than one program uses the equipment, then an allocation of the depreciation costs will be based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ration of each program's expenses to total expenses (see Example 4).

F. Printing (including supplies, maintenance, and repair) – Expenses are charged directly to programs that benefit from the service. Expenses that benefit more than one program are allocated based on the ratio of the costs to total expenses. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

G. Insurance – Insurance needed for a particular program is charged directly to the program requiring the coverage. Other insurance coverage that benefits all programs is allocated based on the ratio of each program's expenses to total expenses.

H. Telephone/Communications – Telephone or communications expenses that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocagted based on the ratio of each program's expenses to total expenses (see Example 4).

I. Facilities Expenses – Allocated based upon usable square footage. The ratio of total square footage used by all personnel to total square footage is calculated. Facilities costs related to general and administrative activities are allocated to program based on the ratio of program square footage to total square footage (see example 5).

J. Training/Conferences/Seminars – Allocated to the program benefiting from the training, conference or seminar. Costs that benefit more than one program will be allocated to those

programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).

K. Other Costs (including dues, licenses, fees, etc.) – Other joint costs will be allocated on a basis determined to be appropriate to the particular costs. (Grantee should describe methodology for applicable costs).

Example 1

Expense Amount = $5,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's personnel costs (salaries & applicable benefits) to the total of such personnel costs, as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	20%	$1,000
C	$ 30,000	30%	$1,500
E	$ 50,000	50%	$2,500
TOTAL	**$100,000**	**100%**	**$5,000**

Example 2

Expense amount = $10,000

Costs that benefit **all** programs are allocated based on a ratio of each program's personnel costs (salaries& applicable benefits) to total personnel costs as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	10%	$1,000
C	$ 30,000	15%	$1,500
E	$ 50,000	25%	$2,500
All other programs	$ 100,000	50%	$5,000
TOTAL	**$200,000**	**100%**	**$10,000**

Example 3

Expense amount = $4,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's expenses (direct costs other than salaries & benefits) to the total of such expenses, as follows:

Grant	Expenses	Percent	Amount Allocated
A	$ 20,000	20%	$800
C	$ 30,000	30%	$1,200
E	$50,000	50%	$2,000
TOTAL	**$100,000**	**100%**	**$4,000**

Example 4

Expense Amount = $8,000

Costs that benefit all programs will be allocated based on a ratio of each program's salaries to total salaries as follows:

Grant	Salary	Percent	Amount Allocated
A	$ 20,000	10%	$ 800
C	$ 30,000	15%	$ 1,200
E	$ 50,000	25%	$ 2,000
All other programs	$ 100,000	50%	$ 4,000
TOTAL	**$200,000**	**100%**	**$8,000**

Example 5

Facilities Expense Amount = $10,000

Facilities costs are allocated based on square footage. Square footage for each program and general administrative activity is considered in the analysis. General and administrative facilities costs are further allocated to each program based on the square footage of each grant program to the total square footage of all grant programs. The calculation is as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	10%	$1,000
C	$ 30,000	15%	$1,500
E	$ 50,000	25%	$2,500
All other programs	$ 100,000	50%	$5,000
TOTAL	**$200,000**	**100%**	**$10,000**

LONG TERM MANAGEMENT PLAN
for
PROVIDENCE MINE SITE
APN 05-100-87
Nevada City, California

Providence Mine in Nevada City, 1893, looking southeast. Champion Mine is at left, Deer Creek is in the foreground

Prepared by:

Sierra Streams Institute
431 Uren Street, Suite C
Nevada City, California 95959

October, 2013

The purpose of the long term management plan is to ensure sustainability of the remediation of Providence Mine for at least ten years.

1 INSTITUTIONAL CONTROLS

Signs will be placed at the two site access points at the eastern and western edges of the Mining Features Area to inform the public that mine waste with elevated metals concentrations is present on the site. California Department of Toxic Substance Control will be consulted regarding sign language. To provide additional human health protection, Land Use Covenants will be established for areas of the site where elevated concentrations of Constituents of Potential Concern will remain in place under proposed soil or existing vegetative cover. Future land use will be restricted to recreational use or open space. California Department of Toxic Substances Control will likely require an Operations & Maintenance agreement to include yearly monitoring and reporting of the integrity of the fill and signage. In addition, deterrent plants such as thorny shrubs or poison oak will be planted at potential access points from the Mining Features Area to the Waste Rock Area. Sierra Streams Institute does not anticipate that permanent fence installation will be required.

2 LAND USE COVENANT AGREEMENT FOR ON-SITE PLACEMENT AREA

A Land Use Covenant agreement and Operations & Maintenance agreement are recommended for the on-site placement area and all areas where mine waste is to be left in place beneath cover soil or vegetation. Land Use Covenant agreements are intended to protect public health and the environment by: 1) preventing inappropriate land use, 2) increasing the probability that the public will have information about residual contamination, 3) disclosing information for real estate transactions about residual contamination, 4) ensuring that long-term mitigation measures are carried out by protecting the engineering controls and remedy; and 5) ensuring that subsequent owners assume responsibility for preventing exposure to contamination.

In practice, the Environs property is owned in perpetuity by the City of Nevada City as recreational open space and it is not anticipated that there will be a change in ownership or land use.

3 DEED RESTRICTION

No specific deed restriction has been proposed for the site at this time. Sierra Streams Institute anticipates that details of a deed restriction will be negotiated between the City of Nevada City and California Department of Toxic Substances Control based on the outcome of the site cleanup.

Deed restriction pertaining to the project would comply with the following general provisions:

1. No activities that will disturb the mine waste within the on-site placement area or beneath other covered areas (e.g., excavation, grading, removal, trenching, filling, earth movement or mining) shall be allowed on the property without a soil management plan approved by California Department of Toxic Substances Control.
2. Restriction of the land use within the on-site placement area is to be established by Land Use Covenant agreement between the property owner and California Department of Toxic Substances Control. Successive owners, heirs and assignees are to be expressly bound by the covenant.
3. Prior to the sale, lease or sublease of the property containing the on-site placement area, the owner, lessor, or sublessor shall give the buyer, lessee, or sublessee notice that hazardous substances are located in the area.
4. The land use controls shall be incorporated by reference in each and all deeds and leases for the property.
5. The owner shall provide notice to California Department of Toxic Substances Control not later than 30 days after any conveyance of any ownership interest in the property containing the on-site placement area (excluding mortgages, liens, and other non-possessory encumbrances). California Department of Toxic Substances Control shall not, by reason of the covenant, have authority to approve, disapprove, or otherwise affect proposed conveyance, except as otherwise provided by law or by administrative order.
6. The Land Use Covenant shall be recorded in the County of Nevada.
7. The terms of the deed restriction run with the land and will continue in perpetuity unless a variance is granted or unless terminated. The property owner agrees to pay California Department of Toxic Substances Control's costs in administering the deed restriction.
8. An Operations & Maintenance agreement will establish requirements for monitoring, reporting and financial assurance.
9. Periodic monitoring of the cover soil and vegetation and annual reporting to California Department of Toxic Substances Control will continue to be required after any future recreational development is complete. Periodic monitoring of sign posting, and annual reporting to California Department of Toxic Substances Control will be required.

4 OPERATIONS AND MAINTENANCE AGREEMENT

California Department of Toxic Substances Control requires an Operations & Maintenance agreement, as set forth in CCR Title 22, including Sections 66264.147, 66265.143, 66265.145 and 66265.147. The Operations & Maintenance Agreement will

include annual monitoring of the integrity of the remedial measures, a letter report including pictures to be sent to California Department of Toxic Substances Control.

5 REVEGETATION AND EROSION CONTROL

Erosion control and re-vegetation will be provided by installing coir fiber blankets on graded or unstable slopes steeper than 2:1, H:V. The coir fiber blankets will be installed in an anchor trench at the top of the slopes. Stakes will also be installed to keep the blankets in place. Soil amendments and seed would be installed under the blankets.

Re-vegetation efforts will begin as soon as possible after excavation, slope grading and completion of soil cover placement and will include all areas where cover soil is placed. Sierra Streams Institute's restoration ecologist will be consulted regarding plant selection. Erosion control measures such as coir fiber mats will also be placed as needed on disturbed slopes prone to erosion including regraded areas of the Western Mine Waste Slope and areas where mine waste has been excavated on the Eastern Mine Waste Slope.

Please see Providence Mine Erosion Control and Revegetation Plan for details.

6 VISUAL INSPECTION

Visual inspection of the erosion control measures and revegetation success will be conducted during implementation and then by trained volunteers in conjunction with monthly water quality monitoring in perpetuity and periodic storm sampling for the life of the project. Concerns with erosion control and native revegetation will be reported to Sierra Streams Institute geologist and ecologist for action as indicated. A qualified engineer will check the integrity of the gabion wall and waste rock pile every six months for 10 years.

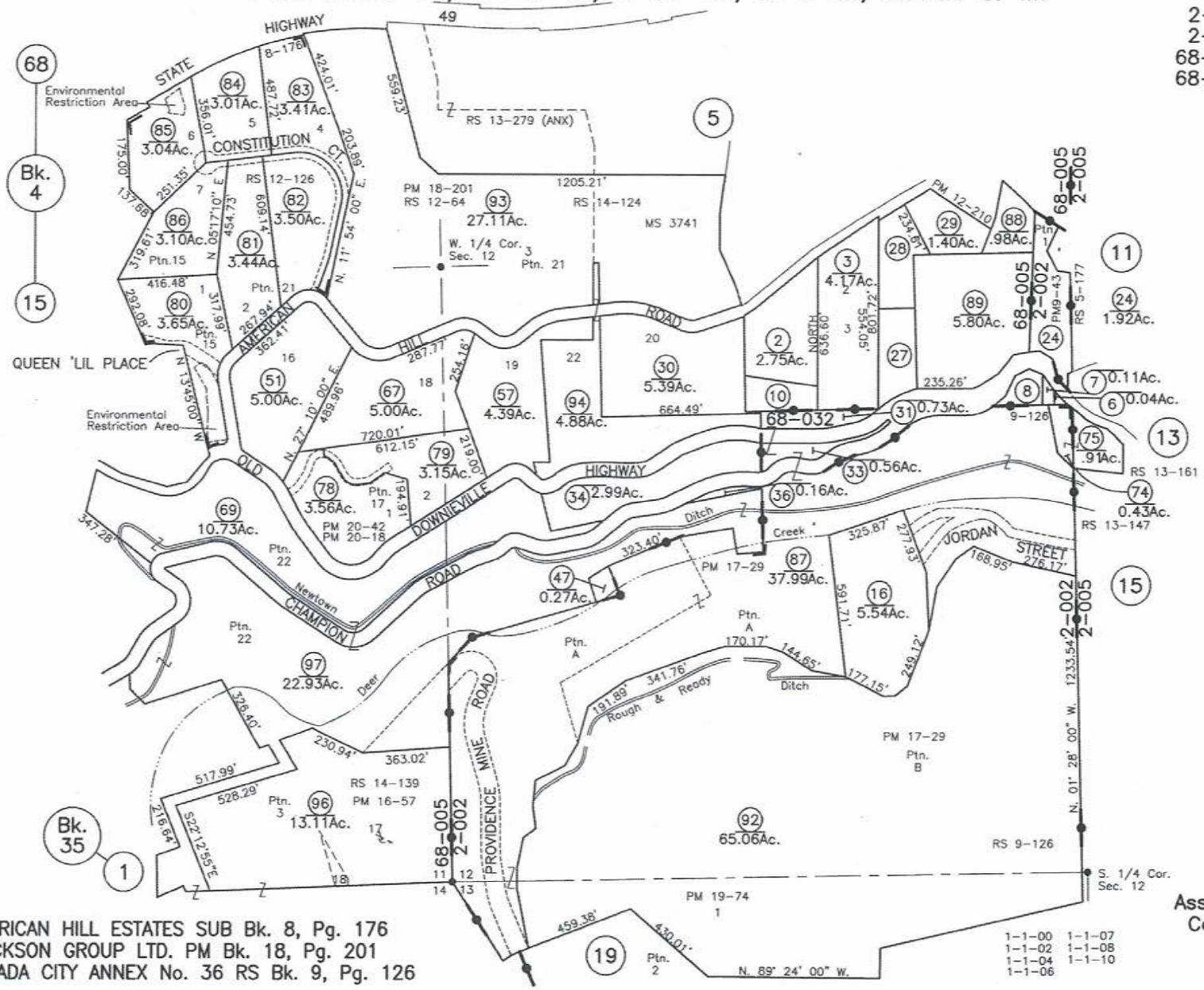
7 LONG TERM MONITORING

Please see Providence Mine Monitoring Plan for details.

PTN. SEC'S 11, 12 & 13, T. 16 N., R. 8 E., M.D.B. & M.

Tax Area Code
2-002
2-005
68-005
68-032

5-10



1" = 400'

8 0.47Ac.
10 0.87Ac.
28 1.50Ac.
27 1.50Ac.

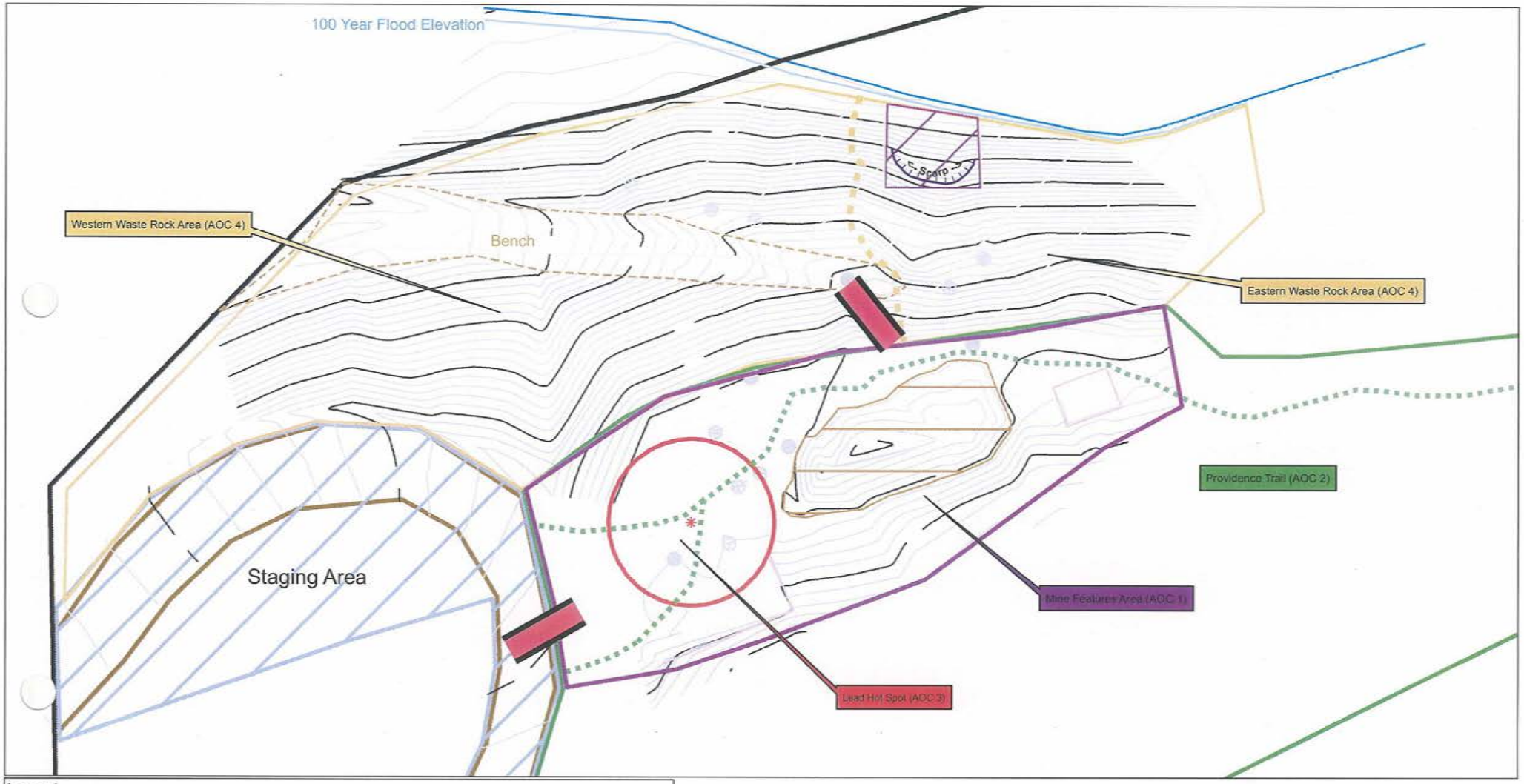
ASSESSOR'S PARCEL MAP
This map was prepared for assessment purposes only. No liability is assumed for the accuracy of data shown. Assessor's parcels may not comply with local lot-split or building site ordinances.

AMERICAN HILL ESTATES SUB Bk. 8, Pg. 176
ERICKSON GROUP LTD. PM Bk. 18, Pg. 201
NEVADA CITY ANNEX No. 36 RS Bk. 9, Pg. 126

1-1-00 1-1-07
1-1-02 1-1-08
1-1-04 1-1-10
1-1-06

Assessor's Map Bk. 5 -Pg. 10
County of Nevada, Calif.
1999
LAST UPDATE 1-13-11

NW 10/99



Legend

- Deer Creek (May 2013)
- Property Line
- Providence Mine Road
- Rock Walls
- Temporary Access Ramps
- Top Scarp
- Western/Eastern Waste Rock Divide
- Bench
- Staging Area
- Slope Regrading Area
- Landslide Repair Area - TBD by ongoing engineering study
- Fill Placement Area with Soil Cover
- Mine Features Area (AOC 1) - Limited excavation and soil placement
- Providence Trail (AOC 2) - No disturbance except limited aggregate placement in AOC 1
- Providence Trail (AOC 2)
- Hot Spot (AOC 3) - Excavation and Backfill Area
- Waste Rock Area (AOC 4) - Excavation and on-site placement in AOC 1

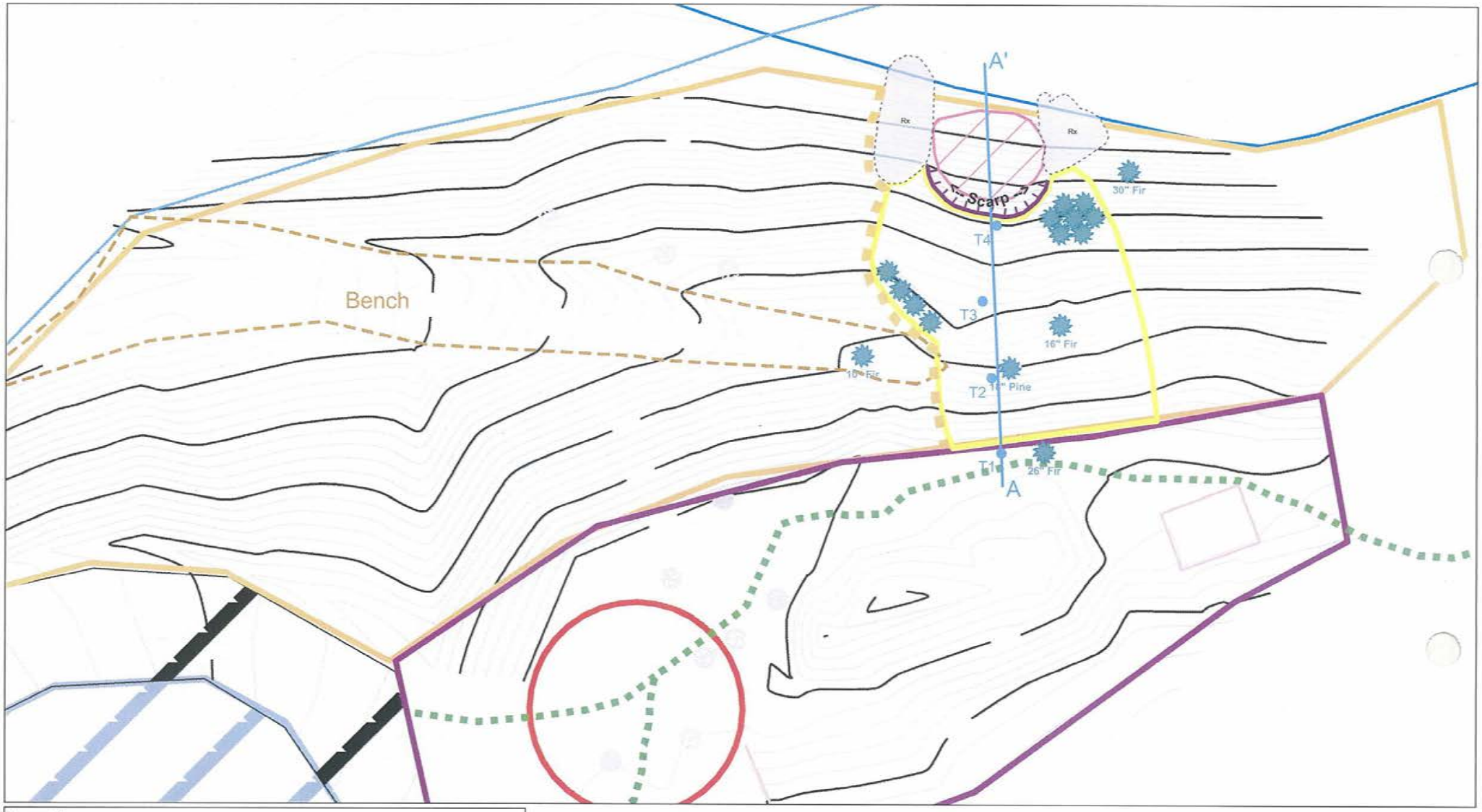
Sierra Streams Institute
Brownfields Cleanup - Providence Mine
Figure 7 - Grading Map

APN: 05-100-87
Nevada City Quadrangle
T16N; R9E; Sec 11, 12, 13

N

1 inch = 30 feet

Miles
0 0.00375 0.0075 0.015



Legend

- Deer Creek (May 2013)
- Property Line
- Top Scarp
- Transect A A' Sample Points
- Transect A A'
- Western/Eastern Waste Rock Divide
- Bench
- Debris Fan
- Rock Outcrops
- Rock Walls
- Staging Area
- Trees
- Waste Rock Above Slide
- Mine Features Area (AOC 1)
- Providence Trail (AOC 2)
- Lead Hot Spot (AOC 3)
- Waste Rock Area (AOC 4)

Sierra Streams Institute
Brownfields Cleanup - Providence Mine
Figure 5: Eastern Waste Rock Area

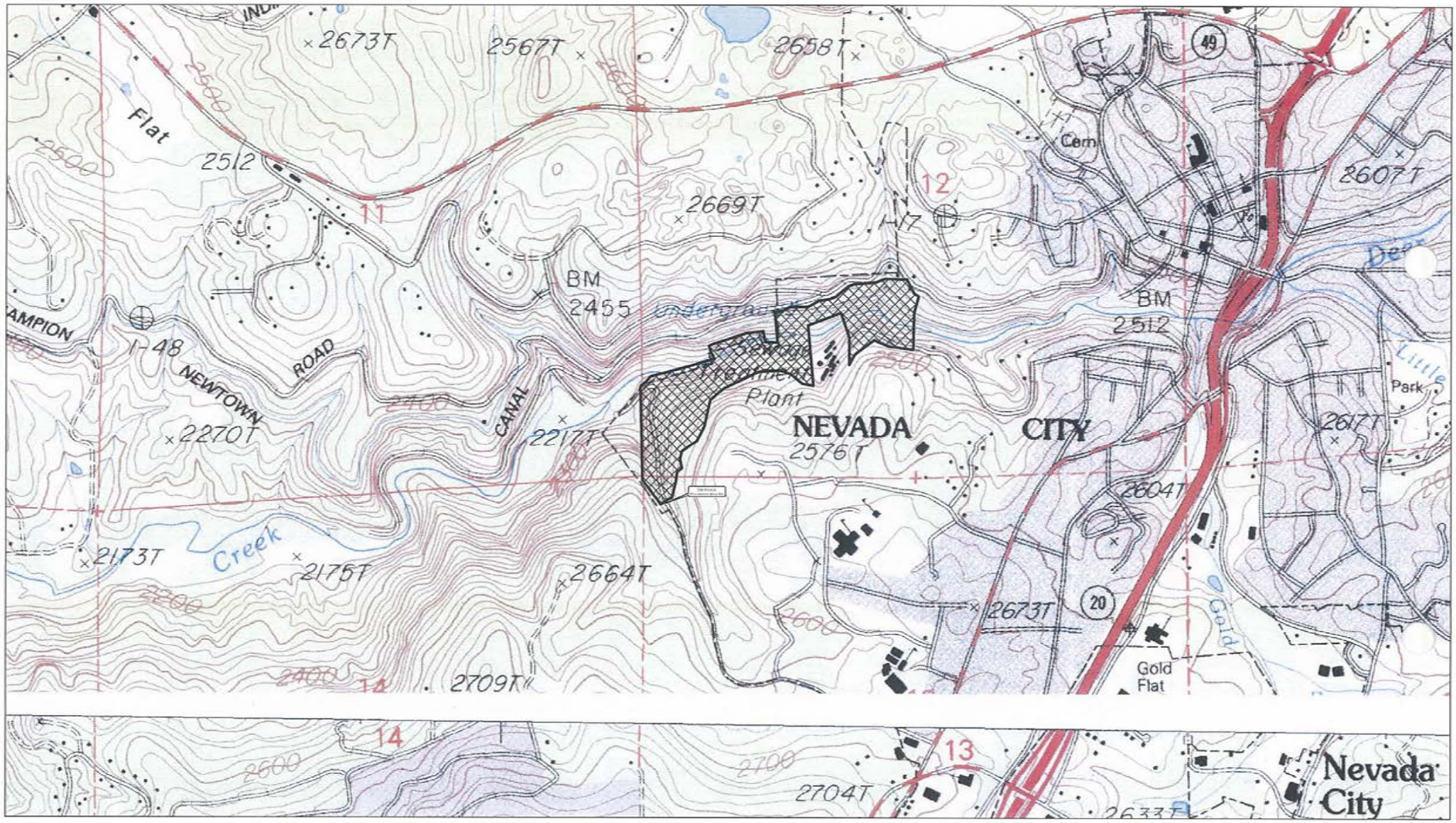
APN: 05-100-87
Nevada City Quadrangle
T16N; R9E; Sec 11, 12, 13

N

1 inch = 20 feet

Miles

0 0.0025 0.005 0.01



Legend

Nevada City Environs Property

Sierra Streams Institute
Brownfields Cleanup - Providence Mine
Figure 1: Site Location Map

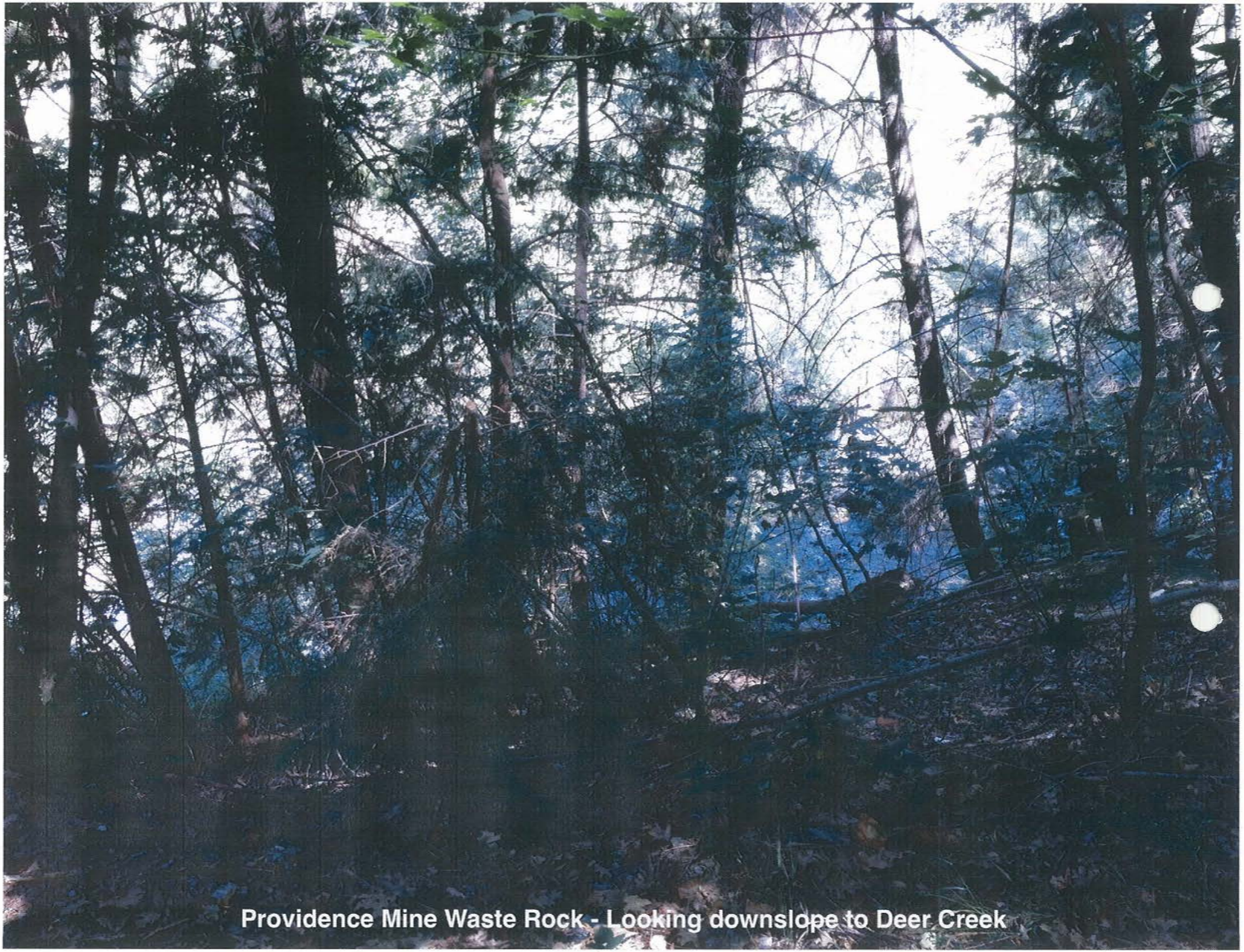
Nevada City Quadrangle
T16N; R9E; Sec 11, 12, 13

N

1 inch = 833 feet

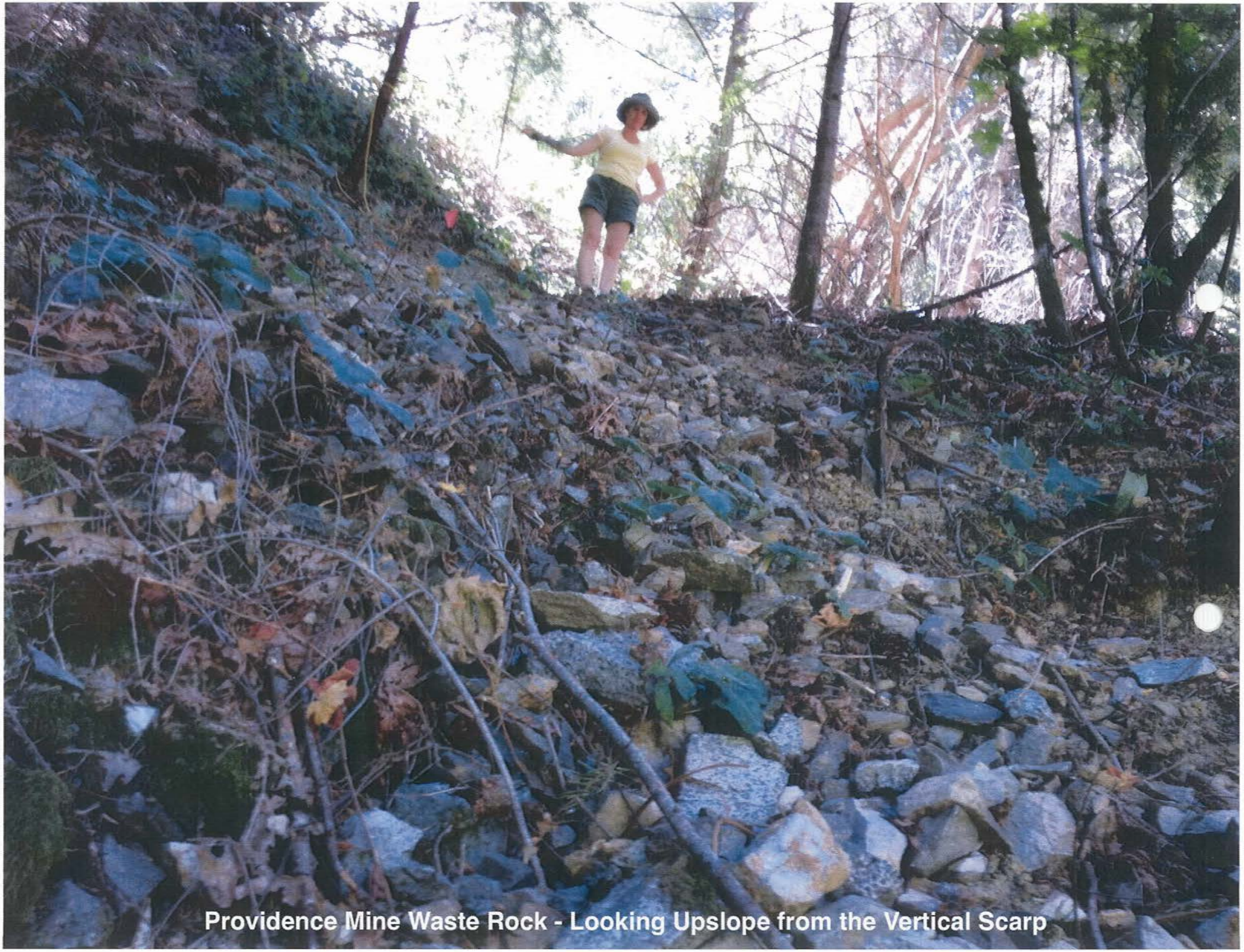
Miles

0 0.075 0.15 0.3



Providence Mine Waste Rock - Looking downslope to Deer Creek

Providence Mine Waste Rock - Side Photo of Vertical Scarp



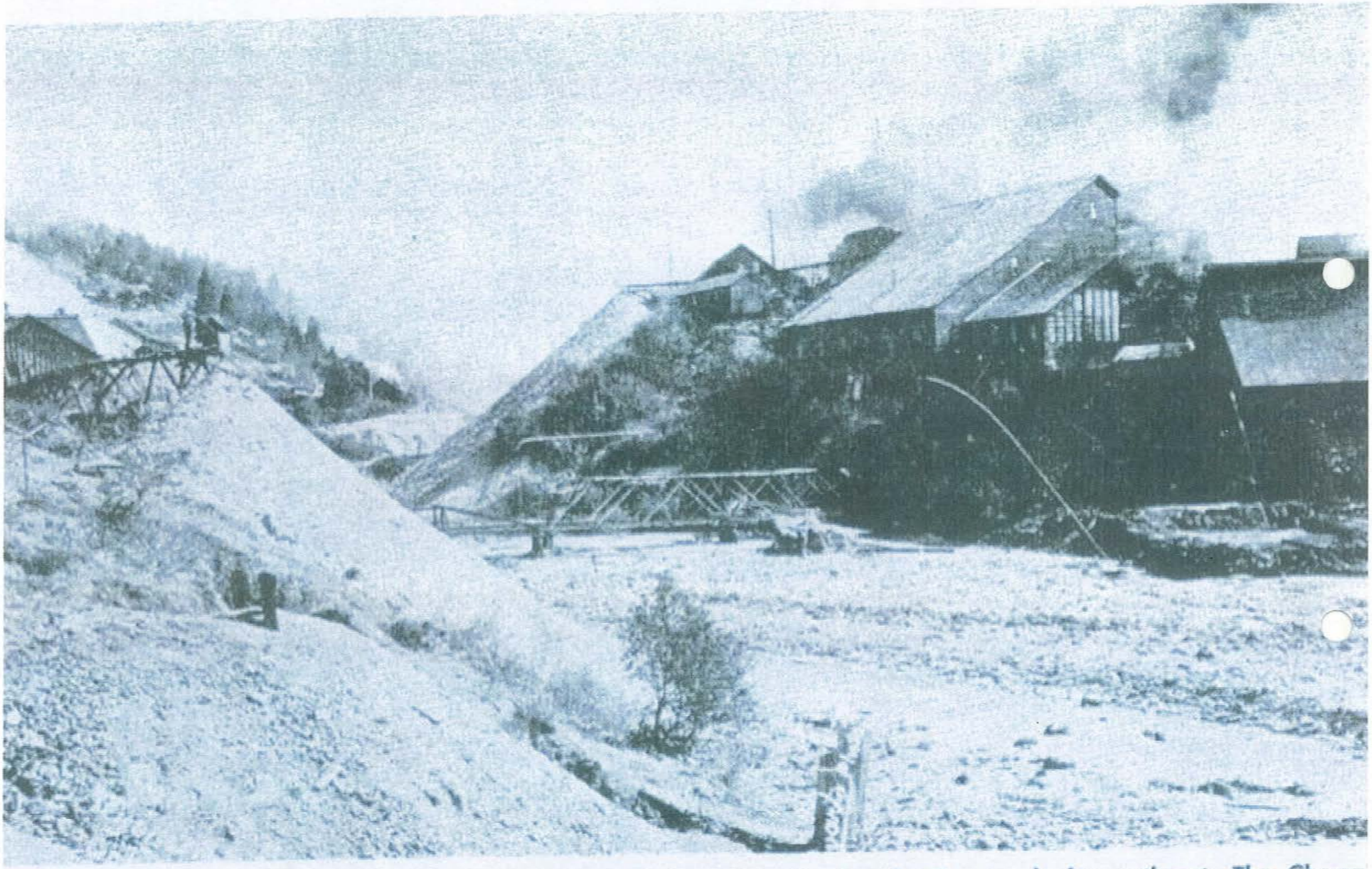
Providence Mine Waste Rock - Looking Upslope from the Vertical Scarp

Providence Mine Site - View of Shaft and Fill Placement Area

Providence Mine Waste Rock Area
Accessing the Site via the steep, eroding waste rock slope

Providence Mine Waste Rock Area
Photo of Vertical Scarp

Mine Features Area and Trail
Hot Spot
Trai Access
Point
Western Waste
Deer Creek
Rock Area
Providence Mine Rd



ridence Mine, Nevada City District. This 1893 view of the mine, in Nevada County, looks southeast. The Champ left, Deer Creek in the foreground.

Mine Features Area, Trail, Hot Spot
Waste Rock Area
Deer Creek

Providence Mine Waste Rock Area - Downslope view to Deer Creek from the top of the vertical scarp

City of Nevada City

October 14, 2013

Ms.Joanne Hild
Executive Director
Sierra Streams Institute
431 Uren Street Suite C
Nevada City, CA 95959

Dear Joanne,

On behalf of the city of Nevada City, I am pleased to affirm our support for the ongoing effort to clean up the Providence Mine abandoned mine site.

In 2010, Sierra Streams Institute entered into a subgrant agreement with the City of Nevada City for the purpose of implementing the US EPA Brownfields-funded cleanup of the Providence Mine site. This grant is funding the cleanup of the mine features area and the western portion of the waste rock area. With further funding from Sierra Nevada Conservancy, it will be possible to complete the cleanup and stabilization of the extremely steep and erosion-prone eastern portion of the waste rock area along Deer Creek, as well as plug and fill the mine shaft.

The City of Nevada City purchased the property in which Providence Mine is located in 1983 with the intention of preserving it as recreational open space. With the completion of the abandoned mine land cleanup, the recreational values of the property will be restored, while protecting the habitat in the Deer Creek watershed.

Thank you for pursuing funding to enhance Nevada City's open spaces, and we look forward to a successful application for funding this important project that will protect Nevada City and the Deer Creek watershed.

Sincerely,

David Brennan

David Brennan
City Manager

MONITORING PLAN
for
PROVIDENCE MINE SITE
APN 05-100-87
Nevada City, California

Providence Mine in Nevada City, 1893, looking southeast. Champion Mine is at left, Deer Creek is in the foreground

Prepared by:

Sierra Streams Institute
431 Uren Street, Suite C
Nevada City, California 95959

October, 2013

This Monitoring Plan for Providence Mine Site was developed by Sierra Streams Institute to ensure the long-term effectiveness of the proposed remediation of Providence Mine in Nevada City, California. The purpose of monitoring is to measure the overall health of the stream, specifically ensuring that the restoration is preventing erosion into the creek, including contamination by sediment, heavy metals, and nutrients. Monitoring will occur before, during and after implementation to confirm long term effectiveness and to provide comparison with pre-project conditions.

Outline of monitoring activities and parameters:

Monthly Water Quality Monitoring:

- Dissolved oxygen
- Specific conductivity
- pH
- Turbidity
- Water temperature
- Bacteria
- Nutrients including nitrates and phosphates
- Visual observation of BMPs and erosion control measures

Twice Yearly Biological Sampling:

- Benthic macroinvertebrates
- Algae

Visual Observation

- Erosion control measures
- Vegetation
- Gabion wall integrity

Heavy Metal Sampling:

- Total Suspended Solids
- Mercury
- Lead
- Cadmium
- Arsenic
- Visual observation of BMPs and erosion control measures

Vegetation Monitoring

- Visual assessment of vegetation twice yearly (spring and fall)

1 SURFACE WATER QUALITY

Surface water quality monitoring will follow standard methods outlined in the "Citizen Water Monitoring Quality Assurance Project Plan for the Yuba Watershed Monitoring Committee" (2008), available at: http://www.friendsofdeercreek.org/documents-1/DeerCreekQAPP.pdf. Specific parameters are dissolved oxygen content, specific conductivity, pH, turbidity, water temperature, bacteria and nutrients including nitrates and phosphates.

Water quality monitoring of Deer Creek will occur on a monthly basis before, during, and after project implementation activities, upstream and downstream of the project site. Monitoring will be conducted by trained citizen volunteers and Sierra Streams Institute staff. Upstream monitoring will occur at SSI monitoring site 4, located upstream of Providence Mine and established in 2000 for the purpose of obtaining baseline data to assist in determining watershed changes over time. This is one of 18 sites throughout the watershed established to assess watershed health. Site 4 will serve as a control site, unimpacted by Providence Mine. A new monitoring site 4b will be established immediately downstream of Providence Mine to monitor disturbance during implementation and to validate long term effectiveness of the restoration as measured in water quality improvement.

In addition to site 4b, Sierra Streams Institute has monthly water quality monitoring data since November 2000 for site 5, located approximately 5 miles downstream of Providence Mine.

Erosion control measures and BMPs in place during and after project implementation will ensure that there are no project-related impacts to the stream.

2 BENTHIC MACROINVERTEBRATES

Biological monitoring parameters will allow for confirmation of project effectiveness, by comparing data upstream and downstream of the project site before and after the implementation. It is not anticipated that the project will have any impact on macroinvertebrate composition, because erosion control measures will keep all soil from entering creek.

Benthic macroinvertebrate monitoring will follow standard methods outlined by the Surface Water Ambient Monitoring Program (SWAMP) in the "Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California" (2007), available at:

http://swamp.mpsl.mlml.calstate.edu/wp-content/uploads/2009/04/swamp_sop_bioassessment_collection_020107.pdf

Macroinvertebrates In the field: Benthic macroinvertebrate sampling will occur at the 150m SWAMP reaches at sites 4b and 4c upstream and downstream respectively of Providence Mine, before and after project construction activities. Sampling will take place once in June and October each year and will continue as part of Sierra Streams Institute's twice yearly macroinvertebrate sampling program in perpetuity.

Macroinvertebrates In the lab: Samples will be hand sorted and identified to family or order.

Data Analysis: Metrics and statistical analyses will be calculated based on the family identification.

3 ALGAE

Algae monitoring will be completed in conjunction with benthic macroinvertebrate sampling (see 2 above). Algae monitoring will follow standard methods outlined by the SWAMP in "Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California" (Fetscher et al., 2009), available at: http://swamp.mpsl.mlml.calstate.edu/wp-content/uploads/2010/06/SWAMP_SOP_Algae_Field_Collection_050110.pdf

4 VISUAL OBSERVATION

Visual observations during project implementation activities will document the presence or absence of soil migrating past the proposed wall location. Photos will be taken to document pre and post project conditions. Visual observations will be conducted during project implementation and in conjunction with monthly water quality monitoring (see 1 above). The project geologist and ecologist will train citizen monitors to evaluate the integrity of erosion control measures and verify the successful establishment of native plantings. In the event of erosion concerns or failure of native plants to become established, monitors will report to the relevant staff at Sierra Streams for a formal evaluation by the staff restoration ecologist and/or geologist. Further visual observations will be conducted in conjunction with storm sampling to evaluate the effectiveness of BMPs and erosion control measures.

5 HEAVY METAL SAMPLING

Additional water quality monitoring will be conducted upstream and downstream of the project site during three major storm events each year, including the "first flush" (first

major storm after the dry season) for the two year life of the project. In addition to the water quality parameters noted above in 1, we will also analyze storm water samples for Total Suspended Solids and a panel of heavy metals (constituents of concern lead, cadmium and arsenic as well as mercury). Storm sampling upstream and downstream of the project site will allow us to evaluate whether Providence Mine is contributing to water quality impacts and loading of heavy metals, as well as to gauge the extent of erosion resulting from high flow events.

In addition to storm sampling and visual observations of erosion on the project site, soil and sediment samples will be analyzed for the target heavy metals before and after project construction activities, to determine if heavy metal contaminants are migrating from the project site, indicating a need for additional erosion control measures.

6 VEGETATION MONITORING

Project areas that are disturbed during mine waste remediation activities will be revegetated following installation of erosion control measures. Revegetation of targeted areas will ensure longevity of soil stabilization methods, reduce threat of erosion into Deer Creek, and improve habitat health.

Following project implementation, twice yearly assessments each spring and fall will monitor the success of revegetation efforts. Surveys will specifically investigate vegetation establishment, survival, recruitment, and percent vegetative cover. Installed erosion control measures will be examined to assess efficacy and longevity, while potential erosion areas of concern will be monitored closely. Repeated monitoring will ensure long-term effectiveness of mine waste and erosion mitigation efforts

7 NAME AND CONTACT INFORMATION FOR SUPERVISING PERSONNEL

Justin Wood, River Scientist
Sierra Streams Institute
431 Uren Street, Suite C
Nevada City, CA 95959
530-265-6090 x204
justin@sierrastreamsinstitute.org

Joanne Hild, Executive Director
Sierra Streams Institute
431 Uren Street, Suite C
Nevada City, CA 95959
530-265-6090 x200
joanne@sierrastreamsinstitute.org

Kyle Leach, Geologist
Sierra Streams Institute
431 Uren Street, Suite C
Nevada City, CA 95959
530-265-6090 x203
Kyle@sierrastreamsinstitute.org

Project Implementation

Existing slopes within the project area drop steeply down to the banks of Deer Creek. Mine waste and contaminated soils throughout the site are distributed across these erosion-prone hillsides. The Providence Mine Remediation Project will address these threats to water quality and human health through removal of existing exposure pathways. Careful project implementation will ensure that contaminated soils and mine waste are removed from potential human contact and erosion is mitigated throughout the site. As specified in the Draft Removal Action Workplan for Providence Mine Site (August 2013) the proposed mine waste and erosion remediation actions are as follows:

1. Excavation of mine waste from eastern mine waste slope and deposition into shaft depression
2. Contaminated sediment excavation from debris fan at toe of active landslide and deposition into shaft depression
3. Installation of cover soil over mine waste placed within shaft depression
4. Installation of earth retaining structure at base of landslide area to prevent sediment transport into Deer Creek, a wire-basket rock Gabion wall or concrete retaining wall will be constructed above the 100-year flood elevation
5. Installation of shotcrete-facing on near-vertical scarp of landslide
6. Implementation of erosion control and revegetation measures throughout project area

Erosion Control Techniques

In order to ensure that the Providence Mine Remediation Project effectively mitigates existing erosion concerns and reduces future risk of slope instability, the following practices* will be implemented:

1. Installation of Rolled Erosion Control Product (coir netting, Type B or C), anchored with incrementally-spaced wooden stakes. Netting will be installed using standard top-trench methodology and horizontal layering to ensure maximum efficacy.
2. If deemed necessary to ensure long-term soil stabilization, installation of welded wire mesh (2 x 6") onto coir netting, affixed with soil anchors.
3. Placement of coir fiber rolls onto installed soil stability measures to minimize sediment transport and slow water flow throughout exposed slopes. Coir rolls will be anchored with wooden stakes according to slope stabilization standards (10 foot spacing for 2:1

slopes, 15 foot spacing for 4:1 slopes).

4. Following installation of erosion control measures, hydroseed exposed slopes with a mixture of native grass seed, fiber, and tackifier. Grass seed should include fast-growing annual native grasses, and competitive perennial native bunchgrasses.

* Erosion control techniques are suggested for slopes 2:1 (H:V) or flatter. Near-vertical landslide scarp will be treated with shotcrete-facing in conjunction with Gabion wall construction.

Revegetation Techniques

Project areas that are disturbed during mine waste remediation activities will be revegetated following installation of erosion control measures. Revegetation of targeted areas will ensure longevity of soil stabilization methods, reduce threat of erosion into Deer Creek, and improve habitat health. Native plant revegetation will be implemented according to the following guidelines:

1. Revegetation efforts will utilize chosen native plant palette. Selected species will be tested for successful on-site establishment and vigor during phytoremediation pilot studies.
2. Hydroseeding on slopes with installed erosion-control measures will feature mix of native grass seed. Species will be selected for fast-growing and fast-rooting growth properties.
3. Hydroseeding plant palette will include a mix of annual grass species (selected to quickly establish cover) and deep-rooting perennial grass species (selected for slope longevity).
4. On slopes 2:1 or less, rooted shrub vegetation (plugs) will be installed following placement of coir netting. These areas will be additionally treated with a light seeding of fast-growing grass and forb species, ensuring a diverse below-ground rooting network for maximal slope stability.

Erosion Control and Revegetation Monitoring

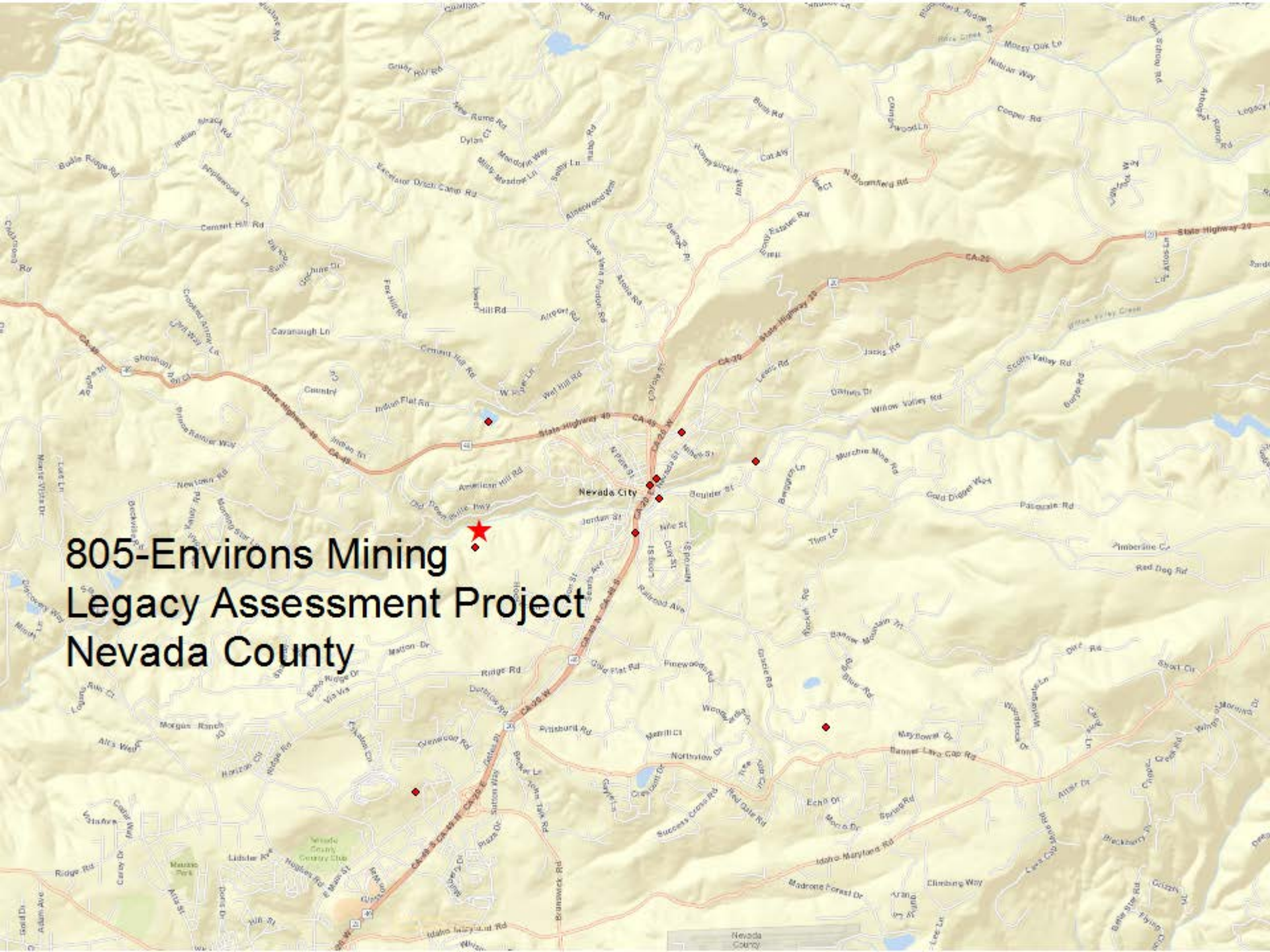
Following project implementation, repeated assessments will monitor the success of revegetation efforts. Surveys will specifically investigate vegetation establishment, survival, recruitment, and percent vegetative cover. Installed erosion control measures will be examined to assess efficacy and longevity, while potential erosion areas of concern will be monitored closely. Repeated monitoring will ensure long-term effectiveness of mine waste and erosion mitigation efforts.

Revegetation Plant Palette

Species	Common name	Growth type	Wetland indicator status	Habitat	Habitat notes	Additional notes	
Achillea millefolium	yarrow	Perennial herb	FACU	Meadows	Full sun / moist soil	Dry upland area; flowering	Intermediate shade tolerance, south and north slopes
Artemisia douglasiana	California mugwort / Douglas sagewort	Perennial herb	FAC	-	Shade / moist soil	Rhizomatous	Open to shady areas, often in drainages
Bromus carinatus	California brome	Annual grass	-	Pine forest, woodland, grassland	-	Medium-tall, competitive	Valued for ease of establishment in revegetation projects
Chamaebatia foliolosa	mountain misery / bearclover	Shrub	-	-	Well-drained, sun, shade	Plant low, extensively clonal	Flowers in July, seed requires cold stratification: 28-84 days
Elymus glaucus	blue wildrye	Perennial herb / bunchgrass	FACU	-	Shade tolerant	Sometimes short-rhizomed	Good for streambank restoration, excellent for reseeding in disturbed forests
Elymus triticoides	alkali rye, creeping wildrye, beardless wild rye	Perennial herb / bunchgrass	FAC	Pine forest, woodland, grassland	-	Strongly rhizomatous	Primarily used in streambank and riparian stabilization
Festuca rubra	red fescue	Perennial herb / bunchgrass	FAC	-	Shade tolerant	Rhizomes generally present, sometimes short	Excellent soil-binder, used extensively for stabilizing slopes, banks, cuts, and fills. Vigorous growth during phytoremediation pilot study.

Species	Common name	Growth type	Wetland indicator status	Habitat	Habitat notes	Additional notes	
Lonicera hispidula	pink honeysuckle	Vine or shrub	FACU	Streambanks / slopes	Full sun / dry slope or riparian environ	Bank stabilizing	Canyons, streambanks, woodland
Muhlenbergia rigens	deer grass	Perennial herb / bunchgrass	FACW	Wetland – riparian	Full sun / moist soil	Stabilizing bunchgrass; mid-slope and upland area	Valuable soil-stabilizer with extensive root system
Stipa pulchra	purple needle grass	Perennial herb / bunchgrass	-	slopes	-	Highly valued as an erosion-control bunchgrass	Long-living, able to establish coarse-root systems in poor soil conditions. Successfully established during onsite pilot phytoremediation study.
Symphoricarpos mollis	trailing / creeping snowberry	Shrub	-	-	-	Sprawling, branches often rooting	

Note: Hydroseeding applications will include grass species listed in bold font


805-Environs Mining
Legacy Assessment Project
Nevada County
Nevada City
State Highway 20
State Highway 49
CA-20
CA-49
Cement Hill Rd
Cavanaugh Ln
Indian Flat Rd
American Hill Rd
Old Downieville Hwy
Boulder St
Jordan St
Nile St
Railroad Ave
Ridge Rd
Dorbrick Rd
Pittsburg Rd
Idaho-Maryland Rd
Banner Lava Cap Rd
Willow Valley Rd
Scotts Valley Rd
Red Dog Rd
Pasquale Rd
Gold Digger Way
Murchie Mine Rd
Jacks Rd
Leeds Rd
Cooper Rd
Bush Rd
N Bloomfield Rd
Excelsior Ditch Camp Rd
Cement Hill Rd
Nevada County

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**Sierra Streams Institute**
Project Title:	**Environs Mining Legacy Assessment Project**
Subregion:	**Central**
County:	**Nevada**
SNC Funding:	**$ 74,980.00**
Total Project Cost:	**$135,980.00**
Application Number:	**805**
Final Score:	**86**

PROJECT SCOPE

The Environs Site is a 38-acre property owned by the city of Nevada City (APN 05-100-87), known as the “Environs Property”. The site is located adjacent to the south side of Deer Creek, a tributary of the Yuba River and drinking water source for Nevada City, approximately one (1) mile downstream of downtown Nevada City, California.

The project area is adjacent to the Providence Mine Brownfields Cleanup site for lead, arsenic and cadmium. Preliminary assessments of the property have revealed concerning features that require futher examination and planning for future remediation. This project will complement investments from US Enviornmenal Protection Agency (EPA), Federal Emergency management Agency (FEMA), and local volunteers to complete the following items: 1) a field environmental survey of the entire Environs parcel, 2) a sampling plan, 3) sampling data from two mine waste piles, a mine drain tunnel and a discharge pipe, 4) an assessment report and remediation plan, 5) collaboration with appropriate regulatory agencies to determine a lead agency for California Environmental Quality Act (CEQA), and 6) a list of any additional studies or data needed for permits and CEQA review.

The project supports the goals of Proposition 84 and of the Sierra Nevada Conservancy (SNC) by contributing to the protection and restoration of rivers and streams, their watersheds and associated land, water and other natural resources.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Site Reconnaissance/field mapping	January 2016
Final Monitoring Plan	February 2016
Water Sample Report	April 2016
Interim Soil Report	May 2016
CEQA Permitting/Research Updates	June 2016
CEQA Lead Agency Identification	August 2016
Final Remediation Plan	August 2016
Six month Progress Reports	April 2015, October 2015, April 2016, October 2016
FINAL PAYMENT/FINAL PAYMENT REQUEST	**March 1, 2017**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	
Project Management	$44,200.00
Contracts	7,500.00
CEQA/Permitting work	2,500.00
Indirect**	
Laboratory Fees	$10,000.00
Mileage	200.00
Supplies	800.00
Administrative***	
Overhead @ 15%	$9,780.00
GRAND TOTAL	**$74,980.00**

* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

** Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

*** Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

PROJECT LETTERS SUPPORT/OPPOSITION

- Support
  - City of Nevada City

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Number of Collaboratively Developed Plans and Assessments

Notice of Exemption

Appendix E

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: (Public Agency) Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Project Title: Environs Mining Legacy Assessment Project (SNC 805)

Project Location – Specific:
The project is located on a 38-acre parcel owned by the City of Nevada City (Assessor Parcel Number [APN] 05-100-87), immediately north and east of Providence Mine Road along the south side of Deer Creek, and adjacent to the Nevada City Sewage Treatment Plant. The project site is approximately 0.5 mile west of State Route (SR) 20, approximately 0.5 mile west of downtown Nevada City, in Nevada County, California. Nevada City US Geology Survey Quadrangle: Township 16 North, Range 8 East, Sections 11, 12, and 13.

Project Location – City: Nevada City
Project Location – County: Nevada

Description of Nature, Purpose and Beneficiaries of Project:
The Sierra Streams Institute is requesting $74,980 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to prepare an assessment report addressing remaining mining waste drainages and discharges at the site, including analyzing drainage samples for mining contaminants (e.g., lead, cadmium, arsenic, etc.) and prepare a remediation plan for site clean-up. In addition, the project will include identifying any studies needed for clean-up compliance with the California Environmental Quality Act (CEQA). The proposed project is located on a densely forested, 38-acre parcel that has been owned by the City of Nevada City since 1985.

The proposed project is adjacent to the Providence Mine Brownfield Cleanup Site. Providence Mine was one of the largest and most productive gold mines in the Sierra. The property features the development of a trail system, which includes the Environs Trail. The Environs Trail will ultimately connect to the Tribute Trail on the south side of Deer Creek via a new pedestrian bridge. During the development of the Environs Trail, previously unknown mine features were identified within the proposed project area. These features include a drain tunnel and a discharge pipe coming from abandoned mineshafts.

The proposed project activities and future clean-up will serve to protect Deer Creek by identifying and evaluating sources of heavy metals resulting from historic gold mining practices, and planning for their remediation, identifying best management practices and ultimately resulting in water quality improvements that extend to downstream waterways. The proposed project would conduct field surveys of the project site and develop a sampling plan. The proposed project would then sample soil and water in two mine waste piles, a mine drain tunnel and a discharge pipe. Based on these findings, a draft assessment report and a remediation plan would be developed to mitigate potential sources of heavy metals, including exposure to lead, cadmium, and arsenic.

Name of Public Agency Approving Project: Sierra Nevada Conservancy
Name of Person or Agency Carrying Out Project: Sierra Streams Institute

Exempt Status: *(check one)*

☐ Ministerial (Sec. 21080(b)(1); 15285);
☐ Declared Emergency (Sec 21080(b)(3); 15269(2));
☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c);
☒ Categorical Exemption. State type and section number: Section 15306, "Information Gathering"
☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:
The proposed Environs Mining Legacy Assessments Project is categorically exempt from the provisions of CEQA pursuant to CEQA Guidelines Section 15306, Class 6, which permits basic data collection, research, and resource evaluation activities for information gathering purposes or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. The project consists of collecting data to determine the health based risks, remediation actions and goals, final recommendations for any required clean-up of the property, and to determine the necessary steps to obtain CEQA clearance and required permits. No significant adverse impacts to cultural or natural resources will occur as a result of the proposed project.

Lead Agency Contact Person: Matthew Daley
Area Code/Telephone/Extension: (530) 823-4698

Signature:_____ Date:_____ Title: Executive Officer
Jim Branham

Date Received for Filing at OPR:

Revised 2005

ENVIRONS MINING LEGACY ASSESSMENT PROJECT

a. Project Description

Project Summary

The **Environs Mining Legacy Assessment Project** is an effort to complete an assessment of mining relics on the Nevada City Environs property, and to begin permitting for cleanup. The project has two main objectives: 1. Reduce the quantity of legacy heavy metals entering Deer Creek; and 2. Protect the public from potential exposure resulting from abandoned mine lands in a newly developed recreational trail area close to Nevada City. The project is offered by Sierra Streams Institute in partnership with the City of Nevada City, owners of the project parcel.

The Nevada City Environs is a densely forested 38 acre parcel owned by the City of Nevada City since 1985. The property is located approximately one mile downstream of downtown and offers much-needed open space close to town. The area includes the site of the abandoned Providence Mine, one of the largest and most productive gold mines in the Sierra. The property has been the subject of extensive restoration and recreational development over the past four years.

Efforts are underway to clean up the contamination left by a century of industrial gold mining, with three US EPA Brownfields grants awarded for assessment and cleanup of the Providence Mine site in the northwest corner of the Nevada City Environs property. Further funding for the next phase of cleanup is under consideration by SNC. The goal of the cleanup is to safeguard public health in light of greatly increased recreational use resulting from the development of a new trail system in the Environs, funded by SNC. The Environs Trail will connect to the Tribute Trail on the south side of Deer Creek via a new pedestrian bridge scheduled to be completed in May 2014. Finally a FEMA-funded effort is underway in the area to manage the forest in a manner that decreases the threat of catastrophic wildfire.

In the course of developing the Environs Trail, previously unknown legacy mine features along Deer Creek were identified including a drain tunnel and a discharge pipe coming from long-abandoned mineshafts, probably connected to the Providence Mine. The location of the drain tunnel was unknown until its recent discovery in the course of developing the Environs Trail because of the steeply sloping and densely forested nature of the Environs. The drain tunnel is located just above the level of the creek and drains by way of a small streambed directly into Deer Creek roughly twenty feet away. This tunnel is likely the Providence Mine drain tunnel documented in literature. In screening level grab samples collected at the drainage pipe, heavy metals arsenic, cadmium and lead were present in excess of EPA Maximum Contamination Levels (MCL). Lead was the highest at 35.9 ppb (MCL is 5.0ppb), while cadmium was 11.1 ppb (MCL 5.0 ppb) and arsenic 16.1 ppb (MCL 10.0 ppb). Although the sampling is limited, these levels are of concern because of the proximity of the discharge to Deer Creek. The second discharge pipe extends from a collapsed apparent mine tunnel located on an overgrown benched area upslope

of Deer Creek and downslope of the Environs Trail. Discharge from the pipe is highly discolored and has created a small pool approximately six feet in diameter which is seeping into a mine waste rock surface. Stockpiles of mine waste extend downslope from the collapsed tunnel and from a second smaller mine tunnel located nearby, with roughly 500 cubic yards of mine waste extending downslope to the edge of the Deer Creek stream channel. While the second drain pipe and waste rock have not been sampled, the waste water and soil have characteristics similar to other mine material with heavy metals in the area that has been cleanup by SSI.

The overall **goal** of the Environs Mining Legacy Assessment Project is to protect Deer Creek by identifying and evaluating sources of heavy metals resulting from historic gold mining practices, and planning for their remediation, with resulting water quality improvements that extend to downstream waterways.

Specific **goals** of the project are as follows:

1. Characterization of mine waste and mine drain water in the Nevada City Environs

2. Water quality improvements: Develop a plan to mitigate potential sources of heavy metals including lead, cadmium and arsenic

3. Recreational Benefits: Through characterization protect recreational users of the area from incidental exposure to lead, arsenic and cadmium, by isolation or removal of historic mine waste

4. Economic Benefits: 1. Enhance Nevada City's recreational appeal by restoring the Environs; 2. Increase hiking opportunities in the vicinity of tourism-dependent downtown Nevada City; 3. Increase pedestrian traffic for businesses in the downtown area.

5. Alignment with SNC Program Goals: The project clearly aligns with SNC's mission and addresses SNC's "triple bottom line" of environmental, economic and social well-being, by protecting Deer Creek, which is a local source of drinking water, while enhancing recreational and tourism opportunities. Specific SNC program areas addressed by the project are: 1. Provide increased opportunities for tourism and recreation by planning for the restoration of public open space close to downtown Nevada City; 2. Protect, conserve and restore the region's physical and living resources by improving water quality; 3. Protect and improve water quality by identifying and planning for the remediation of impacts to Deer Creek; 4. Undertake efforts to enhance public use and enjoyment of lands owned by the public by reducing risk of legacy mining exposure for recreational users of city-owned open space by characterizing mine waste materials and removing/isolating material as necessary.

6. Consistency with Prop 84 goals: The project directly supports the goals of Proposition 84 by contributing to the protection and restoration of rivers, streams, their watersheds and associated land, water, and other natural resources. The project targets Deer Creek and provides for its protection by assessing and planning for the remediation of impacts to the creek resulting from

historic gold mining.

7. Contribution to SNC Action Plan items: The project fulfills an action plan item identified in the 2013-14 Action Plan, by improving water quality through the assessment and remediation of historic abandoned mine features adjacent to Deer Creek.

Location: The Environs site is a 38 acre property owned by the city of Nevada City, which comprises APN 05-100-87. The site is located to the north and east of Providence Mine Road along the south side of Deer Creek, approximately one mile downstream of downtown Nevada City, California.

Scope: The property is adjacent to Providence Mine brownfields cleanup site, which is currently under consideration for additional cleanup funding by Sierra Nevada Conservancy. In this proposal, Sierra Nevada Conservancy funding is requested to i) conduct a field environmental survey of the entire Environs parcel; ii) develop a sampling plan; iii) sample in two mine waste piles, a mine drain tunnel and a discharge pipe from a second shaft, both originating from the nearby Providence Mine; iv) draft an assessment report and remediation plan; v) collaborate and communicate with appropriate regulatory agencies and determine a lead agency; and vi) prepare a list of studies and data needed for permits and CEQA.

b. Workplan and Schedule Narrative

A complete characterization of the drain tunnel discharge will likely require a full year of monthly monitoring of the discharge volume and heavy metal concentrations. Once the sampling and monitoring have been completed and the results analyzed, we will develop an investigation report and, if appropriate, a remediation plan. Following lead agency approval of the remediation plan we will begin necessary permitting and CEQA compliance consistent with the limits of the grant award. Based on recent consultation with regulatory agencies, supporting surveys and CEQA documents currently being finalized for the nearby Providence Mine Cleanup project will likely be applicable for the Environs project. This could streamline CEQA compliance for the project and result in significant cost savings.

Possible remediation actions include sealing the drain tunnel or rerouting the waste water coming from the drain tunnel and discharge pipe via a pipe upstream to the nearby Nevada City wastewater treatment plant, and constructing barriers to prevent public access to the two waste rock piles. It is important to characterize the drain water and waste rock to evaluate what remedial action may be needed. Characterization and appropriate cleanup will protect Deer Creek and public health in an area that is more frequented since development of the public trails, and will become much more so when access to the area is improved upon completion of the pedestrian bridge connecting the Environs Trail to the Tribute Trail in May 2014.

Project activities are as follows:

Task
1. Grant management including progress and financial reporting
2. Conduct a thorough field survey of known features in the Environs property and identify any additional remaining mining impacts
3. Identify and communicate with appropriate regulatory agencies
4. Prepare maps and waste volume estimates for all mine features on the property
5. Prepare sampling and monitoring plan with regulatory agency consultation
6. Implement the Sampling and Monitoring Plan
7. Prepare draft Investigation Report and Remediation Plan (assuming remediation is needed)
8. Submit Remediation Plan for agency review and finalize plan
9. Initiate CEQA process and identify appropriate required studies
TOTAL

Detailed Project Deliverables	Timeline
Task 1: Project Management	
Finalized workplan and budget	November 2014
Finalized subcontracts/grants	November 2014
Financial and performance reports to SNC	May 2015, November 2015, May 2016, November 2016, May 2017
Draft Final Report	September 2017
Final Report	November 2017
Task 2: Site Survey	
Site reconnaissance/ field mapping	January 2015
Task 3: Agency Collaboration	
Lead Agency Determination	April 2016
Task 4: Sampling and Monitoring Plan Development	
Draft Monitoring Plan	January 2015
Final Monitoring Plan	February 2015
Task 5: Sampling and Monitoring Plan Implementation	

Monitoring Field reports (email update)	April 2015, July 2015, October 2015, January 2016
Task 6: Remediation Plan Development	
Interim Soil Report	May 2015
Water Sample Report/Draft Remediation Plan	April 2016
Task 7: Remediation Plan Review	
Draft Remediation Plan to Lead Agency	April 2016
Response to agency comments	June 2016
Final Remediation Plan	August 2016
Task 8: CEQA and Permitting	
CEQA Lead Agency Selection	August 2016
CEQA/permitting quarterly updates	November 2016, February 2017, May 2017, August 2017

c. Restrictions, Technical/Environmental Documents and Agreements Narrative

There are no known property restrictions or encumbrances that could adversely impact project completion.

The property is owned by the city of Nevada City, and is restricted to open space use. Our project supports this restriction. There are no other known restrictions, easements or mineral rights.

d. Organizational Capacity Narrative

Project partners have the experience, expertise and capacity to complete the proposed project. **Sierra Streams Institute** (SSI) is a non-profit watershed science organization, founded in 1996 as Friends of Deer Creek to monitor Deer Creek on behalf of Nevada City during the construction of a road bridge over the creek. Since our founding, we have collected 13 years of monthly water quality monitoring data and have implemented numerous projects that address the issues affecting the creek, successfully working within time and budget constraints. We have successfully completed several assessment and remediation efforts throughout the watershed, including abandoned mine assessment of city owned properties, restoration of Stiles Mill abandoned mine site, ongoing planning for the restoration of the Providence Mine site, numerous revegetation projects and gravel augmentation for restoration of salmon habitat. SSI staff includes biologists, a botanist, geologist, hydrologist and chemist, all with considerable expertise in project management. Among SSI's board members and volunteers are a microbiologist, hydrogeologist, former agency head at the State Water Quality Control Board, and the former manager of Nevada City's wastewater treatment plant. The proposed project will

be managed by Kyle Leach, Professional Geologist, who has managed the cleanup of Stiles Mill mine site in Nevada City, developed the Removal Action Workplan for Providence Mine, and is project manager for the US EPA-funded cleanup of Providence Mine. Mr. Leach brings twenty years of assessment and remediation experience in a variety of environmental geology and abandoned mine land projects.

Project partner **Nevada City** is a small city that enjoys successful working relationships with local non-profits to complete projects. The City has over 150 years of experience managing projects for the public. Sierra Streams Institute has partnered with the city on many projects over the course of eighteen years, including abandoned mine assessment and remediation projects, watershed restoration, trail development, and extensive water quality monitoring.

e. Cooperation and Community Support Narrative

The project was developed as a collaborative partnership with the **City of Nevada City**, the owners of the Environs property. Throughout the cleanup of the nearby Providence Mine site, the community has been engaged in the project through frequent public meetings at City Hall. There is widespread support of efforts to assess and remediate our mining legacy. Project progress will be communicated by media releases, updates at city council meetings, and communication through the **Tribute Trail Forum,** an organization of stakeholders that meets quarterly to discuss issues related to the Deer Creek Tribute Trail.

We have consulted with **The Sierra Fund** on methodology employed in their mining reclamation work, with a guided site visit to their Humbug Diggins project. We have also engaged the services of local engineering firm **Holdrege and Kull,** who have prepared geotechnical recommendations and a Human Health Risk Assessment for the Providence Mine site.

Abandoned mine land remediation in the Deer Creek watershed was identified as a key priority of the Deer Creek Restoration Plan (2011), developed by **SSI, The Sierra Fund**, and **the Maidu**, with SNC funding.

Sierra Nevada AmeriCorps Partnership provides service members to our organization each year, and fully supports the conservation and restoration goals of this project. AmeriCorps members will be assist with restoration tasks.

The local community has been involved since the project's inception in 2005 with the proposed reuse of the Environs as a recreational interpretive trail. Trail construction was accomplished in part with volunteer labor organized under the Tribute Trail Association. Trail development has required many neighborhood meetings throughout the project planning and implementation stages, and heavy media coverage in the local and regional media.

The Nisenan tribe is a project partner on the Sierra Nevada Conservancy-funded Tribute Trail project, which targets the left bank of Deer Creek including the Environs. The role of the tribe in

this project is to develop interpretive signage that educates trail users on the ten thousand year history of the tribe in the Deer Creek watershed. The tribe has identified the remediation of its ancestral lands as its highest priority.

f. Long term Management and Sustainability Narrative

The long term management plan will be established after site remediation is established and would likely include a Land Use Covenant (Deed Restriction) to limit future land use to recreational or open space uses, and an Operation and Maintenance Agreement which would include yearly inspection reports documenting the continuing integrity of the remediation efforts. The site is located on the city-owned Environs property which is zoned open space. Permitted land use includes open space and recreation. Accordingly, the city Parks and Recreation Department has oversight of the property in perpetuity, with an interest in protecting the value of the resources. Sierra Streams Institute will continue monitoring water quality in Deer Creek upstream and downstream of the project site in perpetuity, with thirteen years of monthly data collected to date.

Restrictions/Agreements

There are no property restrictions and/or encumbrances that could adversely impact project completion.

City of Nevada City

April 1, 2014

Joanne Hild, Executive Director
Sierra Streams Institute
431 Uren Street Suite C
Nevada City, CA 95959

Dear Joanne,

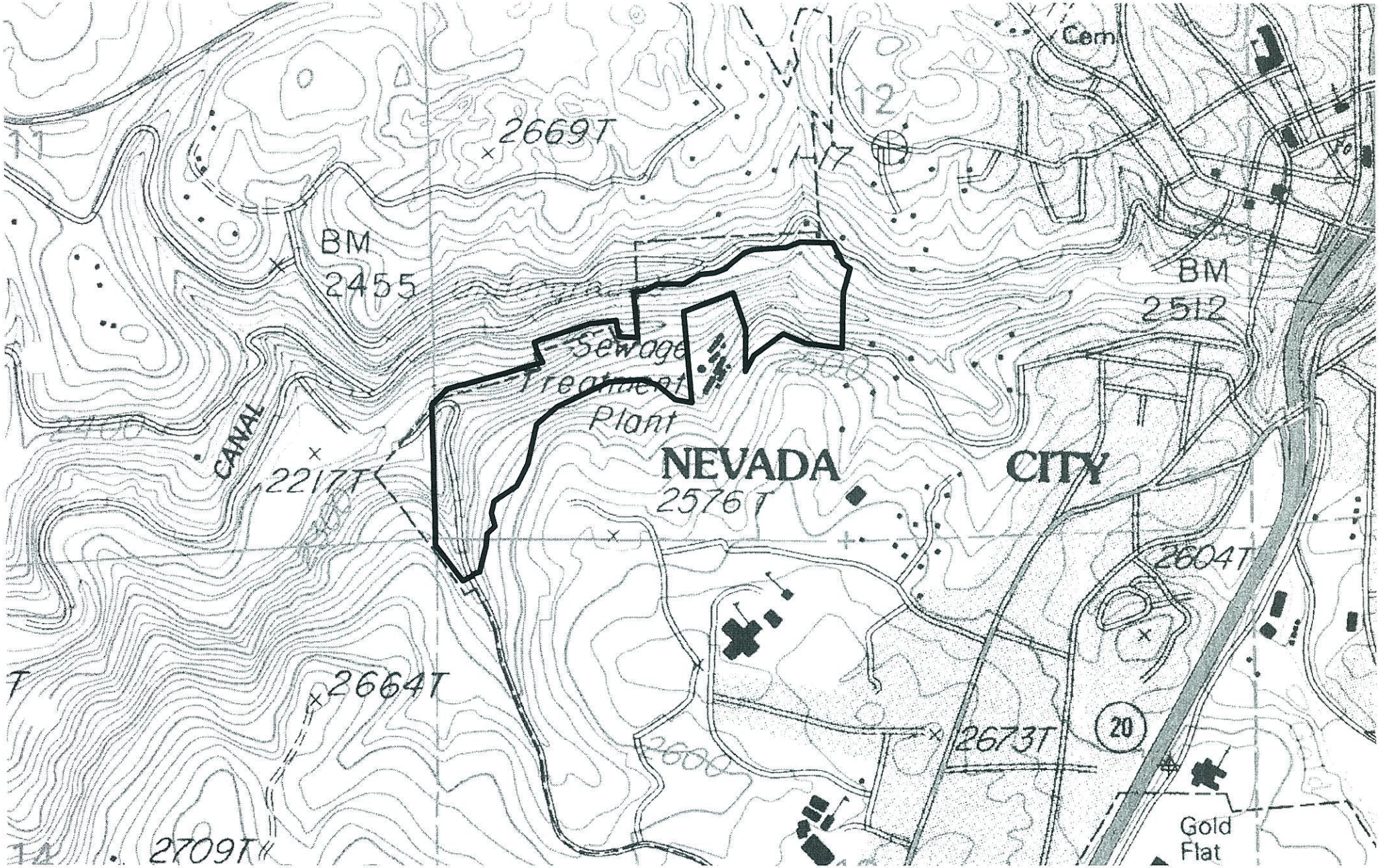
Thank you for pursuing funding to address legacy mining contamination in the Nevada City Environs (APN 5-100-87). I understand that you are developing a proposal to the Sierra Nevada Conservancy to conduct a survey of mining impacts in the Environs and an assessment of two newly identified mine drainages and two waste rock piles. Upon completion of the survey and assessment, you will begin planning and permitting for remediation of the assessed sites.

I have been granted the authority by the City Council to review and approve assessment and restoration projects in the Nevada City Environs, and am pleased to offer my support on behalf of the city for the proposed effort. The City of Nevada City will provide Sierra Streams Institute access to City-owned land in the Environs property for the purpose of conducting the proposed assessment and subsequent remediation and restoration, and for post-project monitoring for a minimum of ten years after the completion of the project.

Sincerely,

David Brennan

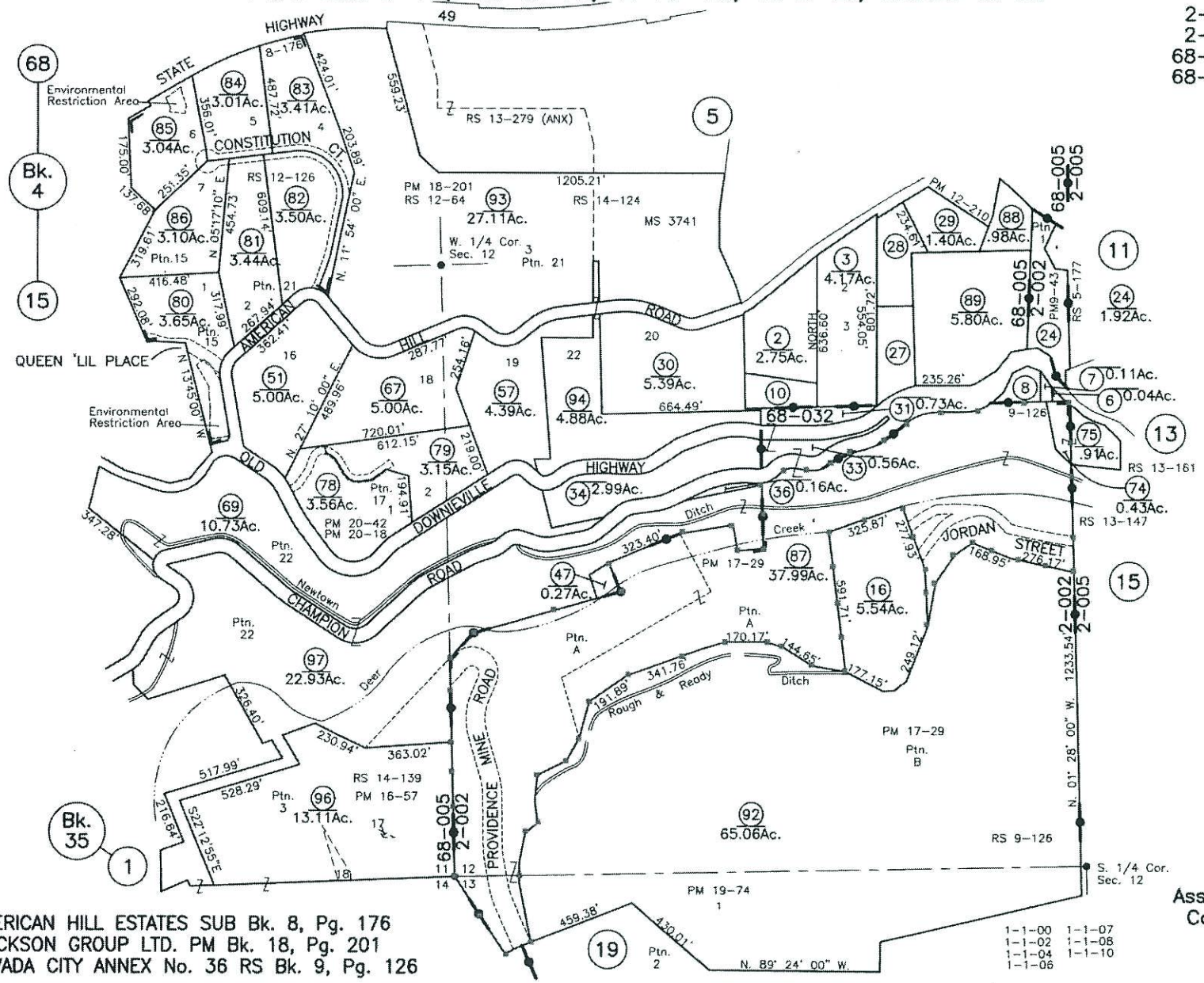
David Brennan
City Manager


Cem
12
2669T
BM
2455
BM
2512
Sewage
Treatment
Plant
CANAL
2217T
NEVADA
CITY
2576T
2604T
2664T
2673T
20
Gold
Flat
2709T
14
13
2708
2704T

PTN. SEC'S 11, 12 & 13, T. 16 N., R. 8 E., M.D.B. & M.

Tax Area Code
2-002
2-005
68-005
68-032

5-10



1" = 400'

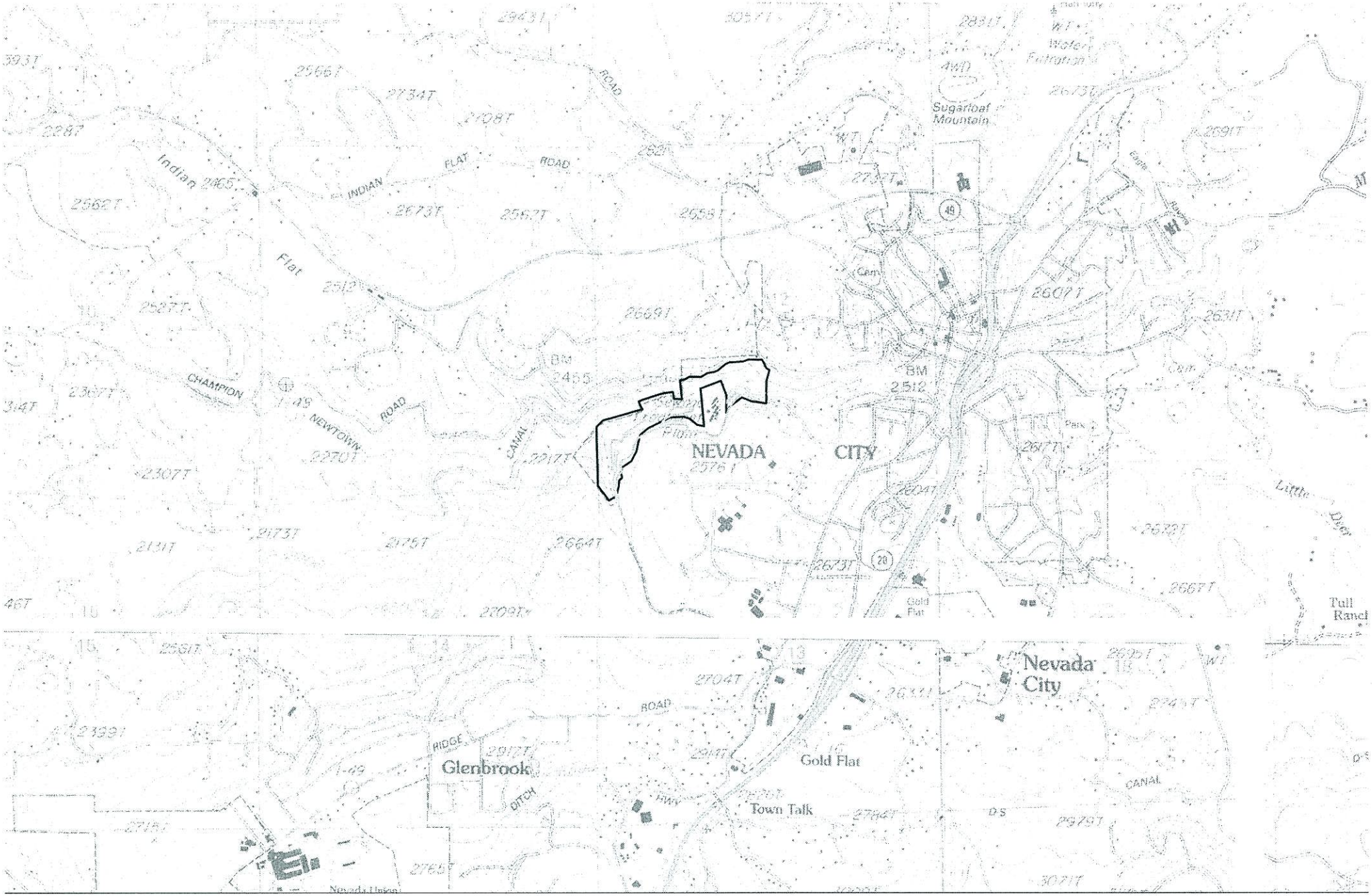
8 0.47Ac.
10 0.87Ac.
28 1.50Ac.
27 1.50Ac.

ASSESSOR'S PARCEL MAP
This map was prepared for assessment purposes only. No liability is assumed for the accuracy of data shown. Assessor's parcels may not comply with local lot-split or building site ordinances.

AMERICAN HILL ESTATES SUB Bk. 8, Pg. 176
ERICKSON GROUP LTD. PM Bk. 18, Pg. 201
NEVADA CITY ANNEX No. 36 RS Bk. 9, Pg. 126

Assessor's Map Bk. 5 -Pg. 10
County of Nevada, Calif.
1999
LAST UPDATE 1-13-11

NW 10/99



Sierra Streams Institute
Sierra Nevada Conservancy Grant Application
Environs Mining Legacy Assessment Project
Topographic Map

Nevada City Quadrangle
T16N; R8E; Sec. 11, 12, 13

Legend

- Environs Trail
- Nevada City Environs Property
- Providence Mine Road

N

1:24,000

1 inch equals 2,000 feet

Miles
0 0.1 0.2 0.4

DSCN8472 : Kyle collecting sample of drainage water, entrance to shaft is above him, drainage water flows down to right & then enters creek.

DSCN8473: Location where mine drainage is entering Deer Creek

DSCN8474: Stream of mine drainage water (orange color) exiting shaft towards creek

DSCN8479: Seen from shaft opening, mine drainage flows out & to the left, entering Deer Creek at moss-covered boulders on left side of photo, orange sediment in creek is deposited from flow of mine drainage into creek

DSCN8483: Shaft and drainage (orange color) seen from entrance

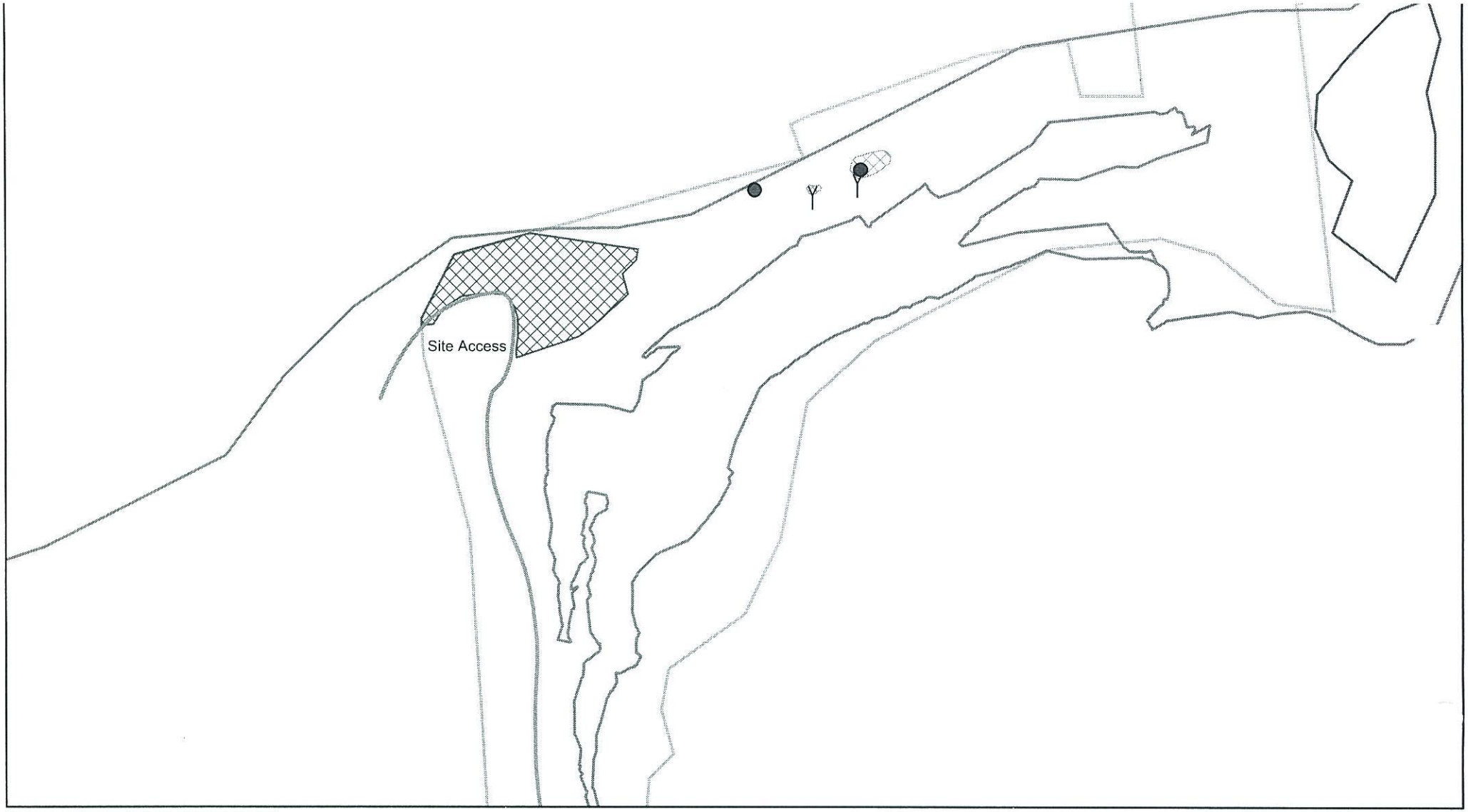
DSCN8484: Remnant anchor bolt at entrance to mine shaft

DSCN8490: Remnant mining pipe on top of tailings pile

DSCN8495: Pipe on top of large tailings pile with active flow from mine, pool of water is approximately 5 ft across

DSCN8504: Close-up of pipe on top of large tailings pile with active flow from mine, pool of water is approximately 5 ft across. Edge of tailings pile seen at middle of picture, steep drop down to Deer Creek.

DSCN8514: Large tailings pile (center of picture) with actively draining pipe is easily seen when standing on Environs Trail, Deer Creek is downhill & in the background of picture



Legend

- Drain Tunnel
- Pipe
- Mine Tunnel
- Deer Creek
- Environs Trail
- Providence Mine Road
- Providence Mine Brownfield Site
- Mine Waste Pile
- Environs Parcel
- Waste Water Treatment Facility

Sierra Streams Institute
Environs Mining Legacy Assessment Project
Site Plan

Nevada City Quadrangle
T16N; R9E; Sec 11, 12, 13

N

1 inch = 261 feet

Miles
0 0.025 0.05 0.1

APN: 05-100-45

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL TO

Name THE CITY OF NEVADA CITY
Street Address City hall
317 Broad Street
City & State Nevada City, California 95959

OFFICIAL RECORDS
RECORDED BY
85 16963 DEPT. PUBLIC WORKS
1985 JUL 26 PM 2:15
JANICE C. BOLGNER
NEVADA COUNTY
RECORDER
N/F

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO

Name SAME AS ABOVE
Street Address
City & State

APN: 5-100-35, 31, 33 & 38

DOCUMENTARY TRANSFER TAX $ —0—
COMPUTED ON FULL VALUE OF PROPERTY CONVEYED,
OR COMPUTED ON FULL VALUE LESS LIENS AND ENCUMBRANCES REMAINING AT TIME OF SALE
Signature of Declarant or Agent determining tax. Firm Name

TTC-12A-6-72

Corporation Grant Deed

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
THE GRASS VALLEY GROUP, INC., a California corporation
a corporation organized under the laws of the state of
hereby GRANTS to
THE CITY OF NEVADA CITY

the following described real property in the City of Nevada
County of Nevada, State of California:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF FOR LEGAL DESCRIPTION

"This land is granted subject to a restriction that said property be used solely for Public purposes and further the burden and benefit of said restriction shall run with land."

The benefit of this restriction is appurtenant to property of the grantor described as Parcel "B" of Parcel Map No. 85-01.

Dated: May 16, 1985

THE GRASS VALLEY GROUP, INC.
By Daniel G. Wright, Executive Vice President
By R. Eric Jorgensen, Secretary

STATE OF CALIFORNIA
COUNTY OF NEVADA } SS.
On May 24, 1985 before me, the undersigned, a Notary Public in and for said State, personally appeared Daniel G. Wright, known to me to be the Executive Vice President, and _____ known to me to be _____ Secretary of the Corporation that executed the within Instrument, known to me to be the persons who executed the within Instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the within Instrument pursuant to its by-laws or a resolution of its board of directors.
WITNESS my hand and official seal.
Signature Helen MacMillen
Helen MacMillen
Name (Typed or Printed)

OFFICIAL SEAL
HELEN MACMILLEN
NOTARY PUBLIC-CALIFORNIA
Nevada County
My Commission Expires April 1, 1988

(This area for official notarial seal)

Title Order No. _____ Escrow or Loan No. _____

MAIL TAX STATEMENTS AS DIRECTED ABOVE

85 16963

EXHIBIT "A"

PARCEL A, as shown on the Parcel Map and Lot Line Adjustment No. 85-01 for The Grass Valley Group, being a portion of Parcel One of that certain Parcel Map filed in Book 16 of Parcel Maps, Page 57, filed in the office of the Recorder, County of Nevada, State of California, on JUL 20 1985, in Book 17 of Parcel Maps, Page 29.

RESERVING THEREFROM, unto the grantor herein, all of the minerals, mineral matter, and rock lying beneath the surface of said land, together with the right to work to extract the same without disturbing the surface thereof.

85 16963

RESOLUTION NO. 85 - 19

RESOLUTION ACCEPTING FROM GRASS VALLEY GROUP A DEED FOR RECORDING

The City Council of Nevada City Does Resolve as Follows:

The City Council accepts the Corporation Grant Deed received from the Grass Valley Group regarding approximately forty (40) acres of property known as the Deer Creek Environs, including the limitation of use contained in said deed and authorizes the recording of said deed at the Nevada County Recorder's Office.

Passed and Adopted by the City Council of Nevada City at its regularly scheduled meeting of May 28, 1985 by the following votes:

Yes: Worth, Zanone, Matson, Tobiassen

No: None

Abstain: Barnes

Paul J. Matson
MAYOR

ATTEST:

Maureen Ryan
CITY CLERK

I, Maureen Ryan, City Clerk of the City of Nevada City, California, do hereby certify that this is a true and correct copy of Resolution No. 85-19, duly passed and adopted by the City Council of said City on the 28th day of May, 1985.

Maureen Ryan

85 16963

CONSENT TO RECORDING OF DEED

PAUL MATSON, Mayor of Nevada City, pursuant to Resolution No. 85 -19 hereby consents to the recording of the attached Corporation Grant Deed from the Grass Valley Group regarding a forty (40) acre parcel known as the Deer Creek Environs.

Dated: 7-25-1985

Paul J. Matson
MAYOR

ATTEST:

Patricia Ryan
City Clerk

STATE OF CALIFORNIA
COUNTY OF NEVADA

On this 25th day of July in the year one thousand nine hundred and eighty-five, before me, Laurie Halvarson a Notary Public, State of California, duly commissioned and sworn, personally appeared PAUL J. MATSON, personally known to me (or proved to me on the basis of satisfactory evidence) known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal in the County of Nevada the day and year in this certificate first above written.

OFFICIAL SEAL
LAURIE HALVARSON
NOTARY PUBLIC-CALIFORNIA
Principal Office in NEVADA County
My Commission Expires Mar. 17, 1989

Laurie Halvarson
Notary Public, State of California

My commission expires 3-17-89

This document is only a general form which may be proper for use in simple transactions and in no way acts, or is intended to act, as a substitute for the advice of an attorney. The publisher does not make any warranty, either express or implied as to the legal validity of any provision or the suitability of these forms in any specific transaction.

Cowdery's Form No. 32 — Acknowledgement — General (C. C. Sec. 1190a)

END OF DOCUMENT

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Environs Mining Legacy Assessment Project

Sierra Streams Institute

SECTION ONE **DIRECT COSTS**	**Year One**	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Total**
Staff	$17,600.00	$17,600.00	$9,000.00			$44,200.00
Contractors	$2,000.00	$4,500.00	$1,000.00			$7,500.00
CEQA and permitting fees	$0.00	$500.00	$2,000.00			$2,500.00
						$0.00
						$0.00
						$0.00
						$0.00
DIRECT COSTS SUBTOTAL:	$19,600.00	$22,600.00	$12,000.00	$0.00	$0.00	$54,200.00

SECTION TWO **INDIRECT COSTS**	**Year One**	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Total**
Laboratory	$7,000.00	$3,000.00	$0.00			$10,000.00
Mileage	$140.00	$40.00	$20.00			$200.00
Supplies	$480.00	$240.00	$80.00			$800.00
						$0.00
INDIRECT COSTS SUBTOTAL:	$7,620.00	$3,280.00	$100.00	$0.00	$0.00	$11,000.00
PROJECT TOTAL:	$27,220.00	$25,880.00	$12,100.00	$0.00	$0.00	$65,200.00

SECTION THREE **Administrative Costs (Costs may not *to exceed 15% of total Project Cost*) :**						**Total**
Overhead 15%	$4,083.00	$3,882.00	$1,815.00			$9,780.00
						$0.00
						$0.00
						$0.00
						$0.00
ADMINISTRATIVE TOTAL:	$4,083.00	$3,882.00	$1,815.00	$0.00	$0.00	$9,780.00
SNC TOTAL GRANT REQUEST:	$31,303.00	$29,762.00	$13,915.00	$0.00	$0.00	$74,980.00

SECTION FOUR **OTHER PROJECT CONTRIBUTIONS**	**Year One**	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Total**
List other funding or in-kind contibutors to project (i.e. Sierra Business Council, Department of Water Resources, etc.)						
SSI Volunteer Monitors	$4,000.00	$4,000.00	$4,000.00			$12,000.00
US EPA	$35,000.00	$10,000.00				$45,000.00
FEMA	$4,000.00					$4,000.00
						$0.00
						$0.00
						$0.00
Total Other Contributions:	$43,000.00	$14,000.00	$4,000.00	$0.00	$0.00	$61,000.00

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.

* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Sierra Streams Institute

Cost Allocation Plan

October 2013

Sierra Streams Institute

COST ALLOCATION PLAN

The purpose of this cost allocation plan is to summarize, in writing, the methods and procedures that this organization will use to allocate administrative costs to various programs, grants, contracts and agreements.

Direct costs are those that can be identified specifically with a particular final cost objective. Indirect costs are those that have been incurred for common or joint objectives and cannot be readily identified with a particular final cost objective.

Only costs that are allowable, in accordance with the cost principles, will be allocated to benefiting programs by Sierra Streams Institute.

The general approach of Sierra Streams Institute in allocating costs to particular grants and contracts is as follows:

A. All allowable direct costs are charged directly to programs, grants, activity, etc.
B. Allowable direct costs that can be identified to more than one program are prorated individually as direct costs using a base most appropriate to the particular cost being prorated.
C. All other allowable general and administrative costs (costs that benefit all programs and cannot be identified to a specific program) are allocated to programs, grants, etc. using a base that results in an equitable distribution.

ALLOCATION OF COSTS

The following information summarizes the procedures that will be used by Sierra Streams Institute beginning October 1, 2013:

A. Compensation for Personal Services – Documented with timesheets showing time distribution for all employees and allocated based on time spent on each program or grant. Salaries and wages are charged directly to the program for which work has been done. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).
1. Fringe benefits (FICA, UC, and Worker's Compensation) are allocated in the same manner as salaries and wages. Health insurance, dental insurance, life and disability and other fringe benefits are also allocated in the same manner as salaries and wages.
2. Vacation, holiday, and sick pay are allocated in the same manner as salaries and wages.
B. Travel Costs – Allocated based on purpose of travel. All travel costs (local and out-of-town) are charged directly to the program for which the travel was incurred. Travel costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Travel costs that benefit all

programs will be allocated based in the ratio of each program's salaries to total salaries (see Example 2).

C. Professional Services Costs (such as consultants, accounting and auditing services) – Allocated to the program benefitting from the service. All professional service costs are charged directly to the program for which the service was incurred. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

D. Office Expense and Supplies (including office supplies and postage) – Allocated based on usage. Expenses used for a specific program will be charged directly to that program. Postage expenses are charged directly to the extent possible. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

E. Equipment – Sierra Streams Institute depreciates equipment when the initial acquisition costs exceeds $500. Items below $500 are reflected in the supplies category and expensed in the current year. Unless allowed by the awarding agency, equipment purchases are recovered through depreciation. Depreciation costs for allowable equipment used solely by one program are charged directly to the program using the equipment. If more than one program uses the equipment, then an allocation of the depreciation costs will be based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ration of each program's expenses to total expenses (see Example 4).

F. Printing (including supplies, maintenance, and repair) – Expenses are charged directly to programs that benefit from the service. Expenses that benefit more than one program are allocated based on the ratio of the costs to total expenses. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

G. Insurance – Insurance needed for a particular program is charged directly to the program requiring the coverage. Other insurance coverage that benefits all programs is allocated based on the ratio of each program's expenses to total expenses.

H. Telephone/Communications – Telephone or communications expenses that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocagted based on the ratio of each program's expenses to total expenses (see Example 4).

I. Facilities Expenses – Allocated based upon usable square footage. The ratio of total square footage used by all personnel to total square footage is calculated. Facilities costs related to general and administrative activities are allocated to program based on the ratio of program square footage to total square footage (see example 5).

J. Training/Conferences/Seminars – Allocated to the program benefiting from the training, conference or seminar. Costs that benefit more than one program will be allocated to those

programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).

K. Other Costs (including dues, licenses, fees, etc.) – Other joint costs will be allocated on a basis determined to be appropriate to the particular costs. (Grantee should describe methodology for applicable costs).

Example 1

Expense Amount = $5,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's personnel costs (salaries & applicable benefits) to the total of such personnel costs, as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	20%	$1,000
C	$ 30,000	30%	$1,500
E	$ 50,000	50%	$2,500
TOTAL	**$100,000**	**100%**	**$5,000**

Example 2

Expense amount = $10,000

Costs that benefit **all** programs are allocated based on a ratio of each program's personnel costs (salaries& applicable benefits) to total personnel costs as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	10%	$1,000
C	$ 30,000	15%	$1,500
E	$ 50,000	25%	$2,500
All other programs	$ 100,000	50%	$5,000
TOTAL	**$200,000**	**100%**	**$10,000**

Example 3

Expense amount = $4,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's expenses (direct costs other than salaries & benefits) to the total of such expenses, as follows:

Grant	Expenses	Percent	Amount Allocated
A	$ 20,000	20%	$800
C	$ 30,000	30%	$1,200
E	$50,000	50%	$2,000
TOTAL	**$100,000**	**100%**	**$4,000**

Example 4

Expense Amount = $8,000

Costs that benefit all programs will be allocated based on a ratio of each program's salaries to total salaries as follows:

Grant	Salary	Percent	Amount Allocated
A	$ 20,000	10%	$ 800
C	$ 30,000	15%	$ 1,200
E	$ 50,000	25%	$ 2,000
All other programs	$ 100,000	50%	$ 4,000
TOTAL	**$200,000**	**100%**	**$8,000**

Example 5

Facilities Expense Amount = $10,000

Facilities costs are allocated based on square footage. Square footage for each program and general administrative activity is considered in the analysis. General and administrative facilities costs are further allocated to each program based on the square footage of each grant program to the total square footage of all grant programs. The calculation is as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	$ 20,000	10%	$1,000
C	$ 30,000	15%	$1,500
E	$ 50,000	25%	$2,500
All other programs	$ 100,000	50%	$5,000
TOTAL	**$200,000**	**100%**	**$10,000**

Project Monitoring Plan

Not applicable. The project is an assessment. Development of a sampling and monitoring plan will be a task within the scope of work.

SIERRA Streams INSTITUTE

Resolution Approving the Application for Grant Funds for the Sierra Nevada Conservancy Proposition 84 Grants Program under the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006

WHEREAS, the Legislature and Governor of the State of California have provided Funds for the program shown above; and

WHEREAS, the Sierra Nevada Conservancy (SNC) has been delegated the responsibility for the administration of a portion of these funds through a local assistance grants program, establishing necessary procedures; and

WHEREAS, said procedures established by the Sierra Nevada Conservancy require a resolution certifying the approval of an application by the Applicant's governing board before submission of said application to the SNC; and

WHEREAS, the Applicant, if selected, will enter into an agreement with the SNC to carry out the project; and

WHEREAS, Sierra Streams Institute has identified the Environs Mining Legacy Assessment Project as valuable towards meeting its mission and goals.

BE IT HEREBY RESOLVED by the Board of Directors of Sierra Streams Institute that this Board:

1. Approves the submittal of an application for the Environs Mining Legacy Assessment Project; and
2. Certifies that Applicant understands the assurances and certification requirements in the application; and
3. Certifies that Applicant or title holder will have sufficient funds to operate and maintain the resource(s) consistent with the long-term benefits described in support of the application; or will secure the resources to do so; and
4. Certifies that Applicant will comply with all legal requirements as determined during the application process; and
5. Appoints Executive Director Joanne Hild, or designee, as agent to conduct all negotiations, execute and submit all documents, including but not limited to: applications, agreements, payment requests, and so on, which may be necessary for the completion of the aforementioned project.

PASSED AND ADOPTED by Sierra Streams Institute via e-mail vote this 20th day of May, 2014 by the following vote:

Ayes: _5__ Nays: _0__ Abstain: ___ Absent: _1__

Attested by:

Stephen M. Carlton
President, Board of Directors

431 UREN ST., SUITE C NEVADA CITY, CA 95959 • 530.265.6090

Leases or Agreements

Memorandum of Understanding between Sierra Streams Institute and the City of Nevada City (property owner) is attached. There are no additional leases or agreements not already addressed affecting project lands or the future operation and maintenance thereof.

MEMORANDUM OF UNDERSTANDING

between

The City of Nevada City and Sierra Streams Institute

PURPOSE

The signatories of this Memorandum of Understanding (MOU) recognize the value of working in collaboration to implement projects focused on abandoned mine remediation, forest health, watershed restoration, and water quality monitoring on City-owned land in the Deer Creek watershed.

INTRODUCTION

Sierra Streams Institute is applying for grants from the Sierra Nevada Conservancy (Proposition 84 Grant Program) in the amount of $417,211 to 1) complete the restoration of Providence Mine and the adjacent mine tailings pile along Deer Creek, located within the property known as the Nevada City Environs; and 2) Plan and implement a forest health project in the Deer Creek corridor immediately downstream of Nevada City. The projects will include long term monitoring on City-owned land.

AGREEMENTS

The parties agree to cooperate and coordinate with each other in addressing the concerns in the Deer Creek watershed while respecting the mission, roles, and rights of each entity.

The parties may enter into mutually agreeable supplemental agreements with each other to implement any grant funded projects related to but not specified in this agreement.

The City of Nevada City will provide the legal descriptions and title information to the City-owned lands addressed in this agreement as required for the application for funds from Sierra Nevada Conservancy.

Sierra Streams Institute will seek approval from the City of Nevada City for all project plans prior to implementation, will coordinate all project activities with the City of Nevada City, and will provide annual updates or as requested.

The City of Nevada City will provide access to City-owned land in the Deer Creek watershed, including the Providence Mine site, for the purpose of planning and implementing the proposed assessment, remediation and restoration, and for post-project monitoring for a minimum of ten years after the completion of the project.

IN WITNESS WHEREOF the parties have executed this MOU as of January 23, 2014

NEVADA CITY:

By: David Brennan

David Brennan, City Manager

Date: 1/27/2014

By: Niel Locke

Niel Locke, City Clerk

Date: 1/27/14

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

By: Hal DeGraw

Hal DeGraw, City Attorney

Date: 1/27/14

SIERRA STREAMS INSTITUTE:

By: Joanne Hild

Joanne Hild, Executive Director

Date: 1/28/14

Applicable CEQA Documents

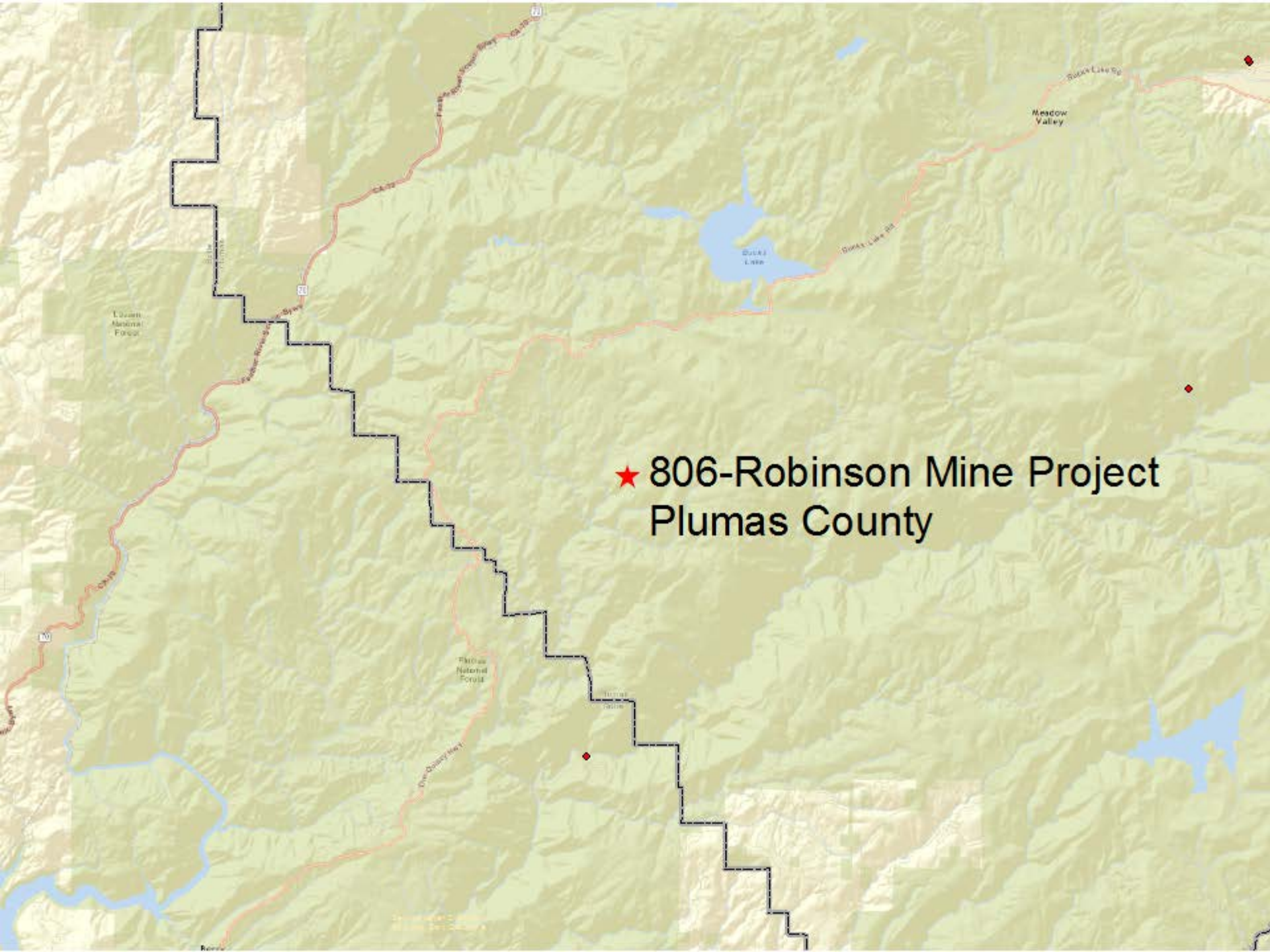
Not applicable. Progress towards CEQA compliance will be a task within the scope of work of the project.

Performance Measure	Target
Number of Collaboratively Developed Plans and Assessments	Collaboratively developed plan: *Environs Mining Impacts Remediation Plan*
Number and Diversity of People Reached	Diversity of Participants: General public: 75 Nisenan Tribal Members: 10 Community volunteers: 10 Conservation groups/individuals: 5 Landowner groups/individuals: 30 Resource Professionals: 3 Government officials: 10
Number and Types of Jobs Created	**Professional:** Number of people employed: 4 length of employment: 3 years average # of hours/week: 15 season of employment (winter, spring, summer, fall): All
Number and Value of New, Improved or Preserved Economic Activity	Type(s) of products and services provided: Tourism Total number of new, improved, or preserved products and services: 1 (Trail use) Estimated annual dollar value of new or improved products and services: Not quantifiable until implementation phase
Resources Leveraged for the Sierra Nevada	# of volunteer hours: 455 In-kind contributions: $12,000

Regulatory Requirements/Permits

Not applicable. There are no permits required for the proposed initial assessment.

Identification of permitting agencies and required permits for future remediation is a task within the scope of work of the project.


806-Robinson Mine Project
Plumas County
Meadow Valley

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**California Department of Conservation**
Project Title:	**Robinson Mine Project**
Subregion:	**North Central**
County:	**Plumas**
SNC Funding:	**$ 75,000.00**
Total Project Cost:	**$138,000.00**
Application Number:	**806**
Final Score:	**85**

PROJECT SCOPE

This project will complete an in-depth Preliminary Assessment/Site Inspection (PA/SI) of the Robinson Mine, located on the Plumas National Forest near Quincy California, to determine the extent of contamination from historic mining operations. The site is located on Frazier Creek, a tributary to the Little North Fork of the Middle Fork Feather River, one of California's primary water supply sources.

Staff from the Abandoned Mine Lands Unit (AMLU) of Department of Conservation (DOC) will perform a full surface inventory of the mine features onsite to ensure all possible points of contamination are accounted for, including mine features that may be draining and contributing to metal contamination. Utilizing AMLU staff along with other environmental contractors as needed, a more in-depth sampling of both soil and sediments will be performed to identify point source contamination. From this PA/SI assessment the DOC and US Forest Service (USFS) can develop site remediation alternatives and can select the appropriate remedy for site cleanup.

The USFS and DOC both have dedicated funding sources for the remediation of legacy mine sites and have indicated that they will be able to implement the project with these funds.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Contract & Project Management	Oct. 2014 – Dec. 2016
Project & Sampling Plan	January 2015
Six Month Progress Report	April 30, 2015
Site inventory & sample collection	May 2015 – Sep. 2015
Lab Analysis (Samples)	Oct. 2015 – Dec. 2015
Six Month Progress Reports	Oct. 30, 2015, April 30, 2016
Project Workplan Development	Jan. 2016 – Dec. 2016
Field Investigation Work	Jan. 2016 – Dec. 2016
Six Month Progress Report	October 30, 2016
Final Report	December 30, 2016
FINAL PAYMENT/FINAL PAYMENT REQUEST	**December 30, 2016**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	$65,250
Indirect**	$0
Administrative***	$9,750
GRAND TOTAL	**$75,000**

PROJECT LETTERS SUPPORT/OPPOSITION

- Support
  - Plumas County Planning and Building Services
  - The Sierra Fund
  - Trout Unlimited
  - California Department of Toxic Substances Control

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC staff.

- Number and Type of Jobs Created
- Resources Leveraged for the Sierra Nevada
- Number and Value of New Improved or Preserved Economic Activities

Notice of Exemption

Appendix E

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: (Public Agency) Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Project Title: Robinson Mine Project (SNC 806)

Project Location – Specific:
The project is located on a former mine site, Robinson Mine, adjacent to Frazier Creek, within the Middle Fork Feather River watershed, in Plumas National Forest. The project site is located approximately 3.5 miles east of Palmetto, approximately 5 miles southwest of Bucks Lake, approximately 7.5 miles southeast of State Route (SR) 70, and approximately 18 miles southwest of Quincy, in Plumas County, California, Haskins Valley 7.5' USGS Quadrangle. Approximate Latitude/Longitude: 39° 48' 39.24" North / 121° 14' 38.809" West.

Project Location – City: Palmetto, Quincy
Project Location – County: Plumas

Description of Nature, Purpose and Beneficiaries of Project:
The California Department of Conservation (DOC), in cooperation with the Unites States Forest Service (USFS) Region 5, is requesting $75,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to develop a Preliminary Assessment and Site Inspection (PA/SI) and to initiate an Engineering Assessment/Cost Evaluation (EE/CA) for the legacy Robinson Mine on USFS property in Plumas County, California. This is part of the remediation process through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program

The project site was once the Robinson Mine, which comprised the patented "Morning Star" and "Trenton" claims, initially located on both sides of Frazier Creek in 1876. The mine was active consistently until approximately 1912, after which it was operated sporadically until approximately 1939. The project site currently consists of various underground mine workings, associated mill and habitation ruins, and scattered equipment remains on both sides of Frazier Creek. A flat-topped waste pile is spread up and down the canyon from above the mine shaft, and a ten-stamp battery is still standing at the mill, although the mill building has collapsed. No obvious tailings are on-site.

In 2009, the USFS conducted on-site sampling and developed a Preliminary Site Characterization of possible mercury and other metals. The Preliminary Site Characterization determined that there was cadmium, lead, mercury, and zinc concentrations above action levels in the soil and lead concentrations above action level in the water. The proposed project would continue the CERCLA program by conducting a full surface inventory of the mine features, including mine workings, mine waste and tailings, structures, and equipment, to help guide the water and soil sampling plan. The proposed project would then collect soil and water samples and analyze the samples to determine the presence, extent, and severity of contamination from the historic mining operations. Upon the obtaining the results of the water and soil samples, a PA/SI would be developed. Thereafter the proposed project would initiate the development of the EE/CA to identify and evaluate site remediation activities and alternatives, as well as Best Management Practices for site remediation. No remediation activities would be completed as a part of the proposed project.

The purpose of the proposed project is to sample soil and water at the site to identify activities necessary to remediate the project site and identify best management practices in order to ultimately remediation the project site. The benefits of the proposed project include identifying activities and best management practices necessary to remove hazardous material associated

with historic mining (i.e., lead, cadmium, and arsenic). This would prepare for the future remediation of the site, which would protect water quality and public health by removing mining contaminants from the Plumas National Forest.

Name of Public Agency Approving Project: Sierra Nevada Conservancy
Name of Person or Agency Carrying Out Project: DOC, Office of Mine Reclamation, in cooperation with the USFS Region 5

Exempt Status: *(check one)*

- ☐ Ministerial (Sec. 21080(b)(1); 15285);
- ☐ Declared Emergency (Sec 21080(b)(3); 15269(2));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c);
- ☒ Categorical Exemption. State type and section number: Section 15306, "Information Gathering"
- ☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:
The proposed Robinson Mine Project is categorically exempt from the provisions of CEQA pursuant to CEQA Guidelines Section 15306, Class 6, which permits basic data collection, research, and resource evaluation activities for information gathering purposes or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. The project consists of collecting data to determine the health based risks, remediation actions and goals, and provide final recommendations for any required clean-up of the property in order to continue to carry out the CERCLA program. No significant adverse impacts to cultural or natural resources will occur as a result of the proposed project.

Lead Agency Contact Person: Matthew Daley
Area Code/Telephone/Extension: (530) 823-4698

Signature:_____ Date:_____ Title: Executive Officer
Jim Branham

Date Received for Filing at OPR:

Revised 2005

OFFICE OF MINE RECLAMATION

DEPARTMENT OF CONSERVATION
OFFICE OF MINE RECLAMATION

801 K STREET • MS 09-06 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 323-9198 • **FAX** 916 / 445-6066 • **TDD** 916 / 324-2555 • **WEB SITE** conservation.ca.gov

May 30, 2014

Ms. Linda Hansen
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Subject: Proposition 84 Grant Application – Category 2

Dear Ms. Hansen:

The California Department of Conservation (DOC), in cooperation with the United States Forest Service Region 5 (USDA FS), wishes to apply for a $75,000 Category 2 grant from the Sierra Nevada Conservancy (SNC) for a Preliminary Assessment and Site Inspection (PA/SI) leading to an Engineering Evaluation (EE) and Cost Analysis (EE/CA) for the legacy Robinson Mine. The Robinson mine site is being remediated under the (USDA FS) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program.

The Robinson Mine was a gold drift mine that started operation in 1894, and was improved in 1936 with a mill. In 2009, USDA FS contracted with Weston Solutions Inc. (WSI) for sampling and a Preliminary Site Characterization (PSC) of possible mercury contamination at the Robinson Mine site. In the resulting soil and sediment samples, mercury was detected in all soil samples at maximum concentration of 47.7 mg/kg. These contamination levels pose a potential threat to human health and the environment.

This project is the next phase in the CERCLA process, to conduct the in-depth (PA/SI) to determine the extent of on and off-site contamination from the historic mining operations. Staff from the Abandoned Mine Lands Unit (AMLU) of DOC will perform a full surface inventory of the mine features onsite to ensure all possible points of contamination are accounted for, including mine features that may be draining and contributing to metal contamination. From the PA/SI assessment the DOC and USDA FS can develop the EE/CA for assessment, development, and evaluation of site remediation alternatives to select the appropriate site remedy and cleanup to insure both the heath of humans and the environment along the Feather River.

As the DOC's representative, I am authorized to submit this application on behalf of DOC. Thank you for the consideration of this request and if any additional information

is needed, please contact Dave Tibor at (916) 322-1232, or by email at david.tibor@conservation.ca.gov.

Sincerely,

Glenda Marsh
Environmental Program Manager
Abandoned Mine Lands Unit

Enclosure

CEQA/NEPA COMPLIANCE FORM

(CALIFORNIA ENVIRONMENTAL QUALITY ACT & NATIONAL ENVIRONMENTAL POLICY ACT)

Instructions: All applicants, including federal agencies, must complete the CEQA compliance section. Check the box that describes the CEQA status of the proposed project. You must also complete the documentation component and submit any surveys, and/or reports that support the checked CEQA status. NOTE: There is no page limit requirement on this form. You may use the space you need to fully describe the CEQA/NEPA status of this project.

If NEPA is applicable to your project, you must complete the NEPA section in addition to the CEQA section. Check the box that describes the NEPA status of the proposed project. Complete the documentation component and submit any surveys, and/or reports that support the NEPA status.

For both CEQA and NEPA, submittal of permits is only necessary if they contain conditions providing information regarding potential environmental impacts.

CEQA STATUS

(All applicants must complete this section)

Check the box that corresponds with the CEQA compliance for your project. The proposed action is either "Not a Project" under CEQA; is Categorically Exempt from CEQA; or requires a Negative Declaration, Mitigated Negative Declaration, or an Environmental Impact Report per CEQA.

X☐ "Not a Project" per CEQA

1. Describe how your project is "Not a Project" per CEQA:
   Although funds from the State of California will be used for conducting the site investigation and evaluation of clean up action alternatives, no discretionary action on the part of a state or local government agency is part of this project and thus this project is not a project under CEQA.

2. If appropriate, provide documentation to support the "Not a Project" per CEQA status.
   Click here to enter text.

☐ **Categorical Exemption or Statutory Exemption**

If a project is categorically exempt from CEQA, all applicants, including public agencies that provide a filed Notice of Exemption, are required to provide a clear and comprehensive description of the physical attributes of the project site, including potential and known special-status species and habitat, in order for the SNC to make a determination that the project is

exempt. A particular project that ordinarily would fall under a specific category of exemption may require further CEQA review due to individual circumstances, i.e., it is within a sensitive location, has a cumulative impact, has a significant effect on the environment , is within a scenic highway, impacts an historical resource, or is on a hazardous waste site. Potential cultural/archaeological resources must be noted, but do not need to be specifically listed or mapped at the time of application submittal. Backup data informing the exemption decision, such as biological surveys, Cultural Information Center requests, research papers, etc. should accompany the full application. Applicants anticipating the SNC to file an exemption are encouraged to conduct the appropriate surveys and submit an information request to an office of the California Historical Resources Information System (CHRIS).

1. Describe how your project complies with the requirements for claiming a Categorical or Statutory Exemption per CEQA:
   Click here to enter text.

2. If your organization is a state or local governmental agency, submit a signed, approved Notice of Exemption (NOE) documenting the use of the Categorical Exemption or Statutory Exemption, along with any permits, surveys, and/or reports that have been completed to support this CEQA status. The Notice of Exemption must bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.
   Click here to enter text.

3. If your organization is a nonprofit or federal agency, there is no other California public agency having discretionary authority over your project, and you would like the SNC to prepare a NOE for your project, let us know that and provide any permits, surveys, and/or reports that have been completed to support the CEQA status.
   Click here to enter text.

☐ **Negative Declaration OR**

☐ **Mitigated Negative Declaration**

If a project requires a Negative Declaration or Mitigated Negative Declaration, then applicants must work with a qualified public agency, i.e., one that has discretionary authority over project approval or permitting, to complete the CEQA process.

1. Describe how your project complies with the requirements for the use of a Negative Declaration or a Mitigated Negative Declaration per CEQA:
   Click here to enter text.

   Submit the approved Initial Study and Negative Declaration/Mitigated Negative Declaration along with any Mitigation Monitoring or Reporting Plans, permits, surveys, and/or reports that have been completed to support this CEQA status.

The IS/ND/MND must be accompanied by a signed, approved Notice of Determination, which must bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.

Click here to enter text.

☐ **Environmental Impact Report**

If a project requires an Environmental Impact Report, then applicants must work with a qualified public agency, i.e., one that has discretionary authority over project approval or permitting, to complete the CEQA process.

1. Describe how your project complies with the requirements for the use of an Environmental Impact Report per CEQA:
   Click here to enter text.

Submit the Draft and Final Environmental Impact Report along with any Mitigation Monitoring or Reporting Plans, permits, surveys, and/or reports that have been completed to support this CEQA status. The EIR documentation must be accompanied by a signed, approved Notice of Determination, which must bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.

Click here to enter text.

NEPA STATUS

(Applicable to federal applicants, some tribal organizations, and applicants receiving federal funding or conducting activities on federal lands)

Check the box that corresponds with the NEPA compliance for your project.

☐ **Categorical Exclusion**

1. Describe how your project complies with the requirements for claiming a Categorical Exclusion per NEPA:
   Click here to enter text.

Submit the signed, approved Decision Memo and Categorical Exclusion, as well as documentation to support the Categorical Exclusion, including any permits, surveys, and/or reports that have been completed to support this NEPA status:

Click here to enter text.

☐ **Environmental Assessment & Finding of No Significant Impact**

1. Describe how your project complies with the requirements for the use of an Environmental Assessment and Finding of No Significant Impact per NEPA:
   Click here to enter text.

   Submit the signed, approved Environmental Assessment and Finding of No Significant Impact along with any permits, surveys, and/or reports that have been completed to support this NEPA status.

   Click here to enter text.

☐ **Environmental Impact Statement**

1. Describe how your project complies with the requirements for the use of an Environmental Impact Statement per NEPA:
   Click here to enter text.

   Submit the Draft and approved, Final Environmental Impact Statement, along with the Record of Decision and any permits, surveys, and/or reports that have been completed to support this NEPA status.

   Click here to enter text.

Table of Contents

Project Description 3
Environmental Setting and Impacts 4
Mining History 4
Current Status of Robinson Mine 4
Impacts 5
Previous Work at Robinson Mine 5
Abandoned Mine Mercury Assessment (2009) 5
Workplan and Schedule Narrative 6
Task 1: DOC Site Inventory 6
Task 2: PA/SI 6
Task 3: EE/CA 6
Project Timing 7
Budget 7
Restrictions, Technical/Environmental Documents and Agreements 7
Partners / Roles / Organizational Capacity 8
Partner / Roles 8
DOC/AMLU Organizational Capacity 8
USFS Region 5 CERCLA Program Qualifications and Experience 9
Cooperative and Community Support 9
Letters of Support 9
Long-Term Management and Sustainability 10
Performance Measures 10
Evaluation Criteria 11
Tangible results that further Proposition 84 and SNC program areas 11
Design and readiness of the project, including budget and funding sources 11
AML project aligns with SNC Abandoned Mine Initiative 11
Likelihood of successful implementation 12
Community support, consistent with similar efforts nearby, part of larger plans and partnerships 12
Leverages resources of other agencies and funding sources 12
Detailed Budget Form 14
Cost Allocation Plan 15
Maps 16
Photographs 22
Letters of Support 33

Weston Solutions Inc. (2009) report 39
Other Literature Cited 52

Table of Figures

Figure 1. Project location map, showing Robinson Mine located between Chico and Quincy in Plumas County, California. 17

Figure 2. Plumas County Assessor's parcel map. The large USFS parcel which contains the Robinson Mine area is APN #112-014-USA. Source: Plumas County Assessor's webpage. 18

Figure 3. USGS 7.5' map series topographic map showing the location of the Robinson Mine, along Frazier Creek in Granite Basin. 19

Figure 4. Detail view of the USGS 7.5' topographic map. Mine features (e.g. cemetery, adit, ruin) shown on the 7.5' map are labeled as to what is actually present; see photographs for more detail on some. 20

Figure 5. Detail of claim map for Robinson Mine area (including Plumas, Trenton, and Morning Star claims). Map indicates locations for graveyard, several adits, shaft, engine house, mill building, and unnamed building. 21

Figure 6. Photograph 1: Historic view of the Robinson Mill building. Shaft house is visible in lower left corner. From *California Journal of Mines and Geology* (1937). 23

Figure 7. View southeast (downstream) across Frazier Creek, with west end of main mine waste pile visible. All photographs by David Tibor (DOC) unless noted. 24

Figure 8. USFS and DOC staff atop main mine waste pile from shaft. Shaft collar located in wood and metal debris pile in lower left corner. 25

Figure 9. View down from top of waste pile towards Frazier Creek. Shaft collar located in wood and metal debris pile, and adit portal located higher upslope, near pipe and small conifer. 26

Figure 10. Location of main shaft, now collapsed closed. Presumed ruins of shaft house (see FIgure 1) form debris pile on slope of waste rock. 27

Figure 11. USFS and DOC staff at 10-stamp battery of Robinson Mill. 28

Figure 12. View looking up at 10-stamp battery and other equipment at Robinson Mill. Mill building (see Photograph 1) is fully collapsed. 29

Figure 13. Large equipment footer on west side of Frazier Creek, northwest of main mine waste pile. 30

Figure 14. Steam boiler leaning against tree trunk above Frazier Creek. Numerous other equipment remains are located onsite. 31

Figure 15. Ruins of building on east side of Frazier Creek, just west of main mine waste pile. There are several collapsed buildings and other platforms onsite. 32

Project Description

The California Department of Conservation (DOC) is partnering with U.S. Department of Agriculture Forest Service (USFS) to apply for a $75,000 Category 2 grant from the Sierra Nevada Conservancy's Proposition 84 grant program to develop a Preliminary Assessment and Site Inspection (PA/SI) and Engineering Assessment/Cost Evaluation (EE/CA) for the legacy Robinson Mine in Plumas County. The Robinson Mine site is being remediated by USFS under its Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program.

Passed by Congress in 1980, CERCLA is a federal law that provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA is a defined and widely known administrative process and provides legally defensible and Environmental Protection Agency (EPA) accepted standards for sampling and analysis, and involves the community, governments (federal, state, local), federally recognized tribes, and other partners in the decision-making process. CERCLA provides a framework to identify and involve Potentially Responsible Parties. National Environmental Policy Act (NEPA) analysis is not required for CERCLA projects. USFS uses its CERCLA authorities to clean up hazardous substances from abandoned mine lands and other sites on National Forest Systems lands in order to protect human health and the environment, such as soil, sediment, surface water, and groundwater. The PA/SI and EE/CA proposed for Robinson Mine are components required under the USFS CERCLA cleanup process.

The Robinson Mine is located on USFS land in the Feather River Ranger District of the Plumas National Forest, approximately 18 air miles southwest of Quincy, in Plumas County, California (Lat/long: 39°48'39.24"N, 121°14'38.809"W, NAD27). The mine site is immediately adjacent to Frazier Creek, which is located in the Middle Fork Feather River watershed. The mine site appears on United States Geological Survey (USGS) Haskins Valley 7.5' topographic quad map (see Figures 1-5).

In 2009, the USFS contracted with Weston Solutions Inc. (WSI) for on-site sampling and the development of a Preliminary Site Characterization (PSC) of possible mercury or other metals contamination at the Robinson Mine site. The PSC determined that there were cadmium, lead, mercury and zinc concentrations above action levels in individual soil samples, and lead concentrations above action level in a water sample.

Based on the results of the PSC, the next phase in the CERCLA process is to conduct the in-depth Preliminary Assessment / Site Investigation (PA/SI) to determine the presence, extent, and severity of any on or off-site contamination from the historic mining operations. DOC staff, along with necessary contractor assistance, will perform sampling and develop the PA/SI. Following this PA/SI assessment, DOC and USFS will retain a contractor to develop the EE/CA for assessment, development, and evaluation of site remediation alternatives. The purpose of the EE/CA is to address how to clean up the contamination determined by the investigation.

Prior to the start of the PA/SI effort, DOC staff, in coordination with USFS archaeology staff, will perform a full surface inventory of the mine features onsite, including mine workings, mine waste and tailings, structures, and equipment. This survey will be used to inform development of the PA/SI sampling plan.

Environmental Setting and Impacts

Mining History

According to historical literature (CSMB 1918), the Robinson Mine comprised the patented "Morning Star" and "Trenton" claims, initially located in 1876 on both sides of Frazier Creek. In 1890, the claims were purchased by Robinson. By 1896 (CSMB 1896) the workings consisted of a 70' deep shaft with a steam hoisting plant, with tunnels run on both sides of Frazier Creek (which divided the two claims). The tunnels were 400', 260', 300', and 40' long, with much stoping. Another tunnel was 200', with little stoping. A 20-stamp mill was located on the east side of the creek, with 900-pound stamps driven by a Knight wheel under 94' of head from a 1,650' long ditch; only one battery of stamps was reported as being in running order.

In 1918 (CSMB 1918) the mine was reported as having been idle since summer of 1912. At this point, the workings were described as a 100' deep shaft with 150' long drift at the bottom, and three tunnels cut on the vein. A steam and water power hoist was present, along with a 35-year old mill with 20 stamps.

In 1937 (CDM 1937) a 320' deep shaft is mentioned as having been recently pumped out, with 390' of drifts at the 85' level, and plans to immediately begin drifts on the 220' level. The mill at this time is described as 50-ton daily capacity, with a jaw crusher, 10 stamps, and ball mill in closed circuit with a Dorr classifier. Riffles were set below the stamps, and amalgamation plates below the ball mill. Three Fagergren flotation cells were follow by two Kraut cleaner-cells. A 200-hp diesel engine drove a generator to supply electric power, and a 440 cfm compressor was driven by a 100-hp motor; the shaft hoist was driven by compressed air.

It appears that the Robinson Mine was last operated in 1939 (Donna Duncan, USFS, pers. comm.). A preliminary history of the Robinson Mine and nearby area was developed in 2014 by USFS (Moore 2014) primarily focused on mining claim history.

Current Status of Robinson Mine

The site now consists of various underground mine workings, associated mill and habitation ruins, and scattered equipment remains on both sides of the creek. (See Figure 4-5 for maps and Figures 6-15 for photographs.) There are several adits in various states onsite, including collapsed, remediated with culvert gates, and partially open. The presumed location of the main shaft is on the east side of the creek below the millsite, and appears to be collapsed. A large amount of waste rock extracted from the shaft forms a linear, flat-topped waste pile spread up and down canyon from above the shaft collar. A ten-stamp battery is still standing at the mill, though the mill building has completely collapsed around the battery and over the lower mill foundation. No obvious tailings materials were noted at or downslope of the mill site, though the collapsed mill building obscures much of the slope (the creek is located not much further downslope below the ruins). Various concrete footers with engines, compressors, steam boiler, and other equipment are present, and other intact and partially-intact equipment items are scattered about the mine site. The collapsed ruins of several buildings are present, along with other flat areas presumably used for habitation and/or work areas. Various roadbeds, flat areas, and trenches are scattered around the site.

Access to the site is via paved and then dirt USFS roads, ending at a parking area adjacent to a small cemetery (shown on the USGS 7.5' topographic map). The last 0.2 mile of road to the mill location has

been closed by USFS. Thus access is by foot, including crossing Frazier Creek in order to reach all features of the site.

The site receives a fair amount of visitation (Donna Duncan, USFS, pers. comm.). It is a large named mine on the USGS 7.5' topographic map and contains standing mill structures, underground workings, scattered artifacts, and a cemetery – all of which serve to draw visitation from the public. A number of recent beer and other cans were found during a May 2014 site visit, also indicating recent visitation.

Impacts

There are several possible impacts to the environment present at underground hardrock mine sites such as the Robinson Mine. Metals (e.g. cadmium, lead, zinc) can be released by waste rock, mill tailings, or draining adits; mercury used in the milling process can escape to the environment, and disturbed ground can contribute to sediment loads in surface waters. The environmental contamination can affect soil, sediment, and surface and ground water, which in turn can affect individual plants and animals, local ecology, and human visitors to the site, or users of the water downstream.

Previous Work at Robinson Mine

Abandoned Mine Mercury Assessment (2009)

In 2009, USFS contracted with Weston Solutions Inc. (WSI) to perform an Abandoned Mine Mercury Assessment (AMMA) of eight sites in three watersheds located on Plumas National Forest (Weston 2009). The Robinson Mine was one of the sampled sites, due to the stamp mill and associated mercury amalgamation. WSI took both soil and sediment samples from the mine area, along with surface water samples. Mercury was detected in all three of the sediment samples collected exhibiting a maximum estimated concentration of 0.03 mg/kg. Mercury was detected in all six of the soil samples collected at a maximum concentration of 47.7 mg/kg. Mercury was detected in three of the soil samples at concentrations above the Bureau of Land Management (BLM) Risk Management Criteria (RMC) soil action level. Mercury was not detected in any of the surface water samples collected. One sediment sample contained the following California Title 22 Metals at concentrations above RMC values: cadmium at 3.7 mg/kg, lead at 1,290 mg/kg, and zinc at 614 mg/kg. Mercury was not detected in any surface water samples. Lead was detected in surface water sample RM-SW-5 above the Freshwater "chronic" Criterion Continuous Concentration (CCC) value at 5.2 µg/L.

The AMMA report found that

> "… mercury was detected in the highest concentrations in soil at Robinson Mine site. Mercury was not detected above the action level in soil samples at any other AMMA sites. The Robinson Mine is the most viable site for a removal action as it is a drift mine and it is possible to delineate the soil contamination. Additional soil sampling can be conducted at the Robinson Mine site in order to fully delineate soils that are above the action values for mercury and other metals. Additionally, the debris remaining at the Robinson Mine, including the stamp mill, may be removed in order to reduce mercury contamination below action levels."

Workplan and Schedule Narrative

The workplan and schedule for this project are as below. DOC will provide six-month progress reports to SNC throughout the term of the contract, including a final progress report at the conclusion of the project

Task 1: DOC Site Inventory

Task / Deliverable	Schedule
DOC Site Inventory	August 2014

DOC will conduct a full surface inventory of the mine features onsite, including mine workings, structures, and equipment. The features will be cataloged with GPS location, photographs, measurements, and written descriptions. All data will be incorporated into the DOC's abandoned mine database. This work will be completed in mid-summer of 2014.

Task 2: PA/SI

Task / Deliverable	Schedule
Sample Plan Development	January 2015
Soil & Water Sample Collection	April, September, and November 2015
Laboratory Sample Analysis	December 2015
Analysis & Draft Written Report	January-February 2016
USFS Review & Approval of Report	March 2016

DOC will obtain contracts under the State of California's competitive bid process, and conduct contractor bid walks before access to site is restricted due to weather. DOC and the contractor will perform all aspects of the PA/SI. Contractor support will be focused on development of the sample plan and laboratory analysis of sediment, soil, and water samples, including a results document. DOC will perform soil, sediment, and water sampling, and prepare a draft PA/SI report for USFS. This work will require a site visit(s), which will be weather dependent. The sampling plan will determine the schedule for sampling events; the proposed schedule provides for post-snowmelt, low flow, and "first flush" (first post-fall rain) sampling. USFS will be responsible for reviewing and approving the report prior to its use in Task 3, the EE/CA.

Task 3: EE/CA

Project Work Plan Development	June 2016
Field Investigation Work	July 2016
Data Analysis and Risk Assessment	August - September 2016
Identification & Report of Removal Alternatives	October - November 2016
USFS Review & Approval of Report for Public Notification	December 2016-March 2017

30-day Public Comment Period, Response to Comments, and Adoption Of Final Report	April– July 2017

The contractor selected through DOC's competitive bid process will perform all aspects of the EE/CA. USFS will review the EE/CA report, issue the draft report for a 30-day public comment period, respond to comments, revise the report as necessary, and finally adopt the final report. DOC will coordinate with contractor and USFS in finalizing the report as needed. This will conclude the EE/CA component of the CERCLA process.

Project Timing

This workplan represents a typical schedule for this type of work based on prior projects conducted by USFS and DOC. The timelines may be adjusted based on a number of factors:

- Access to site for specific tasks due to weather (e.g. heavy rain, persistent snowfall)
- Sampling schedule as determined by the sampling plan (e.g. multiple sampling events)
- Speed of contracting

Budget

The Detailed Budget (see form) contains the budget for the grant funds and also shows the contributions from the cooperating partners in this project, DOC and USFS Region 5. The total project cost, including DOC overhead and administrative costs for the project, is $177,000. The grant will be directed to fund the PA/SI component of the project in its entirety, the 15% DOC overhead and administrative costs for initiating and managing the project contracts, and a portion of the second component of the project – the EE/CA. Funds from DOC and USFS will provide for the balance of the estimated cost for the EE/CA and administrative costs for the project. In Year 1 of the project, the grant will provide for the administrative costs of initiating and managing a contract for performing the PA/SI, and in Year 2 provide for a portion the EE/CA project funds, including initiating and managing the contract for performing the EE/CA. The EE/CA is scheduled to begin in Year 2 of the grant following completion of the PA/SI.

Restrictions, Technical/Environmental Documents and Agreements

The mine site is wholly located on property owned by USFS.

USFS knows of mining claims in the area of the Robinson Mine (e.g. upstream near the cemetery), but do not have any under Notices or Plans. Sampling work at the Robinson Mine will not be an issue (Donna Duncan, pers. comm.).

USFS has performed a preliminary Potentially Responsible Parties search to determine if there might be any individual or company potentially responsible for any contamination at the Robinson Mine. This preliminary search has resulted in no viable PRPs for the mine site (Donna Duncan, pers. comm.).

Partners / Roles / Organizational Capacity

Partner / Roles

As outlined in the workplan and schedule, this project will include a combination of work by DOC, USFS, and contractors.

- *DOC*: Site inventory, project management, contracting, coordination of onsite work for PA/SI including sampling, analysis, reporting (in conjunction with contractor), drafting PA/SI report and review of EE/CA report. Performed by DOC Abandoned Mine Lands Unit (AMLU).
- *USFS*: Coordination of onsite work, review of sampling plan and results, review and approval of PA/SI and EE/CA reports.
- *Contractors (environmental):* PA/SI – sampling plan, sampling, analysis, reporting (in conjunction with AMLU), EE/CA – all phases.
- *Contractors (laboratory):* Sample analysis and reporting.

DOC/AMLU Organizational Capacity

<u>AMLU Project Manager: David Tibor, Senior Environmental Scientist (Specialist)</u>

Mr. Tibor has managed complex projects and significant contracts related to remediation of historic mine sites for seven years. From 2010 - 2013, he was the Project Manager for a $2.1 million, three-year inventory of abandoned mines on all National Park Service lands in California, for which he oversaw a dozen staff and contractors conducting field work and making hazard risk assessments, and he directed the quality control and delivery of data for over 25,000 mine features to the NPS. DOC awarded Mr. Tibor its 2013 Sustained Superior Achievement Award for his leadership in completing the project. In addition, he has completed training in HAZWOPR, hazardous waste sampling, and abandoned mine safety. He has extensive data management, data analysis, technical report writing, and contract and project management experience.

<u>AMLU Program Manager: Glenda Marsh, Environmental Program Manager I</u>

Ms. Marsh has experience in water quality monitoring programs, implementing water quality regulations and standards, collecting and managing water quality samples, managing water quality data sets, and designing and conducting biological and hydrological studies. As manager of AMLU she is responsible for oversight of all contracts and projects conducted by the Unit.

<u>AMLU Program Qualifications and Experience</u>

In August 2009, AMLU completed a multi-year, $1,000,000 project at the direction of the Governor's Office and California's Natural Resources Agency to inventory and complete a preliminary assessment of physical and chemical hazards at abandoned mines on State owned lands. The final technical report was submitted to the Governor's Office and Natural Resources Agency. The AML inventory-assessment is also consistent with the Sierra Fund (2008) *Mining's Toxic Legacy* report recommendation that called for a complete inventory of state lands impacted by mining toxins, including parks, wildlife refuges, reservoirs, and other properties. As a result of this effort, Natural Resources Secretary Mike Chrisman directed DOC to take the lead role in prioritizing and coordinating abandoned mine remediation efforts

on inventoried State-owned sites. AMLU is currently developing soil, sediment, and surface water sampling plans for site characterization and endangerment assessments at five historic mine sites on land owned by the California State Lands Commission (CSLC). The sampling and final report will be conducted by AMLU engineering and scientific staff in 2014-2015. This work is similar to the scope of tasks for a PA/SI.

AMLU has also conducted or participated in a number of remediation strategies to mitigate chemical hazards associated with abandoned mines, including projects at Spenceville Copper Mine in Nevada County, Walker Copper Mine in Plumas County, Gambonini Mercury Mine in Marin County, Sulphur Bank Mercury Mine in Lake County and Leviathan Mine in Alpine County In addition, in 2000-2001, DOC California Geological Survey (CGS) managed a contract for assessment of mercury contamination and mercury sources in the Cache Creek Watershed, contributing to a report entitled *Cache Creek Group Summary and Synthesis of Mercury Studies in the Cache Creek Watershed*. CGS experience and technical expertise is available to AMLU for any project that we undertake.

Finally, since 2002, AMLU has remediated 1,300 features that posed physical hazards in 24 counties in collaboration with 36 federal, state, and local partners—including multiple U.S. Bureau of Land Management Field Offices, USFS , the National Park Service, State Parks, and California State Lands Commission.

USFS Region 5 CERCLA Program Qualifications and Experience

USFS has managed numerous investigations and remediations of abandoned mine sites involving mercury in its forests in the Sierra Nevada using its CERCLA authorities and process. Sites have ranged from hydraulic mine pits to underground mines along with associated mineral processing facilities. USFS has on-the-ground staff in the Plumas National Forest (NF) who are available to assist with site access, historical documentation, and cultural resource management during this project.

Cooperative and Community Support

See section of **Evaluation Criteria** entitled *Community support, consistent with similar efforts nearby, part of larger plans and partnerships* for discussion.

Letters of Support

Several letters in support of this project have been received; full copies of letters are included in this application.

- California Department of Toxic Substances Control
- Plumas County Planning and Building Services
- The Sierra Fund
- Trout Unlimited

Long-Term Management and Sustainability

As the landowner, USFS will retain responsibility for all long-term management of the site, including oversight and maintenance of remediation actions to ensure remediation continues to prevent pollution from the site according to the terms of its obligations under CERCLA. There are no restrictions or encumbrances on access to the site for conduct of this project or for future management of the site (see *Restrictions, Technical/Environmental Documents and Agreements* section for more information).

Performance Measures

Performance Measure	Target	Methodology
Number and Type of Jobs Created (*see table below for FTE specifics)	1 Project Manager (DOC) 1 Environmental Scientist (DOC) 1 Contract Administrator (DOC) 1 Environmental Consultant 1 Laboratory Scientist Consultant	The project will require a manager, a project staff member, administrative support, and consultant and laboratory services for the life of the project. The table below estimates the FTE created for each job during the SNC funded project. All jobs supported at the Department of Conservation will result in increasing the capacity and knowledge of DOC staff in carrying out additional legacy mine remediation projects in the future.
Resources Leveraged for the Sierra Nevada	US Forest Service CA Department of Conservation	The USFS is committing up to $46,270 in a direct cash contribution and approximately $3,000 in staff time as in-kind services. The DOC is committing up to $42,730 in a direct cash contribution and approximately $10,000 in staff time as in-kind services.
Number and Value of New, Improved, or Preserved Economic Activities	Plumas National Forest visitors	Robinson Mine is an informal recreation site in the Plumas NF. The site is accessible to the public and the project is anticipated to identify and reduce currently unknown threats to human health at the site. This will improve the safety and security of the site for visitors. There is no current data on the number of visitors to the site and no data regarding the potential for increased visitation or value of tourist dollars spent in the local area due to the existence of the mine site.

*Occupational Group	Number of people employed	Length of employment (weeks)	Average number of hours worked per week	Total FTEs	Employment season
Project Manager (DOC)	1	5	40	.10	All seasons
Environmental Scientist (DOC)	1	4	40	.08	All seasons
Contract Administrator (DOC)	1	2	40	.04	All seasons
Environmental Consultant	1	32	40	.61	All seasons
Laboratory Scientist Consultant	1	1	40	.019	All seasons

Evaluation Criteria

Tangible results that further Proposition 84 and SNC program areas

The Robinson Mine project directly addresses several goals of the SNC and Prop 84, most prominently to improve water quality by addressing existing threats of mercury and other harmful metals, which will improve the water quality of Frazier Creek and downstream waterways of the Feather and Sacramento Rivers for human health and natural resources.

This project provides community benefits to recreational users of the Plumas National Forest who may be exposed to contaminants when visiting the site, as well as addresses potential contamination in a watershed close to the population center of Quincy. The Sierra Fund (TSF), a non-profit organization focused on addressing community well-being and environmental issues in the Sierra Nevada, has made mercury clean up at historic mine sites a high priority.

Design and readiness of the project, including budget and funding sources

Prior investigations at the Robinson Mine site were conducted as part of USFS CERLCA cleanup process and lead directly to the PA/SI and EE/CA steps. USFS has a national CERCLA program with a dedicated budget, authorized by Congress, for legacy mine sites in its forests located in the Sierra Nevada. DOC has a dedicated fund, based on annual fees assessed on gold and silver production in the state, for remediating legacy abandoned mine sites in the state with the goal of protecting the public and environment from the impacts of the state's legacy mines. Both agencies anticipate having the necessary funds available to complete the project during the term of the grant.

AML project aligns with SNC Abandoned Mine Initiative

This project aligns well with the SNC Abandoned Mine Lands Initiative by 1) promoting collaborative efforts, 2) promoting use of available federal and state funds, and 3) addressing threats to state's water

supply. First, under this partnership with USFS, DOC will enhance its organizational and technical capacity to partner on more of these types of projects in the future, applying its seasoned and recognized legacy mine project management skills. This will put more legacy mine sites into the clean up process, a key goal under DOC's mission in addressing the state's legacy mines. Secondly, the partnership between DOC and USFS on this project allows USFS to spread their limited CERLCA AML remediation funds to additional AML projects in the Sierra Nevada, putting more historic mine sites into the clean up process. Finally, Frazier Creek is a tributary to the Feather River and thus forms part of the state's water supply. One of the factors that can limit water supply is water quality. Across the Sierra, sediment and metals attached to those sediments, flow from legacy mine sites into rivers and reservoirs in the Sierra Nevada. Investigation and remediation at Robinson Mine is part of the overall effort to address an important point in this pollution pathway and learn more about what techniques are the most effective to prevent further impacts.

Likelihood of successful implementation

DOC and USFS are confident that the PA/SI and EE/CA can be completed as proposed. This is a routine course of action at a legacy mine site where pollutants have already been determined present as a result of the past mining activity. USFS has numerous CERCLA sites at various stages of cleanup in the Sierra Nevada including in Plumas NF and Tahoe NF. DOC has managed several legacy mine remediation projects and performed investigations for chemical hazards with DTSC, the state Department of Parks and Recreation, and USFS under the CERCLA process, as well. In addition, both DOC and USFS programs have experience in integrating protection of cultural resources and recreational users' needs and safety into site assessment and remediation projects.

Community support, consistent with similar efforts nearby, part of larger plans and partnerships

The Robinson Mine project enhances important partnerships and community goals around addressing the impacts of legacy mines in the Sierra Nevada. The project will further the partnership between DOC's AMLU and USFS along with establishing a new relationship with the Sierra Nevada Conservancy. AMLU is the clearinghouse for abandoned mine lands (AML) data throughout the state and is currently taking a more active role in chemical hazard remediation. AMLU has worked with USFS on physical hazard remediations for many years and has also conducted or participated in a number of remediation strategies to mitigate chemical hazards associated with abandoned mines with other state and federal agencies. The Robinson mine project will be the second CERCLA chemical hazard remediation, including the Walker Copper Mine tailings in Plumas County, that AMLU and USFS have partnered on to complete. Partnering on these projects has allowed both agencies to establish a process and means to collaborate, a goal shared by the Sierra Nevada Conservancy. In addition, non-profit community organization TSF has made mercury clean up at mine sites, reservoirs, and rivers a high priority, and aims to increase public funding for cleanup of mercury from legacy mines and bringing solutions to the environmental problems caused by the legacy of pollution from historic mining. As a community non-profit, TSF is also pursuing on-the-ground clean up of legacy mines and bringing new intellectual and financial resources to address such mines in the region. Clean up at Robinson Mine contributes to these community goals.

Leverages resources of other agencies and funding sources

The partnership between DOC and USFS on this project leverages funding from SNC, DOC, and USFS to perform two critical steps in the CERCLA process. This allows USFS to spread their limited CERLCA AML

remediation funds to additional AML projects in the Sierra Nevada, putting more historic mine sites into the clean up process.

Detailed Budget Form

SECTION ONE: DIRECT COSTS	Year One	Year Two	Total
Preliminary Assessment & Site Investigation			
Contract & Project Administration	$4,000		$4,000
Project & Sampling Plans	$10,500		$10,500
Field work: site inventory, sample collection	$5,000		$5,000
Travel	$1,000		$1,000
Lab analysis of samples	$10,500		$10,500
Report preparation		$7,000	$7,000
Engineering Estimate & Cost Analysis			
Contract & Project Administration		$3,300	$3,300
Project Work Plan Development		$13,000	$13,000
DIRECT COSTS SUBTOTAL:	$31,000	$23,300	$54,300

SECTION TWO: INDIRECT COSTS	Year One	Year Two	Total
	0	0	
INDIRECT COSTS SUBTOTAL:	0	0	$0
PROJECT TOTAL:	$31,000	$23,300	$54,300

SECTION THREE **Administrative Costs (Costs may n*ot to exceed 15% of total Project Cost*) :**			**Total**
Department of Conservation Overhead	$15,700	$5,000	$20,700
ADMINISTRATIVE TOTAL:	$15,700	$5,000	$20,700
SNC TOTAL GRANT REQUEST:	$46,700	$28,300	$75,000

SECTION FOUR **OTHER PROJECT CONTRIBUTIONS**	**Year One**	**Year Two**	**Total**
United States Forest Service		$49,270	$49,270
Department of Conservation	$3,460	$49,270	$52,730
Total Other Contributions:	$3,460	$98,540	$102,000

Cost Allocation Plan

Section 1 - Direct Costs

Contract & Project Administration Costs

Classification	Personnel Cost	Percent (based on one month)	Amount Allocated
Associate Government Program Analyst - Contract & Grant Administration	$ 106,942	0.8	$ 7,129
Office Technician	$ 74,287	0.27	$ 1,671
Environmental Program Manager I	$ 142,212	0.3	$ 3,555
Total			$ 12,356

Maps

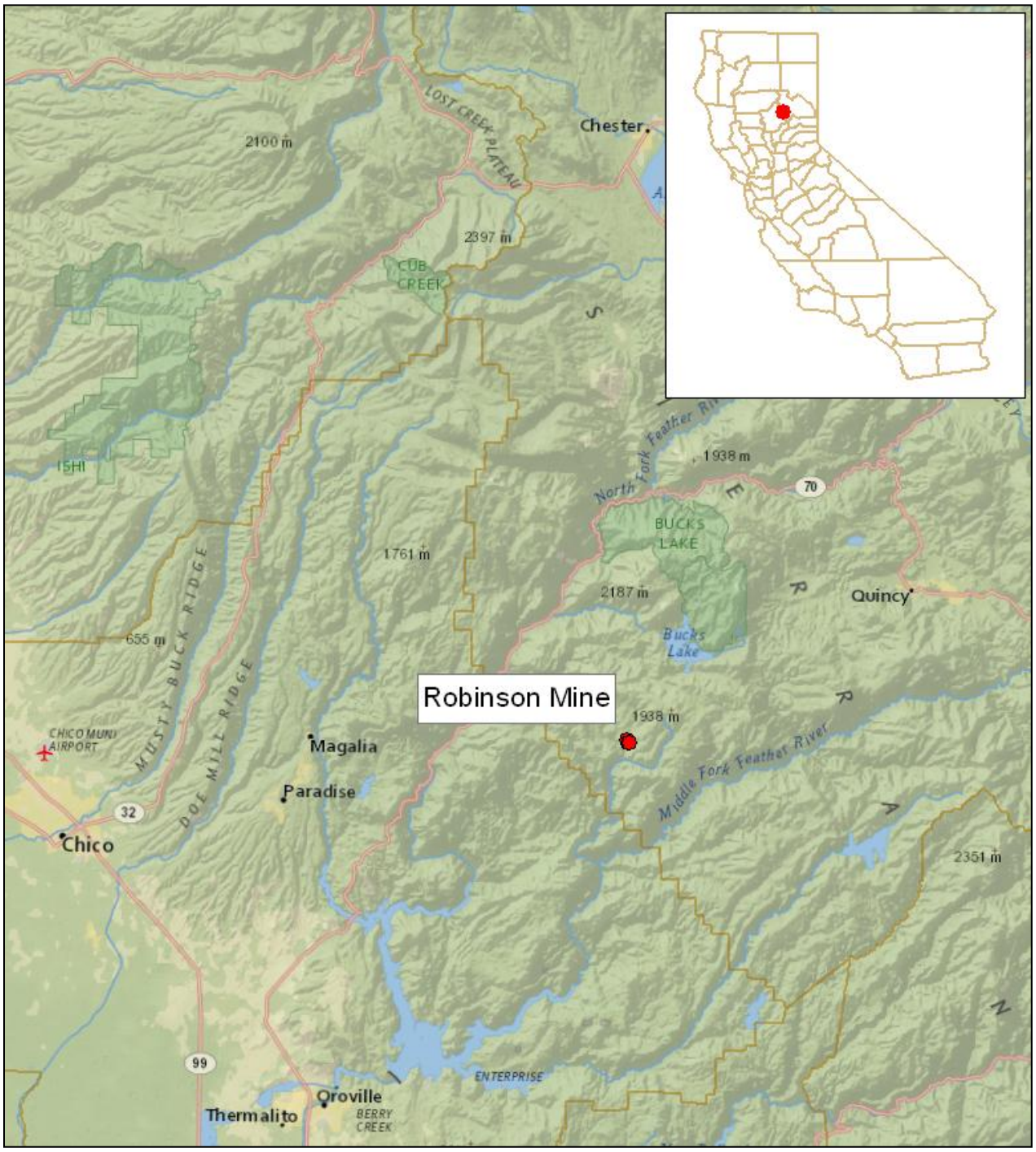


Figure 1. Project location map, showing Robinson Mine located between Chico and Quincy in Plumas County, California.

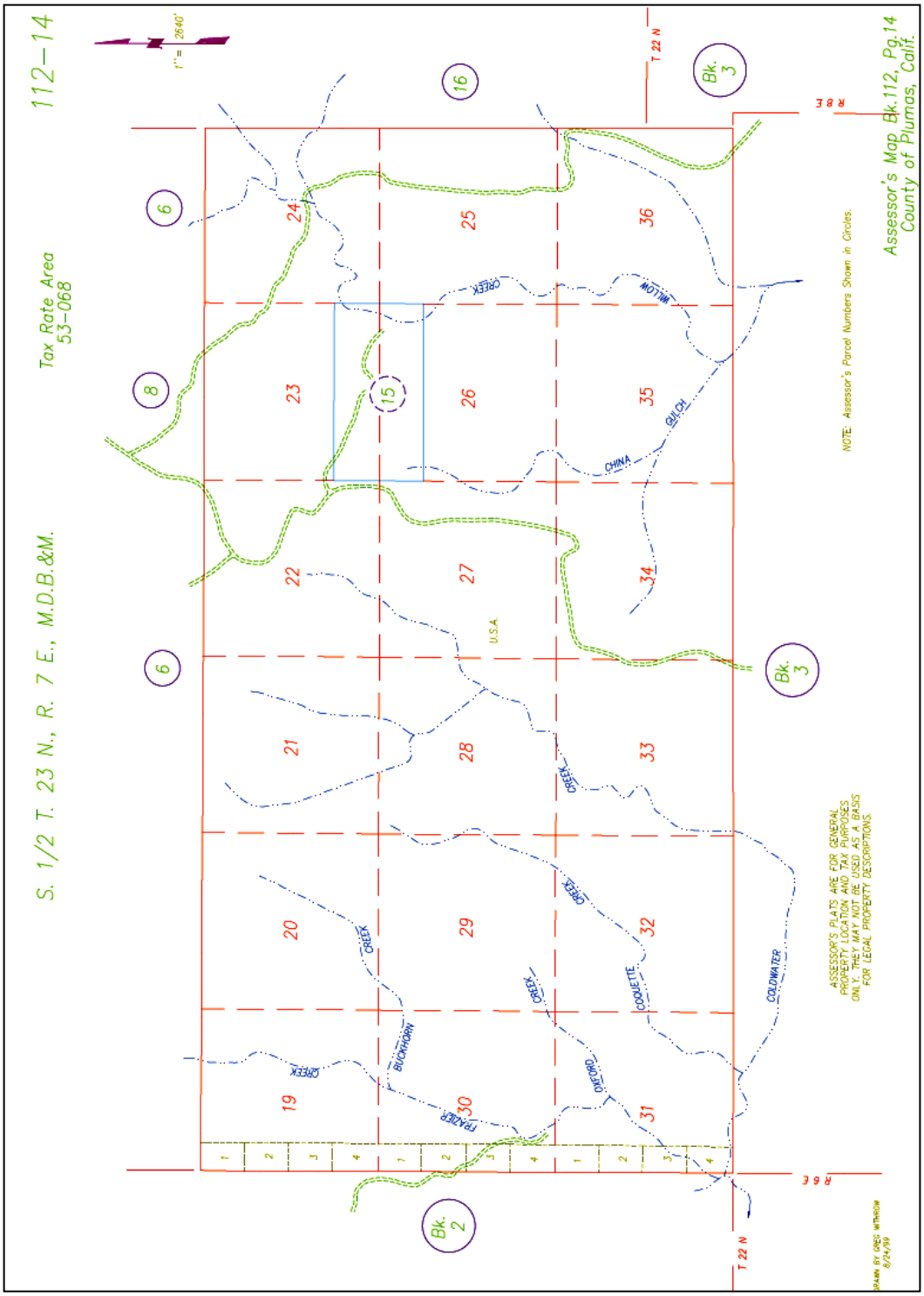


Figure 2. Plumas County Assessor's parcel map. The large USFS parcel which contains the Robinson Mine area is APN #112-014-USA. Source: Plumas County Assessor's webpage.

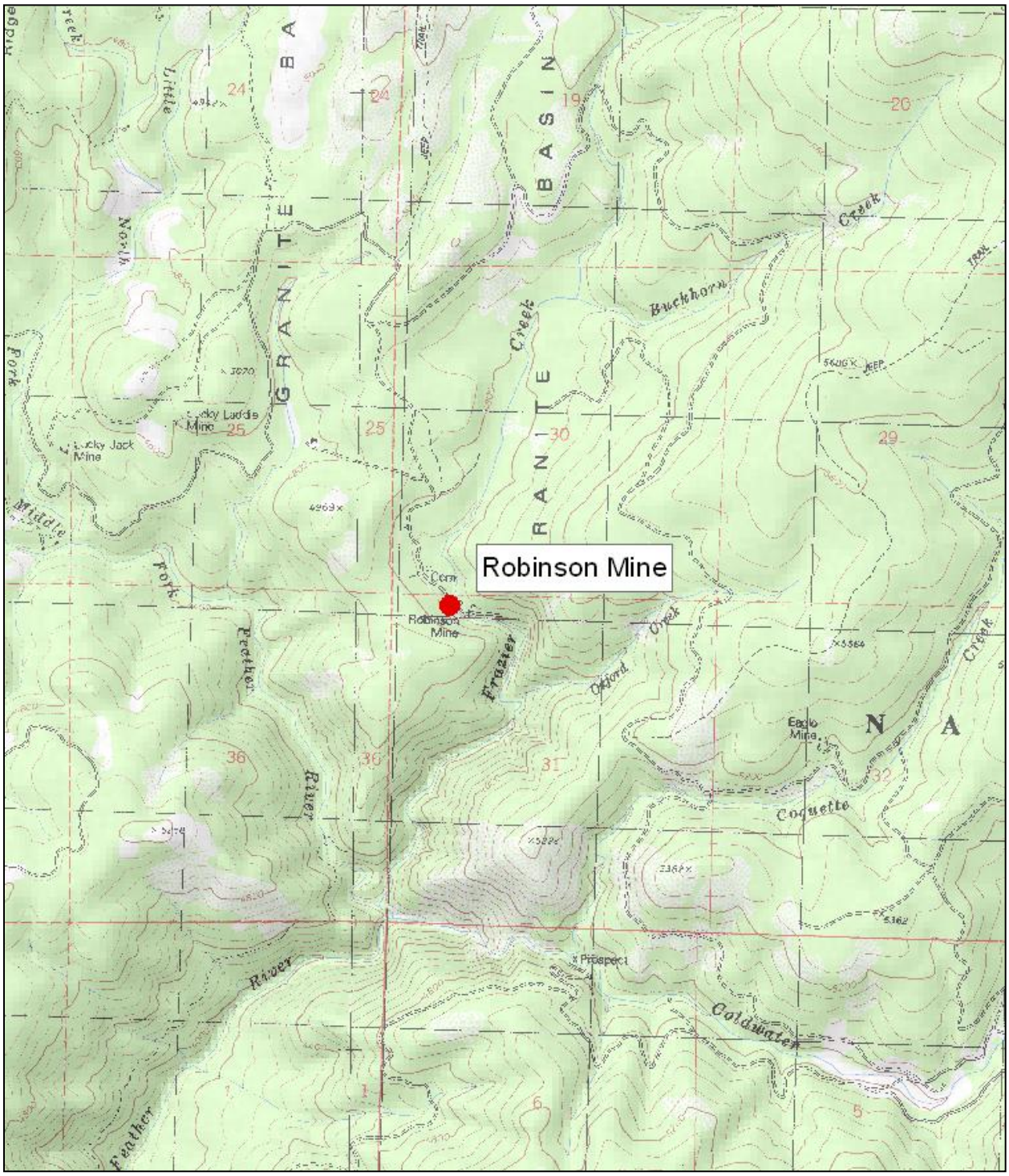


Figure 3. USGS 7.5' map series topographic map showing the location of the Robinson Mine, along Frazier Creek in Granite Basin.

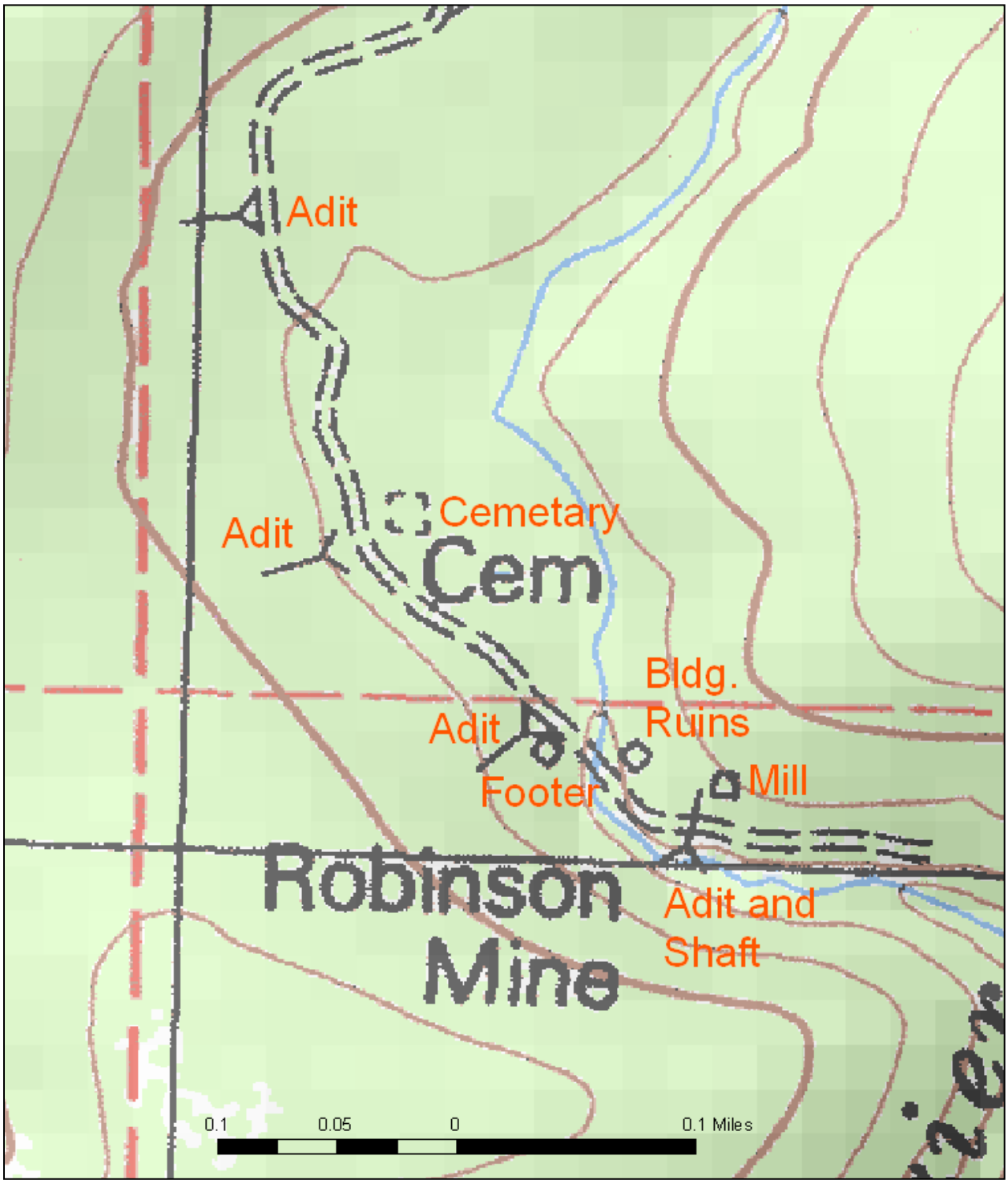


Figure 4. Detail view of the USGS 7.5' topographic map. Mine features (e.g. cemetery, adit, ruin) shown on the 7.5' map are labeled as to what is actually present; see photographs for more detail on some.

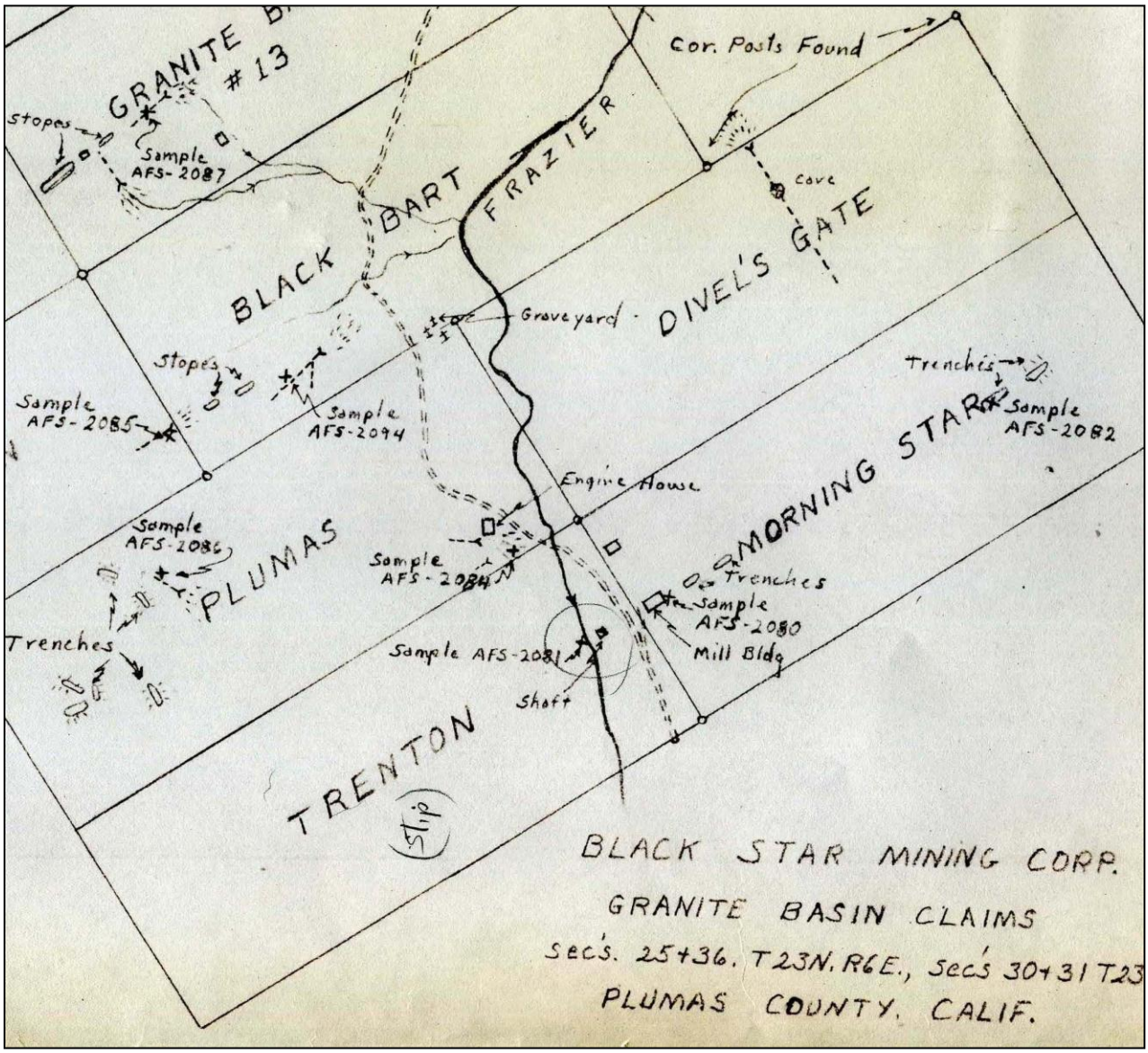


Figure 5. Detail of claim map for Robinson Mine area (including Plumas, Trenton, and Morning Star claims). Map indicates locations for graveyard, several adits, shaft, engine house, mill building, and unnamed building.

Photographs

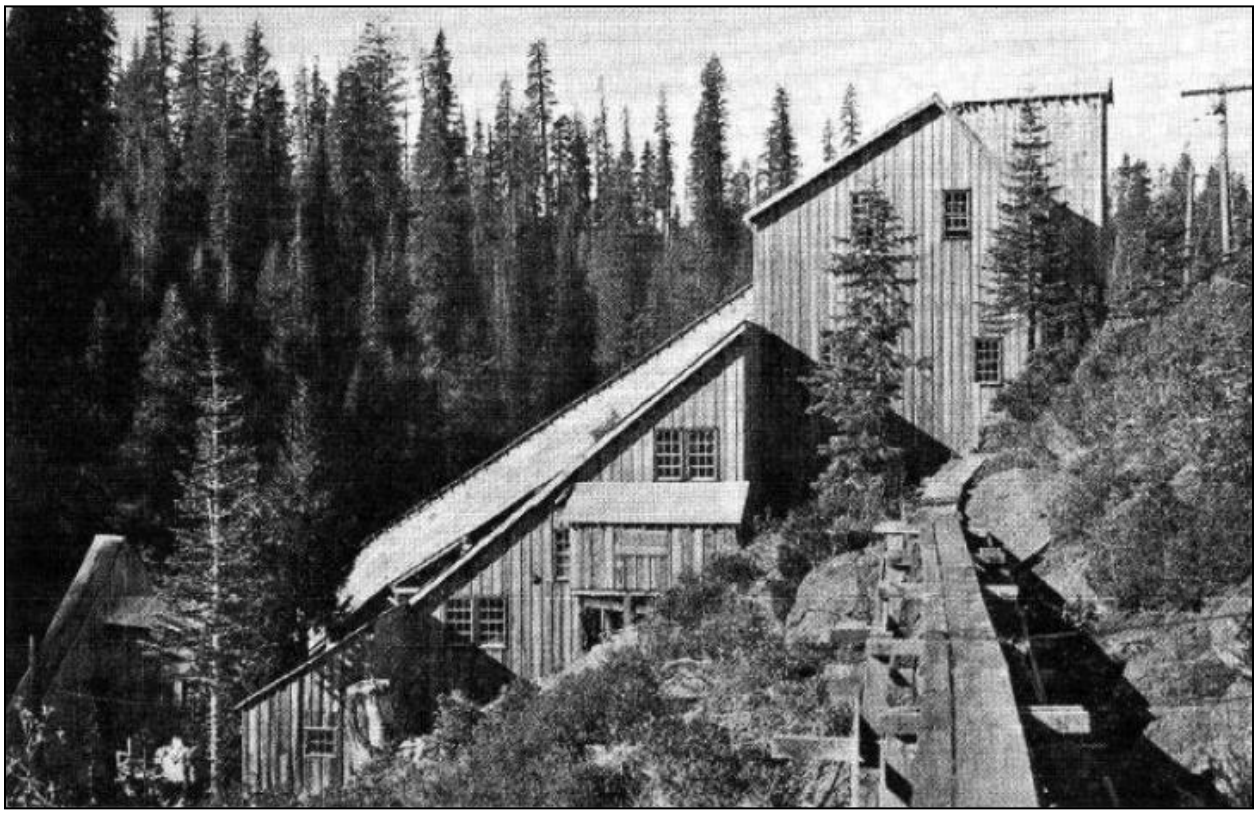


Figure 6. Historic view of the Robinson Mill building. Shaft house is visible in lower left corner. From *California Journal of Mines and Geology* (1937).

Figure 7. View southeast (downstream) across Frazier Creek, with west end of main mine waste pile visible. All photographs by David Tibor (DOC) unless noted.

Figure 8. USFS and DOC staff atop main mine waste pile from shaft. Shaft collar located in wood and metal debris pile in lower left corner.

Figure 9. View down from top of waste pile towards Frazier Creek. Shaft collar located in wood and metal debris pile, and adit portal located higher upslope, near pipe and small conifer.

Figure 10. Location of main shaft, now collapsed closed. Presumed ruins of shaft house (see Photograph 1) form debris pile on slope of waste rock.

Figure 11. USFS and DOC staff at 10-stamp battery of Robinson Mill.

Figure 12. View looking up at 10-stamp battery and other equipment at Robinson Mill. Mill building (see Figure 6) is fully collapsed.

Figure 13. Large equipment footer on west side of Frazier Creek, northwest of main mine waste pile.

Figure 14. Steam boiler leaning against tree trunk above Frazier Creek. Numerous other equipment remains are located onsite.

Figure 15. Ruins of building on east side of Frazier Creek, just west of main mine waste pile. There are several collapsed buildings and other platforms onsite.

Letters of Support

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Deborah O. Raphael, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Edmund G. Brown Jr.
Governor

May 23, 2014

Ms. Glenda Marsh
Program Manager
Abandoned Mine Lands Unit
Department of Conservation
801 K Street, MS 09-06
Sacramento, California 95814
Glenda.Marsh@conservation.ca.gov

LETTER OF SUPPORT FOR SIERRA NEVADA CONSERVANCY GRANT FOR ROBINSON MINE

Dear Ms. Marsh:

Through various initiatives, the Department of Toxic Substances Control (DTSC), California Environmental Protection Agency works cooperatively with state, federal, and local agencies; tribes, communities, private entities; and nonprofit organizations to facilitate investigation and remediation of hazardous substances release sites, including legacy mine sites. DTSC offers its support on behalf of the Abandoned Mine Lands Unit, Department of Conservation, in cooperation with the United States Department of Agriculture, Forest Service Region 5 in its efforts to secure a Proposition 84 Grant from the Sierra Nevada Conservancy (SNC) for additional assessment and characterization of the Robinson Mine located on Fraizer Creek, a tributary to the Feather River, upstream of Lake Oroville, approximately 18 miles southwest of Quincy, Plumas County, California.

The Robinson mine is a legacy gold drift mine and associated mill that operated from approximately 1894 to 1936. Previous preliminary assessment and characterization indicates that heavy metals including cadmium, lead, and zinc pose a potential threat to human health and the environment. The SNC grant funding will help achieve additional assessment and characterization leading to the development of a remediation approach that is effective in safeguarding human health and the environment.

We appreciate this opportunity to support other state agency programs because of the important role they have in California's efforts to protect the human health and the environment.

Please contact Mr. Randy Adams at (916) 255-3591 or by email Randy.Adams@dtsc.ca.gov. If you have any questions or need additional information.

Sincerely,

Mr. William Ryan, P.E., Chief
San Joaquin Branch - Sacramento Office
Brownfields and Environmental Restoration Program
Bill.Ryan@dtsc.ca.gov

cc: Mr. Steven R. Becker, P.G., Chief
Site Evaluation and Remediation Unit
San Joaquin Branch - Sacramento Office
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826
Steven.Becker@dtsc.ca.gov

Mr. Randy S. Adams, C.E.G.
Senior Engineering Geologist
San Joaquin Branch, Sacramento Office
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826
Randy.Adams@dtsc.ca.gov

PLUMAS COUNTY PLANNING & BUILDING SERVICES

555 Main Street
Quincy, CA 95971-9366
(530) 283-7011

www.plumascounty.us

May 20, 2014

Glenda Marsh
Program Manager
Abandoned Mine Land Unit
Department of Conservation
801 K Street, MS 09-06
Sacramento, CA 95814

Subject: Sierra Nevada Conservancy Grant Application by Abandon Mine Lands Unit, Department of Conservation for grant funds to produce a Preliminary Assessment/Site Inspection for the Robinson Mine in Plumas County.

Dear Glenda

Plumas County supports the grant application to address clean up of the abandoned Robinson Mine in Plumas County. The project will address the needed clean up of the mine and protect health and safety.

Randy Wilson

Randy Wilson

Planning Director
Plumas County, California

THE SIERRA FUND

206 Sacramento Street
Suite 101
Nevada City, CA 95959
P: 530.265.8454
F: 530.265.8176
E: info@sierrafund.org
www.sierrafund.org

May 20, 2014

Glenda Marsh
Program Manager
Abandoned Mine Lands Unit
Department of Conservation
801 K Street, MS 09-06
Sacramento, CA 95814

Subject: Support Robinson Mine Project

Dear Ms. Marsh,

The Sierra Fund is pleased to support the United States Department of Agriculture, Forest Service Region 5 and Department of Conservation's application to the Sierra Nevada Conservancy to conduct a more in-depth Preliminary Assessment and Site Inspection (PA/SI) and Engineering Evaluation and Cost Analysis (EE/CA) at the Robinson Mine to better pinpoint locations of mercury and other harmful metals.

The Robinson Mine site is located in the Plumas National Forest's Feather River Ranger District adjacent to Frazier Creek in the Little North Fork of the Middle Fork Feather River watershed, approximately 18 miles southwest of Quincy, CA in Plumas County, California. The Robinson Mine site, which includes a mill structure, tailings piles and underground openings, is accessible to the public via an open forest service road and may be draining metals into Frazier Creek, including mercury.

Addressing sites like Robinson Mine continues progress in meeting public safety and environmental clean up goals at legacy mine sites in the Sierra Nevada. The Sierra Fund is working to bring more attention to the environmental and health impacts of historic mining, through our Mining Initiative (you can learn more about this effort at our website, www.sierrafund.org). We are currently engaged in a Sierra-wide effort to raise public awareness of the problems presented by abandoned mines, tailings piles, mercury, and other toxins left over from mining in the Gold Country, and to involve all stakeholders in designing workable solutions to these problems.

Thank you for considering this important project.

Sincerely,

Elizabeth J. Martin

Elizabeth Martin
CEO
The Sierra Fund

Mike Caltagirone
Nevada Abandoned Mines Project Manager

May 14, 2014

Glenda Marsh
Program Manager
Abandoned Mine Lands Unit
Department of Conservation
801 K Street, MS 09-06
Sacramento, CA 95814

Dear Ms. Marsh:

Trout Unlimited is very pleased to support your application, in conjunction with the US Forest Service District 5, to The Sierra Nevada Conservancy for funding of the initial steps in the remediation of the Robinson Mine in Plumas County, CA.

The rich mining history of the area has shaped the character of Plumas County both positively and negatively. Responsible stewardship requires that we actively seek to reduce the ongoing negative impact of these historic locations so that future generations can enjoy the beauty of the creeks, rivers, mountains and lakes and of the myriad wildlife that live in them for years to come.

Trout Unlimited's mission is to conserve, protect, preserve and restore the coldwater fisheries of North America. In furtherance of that mission, we fully support efforts to remove current toxins and eliminate further contamination of watersheds due to legacy mining artifacts.

Regards,

Mike Caltagirone
Nevada Abandoned Mines Project Manager
720 Tahoe St. Suite 1
Reno, NV 89509
775-232-9697

Weston Solutions Inc. (2009) report

Abandoned Mine Mercury Assessment
Plumas National Forest, California
Abandoned Mine Site Characterization
Final Report

USDA Forest Service Contract Number: 53-91S8-03-PUF13
Weston Work Order Number: 12238.026.001

August 2009

Prepared for:
USDA Forest Service
Sierra Cascade Province
Susanville, California

Prepared by:
Weston Solutions, Inc.
1340 Treat Blvd., Suite 210
Walnut Creek, California 94597

SECTION 1

INTRODUCTION

The United States Department of Agriculture (USDA) Forest Service has tasked Weston Solutions, Inc. (WESTON) to conduct an assessment of several mercury mines in Plumas National Forest. This work was conducted under Activity VII, Task 5 of the Forest Service Regional Environmental Response Action Contract # 53-91S8-03-PUF13.

The Abandoned Mine Mercury Assessment (AMMA) sites are located on Plumas National Forest lands, in Plumas and Sierra Counties, California. A majority of the sites are abandoned hydraulic mines.

The AMMA has been divided into watersheds, with three different groups of sites. Group I - Slate Creek Watershed is comprised of the following five sites: Nugget Bowl, Secret Diggings, Poverty Hill Mine, Slate Creek Debris Dam, and Slate Creek Tunnel. Group II - Little North Fork Watershed consists of one site, the Robinson Mine. Group III - Spanish Creek Watershed consists of two sites: Bean Hill Mines and Gopher Mine.

The objectives of this assessment are:

1. To identify areas at the various mine sites, such as tailing piles, sluices, and drainage tunnels that may contain deposits of mercury that are serving as sources of contamination to the Sacramento River watershed.

2. To determine if there has been a release of mercury and/or other metals to the surface water pathway that is attributable to these sites.

This final report summarizes the field activities conducted by WESTON on September 11 through September 14, 2006, the Primary Sampling Event, and February 24 through February 25 2009, the Precipitation Event. The results are presented from the two sampling events. The WESTON sampling team was accompanied by Joe Hoffman of the USDA Forest Service during this event. Sampling was conducted in accordance with the WESTON Work Plan for the AMMA Site, dated September 2006.

The site is a large hydraulic mine site (approximately 50 acres) that operated in the late 1800s. The site includes a single partially collapsed drain tunnel, which drains the majority of the site. The drainage feeds into Slate Creek.

Slate Creek Tunnel

The Slate Creek Tunnel site is located approximately 2.5 miles northeast of the community of La Porte, in Plumas County, California (39° 41' 33.97" N/ 120° 56' 22.20" W), as shown in Figure 2-1a.

Slate Creek Tunnel is located immediately adjacent to Slate Creek. It is likely that the tunnel was constructed to divert the flow of Slate Creek to mine the historic creek for gold. There is no evidence that the tunnel was ever used as a sluice-way; however it is possible. Water flows through Slate Creek Tunnel into Cedar Grove Ravine, a tributary to Slate Creek.

2.2 Group II – Little North Fork Watershed Location and Description

Robinson Mine

The Robinson Mine site is located on the Feather River Ranger District, approximately 5 miles southwest of Bucks Lake in the Little North Fork of the Middle Fork Feather River watershed, and 18 miles southwest of Quincy, in Plumas County, California (39° 49' 5.54" N/ 121° 14' 49.08" W), as shown in Figure 2-1b. The site can be accessed from the Oroville-Quincy Highway (Butte County Road # 27562 and Plumas County Road #414).

The Robinson Mine site was a gold drift mine site at which a stamp mill and mercury amalgamation process was used. The Robinson Mine site is located adjacent to Frazier Creek. Historically, stamp mills were used to crush and break down ore. The resulting fines were then directed into sluices and drainage tunnels, where a gold-mercury amalgamation process would separate the gold from the fines. Robinson Mine operated from 1894 to 1936. A single, empty mercury flask was recently discovered on site.

Runoff from the Robinson Mine enters Frazier Creek, which is a tributary to Little North Fork of the Middle Fork Feather River. The Middle Fork Feather River feeds into the Feather River. The Feather River is a tributary to the Sacramento River which, runs into the San Pablo Bay.

2.3 Group III – Spanish Creek Watershed Location and Description

The sites located within the Spanish Creek Watershed are located west of the community of Quincy, California, on the Forest's Mount Hough Ranger District. These sites can be accessed via the Oroville-Quincy Highway (Butte County Road #27562 and Plumas County Road #414) near the community of Meadow Valley, California. Spanish Creek is a major tributary to the North Fork of the Middle Fork Feather River, which is a tributary to the Feather River. The Feather River is a major tributary to the Sacramento River which is, in turn, a tributary to the San Pablo Bay.

Slate Creek Tunnel

In order to characterize areas that may contain deposits of mercury at the Slate Creek Tunnel area, WESTON collected five sediment samples. Samples were analyzed for mercury. One sediment sample was also analyzed for Title 22 Metals.

The sample location prefix "SCT" was used to identify the Slate Creek Tunnel samples. Both surface soil and sediment samples were designated by an "S" suffix. All surface soil and sediment samples were collected from 0 to 6 inches bgs using dedicated plastic trowels.

To determine the extent of contaminant migration from possible hydraulic mine deposits, WESTON collected five surface water samples from the Slate Creek Tunnel and downstream from the tunnel in a tributary to Slate Creek, which flows water into Cedar Grove Ravine Creek. Surface water samples were analyzed for total mercury. In addition, surface water analyzed for dissolved mercury and filtered in the field. One surface water sample was also analyzed for Title 22 Metals. Three surface water samples were also analyzed for TSS. A duplicate sample (SCT-SW-7) was collected at sample location SCT-SW-6. Sediment samples were collocated with surface water samples assigned the same number. Thus, sediment sample SCT-S-2 was collected in the same location as surface water sample SCT-SW-2.

WESTON collected one background sediment and surface water sample in Cedar Grove Ravine Creek that was upstream of the Slate Creek Tunnel. The background surface water sample was also analyzed for TSS. WESTON collected a total of six sediment and six surface water samples, including background samples, from the Slate Creek Tunnel area.

3.2 Primary Sampling Event – Group II – Little North Fork Watershed

Robinson Mine

In order to characterize areas that may contain deposits of mercury at the Robinson Mine, WESTON collected six soil samples. Soil samples were analyzed for mercury. One soil sample was also analyzed for Title 22 Metals.

The sample location prefix "RM" was used to identify the Robinson Mine samples. Both surface soil and sediment samples were designated by an "S" suffix. All surface soil and sediment samples were collected from 0 to 6 inches bgs using dedicated plastic trowels.

To determine the extent of contaminant migration from the Robinson Mine, WESTON collected three sediment and three surface water samples downstream from the Robinson Mine. Surface water samples were analyzed for total mercury. In addition, surface water analyzed for dissolved mercury and filtered in the field. One surface water sample was also analyzed for Title 22 Metals. Two surface water samples were also analyzed for TSS. A duplicate sample (RM-SW-7) was collected at sample location RM-SW-5. Another duplicate sample (RM-SW-8) was collected at sample location RM-SW-6. Sediment samples were collocated with surface water samples assigned the same

number. Thus, sediment sample RM-S-5 was collected in the same location as surface water sample RM-SW-5.

WESTON collected one background sediment and surface water sample upstream from possible runoff from the Robinson Mine. The background surface water sample was also analyzed for TSS. WESTON collected a total of four sediment, six soil, and three surface water samples, including background samples, from the Robinson Mine area.

3.3 Primary Sampling Event – Group III – Spanish Creek Watershed

Gopher Hill

In order to characterize areas that may contain deposits of mercury at the Gopher Hill area, WESTON collected six sediment samples during the September 2006 sampling event. Samples were analyzed for mercury. One sediment sample was also analyzed for Title 22 Metals.

The sample location prefix "GH" was used to identify the Gopher Hill samples. Sediment samples were designated by an "S" suffix. A duplicate sediment sample (GH-S-8) was collected at sample location GH-S-5. All samples were collected from 0 to 6 inches bgs using dedicated plastic trowels.

To determine the extent of contaminant migration from the Gopher Hill area, WESTON collected five surface water samples downstream from the Gopher Hill mine workings. Surface water samples were analyzed for total mercury. In addition, surface water analyzed for dissolved mercury and filtered in the field. Five surface water samples were also analyzed for TSS. Sediment samples were collocated with surface water samples assigned the same number. Thus, sediment sample GH-S-3 was collected in the same location as surface water sample GH-SW-3.

WESTON collected one background sediment and surface water sample in Spanish Creek upstream from possible runoff from the Gopher Hill hydraulic mine workings. The background surface water sample was also analyzed for TSS. WESTON collected a total of six sediment, and six surface water samples, including background samples, from the Gopher Hill area during the Primary Sampling Event.

SECTION 4

RESULTS

Soil, sediment, and surface water samples from the AMMA sites were collected and sent to Test America laboratory (formerly Severn Trent Laboratories), an analytical laboratory in West Sacramento, California. All samples were analyzed for mercury using EPA Method 7471A.Selected samples were analyzed for California Title 22 Metals using EPA Method 6010B. Selected surface water samples were also analyzed for TSS using EPA Method 160.2.

The soil action level for mercury is established using a combination of the U.S. Department of Interior, Bureau of Land Management (BLM) Risk Management Criteria (RMC) for metals at mining sites and background soil concentrations. The BLM has established a set of RMC for both human and ecological receptors. Due to the location of the AMMA sites, the human RMC (e.g., resident, camper, ATV, driver, worker, surveyor, boater, and swimmer) are not applicable. Several species of wildlife are more likely to be present and potentially impacted by contamination at the sites. BLM has established a median wildlife RMC for mercury. The BLM wildlife RMC for mercury is 8 milligrams per kilogram (mg/kg). In addition, the median BLM wildlife RMCs for arsenic, cadmium, copper, lead, and zinc was used as reference values to assist in data interpretation of soil samples analyzed for California Title 22 metals. Exceedance of the BLM wildlife RMC in soils indicates that wildlife may experience toxic effects from the ingestion of soil and plants located in the area.

Sediment and surface water action levels for mercury are established using a combination of the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQuiRTs) and background sediment analyte concentrations. NOAA established a set of screening concentrations for inorganic and organic contaminants in various environmental locations for the Coastal Protection & Restoration Division (CPR) of NOAA. For establishing sediment action levels, the NOAA SQuiRTs Table for Inorganics in Solids was used. WESTON used The Threshold Effects Level (TEL) for mercury of 0.174 mg/kg as the action level for mercury in sediment samples. In addition, the TEL for arsenic, cadmium, chromium, copper, nickel, lead, and zinc was used as reference values to assist in data interpretation of sediment samples analyzed for California Title 22 metals. A TEL value represents the concentration of a contaminant in sediment below which adverse effects to aquatic life rarely occur. Values above the TEL are concentrations of contaminants in sediment in which adverse effects occasionally occur.

To establish surface water action levels, the NOAA SQuiRTs Table for Inorganics in Water was used. WESTON used the Freshwater "chronic" Criterion Continuous Concentration (CCC) value for mercury of 0.77 micrograms per liter (µg/L). In addition, the Freshwater "chronic" CCC values for arsenic, cadmium, chromium, copper, nickel, lead, selenium, and zinc were used as reference values to assist in data interpretation of surface water samples analyzed for California Title 22 metals. The CCC value is an estimate of the highest concentration of a material in surface water to which an

aquatic community can be exposed indefinitely without resulting in an unacceptable effect. The CCC value represents.a four-day average exposure not to be exceeded more than once every three years.

4.1 Group I - Slate Creek Watershed Sample Results

4.1.1 Slate Creek Debris Dam

Sample results for the Slate Creek Debris Dam are presented in Tables 4-1 through 4-2. Sample locations are shown in Figure 4-1. Mercury was detected in all three sediment samples collected exhibiting a maximum concentration of 0.099 mg/kg. Mercury was detected in both soil samples collected exhibiting a maximum concentration of 0.11 mg/kg. Mercury was not detected in any surface water sample. Mercury was not detected in any of the samples above the sample matrix action levels. Nickel was detected above the TEL in one sediment sample analyzed for Title 22 Metals at a concentration of 18.7 mg/kg.

4.1.2 Poverty Hill

Sample results for the Poverty Hill site are presented in Tables 4-3 through 4-4. Sample locations are shown in Figure 4-1. Mercury was detected in all five sediment samples exhibiting a maximum concentration of 0.062 mg/kg. One soil sample was collected at the Poverty Hill site, and mercury was detected at a concentration of 3.4 mg/kg. Mercury was detected in three of five surface water samples collected at a maximum concentration of 0.24. µg/L. TSS values were measured at concentrations of 74,000 and 106,000 µg/L, respectively, in two of the three surface water samples that contained mercury. The third surface water sample that contained mercury was not analyzed for TSS. TSS was measured at a concentration of 40,000 µg/L in the background sample for the Poverty Hill site. µg/L. Chromium, copper, and nickel were detected in sediment sample PH-S-2 at concentrations above the TEL value. Chromium was detected at 72.4 mg/kg, copper was detected as 54.3 mg/kg ,and nickel was detected at a concentration of 37.7 mg/kg in the sediment sample analyzed for Title 22 metals.

4.2 Group II –Little North Fork Watershed Sample Results

4.2.1 Robinson Mine

Sample results for the Robinson Mine site are presented in Tables 4-11 through 4-12. Sample locations are shown in Figure 4-3. Mercury was detected in all three of the sediment samples collected exhibiting a maximum estimated concentration of 0.03 mg/kg. Mercury was detected in all six of the soil samples collected at a maximum concentration of 47.7 mg/kg. Mercury was detected in three of the soil samples at concentrations above the RMC value. Mercury was not detected in any of the surface water samples collected. Sediment sample RM-S-2 contained the following California Title 22 Metals at concentrations above RMC values: cadmium at 3.7 mg/kg, lead at 1,290 mg/kg, and zinc at 614 mg/kg. Mercury was not detected in any surface water samples. Lead was detected in surface water sample RM-SW-5 above the Freshwater "chronic" CCC value at 5.2 µg/L.

4.3 Group III –Spanish Creek Watershed Sample Results

4.3.1 Gopher Hill

Sample results for both the Primary Sampling and Precipitation Event for the Gopher Hill site are presented in Tables 4-13 through 4-14. Locations of samples collected during the Primary Sampling Event are shown in Figure 4-4. Mercury was detected in all five of the sediment samples collected. Mercury was detected above the TEL value in one sediment sample at a maximum of 0.22 mg/kg. The following metals were detected above TEL values in the two sediment samples that were analyzed for Title 22 Metals: arsenic at a maximum concentration of 13.3 mg/kg, chromium at a maximum concentration of 42.8, and nickel at a maximum concentration of 36.8 mg/kg. Mercury was detected in one surface water sample at an estimated concentration of 0.17 µg/L. TSS was measured in the surface water sample containing mercury at a concentration of 581,000 µg/L. TSS was measured at a concentration of 148,000 µg/L in the background sample for Gopher Hill..

Locations of samples collected during the Precipitation Event are shown in Figure 4-5. During the Precipitation Event mercury was detected in all five samples at a maximum concentration of 0.48 mg/kg. Mercury was detected in three samples above the TEL value. Mercury was not detected in the surface water samples collected during the Precipitation Event.

Background concentrations of mercury in sediment samples collected upstream of the Gopher Hill site in Wapansi Creek during the Primary Sampling and Precipitation Event were 0.10 mg/kg and 0.13 mg/kg, respectively.

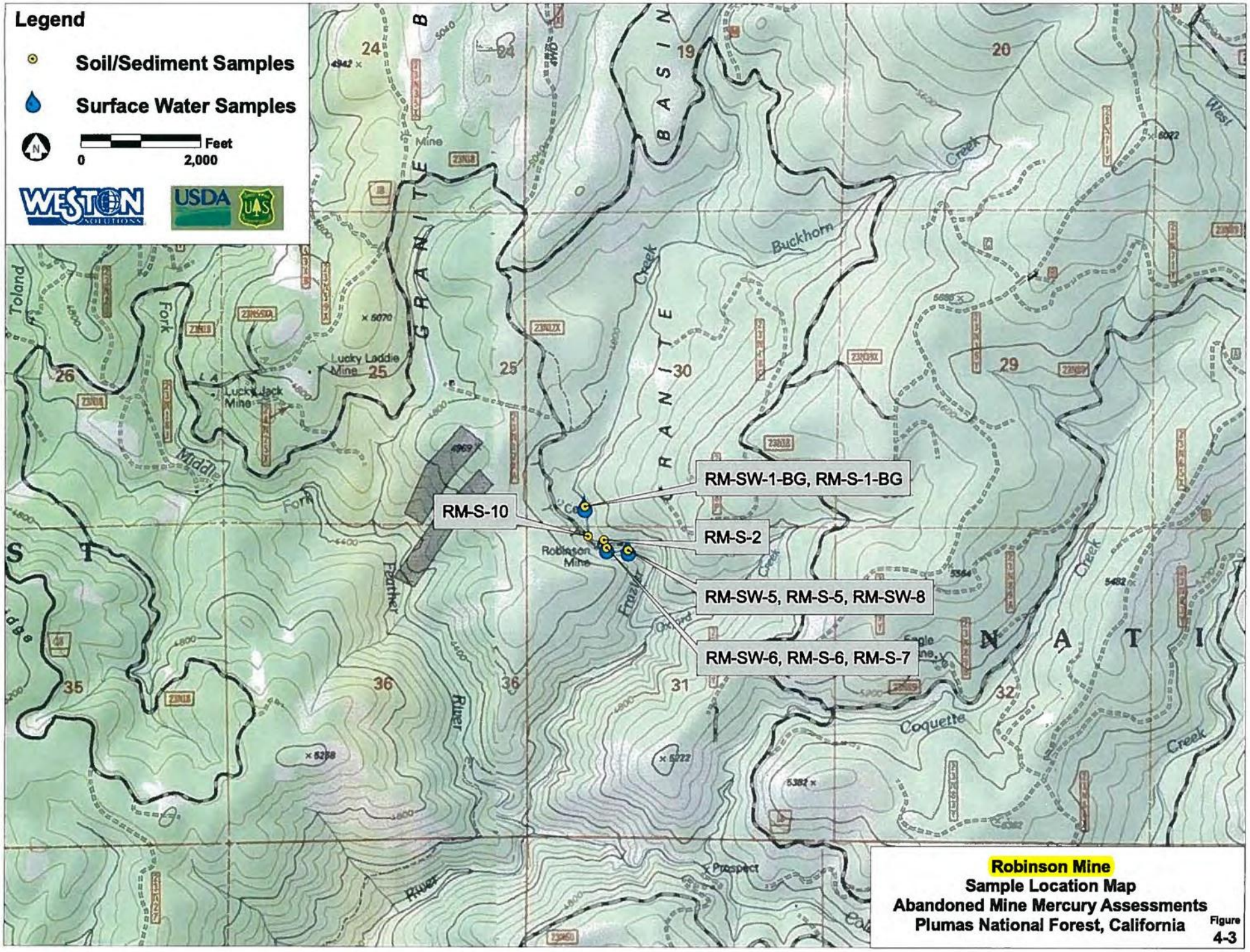
SECTION 5

SUMMARY AND RECOMMENDATIONS

5.1 Abandoned Mercury Mine Assessment Summary and Recommendations

Analytical results indicate that mercury and/or other metals are present in sediment and soils at the AMMA sites above the action level. Mercury was detected in the highest concentrations in soil at Robinson Mine site. Mercury was not detected above the action level in soil samples at any other AMMA sites. Robinson Mine is the most viable site for a removal action as it is a drift mine and it is possible to delineate the soil contamination. Additional soil sampling can be conducted at the Robinson Mine site in order to fully delineate soils that are above the action values for mercury and other metals. Additionally, the debris remaining at the Robinson Mine, including the stamp mill, may be removed in order to reduce mercury contamination below action levels.

In the case of the hydraulic mine sites, although mercury was not detected above the action level in soil, it was detected in sediment samples collected downstream of the Secret Diggings, Nugget Bowl, Slate Creek Tunnel, Gopher Hill, and Bean Hill sites. Precipitation Event sample results for the Gopher Hill and Bean Hill sites show an increase in the mercury concentrations in several of the sediment samples. Mercury was not detected in any filtered water samples. In the surface water samples that contained mercury, the TSS was significantly higher than other samples and/or background samples, indicating that mercury is transported away from AMMA sites via sediment load and not the surface water itself. In order to reduce continued releases of mercury from the hydraulic sites, sediment release to waterways could be reduced. Specifically, stabilizing the sloped areas at the Gopher Hill and Lower Bean Hill mine sites, discussed in Section 2.3, would reduce the sediment load to Spanish Creek and, therefore, the mercury release from the Gopher Hill and Bean Hill sites.



Robinson Mine
Sample Location Map
Abandoned Mine Mercury Assessments
Plumas National Forest, California

Figure 4-3

Table 4-11
Robinson Mine - Primary Sampling Event Sampling Results for Soil and Sediment Samples (mg/kg)
(results above action levels are bolded and underlined)

Sample Location	Sample Type	Location Description	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Sediment Samples Action Level - Threshold Effects Level			–	5.9	–	–	0.596	37.3	–	35.7	–	–	0.174	18.0	–	–	–	–	123
Soil Samples Action Level - Risk Management Criteria			–	275.0	–	–	3.0	–	–	–	125.0	–	8.0	–	–	–	–	–	307.0
Background Sample																			
RM-S-1-BG	Sediment	Upstream of Robinson Mine	–	–	–	–	–	–	–	–	–	–	0.048J	–	–	–	–	–	–
Sediment Samples																			
RM-S-5	Sediment	Downstream of Robinson Mine	–	–	–	–	–	–	–	–	–	–	0.017J	–	–	–	–	–	–
RM-S-6	Sediment	Downstream of Robinson Mine	–	–	–	–	–	–	–	–	–	–	0.030J	–	–	–	–	–	–
RM-S-7 (duplicate)	Sediment	Duplicate of RM-S-6	–	–	–	–	–	–	–	–	–	–	0.015J	–	–	–	–	–	–
Soil Samples																			
RM-S-2	Soil	Below stamp mill	3.5	3.7	189	0.24	**3.7**	33.3	10.9	168	**1,290**	1.3J	**18.8**	23.4	ND (1.0)	5.7	ND (1.0)	53.2	**614**
RM-S-3	Soil	Sluice near stamp mill	–	–	–	–	–	–	–	–	–	–	6.7	–	–	–	–	–	–
RM-S-4	Soil	Sluice near stamp mill	–	–	–	–	–	–	–	–	–	–	**44.4**	–	–	–	–	–	–
RM-S-8	Soil	Mill wash	–	–	–	–	–	–	–	–	–	–	2.6	–	–	–	–	–	–
RM-S-9	Soil	Second sluice away from stamp mill	–	–	–	–	–	–	–	–	–	–	**47.7**	–	–	–	–	–	–
RM-S-10	Soil	Mine debris	–	–	–	–	–	–	–	–	–	–	0.28	–	–	–	–	–	–

Table 4-11 Notes:

– = Analysis not performed on sample
mg/kg = milligrams per kilogram
ND ( ) = Analyte not detected above the reported sample quantitation limit. The number in parentheses represents the associated contract required quantitation limit.

Table 4-12
Robinson Mine - Primary Sampling Event Sampling Results for Surface Water Samples (µg/L)
(results above action levels are bolded and underlined)

Sample Location	Location Description	TSS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Mercury	Mercury, filtered *	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Surface Water Samples Action Level - Freshwater "chronic" CCC		–	–	150	–	–	0.25	74	–	9	2.5	–	0.77	0.77	52	5	–	–	–	120
Background Sample																				
RM-SW-1-BG	Upstream of Robinson Mine	46,000	–	–	–	–	–	–	–	–	–	–	ND (0.20)	ND (0.20)	–	–	–	–	–	–
Samples																				
RM-SW-5	Downstream of Robinson Mine	22,000	ND (10)	ND (10)	30	ND (2.0)	ND (2.0)	ND (8.0)	4.1J	ND (10)	**5.2**	ND (20)	ND (0.20)	ND (0.20)	34	ND (10)	ND (5.0)	ND (10)	2.9J	7.8J
RM-SW-8 (duplicate)	Duplicate of RM-SW-5	39,000	–	–	–	–	–	–	–	–	–	–	ND (0.20)	ND (0.20)	–	–	–	–	–	–
RM-SW-6	Downstream of Robinson Mine	–	–	–	–	–	–	–	–	–	–	–	ND (0.20)	–	–	–	–	–	–	–
RM-SW-7 (duplicate)	Duplicate of RM-SW-7	–	–	–	–	–	–	–	–	–	–	–	ND (0.20)	–	–	–	–	–	–	–

Table 4-12 Notes:

CCC = Criterion Continuous Concentration
– = Analysis not performed on sample
µg/L = micrograms per liter
ND ( ) = Analyte not detected above the reported sample quantitation limit. The number in parentheses represents the associated contract required quantitation limit.
* = The values located in the "Mercury, filtered' row are for the filtered sample taken at the sampling location in the column. For example, the value located in the "Mercury, filtered" column and the SCD-SW-2 row is the sample result for the filtered sample SCD-SW-2F.
TSS = Total Suspended Solids

Other Literature Cited

- California State Mining Bureau (CSMB). 1896. XIII Report of the State Mineralogist. Sacramento, CA. Pages 304-305.
- California State Mining Bureau (CSMB). 1918. Mines and Mineral Resources of Plumas County. San Francisco, CA. Page 144.
- California Division of Mines (CDM). 1937. California Journal of Mines and Geology, XXXIII Report of the State Mineralogist. San Francisco, CA. Pages 108-109.
- Moore, J. 2014. Preliminary History of the Mines Collectively Known as Robinson Mine. U.S. Forest Service. Unpublished. 2 pages.

CALIFORNIA STATE MINING BUREAU,

J. J. CRAWFORD, State Mineralogist.

THIRTEENTH REPORT

(THIRD BIENNIAL)

OF THE

STATE MINERALOGIST

FOR THE

TWO YEARS ENDING SEPTEMBER 15, 1896.

SACRAMENTO:
A. J. JOHNSTON, : : : : : : SUPERINTENDENT STATE PRINTING.
1896.

side to what was supposed to be the lowest point, and an upraise of 30′ made to the gravel; this has lately been cleaned out, retimbered, and a 4′ flume placed in the bottom, on an 8″ grade. Radial bedrock cuts will lead to the upraise, to permit all the gravel being handled through this tunnel, which furnishes a 60′ dump into a flat formed by a curve of Rock Creek. By extending the tunnel the Quigley Ravine side will also be passed through to the Rock Creek dump. This arrangement will permit of a much larger area of gravel being handled each season. One half mile below the dump in Rock Creek is a stone restraining dam, 30′ wide at the base, 17′ at the crest, 20′ high, and 85′ long from bank to bank. A good wagon road has been constructed up Slate Creek, connecting the mine with the county road between Quincy and Spanish Ranch. To the present time only one giant, with 7½″ nozzle, has been used. The gravel carries gold throughout, though coarsest and best near the bedrock; some of this gold is black and rusty. Eighteen men are employed at present around the mine, ditches, and flumes, but later only seven men, working two shifts, will be required. C. D. Hazzard, of Minneapolis, Minnesota, owner; — McGillvray, of Quincy, superintendent.

Quincy Mining and Water Co.'s Mines (Hydraulic).—See our XIIth Report, p. 219. This property is situated on Gopher Hill and Shores Hill, along the north bank of Spanish Creek, about 3 miles W. of Quincy, at 3,800′ elevation on bedrock, and comprises 2,200 acres. Five giants, supplied with 6″ and 8″ nozzles, are used in the three different pits. At Gopher Hill the bank is from 80′ to 100′ in height; at the City Point claim, gravel is 10′ to 12′ deep on the north end and 50′ on the south end; on the N.E. side there is 15′ of reddish quartz gravel. Last season 200,000 cu. yds. of gravel were moved. There are three radiating branch sluices 3,000′ long, 4′ wide, set on a 6″ grade, paved with rock riffles, and cleaned up every twenty days. It is said 1,000 miner's inches of water move 1,000 cu. yds. of gravel in thirteen hours. The gold is coarse and nuggety, and is found mostly on the bedrock. The bedrock is cleaned twice, one season after the other. The company have built four restraining dams, the upper one of gravel, across Wanponsey Creek. The debris drops in a lake 12′ to 15′ deep, and after settling passes over a spillway to the second and third dams. These dams are 300′, 800′, and 200′ apart. The upper dam is 22′ and the second 20′ high. The company's water-supply is obtained from Gold and Silver lakes on Spanish Peak, and from Bean and Spanish creeks. The main ditches are 24 miles long, carrying about 2,000 miner's inches, and the branch ditches 54 miles long, carrying from 500 to 1,000 miner's inches. The pressure from the main reservoir is 350′, and gives ten hours piping. The pipeline, 22″ and 11″, made out of No. 12 iron, is between 5,000′ and 6,000′. Twenty men are employed. An incorporated company, of Quincy, owner; A. B. White, of San Francisco, superintendent.

Rattlesnake Mine (Drift).—See Ding Dong.

Rich Gulch Mine (Quartz).—See Halsted.

Richmond Hill Mine (Hydraulic and Drift).—See Good Hope.

Riverdale Mine (Drift).—See Elizabethtown Gravel Channel.

Robinson (Morning Star and Trenton) Mine (Quartz).—It is situated in Granite Basin, 8 miles N.E. from Merrimac, Butte County, and contains two locations, designated the *North Star* and the *Trenton*, at 4,750′ elevation. The vein, 2′ to 4′ wide, trends N.E. and S.W., and dips 80°

S.E., between a granite and diorite contact. Frazier Creek divides the two claims. Developments consist of a 3½'x 6' shaft, 70' deep, with steam hoisting plant. The quartz in the bottom of the shaft carries 3% of high-grade sulphurets. A No. 3 Hooker pump is driven, with a speed of 30 strokes per minute, by a 14 H.P. engine. The 20-stamp water-mill (with only one battery in running order) is situated on Frazier Creek, a short distance from the shaft, and is connected with it by a tram-road. The mill has 900-lb. steel-shod stamps and one Johnston concentrator driven by a 5' Knight wheel, under 94' pressure. The water is diverted from Frazier Creek, through 1,650' of ditch of 200 miner's inches capacity. Tunnels have been run on the vein from both sides of the creek, the four on the North Star being 400', 260', 300', and 40' long, respectively, with the intervening ground mostly stoped out. The tunnel on the Trenton is 200' long, with some little stoping. The shaft on this vein is the deepest of any mine in the basin. Seven men are employed. E. C. Robinson, of Merrimac, Butte County, owner.

Round Valley Consolidated (Arcadian) Mining Co.'s Mine (Quartz).—It is on the E. side of North Cañon, 2 miles S.E. of Greenville, at 3,900' elevation, and contains four locations and a mill site. There is a main N. and S. vein and two E. and W. feeders, 6' wide, dipping nearly vertically. The developments consist of a main cross-cut tunnel (at present inaccessible) 700' long to the vein, near the south end of the claim; thence a drift 500' to the north country with a shaft; the John Taylor tunnel, 450' long, striking one of the feeders, and developing three pay-shoots between where the vein is tapped and where it connects with the N. and S. vein; pay-shoots have likewise been cut on the other veins. The quartz is low-grade. The 10-stamp steam-mill, with 750-lb. stamps, is furnished, besides the plates, with two rubbers, but no concentrators. Timber is abundant. Idle. An incorporated company, of Greenville, owner; D. NcIntyre, of Greenville, manager.

Russian Mine (Drift).—This is a prospect on the course of the old Dutch Hill channel, 11 miles from Prattville, at 4,025' elevation, and comprises 60 acres, on which a bedrock tunnel has been started. B. Piazzonia and J. Borsini, of Butte Valley, owners.

Salmon Falls Mine (Drift).—See our XIIth Report, p. 220. Assessment work only. D. McIntyre et al., of Greenville, owners.

Savercool Mine (Quartz).—See our Xth Report, p. 493. It is situated 4 miles E. of Butte Valley, on the North Fork of Feather River, at 4,000' elevation. Idle. Savercool Bros. et al., of Butte Valley, owners.

Sawpit Flat Mine (Hydraulic and Drift).—See Good Hope.

See & Seren Mine (Quartz).—See Specimen.

Senator Perkins Mine (Quartz).—It is 5 miles N.E. of Merrimac, Butte County, at 4,750' elevation. The vein courses N.E. in the granite. The developments consist of a 30' tunnel and a 20' open cut. The quartz carries high-grade sulphurets. Two men are at work. — Blazel, of Oakland, owner.

Shenandoah Mine (Quartz).—See our XIth and XIIth Reports, pp. 324 and 220. It is at the head of French Ravine, 12 miles N.W. of Spanish Ranch, at 2,350' elevation, and comprises three quartz and two placer claims. The developments include three tunnels on the vein, 160', 50', and 100' long, and a 45' winze from tunnel No. 1 sunk on the pay-shoot. The large percentage of sulphurets found in the ores interferes with the successful milling; at least the tailings are found to carry a high per-

CALIFORNIA STATE MINING BUREAU
FERRY BUILDING, SAN FRANCISCO
FLETCHER HAMILTON State Mineralogist
San Francisco December, 1918

Mines and Mineral Resources

OF

PLUMAS COUNTY

By ERROL MAC BOYLE

CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO
1920

46902

The Mountain House drift mine owned by the Plumas Investment Company adjoins.

Moreno Randolph Claim. Owner, Barbee.

Morning Star Mine. (Robinson Mine.) Owner, E. C. Robinson, First National Bank Building, Oakland, California.

Location: Granite Basin Mining District, Secs. 30 and 31, T. 23 N., R. 7 E.; Quincy is 30 miles northeast via Letter Box, Buck's Ranch and Meadow Valley; good automobile road to property.
Bibliography: Cal. State Min. Bur. Report XIII, page 304. U. S. Geol. Survey Folio 43, Bidwell Bar.

This property comprises two patented claims, the Morning Star and Trenton. There is a total area of 40 acres with a length along the lode of 3000′. Frazier Creek divides the property, cutting across the strike of the vein. There is an easy slope from the creek to the top of the ridges.

The claims were located in 1876 by O'Brien and Sullivan. In 1890 the property was purchased by Robinson, bonded in 1905 by Trowbridge and in 1912 by Holbrooke and Cohn, San Francisco, who, it was reported, spent $10,000 and only succeeded in sinking the shaft 10′ before work was abandoned. Chas. Lyser was superintendent. It has been idle since the summer of 1912.

Development work consists of a shaft 100′ deep near the portal of the lower tunnel on the east side of Frazier Creek and a drift on the vein 150′ to the northeast from the bottom of the shaft. There are also three tunnels on the vein—the upper tunnel, 75′; middle tunnel, 300′; and lower tunnel, 300′, northeast of the creek and 300′ southwest of the creek. All ground is stoped from the lower tunnel to the surface, and a small amount from the 100′ level in the shaft.

The deposit consists of a fissure vein near the contact between granite and diorite. The vein filling is quartz and in some cases decomposed granite and glass quartz crystals. The vein varies from 2′ to 4′ in width, strikes N 41° E., and dips 80° E. The foot-wall is granite, the hanging wall diorite, and there is a proven length on the surface of 2000′. Several pay shoots 40′ to 50′ in length developed in the 600′ opening. The ore is said to average $10 per ton, 2% sulphides being worth $60 to $75 per ton.

Water is obtained from Frazier Creek by a 1650′ ditch under 94′ head. Steam is also used.

Equipment consists of steam and water power hoist capable of sinking to a depth of 500′ and a 35 year old 20-stamp mill.

Adjoining mines are the Frazier and Black Bart.

Mother Lode Group. Owner, M. J. Calnan, Genesee.

Location: Genesee Valley Mining District, Secs. 14 and 15, T. 25 N., R. 11 E., 3 miles southeast of Genesee, thence 18 miles, by good wagon road, to Keddie. Elevation 4000′.
Bibliography: Diller, J. S., U. S. Geol. Survey Bull. 353, pages 111–121. Diller, J. S., U. S. Geol. Survey Bull. 260, pages 45–49. U. S. Geol. Survey Topo. sheet Indian Valley, Genesee, Honey Lake.

35714

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
GEORGE D. NORDENHOLT, Director

DIVISION OF MINES
FERRY BUILDING, SAN FRANCISCO

WALTER W. BRADLEY State Mineralogist

Vol. 33 JANUARY, 1937 No. 1

CALIFORNIA JOURNAL

OF

MINES AND GEOLOGY

QUARTERLY CHAPTER
OF
STATE MINERALOGIST'S REPORT XXXIII

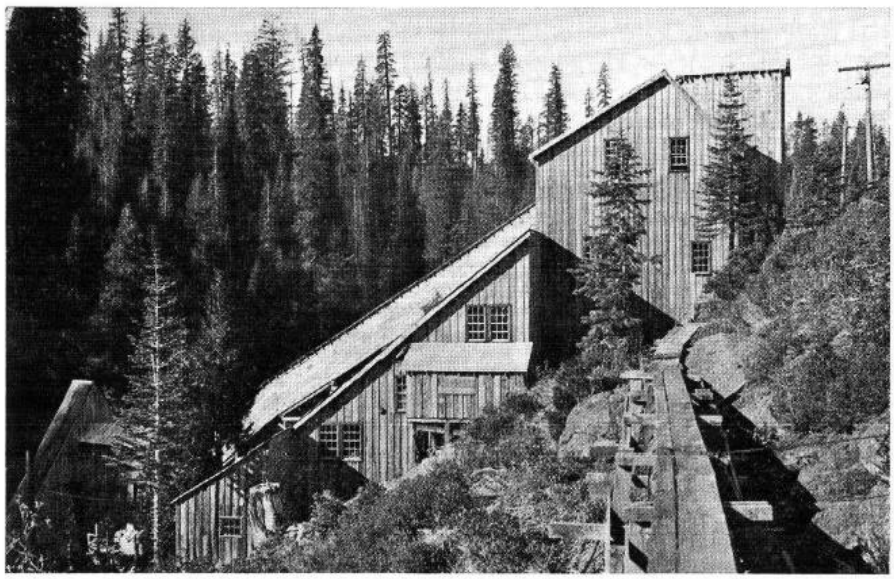
STATE DIVISION OF MINES
FERRY BUILDING, SAN FRANCISCO
CALIFORNIA

40819

part of the same group as the patented claims now held by Mrs. Hamilton and the entire group was known by the name "Gold Stripes." However, when the claims were patented, the Gold Stripe claim was not included in the patent and was later allowed to lapse.

B. K. Melville is president of *Peerless Development Company,* a California corporation, which he has organized to work a group of seven claims adjoining the patented ground owned by Mrs. Hamilton. The address of Peerless Development Company is Room 304, 333 Kearney Street, San Francisco. This property was idle when visited in the summer of 1936.

Granite Basin Mining Co. holds some 50 mining claims in Sec. 30, T. 23 N., R. 7 E., and adjoining sections. C. F. Tolman of Palo Alto is president, and H. F. Lynn of Grass Valley is manager. At the mine John Tolman is superintendent and Jack Murray is assistant superin-



Mill of Granite Basin Mining Co. Shaft house in lower left corner.

tendent. The property is reached over five miles of dirt road from Letterbox on the Oroville-Bucks Ranch road.

Some of these claims have been known in the past as *Robinson Mine, Morning Star Mine,* and *Black Bart Mine,* and they were described by MacBoyle [1] under those names. Both the Morning Star and the Black Bart were equipped with mills in 1895, according to State Mineralogist's Report XIII. The mineralization is associated with the contact between granite and an igneous rock of granitic grain, made up largely of ferromagnesian minerals. Turner has mapped this with his "amphibolite," but at the mine it is known as meta-andesite or porphyrite. Geological conditions are probably more complicated than could be mapped by Turner [2] on the small scale that he used, and the possi-

[1] MacBoyle, *op. cit.*
[2] Turner, H. W., U. S. Geol. Survey Atlas, Bidwell Bar folio (No. 43), 1890-94.

bility of a basic igneous intrusion here, that preceded the granitic intrusion, should be considered. Some mineralization is found on this contact, and some mine-workings have followed it, but the chief mineralization seems to be in the granite. Near the shaft of Granite Basin Mining Co. are five parallel fissures in a width of a few hundred feet, on which old adits have been driven.

The 320-ft. shaft, which has recently been pumped out, develops a nearly vertical quartz vein with an average width of 18 inches, striking easterly and westerly. On the lower levels the dip changes slightly and departs a few degrees from vertical toward the south. On the 85-ft. level, drifts run out 200 ft. easterly and 190 ft. westerly. Ore is being stoped above this level. Drifts on the 220-ft. level are to be started immediately.

The mill of 50 tons rated daily capacity contains a jaw crusher 9 by 14 inches, 10 stamps, and a 4-ft. by 3-ft. ball mill in closed circuit with a Dorr classifier. Riffles are set below the stamps, and plates for amalgamation below the ball mill to recover free gold, which amounts to 40% of the total. Grinding is to 50-mesh. Gold in the sulphides is recovered in three Fagergren flotation cells followed by two Kraut cleaner-cells. The mill was started on Nov. 1, 1936. A 200-hp. Fairbanks Morse diesel engine driving a generator furnishes electric power for all machinery. The 440 cfm. compressor is driven by a 100-hp. motor. The hoist on the shaft is operated by compressed air.

Green Mountain, see Jackson.

Hallsted Group is assessed to Y. H. & Frank Hallsted, Virgilia. It is in Sec. 12, T. 25 N., R. 7 E. and Sec. 7, 18, T. 25 N., R. 8 E. The group is now controlled by Virgilia Mining Corp., which see. References to earlier reports on the Hallsted are contained in the accompanying table of mines.

Imperial Mine comprises the T. C. & O. K. patented claims in Sec. 34, T. 25 N., R. 9 E., which are owned by Vincent E. Bayless, Spokane, Washington, or c/o David J. Heisey, 805 Federal Bank Bldg., Dubuque, Iowa. Ernest V. Grant, of Quincy, has a lease and option, and in 1935 had 16 men at work for a part of the year. A 130-ft. shaft, 4 ft. by 8 ft. was cleaned out and retimbered, and 90 ft. of drifting was done at the 100-ft. level. According to Grant, he made a 300-ton test run from this drift, breaking an 8-ft. width of vein, and the ore ran $9 per ton in gold. The vein strikes N. 17° W. and has a vertical dip. Walls are slate. Grant is now planning to sink the shaft to the 200-ft. level.

The new mill is of 30 tons rated daily capacity, and consists of a crusher, ball mill, Dorr-type classifier, plates for amalgamation, and a Simpson 5-cell, pneumatic type flotation machine.

Indian Valley Mine in Sec. 10, 11, T. 26 N., R. 9 E., one mile south of the town of Greenville, is assessed to J. W. Prentiss, 42 Broadway, New York City, later changed to 40 Wall Street, New York City. It is one of the oldest mines in Plumas County and was described in State Mineralogist's Report X, for 1890. The mine had been very active during a period ten years earlier than that date, having been developed by a tunnel 2000 ft. long and a shaft 700 ft. deep on a pay-shoot.

On June 1, 1934, the mine was reopened by the owner, with whom were associated Phillip J. FitzGerald, 913 Russ Building, San Francisco,

Preliminary history of the mines collectively known as Robinson Mine

By Jamie Moore
District Archaeologist
Plumas National Forest
May 2014

The **Robinson Mine** was a cluster of thirteen mining claims, each twenty acres in size. These claims were adjacent to each other and located in T23N R6E Sec. 25, 36 and T23N R7E Sec. 30, 31. The two oldest claims, the **Trenton** and **Morning Star**, may date to pre-1863 (Robinson claim notes 1966), this would match the 1875 GLO Map that shows an old quartz mill where these two claims were located.

The oldest claims were the **Morning Star**, and it was recorded for Dennis O'Brien and Michael Sullivan (24 July 1878, Plumas Book 1 page 362); **Trenton Lode** was recorded for P.P. Lyttaker, this claim may latter have been called the **Robinson Claim** (12 August 1878, Plumas Book 1 page 375); **Plumas Quartz Claim** was recorded for Joseph Pippin and abutted the **Ella Mining Claim** to the east (1 January 1897, Plumas Book 4 page 183); and Black Bart Mine was recorded for Joe Pippin and was formerly known as the Frazier Mining Company (3 March 1899, Plumas Book 4 page 382). It appears that this claim was located by Pippin who bonded it to the Frazier Co. and then reverted back to Pippen. In 1913 only assessment work was being done. **Devil's Gate Quartz Mining Claim** was recorded for Joe Pippin and was formerly known as the **Schwale Claim** (12 July 1899, Plumas Book 4 page 420).

The Forest Service concluded in 1967 that the **Trenton Claim** did contain enough minerals of sufficient quantity to constitute a discovery under the mining laws. The Forest Service concluded in 1967 that other claims did not contain minerals of sufficient quantity to constitute a discovery under the mining laws.

The next group of claims was recorded in 1941 for the **Morning Star and Trenton Milling and Mining Company**. These claims were the **Granite Basin No. 3** (8 September 1941, Plumas Book 22 page 471), **Granite Basin No. 12** (8 September 1941, Plumas Book 22 page 471) and **Granite Basin No. 13** (8 September 1941, Plumas Book 22 page 472). The Forest Service concluded in 1967 that the **Granite Basin Claims** did not contain minerals of sufficient quantity to constitute a discovery under the mining laws.

The last group of claims was recorded in 1945 for W.C. Robinson by R.C. Jamison. These claims were the **Willie No. 7** (13 September 1945, Plumas Book 23 page 299), **Willie No. 10** (13 September 1945, Plumas Book 23 page 302), **Willie No. 11** (6 September 1945, Plumas Book 23 page 302), **Willie No. 13** (6 September 1945, Plumas Book 23 page 304) and **Willie No. 14** (2 September 1945, Plumas Book 23 page 305). The Forest Service concluded in 1967 that the Willies claims did not contain minerals of sufficient quantity to constitute a discovery under the mining laws.

As of 1966 the **Willie Claims** were owned by the Granite Basin Gold Development Company (W.C. Robinson was President). All the other claims were owned by Black Star Mining Corporation (W.C.

Robinson was Secretary). Both mining companies shared the same address: 205 Sellwood Building, Duluth, Minnesota. By 1967 all the claims were owned by the Estate of W.C. Robinson, executor: First American National Bank of Duluth, Minnesota, M.W. Whittemore, Trust Officer.

Tentatively structures appear to be spread over several of the original four claims. A cemetery is located on both the **Black Bart** and **Plumas** claims. A 15-hp steam engine appears to have been located on the **Plumas** Claim. A Huntington Mill, Triumph concentrator, and several houses appear to be located on The **Morning Star** Claim. The mill on the **Morning Star** claim and the main shaft on the **Trenton** claim seem to have operated between 1936 and 1939.

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Robinson Mine - Plumas National Forest
Applicant: Department of Conservation

SECTION ONE **DIRECT COSTS**	**Year One**	**Year Two**	**Total**
Preliminary Assessment & Site Investigation			
Contract & Project Management	$4,000.00		$4,000.00
Project & Sampling Plans	$10,500.00		$10,500.00
Field work: site inventory, sample collection	$5,000.00		$5,000.00
Travel	$1,000.00		$1,000.00
Lab analysis of samples	$10,500.00		$10,500.00
Report preparation		$7,000.00	$7,000.00
Engineering Estimate & Cost Analysis			
Contract & Project Management		$4,000.00	$4,000.00
Project Work Plan Development		$10,000.00	$10,000.00
Field Investigation Work		$11,750.00	$11,750.00
DIRECT COSTS SUBTOTAL:	$31,000.00	$32,750.00	$63,750.00

SECTION TWO **INDIRECT COSTS**	**Year One**	**Year Two**	**Total**
	$0.00	$0.00	$0.00
INDIRECT COSTS SUBTOTAL:	$0.00	$0.00	$0.00

SECTION THREE **Administrative Costs (Costs *not to exceed 15% of total Project Cost*) :**			**Total**
Department of Conservation Overhead	$9,000.00	$2,250.00	$11,250.00
ADMINISTRATIVE TOTAL:	$9,000.00	$2,250.00	$11,250.00
SNC TOTAL GRANT REQUEST:	$40,000.00	$35,000.00	**$75,000.00**

SECTION FOUR **OTHER PROJECT CONTRIBUTIONS**	**Year One**	**Year Two**	**Total**
United States Forest Service		$48,807.00	$48,807.00
Department of Conservation	$4,385.00	$48,808.00	$53,193.00
Total Other Contributions:	$4,385.00	$97,615.00	**$102,000.00**

Total Project Cost	**$177,000.00**

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.

* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Cost Allocation Plan

Section 1 - Direct Costs

Contract & Project Management Costs

Classification	Personnel Cost	Percent (based on one month)	Amount Allocated
Associate Government Program Analyst - Contract & Grant Administration	$ 106,942	0.8	$ 7,129
Office Technician	$ 74,287	0.27	$ 1,671
Environmental Program Manager I	$ 142,212	0.3	$ 3,555
Total			$ 12,356

802-Upper Stephens Meadow Restoration Project Lassen County

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**Lassen Land and Trails Trust**
Project Title:	**Upper Stevens Meadow Restoration Project**
Subregion:	**North**
County:	**Lassen**
SNC Funding:	**$115,385.00**
Total Project Cost:	**$123,000.00**
Application Number:	**802**
Final Score:	**90**

PROJECT SCOPE

The Upper Stevens Meadow Restoration project is designed to protect a Sierra montane meadow that is threatened by lodgepole pine encroachment. This property, located in western Lassen County, is privately owned and is leased for cattle grazing and actively managed for timber resources, and has a conservation easement held by Lassen Land and Trails Trust.

This restoration project will improve water quality in the Eagle Lake Watershed through the protection of this working landscape on upper Pine Creek, the primary tributary to Eagle Lake, while also preserving valuable wildlife habitat of the Sierra Nevada. This property provides numerous watershed benefits to the Eagle Lake Watershed, which is a crucial environmental, economic and cultural resource to the citizens of Lassen County and the northern Sierra Nevada, but encroaching conifer threatens to eliminate these resource services.

Based upon an approved Non Industrial Timber Management Plan, Sierra Nevada Conservancy (SNC) grant funds will be used to remove encroaching lodgepole pine in the meadow area and monitor riparian corridor and montane meadow before and after treatments.

After the conifer removal project, grantee will utilize a volunteer crew to assist with rehabilitation work and planting of native riparian plant species, as well as include this project in an education program to educate citizens about the importance of water and natural resources in the Sierra Nevada. Lodgepoles harvested from the site may be used to construct necessary fences at parking locations along the Modoc Line, a project the SNC previsously assisted, and may also be able to use chips as mulch to stabilize soils in the parking areas.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Establish monitoring protocols and photo points	October – November 2014
Remove encroaching lodgepole pine within the meadow area.	November – December 2014
Final clean-up and removal of lodgepole seedlings by hand-pulling	June – August 2015, August 2016
Conduct post-treatment monitoring	August 2015, August 2016
Progress Reports	February 28, 2015, August 30, 2015,February 28, 2016,August 30, 2016
FINAL PAYMENT/FINAL PAYMENT REQUEST	**December 31, 2016**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	
Project Management	$13,000
Forest Treatment Work	$93,000
Indirect**	
Monitoring	$2,860
Supplies	$1,000
Publications, Printing, Public Relations	$500
Travel	$1,200
Administrative***	
	$3,825
GRAND TOTAL	**$115,385**

* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

** Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

*** Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

PROJECT LETTERS SUPPORT/OPPOSITION

- Support
  - Lassen NF, Eagle Lake Ranger District
  - US Fish and Wildlife, Partners for Wildlife
  - Rosenberg Trust
  - UC Cooperative Extension; Lassen County

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Number of people reached
- Dollar value of resources leveraged for the Sierra Nevada
- Linear feet of streambank protected or restored
- Acres of land improved or restored

Notice of Exemption

Appendix E

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: (Public Agency) Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Project Title: Upper Stevens Meadow Restoration Project (SNC 802)

Project Location – Specific:
The project is located on a 640-acre private ranching/grazing property (Assessor Parcel Number [APN] 085-080-06) which is subject to a conservation easement in upper Stevens Meadow, immediately south of Forest Route 31N36, approximately four miles west of State Route (SR) 44, approximately 16 miles west of Eagle Lake, approximately 16 miles north of Lake Almanor, approximately 16.5 miles northeast of Chester, and approximately 28 miles northwest of Susanville, in Lassen County, California.

Project Location – City: Susanville and Chester
Project Location – County: Lassen

Description of Nature, Purpose and Beneficiaries of Project:
The Lassen Land and Trails Trust, the conservation easement holder, is requesting $115,385 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to implement the removal of encroaching lodgepole pine on approximately 90-acres of the 640-acre property along Pine Creek within Upper Stevens Creek Meadow in Lassen County. The proposed project would remove encroaching lodgepole pine using both mechanical and hand treatment methods. Mechanical removal of lodgepole pine trees would take place on approximately 20-acres. On the remaining 70-acres, the lodgepole pine trees would be harvested using hand treatment methods. The lodgepole trees would be used for a zigzag fence. Harvested trees not needed for fencing would be chipped and transported to a biomass energy facility; however, these activities (chipping and transporting to a biomass energy facility) would provide off-set costs and are not part of the proposed project. The encroaching lodgepole pine threatens to impair the plant community through altered hydrology, shade, and changing soil composition. The loss of the meadow would impact Pine Creek, and ultimately Eagle Lake, by increasing water speed, erosion and sediment loads, flooding events, and would alter the native plant communities along the length of the stream. Therefore, by removing the encroaching lodgepole pine trees, the proposed project would maintain the native meadow plant community, protect the vegetation along the banks of Pine Creek, and would improve water quality and wildlife habitat.

The project site is subject to an approved Non-industrial Timber Management Plan which contains silvicultural prescriptions (timber harvest requirements) and provides protective measures for stream zones, cultural resources and special status plant and wildlife species. Any work within the watercourse and lake protection zone (WLPZ) would include hand treatments and would be seasonally limited. No cultural resources are within the proposed project area. The proposed project area provides some habitat for State and Federal special status species; however, as part of the treatment activities, pre-treatment surveys would identify plant and wildlife special status species in the treatment areas. If special status plant species are identified, they would be flagged and avoided. If special status wildlife species are identified, a buffer surrounding their activity locations would be provided and treatment activities would occur outside that buffer, allowing the treatment methods to avoid wildlife special-status species.

The purpose of the proposed project is to restore and maintain the native meadow plant community in order for the montane meadow to function properly. In a properly functioning meadow, the native sedges, willows and other species stabilize the stream bank and act as sponges to keep water available late into the season. The loss of streamside vegetation leads to

stream incisions, which in turn leads to a lower water table, further altering the vegetative community. Protection of the meadow would ultimately provide healthier meadows, healthier streams, and healthier watersheds, and would protect existing natural resources from being altered by encroaching lodgepole pine and associated habitat degradation.

Name of Public Agency Approving Project: Sierra Nevada Conservancy
Name of Person or Agency Carrying Out Project: Lassen Land and Trails Trust

Exempt Status: *(check one)*

☐ Ministerial (Sec. 21080(b)(1); 15285);
☐ Declared Emergency (Sec 21080(b)(3); 15269(2));
☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c);
☒ Categorical Exemption. State type and section number: Section 15304, "Minor Alterations to Land"
☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:
The proposed Upper Stevens Meadow Restoration Project is categorically exempt from the provisions of CEQA pursuant to CEQA Guidelines Section 15304, Class 4, which permits minor public or private alterations in the condition of the land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes. The project consists of minor land alterations (mechanical and hand treatments of encroaching lodgepole pine) to maintain and improve the long-term viability of the montane meadow, including its hydrologic function. The proposed project would improve the habitat quality and function of the montane meadow to help sustain forest and watershed health and contains measures to protect water quality, special status plant and animal species, and cultural resources in the project area. No significant adverse impacts to natural or cultural resources will occur as a result of the project.

Lead Agency Contact Person: Matthew Daley
Area Code/Telephone/Extension: (530) 823-4698

Signature:_____ Date:_____ Title: Executive Officer
Jim Branham

Date Received for Filing at OPR:

Revised 2005

Detailed Project Description Narrative:

Upper Stevens Meadow Restoration (EGID #802)

Project Description:

The Upper Stevens Meadow Restoration project is designed to protect a Sierra montane meadow that is threatened by lodgepole pine encroachment. This property, located in western Lassen County, is privately owned and actively managed for timber resources, and has a conservation easement held by Lassen Land and Trails Trust (LLTT). This restoration project will improve the overall health of the forest and the Eagle Lake watershed through the protection of this meadow, as well as improving wildlife habitat conditions. Additionally, forest biomass removed as part of this restoration project will be utilized as fencing or sold as chips to defray project costs.

This project will provide a public benefit through forest health improvement, watershed restoration, and protection of wildlife habitat. In addition, the property is a private inholding surrounded by Lassen National Forest land, and this project will provide increased opportunities for tourism by protecting the primary tributary to Eagle Lake, which provides many recreational opportunities. The deliverables from this project will be improvement of one mile of Pine Creek, improvement and protection of 90 acres of montane meadow, and protection of critical wildlife habitat, including the Eagle Lake Rainbow Trout (ELRT), which is currently under review for federal listing under the Endangered Species Act. Sierra Nevada Conservancy Project Funds will go toward the removal of encroaching lodgepole pine in conjunction will funds secured for this purpose from the US Fish and Wildlife Service-Partners Program and the private landowner. Additional in-kind contributions will come from USFS-Eagle Lake Ranger Station, which will conduct monitoring of the project to evaluate the effects of conifer removal on understory plant community changes through time, and from Trout Unlimited, which will conduct habitat typing on Pine Creek. This will also help put the project in context of similar projects conducted on National Forest land along Pine Creek and within the watershed.

The Upper Stevens Meadow Restoration Project will support the goals of Proposition 84 and the mission of the Sierra Nevada Conservancy to improve the environmental, economic, and social well-being of the Sierra Nevada Region, its communities, and the citizens of California through the improvement of the health of the forest, watershed health, protection of critical wildlife habitat, and enhancement of valuable recreational opportunities.

Lassen Land and Trails Trust believes that this project is critical due to its water resources and wildlife habitat. Although the project will occur on private land, there will be a public benefit due to numerous watershed benefits to the Eagle Lake watershed, which is a crucial environmental, economic and cultural resource to the citizens of Lassen County and the northern Sierra Nevada. Encroaching conifer threatens to eliminate these resource services, which will spread beyond the private property boundary. With the support of the Sierra Nevada Conservancy, we will work with partners from the private and public sectors and the landowner to remove encroaching lodgepole pine which threatens to alter the hydrology of the meadow.

This project will fit in well with on-going efforts in the region, along Pine Creek, and in this area of the Sierra Nevada. The US Forest Service-Eagle Lake Ranger District has had several successful lodgepole removal projects along Pine Creek, and these projects have shown no negative impacts to water quality, including sedimentation and water temperature. US Forest Service staff would participate in the project by conducting monitoring of the site in order to evaluate conifer removal effects on understory plant communities, including measures of species richness, diversity, cover and wetland prevalence index and comparing these data to an untreated meadow threatened with conifer encroachment. The Forest Service will also collect data on forest structure to evaluate how tree density and canopy cover influence understory plant communities. In addition, efforts to reintroduce and re-establish a native population of Eagle Lake Rainbow Trout are on-going, leading to interest from Trout Unlimited to conduct in-stream habitat surveys, and California DFW has expressed interest in spawning and rearing studies on this property.

Maintaining the native meadow plant community is critical to the proper functioning of a montane meadow, however, encroaching lodgepole pine threatens to impair the plant community through altered hydrology, shade and changing soil composition. In a properly functioning meadow, the native sedges, willows and other species stabilize the stream bank and act as sponges to keep water available late into the season. The loss of streamside vegetation leads to stream incisions, which in turn leads to a lower water table, further altering the vegetative community. Some minor bank incision has already occurred in the project area, and this process will accelerate as lodgepole pine outcompetes the willows and sedges. The loss of this meadow near the headwaters of Pine Creek could have drastic consequences on the stream all the way to Eagle Lake. These effects include increased water speed, increased erosion and sedimentation into Eagle Lake, more drastic flooding events, and increased effects of drought, which will lead to the alteration of native plant communities along the length of the stream. After the conifer removal project, we will include this project in our education program to

educate citizens about the importance of water and natural resources in the Sierra Nevada.

Montane meadows are considered a keystone habitat in the Sierra Nevada because they offer water during the dry season, provide higher plant productivity, and other resources. Meadows are an important part of a healthy forest as they provide critical habitat to a variety of species. A wide variety of wildlife including fish, migrating waterfowl, sandhill cranes and deer take advantage of this property and the meadow system. This project will restore key habitat for the Eagle Lake Rainbow Trout as part of the larger effort toward the recovery of this population. This fish is the only rainbow trout native to the Eastern Sierra Nevada, and is endemic to Eagle Lake and its tributaries. The California Department of Fish and Wildlife has identified this species as a "Species of Special Concern" and a "Heritage Trout Species" and is also under review for federal listing under the Endangered Species Act.

Project Design:

The proposed project will restore approximately 80 acres of montane meadow and riparian habitat along the upper reach of Pine Creek, a Class I watercourse and main tributary to Eagle Lake. There are two main techniques being used for the conifer removal. The first is mechanical removal, which will take place on approximately 20 acres. The first phase will be to fell, harvest, skid and transport all lodgepole trees of merchantable size to be sent to a sawmill for conversion into lumber. This phase is expected to pay for itself through the sale of timber, and is not included in this project. After the sawlogs are removed, all other lodgepole trees will be harvested, and will either be prepared for use as zigzag fencing, or will be chipped and transported to a biomass energy plant. In this way, all biomass resulting from these activities will be utilized. The second approach will be to remove lodgepole using hand treatments. Approximately 19 acres are considered dense stands, while an additional 52 acres have more scattered conifer encroachment.

All biomass resulting from this forest health improvement project will be utilized through sale of chips to biomass plants to offset project costs, or will be processed to be used as fencing material. This fencing may be used to surround proposed parking areas on the Modoc Line Rail Trail, which was purchased in part using Sierra Nevada Conservancy funds in 2008, and is owned and managed by Lassen Land and Trails Trust. This plan ensures that all forest biomass resulting from this restoration project will be utilized to increase the cost-effectiveness of project funds, and to further leverage these funds.

The project area is located within 640 acres of private property owned by the Rosenberg family that is surrounded by national forest land. The property is managed under a conservation easement held by Lassen Land & Trails Trust since 1992. The proposed project complements community and interagency goals to rehabilitate the upper reach of Pine Creek and establish natural spawning and rearing of ELRT. Public outreach and education programs are planned through field tours, local news releases, LLTT newsletters, and internet postings to increase awareness of native trout issues and watershed conservation efforts in Lassen County and the Sierra Nevada region.

Pine Creek is the primary watercourse on the property. Two branches converge in the center of the property. The northern branch enters the property from the west and is perennial and is a Class I waterway. The southern branch may become intermittent late in the summer, and is a Class I waterway which becomes a Class III watercourse in the extreme southern portion of the property. In addition, there are two springs located in the western portion of the property which feed Pine Creek. Stream grade is a gentle 4% and the channel bottom is basalt boulders, cobbles and sand.

The property has mature stands of lodgepole pine and Jeffrey pine, along with an aspen stand in a rugged rocky basalt flow, and a large native grass meadow lies in the center portion of the property, which is the project area.

This property is zoned UC-2, or Upland Conservation, with an 80-acre minimum. Under the terms of the conservation easement, this property cannot be subdivided. In the Lassen County General Plan, the property is designated as Prime Recreation, which is consistent with this project. This project will enhance the recreational values of surrounding Forest Service land, and the watershed of Eagle Lake. Although there is not public access to the property, Lassen Land and Trails Trust will lead educational trips on the property, providing public access in a controlled manner. Additionally, the Trust is the sponsor of a Natural Resource focused Explorer Post, who have expressed interest in participating in the project through volunteer labor and educational trips.

Workplan and Schedule

Initial work preparing for lodgepole removal will begin in June 2014, and will be completed using funds from US-FWS Partners Program and the private cash donation. Timber harvest using SNC funds will begin in August 2014, the estimated starting date for a project agreement.

Project Deliverables	Responsible Parties	Timeline
Establish monitoring protocol	USFS, LLTT	June 2014
Project Monitoring: Pre-treatment	USFS, LLTT	June 2014
Project Monitoring: photopoints, report	LLTT	August 2014, 2015, 2016 (on-going in perpetuity)
Lodgepole Removal (mechanical)	Contractor	August-November 2014
Lodgepole removal (hand treatment, intensive)	Contractor, LLTT	June-November 2014
Lodgepole removal (hand treatment, extensive)	Contractor, LLTT	September-October 2014
Project Monitoring: post-treatment	USFS, LLTT	October 2014, August 2015, August 2017, August 2019
6-month reports to SNC	LLTT	February 2015, August 2015, February 2016
Final cleanup, hand removal of lodgepole seedlings	LLTT, volunteers	June-August 2015, August 2016
Final Report (project completion)	LLTT	August 2016

Restrictions, Technical/Environmental Documents and Agreements

We have received several of the documents and agreements necessary for project completion, and anticipate final approval by April 2014. Many of these are part of the active Non-Industrial Timber Management Plan (NTMP) for the property. An update of the Non-industrial Timber Management Plan was submitted on February 17, 2014, which includes specific provisions for the meadow. NTMP serves as a Certified Regulatory Program under CEQA, so the Upper Stevens Meadow Restoration is not considered a new project under CEQA. There is a timber waiver for water quality from the California State Water Resources Control Board which covers the property. Through

a partnership on this project, US-FWS Partners Program has completed necessary NEPA documentation, including Section 7 and cultural resources clearance.

Organizational Capacity

Lassen Land and Trails Trust is a 501 (c)(3), member-supported organization whose mission is to conserve significant natural lands and agricultural landscapes; to promote and enhance a regional recreational trails network. Over its 25-year history, the Trust has conserved over 4,000 acres in northeastern California and currently partners to develop, enhance and promote over 135 miles of recreational trails. The Trust has succeeded in its achievements through support from its partners, including the Bureau of Land Management Eagle Lake and Alturas Field Offices, USFS Lassen National Forest, California Department of Fish and Wildlife, California Wildlife Conservation Board, Lassen County and the City of Susanville along with a number of private foundations and individual donors.

The Trust's annual budget is just under $300,000 and supports a professional staff including an executive director and lands manager, as well as its programs in conservation, trails and education.

An all-volunteer Board of Directors governs the Trust, which adheres to the standards and policies of the Land Trust Alliance. In addition, the Trust looks to volunteer committees to provide guidance and insight into its programs in conservation, trails and education, as well as in its governance and fundraising. A broad base of community volunteers assist in restoration projects, educational programs, trail activities and maintenance, as well as fundraising events.

Cooperation and Community Support

One major opportunity that we will take advantage of is the increased interest in Pine Creek and Eagle Lake Rainbow Trout (ELRT) by a variety of groups. These include CalDFW, US Forest Service, US Fish and Wildlife Service, the Pine Creek Coordinated Resource Management Planning Group, Susanville Rancheria, Trout Unlimited, and CalTrout, among others. The focus of these groups is to return the ELRT to a naturally stable state through habitat restoration along the length of Pine Creek, brook trout removal, and the release of ELRT in upper reaches of the stream. In addition, Eagle Lake is a critical environmental and economic resource to Lassen County and the Sierra Nevada region, and protecting the water sources to this lake are a priority to many groups. This project would protect the water quality and quantity of Eagle Lake, as well

as protecting critical habitat necessary to the rehabilitation of the Eagle Lake Rainbow Trout.

Our project will fit in with ongoing efforts on Pine Creek and with the Eagle Lake Rainbow Trout. In particular, USFS-Eagle Lake Ranger District has conducted several similar projects nearby along Pine Creek and other tributaries. They will be participating in monitoring of the project which will help put the project in context of other meadow restoration projects in the area. The subject property is completely surrounded by National Forest land, so it is important that this project relate to USFS projects. *Upper Stevens Meadow Restoration* project methods have taken into account lodgepole removal projects conducted by USFS-Eagle Lake Ranger District staff, which have shown positive results in terms of aspen growth, and have not shown any negative water quality effects. Lassen Land and Trails Trust will also participate in Pine Creek Coordinated Resource Management Planning Group meetings, associated Technical Review Team for Fisheries, and the Eagle Lake Working Group organized by Trout Unlimited and CalTrout. This will keep partners updated on the project progress and will ensure that we stay current on other ELRT/Pine Creek projects. We believe that this project will work well within overall efforts to restore the Pine Creek/Eagle Lake watershed and rehabilitate the Eagle Lake Rainbow Trout population.

We have received formal letters of support for this project from Cassandra Roeder, US Fish & Wildlife Service; Ann Carlson, US Forest Service-Eagle Lake Ranger District; David Lile, University of California Cooperative Extension- Lassen County; Paul Divine, California Department of Fish and Wildlife; and Jane Rosenberg, the property landowner.

Long-term Management and Sustainability

This property is currently protected from development and subdivision under terms of the conservation easement held by Lassen Land and Trails Trust. This easement is held in perpetuity, ensuring that the environmental values of the property cannot be lost. However, the lodgepole pine threatens the long-term sustainability of the meadow habitat, which is why this project is so important. Because both saw-logs (diameter > 11 inches) and non-saw logs will be removed from the meadow, regrowth of lodgepole pine will be slow. This means that the effort to remove lodgepole will not have to be repeated for another 20-30 years. At that point, it would not be as large of an area as is included in this project, and higher timber prices for lodgepole may allow the continuation of the project to be cost effective for the family.

Lassen Land and Trails Trust conducts annual monitoring under the terms of the conservation easement and will establish additional photopoints in the project area to ensure that changes can be tracked. The US Forest Service will participate in monitoring of project effectiveness through monitoring of understory plant communities, including measures of species richness, diversity, cover and wetland prevalence index. These data will then be evaluated in conjunction these data to an untreated meadow threatened with conifer encroachment on National Forest land. This monitoring protocol will occur pre-treatment and the 1st and 3rd years post-treatment. In addition, US Forest Service has a temperature monitor in Pine Creek downstream of the project area which continually records water temperature, and will continue to do so for the foreseeable future. This continual monitoring of conditions on the subject property and Pine Creek will ensure that any issues that arise can be swiftly addressed.

Budget Narrative

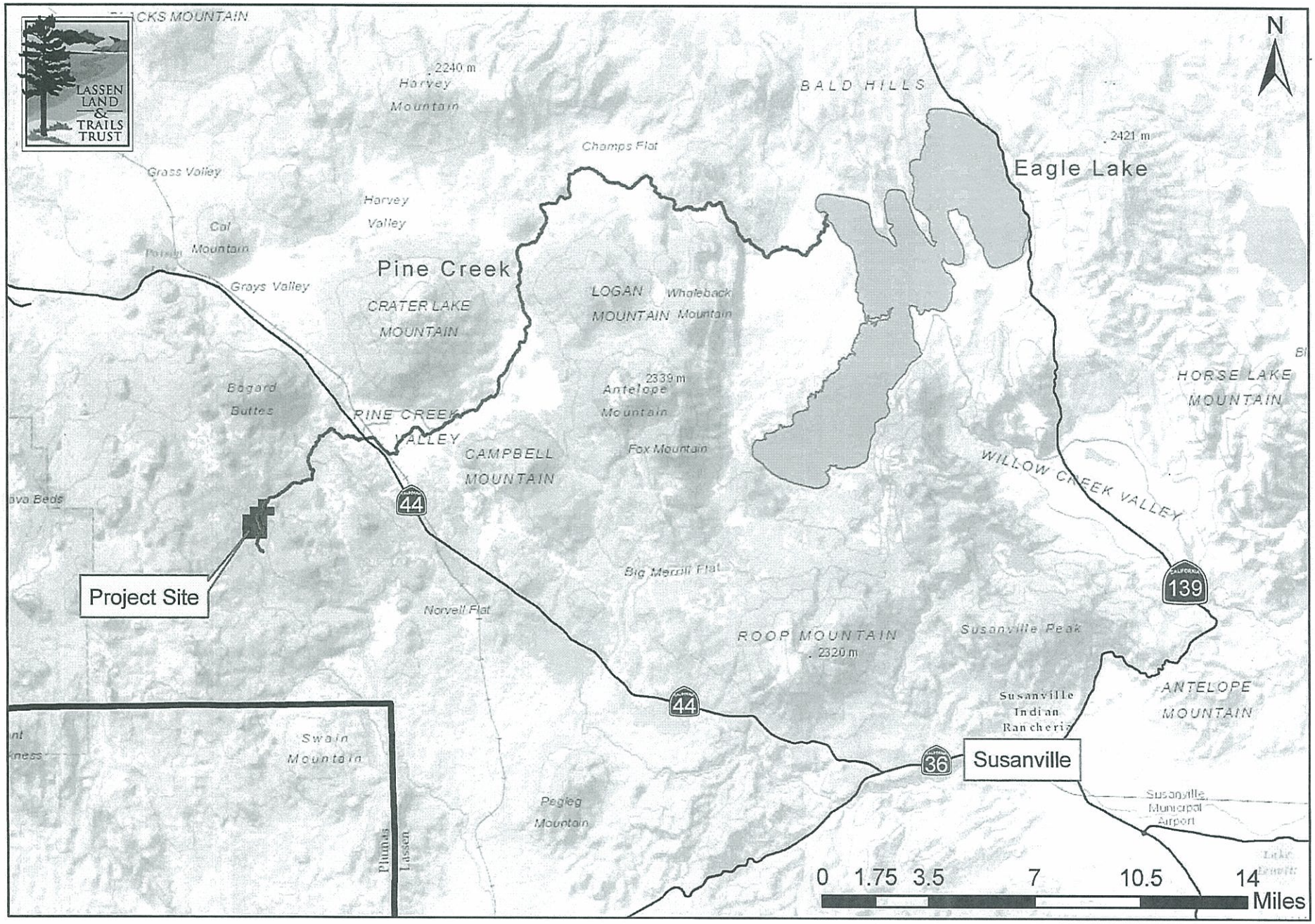
We have carefully developed a budget which we feel will effectively achieve project goals and ensure successful completion of the project. There are a total of 200 hours of staff time (at $65/hr) included in Project Management over 3 years, which will ensure that the project stays on track and is carefully and accurately implemented. The majority of the remaining project funds will go to on the ground work and the actual removal of lodgepole. This portion of the project will be through a contractor, and will be managed by the landowner's private forester. The 20 acres of mechanical harvest is expected to have a net cost of $48,000 after biomass is utilized and put toward project costs. The 19 acres of intensive hand treatment will cost $1,000/acre for a total of $19,000, while extensive hand treatment of approximately 52 acres will cost $500/acre, for a total of $26,000. In addition, we have included a total of 44 staff hours to effectively monitor the project effectiveness, work with US Forest Service staff, and to establish new photopoints to track changes through the Trust's annual monitoring. This will be spread over 3 years in order to monitor changes throughout the project. Administrative costs for this project will be minimal, with a total of $3,825, which is just over 3% of the total project costs. This brings the total project budget to $115,385.

We will leverage these funds from Sierra Nevada Conservancy to secure additional funds to complete the project. We have already received $5,000 toward the project from the landowner, as well as $13,000 of project funds of from US Fish & Wildlife Service-Partners for Fish and Wildlife Program (Partners). Partners have already completed

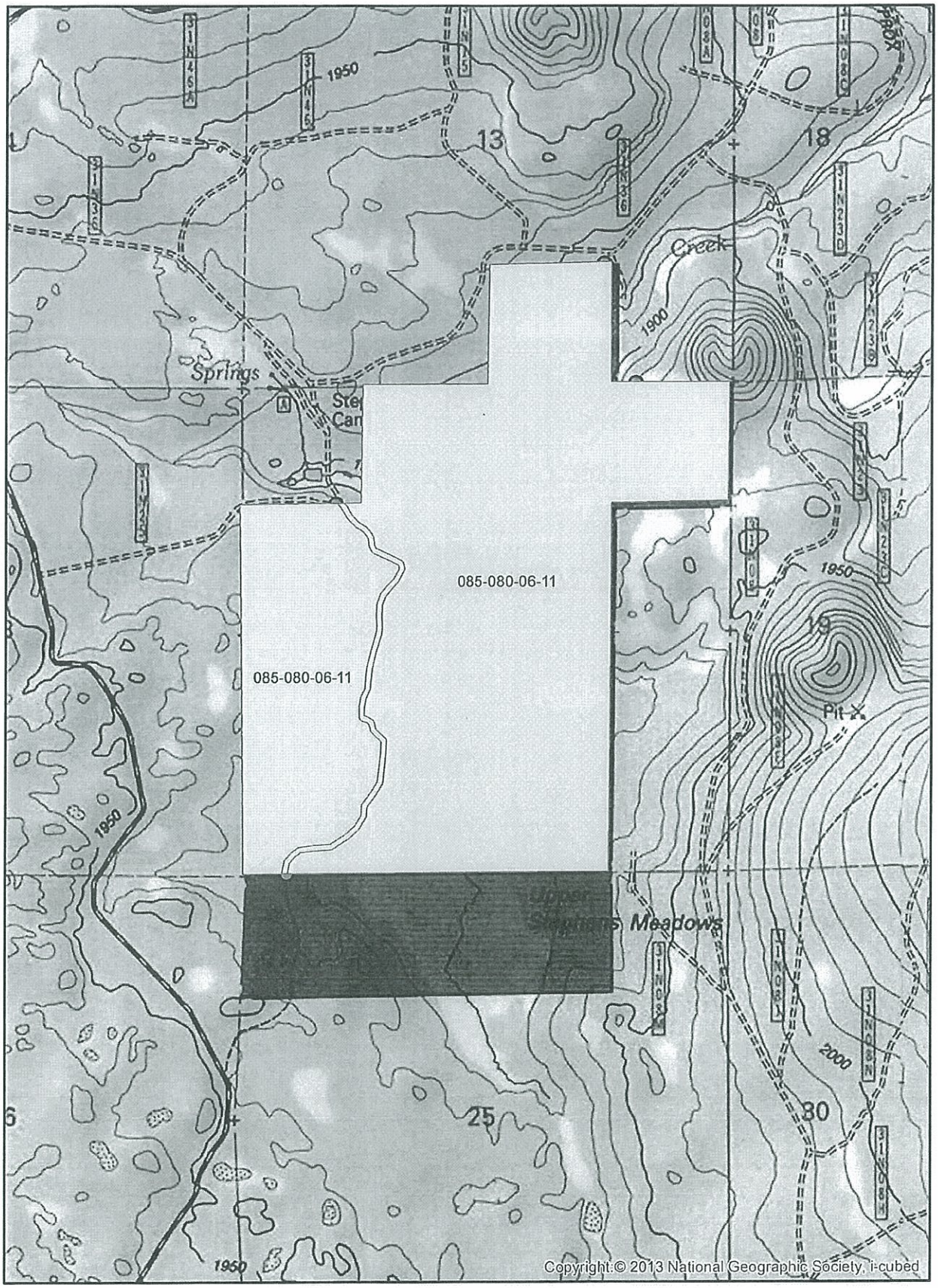
permitting from US Army Corp of Engineers and California DFW, botanical surveys and archaeological surveys, and these costs will be in addition to the $13,000 of allocated funds for this project. We have secured project contributions from US Forest Service-Eagle Lake Ranger District through implementation of monitoring of conifer removal effectiveness, and Trout Unlimited which will conduct habitat typing of the in-stream and meadow conditions. Additionally, the Registered Professional Forester will apply to California Forest Improvement Program for funds to cover the cost of project supervision.

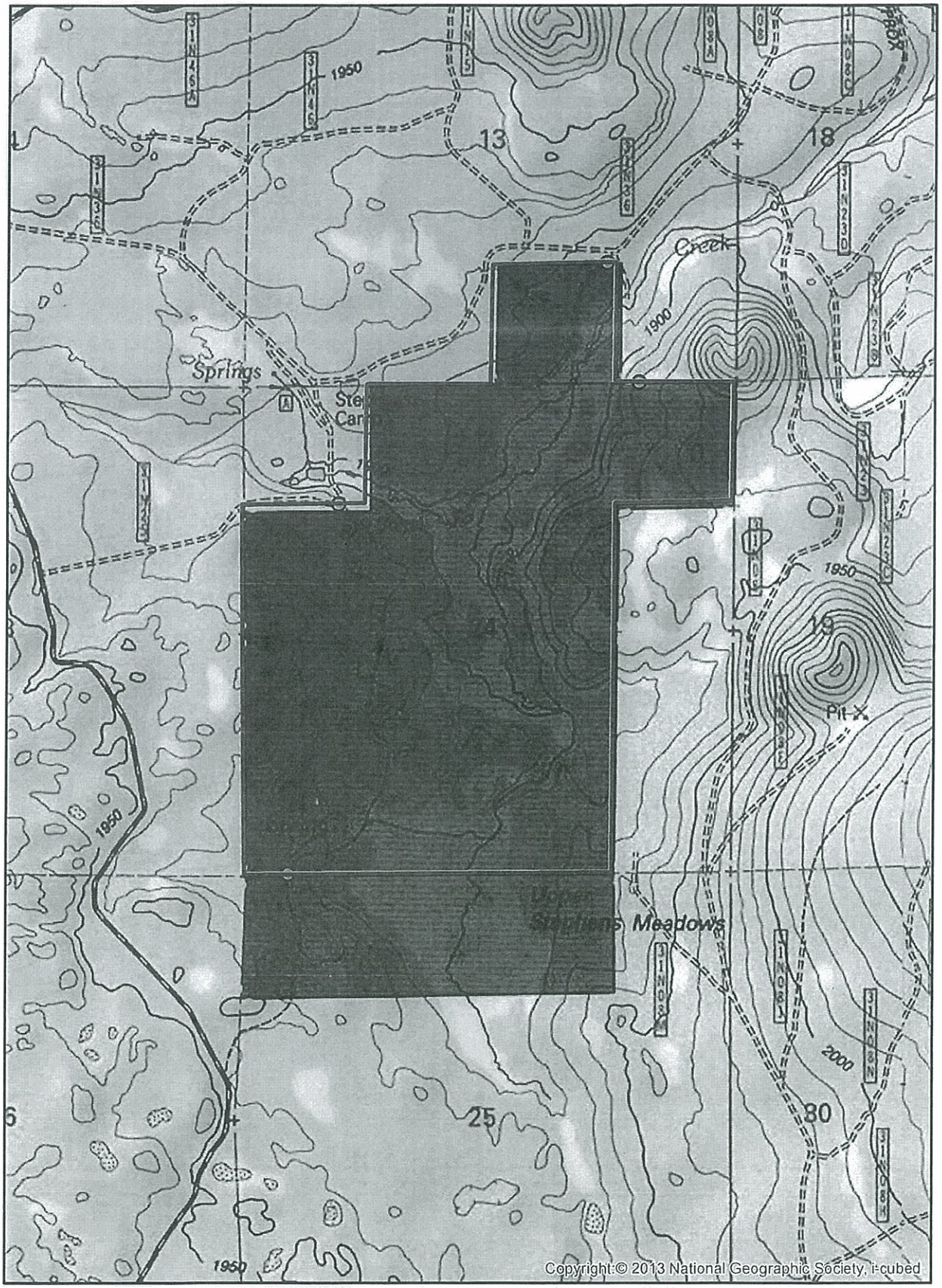
The utilization of forest biomass has also been carefully planned to maximize the effectiveness of the project budget. The use of non-sawlogs to be used as fencing supplies will reduce management costs of the Sierra Nevada Conservancy-funded Modoc Line Rail Trail, which is owned and managed by Lassen Land and Trails Trust, and the sale of chips will be used to offset project costs.

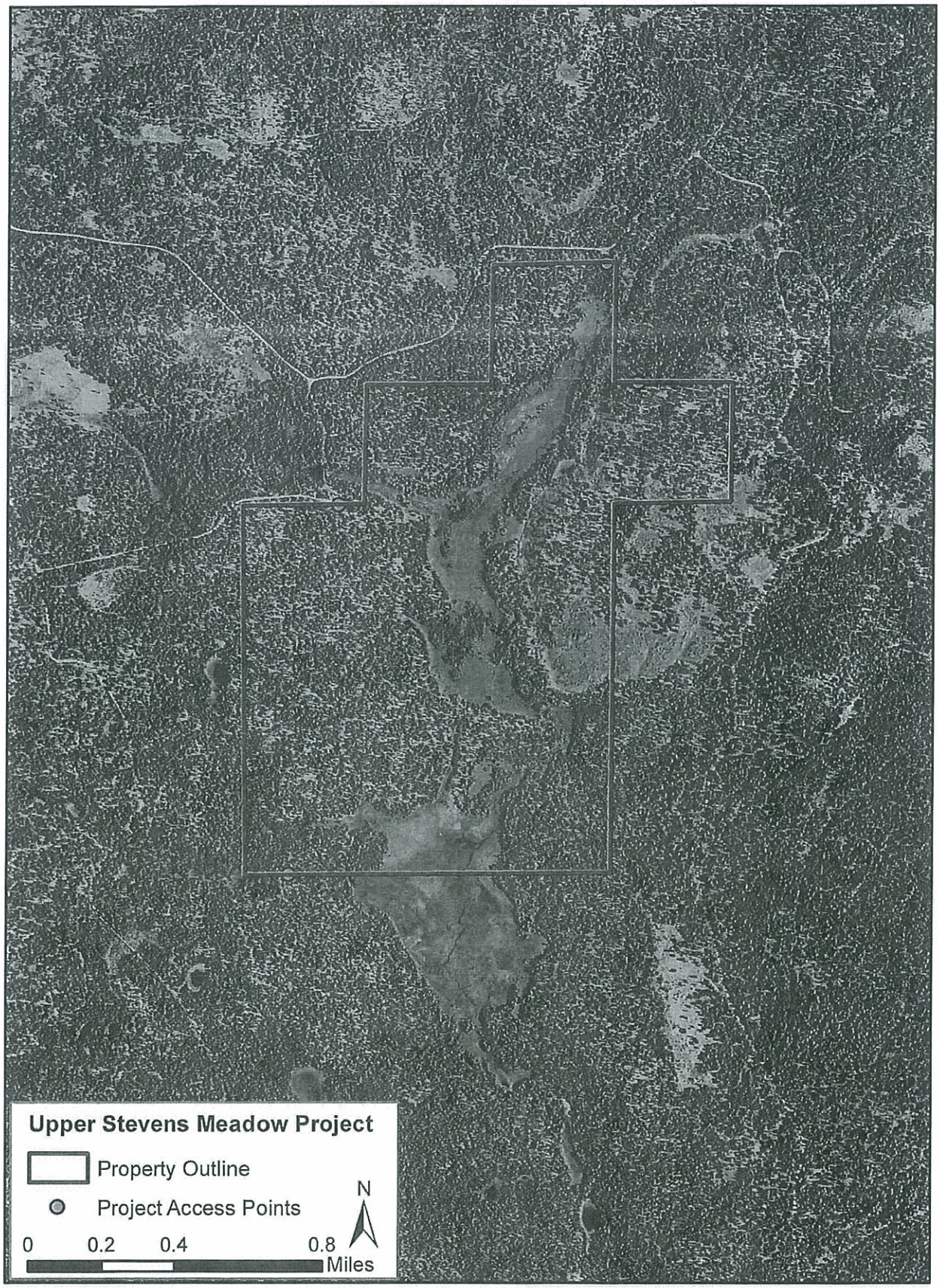
Upper Stephens Meadow Restoration: General Location Map



Lassen Land and Trails Trust. PO Box 1461, Susanville, CA 96130. www.lltweb.org (530) 257-3252

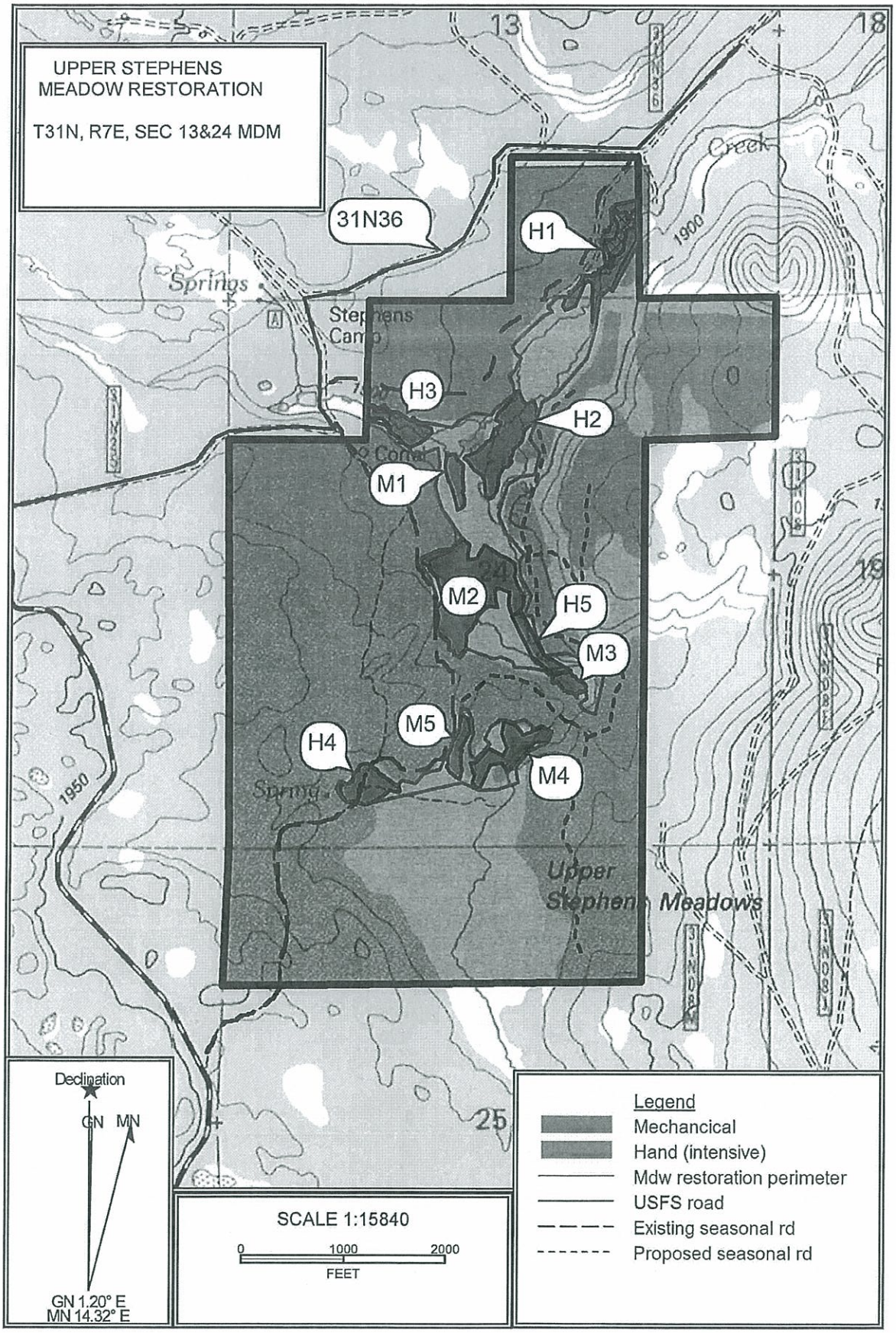

085-080-06-11
085-080-06-11
Springs
Creek
Upper
Stephens Meadows
Pit
1950
1900
2000
13
18
19
25
30
Copyright © 2013 National Geographic Society, i-cubed


1950
13
18
Creek
1900
Springs
1950
19
Pit X
1950
Upper
Stephens Meadows
2000
25
30
1950
Copyright © 2013 National Geographic Society, i-cubed



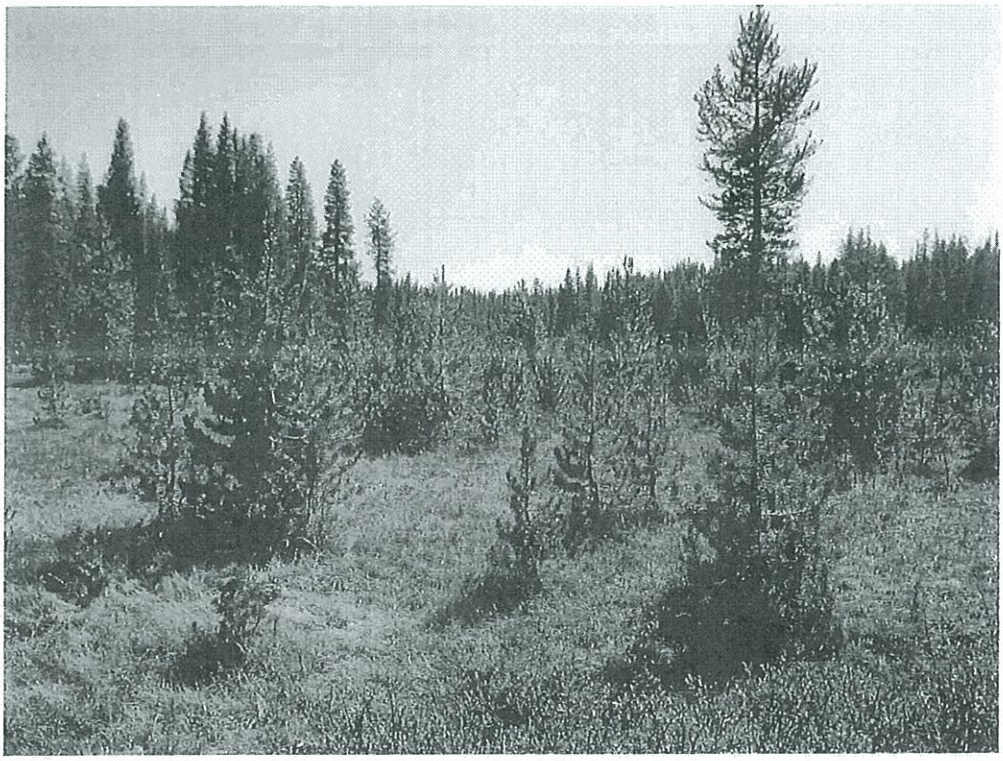
Lassen Land & Trails Trust. PO Box 1461, Susanville, CA 96130. (530) 257-3252
www.lassenlandandtrailstrust.org

EGID #802: SITE PLAN



Upper Stevens Meadow Restoration

Photos of Project Site



Encroaching lodgepole in meadow habitat

Young lodgepole pines growing in meadow

Upper Stevens Meadow Restoration

Photos of Project Site

Meadow area with encroaching lodgepole pine

Pine Creek in central portion of Property

Upper Stevens Meadow Restoration

Photos of Project Site

View of meadow from within lodgepole stand

Pine Creek and Upper Stevens Meadow with lodgepole encroachment

Upper Stevens Meadow Restoration

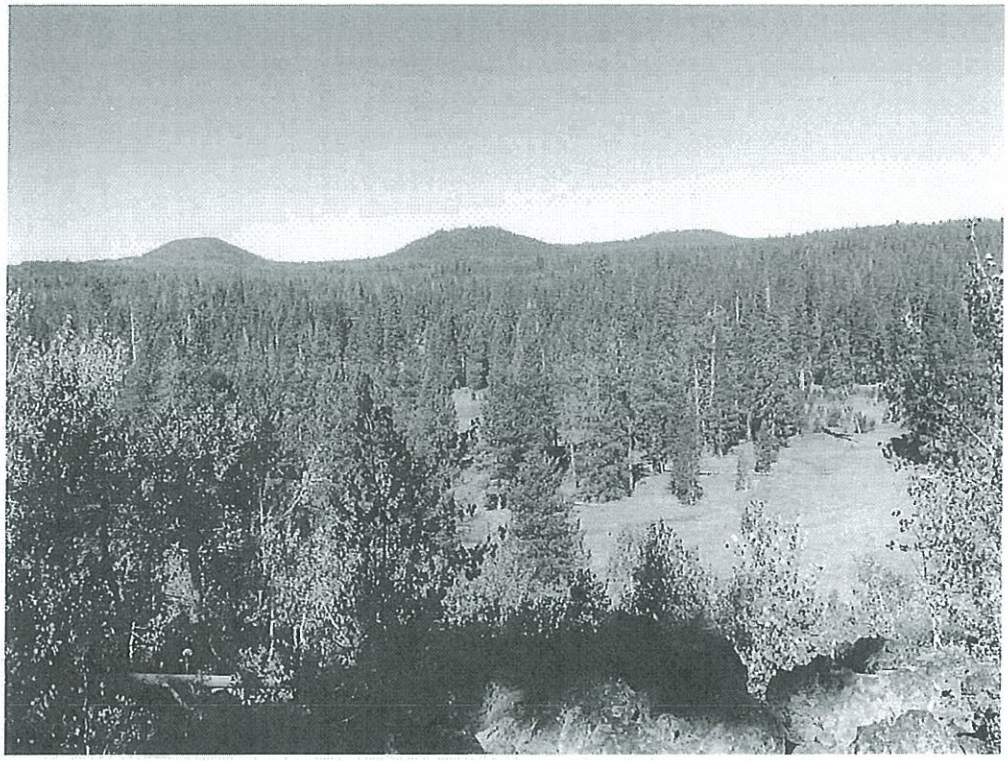
Photos of Project Site

Pine Creek in north-central portion of property

Lodgepole pine growing along banks of Pine Creek

Upper Stevens Meadow Restoration

Photos of Project Site



Overlook of meadow from eastern portion of property

Young lodgepole growing in meadow habitat

USDA United States Department of Agriculture

Forest Service

Lassen National Forest

Eagle Lake Ranger District
477-050 Eagle Lake Road
Susanville, CA 96130
(530) 257-4188 Voice
(530) 252-5803 Fax

File Code:

Date: October 10, 2012

Mr. Jim Branham
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Dear Mr. Branham:

On behalf of the Eagle Lake Ranger District, Lassen NF I am writing to express my support of Lassen Land and Trails Trust and their proposed Upper Stevens Meadow Restoration Project. This project will protect and restore critical Sierra Nevada meadow habitat along Pine Creek, the primary tributary to Eagle Lake. With the help of funds from the Sierra Nevada Conservancy, this agricultural property within the Pine Creek/Eagle Lake watershed will be protected and improved, which will have a positive impact on the environmental, economic and social well-being of the citizens and communities of the Sierra Nevada region.

Upper Stevens Meadow is located near the headwaters of Pine Creek, which flows year-round through the property. This meadow is part of the historical breeding and spawning grounds for the Eagle Lake Rainbow Trout, and supports many other wildlife species which depend on this consistent source of water. Lassen Land and Trails Trust, which holds a conservation easement on this property, is proposing the restoration of this meadow which will enhance water resources of Pine Creek, as the meadow holds water during run-off events and releases it slowly throughout the summer. Pine Creek provides key fish and wildlife habitat within the critical juncture of the Sierra Nevada, Cascade, Modoc Plateau and Great Basin.

I believe this project supports our shared priorities and concern for quality habitat and watershed protection in the region, and would be a good fit for a Sierra Nevada Conservancy Prop 84 grant. Please feel free to contact me for any additional information. Thank you for your consideration.

Sincerely,

ANN D. CARLSON
District Ranger

United States Department of the Interior
Fish and Wildlife Service

Modoc National Wildlife Refuge
P.O. box 1610
5364 Co. Rd. 115
Alturas, CA 96101
(530)233-3572

10/25/2012

Mr. Jim Branham
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Dear Mr. Branham:

On behalf of the U.S. Fish and Wildlife Service, Partners for Fish and Wildlife Program I am writing to express my support of Lassen Land and Trails Trust and their proposed Upper Stevens Meadow Restoration Project. This project will protect and restore critical Sierra Nevada meadow habitat along Pine Creek, the primary tributary to Eagle Lake. With the help of funds from the Sierra Nevada Conservancy, this agricultural property within the Pine Creek/Eagle Lake watershed will be protected and improved, which will have a positive impact on the environmental, economic and social well-being of the citizens and communities of the Sierra Nevada region.

Upper Stevens Meadow is located near the headwaters of Pine Creek, which flows year-round through the property. This meadow is part of the historical breeding and spawning grounds for the Eagle Lake Rainbow Trout, and supports many other wildlife species which depend on this consistent source of water. Lassen Land and Trails Trust, which holds a conservation easement on this property, is proposing the restoration of this meadow which will enhance water resources of Eagle Lake, as the meadow holds water during run-off events and releases it slowly throughout the summer. Eagle Lake is a valuable economic and recreational resource to the people of Lassen County, and provides crucial fish and wildlife habitat within the critical juncture of the Sierra Nevada, Cascade, Modoc Plateau and Great Basin.

As a partner with the Trust on the Upper Stevens Meadow Restoration project, USFWS Partners Program is prepared to provide the support of our staff and resources to ensure the success of this project. At this time the Partners Program has guaranteed $10,000 in matching funds to the Upper Stevens Meadow Restoration project. I believe this project supports our shared priorities and concern for quality habitat and watershed protection in the region, and would be a good fit for a Sierra Nevada Conservancy Prop 84 grant.
Please feel free to contact me for any additional information. Thank you for your consideration.

Sincerely,

Cassie Roeder
Partners for Fish and Wildlife
Wildlife Biologist
Modoc National Wildlife Refuge

University *of* California
Agriculture and Natural Resources

707 Nevada Street
Susanville, CA 96130
(530) 251-2601 office
http://celassen.ucdavis.edu

Mr. Jim Branham, Executive Director
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

October 19, 2012

Dear Mr. Branham:

I am writing to express my support of Lassen Land and Trails Trust and their proposed Upper Stephens Meadow Restoration Project. This project will protect and restore critical meadow habitat along Pine Creek, the primary tributary to Eagle Lake. With the help of funds from the Sierra Nevada Conservancy, key meadow and water resources within the Pine Creek/Eagle Lake watershed will be improved, which will have a positive benefit within the watershed.

Upper Stephens Meadow is located near the headwaters of Pine Creek, which flows year-round through the property. This meadow is part of the historical breeding and spawning grounds for the Eagle Lake Rainbow Trout, and supports many other wildlife species which depend on this consistent source of water. Lassen Land and Trails Trust, which holds a conservation easement on this property, is proposing the restoration of this meadow which will enhance water resources of Eagle Lake.

I am more than willing to collaborate with the Trust on the Upper Stephens Meadow Restoration project, and I believe it would be a good fit for a Sierra Nevada Conservancy grant.

Please feel free to contact me at 251-8133 for any additional information. Thank you for your consideration.

Sincerely,

David Lile
County Director
UC Cooperative Extension, Lassen County

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Upper Stevens Meadow Restoration

Applicant: Lassen Land & Trails Trust

SECTION ONE DIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Project Management	$7,150.00	$3,900.00	$1,950.00			$13,000.00
Mechanical harvesting	$48,000.00					$48,000.00
Hand Treatment (intensive)	$19,000.00					$19,000.00
Hand Treatment (extensive)	$26,000.00					$26,000.00
						$0.00
						$0.00
						$0.00
DIRECT COSTS SUBTOTAL:	$100,150.00	$3,900.00	$1,950.00	$0.00	$0.00	$106,000.00

SECTION TWO INDIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Monitoring	$1,300.00	$1,040.00	$520.00			$2,860.00
Supplies	$500.00	$500.00				$1,000.00
Publications, Printing, Public Relations	$500.00					$500.00
Travel to/from project site	$600.00	$400.00	$200.00			$1,200.00
INDIRECT COSTS SUBTOTAL:	$1,800.00	$1,540.00	$520.00	$0.00	$0.00	$5,560.00
PROJECT TOTAL:	$101,950.00	$5,440.00	$2,470.00	$0.00	$0.00	$111,560.00

SECTION THREE Administrative Costs (Costs may *not to exceed 15% of total Project Cost*) :						Total
Administration	$1,275.00	$1,275.00	$1,275.00			$3,825.00
ADMINISTRATIVE TOTAL:	$1,275.00	$1,275.00	$1,275.00	$0.00	$0.00	$3,825.00
SNC TOTAL GRANT REQUEST:	$103,225.00	$6,715.00	$3,745.00	$0.00	$0.00	$115,385.00

SECTION FOUR OTHER PROJECT CONTRIBUTIONS	Year One	Year Two	Year Three	Year Four	Year Five	Total
List other funding or in-kind contibutors to project (i.e. Sierra Business Council, Department of Water Resources, etc.)						
USFWS-Partners Program	$13,000.00					$13,000.00
Private Landowner contribution	$5,000.00					$5,000.00
Volunteer post-treatment hand removal		$2,475.00	$2,475.00			$4,950.00
California Dept of Forestry and Fire Protection	$3,000.00					$3,000.00
USFS-Eagle Lake Ranger Station	$1,822.00	$1,339.00		$2,333.00		$5,494.00
Trout Unlimited	$1,000.00					$1,000.00
Total Other Contributions:	$23,822.00	$3,814.00	$2,475.00	$2,333.00	$0.00	$32,444.00

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.
* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Long-term Management and Sustainability

Lassen Land and Trails Trust conducts annual monitoring under the terms of the conservation easement and will establish specific photopoints in the project area to ensure that changes can be tracked. In addition, US Forest Service has a temperature monitor in Pine Creek downstream of the project area which continually records water temperature, and will continue to do so for the foreseeable future. The Forest Service will also conduct monitoring of project effectiveness, and will collect data pre-treatmen, and 1 year and 3 years post-treatment. This continual monitoring of conditions on the subject property and Pine Creek will ensure that any issues that arise can be swiftly addressed. This property is currently protected from development and subdivision under terms of the conservation easement held by Lassen Land and Trails Trust. This easement is held in perpetuity, ensuring that the environmental values of the property cannot be lost.

We have included a total of 44 hours of staff time for monitoring, which will ensure that there is accurate record keeping in the first 3 years of the project. After that, long-term monitoring will occur in perpetuity under the terms of the conservation easement.

Restrictions / Agreements

Project: Upper Stevens Meadow Restoration, EGID #802

Applicant: Lassen Land and Trails Trust

Contact Person/email/phone: Amy Holmen, land@lassenlandandtrailstrust.org, (530) 257-3252

The project covers land under private ownership which has a California Department of Forestry and Fire Protection approved Non-industrial Timber Management Plan (NTMP).

Mr. Jim Branham
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

SUBJECT: Agreement to Participate – Upper Stevens Meadow Restoration Project

Dear Mr. Branham,

I am writing to confirm that I am Trustee to the Lillian Jane Deas Trust and the William Edgar Deas Trust which holds legal title to property containing the project area identified in the grant application submitted to the Sierra Nevada Conservancy by Lassen Land & Trails Trust. We support the proposed meadow restoration project and give permission for this project to occur on our property which has a conservation easement held by Lassen Land and Trails Trust. The restoration of this meadow which will enhance water resources of Eagle Lake, which is a valuable economic, environmental, and recreational resource to the people of Lassen County and the Sierra Nevada region.

Thank you for your consideration of this important project which will protect valuable water resources and habitat of the Sierra Nevada.

Sincerely,

Emily J. Rosenberg, Trustee

Emily Jane Rosenberg ,Trustee

Lillian Jane Deas Trust under the Garrett H. Rosenberg and Helen B. Rosenberg Trust Agreement Dated August 19, 1982 and the William Edgar Deas Trust under the Garrett H. Rosenberg and Helen B. Rosenberg Trust Agreement Dated August 19, 1982

Lassen Land & Trails Trust

Board of Directors Resolution No. 2012 USM

In the matter of: A RESOLUTION APPROVING THE APPLICATION FOR GRANT FUNDS FOR THE **Category One Grant Program** UNDER THE **Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond ACT OF 2006, Proposition 84**	Resol. No: **2012 USM** Date: **September 25, 2012**

Section II

The following RESOLUTION was duly passed by the Board of Directors of the **Lassen Land & Trails Trust** at a regular meeting held **September 25, 2012** by the following vote:

Ayes: 7
Noes: 0
Abstentions: 1
Absent: 3

Signed and approved by: Frank C. Hall

Frank Hall
Vice-President, Board of Directors Lassen Land & Trails Trust

WHEREAS, the Legislature and Governor of the State of California have provided Funds for the program shown above; and

WHEREAS, the Sierra Nevada Conservancy (SNC) has been delegated the responsibility for the administration of a portion of these funds through a local assistance grants program, establishing necessary procedures; and

WHEREAS, said procedures established by the Sierra Nevada Conservancy require a resolution certifying the approval of application(s) by the Applicant's governing board before submission of said application(s) to the SNC; and

WHEREAS, the Applicant, if selected, will enter into an agreement with the SNC to carry out the project;

WHEREAS, the **Lassen Land & Trails Trust** has identified the **Upper Stephens Meadow Restoration Project** as valuable toward meeting its mission and goals.

BE IT HEREBY RESOLVED by the Board of Directors of the Lassen Land & Trails Trust, that this Board:

1. Approves the submittal of an application for the **Upper Stephens Meadow Restoration;** and

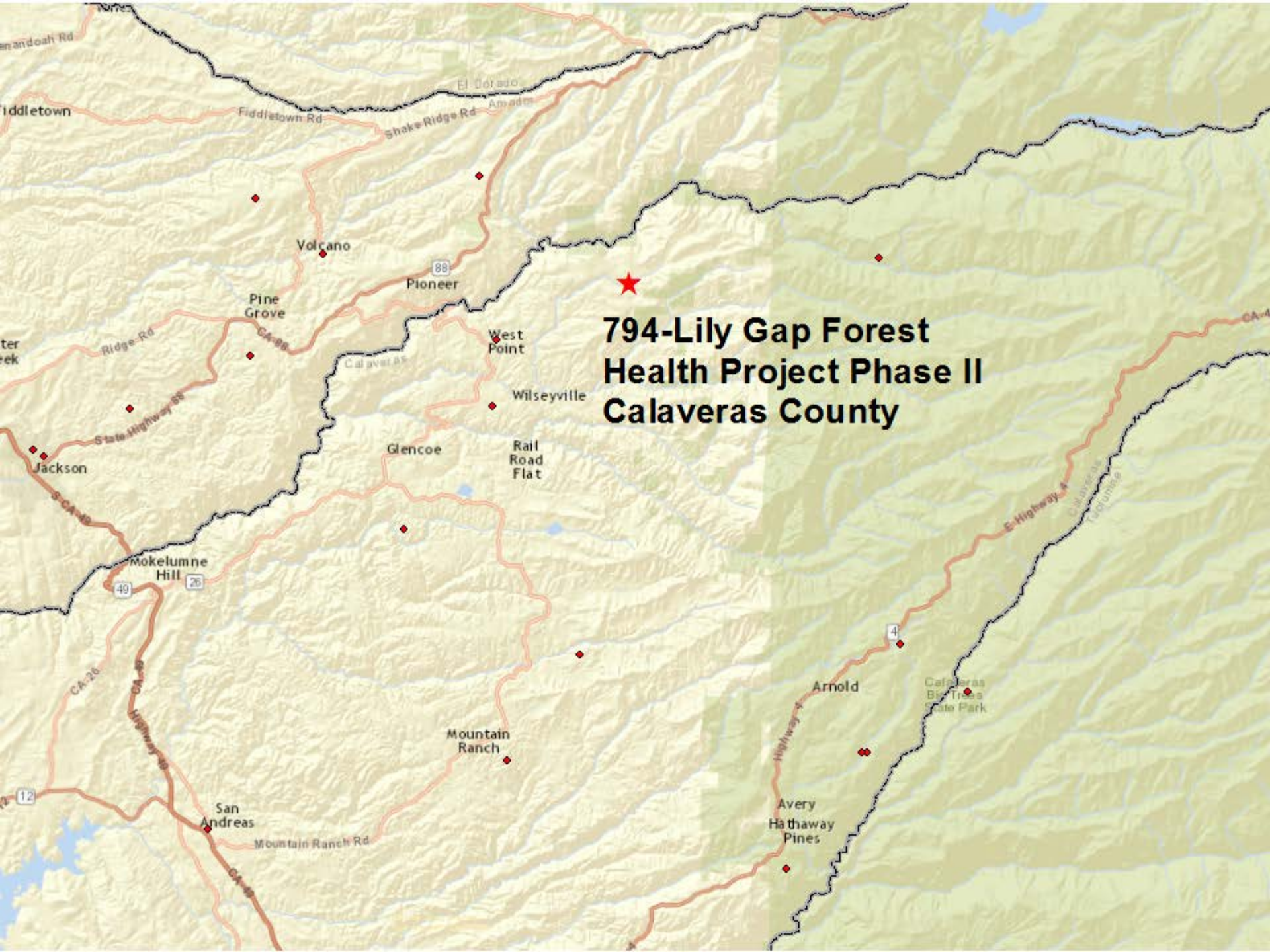
2. Certifies that Applicant understands the assurances and certification requirements in the application; and

3. Certifies that Applicant or title holder will have sufficient funds to operate and maintain the resource(s) consistent with the long-term benefits described in support of the application; or will secure the resources to do so; and

4. Certifies that Applicant will comply with all legal requirements as determined during the application process; and

5. Appoints **Louise Jensen, Executive Director**, or designee, as agent to conduct all negotiations, execute and submit all documents, including but not limited to: applications, agreements, payment requests, and so on, which may be necessary for the completion of the aforementioned project(s).

PASSED AND ADOPTED by the Lassen Land & Trails Trust on the 25th day of September, 2012.


794-Lily Gap Forest
Health Project Phase II
Calaveras County
Fiddletown
Fiddletown Rd
Shake Ridge Rd
El Dorado
Amador
Volcano
Pioneer
Pine
Grove
Ridge Rd
West
Point
Calaveras
Wilseyville
State Highway 88
Jackson
Glencoe
Rail
Road
Flat
Mokelumne
Hill
Mountain
Ranch
San
Andreas
Mountain Ranch Rd
Arnold
Avery
Hathaway
Pines

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water,Water Quality and Supply,Flood Control,
Riverand Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**Bureau of Land Management, Motherlode Field Office**
Project Title:	**Lily Gap Forest Health Project, Phase II**
Subregion:	**South Central**
County:	**Calaveras**
SNC Funding:	**$185,000.00**
Total Project Cost:	**$197,450.00**
Application Number:	**794**
Final Score:	**97**

PROJECT SCOPE

The Bureau of Land Management's (BLM) Lily Gap Forest Health Project, Phase II will use Sierra Nevada Conservancy (SNC) grant funds to treat approximately 200-acres of the 420-acre Lily Gap Forest Health Project. The area is located on BLM-administered public lands near the town of West Point in Calaveras County, California, on forested slopes within the Mokelumne River Watershed on the south rim of the North Fork Mokelumne River Canyon. It is within the wildland urban interface (WUI) near several small towns and dozens of private residences.

Implementation of this Phase II Project will result in the protection and restoration of 200-acres immediately to the north of the Phase I site, where treatment of 157-acres was completed in 2013. The Phase II Project area has not experienced fire in decades, leading to dead brush, slash and litter in the understory surrounding dense thickets of conifers. Upon completion, this project will recreate pre-suppression forest conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and reduce erosion resulting in the protection and restoration of a portion of the Mokelumne River Watershed.

Harvest of material for woody biomass utilization such as electric power generation and shaved animal bedding will occur throughout the project area where it is most economically feasible. Harvest of saw logs, if any, is expected to be limited as was the case in the Phase I implementation of the larger project. Any revenue produced from the sale of saw logs will be used to offset the cost of the fuels reduction activities. Otherwise fuels reduction treatment methods will include use of a brush chipper with pile burning and mechanical mastication. It will also provide a demonstration of a dozer

and brush rake to pile vegetation in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds, and retains coarse woody debris for wildlife habitat.

All treatments will conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierra Mixed-Conifer Forests.

This project has been endorsed by the Amador Calaveras Consensus Group, a successful forest collaborative that has participated in the development and implementation of numerous healthy forest projects. The SNC has invested significant resources in this collaborative effort.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Contracting Prepare government estimate, prepare and post statement of work, conduct bidder site visits, review timely bids, select and award contract.	October 2014 – March 2015
Forest Treatments 2015-2016 Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 100 acres.	October 2015 – April 2016
Pile Burning Spring 2016 Burn plies of residual forest waste and slash prior to fire season.	April 2016
Forest Treatment 2016 - 2017 Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 100 acres.	October 2016 – December 2016
Pile Burning Spring 2017 Burn plies of residual forest waste and slash prior to fire season.	January 2017 – March 2017
Final Site Clean-up and Restoration Complete final removal of biomass and project cleanup by start of fire season	April 2017
Progress Reports Prepare six – months progress reports describing accomplishments to date	April 1, 2015, October 1, 2015, April 1, 2016, October 1, 2016,
Final Report	April 1, 2017
FINAL PAYMENT/FINAL PAYMENT REQUEST	**April 1, 2017**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	
Project Management/Forestry and Fuels Staff	$26,000
Project Timber Contractor	$120,250
Pile Burning	$8,000
Equipment including Fleet	$5,000
Indirect**	
Monitoring	$3,000
Administrative***	
Contracting, clerical and natural resource staff salaries	$22,750
GRAND TOTAL	**$185,000**

* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

** Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

*** Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Acres of Land Improved or Restored

Initial Study/Mitigated Negative Declaration: Lily Gap Forest Health Project, Phase 2

Lead Agency

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603
Contact: Matthew Daley, Senior Grants Analyst
530-823-4698

September 2014

NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE PROPOSED LILY GAP FOREST HEALTH PROJECT, PHASE 2

Public Notice is hereby given that an Initial Study and Draft Mitigated Negative Declaration (IS/MND) is available for public review for the Lily Gap Forest Health Project, Phase 2.

Project Location: The proposed project is located on 200 acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

Project Description: The BLM is requesting approximately $185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200 acres of fuel reduction within the overall 420 Lily Gap. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Refer to Section 2.0, *Project Description*, of the Initial Study for a detailed project description.

Document Review and Availability: The public comment period began July 9, 2014 and extended to August 7, 2014. The MND will be considered by the Sierra Nevada Conservancy Governing Board at a public meeting on September 4, 2014 located at the Bridgeport Memorial Hall, 73 N. School Street, Bridgeport, CA 93517.

Questions regarding the September 2014 Governing Board meeting may be provided to Matthew Daley, Senior Grants Analyst, at Matthew.Daley@sierranevada.ca.gov or at the following address:

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

MITIGATED NEGATIVE DECLARATION

Project Title: Lily Gap Forest Health Project, Phase 2 (SNC 794)

Project Location: The proposed project is located on 200 acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

Date: September 4, 2014

Project Applicant: United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office.

Lead Agency: Sierra Nevada Conservancy

Contact Person: Matthew Daley, Senior Grants Analyst, Sierra Nevada Conservancy, (530) 823-4698

Project Description: The BLM is requesting approximately $185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuel reduction within the overall 420-acre project site. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Refer to Section 2.0, *Project Description*, of the Initial Study for a detailed project description.

Declaration: The Sierra Nevada Conservancy has determined that there is no substantial evidence that the above project, as mitigated, may have a significant effect on the environment and the Sierra Nevada Conservancy proposes that a Mitigated Negative Declaration be adopted. The determination is based on the attached initial study and the following findings:

a) *The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.*
b) *The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*
c) *The project will not have impacts that are individually limited, but cumulatively considerable.*
d) *The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.*
e) *No substantial evidence exists that the project will have a significant negative or adverse effect on the environment.*
f) *The project incorporates mitigation measures identified in the initial study and the Lily Gap Demonstration Project Environmental Assessment/Finding of No Significant Impact prepared by the United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office.*
g) *This mitigated negative declaration reflects the independent judgment of the lead agency.*

Submit comments to:
Matthew Daley
Senior Grants Analyst
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603
(530) 823-4698
Matthew.Daley@sierranevada.ca.gov

_____	(530) 823-4670
Jim Branham, Executive Officer	Phone #

TABLE OF CONTENTS

Section Page

1.0 INTRODUCTION 1
1.1 Project Information 1
1.2 Project Background and Previous Environmental Documentation 2
1.2.1 Project Background 2
1.2.2 Previous Environmental Documentation 3
2.0 PROJECT DESCRIPTION 4
2.1 Treatments 4
2.1.1 Silvicultural Strategy 6
2.1.2 Treatment Methods 6
3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 8
4.0 EVALUATION OF ENVIRONMENTAL IMPACTS: 9
5.0 RESPONSE TO COMMENTS 36
6.0 DISTRIBUTION LIST 45
7.0 PREPARERS 36

Figures

Figure 2-1. Project Vicinity and Location Map 5

Table

Table 4-1. Sensitive Receptors Identified within 10 Miles of the Lily Gap Project, Phase 2 13

Appendices

Appendix A Silvicultural Prescription for Sierran Mixed-Conifer/Lower Montane Forest
Appendix B Design Criteria

1.0 INTRODUCTION

1.1 PROJECT INFORMATION

1. Project Title:

Lily Gap Forest Health Project, Phase 2 (SNC 794)

2. Lead Agency Name and Address:

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

3. Contact Person and Phone Number:

Matthew Daley, Senior Grants Analyst (530) 823-4698

4. Project Location:

The proposed project is located on 200-acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

5. Project Sponsor's Name and Address:

United States Department of the Interior
Bureau of Land Management
Mother Lode Field Office
5152 Hillsdale Circle
El Dorado Hills, CA 95762

6. General Plan Designation:

Natural Resource Land: Timber-Mineral Resource Area, 2A-Dam Inundation

7. Zoning:

Unclassified (U)

8. Description of Project:

The BLM is requesting approximately $185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project

would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuel reduction within the overall 420 Lily Gap. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Refer to Section 2.0, *Project Description*, for a detailed project description.

Due to the proposed project area's relatively low elevation (approximately 3,500 feet above mean sea level), the proposed project would be implemented after the end of the fire season, generally between mid-fall and late spring. The anticipated start date is late 2014 and would continue over a two year period, with completion by Spring 2016. Final site cleanup and restoration would occur by June 2016.

9. Surrounding Land Uses and Setting:

The proposed project is within BLM-administered lands off of Winton Road, north of the community of West Point referred to as the Lily Gap area. Much of this area has not experienced wildfire in decades. Shrub stands have aged and now contain a larger proportion of dead fuels, and in some forest stands understory fuels have increased, creating unhealthy forest conditions and making the probability that the area will experience a devastating wildfire more likely. At the same time, the local communities have grown. There are now numerous private residences in the area, many of them adjacent to the BLM-administered parcels containing dense fuels. The Lily Gap area is considered to be within the Wildland Urban Interface and the local communities are considered "at risk."

10. Other public agencies whose approval is required:

United States Department of the Interior, Bureau of Land Management*
Calaveras County Air Pollution Control District
*Approved the Environmental Assessment/Finding of No Significant Impact (NEPA) in 2011

1.2 PROJECT BACKGROUND AND PREVIOUS ENVIRONMENTAL DOCUMENTATION

1.2.1 Project Background

The overall Lily Gap Forest Health Project (Phase 1 and Phase 2) has been approved by the U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) and endorsed by the Amador Calaveras Consensus Group (ACCG), a forest collaborative that has implemented numerous healthy forest projects with the participation of federal and state agencies, local jurisdictions, non-governmental organizations and private businesses. The Lily Gap Forest Health Project is consistent with the

ACCG's All Lands - Triple Bottom Line approach, as well as the Amador Calaveras Cooperative Association for Biomass Utilization's community economic development work.

The proposed project is also a key component of the watershed health strategy currently being developed by the interagency Mokelumne Avoided Cost Analysis (MACA) team. The MACA team consists of a diverse group of stakeholders that include land managers (United States Forest Service, Bureau of Land Management, Sierra Pacific Industries), water and electric utilities (East Bay Municipal Utility District, Pacific Gas & Electric, California Department of Water Resources, California Department of Forestry and Fire Protection, and county governments), environmental organizations (Sustainable Conservation, Environmental Defense Fund), and local stakeholders (Foothill Conservancy, ACCG, West Point Fire District), and is led by the United States Forest Service, Sierra Nevada Conservancy, and The Nature Conservancy.[1] MACA's purpose is to determine how upper Mokelumne River watershed conditions affect forest health, fire risk, erosion potential and other factors directly impacting water users, including major utilities. The MACA team identified a number of agency projects that could improve the health of surrounding forests, reduce erosion and fire risk and thereby improve water quality and protect related infrastructure. The proposed project is one of the projects being considered by the MACA team. It is located in an area in need of immediate forest treatments to provide for the protection and restoration of the Mokelumne River drainage, lakes and reservoirs along the river, and other natural resources within the watershed.

1.2.2 Previous Environmental Documentation

The United States Department of Interior, Bureau of Land Management, Mother Lode Field Office acted as Lead Agency under the National Environmental Policy Act (NEPA) in March 2011 and prepared an Environmental Assessment (EA) and adopted a Finding of No Significant Impact (FONSI) and a Decision Record in May 2011. This Initial Study and Draft Mitigated Negative Declaration (IS/MND) relies on the BLM EA/FONSI and Record of Decision for the Lily Gap Project (addressing Phase 1 and Phase 2), and the following environmental documentation, included in the Sierra Nevada Conservancy files:

- *Botanical Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, August 25, 2010.
- *Section 106 Compliance for the Lily Gap Biomass Demonstration Project Memorandum (BLM Case # CA-018-S-AC-10/05)*, October 29, 2010. (CONFIDENTIAL)
- *Lily Gap Biomass Demonstration Project Environmental Assessment (CA-180-10-25)*, April 2011
- *Lily Gap Biomass Demonstration Project Finding of No Significant Impact (CA-180-10-25)*, signed May, 2, 2011.
- *Lily Gap Biomass Demonstration Project (CA*-180-10-25) *Decision Record*, signed May 2, 2011.
- *Sierra Resource Management Plan (RMP)/Final Impact Statement (EIS)*, Publication Index No.: BLM/CA/ES-2007-013+1790OEPC EIS Control No.: FES 07-18, May 2007.
- *Biological Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, May 15, 2014.
- *Supplemental Botanical Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, May 19, 2014.

[1] Buckley, M., N. Beck, P. Bowden, M. E. Miller, B. Hill, C. Luce, W. J. Elliot, N. Enstice, K. Podolak, E. Winford, S. L. Smith, M. Bokach, M. Reichert, D. Edelson, and J. Gaither. 2014. "Mokelumne watershed avoided cost analysis: Why Sierra fuel treatments make economic sense." A report prepared for the Sierra Nevada Conservancy, The Nature Conservancy, and U.S. Department of Agriculture, Forest Service. April 10, 2014. *Sierra Nevada Conservancy*. Auburn, California. Online: http://www.sierranevadaconservancy.ca.gov/mokelumne.

2.0 PROJECT DESCRIPTION

The proposed project is located on 200 acres within the larger 420-acre Lily Gap Forest Health Project. This total 420 acre project area is located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands on forested slopes adjacent to the Mokelumne River in unincorporated Calaveras County, California. The project site is located off of Lily Gap Road/Winton Road, approximately two miles north east of the town of West Point, in the central Sierra Nevada foothills. The proposed project would allow BLM to address 200 acres immediately to the north of the Lily Gap Forest Health Project Phase 1 site.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuels reduction. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds, and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests.

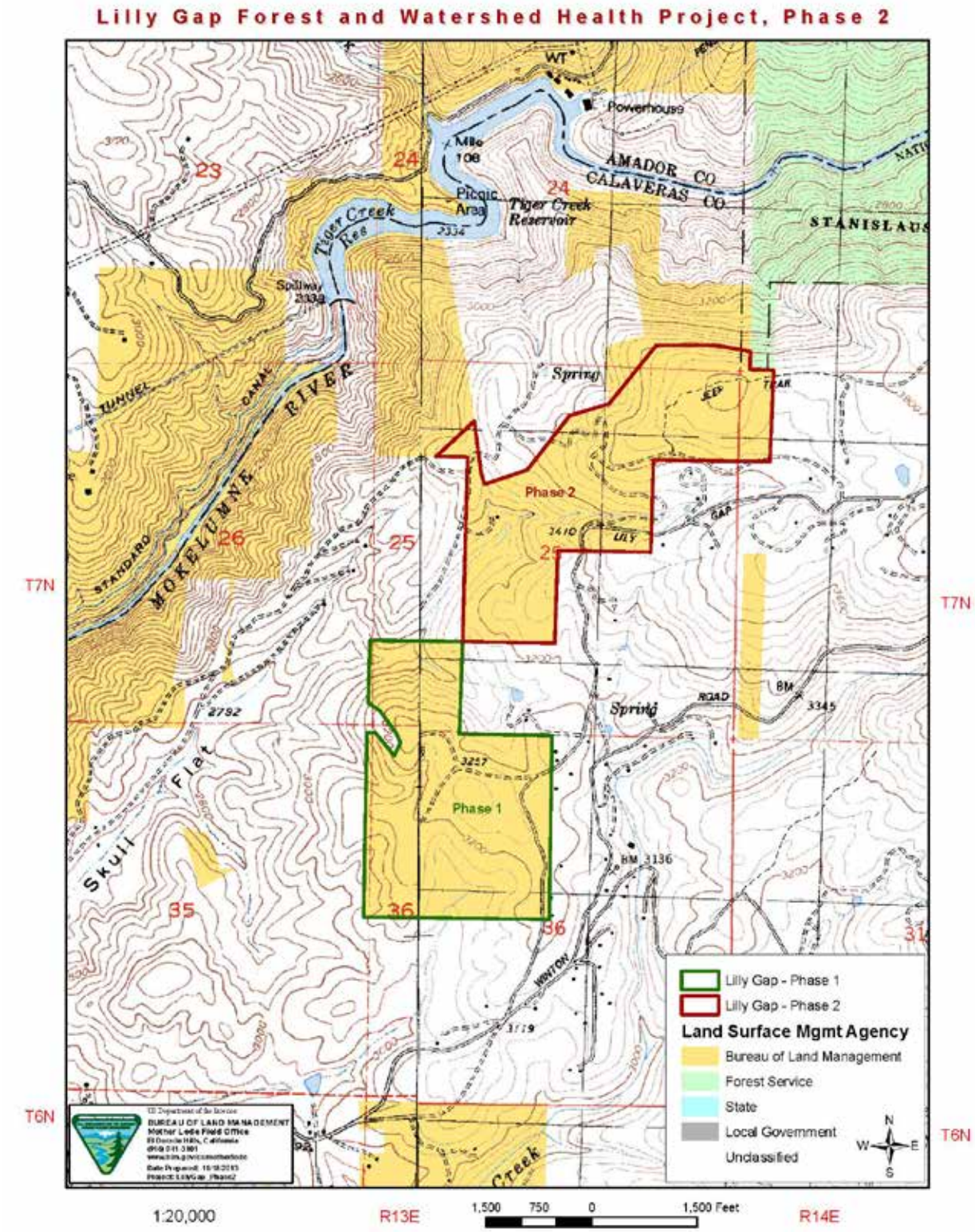
Due to the proposed project area's relatively low elevation (approximately 3,500 feet), the proposed project would be implemented after the end of the fire season, generally between mid-fall and late spring. The anticipated start date is late 2014 and would continue over a two year period, with completion by Spring 2016. Final site cleanup and restoration would occur by June 2016.

2.1 TREATMENTS

Vegetative treatments are designed to decrease fuel loads and stand densities in order to restore the landscape to a healthy, diverse, fire-resilient one that would aid in disrupting severe wildfires that may occur around the Wildland Urban Interface. This would be accomplished by reducing surface and ladder fuels, promoting and maintaining heterogeneity at multiple scales, maintaining and improving habitat for sensitive wildlife species, improving watershed function and resilience, and restoring native species composition.

BLM proposes to treat Lily Gap as a "demonstration project," that is, as a venue for applying a variety of different treatment methods to determine which are the most ecologically effective and economically feasible. Regardless of the treatment method demonstrated, the goal would be to create healthy forest conditions within the project area by applying the management ideas of North et al. (2009) (see Appendix A). All treatment methods would be conducted in accordance with the Silvicultural Prescriptions described in Appendix A, as well as those discussed in the United States Forest Service's General Technical Report 220.

Figure 2-1. Project Vicinity and Location Map
(Source: BLM Mother Lode Field Office)



2.1.1 Silvicultural Strategy

The silvicultural strategy laid out in Appendix A would be applied to all portions of the project area that have the characteristics of a Sierran mixed-conifer/lower montane forest type. Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity.

Most conifers less than 8 inches diameter at breast height (DBH) would be removed, although a full range of conifer size and age classes would be maintained as part of the treatment. This includes the dense thickets of incense-cedar and pine. Some conifers less than eight inches DBH would be retained to ensure that a full range of size and age classes would be represented. Large pines and groups of large pines would be retained, with strategic clearing of potential ladder fuels around them to give them additional protection and to create some open gaps in the canopy. This means that some trees greater than 8 inches DBH would be removed if they are potential ladder fuels and to decrease overall stand density. Any conifers greater than 8 inches DBH that are to be removed to protect the larger "leave" trees and tree clusters would be marked by a BLM forester or fuels specialist. The cut trees would be sold at their highest and best use. Trees larger than 12 inches DBH generally would be sold as sawtimber.

A higher density of tree stems and canopy cover would be retained in the cooler, moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of Section 25. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained, unless to do so would create an unusually unsafe concentration of fuels.

2.1.2 Treatment Methods

The different treatment methods are outlined below. The majority of the work would be done by a hand crew (i.e., BLM fuels crew, inmates, Hotshots, contractors, etc.) under the supervision of BLM's fuel/fire management specialists. Any combination of the following treatments could be implemented for the proposed project.

- *Brush Chipper with Pile Burning*. The crew would feed cut vegetation into a rubber-tracked brush chipper staged on existing roads. The crew would pile and prep vegetation in six-foot by six-foot piles for burning at a later date in accordance with a BLM-approved burn plan and other BLM policy. Approximately 60 piles per acre would be constructed.

- *Mechanical Masticator*. A mechanical masticator would be used to grind, chip, and chew vegetation. The masticated vegetation would be broadcasted across the project area, leaving an altered fuel type, which does not reduce the quantity of fuels, but rearranges them so they are more manageable in the event of wildfire suppression. Equipment selected to carry out this task would be designed to minimize ground disturbance. Multiple cutting attachments would be used to adapt to the terrain and fuels.

- *Biomass.* Biomass size material may be harvested and transported to the biomass plant (Buena Vista Biomass Power Facility) near Ione. Fallers would use chainsaws to cut brush and trees less than 8 inches DBH (unless the trees are a potential ladder fuel that threatens the larger "leave" pines). Cut vegetation would be bucked into manageable lengths for the crew to feed into a rubber-tracked chipper. The chips would be fed directly into a trailer towed by a small rubber-tracked vehicle. The vehicle would tow the chips to designated staging areas (existing roads, pullouts, and landings). The chips would then be loaded into a semi-truck trailer and transported to the biomass plant.

- *Biomass Using Feller Buncher.* Another method for harvesting biomass involves a feller buncher, a tractor with an attachment that can rapidly cut and gather several trees. The feller buncher would cut and position trees and other vegetation into piles at the harvest site. A rubber-tracked skidder would then move the vegetation from the harvest sites to designated staging areas (existing roads, pullouts, and landings). Here, a large-scale tub grinder would chip the vegetation directly into the trailer of a semi-truck for transport to the biomass plant near Ione. Trees of larger diameter, which could be utilized as sawtimber, would be loaded on log trucks to be hauled to the closest mill. It would be necessary to create tracks into the project area to access harvest sites and to transport vegetation from the harvest sites to the designated staging areas for further processing and loading. Ground disturbance would occur in areas where tracks would be needed to drive heavy equipment into the harvest areas to transport vegetation to designated staging areas. Ground disturbance would be kept to a minimum and would occur only where necessary. No new roads would be built. The number of new tracks into the project area would be minimized. The tracks would be put to bed after work at the harvest site is completed. Only existing roads, pullouts, and landings would be used as designated staging areas.

- *Dozer and Brush Rake.* BLM would demonstrate, for the public, the use of a dozer and brush rake to pile vegetation for chipping and biomass utilization in a five-acre area of project site.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this proposed project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Jim Branham, Executive Officer Date

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a, c.) **Less Than Significant**. The proposed project is near the boundary of the Stanislaus National Forest. There are numerous residences on private land in the general area, including along the boundaries of BLM-administered land within the project area. The level of recreational use in the project area is considered to be low, although off-highway use has occurred throughout the project area. The North Fork of the Mokelumne River is located approximately one mile to the west of the project area. BLM has recommended that the river, from Tiger Creek Reservoir to State Route (SR) 49 be incorporated into the National Wild and Scenic River System.

BLM manages this area in accordance with Class III Visual Resource Management (VRM) standards. BLM's objective for Class III is to partially retain the existing character of the landscape. Management activities are designed to not dominate the view of the casual observer.

The proposed project is visible primarily from Lily Gap Road and is not known for its visual resources. Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity. Although some conifers less than eight inches DBH would be removed, a full range of conifer size and age classes will be maintained as part of the treatment.

There would be no impacts to scenery from Lily Gap Road, as the proposed project would not be visible due to the "walls" of trees and land forms that screen views beyond the immediate foreground. Given the nature of the proposed project, to enhance forest health, and the specific proposed project design criteria outlined by the BLM, the proposed project would have a less than significant impact on the Stanislaus National Forest, surrounding roadways and private properties. Proposed project impacts are considered less than significant. No mitigation is required.

b.) **Less Than Significant.** The proposed project is not within a viewshed of a state scenic highway. SR-4 is an officially designated scenic highway from east of Arnold to the Calaveras County line, approximately 14.5 miles south of the proposed project at its closest point. SR-88 is an officially designated state scenic highway within Amador and Alpine counties from Dew Drop Ranger Station to the California/Nevada state line. This officially designated section of SR-88 is approximately 7.25

miles north of the proposed project at its closest point.[2] Neither state designated scenic highway has direct views of the proposed project due to the "walls" of trees and the surrounding topography. As part of the proposed project activities, buffer areas would be set up around rock outcroppings and cultural resource sites. No ground disturbing activities would occur within cultural resource sites and any resources identified through consultation with Native American tribes, individuals, and other interested parties would be flagged and would be protected through avoidance. Therefore, the proposed project would have a less than significant impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings. No mitigation is required.

d.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not introduce a new source of light of glare into the region. Therefore, no impact would occur. No mitigation is required.

[2] California Department of Transportation. California Scenic Highway Mapping System: Calaveras and Amador Counties, State Route (SR) 88 and SR-4 Designations. [online]: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed on June 10, 2014.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a-e.) **No Impact**. The proposed project is located on land that is under the jurisdiction and administration of BLM. The proposed project site does not contain Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations. The proposed project involves forest land, but would not involve the loss of any forest land. The proposed project would benefit the forest as it would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project does not include any changes that could result in conversion of any farmland to a non-agricultural use or forest land to non-forest land use. Accordingly, there would be no impact related to agricultural or forest resources. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

a, b, d, e) **Less Than Significant.** The proposed project is located within the Mountain Counties Air Basin within the jurisdiction of the Calaveras County Air Pollution Control District (APCD). Table 4-1 identifies general sensitive receptor areas within 10 miles of the project area. These areas could be affected by smoke from pile burns if weather patterns produce a stable air mass and smoke is unable to vent into the upper atmosphere.

Table 4-1. Sensitive Receptors Identified within 10 Miles of the Lily Gap Project, Phase 2

Sensitive Receptor Type	Location
Towns, Communities	Volcano, Barton, Pioneer, Pine Acres, West Point, Wilseyville, Porter, Railroad Flat, Glencoe, Sandy Gulch, Bummerville
Recreation Areas	Wilson lake, Tiger Creek Reservoir, Mokelumne River, Stanislaus National Forest, BLM lands
Roads	State Route 26, Lily Gap Road, Winton Road, Hidden Valley Road, Skull Flat Road, and other BLM, Forest Service, and County Roads.
Other	Private lands adjacent to the project area

Source: BLM, *Lily Gap Biomass Demonstration Project (CA-180-10-25) Decision Record.* April 2011.
Towns, Communities, Recreation Areas, and Roads verified using Google Earth on June 10, 2014.

Prescribed burns (pile burns) would occur as part of the proposed project. The BLM would prepare a burn plan, to be approved by Calaveras County APCD for the pile burn activities. In addition, the BLM would obtain a burn permit from the Calaveras County APCD. Burns must be conducted on authorized burn days only in consultation with the BLM, Calaveras County APCD, and the California Air Resources Board (CARB). Since smoke is made up of inhalable particulates (smoke particles that measure less than ten microns in size [PM_{10}], and of less than 2.5 microns in size [$PM_{2.5}$]) and ozone are public health hazards; pile burns would be planned during periods of unstable air, which would allow for proper ventilation.

The objective of pile burning would be to reduce fuel loadings while protecting the residual overstory trees from damage caused by heat and flames. Pile burned material is allowed to cure and can be ignited with lower fuel moistures, which ensures complete and efficient consumption and less particulate matter being produced.

The use of the existing unpaved roads could potentially generate dust; however, BLM has coordinated with Calaveras County APCD and dust generated by the proposed project is considered to be small and not enough to exceed Calaveras County APCD thresholds. Impacts are considered less than significant and no mitigation measures are required.

Mechanical equipment would be used for vegetation removal, thinning, chipping, and piling activities. The proposed project would include equipment such as rubber tracked chippers and skidders, semi-truck trailers, log trucks, dozers and brush rakes, and tub grinders. Exhaust hydrocarbons (EH) and pollutant levels produced from proposed project activities are considered to be small and much lower than historical levels of logging and similar activities for the Stanislaus National Forest and surrounding area. In addition, the proposed project would follow BLM equipment operating standards and would comply with requirements from the Calaveras County APCD per their standards, as well as the burn permit required for the proposed project. Therefore, exhaust from proposed project activity equipment would have a less than significant impact on air quality. No mitigation measures are required.

c.) **Less Than Significant.** The combination of the proposed project with past, present and reasonably foreseeable projects such as fuel load reductions, mastication and chipping, pile burning, cattle grazing, off-highway vehicle recreation and ranching use, and private land management activities and timber sales could result in cumulative impacts. However, all projects are required to comply with Calaveras County APCD rules and guidelines. In addition, all prescribed fire activities are coordinated with Calaveras County APCD and would be implemented under optimum conditions using best available control measures to prevent smoke concentrations from affecting local communities. Therefore, cumulative impacts are considered less than significant and no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a.) **Less Than Significant.** The BLM wildlife biologist analyzed the impacts of the proposed project on wildlife, including special status wildlife in accordance with the Endangered Species Act, other authorities, and BLM policies. BLM concluded that the proposed project would not impact threatened or endangered wildlife or other BLM special status wildlife. Specific project design features are provided in Appendix B, and include the following stipulations related to wildlife: 1) implement the proposed project outside the breeding season, generally spring (March-June so as not to disrupt nests, dens, and young animals; 2) avoidance of wood rat nests and large woody debris when creating burn piles; 3) 0.25 acres uncut for every 10 acres harvested with patches totaling 5 percent of the area; 4) retain live trees within existing cavities; 5) avoid damaging existing downed woody debris, particularly large (more than 18 inches) hollow or rotten logs and rotten stumps during all harvesting operations; 6) existing coarse woody material (more than 6 inches in diameter at the large end) and snags should be retained in place; and 7) retain and scatter tops and limbs from 20 percent of the trees harvested. In addition, proposed project activities near riparian areas would maintain 100 foot buffer from the centerline of the east-west drainage of Section 25. With the proposed project design criteria (refer to Appendix B), the proposed project would have a less than significant impact on special status wildlife and plant species. No mitigation measures are required.

b, c.) **Less Than Significant**. There are small seasonal streams in the project area that feed into the North fork of the Mokelumne River, approximately one mile to the west. The proposed project could cause erosion and some additional sediment to flow into these streams and into the river. Proposed project activities, including the design criteria provided in Appendix B, would occur adjacent to stream drainages. Vegetation treatments would include biomass thinning and tractor and grapple piling. Sedimentation could be slightly increased in some subdrainages in the short term; however, the proposed project specific design criteria (refer to Appendix B) would be followed to minimize impacts.

While riparian habitat and riparian areas may have temporary, indirect impacts during vegetative treatment activities, the proposed project would improve riparian habitat health, improve water quality, reduce sedimentation, and improve the ultimate health of the watershed. Therefore, the proposed project would have a less than significant impact on riparian areas, riparian habitat and watersheds. No mitigation measures are necessary.

d.) **Less Than Significant.** The proposed project would generate noise during treatment activities. However, snags and woody debris, riparian buffers, and maintenance of canopy closures, as outlined in the proposed project description and the design criteria (refer to Appendix B), would minimize any impacts to migratory species. Therefore, the proposed project would have a less than significant impact on migratory species. No mitigation measures are required.

e-f.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not conflict with policies or ordinances protecting biological resources nor would it conflict with any adopted conservation plans. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

a-d.) **Less Than Significant With Mitigation**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. A cultural resource study, including a background records search and field inventory, was conducted by the BLM to determine whether significant cultural resources could be affected by the proposed project. The backgrounds record search and field inventory concluded that the project area has a very low sensitivity for prehistoric resources, especially village sites. The project area's terrain is mostly steep and heavily forested and has a much higher sensitivity for historic-era gold-mining- and logging-related resources.

The proposed project site has a high sensitivity for historic-era gold-mining and logging related resources. Although no cultural resources have been identified within the project area, in the event that a previously unknown potential resource is discovered, then a flagged buffer area around the resource would be established by qualified cultural resource specialist in order to avoid the identified resource(s). Only hand treatments near the boundaries of the flagged area would be allowed.

Ground disturbing activities would occur surficially with mechanical thinning. It is not anticipated that paleontological resources would be disturbed as a result of the proposed project. As part of the proposed project activities, flagging tape buffers would be established around identified cultural resources in order to protect by avoidance. Thus, the proposed project would have a less than significant impact to paleontological resources or rock outcrop; however, there is the potential to disturb previously unidentified paleontological resources. Therefore, mitigation is required.

Mitigation Measures

CULT-1 If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the Fresno County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).

CULT-2 During any ground disturbance activities, if paleontological resources are encountered, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the *Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the University of California, Museum of Paleontology located at the University of California, Berkeley, regarding any discoveries of paleontological resources.

If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office.

CULT-3 If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Sierra Nevada Conservancy, and the Bureau of Land Management, Mother Lode Office shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Sierra Nevada Conservancy and Bureau of Land Management, Mother Lode Office as verification that the provisions for managing unanticipated discoveries have been met.

CULT-4 Prior to any ground disturbing activities, such as the creation of tracks to drive heavy equipment into harvested areas, all crew members shall attend a tailgate session conducted by a qualified cultural resource specialist. The tailgate session shall provide information, including pictures,

on the types of historic-era resources that are known to occur in the area. This information session shall provide pictures of representative resource examples, as well as providing instructions on appropriate actions, should a resource be discovered. All crew members shall sign in at the session and a roster and summary of the session shall be provided to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office as verification that the tailgate sessions was conducted.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

a, d, e) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. While the proposed project may remove some understory ladder fuel, the proposed project would ultimately improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Therefore, people residing, working, or recreating in the project area would not be exposed to potential seismic activity or landslides beyond the existing threat. No impacts would occur. No mitigation measures are required.

b-c.) **Less Than Significant.** The proposed project has been developed to minimize ground disturbance; however, new tracks may be created to access harvested areas. Thus, there is potential for soil erosion and/or loss of topsoil. Mechanical equipment would not operate on slopes greater than 30 percent and/or within 100 feet of perennial streams. Any new tracks would be placed in areas to minimize ground disturbance to the extent feasible. Equipment used for the proposed project would be small in size and power and would be equipped with rubber-tracked tires to minimize ground disturbance. In addition, the design of the proposed project includes maintaining woody debris and a percentage of groundcover. Therefore, impacts are considered less than significant. No mitigation is required.

In addition, given that the proposed project would provide for a healthier forest and includes erosion controls for slopes greater than 35 percent, the proposed project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The proposed project would have a less than significant impact in this regard and no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a-b.) **Less Than Significant**. Projected climate change impacts include temperature increases, sea level rise, changes in timing, location and quantity of precipitation and the increased frequency of extreme weather events such as heat waves, droughts and floods. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. Pile burning would occur as part of the proposed project and would be relatively small burns (six-foot by six-foot areas). The BLM would prepare a burn plan, to be approved by Calaveras County APCD for the pile burn activities. In addition, the BLM would obtain a burn permit from the Calaveras County APCD. Burns must be conducted on authorized burn days only in consultation with the BLM, Calaveras County APCD, and the California Air Resources Board (CARB). Since smoke is made up of inhalable particulates (smoke particles that measure less than ten microns in size [PM_{10}], and of less than 2.5 microns in size [$PM_{2.5}$]) and ozone are public health hazards; pile burns would be planned during periods of unstable air, which would allow for proper ventilation.

Completed fuel treatments are known to sustain a forest's ability to continue to sequester carbon. Less tree carbon loss following wildfire should be viewed in the context of the carbon sequestered from biomass and saw timber removal in treated areas before they encountered fire. The ultimate use of that removed biomass results in relatively long-term sequestration in building materials, and biomass burning for energy which supplants fossil fuels.

The proposed project would use mechanized equipment such as masticators or mechanical harvesters (i.e., rubber-tracked shippers and skidders), dozers, trucks, and pile burns. Changes in combustion efficiency change the amount of CO_2 release per ton of fuel. The proposed project would improve forest health and reduce fuel load, which would reduce the risk of wildfire, thus reducing the release of additional CO_2 as a result of severe wildfire. While the proposed project would increase CO_2 emissions in the near-term due to pile burns and equipment operation, emissions overall would small and equipment would be operated using current standards. Ultimately CO_2 emissions would be reduced because wildfire severity would be reduced. Impacts are considered less than significant. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

a-c.) **Less Than Significant**. The proposed project would not include the use of hazardous materials. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not transport, use, or dispose of hazardous materials. The proposed project would not release hazardous materials into the environment. The proposed project would result in equipment emissions as well as particulate matter from proposed project activities; however, the project area is not located within 0.25 mile of a school. The proposed project would have a less than significant impact as related to hazardous materials. No mitigation measures are required.

d-g.) **No Impact**. The proposed project is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, nor would it create a hazard to the public. The proposed project is not within an airport or private airstrip plan area.

The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would

improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Therefore, the proposed project area would not interfere with air traffic circulation nor would it interfere with an adopted emergency response plan or an emergency evacuation plan. The proposed project would thus, have no impact in this regard. No mitigation measures are required.

h.) **Less Than Significant.** The proposed project is located within a Wildland Urban Interface area. In general, wildfire ignitions are a mix of human caused and lightning. Wildfires usually spread in a continuous flaming front throwing embers ahead, starting multiple small fires called spot fires. Generally the higher the wind speed, the further the spot fires occur from the main fire. As these spot fires burn together they cause the speed and intensity of the fire to increase dramatically. Multiple spot fires are an indication of extreme fire behavior.

The Wildland Urban Interface is always given priority to suppression activities. For fire suppression efforts, the effect of reducing hazard fuels in the Wildland Urban Interface is a reduced number of suppression resources needed for structure protection, which allows the resources to be redeployed to perimeter control, thus reducing fire size if fire behavior is controllable. Smaller fires require fewer firefighters, which in turn reduces the number of firefighters exposed to hazards. In addition, smaller fires expose fewer numbers of the public to the hazards of wildfires.

An indirect effect of the proposed project is the increased fire resilience of the landscape, which is the ability of the forest to withstand the effects of wildfires. Given the proposed project's outcome in reducing ladder fuel, fire intensity, and flame height, and increasing fire resilient conditions to the project area, the proposed project would have a less than significant impact on wildfires. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre- existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a, c, d, f.) **Less Than Significant**. The proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project includes biomass thinning, tractor and grapple piling, and pile burning. These activities include ground disturbing activities, which could result in an increase is sediment within runoff. However, the proposed project would include a 100-foot-wide streamside buffer to avoid potential runoff generated by these areas that can cause accelerated erosion on soils downslope. To prevent potential water quality degradation, streamside buffers (100-foot minimum measured from the centerline of the stream) would be established for the seasonal stream that flows through the project area. Only hand treatments would be allowed near the boundaries of the 100-foot streamside buffer. No equipment operation would be allowed on slopes greater than 35 percent, although work with hand equipment would be allowed. The proposed activities would help to reduce runoff and erosion

in the long-term, which would ultimately improve water quality. The main water quality concern in the project area is sand-sized sediment that can be derived from roads, hillslope disturbances, or in-stream erosion.

Proposed project activities could indirectly impact water quality, as discussed above; however, the proposed project activities and design criteria provided in Appendix B would ensure a less than significant impact during project implementation. While the seasonal stream, as well as water bodies downstream of the proposed project, may have temporary, indirect impacts during vegetative treatment activities, the proposed project would improve riparian habitat health, improve water quality, reduce sedimentation, and improve the ultimate health of the watershed. Therefore, the impacts to water quality would be less than significant. No mitigation measures are required.

b.) **No Impact.** The proposed project would ultimately improve watershed, riparian and forest health. No water supply would be required for the proposed project. Thus, the proposed project would not impede groundwater recharge, as vegetative treatments would not include the introduction of impervious surfaces. There would be no impact to water supply as a result of the proposed project. No mitigation measures are required.

e.) **No Impact.** The proposed project would not result in an increase in runoff and would not contribute to polluted runoff. Ground disturbing activities would result from the proposed project, however, design criteria (refer to Appendix B), would minimize the potential of increased sediment in runoff, as discussed above. The proposed project would not impact runoff amount or runoff water quality. No mitigation measures are required.

g-j.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not introduce houses or businesses to the area. Therefore, the proposed project would not introduce people, houses, or other structures to a 100-year flood hazard area, would not redirect a 100-year flood event, would not introduce people or structures to an area that would flood, including flooding from a failed dam or levee, and would not introduce people or structures to an area that would experience inundation from seiche or tsunami. In addition, the threat of a mudflow would not be any greater that the existing conditions. Therefore, the proposed project would have no impact in this regard. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a-c.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. No changes in land use designations or zoning would occur as a result of the proposed project. The proposed project would not physically divide an established community. The proposed project would enhance the forest health, thus the proposed project would not conflict with any conservation plans for the BLM or Calaveras County. No impact would occur as a result of the proposed project. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a-b.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. There are several active mining claims in the project area, the use of which is regulated by the BLM under federal mining regulations 43 CFR 3809 and 3715. One claimant has been authorized, under these regulations, to live on an existing mining claim within the project area. The BLM will continue to work with this claimant to ensure the existing mining activity and related occupancy is not negatively impacted by the proposed project. Therefore the proposed project would not result in the loss of available known mineral resources or mineral resource recovery sites. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

a, b, d.) **Less Than Significant.** The proposed project would increase noise levels temporarily during activities such as mechanical thinning and tractor piling. However, the design criteria for the proposed project, as outlined in Appendix B, would result in impacts that are less than significant. In addition, the anticipated mechanical equipment used for proposed project activities are not anticipated to result in excessive groundborne vibration levels. Many of the treatment sites are located away from any private land owners or campgrounds. Activities would be temporary in nature, as they would cease upon project completion. Therefore, the proposed project would have a less than significant impact. No mitigation measures are required.

c.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. While temporary noise would occur as a result of the mechanical thinning and tractor and grapple piling, these noise increases would be temporary in nature and would cease upon project completion. Therefore, the proposed project would not permanently increase ambient noise levels above existing noise levels. No mitigation measures are required.

e, f.) **No Impact**. The proposed project is not located within an airport land use plan or in the vicinity of a private airstrip. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not expose people to excessive noise levels as a result of the proximity to an airport or private airstrip. No impacts would occur in this regard. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a-c.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. No changes in land uses or land use designations would occur as a result of the proposed project. The proposed project does not include the development of new homes or businesses. The proposed project would not displace existing homes or people. No impacts would occur as a result of the proposed project. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

a.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not result in an increase need for public services. While pile burning is an element of the proposed project, the BLM would provide appropriate staff for this proposed project activity. Thus, the proposed project would not result in an increase need for fire protection. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to public services would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a-b.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not increase the use of existing neighborhood and regional parks, nor would it increase the use of the project area or adjacent National Forest. The proposed project would not require the expansion or construction of recreational facilities. The project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to recreation would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation / Traffic: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

a-f.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. A temporary increase in traffic may occur while equipment is being moved to the project area, out of the project area, or transporting biomass from the project area to the biomass plant near Ione (Buena Vista Biomass Power Facility). However, because of the nature of the proposed project activities, it is not anticipated that the proposed project would conflict with applicable plans, ordinances, policy establishing measures, congestion management plans or programs, or policies or programs regarding alternative transportation (public transit, bicycles, or pedestrian facilities).

The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Thus, the proposed project would not impact air traffic patterns.

The proposed project includes vegetative treatments that would be applied to approximately 200 acres. No roadway construction or improvements would occur as a result of the proposed project. Therefore, the proposed project would not increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). No mitigation measures are required.

The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. This would improve emergency access to the area in case

of wildfire or other forest emergency. No impacts from the proposed project would occur. No mitigation measures are necessary.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

a-g.) **No Impact**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not require wastewater treatment, water supply, or solid waste disposal, as the proposed project does not include utilities and service systems. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to utilities and service systems would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a.) **Less Than Significant**. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project activities as described in Section 2.0, *Project Description*, as well as the design criteria provided in Appendix B would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. Temporary impacts would be less than significant. No mitigation measures are required.

b.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. While air quality and greenhouse gas emissions could result in cumulative impacts as a result of the proposed project, all projects are required to comply with Calaveras County APCD rules and guidelines. The proposed project would reduce the threat of severe wildfire, and, therefore, long term impacts would not be cumulatively considerable. Impacts are considered less than significant.

c.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. Overall impacts to human beings would be beneficial in nature, as wildfire threat and severity would be reduced as a result of the reduction in ladder fuels. Therefore, impacts would be less than significant.

5.0 RESPONSE TO COMMENTS

5.1 PURPOSE

As defined by Section 15050 of the California Environmental Quality Act (CEQA) Guidelines, the Sierra Nevada Conservancy (SNC) is serving as "Lead Agency," for preparation of the Mitigated Negative Declaration (MND) for the Lily Gap Forest Health Project, Phase 2 (proposed project). The Final MND presents the environmental information and analyses that have been prepared for the proposed project, including comments received addressing the adequacy of the Initial Study (IS)/Proposed MND and responses to those comments. The Final IS/MND, which includes these responses to comments, the Draft IS, and the technical appendices, will be used by the SNC Governing Board (SNC Board) in the decision-making process for the proposed project.

5.2 ENVIRONMENTAL REVIEW

The SNC prepared and distributed the IS/Draft MND, dated July 2014, for the proposed project (State Clearinghouse [SCH] No. 2014072017). The IS/MND was circulated for a 30-day review period which began on July 9, 2014 and extended to August 7, 2014. SNC received two (2) written comment letter and no verbal comments on the IS/MND. The agency that has commented on the Draft IS/MND is listed in Table 5-1, *Public Comments Received on the Draft IS/MND*.

Table 5-1. Public Comments Received on the Draft IS/MND

Letter/Comment No.	Commenter	Commenter Type
1	Governor's Office of Planning and Research – State Clearinghouse	State
2	California Water Boards – Central Valley Regional Water Quality Control Board	State

Pursuant to State CEQA Guidelines Section 15074, the SNC Governing Board shall consider the IS/MND together with any comments received during the public review process. The SNC Governing Board shall adopt the proposed MND only if it finds on the basis of the whole record, including the IS and public comments, that there is no substantial evidence that the proposed project would have a significant effect on the environment and that the MND reflects the lead agency's independent judgment and analysis. The responses to comments are contained in this chapter, Chapter 5, *Response to Comments*, of this IS/MND. A copy of the numbered comment letters and lettered responses to each comment is provided in Section 5.4, *Response to Comments*, of this chapter.

5.3 REVISIONS TO THE DRAFT IS/MND

Revisions made to the text of the IS/MND are shown within this document. Clarifications to this IS/MND text are shown with underlining and text removed from the IS/MND is shown with ~~strikeout~~. Page numbers for the revisions are provided within the appropriate response in Section 5.4, *Response to Comments*, below.

5.4 RESPONSE TO COMMENTS

The letter comments received on the Draft IS/MND are addressed in their entirety in this section. Each comment contained in the letters has been assigned a reference code. The responses to reference code comments follow each letter. Two (2) written comment letters were received and no verbal comments were received during the public comment period.

Comment Letter 1

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

RECEIVED
AUG 12 2014
BY:

August 8, 2014

Matthew Daley
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Subject: Lilly Gap Forest Health Project, Phase 2 (SNC 794)
SCH#: 2014072017

Dear Matthew Daley:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 7, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

A

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2014072017
Project Title Lilly Gap Forest Health Project, Phase 2 (SNC 794)
Lead Agency Sierra Nevada Conservancy

Type **MND** Mitigated Negative Declaration

Description The BLM is requesting approximately $185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lilly Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lilly Gap Forest and Watershed Health Project, and is part of the Lilly Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lilly Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades.

Lead Agency Contact

Name Matthew Daley
Agency Sierra Nevada Conservancy
Phone 530 823 4698 **Fax**
email
Address 11521 Blocker Drive, Suite 205
City Auburn **State** CA **Zip** 95603

Project Location

County Calaveras
City
Region
Lat / Long 38° 26' N / 120° 29' W
Cross Streets Lily Gap Road/Winton Road
Parcel No. 040-170-30
Township 7N **Range** 13E **Section** 25 **Base** MDB&M

Proximity to:

Highways Hwy 88, 26
Airports
Railways
Waterways Mokelumne River, Tiger Creek Reservoir
Schools
Land Use LUD: Timber-Mineral Resource Area, 2A-Dam Inundation; Z: Unclassified (U)

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Water Quality; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission

Date Received 07/09/2014 **Start of Review** 07/09/2014 **End of Review** 08/07/2014

Response to Comment Letter 1: Governor's Office of Planning and Research - State Clearinghouse (August 8, 2014)

1. Thank you for your comment. The participation of the State Clearinghouse in the public review of this document is appreciated. The commenter states that the State Clearinghouse distributed the Draft IS/MND for selected agencies to review; in compliance with the California Environmental Quality Act (CEQA). One comment letter was received from the Central Valley Regional Water Quality Control Board (CVRWQCB) (July 17, 2014) and was attached to the comment letter. Responses to the CVRWQCB letter are provided in Comment Letter 2. The comments have been noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

Comment Letter 2

Water Boards

Edmund G. Brown Jr., Governor

Matthew Rodriquez, Secretary for Environmental Protection

Central Valley Regional Water Quality Control Board

17 July 2014

RECEIVED JUL 18 2014 BY:

CERTIFIED MAIL
7013 1710 0002 3644 7297

Matthew Daley
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, LILY GAP FOREST HEALTH, PHASE 2 (SNC 794) PROJECT, SCH NO. 2014072017, CALAVERAS COUNTY

Pursuant to the State Clearinghouse's 9 July 2014 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Lily Gap Forest Health, Phase 2 (SNC 794) Project, located in Calaveras County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

A

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Karl E. Longley ScD, P.E., chair | Pamela C. Creedon P.E., BCEE, executive officer

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley

Recycled Paper

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ. A

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements
If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Low or Limited Threat General NPDES Permit A
If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

A

Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

Response to Comment Letter 2: Central Valley Regional Water Quality Control Board (July 17, 2014)

A. Thank you for your comment. The participation of the Central Valley Regional Water Quality Control Board (RWQCB) in the public review of this document is appreciated. The commenter discusses their responsibility in protecting the quality of surface and groundwater and provides information on the different permits that are issued under CVRWQCB.

The commenter is referred to the subsection *Hydrology and Water Quality* provided on page 24 of Chapter 4, *Evaluation of Environmental Impacts*, of this IS/MND. The U.S. Department of the Interior, Bureau of Land Management (BLM), Mother Lode Field Office analyzed a larger project (Lily Gap Forest Health Project [Phase 1 and Phase 2]) under the National Environmental Policy Act (NEPA). BLM prepared an Environmental Assessment (EA) and adopted a Finding of No Significant Impact (FONSI) in March 2011 and issued a Decision Record in May 2011, which is within the CVRWQCB's jurisdiction. The proposed project is required to meet water quality requirements as identified in the NEPA EA/FONSI and Decision Record, which includes the design criteria. Compliance with the 2011 EA/FONSI and Decision Record will result in the protection of water quality. The NEPA documentation requirements include, but are not limited to streamside buffers (100-foot minimum from the centerline of the stream), prohibiting waste (i.e., petroleum products, soil, silt, sand, rock, felled trees, slash, sawdust, and bark) from being discharged to surface waters, and allowing only hand treatments near the boundaries of the 100-foot streamside buffers. The enforcement of hand treatments near the boundaries of the 100-foot streamside buffers will minimize erosion potential. In addition, the proposed project includes Design Criteria (as provided in Appendix A of this IS/MND), that would protect water quality within the project boundaries. If it is determined that the proposed project is required to obtain additional permits, beyond what is set forth in the NEPA EA/FONSI and Decision Record, the BLM Mother Lode Field Office will obtain all required permits. The comment is noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

6.0 DISTRIBUTION LIST

- San Andreas Central Library
  1299 Gold Hunter Road
  San Andreas, CA 95249

- West Point Branch Library
  291 Main Street
  West Point, CA 95255

- Calaveras County Water District
  120 Toma Court
  San Andreas, CA 95249

- BLM – Mother Lode Field Office
  Bill Haigh – Manager
  5152 Hillsdale Circle
  El Dorado Hills, CA 95762

- Calaveras Board of Supervisors
  Madaline Krska, County Clerk Recorder
  891 Mountain Ranch Road
  San Andreas, CA 95249

- California State Clearinghouse (Hand Deliver)
  1400 Tenth Street
  Sacramento, CA 95814

7.0 PREPARERS

Matthew Daley, Senior Grants Analyst, Sierra Nevada Conservancy

Christa Redd, Environmental Planner, Kimley-Horn and Associates, Inc.

Bruce Grove, Environmental Planner, Kimley-Horn and Associates, Inc.

Nicole Marotz, Environmental Planner, RBF Consulting, a M. Baker International Company

Erin Longo, Technical Editor, Kimley-Horn and Associates, Inc.

Appendix A

Silvicultural Prescription for Sierran Mixed-Conifer/Lower Montane Forest

Source: BLM, *Lily Gap Biomass Demonstration Project (CA-180-10-25) Decision Record and Finding of No Significant Impact*, April 2011

Appendix A

Silvicultural Prescription for Sierran Mixed-Confier/Lower Montane Forest

A.1 Background and the Importance of Fire

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicutlural principles that we feel can be incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area.

Chief among these concepts is the importance of wildfire. North et al (2009) explains that:

> Fire plays a pivotal role in reshaping and maintaining mixed-conifer ecosystems. Fire was once very common in most of the western Sierra and has been a primary force shaping the structure, composition, and function of mixed-conifer forests. ... [Most of the fires were of low intensity and returned at frequent intervals.] The main effect of low-intensity fire is its reduction of natural and human-created (i.e., resulting from management activities) fuels, litter, shrub cover, and small trees. These reductions open growing space, provide a flush of soil nutrients, and increase the diversity of plants and invertebrates. By reducing canopy cover, fire also increases habitat and microclimate heterogeneity at site, stand, and landscape levels [North et al. 2009:5-6].
>
> Forest fuels are usually assessed in three general categories: surface, ladder, and canopy bulk density. Fuel treatments often focus on ladder fuels (generally defined to be variably sized understory trees that provide vertical continuity of fuels from the forest floor to the crowns of overstory trees.) Some studies and models, however, suggest a crown fire entering a stand is rarely sustained (i.e., sustained only under extreme weather conditions) if understory fuels are too sparse to generate sufficient radiant and convective heat. [North et al. 2009:3].
>
> By itself, prescribed fire is difficult to apply in some forests owing to fuel accumulations, changes in stand structure, and operational limitations on its use. Mechanical treatments can be effective tools to modify stand structure and influence subsequent fire severity and extent and are often a required first treatment in forests containing excessive fuel loads. [North et al. 2009:6-7]
>
> Prescribed fire is generally implemented very carefully, killing only the smaller size class trees. In some cases, it is ineffective for restoring resilience, at least in the first pass. For example, prescribed fire may not kill many of the larger ladder-fuel or co-dominant true fir trees that have grown in with fire suppression. In many stands, mechanical thinning followed by prescribed fire may be necessary to achieve forest resilience much faster than with prescribed fire alone. [North et al. 2009:7]
>
> Some forests cannot be prescription burned, at least as an initial treatment, because of air quality regulations, increasing wildland home construction, and limited budgets. Yet restoration of these forests still depends on modifying fuels because it reduces wildfire intensity when a fire does occur and can produce stand conditions that simulate **some** of fire's ecological effects. [North et al. 2009:7]

One measure of resilience is that fire disturbance produces mortality patterns consistent with the dynamics under which the forest evolved. Mixed-conifer resilience might be best ensured by (1) reducing fuels such that if the forest burned, the fire would most likely be a low severity surface and (2) producing a forest structure that keeps insect and pathogen mortality at low, chronic levels. Where intermediate-size trees are abundant, they may present a fire and fuels risk, especially when live crowns are continuous to the forest floor (North et al. 2009:v).

Intermediate-size trees can contribute to overly dense stands that are moisture stressed and at risk of bark beetle attacks:

In addition to ladder and surface fuels, managers have been concerned with reducing canopy bulk density in DFPZs and the defense zone of wildland urban interfaces (WUI). Overstory trees are commonly removed, and residual trees are evenly spaced to increase crown separation. The efficacy of canopy bulk density reduction in modifying fire behavior is largely a function of weather conditions. Research has suggested there is often limited reduction in crown fire potential through overstory thinning alone, without also treating surface fuels. [North et al. 2009:4]

A concern with the widespread use of canopy bulk density thinning in defensible fuel profile and defense zones is the ecological effects of the regular tree spacing. In the Sierra Nevada, historical data, narratives, and reconstruction studies indicate mixed conifer forests were highly clustered with groups of trees separated by sparsely treed or open gap conditions. This clustering can be important for regenerating shade-intolerant pine, increasing plant diversity and shrub cover moderating surface and canopy microclimate conditions within the tree cluster and providing a variety of microhabitat conditions for birds and small mammals. [North et al. 2009:4]

A.2 Importance of Stand Heterogeneity and Density

Recent studies have shown that spatial heterogeneity was a key feature in forest resiliency and characteristic of frequent fire's effect on mixed-conifer forests. Fuel treatments that produce uniform tree spacing reduce this ecologically important spatial heterogeneity. North et al. (2009) explains that:

Horizontal heterogeneity, however, used to be relatively common in Sierran mixed-conifer forests [due to logging/reforestation practices]. All of the Sierran reconstruction studies suggest mixed-conifer forests, under an active fire regime, had a naturally clumped distribution containing a variety of size and age classes. [North et al. 2009:15]

At the stand level, vertical heterogeneity can still be provided by separating groups of trees by their canopy strata. For example, a group of intermediate-size trees that could serve as ladder fuels might be thinned or removed if they are growing under large overstory trees. The same size trees in a discrete group, however, might be lightly thinned to accelerate residual tree growth or left alone if the group does not present a ladder fuel hazard for large, overstory trees. [North et al. 2009:15-16]

To increase horizontal heterogeneity, we suggest using microtopography as a template. Wetter areas, such as seeps, concave pockets, and cold air drainages, may have burned less frequently or at lower intensity. Limiting thinning to ladder fuels in these areas is suggested because with their potentially higher productivity and cooler microclimate, they can support greater stem densities, higher canopy cover, and reduced fire effects. A concern with current uniform fuel reduction is that these microsite habitats associated with sensitive species would be eliminated. Surface fuel loads at these microsites should still be reduced to lower their vulnerability to high-intensity fire.

In contrast, upslope areas, where soils may be shallower and drier and where fire can burn with greater intensity, historically had lower stem densities and canopy cover. On these sites, thinning might reduce the density of small or, where appropriate, intermediate trees and ladder and surface fuels toward a more open condition. In some circumstances this thinning may reduce water stress, accelerating the development of large residual trees. Within a stand, varying stem density according to potential fire intensity effects on stand structure would create horizontal heterogeneity. [North et al. 2009:16-18]

Historical forests can provide a better understanding of the ecological processes that have shaped mixed-conifer forest and the habitat conditions to which wildlife have adapted. All reconstruction studies, old forest survey data sets, and 19th-century photographs suggest that frequently burned forests had very low tree densities. ... Studies reconstructing pre-European conditions all indicate that forests had a greater percentage of pine, a clustered pattern with highly variable canopy cover, and a high percentage of the growing stock in more fire resistant, large-diameter classes. ... What these reconstructions do provide is inference about the cumulative process effects of fire, insects, pathogens, wind, and forest dynamics on stand structure and composition, producing forests resilient to most disturbances, including wildfire. ... [Modeling] found a low-density forest dominated by large pines was most resilient to wildfire, sequestered the most carbon, and had the lowest carbon dioxide (CO_2) emissions and thus contributed less to global warming. An analysis of carbon emissions and storage from different fuel treatments, found

> understory thinning followed by prescribed fire produced the greatest reduction in potential wildfire severity without severely reducing carbon stocks. [North et al. 2009:9].

> In fire-suppressed forests, shrubs are often shaded out, reducing their size, abundance, and fruit and seed production in low-light forest understories. Anecdotal narratives, a forest reconstruction, and a few early plot maps suggest shrub cover in active-fire conditions might have been much higher than in current forests, mostly owing to large shrub patches that occupied some of the gaps between tree clusters. [North et al. 2009:12]

> Studies in the Sierra Nevada and Klamath Mountains found that mixed-conifer structure and composition varied by fire patterns that were controlled by landscape physiographic features. Fire intensity, and consequently a more open forest condition, increased with higher slope positions and more southwesterly aspects. ... Cumulatively these studies suggest that forest landscapes varied depending on what structural conditions would be produced by topography's influence on fire frequency and intensity. [North et al. 2009:19]

A.3 Silvicultural Strategy

North et al. (2009) asserts that a new silviculture for Sierran mixed-conifer forest that

> balances ecological restoration and wildlife habitat with fuel reduction can meet multiple forest objectives. By necessity, recent Sierran silviculture has first been focused on reducing fire severity through fuel reduction. For many reasons, including maintaining or restoring resilient forests, public safety, and property loss, fuel reduction remains a priority. We suggest that , with some modification, wildlife and ecological objectives can also be met. [North et. al. 2009:22]

> Diameter-limit prescriptions applied equally to all species will not remedy the significant deficit of hardwoods and pines in current forests. Prescriptions that differ by species can retain hardwoods, which are important for wildlife, and favor pines that can increase the forest's fire resilience. Given their current scarcity in many locations, there are few instances that warrant cutting either hardwoods or pines in mixed-conifer forests. [Id.]

In general, leaving pine and thinning white fir, Douglas-fir, and incense-cedar will help restore historical species composition and increase the forest's fire resilience. There are times, however, where removing pine can reduce fuels, decrease the risk of drought or insect induced mortality, and accelerate the growth of the residual pine trees.

> We suggest creating landscape heterogeneity in the Sierra Nevada by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. In general, stem density and canopy cover would be highest in drainages and riparian areas, and then decrease over the midslope and become lowest near and on ridgetops. Stem density and canopy cover in all three areas would be higher on northeast aspects compared to southwest. Stand density would also vary with slope becoming more open as slopes steepen. [North et al. 2009:20]

Locating gaps in areas with thinner soils or lower productivity may be logical to foster lower canopy cover since these areas historically supported lower tree densities and fuel loads. In the forest matrix between tree groups and gaps, frequent-fire forests generally consisted of widely spaced, large trees, most of which were pines. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition could be varied depending on existing forest conditions and topographic position.

> The proposed silvicultural approach is a multiaged-stand strategy driven by the need for wildlife habitat, fire-resistant stand structures, and restoration of stand and landscape patterns similar to active-fire conditions in mixed-conifer forests. Although we use the term multiage, we are most interested in size and structure, and their associated ecological attributes. Multiaged stands are a flexible means of including variable stand structures with two or more age classes and integrating existing stand structures into silvicultural prescriptions. [North et al. 2009:22]

> Clusters of intermediate to large trees (i.e., >20 inches diameter at breast height [DBH]) are sometimes marked for thinning with the belief that they are overstocked and thinning would reduce moisture stress. Some evidence, however, suggests these groups of large trees may not be moisture stressed by within-group competition.... Reconstructions of Sierran forests with active fire regimes have consistently found large trees in groups. These groups, however, can be at risk if intermediate and small trees grow within the large tree groups. Thinning these small and intermediate trees will reduce fire laddering. [North et al. 2009:23-24]

What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10- to 16-inch DBH classes. Trees larger than this may be thinned, for additional fuel reduction by reducing canopy bulk density in strategic locations. Removal of some of the intermediate sized trees would also have the economic benefit of providing revenue to help offset the costs of the fuels reduction and could fund additional projects (North et al. 2009:24).

> Thinned intermediate-size trees should only be fire-sensitive, shade-tolerant species such as white fir, Douglas-fir, and incense-cedar. In mixed-conifer forest, attempt to keep intermediate-size pines and hardwoods because of their relative scarcity and importance to wildlife and fire resilience. . . Some intermediate-size trees can still function as ladder fuel, particularly those that were initially grown in more open conditions. These trees can have live and dead limbs that extend down close to the forest floor providing a continuous fuel ladder. . . [In] middle to upper slope topographic position ... some thinning of intermediate-size trees may help accelerate the development of large "leave" trees. We suggest, however, that these criteria not be applied to riparian areas, moist microsites often associated with deeper soils, concave topography, or drainage bottoms because these areas may have supported higher tree densities and probably greater numbers of intermediate size trees. [North et al. 2009:24-25]

Appendix B

Design Criteria

DESIGN CRITERIA

To minimize potential adverse impacts to resources in the area from the proposed project, the United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office identified the following design criteria within the NEPA Environmental Assessment/Finding of No Significant Impact prepared for the 420-acre Lily Gap Forest Health Project. These design criteria are broken into resource groups but many of these features can reduce impacts to other resources as well. Project-wide design criteria are applicable to the proposed project as a whole and are not resource specific.

The following design criteria cover 200 acres known as the Lily Gap Forest Health Project, Phase 2; this proposed project is a part of the larger 420-acre Lily Gap Forest Health Project. The design criteria are considered part of the proposed project activities, where applicable.

- *Minimize New Ground Disturbance*. Cut vegetation would be taken to designated staging areas: existing roads, road pullouts, and landings on BLM-administered land for further processing and loading into trucks. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used (rather than a feller buncher) to harvest biomass and sawtimber. Biomass material may be harvested and transported to the biomass plant near Ione (Buena Vista Biomass Power Facility). Berms, large boulders, and other kinds of barriers may be placed at strategic locations after harvest to prevent dirt bikes and other off-highway vehicles from driving in the treated area and causing erosion.

- *Erosion and Sedimentation Control*. Erosion and sedimentation are potential issues affecting the drainages near where the center line (running east-west) of the Section 25, crosses the drainage that appears on the USGS 1:24,000 topographic map. This stream drainage has been degraded by previous land use. Mining and timber harvest have left an areas of un-vegetated slope and has caused some sedimentation in the channel. To prevent any further potential degradation, streamside buffers (100ft minimum from the centerline of the stream) would be established for the perennial streams that flow through the project area. No equipment operation would be allowed on slopes greater than 35 percent; hand work would be allowed.

- *Weed Control.* To minimize the potential for introduction or spread of invasive weeds, equipment used for the proposed action would be cleaned prior to entering area and, where possible, would avoid operating within weed-infested areas, such as stands of scotch broom or oblong spurge. Occurrences of these weed species were found only at the edge of the public land and avoidance should be feasible.

- *Cultural Resources.* Flagging-tape buffers would be established around identified cultural resources. These cultural resources would be protected during project implementation.

- *Wildlife.* Attempt to implement the project outside the breeding season, generally spring (March-June) so as not to disrupt nests, dens, and young animals.

- *Wildlife.* Avoid wood rat nests and large woody debris when creating burn piles. If a potential nest cannot be avoided, check the pile for signs of wildlife before lighting. If nests or dens are found, leave the pile alone. If it must be burned, restack it nearby or give the animal a path to escape from the fire.

- *Wildlife.* Leave an uncut patch (minimum of 0.25 acres) for every 10 acres harvested, with patches totaling 5 percent of the area. Use leave trees or large snags as the center for uncut patches. Riparian and other buffers can help to satisfy this goal.

- *Wildlife.* Retain live trees with existing cavities.

- *Wildlife.* Avoid damaging existing downed woody debris, especially large (18+ inches) hollow or rotten logs and rotten stumps during all harvesting operations. Leave all existing coarse woody material (more than 6 inches in diameter at the large end) and snags as possible.

- *Wildlife.* Retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands. Retain and scatter tops and limbs from 20 percent of the trees harvested.

- *Mining Activity.* There are several active mining claims in the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA. BLM would work with Louis Saltzer to ensure that his mining activity and related occupancy, as allowed under the regulations, is not negatively affected by the proposed action.

Lily Gap Forest and Watershed Health Project, Phase 2
Category One Grant Proposal: Site Improvement

Project Title: Lily Gap Forest and Watershed Health Project, Phase 2
County: Calaveras
Sierra Nevada Conservancy (SNC) Subregion: South Central
SNC Area Representative: Brandon Sanders
Area Manager: Julie Bear

ORGANIZATION INFORMATION

Organization: United States Department of the Interior, Bureau of Land Management (BLM), Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, CA 95762

Organization Type: Government

Organization Website: http://www.blm.gov/ca/st/en/fo/folsom.html

Has the organization successfully completed similar project(s)?: Yes

If yes, please describe the project(s): Lily Gap Forest Health Project, Phase 1. Adjacent to Phase 2 site, 157 acres, $182,000 budget, application of United States Forest Service's General Technical Report 220 forest health approach, biomass sold to Buena Vista biomass plant near Ione, California.

PROJECT CONTACT INFORMATION

Authorized Representative/Title: William Haigh, Mother Lode Field Manager.

Email: whaigh@blm.gov
Address: 5152 Hillsdale Circle
City, State, Zip: El Dorado Hills, CA 95762
Phone Number: 916 941-3102 Fax Number: 916 941-3199

Day-to-Day Grant Project Manager (Person/Title): Brian Mulhollen

Email: bmulholl@blm.gov
Address: 5152 Hillsdale Circle
City, State, Zip: El Dorado Hills, CA 95762
Phone Number: 916 941-3118 Fax Number: 916 941-3199

DETAILED PROJECT DESCRIPTION NARRATIVE

Project Description

BLM's 420-acre Lily Gap Forest and Watershed Health Project is located on BLM-administered public lands in Calaveras County, California. The project is located near the town of West Point in Calaveras County, California at Township 7 North, Range 13 East, Section 25, at lattitude 38 degrees, 26 minutes north; longitude 120 degrees, 29 minutes west.

Lily Gap is situated on forested slopes within the Mokelumne River watershed on the south rim of the North Fork Mokelumne River Canyon. Within the project area the consequence of decades of suppression has been the buildup of dead brush, slash, and litter debris in the understory and dense thickets of conifers (especially incense-cedar and ponderosa pine). These conditions are considered unhealthy with many potential downsides, such as loss of ecological diversity, and greater susceptibility to disease/insect infestation.

Critically, these conditions are more likely to support a high severity, high intensity fire—such as a crown fire—that could be devastating to the watershed, not to mention property and lives. The area has not experienced fire in decades, leading to dead brush, slash and litter in the understory surrounding dense thickets of conifers. The parcel is entirely within the wildland urban interface (WUI), near several small towns and dozens of private residences.

BLM proposes to recreate pre-suppression forest conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and reduce erosion and thereby protect and restore the Mokelumne River watershed. All treatments will conform to the recommendations of the United States Forest Service's General Technical Report 220, *An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests* (GTR-220). Consistent with the recommendations in this report, BLM will implement the following silviculture strategy on the Lily Gap parcel. BLM will create landscape heterogeneity by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. Stem density and canopy cover will be highest in drainages and riparian areas, and then decrease over the midslope. Stem density and canopy cover would be higher on northeast aspects compared to southwest. In general pine will be left and white fir, Douglas-fir, and incense-cedar thinned, which will help restore historical species composition. Gaps may be located in areas with thinner soils or lower productivity to foster lower canopy cover since the Lily Gap area historically supported lower tree densities and fuel loads. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition would be varied depending on existing forest conditions and topographic position.

A higher density of tree stems and canopy cover would be retained in the cooler moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of the parcel. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained unless to do so would create an unusually unsafe concentration of fuels.

The majority of the work would be done by a hand crew under the supervision of BLM's fuel/fire management specialists. Treatment methods will include use of a brush chipper with pile burning and mechanical mastication. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used

Figure 1 depicts the stand as it is today. Figure 2 represents what the stand would generally look like after treatment is fully implemented. All the trees less than 8 inches DBH have been removed and some of the larger diameter trees have been removed to increase spacing and reduce overall density. Snags and areas of brush would be retained to provide habitat for certain wildlife.

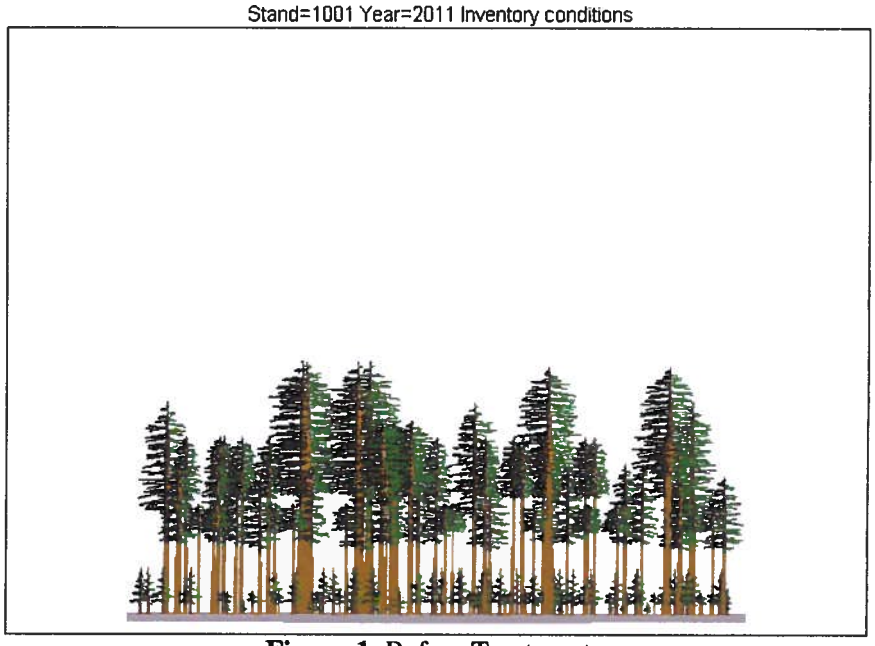


Figure 1. Before Treatment

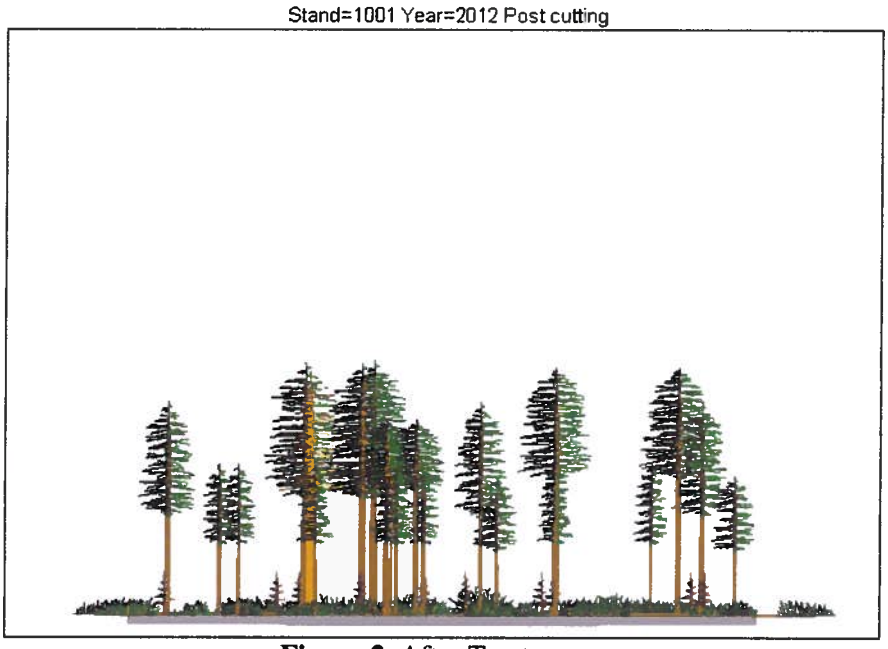


Figure 2. After Treatment

A small seasonal stream flows through the project site and, within a mile, reach the North Fork of the Mokelumne River. The Lily Gap Phase 2 project will decrease the risk of fire in these wathersheds and, in so doing, reduce long-term soil erosion and sediment flow into the Mokelumne River. This is important because of the project's location immediately above the Tiger Creek Reservoir, a critical component of the hydroelectric power generation infrastructure that has been constructed throughout the North Fork canyon. Enhanced fire protection will also contribute to the maintenance of the late seral forest stands characteristic of the north-facing slopes of the river canyon. In addition, BLM's Sierra Resource Management Plan (2008) found the North Fork Mokelumne to be suitable for wild and scenic river designation because it possesses outstandingly remarkable wild, scenic and recreational values (ORVs). Lily Gap Phase 2's beneficial impacts on watershed health would be consistent with this finding and the protection and enhancement of river ORVs.

Forest health improvements will be particularly helpful in the late seral stage stands that are found in

the south central portion of the Lily Gap parcel, adjacent to the small seasonal creek. This would contriubute to future enhancement of these stands for wildlife. On-site riparian habitat within the parcel will be protected due to such project design features as streamside buffer zones. This, together with the retention of downed wood, coarse woody debris and snags will benefit a variety of wildlife species, including cavity-nesting birds. Finally, the treatments would enhance a small wet meadow that is located in the riparian drainage. BLM's botanist describes the meadow, with its horsetail, leopard lily, digitalis, columbine, mugwort, sedges and rushes as an interesting and unusual community for this area.

Harvest of material for woody biomass utilization such as electric power generation and shaved animal bedding will occur throughout the project area where it is most economically feasible. It will also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains course woody debris for wildlife habitat.

Phase I of the Lily Gap project, a 157 acre treatment, was completed in July 2013. This request for SNC funding will allow BLM to address a further 200 acres immediately to the north of the Phase 1 site. The total project cost will be $200,450. BLM is requesting $185,000 from SNC through this grant process. The remaining $15,450 will be provided by Congressionally-appropriated forestry funds.

Workplan and Schedule Narrative

Due to its relatively low elevation (approximately 3,500 feet), the project will be implemented after the end of the fire season, that is, between mid fall and late spring. The anticipated start date is late 2014. Selection of a private timber contractor(s) will be completed by March 2015. Work will begin shortly after the contractor is selected, and will continue over a two year period, with completion by Spring 2017. Pile burning will be conducted in the spring of both 2016 and 2017. Final site cleanup and restoration will occur by April 2017. A detailed project schedule follows:

Project Schedule

DETAILED PROJECT DELIVERABLES	TIMELINE
Contracting Prepare government estimate, prepare and post statement of work, conduct bidder site visit, review timely bids, select and award contract.	October 2014 – March 2015
Forest Treatments 2015 - 2016 Thin white fir, Doublas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 107 acres.	October 2015 – April 2016
Pile Burning Spring 2016 Burn piles of residual forest waste and slash prior to start of fire season.	April 2016
Forest Treatments 2016 - 2017 Thin white fir, Doublas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 50 acres.	October 2016 – December 2016
Pile Burning 2017 Burn piles of residual forest waste and slash prior to start of fire season.	January 2017 – March 2017
Final Site Cleanup and Restoration Complete final removal of biomass and project cleanup by start of fire season.	April 2017
Progress Reports Prepare reports describing accomplishments to date	May 2015, May 2016, May 2017

Land Tenure

BLM holds fee title to all project lands. No other agencies or jurisdictions hold any real property interest in these parcels. The property is not a part of any BLM grazing lease. There are no other agreements with any entity that affect project lands or their future operation and maintenance.

Restrictions, Technical/Environmental Documents and Agreements Narrative

National Environmental Policy Act documents have already been prepared and public review completed. A Finding of No Significant Impacts and a Decision Record were signed in May 2011. The Decision Record is the federal approval document; no additional BLM approvals are required and no permissions or permits from other entities are necessary. There are no known encombrances on the property that could adversely impact project completion. All project work would occur on public lands under the jurisdiction of the BLM. Access to this property is currently available: these are not land locked parcels. Thus, the project is "shovel ready."

Organizational Capacity Narrative

BLM has the staff, training and expertise to complete the project as proposed. All necessary environmental documents have been prepared. BLM will retain ownership and, as a natural resources and land management agency, has the capability and Congressional policy direction to provide long term management for this parcel.

Cooperation and Community Support Narrative

Lily Gap has been endorsed by the Amador Calaveras Consensus Group (ACCG), an award-winning forest collaborative that has implemented numerous healthy forest projects with the participation of federal and state agencies, local jurisdictions, non governmental organizations and private businesses. BLM has been an active participant in the ACCG since its inception in 2008 and the Lily Gap project is BLM's most ambitious contribution to the ACCG's regional watershed protection and restoration strategy. Thus Lily Gap is consistent with the ACCG's All Lands - Triple Bottom Line approach, as well as the Amador Calaveras Cooperative Association for Biomass Utilization's community economic development work.

The project is also a key component of the watershed health strategy currently being developed by the interagency Mokelumne Avoided Cost Analysis (MACA) team. MACA's purpose is to determine how upper Mokelumne River watershed conditions affect forest health, fire risk, erosion potential and other factors directly impacting water users, including major utilities.The MACA team has identified a number of agency projects that could improve the health of surrounding forests, reduce erosion and fire risk and thereby improve water quality and protect related infrastructure. The Lily Gap project is one of the projects being considered by the MACA team. It is located in a MACA planning unit that is being recommended as an area in need of immediate forest treatments to provide for the protection and restoration of the Mokelumne River drainage, lakes and reservoirs along the river, and other natural resources within the watershed.

Though not required for the proposed completion of the site treatment described above this project will also be conducted in such a way as to inform work being done by the Sierra Cascades All-Lands Enhancement (SCALE) Demonstration. In this demonstration project Burney-Hat Creek Community Forest and Watershed Group and the ACCG are working together to advance triple-bottom line (environment, economy, and community) outcomes and connect learning and adaptive work through monitoring. This project will coordinate with projects of the Burney-Hat Creek Community Forest and Watershed Group to share experience and data that informs SCALE efforts. Collectively the SCALE projects intend to advance forest and watershed restoration and fuels thinning on private and

public lands (BLM and Forest Service). The two groups will draw on existing SNC indicators and explore development of new indicators as needed—including identifying indicators and metrics that more effectively address triple-bottom line outcomes. The two groups are jointly exploring and describing ways to advance multi-party monitoring and adaptive learning and management through these projects.

There is no known opposition to this project.

Long-Term Management and Sustainability Narrative

Long term management would be guided by the BLM's Sierra Resource Management Plan (RMP), adopted in 2008, which provides management direction for public lands in the Sierra Nevada Foothills and which is to remain in place through the year 2038. The Sierra RMP requires that BLM's forested lands be managed for late succession/old growth conditions, and that they be thinned for forest health, fuels reduction and special status species habitat. This requirement applies to the Lily Gap parcel, and will dictate its future management. BLM anticipates that the Lily Gap parcel will be monitored by field staff on a regular basis and, when necessary, maintained to ensure that the parcel is moving towards late successon conditions. This would involve selective site retreatment by hand crews every five to seven years.

BLM's permanent staff includes fire and fuel reduction crews who will be available to maintain and retreat this site. Thus the agency has the capacity to sustain a long-term commitment to manage this parcel.

SUPPLEMENTAL DOCUMENTS

The following documents are attached.

- Project Maps, including
  - Project Location Man
  - Parcel Map with County Assessor's Parcel Numbers
  - Topographic Map and Site Plan
  - Air Photo
- Photos of the Project Site

FINANCIAL FORMS

Detailed Budget Form

A **detailed budget form** is attached that identifies all project costs for which SNC funds are being requested. The form identifies matching funds that will be provided by BLM.

Cost Allocation Plan

Fifteen percent (15%) of grant funds will be applied to cover the BLM's costs to administer the Lily Gap Forest and Watershed Health project. Administrative costs will include only those direct and indirect expenses that are specifically charged to the Lily Gap project. These will include compensation for personal services (salaries, wages and benefits), office expenses and supplies, equipment including fleet (mileage), contracting oversight and other miscellaneous support costs. Costs will not include insurance, facilities, telephones and communications. No printing or training expenses are anticipated.

Supplemental Documents

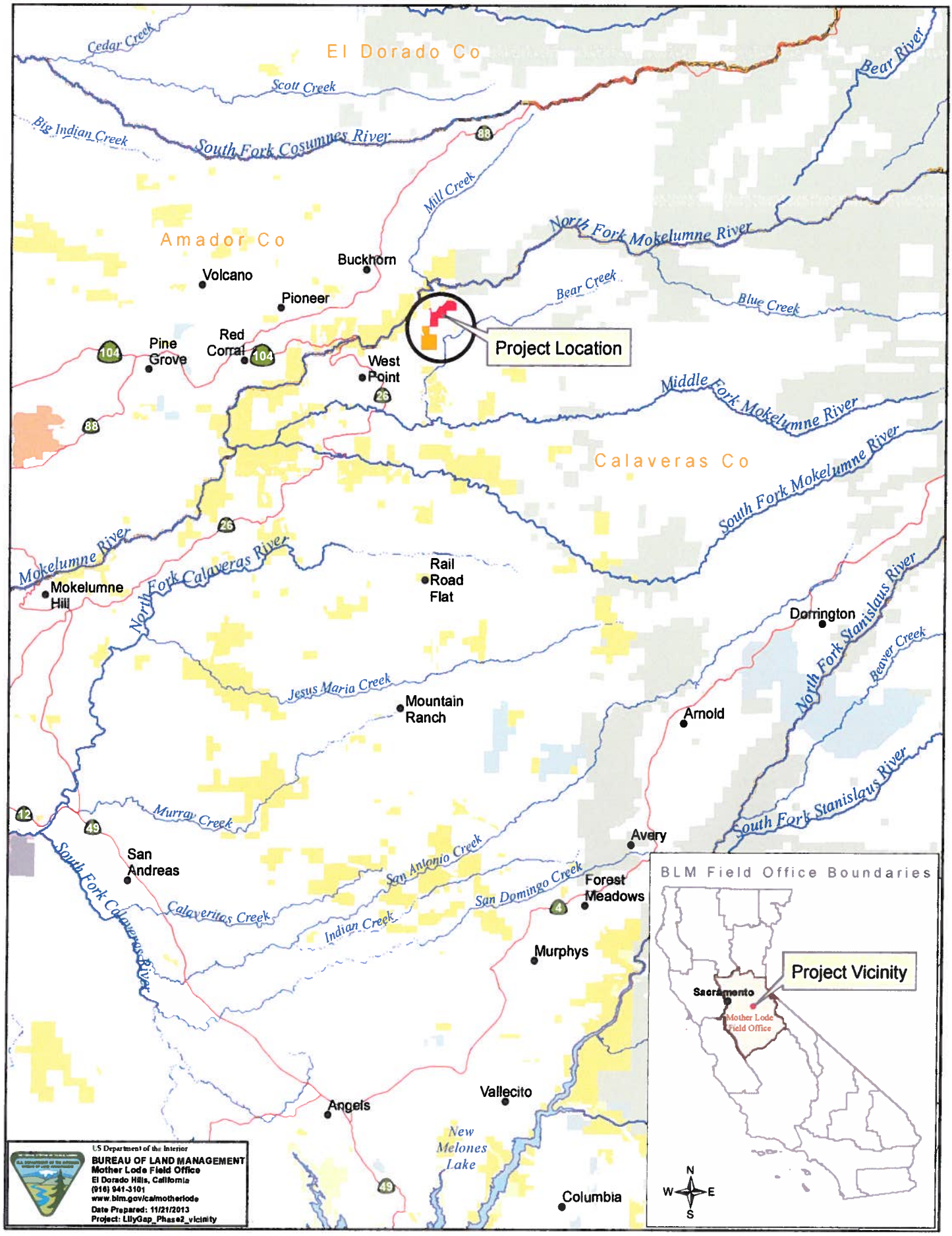
Project Maps

- Project Location Map
- Parcel Map
- Topographic Map and Site Plan
- Aerial Photo

Photos

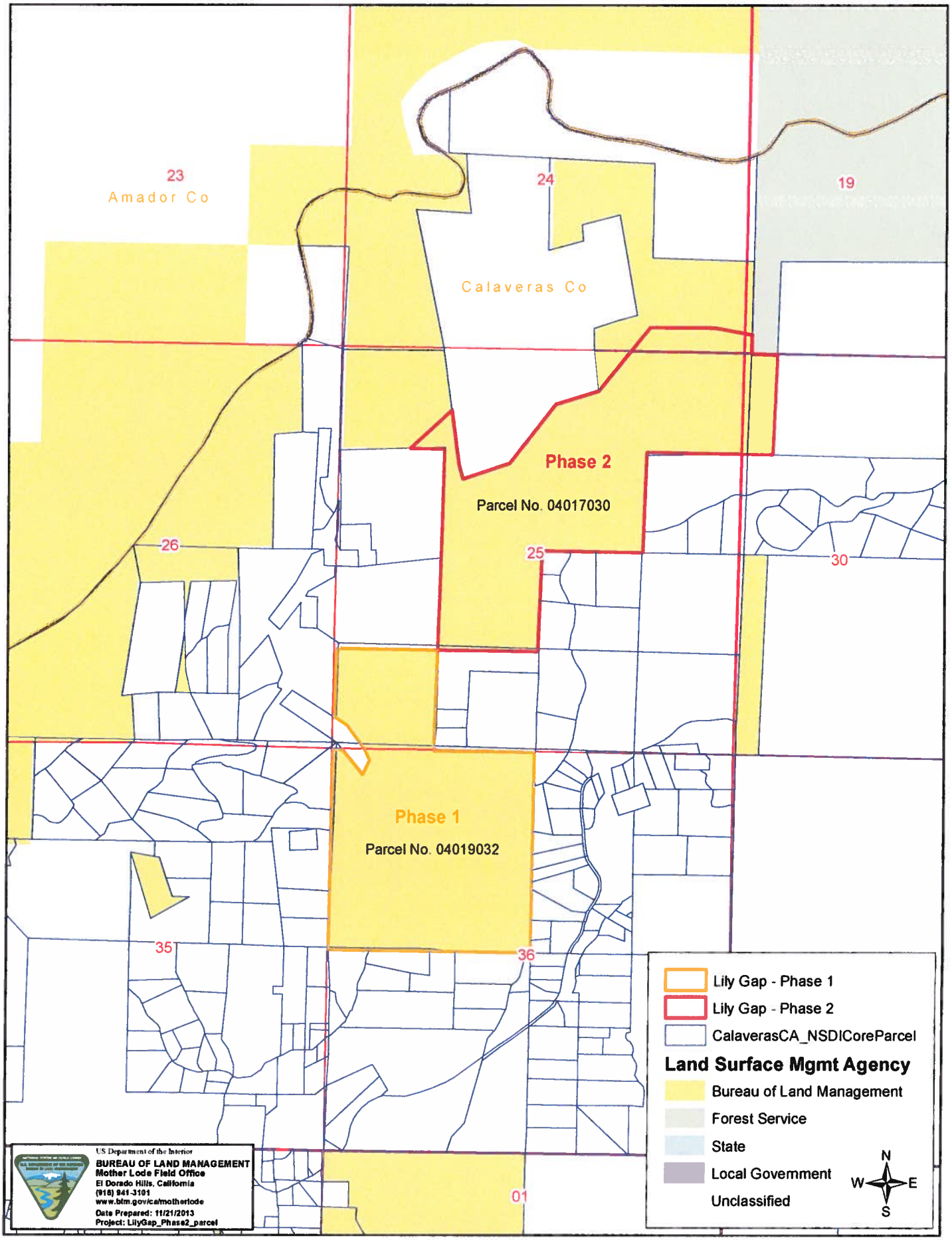
Project Location Map

Lily Gap Forest and Watershed Health Project, Phase 2



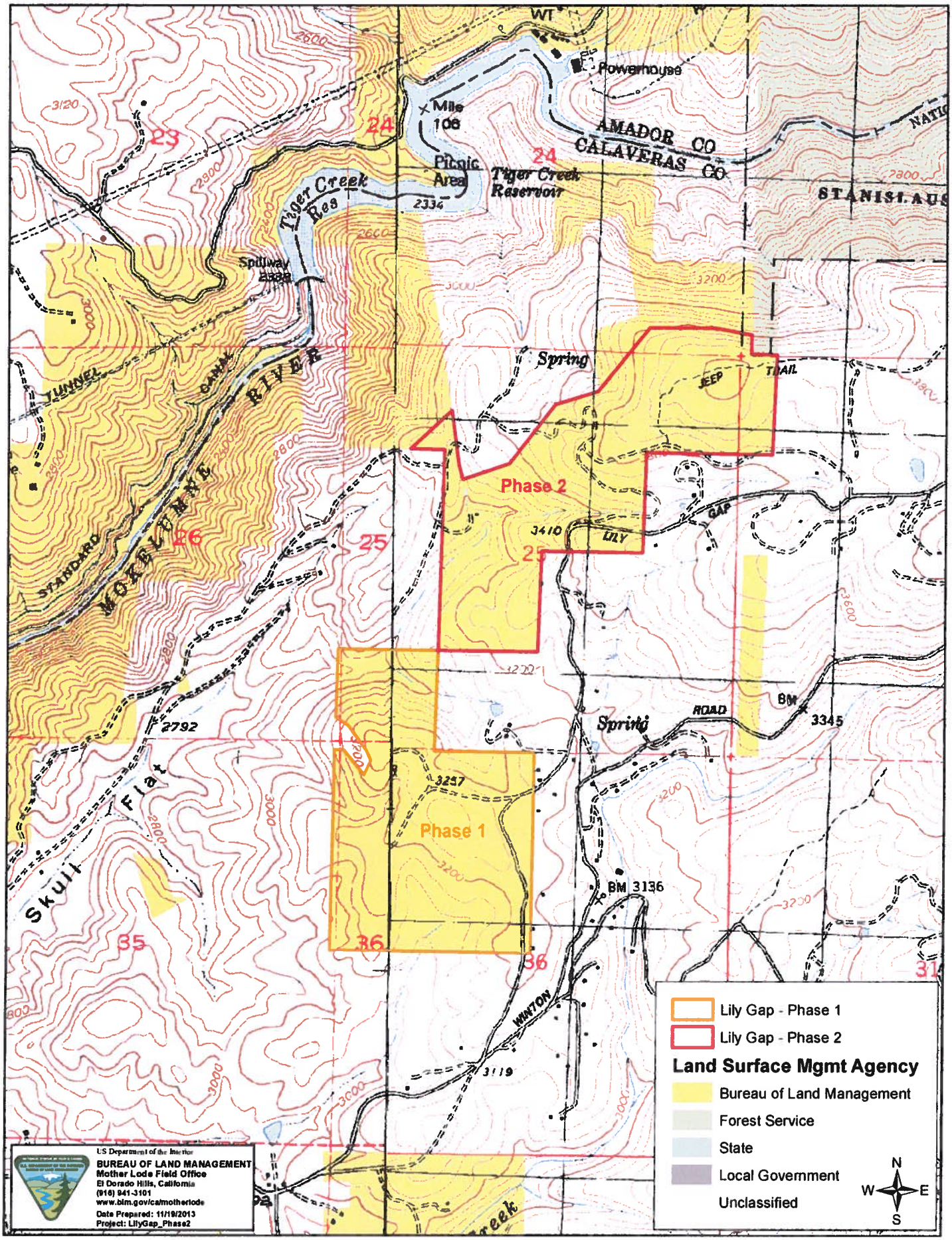
Parcel Map

Lily Gap Forest and Watershed Health Project, Phase 2



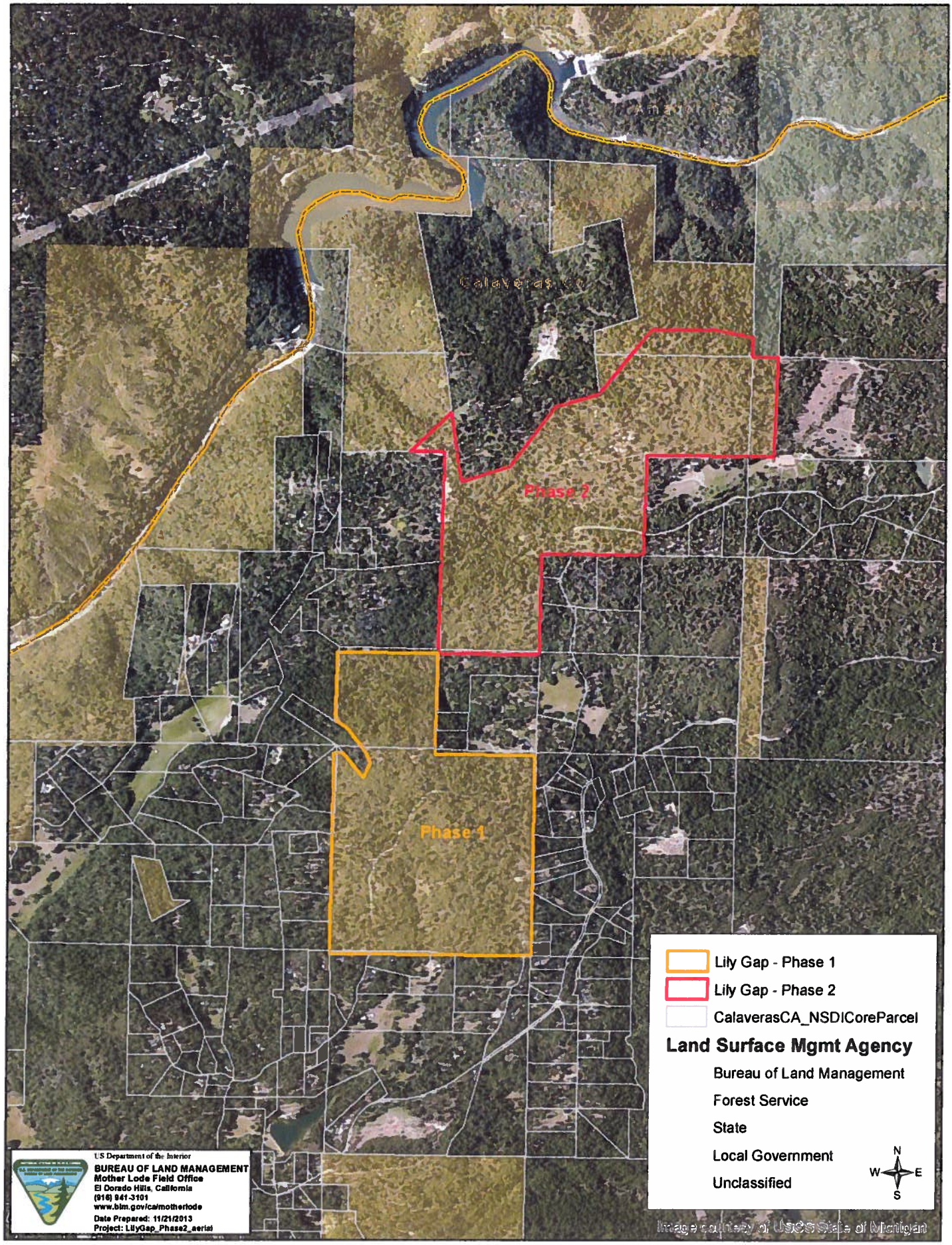
Topographic Map and Site Plan

Lily Gap Forest and Watershed Health Project, Phase 2



Aerial Photo

Lily Gap Forest and Watershed Health Project, Phase 2



1:20,000

R13E

1,500 750 0 1,500 Feet

R14E

Lily Gap Phase 2: Unthinned Young Tree Stand

Lily Gap Phase 2: Dense Manzanita Thicket

Above and Below: Lily Gap Phase 2 Unthinned General Forest

Lily Gap Phase 1, Post Treatment. Note clustering of trees at bottom of slope.

Above and Below: Lily Gap Phase 1, Post Treatment.

Detailed Budget Form

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Lily Gap Forest and Watershed Restoration Project, Phase 2
Applicant: Bureau of Land Management

SECTION ONE DIRECT COSTS	Units	Unit Cost	Total Cost	Project Cost Breakdown Year One (2014)	Year Two (2015)	Year Three (2016)	Year Four (2017)	Total
Project Management and Forestry/Fuels Staff Costs	*740 Hours*	*$35/hour*	*26,000.00*	$4,000.00	$14,000.00	$8,000.00		$26,000.00
Project Timber Contractor	*157 Acres*	*$766/acre*	*120,250.00*		$60,125.00	$60,125.00		$120,250.00
Pile Burning	*2 weeks*	*$4,000/week*	*8,000.00*		$2,500.00	$5,500.00		$8,000.00
			0.00					$0.00
			0.00					$0.00
			0.00					$0.00
DIRECT COSTS SUBTOTAL:	0	$0.00	$154,250.00	$4,000.00	$76,625.00	$73,625.00	$0.00	$154,250.00

SECTION TWO INDIRECT COSTS	Units	Unit Cost	Total Cost	Project Cost Breakdown Year One	Year Two	Year Three	Year Four	Total
Monitoring	*86 Hours*	*$35/hour*	*3,000.00*		$1,000.00	$2,000.00		$3,000.00
Project materials & supplies purchased			*0.00*					$0.00
Publications, Printing, Public Relations			*0.00*					$0.00
			0.00					$0.00
INDIRECT COSTS SUBTOTAI	0	$0.00	$3,000.00	$0.00	$1,000.00	$2,000.00	$0.00	$3,000.00
PROJECT TOTAL:	0	$0.00	$157,250.00	$4,000.00	$77,625.00	$75,625.00	$0.00	$157,250.00

SECTION THREE **Administrative Costs (Costs may *not to exceed 15% of total Project Cost*) :**	Units	Unit Cost	Total Cost	Project Cost Breakdown Year One	Year Two	Year Three	Year Four	Total
Contracting, clerical and natural resource staff salaries and benefits	*650 Hours*	*$35/hour*	*22,750.00*	$7,000.00	$8,000.00	$7,750.00		$22,750.00
Equipment including fleet			*5,000.00*	$1,000.00	$2,000.00	$2,000.00		$5,000.00
			0.00					$0.00
			0.00					$0.00
ADMINISTRATIVE TOTAL:	0	$0.00	$27,750.00	$8,000.00	$10,000.00	$9,750.00	$0.00	$27,750.00
SNC TOTAL GRANT REQUES	0	$0.00	$185,000.00	$12,000.00	$87,625.00	$85,375.00	$0.00	$185,000.00

SECTION FOUR OTHER PROJECT CONTRIBUTIONS				Years Fund Received Year One	Year Two	Year Three	Year Four	Total
BLM Congressionally Appropriated Funding			*15,450.00*	$4,000.00	$7,000.00	$4,450.00		$15,450.00
			0.00					$0.00
			0.00					$0.00
			0.00					$0.00
			0.00					$0.00
			0.00					$0.00
Total Other Contributions:	0	$0.00	$15,450.00	$4,000.00	$7,000.00	$4,450.00	$0.00	$15,450.00

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.
* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Environmental Documentation

Environmental Assessment,
Finding of No Significant Impact,
and
Decision Record

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Mother Lode Field Office
5152 Hillsdale Circle
El Dorado Hills, CA 95762
www.ca.blm.gov/motherlode

Lily Gap biomass demonstration project (CA-180-10-25)
Decision Record
April 2011

1.0 Introduction and Background

The Bureau of Land Management's Mother Lode Field Office (BLM) manages thousands of acres of public lands in the central western Sierra Nevada, particularly within the transition between the lower montane forest and chaparral "belt." These public lands include densely forested tracts in the Lily Gap area north of West Point on the divide between the north and middle forks of the Mokelumne River. Due to decades of fire suppression and other factors, brushy chaparral species, young overstocked stands of conifers (ponderosa pine and incense cedar), and other volatile fuels have increased markedly on these lands, resulting in a corresponding increase in the probability of a high-severity wildfire, with potentially devastating effects on the environment and adjacent private properties. The primary goal of the proposed action is to create healthier, more fire-resilient conditions on 450 acres of forested public land off of Lily Gap Road. Our definition of forest health draws heavily from the ideas and silvicultural strategies of long-term Forest Service research in the central western Sierra Nevada (North et al. 2009). The most important underlying principle of this research is that western Sierran forests are adapted to, and perhaps even dependent on, regular low intensity low severity wildfires. Forest managers should attempt to return forests to pre-suppression-era conditions—prior to circa 1910 when low intensity low severity wildfires likely occurred naturally on a regular interval as a result of lightening strikes and perhaps Native American- (and early settler-) caused ignitions. This fire regime is likely to improve forest health and, critically, lower the potential for the forest to support a catastrophic wildfire; thus protecting the environment and private properties. BLM would demonstrate various fuel reduction methods (chipping, pile burning, mastication, feller buncher, etc.) to determine which treatment is the most cost effective way to create healthy conditions. BLM would explore opportunities to provide vegetative material to the proposed biomass utilization plant near Ione, CA as a way of reducing fuels and thus mimicking the effects of a low intensity low severity fire within the project area. Prescribed fire is the most obvious way to move the project area forest toward healthier pre-suppression conditions. However, prescribed fire was not analyzed in the EA because BLM does not foresee having the budget, personnel, and other resources necessary to conduct a prescribed fire within the project area in a safe manner. Based on information in the EA, the project record, and recommendations from my staff, the following constitutes my decision.

2.0 Decision

2.1 Alternatives Considered but not Selected

The no action alternative was considered but not selected. Under this alternative, fuels would not be treated within the project area. None of the negative impacts discussed in the EA would occur: negligible soil disturbance caused by the use of a mechanized equipment and temporary dust due to mastication of vegetation and temporary smoke due to burning piled vegetation. However, BLM would miss an opportunity to determine which treatment method would most cost effectively help BLM to apply the current silvicultural strategies of North et al. (2009). These silvicutlural strategies make a lot

of sense from a current management standpoint. These strategies are designed to move west-slope Sierran forests such as the forest found within the project area toward pre-suppression-era conditions—these conditions would potentially create a healthier and more fire-resilient forest. These conditions would help lower the potential for the forest to support a highly destructive wildfire—such as a crown fire—within the Lily Gap area. Local residents are concerned with protecting their homes from wildfire. Therefore, the strategies help BLM to address the fire management goals, objectives, and strategies laid out in the Sierra Resource Management Plan and the office's Fire Management Plan.

2.2 Decision and Rationale

Based on information in the EA, the project record, and recommendations from my staff, I have decided to implement the proposed action as described in the EA. The proposed action is needed to try to create healthy forest conditions within the project area and, thus, reduce the threat of a high-severity wildfire. BLM would also demonstrate different treatments to determine which method (or methods) is the most cost effective way of reaching the goal of creating healthy forest conditions. The proposed action will help reduce threats to the environment and private property adjacent to public land caused by catastrophic wildfire. There is no time restriction on when the project can be implemented, though all of the project design features must be followed, particularly with respect to preventing unnecessary erosion of sediments into drainages, preventing the introduction of noxious weeds, avoiding identified cultural resources, and ensuring that mining claimants' activities allowed under BLM's mining regulations are not unnecessarily disturbed.

3.0 Consultation and Coordination

No special status animal or plant species (or their habitats) will be affected by the project; therefore, consultation with US Fish and Wildlife Service was unnecessary.

4.0 Public Involvement

An earlier version of this EA was posted on the BLM Mother Lode Field Office internet website for a formal 30-day public comment period in October and November 2010. On November 2, 2010, BLM received a letter from the Foothill Conservancy commenting on this EA. In their letter the Foothill Conservancy raised several issues regarding the proposed action. The Foothill Conservancy questioned why BLM had not considered prescribed burning as a treatment option. They pointed out that chipping and mastication without actually removing fuels may not help BLM reach the stated goal of preventing the possibility of a high severity fire—that, in fact, it may not change fire behavior at all. They also pointed out that the EA lacked detail. On November 17, 2010, BLM met to discuss the EA with members of the Foothill Conservancy as well as members of another interested group, Sierra Forest Legacy, at the office of Foothill Conservancy in Pine Grove, CA. We went over specific issues raised in the Foothill Conservancy letter. Another issue that the Foothill Conservancy raised at the meeting is that the EA lacked specifics regarding the current environmental conditions (affected environment) within the project area and the EA also lacked specifics regarding what the project area might look like after the proposed action was fully implemented (the desired future condition). There was also concern that the needs of the proposed biomass plant near Ione might drive BLM forest management in the future. In subsequent email communication, members of Sierra Forest Legacy directed BLM to the long-term forest management research of the US Forest Service (summarized in North et al. 2009) which they believe might be a worthwhile approach to consider in the EA. BLM took the public's comments into consideration and produced another version of the EA which adopts many of the management ideas of North et al. (2009). BLM met at the project area with the Foothill Conservancy and other interested members of the public on March 7, 2011 to discuss the proposed action and the revised EA. The EA was released for another 30 day public review period on the BLM Mother Lode Field Office internet website during March and April 2011. On April 18, 2011, BLM received an email from the Foothill Conservancy commenting on this EA. In the email the Foothill Conservancy pointed

out that the proposal to remove all conifers under 8 inches DBH was not consistent with the approach of North et al. (2009) which calls on forest managers to leave a full range of conifer size and age classes. BLM updated the EA proposed action to ensure that a full range of conifer size and age classes would be maintained as part of the treatment.

5.0 Plan Consistency

Based on information in the EA, the project record, and recommendations from my staff, I conclude that this decision is consistent with the management goals, objectives, and strategies laid out in the Sierra Resource Management Plan and the Fire Management Plan. Specifically, the Sierra Resource Management Pan's Record of Decision (pages 15-16) gives BLM the goal of establishing a cost-efficient fire management program commensurate with threats to life, property, public safety, and environmental resources. My decision is also in compliance with the Endangered Species Act; Section 106 of the National Historic Preservation Act; and other applicable laws, regulations, and BLM policies.

6.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825. The effective date of this decision is the date this decision is signed.

William S. Haigh
Field Manager, Mother Lode Field Office

5-2-11
Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Mother Lode Field Office
5152 Hillsdale Circle
El Dorado Hills, CA 95762
www.blm.gov/ca/motherlode

Lily Gap biomass demonstration project (CA-180-10-25)
Finding of No Significant Impact
April 2011

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed in the Sierra Resource Management Plan (RMP)/Final Environmental Impact Statement. The proposed action does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA, and based on my understanding of the proposed action:

1) Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects. Potential impacts include negligible soil disturbance caused by use of a rubber-tracked chipper, masticator, and other mechanized equipment, and temporary dust due to mastication of vegetation and temporary smoke due to pile burning or burning in the biomass plant near Ione, CA. However, with the project design features, none of these impacts would be significant at the local or regional scale (cumulatively) because of the small scale of the proposed action.

2) The degree of the impact on public health or safety. No aspects of the proposed action have been identified as having the potential to significantly and adversely impact public health or safety. In fact, the project is designed to help firefighters fight wildfire and to protect nearby private residences from wildfire; therefore protecting public health and safety, especially for local residents.

3) Unique characteristics of the geographic area. The area affected by the proposed action does not have any unique characteristics. Soils, vegetation, wildlife, and cultural resources are all typical for the elevation and terrain in the west central Sierra Nevada.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial effects. No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5) The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks. The analysis does not show that the proposed action would involve any unique or unknown risks.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. Fuels reduction using hand crews and mechanized equipment (i.e., rubber-tracked chipper, masticator, etc.) is not precedent setting. BLM undertakes these types of projects on a regular basis. Biomass utilization is somewhat new to the Mother Lode Field Office, but the environmental impacts are similar to fuels projects with a pile-burning component, which are nothing new to the field office and are not precedent setting.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. No significant cumulative impacts have been identified. The proposed action is relatively small in scale and is consistent with the actions and impacts anticipated in the Sierra RMP. BLM has not recently proposed any projects of this scope within the Mokelumne River watershed. Nothing like this is planned in the foreseeable future.

8) The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources. The proposed action would not affect cultural resources listed on or eligible for the National Register of Historic Places.

9) The degree to which the action may adversely affect ESA listed species or critical habitat. No ESA listed species (or their habitat) would be affected by the proposed action.

10) Whether the action threatens a violation of environmental protection law or requirements. There is no indication that this decision would result in actions that would threaten such a violation.

William S. Haigh
Field Manager, Mother Lode Field Office

5-2-11
Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Mother lode Field Office
5152 Hillsdale Circle
El Dorado Hills, California 95762
www.blm.gov/ca/motherlode

EA Number: CA-180-10-25

Project Name: Lily Gap biomass demonstration project

Location: MDM T 7 N, R 13 E, Sections 24, 25, 26, and 36,
T 7 N, R 14 E, Section 30
Lily Gap area near West Point, Calaveras County, CA
(See attached project area maps in Appendix B)

1.0 Purpose of and Need for Action

1.1 Need for Action

The Bureau of Land Management's Mother Lode Field Office (BLM) manages scattered public lands off of Winton Road, north of West Point—what is referred to as the Lily Gap area. Much of this area has not experienced wildfire in decades. Shrub stands have aged and now contain a larger proportion of dead fuels, and in some forest stands understory fuels have increased, creating unhealthy forest conditions and making the probability that the area will experience a devastating wildfire more likely. At the same time, the local communities have grown. There are now numerous private residences in the area, many of them adjacent to BLM-administered parcels containing dense fuels. Local residents are concerned about wildfire and are anxious to see public land managers like BLM take action to reduce fuels on public lands. The Lily Gap area is considered to be within the wild land-urban interface (WUI) and the local communities are considered "at risk."

With this need in mind, the primary purpose of the proposed action is to create healthy forest conditions on approximately 450 acres of forested public land managed by BLM in the Lily Gap area. Our definition of forest health within the project area draws from the findings of long-term US Forest Service research in the montane/mixed conifer forests of the western central Sierra Nevada (North et al. 2009). A key finding of this (and related) research is that mixed coniferous forests of the west central slopes of the Sierra Nevada (including forests types within the project area) are well adapted to, and perhaps dependent upon, regular low severity, low intensity wildfire—something that the Lily Gap area has not experienced for decades. In other words, wildfire was likely an integral part of the lifecycle of western Sierran forests. Within the project area the consequences of decades of suppression have been, most obviously, the buildup of dead brush, slash, and litter debris in the understory and dense thickets of conifers (especially incense-cedar and ponderosa pine). These conditions are considered unhealthy with many potential downsides, such as loss of ecological diversity, and greater susceptibility to disease/insect infestation. Critically, these conditions are more likely to support a high severity, high intensity fire—such as a crown fire—that could be devastating to the environment, not to mention property and lives. A key consideration, then, is how to restore the healthier pre-suppression conditions to the project area. This outcome would have the important effect of increasing the resilience of the forest to future wildfires and reducing the possibility of a high severity, high intensity fire in the Lily Gap area. This is good for the environment as well as for local residents.

The title of this EA is "Lily Gap biomass demonstration project." If BLM decides to implement the proposed action, what would we be demonstrating? An important aspect of the proposed action is to determine which treatment method would help us achieve our goal of creating healthy forest conditions within the project area in the most cost effective manner. The treatment methods are laid out in Section 2.1.

The most basic question is what would this forest look like if fire had been left to play its natural role? There would be far less brush and shrubs, fewer small diameter trees (including thickets of ponderosa pine and incense cedar), and widely spaced large diameter dominant trees of diverse species (sugar pine, Douglas fir, ponderosa pine, incense cedar, black oak, canyon live oak, madrone, etc.). The majority of trees would be ponderosa pine. There would also be more diversity in the herbaceous layer. This is the desired future condition we are working toward in the proposed action.

If a fire were to occur in this stand during the time of year fires normally start in California, it would likely move into the upper story burning virtually all the trees and vegetation within the project area. By doing proposed treatment, we can move this stand to a healthier, more resilient condition so if a fire were to occur after treatment, it would just kill the small evergreens trees and remove much of the shrub and forb understory—which is what likely occurred historically.

Of note, broadcast prescribed fire seems to be the most obvious and effective way to restore forest health. If healthy forest conditions are seemingly dependent on regular low intensity fire, why not reintroduce fire under controlled conditions? Due to the project area's close proximity to several homes/communities, air quality issues, the massive accumulation of fuels, budget constraints, and other factors, it is extremely unlikely that BLM would be able to do broadcast prescribed burning within the project area at this time. This treatment is not considered in this EA. Therefore, the treatment options considered would involve cutting vegetation either by hand or by mechanical means (i.e., chipper, masticator, etc.) or both.

Cutting does not, by itself, reduce vegetation/fuels; it rearranges them. Since it is possible that a biomass electric generation plant may be in operation near Ione, Amador County by the time this project is implemented, one goal of the proposed action is to determine which method of treatment could generate biomass for this plant in the most feasible and cost effective manner. This could help to remove unwanted cut vegetation. If hauling cut vegetation to the biomass plant is not feasible, BLM would consider pile burning as an alternative. Regardless of the treatment method demonstrated, the desired future condition of a healthy forest will remain the primary goal.

1.2 Conformance with Applicable Land Use Plans

The proposed action—to improve the health of forests on public land in the Lily Gap area and to make this forest more fire resistant to help protect adjacent private property—is consistent with the Sierra Resource Management Plan, approved in February 2008. The Sierra Resource Management Plan's Record of Decision (pages 15-16) gives BLM the goal of establishing a cost-efficient fire management program commensurate with threats to life, property, public safety, and environmental resources. BLM's objectives for meeting these goals are to 1). reduce the risk of wildfire in WUI communities; 2). reduce the risk of catastrophic wildfire through fuels management; 3). use prescribed fire, mechanical, and biological treatments to reduce fuels and promote ecosystem diversity and resilience, control invasive species, reduce fuel hazard, improve wildlife habitat, increase water yield, and enhance watersheds. The Folsom/Mother Lode Field Office Fire Management Plan, approved in March 2008 gives BLM various fire and fuels treatment objectives and strategies for specific lands under BLM's administration. Specific objectives and strategies for the fire management unit, in which the project area is located, are laid out in the plan. The proposed action is consistent with these objectives and strategies.

1.3 Silvicultural Prescriptions for Sierran Mixed-Confier/Lower Montane Forest

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicutlural principles that we have incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area. Appendix A presents a summary of this research.

2.0 Proposed Action and Alternatives

2.1 Proposed Action

BLM proposes to treat Lily Gap as a "demonstration project," that is, as a venue for applying a variety of different treatment methods to determine which are the most ecologically effective and economically feasible. Regardless of the treatment method demonstrated, the goal would be to create healthy forest conditions within the project area by applying the management ideas of North et al. (2009) (see Appendix A).

Silvicultural Strategy: The silvicultural strategy laid out in Appendix A (especially section A.3) would be applied to all portions of the project area that have the characteristics of a Sierran mixed-conifer/lower montane forest type. This would include nearly the entire the project area with the exception of a dry meadow area and a small wet meadow.

Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity.

Most conifers less than 8 inches diameter at breast height (DBH) would be removed. This includes the dense thickets of incense-cedar and pine. Some conifers less than 8 inches DBH would be retained to ensure that a full range of size and age classes would be represented. Large pines and groups of large pines would be retained, with strategic clearing of potential ladder fuels around them to give them additional protection and to create some open gaps in the canopy. This means that some trees greater than 8 inches DBH would be removed if they are potential ladder fuels and to decrease overall stand density. Any conifers greater than 8 inches DBH that are to be removed to protect the larger "leave" trees and tree clusters would be marked by a BLM forester or fuels specialist. The cut trees would be sold at their highest and best use. Trees larger than 12 inches DBH generally would be sold as sawtimber.

A higher density of tree stems and canopy cover would be retained in the cooler moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of Section 25. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained unless to do so would create an unusually unsafe concentration of fuels.

Treatment Methods: The different treatment methods to be demonstrated are outlined below. The majority of the work would be done by a hand crew (i.e., BLM fuels crew, inmates, Hotshots, contractors, etc.) under the supervision of BLM's fuel/fire management specialists.

1. **Brush Chipper with Pile Burning.** The crew would feed cut vegetation into a rubber-tracked brush chipper staged on existing roads. The crew would pile and prep vegetation in 6 x 6 ft

piles for burning at a later date in accordance with a BLM-approved burn plan and other BLM policy. Approximately 60 piles per acre would be constructed.

2. **Mechanical Masticator.** The crew would use a mechanical masticator to grind, chip, and chew vegetation. The masticated vegetation would be broadcasted across the project area, leaving an altered fuel type, which does not reduce the quantity of fuels, but rearranges them so they are more manageable in the event of wildfire suppression. Equipment selected to carry out this task would be designed to minimize ground disturbance. Multiple cutting attachments would be used to adapt to the terrain and fuels.

3. **Biomass.** If the proposed biomass plant is built near Ione, BLM may attempt to harvest biomass size material. The likely method for harvesting biomass within the project areas is as follows. Fallers would use chainsaws to cut brush and trees less than 8 inches diameter at breast height (unless the trees are a potential ladder fuels that threatens the larger "leave" pines). Cut vegetation would be bucked into manageable lengths for the crew to feed into a rubber-tracked chipper. The chips would be fed directly into a trailer towed by a small rubber-tracked vehicle. The vehicle would tow the chips to designated staging areas (existing roads, pullouts, and landings). Here, the chips would be loaded into a semi-truck trailer and transported to the biomass plant.

4. **Biomass Using Feller Buncher.** Another method for harvesting biomass that may be used involves a feller buncher—a tractor with an attachment that can rapidly cut and gather several trees. The feller buncher would cut and position trees and other vegetation into piles at the harvest site. A rubber-tracked skidder would then move the vegetation from the harvest sites to designated staging areas (existing roads, pullouts, and landings). Here, a large-scale tub grinder would chip the vegetation directly into the trailer of a semi-truck for transport to the biomass plant near Ione. Trees of larger diameter which could be utilized as sawtimber would be loaded on log trucks to be hauled to the closest mill. It would be necessary to create tracks into the project area to access harvest sites and to, then, transport vegetation from the harvest sites to the designated staging areas for further processing and loading. Ground disturbance would be kept to a minimum and would occur only where necessary. No new roads would be built. The number of new tracks into the project area would be minimized. The tracks would be put to bed after work at the harvest site is completed. Only existing roads, pullouts, and landings would be used as designated staging areas.

5. **Dozer and Brush Rake.** BLM would demonstrate for the public the use of a dozer and brush rake to pile vegetation for chipping and biomass utilization in a 5-acre area in the project area. BLM would study the environmental effects of this kind of treatment on the 5-acre area.

The project area may see fuels work at any time over the following 10 years. At the end of this 10-year period, fuels work of any kind within the project area would need to be reauthorized, if necessary with a "fresh" NEPA document. The present EA will be reviewed by staff to determine whether it is adequate to use to reauthorize the proposed action and/or other kinds of fuels work.

Any fuels treatment work (i.e., broadcast prescribed burn, etc.) that BLM may propose in the future outside of the scope of the above described proposed action and/or affecting land outside of the project area analyzed in this EA would be subject to BLM's full environmental review/decision-making process. In other words, a new NEPA document may be needed, including new cultural and biological recommendations.

2.2 Project Design Features

All treatment work would be conducted subject to the following stipulations.

1. **Minimize New Ground Disturbance.** Cut vegetation would be forwarded to designated staging areas: existing roads, road pullouts, and landings on BLM-administered land for further processing and loading into trucks. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used (rather than a feller buncher) to harvest biomass and sawtimber. Biomass material would not be harvested unless the biomass plant is built at Ione, as proposed. Berms, large boulders, and other kinds of barriers may be placed at strategic locations after harvest to prevent dirt bikes and other off-highway vehicles from driving in the treated area and causing erosion.

2. **Erosion and Sedimentation Control.** Erosion and sedimentation are potential issues affecting the drainages near where the center line (running east-west) of the section 25, crosses the drainage that appears on the USGS 1:24,000 topographic map. This stream drainage has been degraded by previous land use. Mining and timber harvest have left an areas of un-vegetated slope and has caused some sedimentation in the channel. To prevent any further potential degradation, streamside buffers (100 ft minimum from the centerline of the stream) would be established for the perennial streams that flow through the project area. No equipment operation would be allowed on slopes greater than 35 percent; hand work would be allowed.

3. **Weed Control.** To minimize the potential for introduction or spread of invasive weeds, equipment used for the proposed action would be cleaned prior to entering area and, where possible, would avoid operating within weed-infested areas, such as stands of scotch broom, or oblong spurge. Occurrences of these weed species were found only at the edge of the public land and avoidance should be feasible.

4. **Cultural Resources.** Flagging-tape buffers would be established around identified cultural resources. These cultural resources would be protected during project implementation.

5. **Wildlife.** Attempt to implement the project outside the breeding season, generally spring (March-June) so as not to disrupt nests, dens, and young animals.

6. **Wildlife.** Avoid wood rat nests and large woody debris when creating burn piles. If a potential nest cannot be avoided, check the pile for signs of wildlife before lighting. If nests or dens are found, leave the pile alone. If it must be burned, restack it nearby or give the animal a path to escape from the fire.

7. **Wildlife.** Leave an uncut patch (minimum of 0.25 acres) for every 10 acres harvested, with patches totaling 5 percent of the area. Use leave trees or large snags as the center for uncut patches. Riparian and other buffers can help to satisfy this goal.

8. **Wildlife.** Retain live trees with existing cavities.

9. **Wildlife.** Avoid damaging existing downed woody debris, especially large (18+ inches) hollow or rotten logs and rotten stumps during all harvesting operations. Leave all existing coarse woody material (more than 6 inches in diameter at the large end) and snags as possible.

10. **Wildlife.** Retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands. Retain and scatter tops and limbs from 20 percent of the trees harvested.

11. **Mining Activity.** There are several active mining claims in the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA. BLM would work with Louis Saltzer to ensure that his mining activity and related occupancy, as allowed under the regulations, is not negatively affected by the proposed action.

2.3 No Action

Under the no action alternative, BLM would not treat fuels in the project area. Fuels would not be harvested for biomass.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

Due to the project area's close proximity to several homes/communities, air quality issues, budget constraints, and other factors, it is extremely unlikely that BLM would be able to do broadcast prescribed burning within the project area. This alternative is eliminated from detailed analysis.

3.0 Affected Environment

The project area is approximately 420 acres of public land located off of Lily Gap Road/Winton Road, two air miles north east of the town of West Point, in the central Sierra Nevada foothills. Specifically, the project area is located just northwest of Skull Flat, on the divide between the north and south forks of the Mokelumne River. Elevations within the project area range from 3760 to 2840 ft above sea level. There are several unnamed seasonal streams in the project area that drain to the North Fork of the Mokelumne River. One of the drainages (known historically as Skull Flat Gulch or Skull Flat Creek) runs east-west through the project area in Section 25. This drainage is, in some sections, deeply incised and flows perennially. Please refer to the project area maps in Appendix B.

Vegetation in the project area varies depending on elevation, aspect, soils, etc. While westside Ponderosa pine forest tends to be the dominate overstory species over much of the area, the occurrence of Douglas fir, incense-cedar, sugar pine and oak, lends portions of the project area to being classified as mixed conifer type. Whiteleaf manzanita and mountain misery dominate the understory layers. On more north facing slopes the amount of Douglas fir, incense-cedar, and sugar pine as well as canyon live oak increases. Along Skull Flat Creek, big leaf maple, mock orange, white alder, and mountain dogwood become prominent. Other associated woody species include black oak, madrone, deer brush, buckbrush, pinemat ceanothus, toyon, Sierra gooseberry, golden fleece, and poison oak. Due to the lack of disturbance, the area has become thick with brush and suppressed conifers of many species. There are numerous places where the whiteleaf manzanita is so thick, it is impossible to walk through.

The drainages do not support riparian vegetation for the most part. The prominent east-west drainage in Section 25, known as Skull Flat Creek, does support some riparian vegetation (as indicated in the paragraph above), but it is not well developed probably because of the steepness of the grade. Of note, near where the center line (running east-west) of Section 25 crosses Skull Flat Creek, there is a wet meadow dominated by horsetail, with leopard lily, digitalis, columbine, mugwort, sedges, and rushes. There is a dry meadow in the southern portion of the parcel in Section 36.

The vegetation within the project area provides habitat for a variety of wildlife typical for the central Sierra foothills, including black bear, coyote, bobcat, grey fox, California quail, Steller's jay, raven, hawks, and eagles.

The project area is generally within the Mother Lode (east belt), a region of California that experienced substantial gold mining beginning shortly after the discovery of gold in the region in 1848 and lasting to approximately the time that the USA entered World War II (and, in some cases, after World War II). In fact, gold mining (and later logging) was historically the backbone of the region's economy. Many of the current towns in the vicinity of the project area (such as West Point and Railroad Flat) were founded during the Gold Rush (1848 to ca. 1858). Logging intensified after World War II. Evidence of mining and logging activity within the project area is a legacy of the region's historic mining and logging economies—economies that helped to support these and other towns. For more information about the cultural resources found within the project area, refer to the attached cultural resources inventory report by the BLM archaeologist.

The project area is near the boundary of the Stanislaus National Forest. There are numerous residences on private land in the general area, including along the boundaries of BLM-administered land within the project area. The level of recreational use in the project area is quite low. The project area may see some use by hunters. There has been off-highway vehicle use within the project area, as well. Under the 2008 Sierra RMP this use is not allowed off of roads designated for motorized use.

BLM manages this area in accordance with class III visual resource management (VRM) standards. BLM's objective for class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat basic elements found in the predominant natural features of the characteristic landscape.

There are several active mining claims within the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA.

4.0 Environmental Effects

The following critical elements have been considered in this environmental assessment and have been determined to be unaffected by the proposal: areas of critical environmental concern, prime/unique farmlands, floodplains, wetlands and riparian zones, wilderness, and environmental justice.

4.1 Impacts of the Proposed Action and Alternatives

Forestry. Using data from the Forest Inventory and Analysis gathered by the Forest Service and field observations by the BLM forester, we were able to visually depict what the forest looks like now and what it would look like after we have fully implemented the proposed action. This was accomplished by processing the data through the Forest Vegetation Simulator (FVS). This computer program takes stand data and allows you to set parameters for different types of treatments, and then project the stand into the future to see what would happen after the treatments have been implemented. It is important to remember that this is a "representation" of this stand using real data, and not an exact duplication. Figure 1 depicts the stand as it is today. Figure 2 represents what the stand would generally look like after treatment is fully implemented. All the trees less than 8 inches DBH have been removed and some of the larger diameter trees have been removed to increase spacing and reduce overall density. Keep in mind that snags and areas of brush would be retained to provide habitat for certain wildlife.

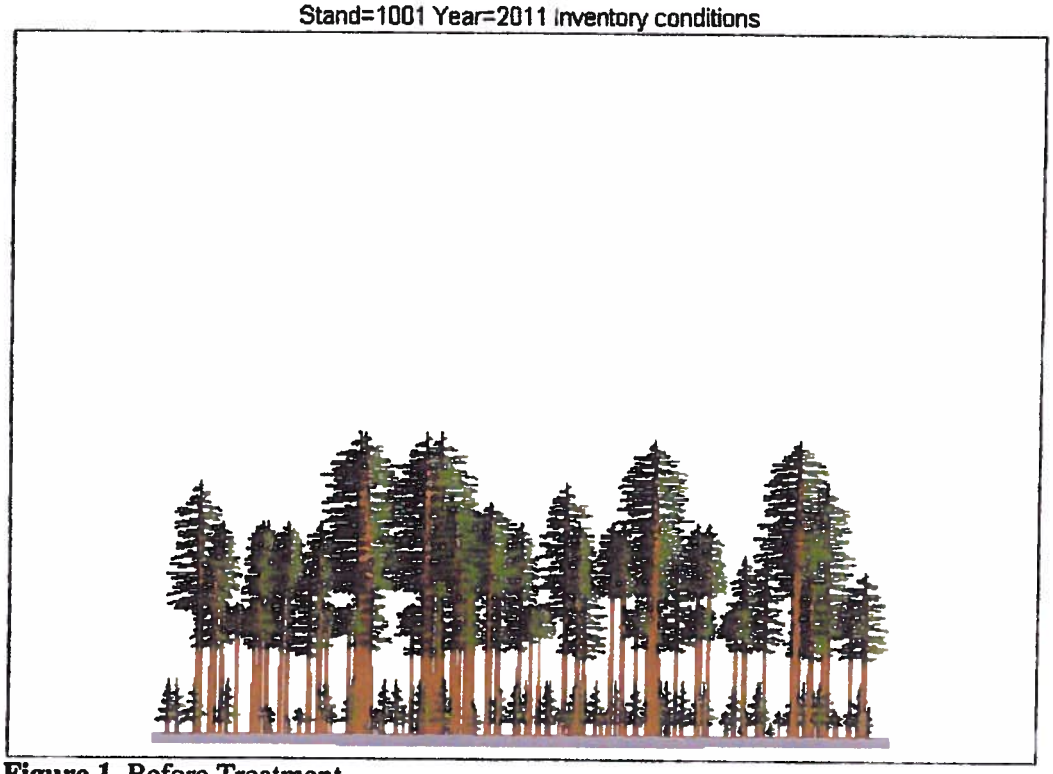


Figure 1. Before Treatment

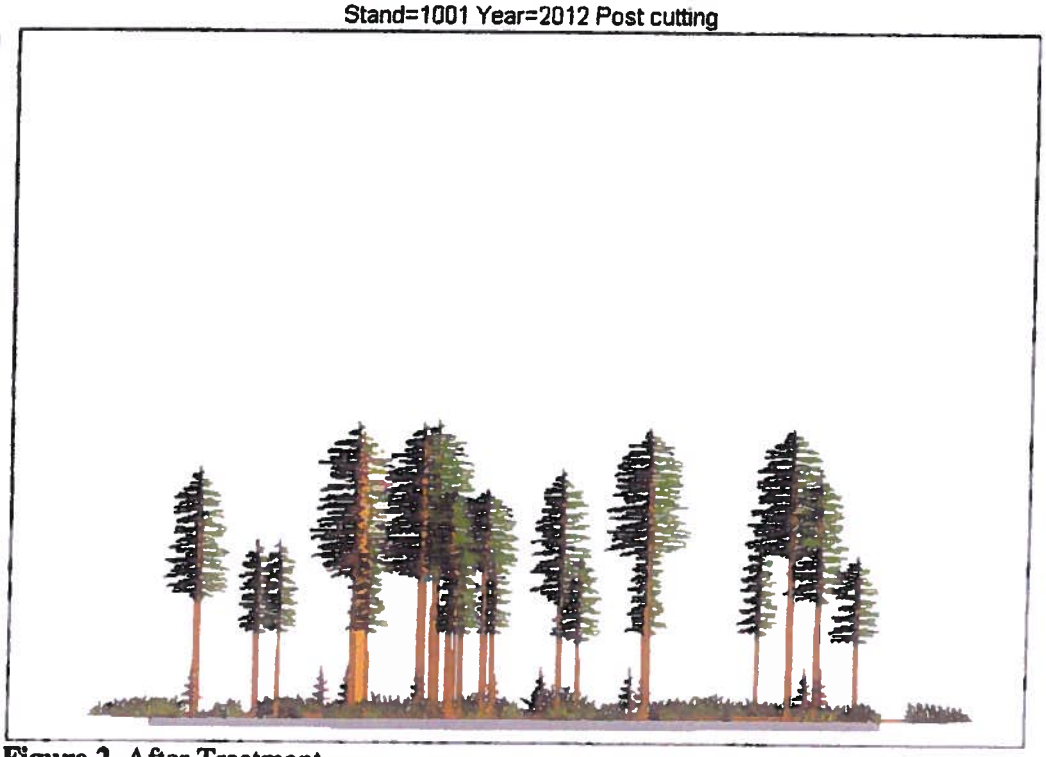


Figure 2. After Treatment

Soil – Air – Water. The proposed action would have negligible short-term negative impacts on atmospheric, water, and soil resources in the project area, especially if heavy equipment is not used to harvest vegetation for biomass. There are small seasonal streams in the area that feed into the North Fork of the Mokelumne River, a mile or so to the west. The proposed action could cause erosion and some additional sediment to flow into these streams and into the river. BLM has recommended that the river, from Tiger Creek Reservoir to Highway 49 be incorporated into the national wild and scenic river system. Water quality is one of the outstandingly remarkable values that, in BLM's view, makes this stretch of river potentially eligible for wild and scenic designation. The area that would be treated is relatively small in size and ground disturbance would be minimized using the project design features in Section 2.2 of this EA. In particular, heavy equipment would not operate on slopes greater than 30 percent and/or within 100 ft of perennial streams. Equipment used for the project is small in terms of size and power and would be equipped with rubber-tracked tires to minimize ground disturbance. The proposed action would not have more than a negligible impact on soils and water quality. Cutting and chipping of vegetation, as proposed, would create some dust, but again dust created by the proposed action is small and not enough to seriously affect air quality. The same can be said for potentially burning vegetation harvested in the project area in a biomass plant. The proposed action is too small to seriously affect air quality on a local or regional scale.

Botany. BLM botanists analyzed the impacts of the proposed action on botanical/vegetation resources, especially special status plants. The analysis is designed to help BLM meet its obligations under the Endangered Species Act and meet other authorities and BLM policies. The botanist recommended that the proposed actions would not affect threatened and endangered plants or other BLM special status plants. White leaf manzanita chaparral and ponderosa pine/black oak forest are project area plant communities adapted to periodic wildfire. It is likely that the project area has experienced natural wildfire events in the past and has recovered after the wholesale removal of shrubs and other understory vegetation. Likewise, the common woody species (e.g., white leaf manzanita) that would be cut in the course of the proposed action would reestablish themselves within the project area over time. However the relative abundance of species can be altered by the treatment method used to reduce fuels. For instance, cutting shrubs with a chainsaw or masticator favors sprouting species like chamise or toyon that are not killed by cutting. These species can reestablish themselves quickly. Obligate seeding species like white leaf manzanita may become less abundant in the stand after this kind of treatment.

Wildlife. The BLM wildlife biologist analyzed the impacts of the proposed action on wildlife, especially on special status wildlife. Her analysis was designed to help BLM meet its obligations under the Endangered Species Act and other authorities and BLM policies. The biologist recommended that the proposed action would not affect threatened and endangered wildlife or other BLM special status wildlife.

While mechanical fuels treatments can decrease the risk of catastrophic fire, they do not provide the ecosystem benefits of low intensity low severity fire, and they alter habitat needed by wildlife. In general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from mechanical fuel reduction activities. Increasing understory light for shrub patch development can increase habitat for some small mammals and birds. In contrast, species that prefer closed-canopy forests or dense understory, and species closely associated with those habitat elements that may be removed or consumed by fuel reductions, would likely be negatively affected by fuel reductions. Some habitat loss may persist for only a few months or a few years, such as the loss of shrubby understory vegetation which can recover quickly. The loss of large-diameter snags and down wood, which are important habitat elements for many wildlife and invertebrate species, may take decades to recover and thus represent some of the most important habitat elements to conserve during fuel reduction treatments.

Retention of snags is addressed in the proposed action. Downed wood retention is addressed in project design features 10 and 11. These measures would reduce this impact.

Overall, direct mortality of wildlife owing to crushing from heavy equipment during fuel reduction is considered to be low, but this is mostly based on anecdotal information. It is believed that most species are able to find refuge microsites (e.g., inside burrows or under surface objects) or move away from approaching equipment. However, spring-season thinning during the breeding season may result in mortality of ground- and shrub-nesting bird nestlings and species living within litter such as small mammals, reptiles, amphibians, and invertebrates. Project design feature 6 that attempts to avoid the breeding/nesting period would reduce this impact.

Black bear. By volume, about 25 percent of black bear diet can consist of insects (mainly ants and yellowjackets) obtained primarily from down logs. A decrease in down wood would result in fewer ants and yellowjacket nests available to black bears. Project design features 10 and 11 address the retention of coarse woody material. Fuels reduction would likely increase the amount of grasses and berries used by black bears for foraging.

Deer. The proposed fuels reduction strategy would increase forage quantity and quality for deer. However, escape cover for mule deer, and other animals that need high shrub cover to avoid predators would be reduced. Project design feature 8 which calls for the retention of uncut patches of vegetation would reduce the impacts of less escape cover.

Small Mammals. Shrubs, down wood, and snags provide important cover from predators thus the loss of these habitat elements may have negative consequences for some small mammal species. The silvicultural strategy to be implemented, along with project design features 10 and 11, address snag and down wood retention and would reduce this impact. Small mammal species that need high shrub cover to avoid predators may be negatively affected by shrub removal for the first few years post-treatment, but then exceed pretreatment population levels when shrubs recover and food sources are high from increased light, herbaceous growth, and seed production. Project design feature 8 that retains patches of uncut vegetation would reduce the impacts of shrub removal. However, other species prefer open habitat conditions and may benefit from the food resources provided by plentiful grasses and forbs that may establish after fuel reduction. Some species of small mammals prefer high canopy closure, such as northern flying squirrel, and thus may be adversely affected by thinning treatments. Thinned stands would likely be poor bushy tailed woodrat habitat due to their association with abundant large snags, mistletoe brooms and soft log cover. Project design feature 10 that addresses retention of pre-harvest coarse woody material and the proposed action which addresses retention of snags will reduce these impacts.

Bats. Several species of bats roost under the bark of tall, large-diameter trees or in cavities of large snags. If large-diameter snags and trees are protected during fuel reduction as proposed, it is likely that fuels reduction may have minimal or even positive effects on bat populations. Retention of large trees and snags is addressed in the proposed action and project design features.

Birds. Fuels reduction conducted during the nesting season is more likely to result in high mortality of nestlings, especially for species nesting on the ground and in shrubs and small trees. Project design feature 3 that attempts to avoid the breeding/nesting period would reduce this impact. Fuels reduction prior to the nesting season is likely to reduce nesting habitat for ground- and shrub-nesting species. At the population level, the proposed project would not have a measurable negative effect on migratory bird populations. This is in part because the project is relatively small compared to the amount of mixed conifer forest within the field office boundary. The impact is further reduced by project design feature 8 which leaves patches of uncut vegetation.

Bird responses to fuels reduction are dependent on the species and other factors. Some bird species prefer early successional and open habitats, and these species are likely to increase in abundance after fuel reduction. In contrast, some bird species may be less abundant after fuel reduction. Hurteau et. al (2008) found that mountain chickadee and yellow-rumped warbler were particularly sensitive to thinning treatment in his study at the Southwestern Plateau. Removal of large trees or snags would likely affect species nesting in tree canopies and cavities of snags or live tree boles. Recruitment of large snags for cavity nesters may take decades or longer, depending on existing stand conditions. The proposed action which addresses the retention of large trees and snags would reduce these impacts. Further, project design feature 9 that addresses retention of live trees with cavities would reduce these impacts.

Cavity-nesting birds. If fuel treatments involve removing or eliminating snags, then a net loss of nesting habitat for primary and secondary cavity-nesting birds might be expected for many years. The majority of research studies report that fuel treatments result in a decrease in populations of cavity nesters owing to loss of dead trees used for nesting and roosting. The proposed action which addresses the retention of large trees and snags would reduce these impacts. Further, project design feature 9 that addresses retention of live trees with cavities would reduce these impacts.

Raptors. The more open understory created by fuel reduction may be advantageous to some species of hawks, owls, and eagles that prey on small mammals and birds in open forests and small clearings. Prey species that have less cover are more easily captured, and some prey species prefer open forests (for example, deer mice). However, some raptor species and some small mammals and avian prey prefer closed canopy forests and thus may avoid stands that have been treated to reduce fuels. Raptor species that prefer closed canopy forest, such as California spotted owl and northern goshawk, were not detected in the project area so these raptors will not be impacted by the project. The removal of trees with dwarf mistletoe brooms during thinning treatments would likely be detrimental to wildlife species that nest in mistletoe brooms, including great horned owl, northern goshawk, Cooper's hawk, California spotted owl, and red-tailed hawk. Retention of defect trees which is addressed in the proposed action would reduce this impact.

Thinning from below, while still retaining large trees, snags, large downed wood, and high canopy closure should allow continued habitat suitability for northern goshawk and California spotted owl. Although vegetation manipulation to reduce wildfire hazard may create less than optimum habitat for northern goshawk and California spotted owl, this should be weighed against the hazard for stand replacement fires and complete loss of habitat over large areas. Retaining large trees, snags, large downed wood, and patches of high canopy closure is addressed in the proposed action and the project design features. In addition, northern goshawk and California spotted owl were not detected in the project area, and therefore would not be impacted by the proposed action.

Amphibians. A few amphibians are strictly aquatic, but most use upland habitats at various times during the year, and a few species are strictly terrestrial. Upland habitat use by forest amphibians largely depends on the availability of moist duff and litter and rotting down wood. Amphibian response to reducing canopy cover would likely be unfavorable because of the warmer and drier conditions created in the understory vegetation, down wood, litter, and soil. Most terrestrial salamanders require moist soils or decomposing wood to maintain water balance, and dry conditions usually result in suppressed populations. Project design features 10 and 11 that address retention of downed wood would reduce this impact. Anurans (frogs and toads) may be less affected by changes in environmental conditions associated with the proposed fuel reduction project because of their tendency to travel at night and during rain events, their greater vagility than salamanders, and their close association with wetlands. Still, species that frequently occupy terrestrial habitats such as many salamanders, boreal toads, and tree frogs may be killed during fuel treatments or find post-treatment conditions unsuitable.

These negative effects would be expected to be short-term. The direct mortality of amphibians during fuels reduction treatment is not anticipated to be high. Fuels reduction treatments may contribute fine sediment to streams because of increased surface runoff. Sedimentation causes reduced survivorship of eggs and tadpoles of some stream-breeding amphibians that lay their eggs and rear tadpoles under rocks or within interstitial spaces in the substratum. Project design feature 2 that establishes stream buffer zones would reduce sedimentation into the stream, thus reducing this impact.

Reptiles. James and M'Closkey (2003) found that the removal of dead trees (standing and prone) during fuels treatment on the Colorado Plateau may limit the local distribution, abundance, and diversity of lizards, which include dead trees in their microhabitat for shelter, perching, foraging, courting, and defending territories. Removal of dead trees could seriously affect the local abundance and diversity of lizard species, which spend substantial time in this microhabitat. Project design features 10 and 11 address the retention of coarse woody debris, and the proposed action addresses retention of snags. The retention of snags and coarse woody debris would reduce these impacts.

Coarse Woody Debris. One of the key differences between biomass removal and a traditional timber harvest is the reduction of dead wood on the forest floor. Besides providing wildlife habitat, dead wood serves as a seedbed for regeneration, releases nutrients back into the soil and forest, decreases runoff and erosion, facilitates nitrogen fixation, and stores forest carbon.

Butts and McComb (2000) found in their study site in western Oregon that coarse woody debris reductions associated with thinning of stands may negatively impact salamanders and shrews. The abundance of ensatina and clouded salamanders increased with the volume of coarse woody debris. In addition, the probability of encountering either ensatina or Trowbridge's shrew increased with cover of coarse woody debris on the forest floor. The study suggests that current management guidelines for coarse woody debris retention may not provide adequate habitat for forest-floor vertebrates that depend on this component of the habitat. The authors suggest that the retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands, and thus recommend coarse woody debris retention in the range of 100-300 m3/hectare. This is more likely to provide coarse woody debris for terrestrial salamanders.

In three regions (West, North and East) of south and central Sweden, Gunnarson et. al. (2004) studied short-term effects of slash removal on species richness and abundance of beetles in coniferous and mixed forests. The study concluded that extensive slash removal leads to impoverished species richness of beetles at a local scale. Slash heaps left on site may provide important refuges for ground-active beetles. Moreover, the results support the general theory that microhabitat structure affects arthropod abundance and diversity. Project design features 10 and 11 that address the retention of coarse woody debris would reduce these impacts.

Cultural Resources. The BLM archaeologist has conducted a cultural resource study of the proposed action to determine whether significant cultural resources could be affected by the proposed action. The study includes a background records search and field inventory. The study is designed to help BLM meet its obligations under Section 106 of the Historic Preservation Act. The backgrounds record search and field inventory indicate very low sensitivity for prehistoric resources, especially village sites. The terrain is mostly steep and heavily forested. The project area has a much higher sensitivity for historic-era gold-mining- and logging-related resources. Logging during the last 30 to 50 years has also left a mark on the project area in the form of skid roads, stumps, and eroded areas. All cultural resources found within the project that could be affected by the proposed action would be flagged for avoidance. In other words, no cultural resources would be affected by the proposed action. It is anticipated that the proposed actions would not affect significant cultural resources. Consultation with Native Americans is occurring as this EA is put out for public review. All Native American input will

be carefully considered. We do not anticipate that any places of traditional religious and cultural significance to Native Americans would be affected. If we do identify such places we will work with the affected Native Americans to modify the proposed action to avoid negative effects.

Recreation. The proposed action could have negligible short-term negative impacts on recreational use. Hunters and motorists on designated routes might be inconvenienced temporarily during project implementation due to the noise and the dust caused by cutting and chipping fuels, and the use of the roads in the area by project-related vehicles including a semi-truck/trailer. Recreationists would continue to use the project area after the proposed action is implemented with no additional inconvenience. As noted in the affected environment section, there has been off-highway vehicle use within the project area. Under the 2008 Sierra RMP this use is not allowed off of designated roads. The proposed action would be done in a way that does not increase unauthorized use of off-highway vehicles within the project area.

Visual Resources. The project area is not known for its visual resources. The proposed project could have a negligible negative impact on visual resources. Vegetation would be removed. Some might consider this an improvement to the scenery. Most importantly, the proposed action would be consistent with BLM's VRM class III management objective under the 2008 Sierra RMP, which is to partially retain the existing character of the landscape.

4.2 Impacts of the No Action Alternative

There would be no direct impacts to environmental resources, such as atmospheric, soil, water, biological, and cultural resources. Though highly variable and difficult to predict with certainty, not implementing the proposed action could lead to detrimental impacts to forest health, firefighting efforts, and adjacent private properties. If a fire were to occur within the project area during the usual California fire season, it would likely move into the upper story—a crown fire—burning virtually all the trees and vegetation within the project area. By doing proposed treatment, we can move this stand to a healthier, more resilient condition so if a fire were to occur after treatment, it would just kill the small evergreens trees and remove much of the shrub and forb understory—which is what likely occurred historically. The BLM may also miss an opportunity to provide vegetation to a biomass plant near Ione. We would miss an opportunity to help produce energy and increase economic growth. Quantifying this impact is impossible.

4.3 Cumulative Impacts

Negative cumulative impacts on the larger watershed scale are not anticipated. The proposed action would have negligible negative impacts on commonplace plants and wildlife. The current condition of the vegetation has been influenced by decades of wildfire suppression. Other than prescribed fire (or an uncontrolled wildfire), which has been removed from further consideration in this EA for a variety of reasons (refer to Section 2.4), there is not at present a better way to reduce dense understory vegetation that would have been reduced by wildfire in the past, before fire suppression was practiced. Prescribed burning is severely limited by safety and air quality concerns, especially in the wildland urban interface. The number of homes in close proximity to the project area would make burning here problematic. The proposed action is expected to have beneficial cumulative impact on wildfire suppression in the area, as long as BLM maintains the treatment area.

With respect to atmospheric, soil, and water resources, negative cumulative impacts on the watershed scale are not anticipated. The project design features would greatly limit the amount of potential erosion of sediments into the drainages/tributaries of the North Fork of the Mokelumne River. BLM has not recently proposed any projects of this scope within the Mokelumne River watershed. Nothing like this is planned in the foreseeable future.

5.0 Agencies and Persons Consulted

5.1 Authors

James Barnes, BLM NEPA coordinator/archaeologist
Keith Johnson, BLM forester
Al Franklin, BLM botanist
Peggy Cranston, BLM wildlife biologist
Brian Mulhollen, BLM fuels specialist

5.2 BLM Interdisciplinary Team/Reviewers:

3/1/11
NEPA coordinator/Archaeologist — Date

Brian R Mulhollen 3/1/11
Fuels specialist — Date

3/1/11
Forester — Date

2/25/11
Outdoor recreation planner/VRM specialist — Date

Lauren Fetty 2/24/2011
Botanist — Date

Peggy Cranston 2/25/2011
Wildlife biologist — Date

5.3 Availability of Document and Comment Procedures

This EA will be posted on Mother Lode Field Office's website (www.blm.gov/ca/motherlode) under NEPA and will be available for a 30-day public review period. The EA is also available by mail upon request during this 30-day public review period. Comments should be sent to James Barnes at Bureau of Land Management, Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, California 95762 or emailed to jjbarnes@blm.gov.

5.4 References Cited and Sources of Information

Butts, S.R., and W.C. McComb
2000 Association of forest-floor vertebrates with coarse woody debris in managed forests of western Oregon. *J. Wildl. Manage* 64: 95-104.

Cal Fire and Placer County Resource Conservation District.
2010 Forestland Steward Summer 2010. California Forest Stewardship Program. 12 pp. (Some of the wildlife project design feature ideas came from this publication.)

Evans, A.M., R.T. Perschel, and B.A. Kittler
2010 Revised assessment of biomass harvesting and retention guidelines. Forest Guild, Santa Fe, New Mexico. 36 pp. (Some of the wildlife project design feature ideas came from this publication.)

Gunnarson, B., K. Nitterus, and P. Wirdenas
2004 Effects of logging residue removal on ground-active beetles in temperate forests. *Forest Ecol. and Manage* 201: 229-239.

Hurteau, S.R., T.D. Sisk, W.M. Block, and B.G. Dickson
2008 Fuel-reduction treatment effects on avian community structure and diversity. *J. Wildl. Manage* 72: 1168-1174.

James, S.E., and R.E. M'Closkey
2003 Short communication. Lizard microhabitat and fire fuel management. *Biological Conservation* 114: 375-383.

North, M., P. Stine, K. O'Hara, W. Zielinski, and S. Stephens
2009 *An ecosystem management strategy for Sierran mixed-conifer forests*. Gen. Tech. Rep. PSW-GTR-220. US Department of Agriculture, Forest Service, Pacific Southwest Research Station, Albany, CA. 49 pp.

Pilliod, D.S., E.L. Bull, J.L. Hayes, and B.C. Wales
2006 *Wildlife and invertebrate response to fuel reduction treatments in dry coniferous forests of the western United States: a synthesis*. Gen. Tech. Rep. RMRS-GTR-173. U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, CO. 34 pp. (Much of the wildlife impact section came from this publication.)

Appendix A

Silvicultural Prescription for Sierran Mixed-Confier/Lower Montane Forest

A.1 Background and the Importance of Fire

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicutlural principles that we feel can be incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area.

Chief among these concepts is the importance of wildfire. North et al (2009) explains that:

> Fire plays a pivotal role in reshaping and maintaining mixed-conifer ecosystems. Fire was once very common in most of the western Sierra and has been a primary force shaping the structure, composition, and function of mixed-conifer forests. ... [Most of the fires were of low intensity and returned at frequent intervals.] The main effect of low-intensity fire is its reduction of natural and human-created (i.e., resulting from management activities) fuels, litter, shrub cover, and small trees. These reductions open growing space, provide a flush of soil nutrients, and increase the diversity of plants and invertebrates. By reducing canopy cover, fire also increases habitat and microclimate heterogeneity at site, stand, and landscape levels [North et al. 2009:5-6].
>
> Forest fuels are usually assessed in three general categories: surface, ladder, and canopy bulk density. Fuel treatments often focus on ladder fuels (generally defined to be variably sized understory trees that provide vertical continuity of fuels from the forest floor to the crowns of overstory trees.) Some studies and models, however, suggest a crown fire entering a stand is rarely sustained (i.e., sustained only under extreme weather conditions) if understory fuels are too sparse to generate sufficient radiant and convective heat. [North et al. 2009:3].
>
> By itself, prescribed fire is difficult to apply in some forests owing to fuel accumulations, changes in stand structure, and operational limitations on its use. Mechanical treatments can be effective tools to modify stand structure and influence subsequent fire severity and extent and are often a required first treatment in forests containing excessive fuel loads. [North et al. 2009:6-7]
>
> Prescribed fire is generally implemented very carefully, killing only the smaller size class trees. In some cases, it is ineffective for restoring resilience, at least in the first pass. For example, prescribed fire may not kill many of the larger ladder-fuel or co-dominant true fir trees that have grown in with fire suppression. In many stands, mechanical thinning followed by prescribed fire may be necessary to achieve forest resilience much faster than with prescribed fire alone. [North et al. 2009:7]
>
> Some forests cannot be prescription burned, at least as an initial treatment, because of air quality regulations, increasing wildland home construction, and limited budgets. Yet restoration of these forests still depends on modifying fuels because it reduces wildfire intensity when a fire does occur and can produce stand conditions that simulate some of fire's ecological effects. [North et al. 2009:7]

One measure of resilience is that fire disturbance produces mortality patterns consistent with the dynamics under which the forest evolved. Mixed-conifer resilience might be best ensured by (1) reducing fuels such that if the forest burned, the fire would most likely be a low severity surface and (2) producing a forest structure that keeps insect and pathogen mortality at low, chronic levels. Where intermediate-size trees are abundant, they may present a fire and fuels risk, especially when live crowns are continuous to the forest floor (North et al. 2009:v).

Intermediate-size trees can contribute to overly dense stands that are moisture stressed and at risk of bark beetle attacks:

In addition to ladder and surface fuels, managers have been concerned with reducing canopy bulk density in DFPZs and the defense zone of wildland urban interfaces (WUI). Overstory trees are commonly removed, and residual trees are evenly spaced to increase crown separation. The efficacy of canopy bulk density reduction in modifying fire behavior is largely a function of weather conditions. Research has suggested there is often limited reduction in crown fire potential through overstory thinning alone, without also treating surface fuels. [North et al. 2009:4]

A concern with the widespread use of canopy bulk density thinning in defensible fuel profile and defense zones is the ecological effects of the regular tree spacing. In the Sierra Nevada, historical data, narratives, and reconstruction studies indicate mixed conifer forests were highly clustered with groups of trees separated by sparsely treed or open gap conditions. This clustering can be important for regenerating shade-intolerant pine, increasing plant diversity and shrub cover moderating surface and canopy microclimate conditions within the tree cluster and providing a variety of microhabitat conditions for birds and small mammals. [North et al. 2009:4]

A.2 Importance of Stand Heterogeneity and Density

Recent studies have shown that spatial heterogeneity was a key feature in forest resiliency and characteristic of frequent fire's effect on mixed-conifer forests. Fuel treatments that produce uniform tree spacing reduce this ecologically important spatial heterogeneity. North et al. (2009) explains that:

Horizontal heterogeneity, however, used to be relatively common in Sierran mixed-conifer forests [due to logging/reforestation practices]. All of the Sierran reconstruction studies suggest mixed-conifer forests, under an active fire regime, had a naturally clumped distribution containing a variety of size and age classes. [North et al. 2009:15]

At the stand level, vertical heterogeneity can still be provided by separating groups of trees by their canopy strata. For example, a group of intermediate-size trees that could serve as ladder fuels might be thinned or removed if they are growing under large overstory trees. The same size trees in a discrete group, however, might be lightly thinned to accelerate residual tree growth or left alone if the group does not present a ladder fuel hazard for large, overstory trees. [North et al. 2009:15-16]

To increase horizontal heterogeneity, we suggest using microtopography as a template. Wetter areas, such as seeps, concave pockets, and cold air drainages, may have burned less frequently or at lower intensity. Limiting thinning to ladder fuels in these areas is suggested because with their potentially higher productivity and cooler microclimate, they can support greater stem densities, higher canopy cover, and reduced fire effects. A concern with current uniform fuel reduction is that these microsite habitats associated with sensitive species would be eliminated. Surface fuel loads at these microsites should still be reduced to lower their vulnerability to high-intensity fire.

In contrast, upslope areas, where soils may be shallower and drier and where fire can burn with greater intensity, historically had lower stem densities and canopy cover. On these sites, thinning might reduce the density of small or, where appropriate, intermediate trees and ladder and surface fuels toward a more open condition. In some circumstances this thinning may reduce water stress, accelerating the development of large residual trees. Within a stand, varying stem density according to potential fire intensity effects on stand structure would create horizontal heterogeneity. [North et al. 2009:16-18]

Historical forests can provide a better understanding of the ecological processes that have shaped mixed-conifer forest and the habitat conditions to which wildlife have adapted. All reconstruction studies, old forest survey data sets, and 19th-century photographs suggest that frequently burned forests had very low tree densities. ... Studies reconstructing pre-European conditions all indicate that forests had a greater percentage of pine, a clustered pattern with highly variable canopy cover, and a high percentage of the growing stock in more fire resistant, large-diameter classes. ... What these reconstructions do provide is inference about the cumulative process effects of fire, insects, pathogens, wind, and forest dynamics on stand structure and composition, producing forests resilient to most disturbances, including wildfire. ... [Modeling] found a low-density forest dominated by large pines was most resilient to wildfire, sequestered the most carbon, and had the lowest carbon dioxide (CO2) emissions and thus contributed less to global warming. An analysis of carbon emissions and storage from different fuel treatments, found

> understory thinning followed by prescribed fire produced the greatest reduction in potential wildfire severity without severely reducing carbon stocks. [North et al. 2009:9].

> In fire-suppressed forests, shrubs are often shaded out, reducing their size, abundance, and fruit and seed production in low-light forest understories. Anecdotal narratives, a forest reconstruction, and a few early plot maps suggest shrub cover in active-fire conditions might have been much higher than in current forests, mostly owing to large shrub patches that occupied some of the gaps between tree clusters. [North et al. 2009:12]

> Studies in the Sierra Nevada and Klamath Mountains found that mixed-conifer structure and composition varied by fire patterns that were controlled by landscape physiographic features. Fire intensity, and consequently a more open forest condition, increased with higher slope positions and more southwesterly aspects. ... Cumulatively these studies suggest that forest landscapes varied depending on what structural conditions would be produced by topography's influence on fire frequency and intensity. [North et al. 2009:19]

A.3 Silvicultural Strategy

North et al. (2009) asserts that a new silviculture for Sierran mixed-conifer forest that

> balances ecological restoration and wildlife habitat with fuel reduction can meet multiple forest objectives. By necessity, recent Sierran silviculture has first been focused on reducing fire severity through fuel reduction. For many reasons, including maintaining or restoring resilient forests, public safety, and property loss, fuel reduction remains a priority. We suggest that , with some modification, wildlife and ecological objectives can also be met. [North et. al. 2009:22]

> Diameter-limit prescriptions applied equally to all species will not remedy the significant deficit of hardwoods and pines in current forests. Prescriptions that differ by species can retain hardwoods, which are important for wildlife, and favor pines that can increase the forest's fire resilience. Given their current scarcity in many locations, there are few instances that warrant cutting either hardwoods or pines in mixed-conifer forests. [Id.]

In general, leaving pine and thinning white fir, Douglas-fir, and incense-cedar will help restore historical species composition and increase the forest's fire resilience. There are times, however, where removing pine can reduce fuels, decrease the risk of drought or insect induced mortality, and accelerate the growth of the residual pine trees.

> We suggest creating landscape heterogeneity in the Sierra Nevada by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. In general, stem density and canopy cover would be highest in drainages and riparian areas, and then decrease over the midslope and become lowest near and on ridgetops. Stem density and canopy cover in all three areas would be higher on northeast aspects compared to southwest. Stand density would also vary with slope becoming more open as slopes steepen. [North et al. 2009:20]

Locating gaps in areas with thinner soils or lower productivity may be logical to foster lower canopy cover since these areas historically supported lower tree densities and fuel loads. In the forest matrix between tree groups and gaps, frequent-fire forests generally consisted of widely spaced, large trees, most of which were pines. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition could be varied depending on existing forest conditions and topographic position.

> The proposed silvicultural approach is a multiaged-stand strategy driven by the need for wildlife habitat, fire-resistant stand structures, and restoration of stand and landscape patterns similar to active-fire conditions in mixed-conifer forests. Although we use the term multiage, we are most interested in size and structure, and their associated ecological attributes. Multiaged stands are a flexible means of including variable stand structures with two or more age classes and integrating existing stand structures into silvicultural prescriptions. [North et al. 2009:22]

> Clusters of intermediate to large trees (i.e., >20 inches diameter at breast height [DBH]) are sometimes marked for thinning with the belief that they are overstocked and thinning would reduce moisture stress. Some evidence, however, suggests these groups of large trees may not be moisture stressed by within-group competition.... Reconstructions of Sierran forests with active fire regimes have consistently found large trees in groups. These groups, however, can be at risk if intermediate and small trees grow within the large tree groups. Thinning these small and intermediate trees will reduce fire laddering. [North et al. 2009:23-24]

What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10- to 16-inch DBH classes. Trees larger than this may be thinned, for additional fuel reduction by reducing canopy bulk density in strategic locations. Removal of some of the intermediate sized trees would also have the economic benefit of providing revenue to help offset the costs of the fuels reduction and could fund additional projects (North et al. 2009:24).

> Thinned intermediate-size trees should only be fire-sensitive, shade-tolerant species such as white fir, Douglas-fir, and incense-cedar. In mixed-conifer forest, attempt to keep intermediate-size pines and hardwoods because of their relative scarcity and importance to wildlife and fire resilience. . . Some intermediate-size trees can still function as ladder fuel, particularly those that were initially grown in more open conditions. These trees can have live and dead limbs that extend down close to the forest floor providing a continuous fuel ladder. . . [In] middle to upper slope topographic position ... some thinning of intermediate-size trees may help accelerate the development of large "leave" trees. We suggest, however, that these criteria not be applied to riparian areas, moist microsites often associated with deeper soils, concave topography, or drainage bottoms because these areas may have supported higher tree densities and probably greater numbers of intermediate size trees. [North et al. 2009:24-25]

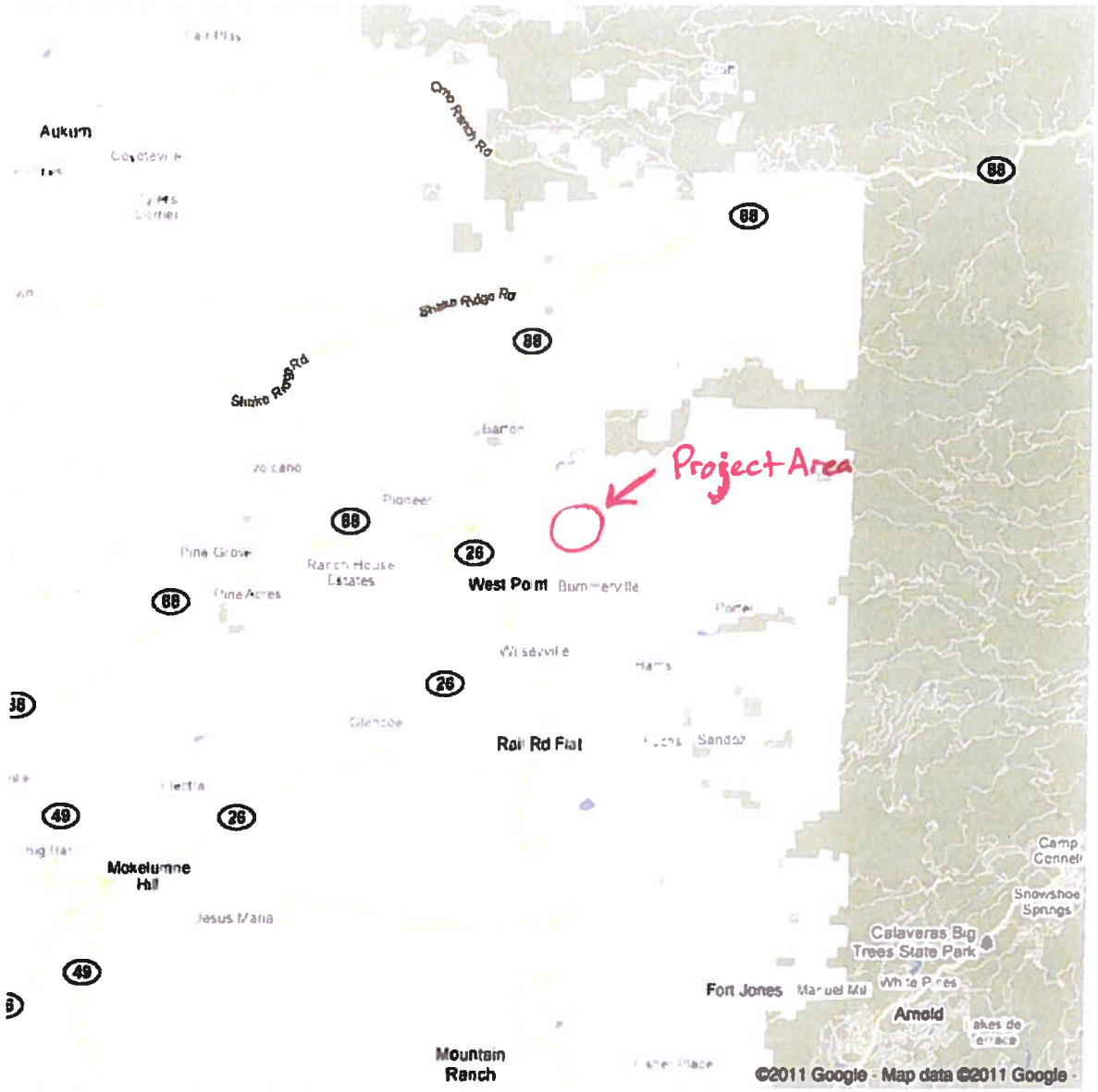
Appendix B

Project area maps

Appendix B

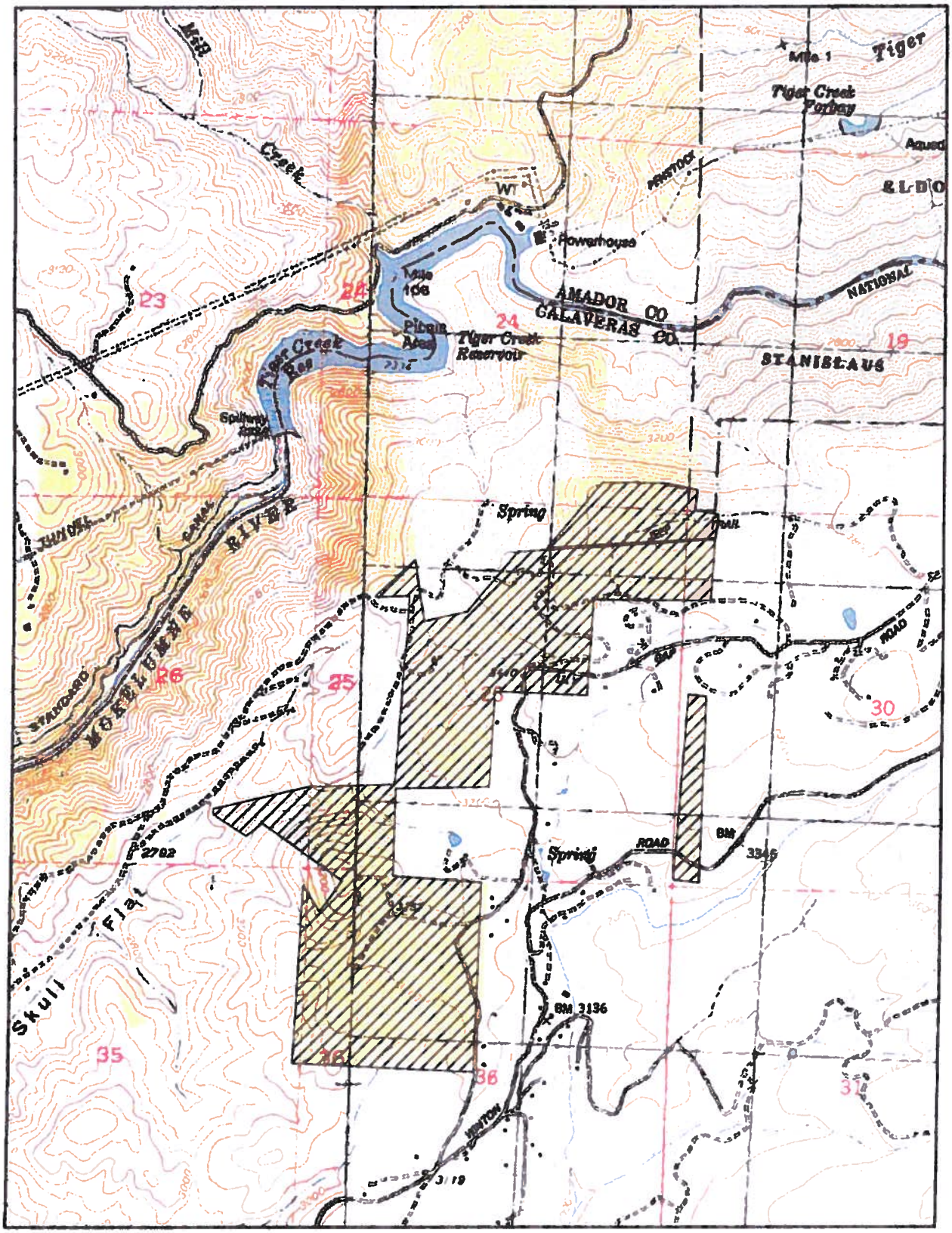
Project area maps

Notes Project location map for the Lily Gap biomass demonstration project



R13E R14E

T7N T7N



Lilly Gap Biomass Demonstration Project

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT
Mother Lode Field Office
El Dorado Hills, California
(916) 941-3101
www.ca.blm.gov/motherlode
Date Prepared: 3/15/2011
Project: LillyGapBiomassEA 6x10.mxd

Harvest Area, 450 acres

Performance Measures

Acres of Land Improved or Restored

Purpose

The purpose of this Performance Measure (PM) is to track efforts to improve natural resource conditions, such as site productivity and wildlife habitat, through site improvement or restoration activities and reduce the risk of natural disasters, such as catastrophic wildfire, flood, avalanche, etc. Wherever possible, acres should be categorized by importance or priority rating, such as acres of critical habitat, or acres in moderate, high and very high fire hazard areas as delineated by CAL FIRE's Fire Hazard Severity Zoning Map.

Likely Project Categories

This PM would likely be applicable for projects in the following category:

- Site improvement/restoration projects.

Variations

This PM is further classified by the following two variations:

- Site Importance or Priority Rating
- Restoration/Improvement Project Purpose
  - ✓ Natural Disaster Risk Reduction – Fire
  - ✓ Natural Disaster Risk Reduction – Other
  - ✓ Natural Resource Protection, e.g., invasive species removal, erosion control, vegetation planting, trail/bridge replacement, forest health, etc.
  - ✓ Water Quality
  - ✓ Habitat, both aquatic or terrestrial
  - ✓ Resource Management, e.g. increasing site productivity, vegetation management, forest management, etc.
  - ✓ Recreation

Guidance on Applying this PM to Your Project

This is a recommended approach to collecting data and reporting on this PM. Grantees are asked to further evaluate how these steps may best be applied to their specific projects and to discuss with SNC any steps or considerations that may be unique.

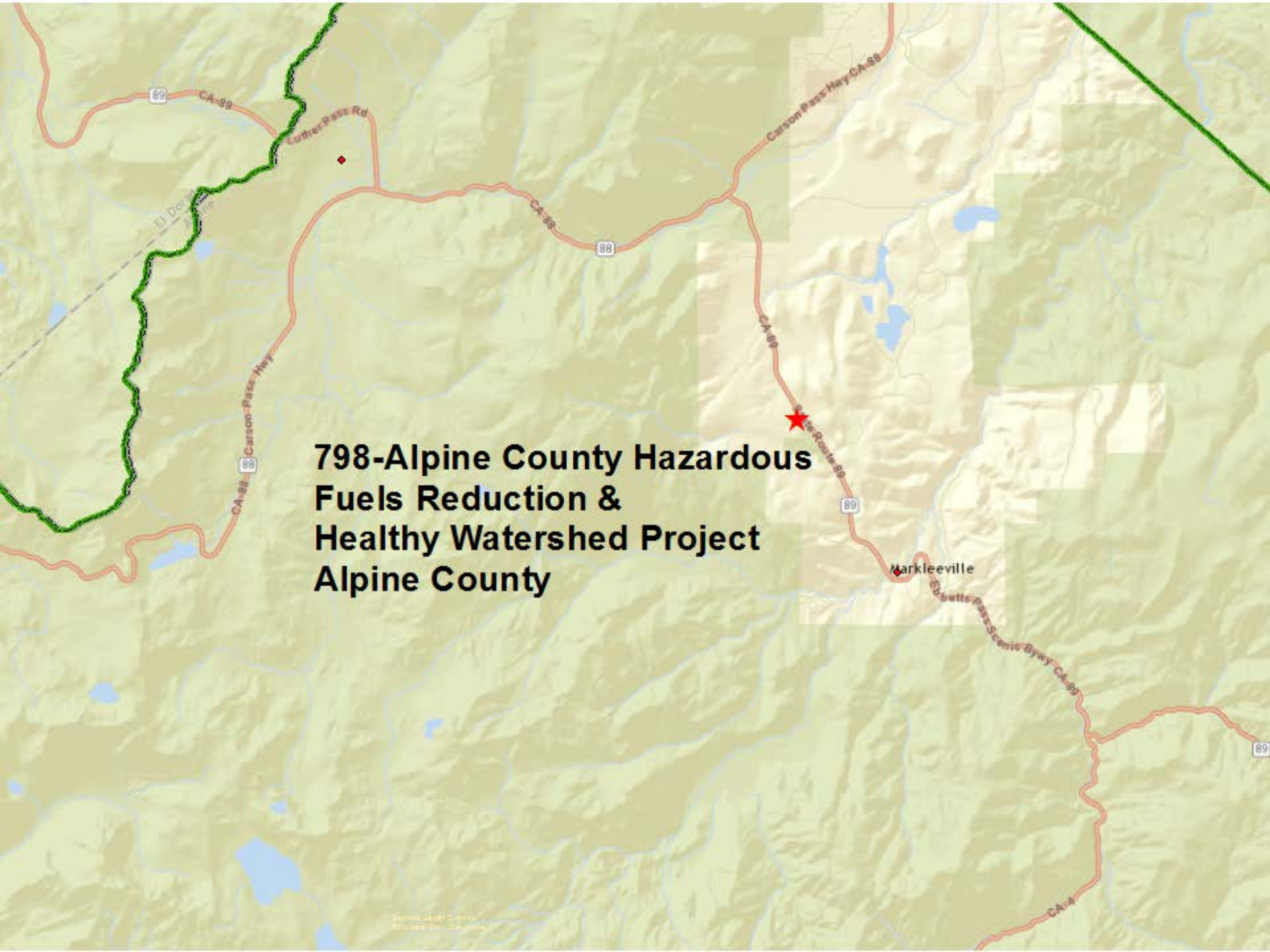
- *Data collection*:
  a. Document total acres treated.
  b. Identify land restoration or improvement purpose(s) for the acres treated, using the following list (check all that apply and provide number of acres for each purpose or topic area):
     i. Natural Disaster Risk Reduction – Fire
     ii. Natural Disaster Risk Reduction – Other
     iii. Natural Resource Protection, e.g., invasive species removal, erosion control, vegetation planting, trail/bridge replacement, forest health, etc.
     iv. Water Quality
     v. Habitat, both aquatic or terrestrial
     vi. Resource Management, e.g. increasing site productivity, vegetation management, forest management, etc.
     vii. Recreation
  c. Where appropriate, identify the federal, state, or local government site importance or priority rating for the treated acres and the source of the rating
     i. For fuel treatments, document the acres treated by risk category (moderate, high, very high) based on Cal Fire severity rating (http://frap.cdf.ca.gov/data/frapgismaps/download.asp).
     ii. For habitat restoration, identify, if applicable, acres that contain rare natural communities (i.e., those communities that are of highly limited distribution); priority acres based on the California Wildlife Habitat Relationships System (http://www.dfg.ca.gov/biogeodata/cwhr/morecwhr.asp); or habitat for threatened or endangered species as listed by the California Department of Fish and Game or U.S. Fish and Wildlife Service).
     iii. Consider other applicable importance or priority ratings as determined by federal, state, or local government resource management or planning agencies.

- *Reporting*: Report total number of acres improved or restored by importance/priority rating and treatment purpose. Note: one acre may be counted more than once if improvement/restoration of that acre meets more than one purpose. Suggested reporting format as follows:

Acres treated	Site importance or priority rating	Source of prioritization or importance rating	Purpose (from list provided above)

Other

The level of effort required to measure, analyze, and report acres of land improved or restored should be minimal, less than 40 hours. Accurate measurement and reporting requires careful record-keeping, but no special skills or knowledge are required.


798-Alpine County Hazardous
Fuels Reduction &
Healthy Watershed Project
Alpine County
Markleeville
Carson Pass Hwy CA-88
Luther Pass Rd
CA-89
CA-88
Carson Pass Hwy
State Route 89
Ebbetts Pass Scenic Byway CA-89
CA-4

STATE OF CALIFORNIA
SIERRA NEVADA CONSERVANCY

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

Applicant:	**Alpine County**
Project Title:	**Alpine County Hazardous Fuels Reduction & Healthy Watershed Project**
Subregion:	**East**
County:	**Alpine County**
SNC Funding:	**$160,600.00**
Total Project Cost:	**$225,000.00**
Application Number:	**798**
Final Score:	**88**

PROJECT SCOPE

The Alpine County Hazardous Fuels Reduction & Healthy Watershed Project will administer fuel treatments in four targeted areas within the Upper Carson River Watershed that are located in Alpine County's right of way and have been identified as high wildfire severity zones by CalFire. Additionally, the project will include a community outreach component that will promote fuels treatment among private land owners and develop a school-based educational program to promote wildfire prevention and personal responsibility while emphasizing the role of fire in a healthy ecosystem.

The project is a partnership between Alpine County and the Alpine Watershed Group (AWG) along with six other supporting partners including the Carson Ranger District of the Humboldt-Toiyabe National Forest, Eastern Alpine County Volunteer Fire Department, Alpine Fire Safe Council, Woodfords Community of the Washoe Tribe, Carson Water Subconservancy District and American Rivers.

The four targeted areas selected include Blue Lakes Project Area (41.7-acres), Diamond Valley Project Area (34.9-acres), Woodfords Project Area (27.6-acres) and Hot Springs Creek Project Area (12.4-acres). These sites were selected using the following criteria:

- Collaboration opportunity with the Humboldt-Toiyabe National Forest to leverage fuels reduction projects underway and adjacent to targeted sites;
- Sites will serve as strategically placed breaks to hold fires and prevent them from expanding; and,

- Sites will help reduce the risk of catastrophic fires spreading to surrounding communities and public lands.

The treatments will vary from site to site but include mastication of sage, small pine and other shrubs as well as mowing in areas dominated by grasses and forbs. Hand crews will work in areas equipment can't reach. Pruning of tree branches and other ladder fuels within the County right of way will occur.

The community outreach and education component of the project will include outreach activities that will raise awareness of modern fuels reduction practices on public lands, and watershed protection and opportunities to reduce fuel on privately-owned lands. Town hall meetings will be held to provide this information and press releases, flyers and educational brochures will be developed and distributed in neighborhoods and at the meetings. A school-based educational program will be developed and implemented at the Diamond Valley School, intended to provide students with information regarding fuels reduction and how to be "fire smart."

The budget for the project covers both the fuel treatments and the community outreach component. The budget for the treatment portion of the project is $154,700. The community outreach budget is $5,900.

California Environmental Quality Act (CEQA): Alpine County, acting as Lead Agency under the CEQA will produce a "Notice of Exemption" (NOE) and will have the categorical document developed and filed before the project is approved for funding.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	**TIMELINE**
Education Program Planning and Outreach	November 2014 – February 2015
Education Program Implementation	February – June 2015
Fuels Contractor Hiring	April 2015
Six Month Progress Report	May 2015
Fuels Treatments	May – October 2015
Public Information Meeting	June 2015
Six Month Progress Report	November 2015
Final Report	January 2016
FINAL PAYMENT/FINAL PAYMENT REQUEST	**February 15, 2016**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	.
Fuels Reduction Contractor	$130,000
Community Outreach & School Education Administration	$4,900
Agency/Partner Coordinator & Monitoring	$4,800
Total Direct	**$139,700**
Indirect**	
Project Materials Supplies – printing, copies	$1,000
Total Indirect	**$1,000**
Administrative***	
Grant Management & Reporting	$14,900
Operations & Overhead	$5,000
Total Administrative	**$19,900**
GRAND TOTAL	**$160,600**

* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

** Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

*** Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

PROJECT LETTERS SUPPORT

- Support
  - Roderick Alfred, Humboldt-Toiyabe National Forest
  - Kris Hartnett, Alpine Fire Safe Council
  - Geoffrey Ellis, Woodfords Washoe Community Council
  - Luke Hunt, American Rivers
  - Hal Bird, South Tahoe Public Utility District

PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Acres of Land Improved or Restored
- Number of People Reached
- Resources Leveraged for the Sierra Nevada

Notice of Exemption **Appendix E**

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: (Public Agency) Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Project Title: Alpine County Hazardous Fuels Reduction and Healthy Watershed Project (SNC 798)

Project Location – Specific:
The project is located on a total of approximately 120-acres, along 25 miles of roadway and within Woodfords Cemetery, entirely within Alpine County property/right-of-way, along eight roadways (Blue Lakes Road, Diamond Valley Road, Scossa Road, Airport Road, Foot Hills Road, Emigrant Trail Road, Hot Springs Road, Shay Creek Road), and at Diamond Valley School. The project is within the Carson River Watershed, near Woodfords and Markleeville, and portions of roadway traverse the Toiyabe National Forest, in Alpine County, California. Approximate Latitudes/Longitudes: 38.769503/-119.822243 and 38.691958/-119.805682

Project Location – City: Woodfords and Markleeville
Project Location – County: Alpine

Description of Nature, Purpose and Beneficiaries of Project:
Alpine County is requesting $170,700 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce fuel loads and the threat of wildfire within the County's right-of-way on approximately 25 miles of road right-of-way, involving eight County Roads in Alpine County. The proposed project is designed to treat dense fuel loads that have built up within the County's right-of-way, which extends 30 feet beyond the centerline of the roadways. The proposed treatment locations are dominated by easily ignitable light fuel (sage, grasses and thickets of young pine). The dense fuel loads that are located within County right-of-way are adjacent to larger forested areas. Human-caused ignitions of wildfire often occur as a result of accidents, over-heated vehicles, tow chains, or discarded cigarettes. The reduction in fuel loads along the roadway right-of-way would reduce the threat of catastrophic wildfires. In addition, the reduced fuel loads along County roadways not only provide fuel breaks, but safer work areas for fire suppression crews. The proposed project is specifically located as follows:

- *Blue Lakes Area* (41.7-acres): Within the right-of-way on Blue Lakes Road, beginning at the intersection with SR-88 and continuing on both sides of the road for 11.5 miles
- *Diamond Valley Area* (34.9-acres): Within the rights-of-way along Diamond Valley Road, Scossa Road, and Airport Road, as well as on approximately one (1) acre of open space at Diamond Valley School.
- *Woodfords Area* (27.6-acres): Within the rights-of-way along Foot Hills Road and Emigrant Trail Road, as well as on approximately two (2) acres of open space at Woodfords Cemetery.
- *Hot Springs Creek Area* (12.4 acres): Within the rights-of-way along Hot Springs Road and Shay Creek Road.

The proposed project would include four main treatment techniques including mechanical treatments, hand thinning, pruning, and removing large fuel. Mechanical treatments include mastication and mowing of brush to create fuel breaks. Hand thinning of brush and small conifer trees would occur in areas of high fuel loads, or where mechanical equipment would not be beneficial to the fuel reduction task. Pruning would involve the removal of tree branches and other ladder fuels. Removing fuel includes moving the large fuels that cannot be masticated to the County's burn pile, which is off-site at Turtle Rock Park. Treatment activities for each of the

four treatment areas include mastication of sage and other shrubs, mowing in areas dominated by grasses and phorbs, and hand treatments in areas equipment cannot reach or be effective.

Prior to any treatment activities, the proposed project would use California Department of Fish and Wildlife data and adjacent U.S. Forest Service surveys, as well as the County Geographic Information Systems (GIS) wetland delineation data to identify special status species and sensitive areas within the project site. These areas would be required to either use hand treatment only or avoid the area entirely. No known cultural resources are within the proposed project area.

The project would provide fuels reduction in areas that are considered high or very high wildfire severity zones as defined by the California Department of Forestry and Fire Protection (CalFire). The project would protect wildlife habitat, the Carson River Watershed, and local homeowners in the area. The project reduces the threat of human-caused fire ignition along roadways and ultimately reduces the threat of catastrophic wildfire that spreads from roadside ignition. Ultimately, less severe wildfires protect the forest and the watershed.

Name of Public Agency Approving Project: Sierra Nevada Conservancy
Name of Person or Agency Carrying Out Project: Alpine County

Exempt Status: *(check one)*

- ☐ Ministerial (Sec. 21080(b)(1); 15285);
- ☐ Declared Emergency (Sec 21080(b)(3); 15269(2));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c);
- ☒ Categorical Exemption. State type and section number: Section 15304, "Minor Alterations to Land"
- ☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:
The proposed Alpine County Hazardous Fuels Reduction and Healthy Watershed Project is categorically exempt from the provisions of California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15304, Class 4, which permits minor public or private alterations in the condition of the land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes. The project consists of minor land alterations (mechanical and hand treatments of fuel [sage, grasses and thickets of young pine]) to maintain and reduce the threat of catastrophic wildfire spreading from roadside areas into adjacent forests The project would protect local homeowners, protect wildlife habitat, and protect the Carson River Watershed. The project reduces the threat of human-caused fire ignition along roadways and ultimately reduces the threat of catastrophic wildfire that spreads from roadside ignition. No significant adverse impacts to natural or cultural resources will occur as a result of the project.

Lead Agency Contact Person: Matthew Daley
Area Code/Telephone/Extension: (530) 823-4698

Signature:_____ Date:_____ Title: Executive Officer
Jim Branham

Date Received for Filing at OPR:

Revised 2005

Project Description

Purpose

The Alpine County Hazardous Fuels Reduction & Healthy Watershed Project has been developed to protect Alpine County's natural resources and populated areas within the Carson River's Upper Watershed. Alpine County is known for its superlative landscapes with 96% of the county being public land. They provide a tremendous scenic and recreational resource; however, they also possess a significant fuels treatment problem and wildfire threat. A wildfire in the Upper Carson River Watershed would cause catastrophic damage to fragile watershed resources and impact the Carson River for years into the future. A fire would also threaten past SNC projects including Grant #365 - Markleeville Creek Restoration and Grant #420 Hope Valley Meadow Restoration. Human caused ignition within the County's right of way, which parallels roadsides are a likely vector for catastrophic fire into these areas.

This project addresses Alpine County's wildfire threat by treating fuels within the County's right of way that have been identified by CalFire, the County and expert partners as being at a high risk of carrying wildfire into sensitive watershed resources and populated areas.

All of the proposed fuel treatments are located within high or very high wildfire severity zones as defined by CalFire. Emphasis on fuels along roads is prudent due to past incidence of ignition. Previous human-caused ignitions include accidents, over-heated vehicles, tow chains, and discarded cigarettes. Once cleared of hazardous fuels the County Right-of-Way will be less likely to carry fire from the roadside into valued resources.

Other project benefits include improving survivable space to give fire suppression crews a safer work area and creating a fuel break.

To further watershed protection, AWG and project partners will collaborate to develop presentations and media to increase our community's understanding of fire's natural role in a healthy watershed, its benefits to forest ecology, all while balancing the message with the threat of wildfire. Community education is a critical component of this project, needed to sustain public support for fuels maintenance and to build awareness for future fire related activities. This will be no small task. Years of education decrying the perils of fire, have provided too little on fire's natural role in forest ecology. AWG and partners will have to research and develop new effective programs to meet these objectives. This will take significant staff time, coordination and development.

AWG's community outreach efforts will promote "fuels treatment" and "fire use" activities and inform landowners on how they can manage their private properties to prevent wildfire. A school-based educational program will be developed in parallel to

promote awareness amongst youth on wildfire prevention and personal responsibility, while educating them on the role of fire in a healthy ecosystem.

Fire History of Project Area

> *Eastern Alpine County has been affected by large fires within the past 25 years. Such fires include the Indian Creek Fire which burned 6,000 acres in 1981; the Fredericksburg Fire which burned 2,000 acres in 1986, and the Acorn Fire, which burned nearly 6,000 acres and twenty-six homes in 1987. Lightning causes the most wildland fire ignitions in this area, with summer thunderstorms bringing erratic winds and lighting to the area. It is common to have a strong southwesterly wind coming over the Sierras in the afternoon during the summer, which helps to drive fires. Most catastrophic fires have occurred during these conditions along the Sierra Front.*
>
> The Mesa Vista and Woodsford/Alpine Village neighborhoods have had few frequent fires in the last 20 years. Since 1980, at least three fires have burned in the area, some over the same ground multiple times. Fuels are flashy, making fire difficult to contain on initial attack.
> *CAL FIRE's Unit Management Plan – Alpine County*

Sadly Alpine County's Ignition data is incomplete, with most years lacking statistical cause.

Location & Partners

This project will be based in the Carson River Watershed of Alpine County. All fuels treatment will occur within the County's right of way that extends 30' on either side of the centerline of the road. The right of way runs adjacent to many of the project partners' lands. All partners will see benefits from this project; no fuel treatment activities will occur on private, federal or tribal lands.

The project is a partnership between Alpine County (the County) and Alpine Watershed Group (AWG) with six other supporting partners. These partners include the Carson Ranger District of the Humboldt-Toiyabe National Forest, Eastern Alpine County Volunteer Fire Department, Alpine Fire Safe Council, Woodfords Community of the Washoe Tribe, Carson Water Subconservancy District, and American Rivers. Our expert partners have not only written letters of support, but have worked closely with us to ascertain the greatest fire threats to natural resources and human communities.

By working with our partners we have identified 4 proposed project Area:

- Blue Lakes Road Project Area – total 41.7 acres to be treated
- Diamond Valley Project Area - total 34.9 acres to be treated
- Woodfords Project Area - total 27.6 acres to be treated

- Hot Springs Creek Project Area - total 12.4 acres to be treated

These sites were selected because:

1) They leverage ongoing Forest Service fuels projects. Collaborations with the Forest service are currently ongoing in order to maximize productivity.
2) Sites are strategically placed breaks to hold fires and prevent them from expanding.
3) Sites offer protection to communities, or prevent fire from spreading on to Forest Service and BLM lands.
4) Sites have continuous fuels allowing fire to spread.
5) Sites avoid disagreements with private landowners.

Blue Lakes Project Area: 41.7 Acres

Site: The County's right of way parallels Blue Lakes Road. Treatment will start at the roads intersection with Hwy 88 and continue up both sides of the road for 11.5 miles.
Fuels: Fuels are light and flashy mostly consisting of grasses, and shrubs.
Treatments: Mastication of sage, small pine and other shrubs. Mowing in areas dominated by grasses and phorbs.
Threats: Blue Lakes road winds through the Toiyabe National Forest, any ignition off this road could threaten forest stands, wilderness, wetlands, water supply and SNC Grant #420 Hope Valley Meadow Restoration.

Diamond Valley Project Area: 34.9 Acres

Site: The County's right of way parallels Diamond Valley Road, Scossa Road and Airport Road. The Diamond Valley School has about 1 acre of open space that will also be treated. Only a portion of Diamond Road will be treated, being that some sections don't front continuous fuels.
Fuels: Fuels are mostly light and flashy consisting of grasses and shrubs. Mixed small conifers are also growing up within the right of way.
Treatments: Mastication of sage and other shrubs. Mowing in areas dominated by grasses and phorbs. Hand crews will work in areas equipment can't reach or be effective.
Threats: Scossa and Airport roads cross BLM land. Ignitions off these roads could threaten Curtz Lake and Indian Reservoir. A fire stated in the treatment area could threaten the Woodfords Washoe Community. Ignitions could also threaten, forest stands, a local school and important reservoirs.

Woodfords Project Area: 27.6 Acres

Site: The County's right of way parallels Foot Hills Road, and Emigrant Trail Road. The Woodfords Cemetery has about 2.5 acres of open space that will also be treated.

Fuels: Fuels are mostly light and flashy consisting of grasses and shrubs. Mixed small conifers are also growing up within the county owned cemetery and right of way.

Treatments: Mastication of sage and other shrubs. Mowing in areas dominated by grasses and phorbs. Hand crews will work in areas equipment can't reach.

Threats: Foot Hills Road, and Emigrant Trail Road act as a fire break preventing wildfire from burning into communities or escaping into the Humboldt-Toiyabe National Forest. Ignitions could bring fire into communities, forest stands, water supply and a canyon fire could threaten SNC Grant #420 Hope Valley Meadow Restoration.

Leverage: The Carson Ranger District is currently implementing the "Manzanita Hazardous Fuels Reduction Project". Approximately 700 acres will be treated within the Wildland Urban Interface in Woodfords, California. Our treatments efforts along the Emigrant Road and within the open space around the cemetery will greatly supplement the Carson Ranger Districts efforts. Our education and outreach efforts will also garner support and understanding for their ongoing project. We are working collaboratively with the Carson Ranger District to combine our effort and capitalize on our outcomes.

Hot Springs Creek Project Area: 12.4 Acres

Site: The County's right of way parallels Hot Springs Road, and Shay Creek Road.

Fuels: Fuels are mostly light and flashy consisting of grasses and shrubs. Mixed small conifers are also growing up within the county right of way.

Treatments: Mastication of sage and other shrubs. Mowing in areas dominated by grasses and phorbs. Hand crews will work in areas equipment can't reach or isn't effective.

Threats: Hot Springs Creek Road, and Shay Creek road winds through the Toiyabe National Forest and Grover State Park. Any ignition off this road could threaten forest stands, wilderness, wetlands, Grover Meadow/Hot Springs, water supply and Grant #365 - Markleeville Creek Restoration.

Leverages: The Carson Ranger District has nearly complete the "Markleevillage Fuels Reduction Project". Approximately 1200 acres have been treated within the Wildland Urban Interface of Markleeville's satellite community, and along Hot Springs Creek. Our fuels treatment efforts along the Hot Springs Road and Shay Creek will greatly complement the Carson Ranger Districts efforts. Our education and outreach efforts will also garner support and understanding for their nearly complete project. We are working collaboratively with the Carson Ranger District to combine our effort and capitalize on our outcomes. Prescribed burns will still be occurring during the timeline of our project.

Project Need

This project is designed to treat dense fuels that have built up within the County's right of way. The U.S. Forest Service (USFS) considers this fuel build up a serious threat and has promoted its "One Less Spark, One Less Fire" campaign for years in Alpine County to bring awareness to this dire issue.

Over the past ten years, a great deal of funding and effort has been invested in natural resource protection of the Upper Carson River Watershed. Organizations such as Alpine Watershed Group, American Rivers and the Carson Water Subconservancy District have spent thousands of hours implementing water quality monitoring and conducting watershed restoration projects. Much of this work has been supported by California's Proposition 84 (Prop 84) funding. These past efforts and the money spent would be jeopardized in the event of a catastrophic fire.

The project's proposed fuel treatment locations are dominated by easily ignitable light fuel (sage, gasses and thickets of young pine). These fuels carry fire extremely well. An ignition could easily be caused by a spark from a loose trailer chain, an overheated vehicle, or a carelessly disposed cigarette. One spark could abolish years of effort in planning and restoration, threaten communities and human lives along with natural resources contained on federal lands.

Goals

The Alpine County Hazardous Fuels Reduction & Healthy Watershed Project will reduce the threat of wild fire on State, BLM and National Forest lands, while also benefiting adjacent lands of the Native American community and private landowners. To ensure long term fuels reduction and community safety, the project will build on existing community outreach and education programs, including the USFS "One Less Spark" campaign.

The project contains three key components and associated goals:

1. The project will treat fuels within the county's right of way. A total of 120.1 acres of the right of way will be treated with a goal of reducing flammable material in these areas by 60-80%. This will reduce the chance of fire being carried from the road into sensitive watershed areas and Alpine communities.

2. The project will involve public outreach, including community meetings and educational forums. Flyers and information materials will be developed and circulated to garner support and a broader understanding of fire management. At least 25% of Alpine County residents will be reached through this outreach effort.

3. School-based educational programs will be developed to promote awareness amongst youth on wildfire prevention and personal responsibility, while educating classrooms on the role of fire in a healthy ecosystem. AWG and partners will have to research and develop new effective programs to meet these objectives.

   AWG and partners will work with kindergarten through 8th grade students at Alpine County's Diamond Valley School. This is the major school within Alpine County, and in the Carson River watershed. Nearly all of our high school student go to school out of state, however we will try to reach local youth groups (little scouts), and provide opportunities to learn about fire ecology and the treat of wildfire.

.

Scope of Work

The project will reduce hazardous fuels on the landscape with the use of mechanized equipment and hand crews.

Techniques will include:

1. Mechanical treatment - Mastication and mowing of brush will occur, creating fuel breaks by reducing cover 60 to 80 percent.

2. Hand thinning - Hand thinning of brush and small conifer trees will occur in areas of high fuel loads, or where equipment isn't effective.

3. Pruning - Tree branches and other ladder fuels within the County right of way will be pruned.

4. Maintenance – Large fuels that can't be masticated will be moved to the county's burn pile. The County's recently purchased Burn Boss, a self-contained incineration unit, may also be used to complete this project.

The breakdown of treatments by project area.

Blue Lakes Road Project Area – total 41.7 acres to be treated

Fuels on Blue Lakes Road primarily consist of sage, shrubs and conifers. Working adjacent to Forest Service parcels and treatments, also around large pines and rocks s is going to require extensive hand crew time. The Hope Valley portion of the fuels treatment is the only area where mowing is an option.

~15% Mowing

~45% Mastication
~40% hand crews.

Diamond Valley Project Area - total 34.9 acres to be treated

Fuels within the Diamond Valley Project Area primarily consist of sage, and grasses. After the site visit by Mark Stanley, we limited the amount of mowing this project will accomplish due to the rapid regeneration of the light fuels. However we've made one exception and that's around the Washoe Tribe's Hung A Lel Ti community. This is a disadvantaged community and protecting this tribal property is a priority for the county and all our partners. Fuels around the community are very flashy and with the expected drought conditions actions to treat these fuels are necessary. Excluding treatments around the Washoe community, other portions of this project area will focus on sage and other woody shrubs.

~35% Mowing
~40% Mastication
~25% hand crews.

Woodfords Project Area - total 27.6 acres to be treated

Fuels within the Woodfords Project Area primarily consist of mature sage, shrubs, juniper and conifers. Working adjacent to Forest Service parcels and treatments is going to require extensive hand crew time.

~5% Mowing
~50% Mastication
~45% hand crews.

Hot Springs Creek Project Area - total 12.4 acres to be treated

Fuels within the Hot Springs Creek Project Area primarily consist of mature pine, with an under story of woody shrubs, sage and young conifers. Working adjacent to Forest Service parcels and treatments is going to require extensive hand crew time.

~0% Mowing
~40% Mastication
~60% hand crews.

In total 32.18 miles of right of way is proposed to be treated. The total acreage of treated areas will be 120.1 acres.

~13% Mowing - Grasses
~39% Mastication – Shrubs, Sage
~48% hand crews – Shrubs, Sage, Pine, Juniper

Alpine County will use standard mechanical treatments implemented by trained and

knowledgeable crews to treat the targeted 120.1 acres. Prescriptions will include removing heavy brush and under story fuels and pruning or removing ladder fuels to create vertical breaks to reduce the potential for fire spread into the canopy.

The County right of way runs parallel to roads of County responsibility. This right of way extends 30' beyond the centerline of the road. Controlling these fuels will keep roadside ignitions from starting fires within the right of way and spreading into high value habitats.

Community Outreach/Education Component

Outreach and Education will be no small task. Years of education decrying the perils of fire, have provided very little on fire's natural role in forest ecology. Often time project involving prescribed burns, fire use or other non- suppression techniques have a hard time garnering support in the community. Fire is a natural part of our watershed, and greatly benefits nutrients cycling and regeneration. AWG and partners will have to research and develop new effective programs to meet these objectives. This type of outreach is very involved and will take staffs time and extensive coordination.

Alpine Watershed Group with the support from other project partners will plan and conduct public outreach and education in both the community and in the school classroom. Outreach activities will help raise the community's awareness of the role of fire, modern fuels practices, prior work funded by Prop 84 work, watershed protection, and opportunities to reduce fuel on local residents' lands.

Town hall meeting will educate our community on the objectives of this project. The meetings will include presentations by experts on land management and fire ecology. The Forest Service will promote their "One Less Spark Champaign" while the Alpine Fire Safe Counsel will provide information on how to reduce fuel on a resident's land.

AWG and partners will develop press releases, flyers and pamphlets to be distributed in neighborhoods and at meetings. These materials are intended to encourage participation in events and to increase public awareness of this project and other fire management activities.

AWG will also conduct school-based educational programs that promote an understanding of fire ecology, restoration and wildfire protection. Youth will learn about how fire works in a natural system and how being fire smart can help protect watersheds. AWG already instruct watershed educational programs in the Diamond Valley School, and will develop natural fire history and protection components to ongoing messaging.

Budget

This application is intended to provide sufficient funding to complete the project. This SNC grant request provides for the hiring of a contractor to complete the fuels treatments with in the County right of way. It also provides for program planning and implementation of the Healthy Watersheds Outreach and Education Program conducted by Alpine Watershed Group. Funding will also provide for grant management and reporting by Alpine Watershed Group.

All additional support for project implementation will be in the form of in-kind support from project partners, and leverage from parallel projects. This support includes the following:

Leveraged Partner Project

- Carson Ranger District: "Manzanita Hazardous Fuels Reduction Project 2014-15" – $150,000
-

In-kind Support

- Hazardous Fuels Reduction Project" 14-15 – $1,000
- Alpine County: project administration and contractor management – $5,000
- Alpine County: biomass collection site implementation – $3,000
- Alpine Watershed Group: educational program supervision – $2,500

Other possible resources that will be pursed include volunteer fire fighter assistance and watershed volunteer involvement.

<u>Compliance</u>

Alpine County has a history of implementing fuel treatment projects along roadways. The county will produce a "Notice of Exemption" Under the California Administrative Code (tit.14, § 15301), such fuels treatment actions are provided an exemption under CEQA that allows the:

> "…operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use."

This includes: "(c) Existing highways and streets, sidewalks, gutters, bicycle and pedestrian trails, and similar facilities". These roadways are county (state) owned and don't fall under NEPA. Alpine County has not had any previous fuel reduction compliance issues under the CEQA exemption.

The County will have the categorical exclusion document developed and filed before the project is implemented.

We will use CDFW data and adjacent USFS surveys to search for rare/sensitive species in the project area and to support the categorical exclusion document.

This project intentionally avoids any impact to wetlands and riparian areas. The County GIS has wetlands delineated. Treatment crews will be directed to use non-mechanized thinning in sensitive areas or exclude treatments completely, to avoid disturbance to riparian bird species, and the vegetative buffers along streams.

According to the Alpine County Community Development Director, "The County has implicit authority to do work within the County right of way. Maintenance of fuels along county roads occurs routinely without special permission of adjacent landowners or agencies."

Restrictions/Agreements

There are no property restrictions or encumbrances that would hinder project completion. All roads within the scope of work are in County jurisdiction. All fuels reduction work will be conducted in the County right of way.

Organizational Capacity

Alpine County will act as the lead agency, managing contracts and supervising treatment crews. The County has successfully completed past fuels reduction projects along County roads and on other County-owned properties. These treatments are standard techniques utilized across the US, and have been proven effective in limiting the spread of fire.

Both Alpine County and Alpine Watershed Group have experience in managing complex projects. Using the combined skills of our partnership and collaborating with experienced land agencies, we have the expertise and capacity to conduct a successful project.

As the educational program coordinator and grant manager for this project, Alpine Watershed Group (AWG) offers strength as a community-based, collaborative organization. AWG has a proven track record for coordinating watershed programs and managing grant funding. AWG has been serving Alpine County in the arena of watershed planning, monitoring and restoration for over ten years. AWG has consistently partnered with Alpine County on numerous projects and activities, and has always received strong support from the County's Board of Supervisors.

Over the years, AWG has developed close partnerships with the Humboldt Toiyabe National Forest, Alpine Fire Safe Council, local fire departments and the Woodfords Washoe Community Council. AWG represents a diverse group of stakeholders with a variety of interests collaborating to preserve and enhance the natural system functions of Alpine County's watersheds for future generations. General members include local landowners, conservationists, recreationists, agency representatives, tribal members, ranchers and local business owners.

Cooperation and Community Support

Fuels reduction projects in rural Alpine County garner broad support throughout the community. In 1987, the Acorn Fire burned 6,500 acres and 26 homes in the community of Woodfords. The 2013 Rim Fire, which occurred just south of Alpine County, destroyed over 200,000 acres. They serve as grim reminders of the devastating effects of wild land fire. The community is definitely aware of the threat that wild fire poses to its cherished landscapes, celebrated streams and communities. There is no known opposition to this project and no likely potential for such, given the overarching community support for fuels reduction.

The Alpine County Hazardous Fuels Reduction & Healthy Watershed Project leverages past SNC-funded watershed programs by tying fuels reduction and fire safety into forest health and watershed condition. Treated lands will directly benefit previous restorations and water quality projects conducted by AWG and other SNC-funded partners, specifically American Rivers. At risk natural resources that will be included in the scope of this project include Hope Valley and Markleeville Creek, the site of current watershed monitoring and restoration planning efforts.

This project builds on past and existing fuels reduction and community education efforts by project partners. Each of the partners involved in this project have been actively working to promote fire safety and healthy watersheds for many years. Alpine Watershed Group will seek input from partner organizations such as the Alpine Fire Safe Council and the Eastern Alpine Fire Department in developing the educational program.

The majority of the acreage to be treated adjoins, or is in close proximity to federal and state lands. By working in parallel with neighboring land agencies, we hope to maximize the effectiveness of past contiguous treatments. This project will also work in conjunction with Alpine County's biomass collection, Burn Boss and disposal site. Residents can take full advantage of this Project by reducing fuel loading on their properties by bringing the material to the biomass collection site.

Long-term Management and Sustainability

Alpine County is primarily responsible for fuels reduction within the County's right of way, and is committed to providing this service in the long-run. The County continues to seek funding to support, and even enhance their fuel treatment capacities.

Presently Alpine County does not have a formal management plan in place for fuels reduction work. Without a formal plan, Alpine County relies on the Toiyabe National Forest Land and Resource Management Plan (1986), as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (2004). This serves as the primary document of record for fuels management in the Upper Carson River Watershed.

Through the statewide Cooperative Fire Management Agreement, the USFS has been given the authority to act on CAL FIRE's behalf as the wildland fire response entity for State Responsibility Area (SRA) lands within Alpine County.

Locally driven, specific terms of this agreement are addressed in an Annual Operating Agreement between the USFS Humboldt-Toiyabe National Forest and the CAL FIRE Amador-El Dorado-Sacramento-Alpine Unit. This agreement includes, but is not limited to, information such as tactical frequencies, wildland fire response notification procedures, apparatus and their staffing levels, facilities, prescribed burning procedures, and inspection and enforcement of PRC 4291.

Alpine County Fuels Reduction Project meets the goals and objectives outlined in the the Sierra Nevada Forest Plan Amendment, Attachment 5 – Management Plan).

Sierra Nevada Forest Plan Amendment, Attachment 5

> *"Fuels treatments in these zones are designed to reduce wildfire spread and intensity. Strategic landscape features, such as* ***roads****, changes in fuels types, and topography may be used in delineating the physical boundary of the threat zone." Page 40 - Record of Decision*
>
> *WUI Threat zones are priority area for fuels treatments.*
>
> - *Fuels treatments in the threat zone provide a buffer between developed areas and wildlands.*
> - *Fuels treatments protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas.*
> - *The highest density and intensity of treatments are located within the WUI Page 46 - Record of Decision*

This project will help move the county's right of way towards the desired conditions described within the plan.

The U.S. Forest Service is the primary land holder within Alpine County and has long partnered with the County in the implementation of fuels treatment projects. Presently the Forest Service is conducting fuels treatments projects around Woodfords and Hot Springs Creek. These sites don't include the County's right of way. The implementation of the Alpine County Fuels Reduction Project will greatly increase the effectiveness of these ongoing Forest Service projects.

Monitoring

Retreatment may be necessary in three to five years and will include repeated mowing, mastication, and hand thinning.

Photo Monitoring will be used to assess the regrowth of vegetation. 5 monitoring point will be taken within each project area (a total of 20 points), focusing on different elevations, aspect and vegetation types. This will give a better picture of the overall regeneration of the project areas.

Ideally fuels will be broken up with only 25-30% cover. Photo monitoring will determine if regrowth exceeds trigger point developed by the County and USFS. Presently the County is looking to expand its fuel treatment capacity by purchasing a mower and masticator, and eventually do this type of work internally. Partners will help the county seek funding for this equipment in order to be ready for future fuels treatments.

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Proposal for the Alpine County Hazardous Fuels Reduction & Healthy Watershed Project

Applicant: Alpine County / Alpine Watershed Group

SECTION ONE **DIRECT COSTS**	**Year One**	**Total**
Fuels Reduction Contractor	$130,000.00	$130,000.00
Community Outreach & School Education Program administration	$15,000.00	$15,000.00
Agency/Partner Cordinator and Monitoring Development	$4,800.00	$4,800.00
		$0.00
		$0.00
DIRECT COSTS SUBTOTAL:	$149,800.00	$149,800.00

SECTION TWO **INDIRECT COSTS**	**Year One**	**Total**
Project materials, supplies, printing	$1,000.00	$1,000.00
		$0.00
INDIRECT COSTS SUBTOTAL:	$1,000.00	$1,000.00
PROJECT TOTAL:	$150,800.00	$150,800.00

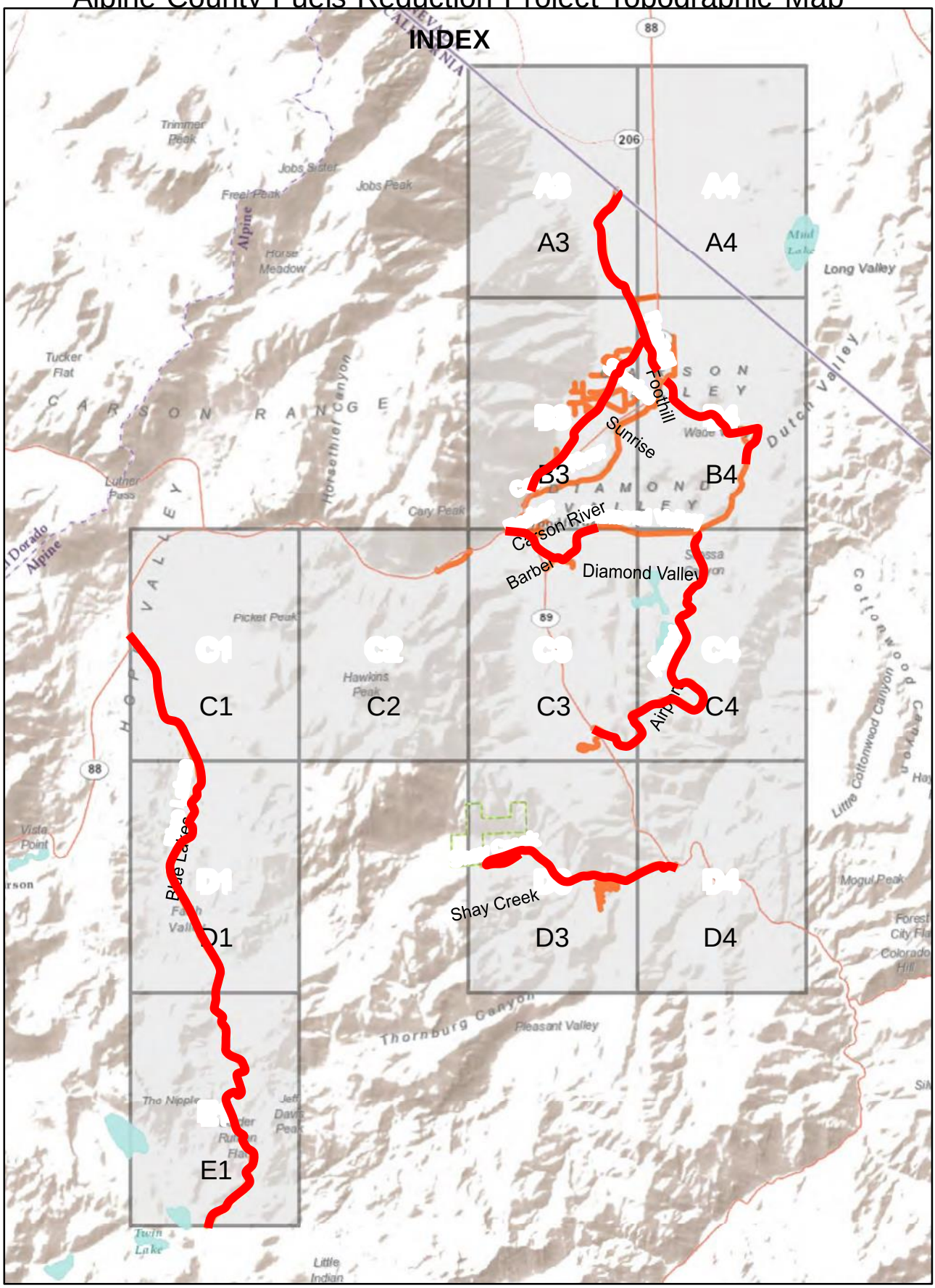
SECTION THREE **Administrative Costs (Costs may n*ot to exceed 15% of total Project Cost*) :**		**Total**
Grant management and reporting (10%)	$14,900.00	$14,900.00
Operations and overhead (travel, insurance, utilities, rent, comunications etc)	$5,000.00	$5,000.00
		$0.00
		$0.00
		$0.00
ADMINISTRATIVE TOTAL:	$19,900.00	$19,900.00
SNC TOTAL GRANT REQUEST:	$170,700.00	$170,700.00

SECTION FOUR **OTHER PROJECT CONTRIBUTIONS**	**Year One**	**Total**
Great Basin Air Pollution Control District - purchase of Burn Boss	$50,000.00	$50,000.00
Alpine County - project administration and contractor management	$5,000.00	$5,000.00
Alpine County - Biomass Collection Site implementation	$3,000.00	$3,000.00
Alpine Watershed Group - educational program supervision	$2,500.00	$2,500.00
		$0.00
		$0.00
Total Other Contributions:	$60,500.00	$60,500.00

NOTE: The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.

* Operating Costs should be allocated to the pecentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

Alpine County Fuels Reduction Project Topographic Map



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

N
W E
S

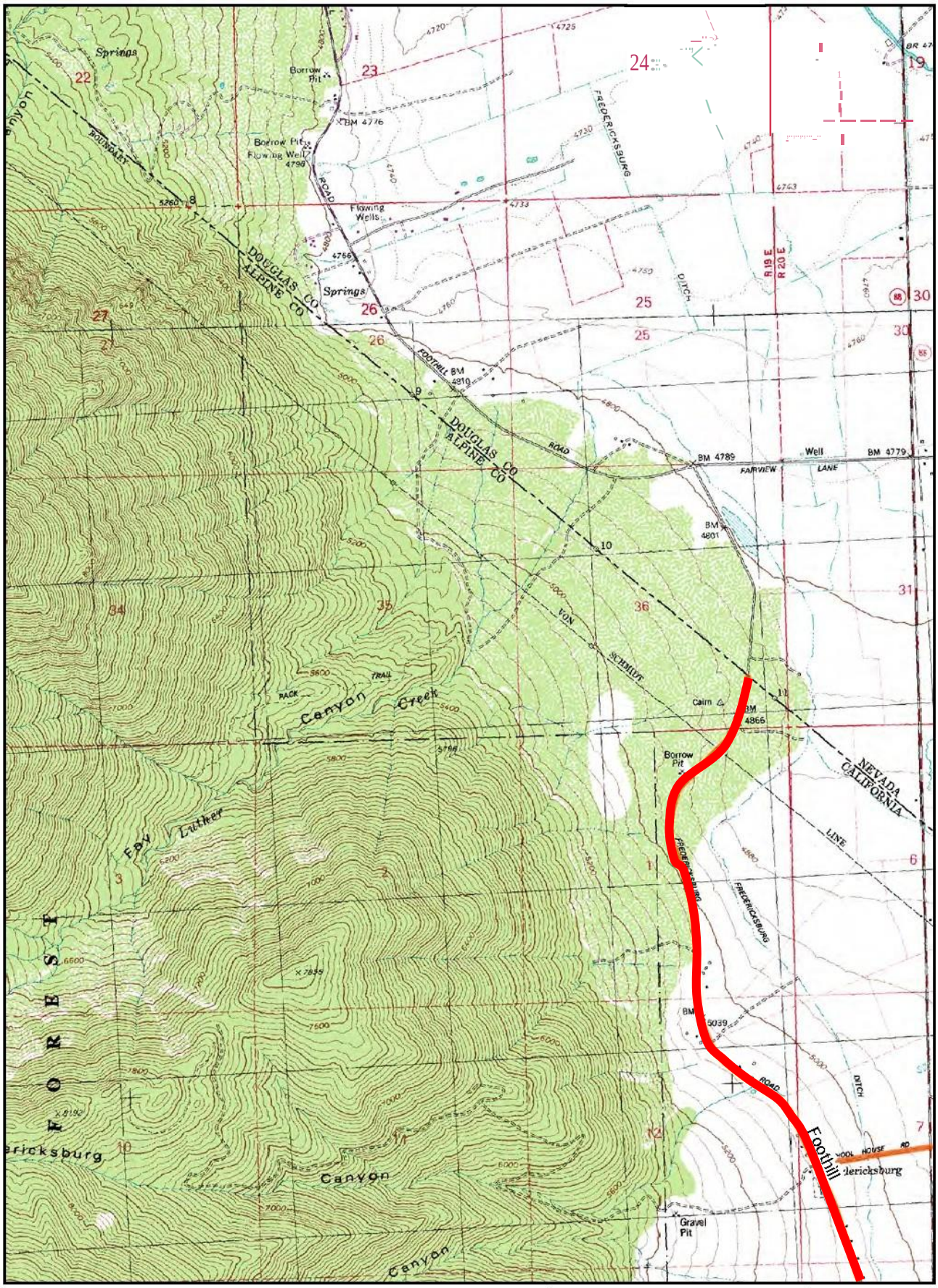
0 1.25 2.5 5 Miles

Reviewed Area

Proposed Project Areas

Alpine County Fuels Reduction Project Topographic Map

PAGE:A3



N W E

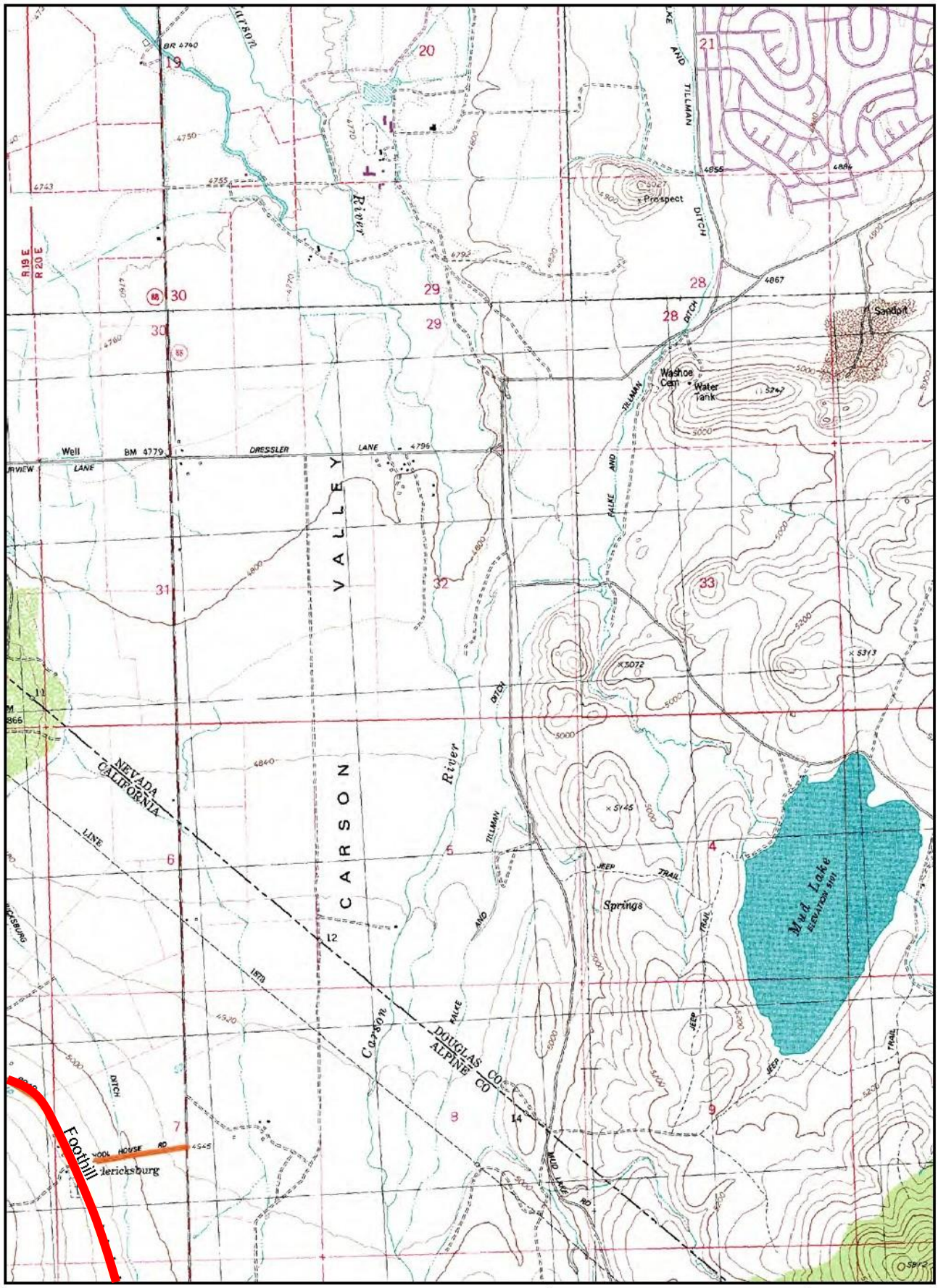
0 0.27 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:A4



N
W E

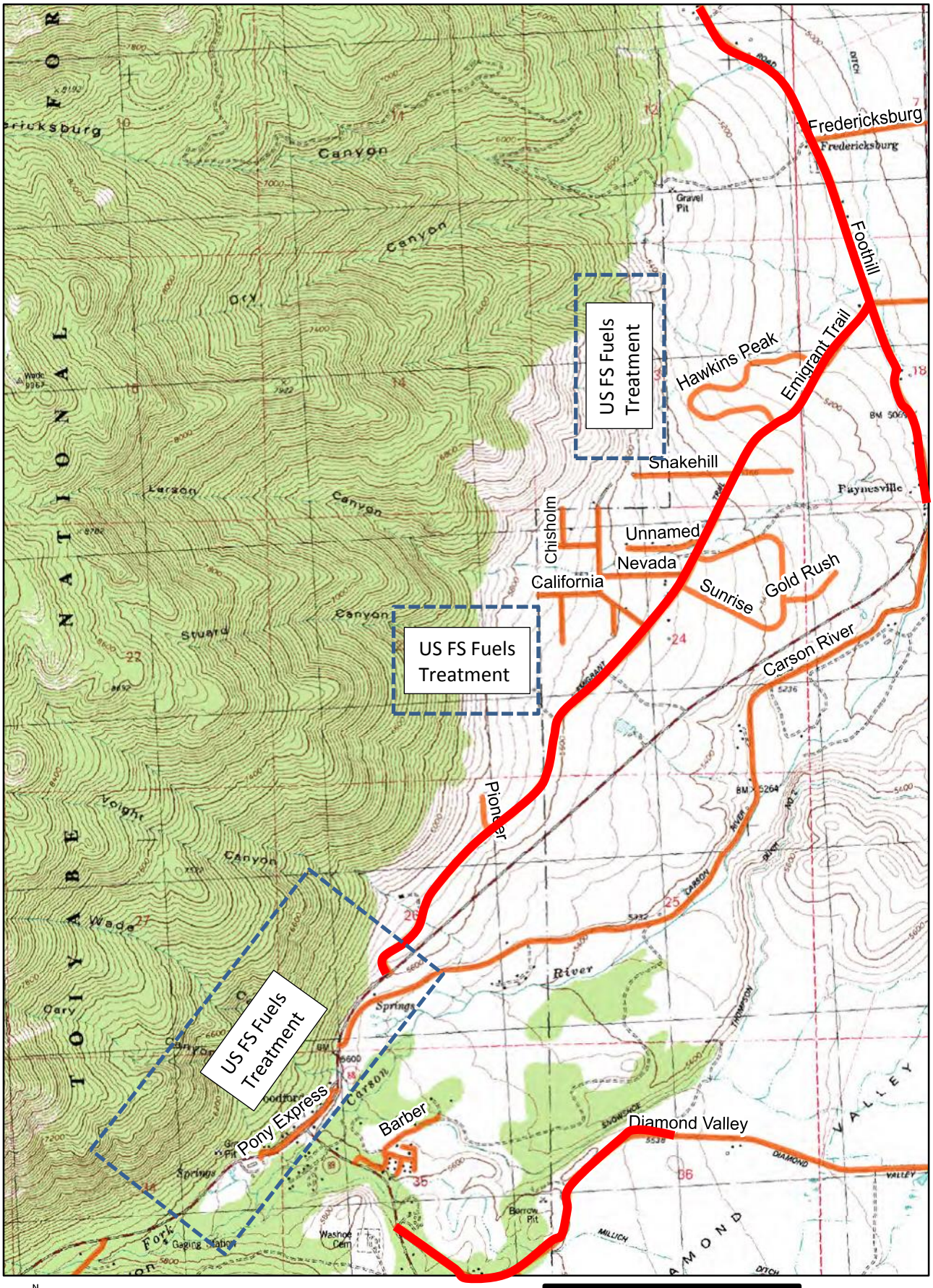
0 0.275 0.55 1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:B3



N
W E
S

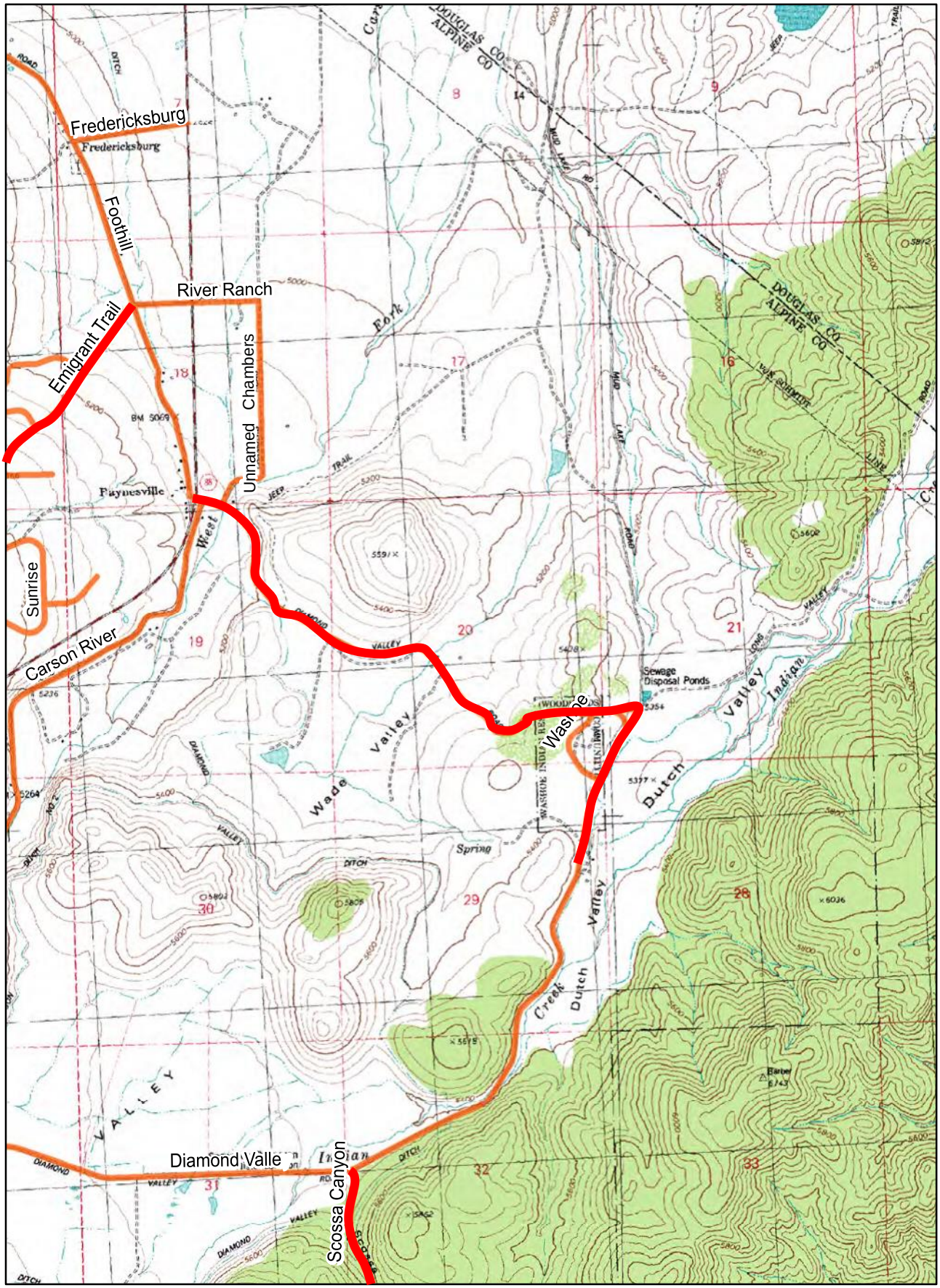
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:B4



N
W E
S

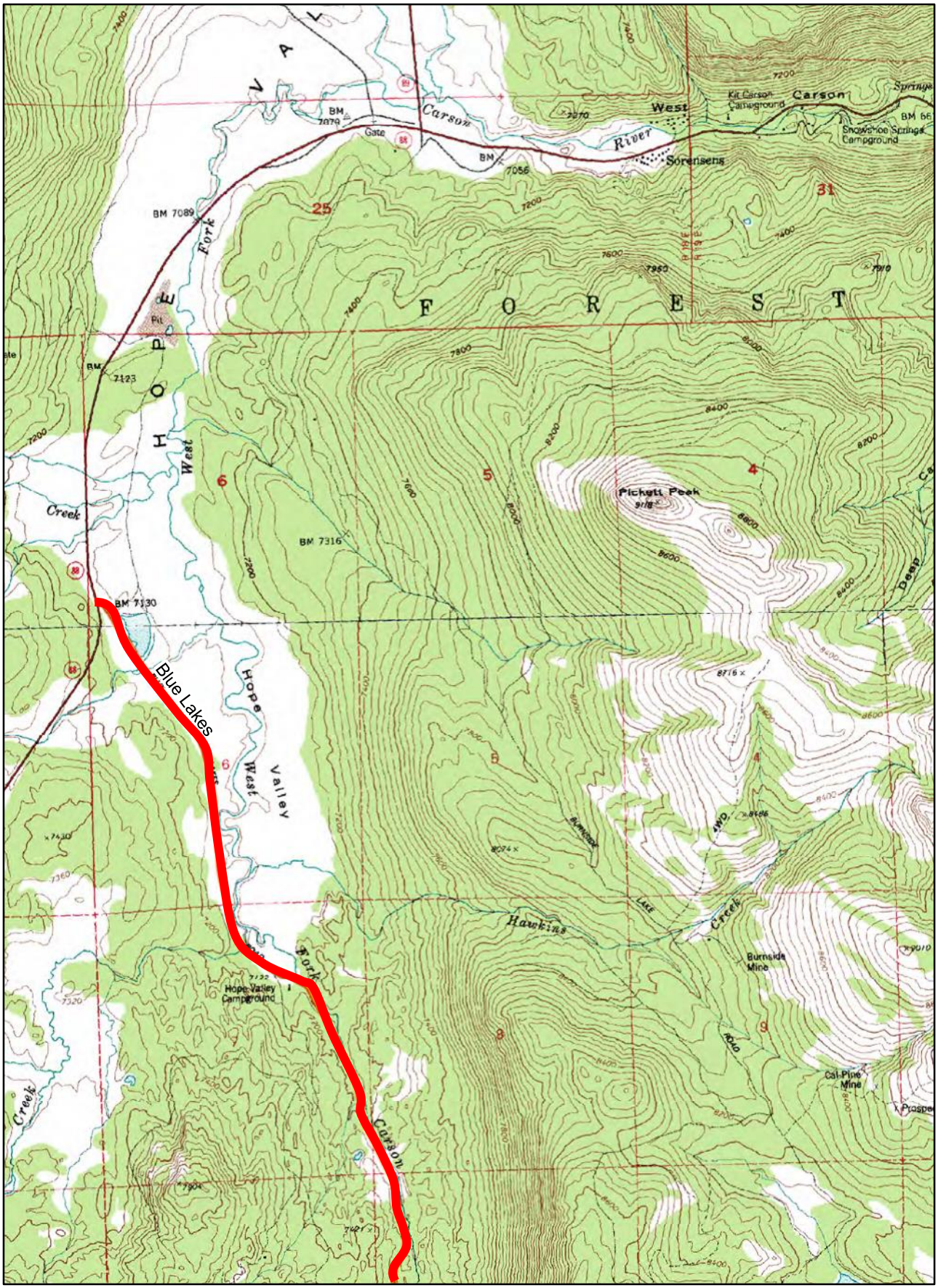
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:C1



N
W E
S

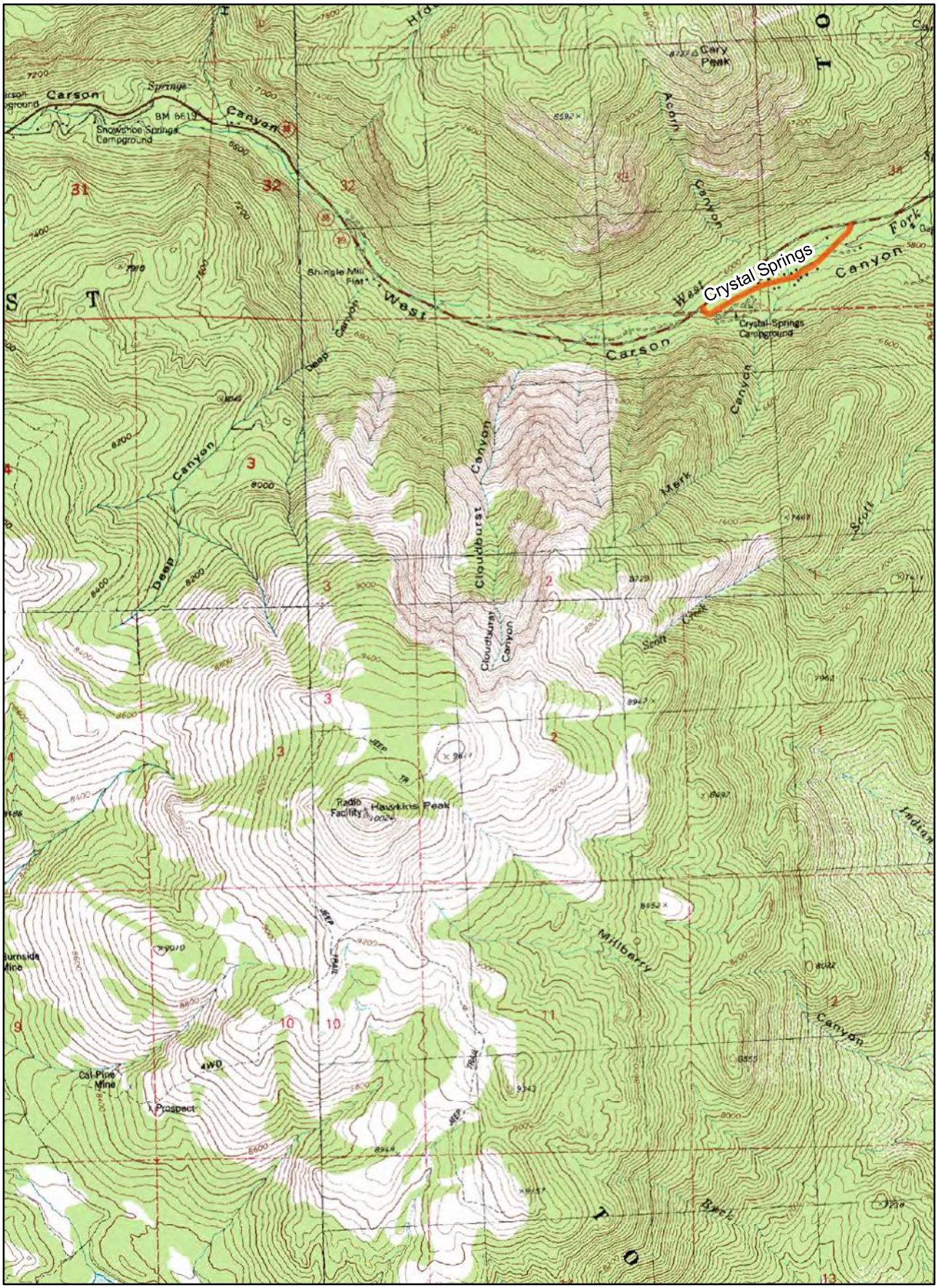
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:C2



N
W E
S

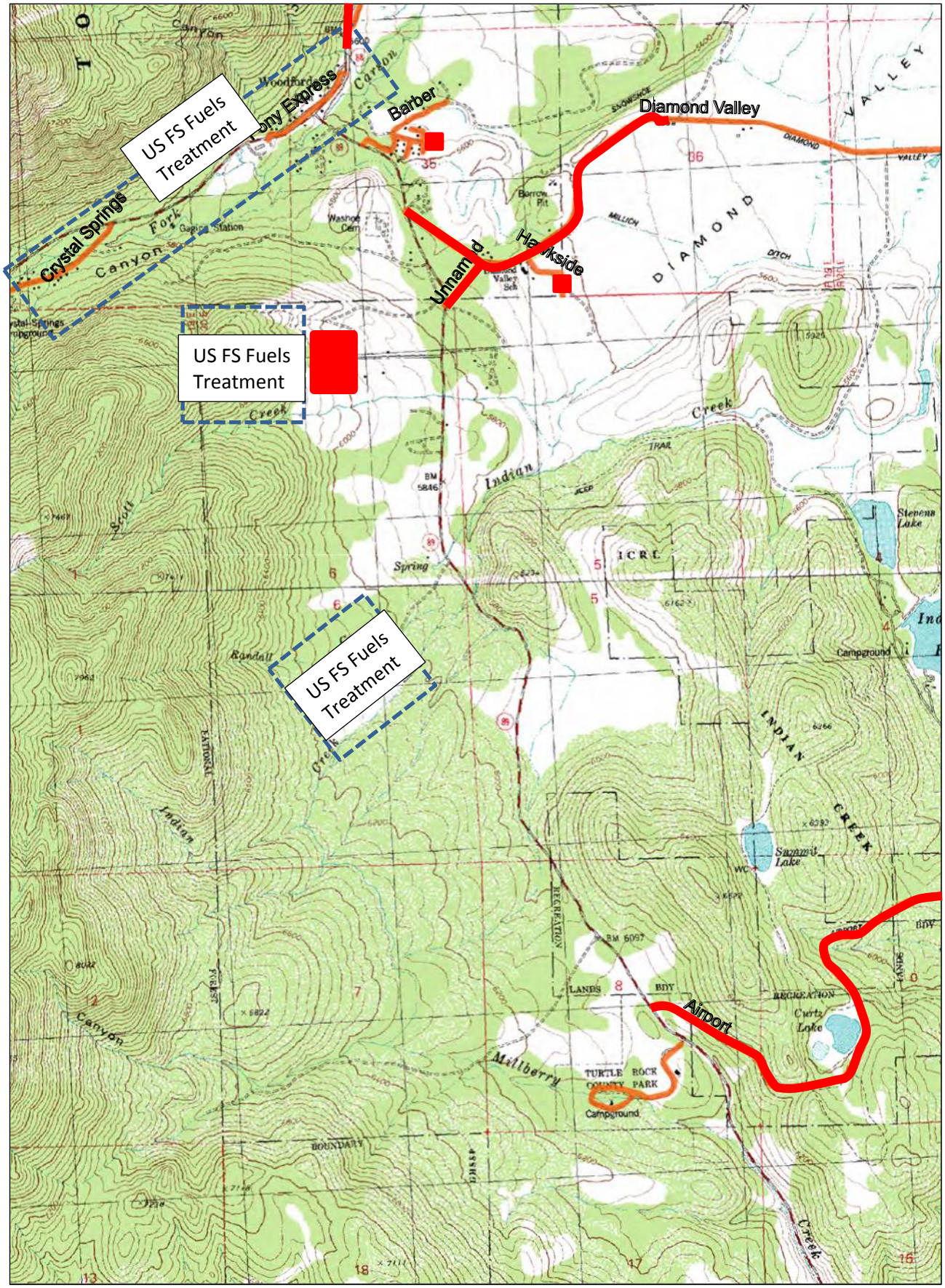
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:C3



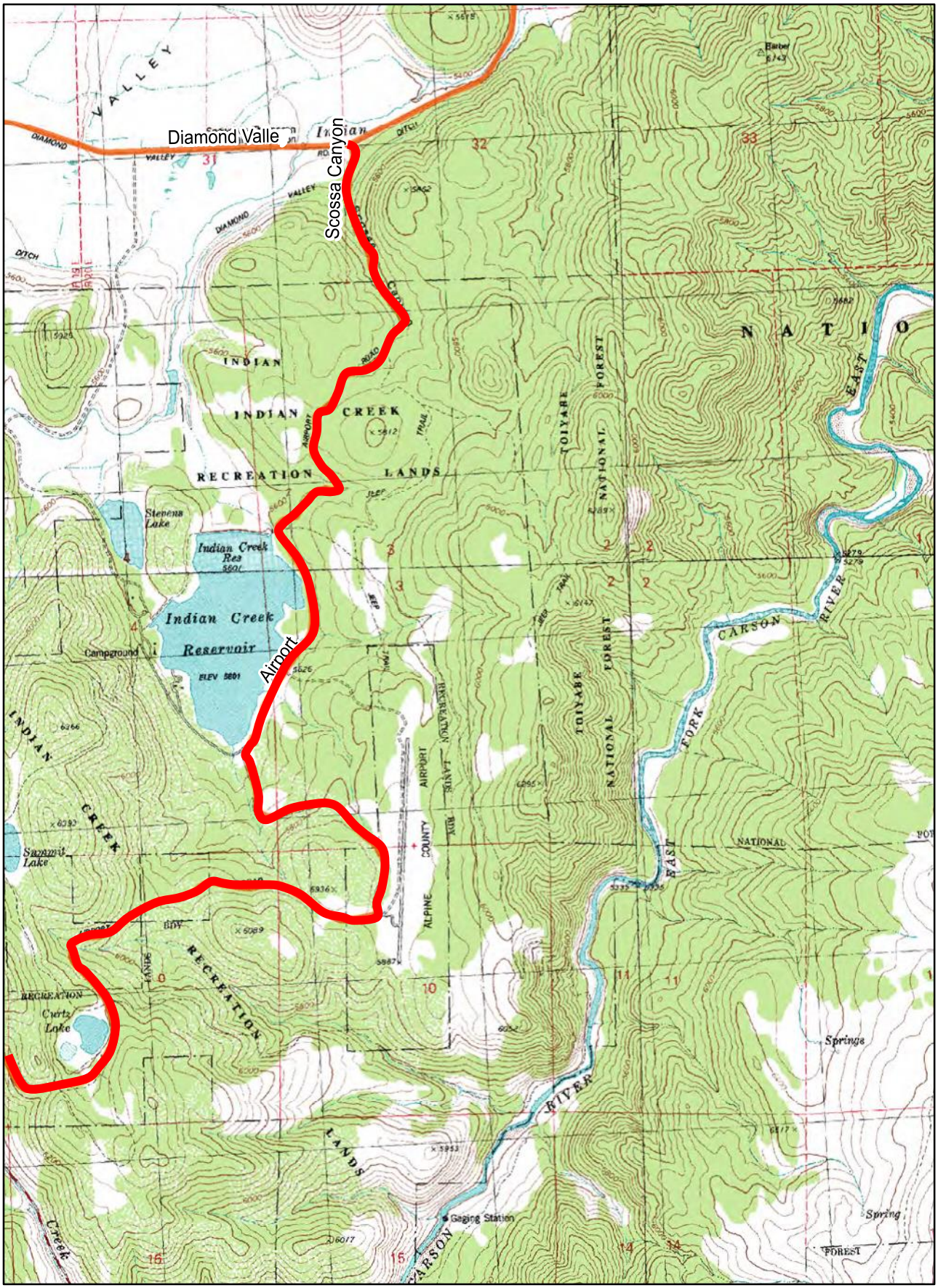
12/12/2013

N
W E
S

0 0.275 0.55 1.1 Miles

Alpine County Fuels Reduction Project Topographic Map

PAGE:C4



N
W E
S

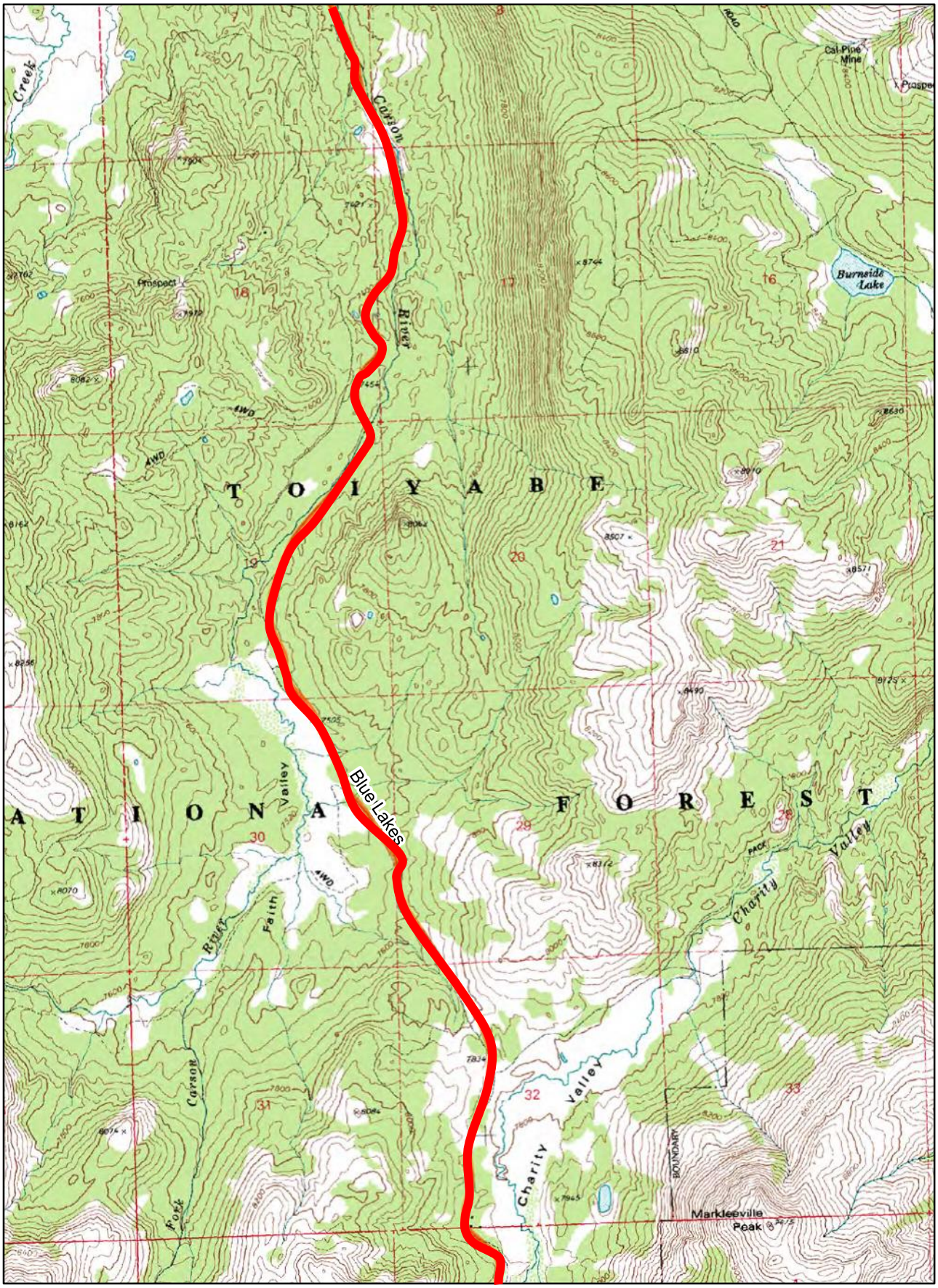
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:D1



N
W E
S

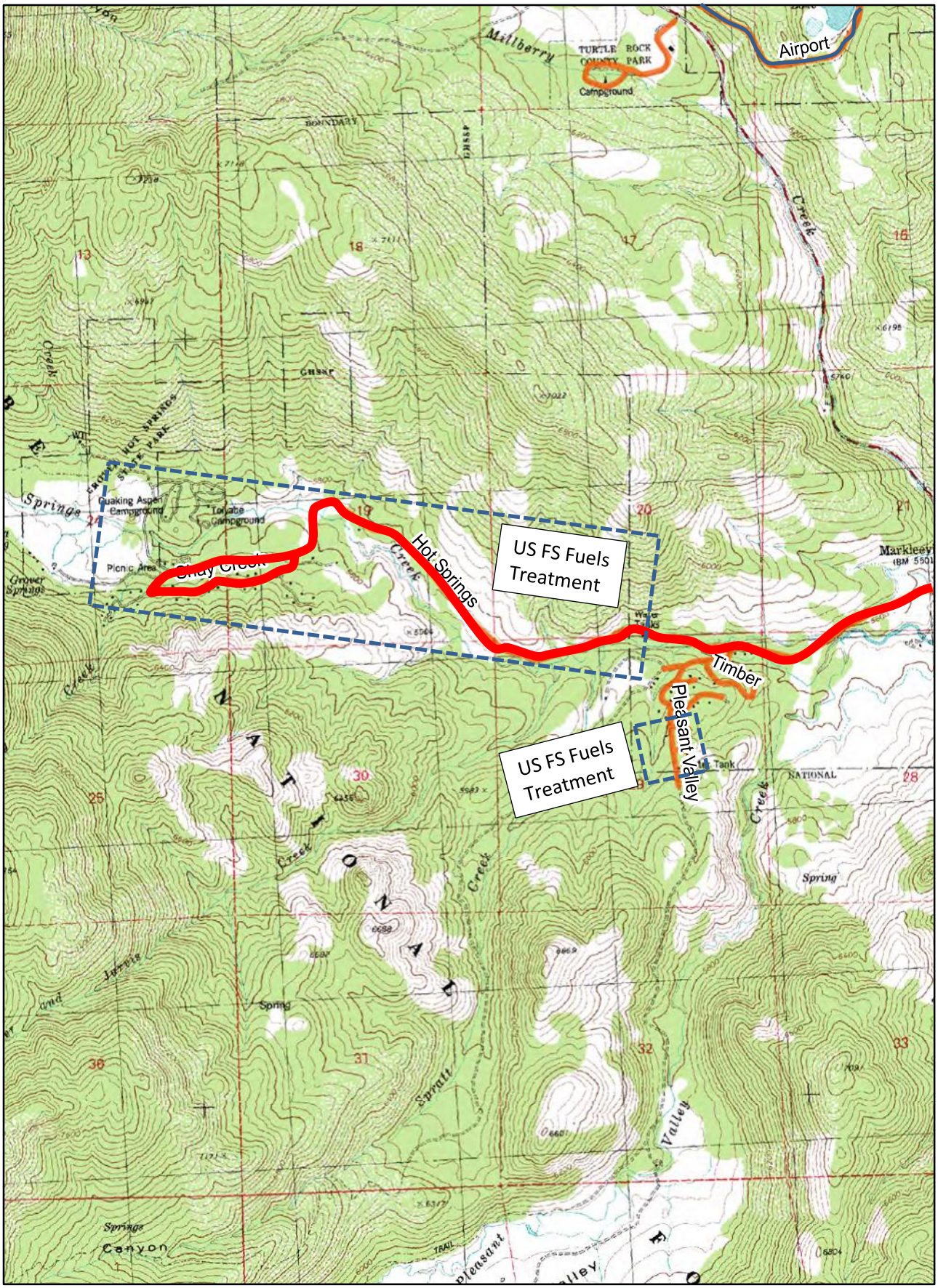
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:D3



N
W E
S

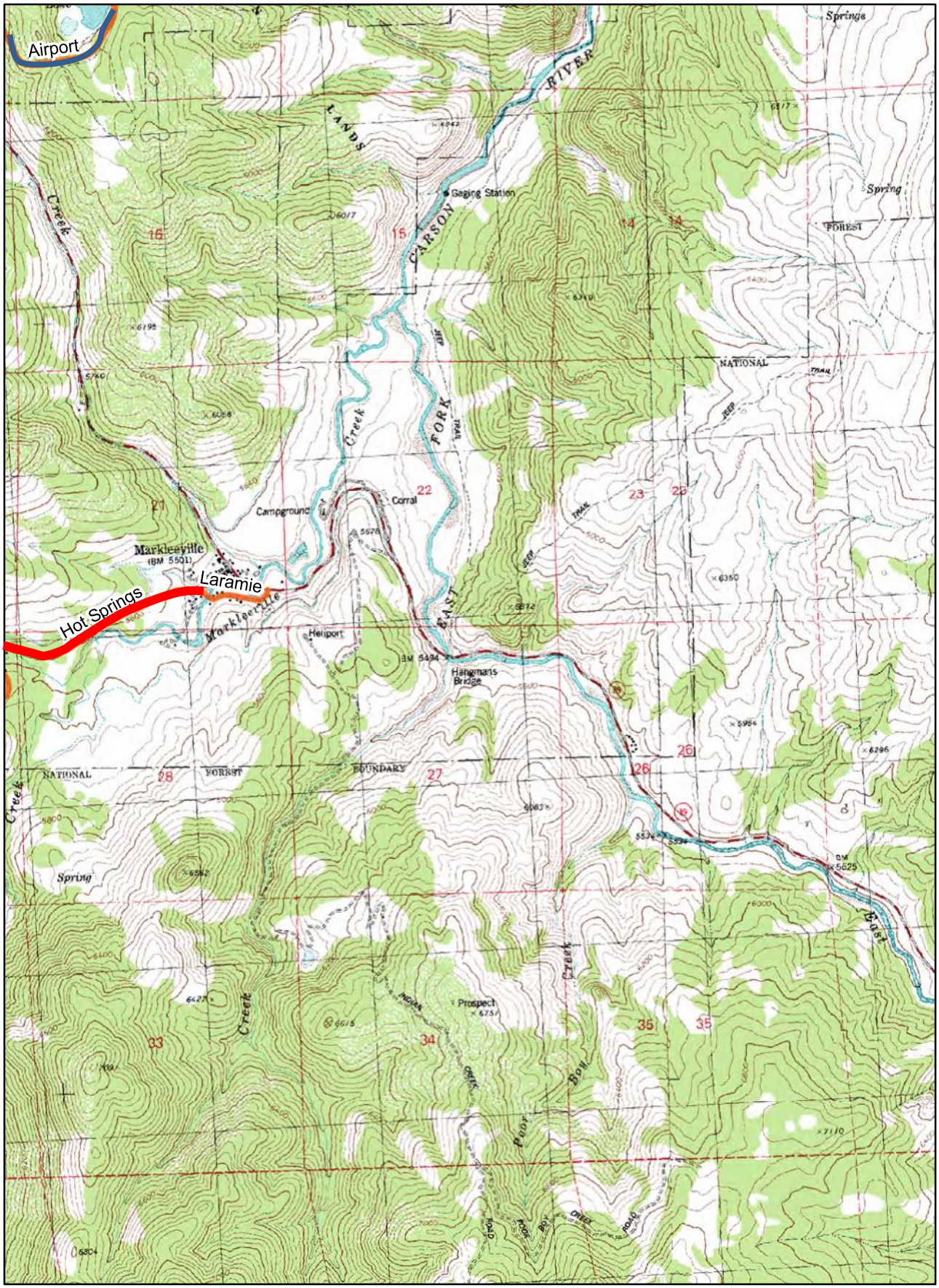
0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:D4



N
W E
S

0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Alpine County Fuels Reduction Project Topographic Map

PAGE:E1

W-</-E ---==:::::::::J

0 0.275 0.55 1.1 Miles

Treatment Area

12/12/2013

Background

Over the past few years, the Sierra Nevada Conservancy (SNC) has been actively involved in issues relating to forest and community health. The Sierra Nevada Forest and Community Initiative (SNFCI) was adopted by the SNC Board in 2011 and was endorsed by all 22 Sierra counties, as well as numerous other groups and organizations. The Initiative called for parties to work together in a collaborative manner with the objectives of restoring forests to ecological health and improving local communities' social and economic well-being.

As a part of SNFCI, the SNFCI Regional Coordinating Council was formed under SNC's leadership. Representatives on the Coordinating Council includes a wide range of diverse perspectives including local government, environmental and conservation organizations, the wood products industry, fire safe councils, community organizations and public land management agencies. Boardmember Kirkwood serves as the Board Liaison to the Coordinating Council.

At the same time, a number of local collaborative efforts with objectives consistent with the Initiative have begun in the Region. SNC staff have been actively involved with many of these collaboratives and the SNC has provide financial support to a number of them.

Shortly after this initiative began, the U.S. Forest Service Region 5 released its "Leadership Intent for Ecological Restoration" which articulated the need to increase the pace and scale of forest restoration. This document is consistent with the Initiative and has helped to further bring parties together on the many challenges that we face in achieving our objectives.

Current Status

At the June Board meeting, the Board directed SNC staff to develop a plan that ensures that the issues being addressed under the SNFC Initiative were the organization's top priority. In response to this direction, staff has prepared:

1) The "State of Sierra Forests" report (Attachment A). The "State of Sierra Forests" report represents our best understanding of current conditions at this time. It may be updated from time to time as new information becomes available or circumstances change;
2) The SNFCI Action Plan (Attachment B). The Action Plan addresses issues at the Regional level as well as developing a plan at the watershed/county/National Forest level. SNC efforts will be closely coordinated with partners at the Regional and local levels.

The Board also directed staff to consider whether some activities identified in the 2014-15 Action Plan should be removed so that additional resources could be directed into the SNFCI efforts. At this time, staff is not proposing changes to the Action Plan, but may do so at the December meeting. Any adjustments in resource allocations needed to enhance our efforts on the SNFCI Action Plan during the interim will be made.

This additional emphasis on these issues occurs recognizing that the conditions faced in the Region are critical and require a response with a high degree of urgency. While the primary focus of our efforts will continue to be federally managed forests, we will approach efforts with an "all lands" perspective as appropriate. Large fires such as the Rim Fire not only pose threats to communities and resources, the expense of fire suppression often results in reducing funds available for restoration efforts. In addition, the flow of salvaged logs from these fires can easily meet or exceed mill capacity in the Region, once again resulting in restoration projects with a log component becoming infeasible. We find ourselves in a cycle that causes us to fall further behind in needed restoration work. All indications suggest that the changing climate (and the current drought) will result in a longer fire season, with more large intense fires.

While the pace and scale of work continues to lag well behind what is needed, it is important to acknowledge that there a number of positive developments in the efforts to restore our forests to ecological health. In carrying out the Board's direction, the SNC will enhance and build upon these efforts, as well as identifying more ways for the organization to increase pace and scale. An example of the activities occurring, include the following:

The Sierra Nevada Forest and Community Regional Coordinating Council

The SNCFI Regional Coordinating Council continues to work to support efforts to increase the pace and scale of ecological restoration. Generally speaking, the Coordinating Council focuses on policy, investment, and science and research issues that affect the success of the SNFCI. Among other activities, the Coordinating Council has been actively working with Region 5 U.S. Forest Service (USFS) leadership to help them turn the vision of the Leadership Intent into real implementation measures. Currently the Coordinating Council's efforts focus on five key issues that affect pace and scale:

- Addressing Restoration at a Larger Landscape Level
- Increased Use of Prescribed and Managed Fire
- Protecting and Increasing Wood/Biomass Processing Infrastructure
- Ensuring Local Socio-Economic Benefits from Restoration Efforts
- Potential for Restoration Treatment on Steep Slopes

Workgroups comprised of Council members and USFS staff, with coordination from the SNC, are developing approaches and actions to address these issues in a manner consistent with the SNFC Initiative and the Leadership Intent.

Local Collaborative Efforts

As noted above, forest-community collaboratives are active throughout much of the Region. There have been a number of positive outcomes from these efforts that can form a foundation for a more significant increase in the pace and scale of restoration. Examples of successes to date include the following:

- Three Collaborative Forest Landscape Restoration Program (CFLRP) Funding Awards (a new federal program designed to support highly collaboratives forest restoration efforts) went to projects in the Sierra

Nevada: the Dinkey Creek Collaborative in 2010 ($829,000); and the Amador-Calaveras Collaborative Cornerstone Project ($730,000) and the Burney Hat Creek Basins Project ($605,000) in 2012;

- The Cabin Creek biomass facility in eastern Placer County is nearing commencement of construction activities.
- The North Fork Biomass Project in eastern Madera County cleared their last planning hurdles in April 2014 with the approval of a Conditional Use Permit (CUP) that supports the construction of a state-of-the-art bioenergy facility.
- Significant funding was secured in the Sierra Nevada for Biomass Utilization Projects in June, 2013 from the USDA Forest Service's Woody Biomass Utilization Grant Program including the Sierra Institute for Community and Environment, in Plumas County ($250,000), and Calaveras Healthy Impact Products Solution, in Wilseyville ($184,405).
- SNC assisted in the development of a highly collaborative expedited National Environmental Policy Act (NEPA) process for Rim Fire Restoration Salvage Environmental Impact Statement (EIS) in the spring of 2014

Biomass Utilization

The SNC continues to be involved on a number of fronts in an effort to increase the utilization of biomass removed as part of forest restoration. Increasing the amount of wood/biomass processing infrastructure is an essential component in increasing pace and scale of restoration. By creating additional opportunities for utilizing biomass, value is created for the material, making more projects economically feasible.

While recent State planning efforts and policies are increasing support for the use of biomass to create renewable energy and reducing the risk of damaging wildfire, little progress has been made to date in terms of facilitating being constructed and operated. Unfortunately, at the same time, a number of larger biomass energy plants have been taken "off line," only adding to problem.

The proposed SNFCI Action Plan will build on the ongoing work in the Region. The SNC will continue to operate in a collaborative manner, interacting with the wide range of stakeholders involved with these issues. We will also continue to focus on areas where there is broad agreement, recognizing that there is a substantial amount of work that can be done where there is not conflict and/or controversy.

Next Steps

Upon approval by the Governing Board, SNC staff will finalize the "State of Sierra Forests" report and release it to the public. As noted above, the SNC may update this report from time to time to add new information or address emerging issues.

Upon approval by the Governing Board, SNC staff will continue working on the SNFCI Action Plan, engaging stakeholders and soliciting public comment. It is anticipated that

the Action Plan will be brought back to the Governing Board at the December 2014 meeting.

Recommendation

Staff recommends that the Board approve the "State of Sierra Forests" report and authorize staff to release the report upon finalization. Staff further recommends that the Board approve the draft SNFCI Action Plan and direct staff to work with interested parties in preparing a final draft for Board review and possible approval at the December 2014 meeting.

August 20, 2014 Draft

To be reviewed by the Governing Board of the Sierra Nevada Conservancy on September 4, 2014 and released, with modifications as necessary, subsequent to that meeting.

THE STATE OF THE SIERRA NEVADA'S FORESTS

SIERRA FORESTS AND WATERSHEDS IN PERIL

This report is intended to inform policy makers, interested parties and the public on the dire current state of many of the forests of the Sierra Nevada, and identify the benefits at risk and key policy and investment issues that must be urgently addressed if these forests are to be returned to a healthy, resilient state. It may be updated from time to time based on new information or changed conditions. It is accompanied by a draft Sierra Nevada Forest and Community Action Plan, which the Sierra Nevada Conservancy will develop in coordination with a wide array of interested parties.

OVERVIEW

In recent years, we have seen a steady increase in the amount of forests lost to large damaging fires, such as the 2013 Rim Fire. The potential for even more of these ”megafires” is increasing in the Sierra Nevada Region. The failure to adequately address this situation threatens many of the benefits that result from healthy forests. Benefits, such as a reliable supply of clean water, clean air, stored carbon, wildlife habitat and recreational opportunities are all at risk. Quite simply, the solution is to dramatically increase the pace and scale of forest restoration efforts aimed at improving forest resiliency.

Forest restoration work removes excess brush and trees, returning the forests to a more *healthy* and *resilient* state

Aggressive fire suppression and conflict over forest management over the past decades have led to a dangerous situation in many parts of the Sierra – with significant areas of overgrown, diseased, dry and threatened forests. While fire is a natural part of the Sierra ecosystem, the

unnatural conditions that currently exist mean that many fires will provide less of the ecological benefits, and more ecological damage than historic fires. Further, the high cost of fire suppression has often resulted in reducing funds available for critically needed restoration efforts (at least on federal lands). Key actions related to funding, policy and process are needed NOW to begin to turn the tide in the Sierra. Failing to understand the urgency of the situation will have devastating consequences to California's environment and economy. Some of the key actions include the following:

Increasing funds available for forest restoration work is essential if critical benefits are to be protected and enhanced. Some example of opportunities include:

- Federal Funding

  Fund suppression costs differently
  Provide adequate funding for projects that don't "pay for themselves"

- State Funding

  Cap and Trade Auction Revenue
  Bond Funding
  Other sources

- Beneficiary Funding

  Water Providers/Users
  Dam Operators/Hydro Electric Producers
  Activities Resulting in Green House Gas (GHG) Emissions

Addressing the policy and process issues discussed in more detail later in this report will also be necessary to increase pace and scale. In summary these include:

- ✓ Restoring larger landscapes more efficiently
- ✓ Using fire to increase restoration (prescribed and managed fire)
- ✓ Use new tools to extend mechanized thinning to steeper slopes when environmentally sound
- ✓ Protect and increase wood and biomass processing facilities to create energy and wood products
- ✓ Fully use contracting tools to assure local communities share in the economic benefits from ongoing restoration in their area

BACKGROUND

The Sierra Nevada Region is an area of great significance to the State of California. Comprising about 25% of California's total land area, the Region is California's principal watershed and provides:

- More than 60% of the State's developed water supply – drinking water for 23 million people and water for millions of acres of agricultural lands
- Up to 50% of the freshwater that flows into the Sacramento – San Joaquin Delta[1]
- 15 million acre feet of natural water storage in the form of snowpack – roughly equal to the storage capacity of the five largest man-made reservoirs in the state combined. This water is slowly released over spring and summer when it is needed the most by urban and agricultural users
- More than 50% of the hydropower generated in California[2]

Giant Sequoias are native to the Sierra Nevada

The Region also provides a number of other benefits to all Californians, including enough annual carbon storage to offset the annual carbon dioxide emissions of almost 2.7 million passenger cars (or 10% of all registered automobiles in CA in 2013). The Region is known for world-class recreation, iconic landscapes and visitor experiences that draw millions of visitors annually from throughout California, and the US. It is home to almost half of California's plant species and 60% of California's animals species – nearly 350 of the plant species are native only to the Sierra Nevada Region, including the world's largest living thing: the Giant Sequoia.

As California grapples with issues such as meeting the State's water supply needs, climate change, mandates for decreasing greenhouse gas emissions, and meeting ecosystem restoration and water reliability goals in the Delta, ensuring the Sierra is able to continue to provide these benefits becomes even more critically important.

Unfortunately, the declining health of many of the Sierra's forests and watersheds is putting these benefits at great risk, because it has created a landscape that is highly susceptible to uncharacteristically large and damaging wildfires. Not only do these events affect everyone in California who relies on the water and other services the Region provides, they are also felt in our pocketbooks as we must often spend large sums to deal with them when they could have been prevented at a lower cost.

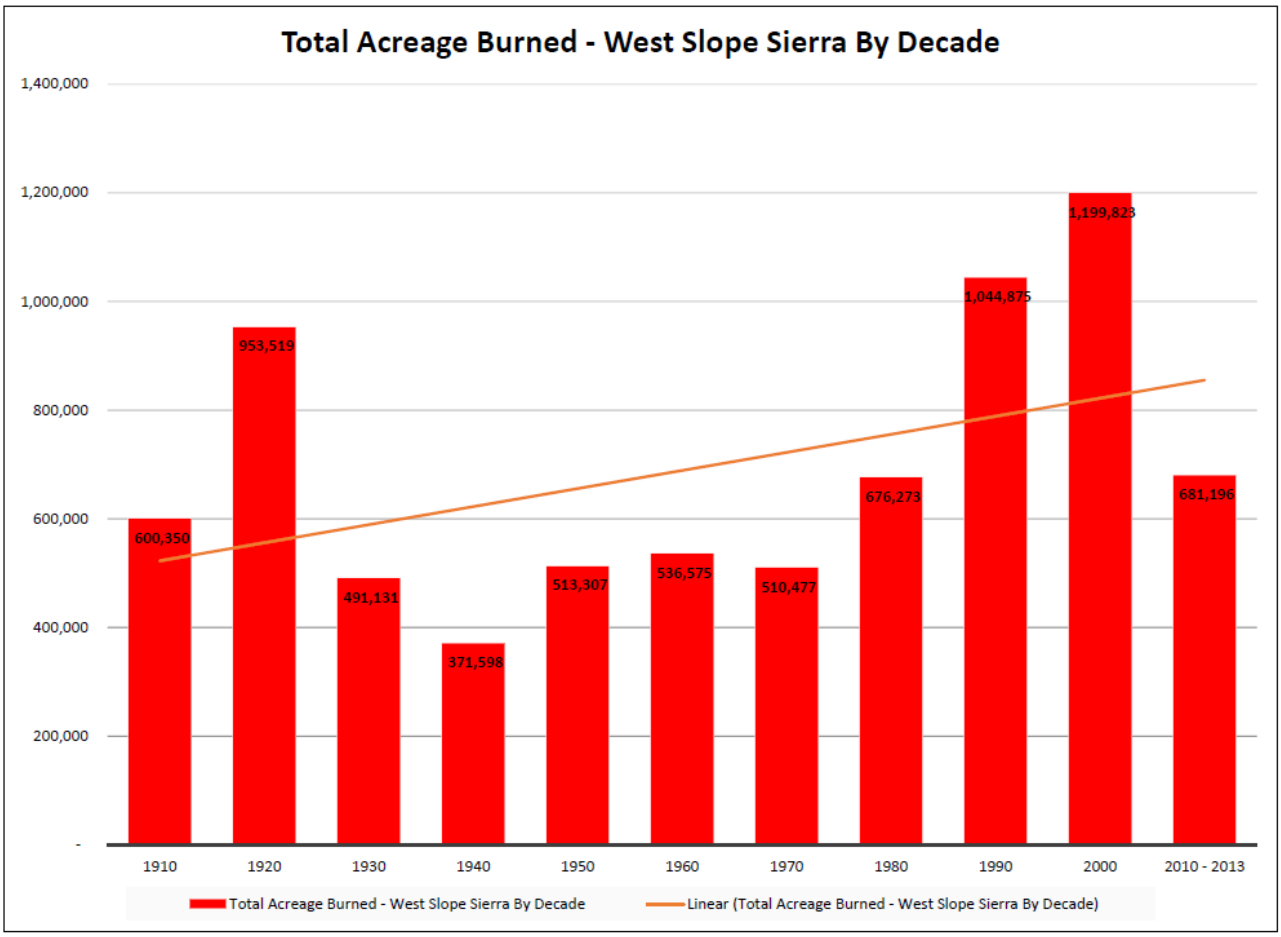
About 60% of the Sierra Nevada's forested lands – 6.3 million acres – are managed by the U.S. Forest Service (USFS). To address the unhealthy state of many of the forests under their management, in March 2011, USFS Region 5 rolled out its *Leadership Intent for Ecological*

Restoration [3], which is a call to action to increase the pace and scale of forest restoration in this region. The Regional Forester estimates the need to be at least two (2) to three (3) times greater than current efforts. Unfortunately, despite the best of intentions, very little progress has been made towards achieving this goal.

Wildfire Threat is Increasing

Fire has historically been a natural and critical component of Sierra landscapes. Prior to 1900, wildfires in the Sierra were predominately low-intensity and removed excess fuel, thinned vegetation, and reduced competition for nutrients and water, resulting in healthy forests resilient against insects and diseases. Unfortunately, a century of fire suppression and conflict over forest management has altered the landscape. As a result, wildfires in California have become larger and more extreme over the last two decades and many predict that this trend will continue to increase unless in the pace and scale of forest restoration dramatically increases. Simply put, there is too much fuel in many of today's forests for them to burn in a safe and ecologically beneficial manner:

- As shown in the chart below, the total acreage burned on the west slope of the Sierra has trended upward over the last century.
- The average size of a wildfire today is nearly five (5) times the average in the 1970s. In 2013, the Sierra Nevada experienced its largest fire in recorded history – the Rim Fire.
- Between 1984 and 2004, there was a significant increase in the number of acres within a forest fire burning at high-intensity; from 14% in 1984 to 23% in the early 2000s, [4] and the trend is continuing upward (the Rim Fire burned at nearly 40% at high intensity).
- The regeneration that occurs after a high-intensity fire leads to forest conditions which are likely to burn again at high-intensity.[5]
- The increase in size and severity of fires in the Sierra has added a new word to our lexicon: Megafire. Megafires, like the Rim Fire, are expensive both economically as well as ecologically. Some of the direct impacts of the Rim Fire included:
    - $127 million for fire suppression
    - Greenhouse gas emissions equal to 2.3 million vehicles for one year
    - $8.5 million for emergency road, trail, and watershed stabilization efforts
    - $35 million for the San Francisco Public Utility Commission to buy alternative energy due to damage to hydroelectric powerhouses and for repairs to its grid
    - Millions in losses to the ranching community as a result of destruction of grazing lands, killed livestock, and damaged infrastructure
    - An estimated $2.75 million loss in revenue from visitor lodging in Tuolumne County
    - Destruction of ¾ of the area's known great gray owl nests sites and 26,000 acres of suitable habitat for Pacific fisher, species that are listed or proposed for listing as endangered species.



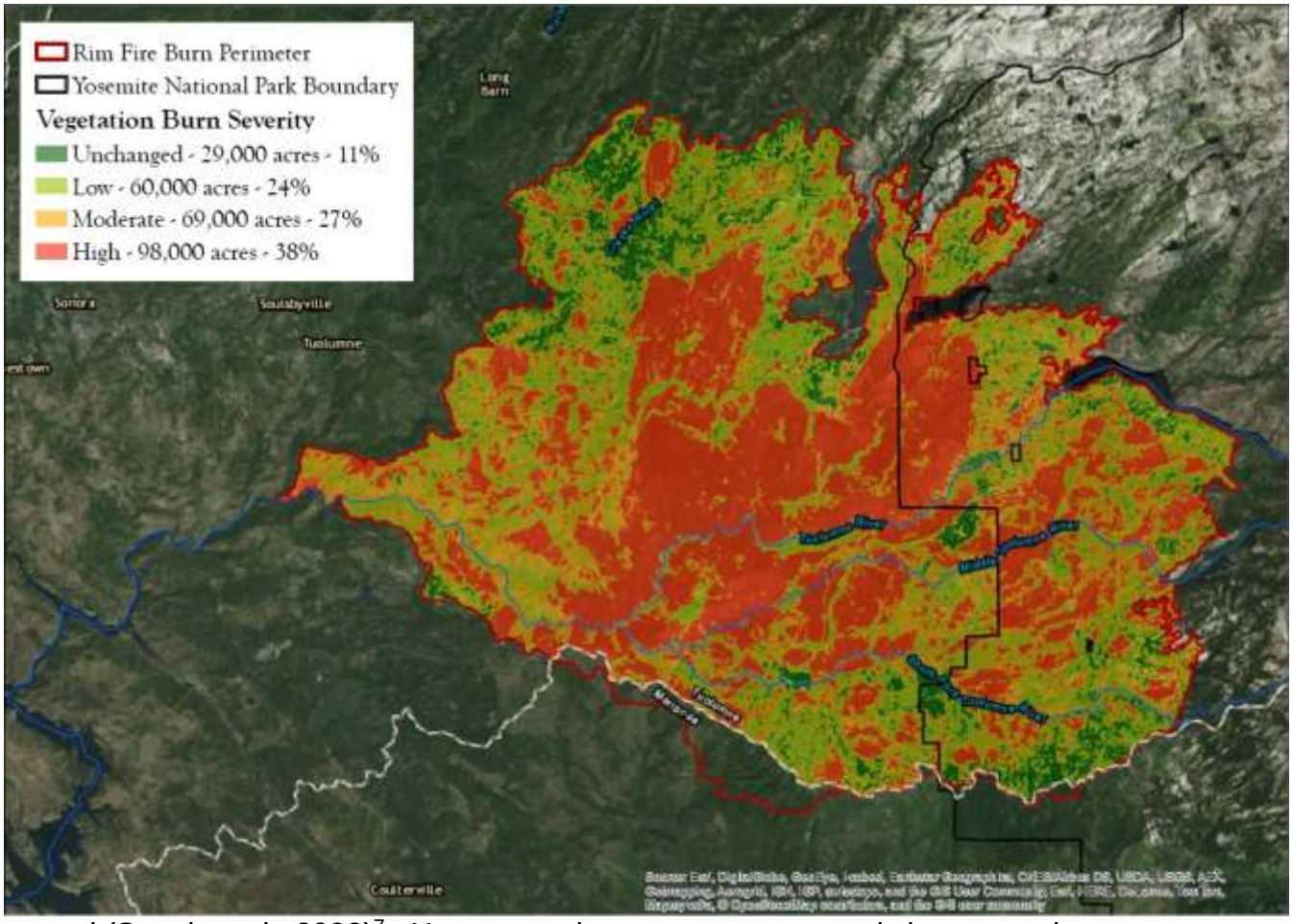
The effects of climate change will only make matters worse. As increasing temperatures bring about drier conditions, it also results in longer fire seasons and increased risk of pest and disease infestation in the forests. The more we improve the health of our forests, the better able they will be to withstand these impacts.

California's Water Supply at Risk

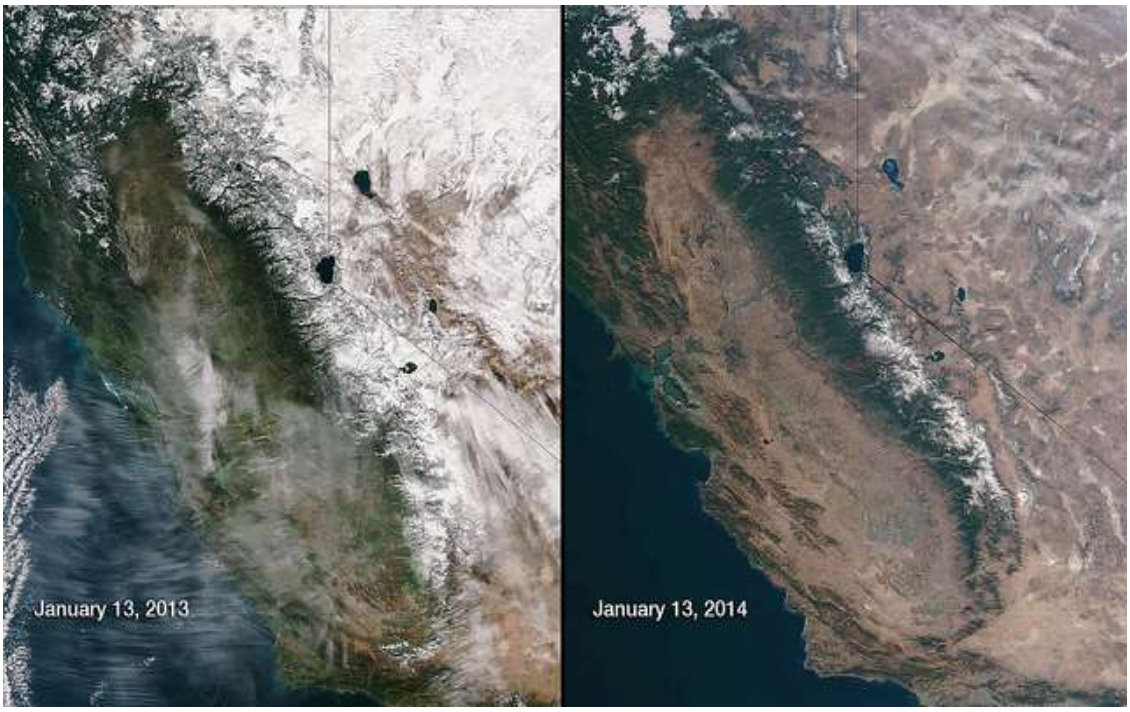
Measuring sediment deposition in Skunk Creek following the 2013 Rim Fire. Photo courtesy of the U.S. Forest Service.

Due to large increases in runoff and the lack of vegetation to stabilize soil, high-intensity burned landscapes erode at rates that are much greater than unburned landscapes. The resulting sediment enters nearby creeks and rivers and can be carried downstream to reservoirs where it impacts operational storage capacity. Plumes of sediment entering reservoirs after post-fire rain events can impact operations of the reservoir until the sediment settles out to the bottom, where it displaces water storage. Sediment delivery has been found to increase by almost 10 times in a watershed that burned at high-intensity.[6] After the Bagley Fire of 2012, which burned just over 46,000 acres of the Shasta-Trinity National Forest, significant erosion, totaling approximately 110,000 cubic meters of sediment (enough to fill 44 Olympic-sized swimming pools), entered the watershed surrounding Lake Shasta.

Better forest management relates to water supply in another important way. Up to 60% of snowfall can't reach the ground when trees are too close together and 75% more of the snow caught in the trees can be lost back into the atmosphere compared to when it falls to the



ground (Storck et al., 2002)[7]. However, adequate canopy cover is important, because snowpack in clearings melts earlier in the year due to direct exposure to sunlight, compared to areas with a forest canopy[8]. Therefore, if a high-intensity wildfire rips through an overgrown forested area and kills everything in its path, the snowpack in that area can melt too early in the year to be useful to California's water needs. Forest management activities could lead to an increase in the snowpack both by reducing the risk of wildfire and creating right-sized gaps in the canopy so that snow can fall to the ground but still receive enough shade to be protected[9].



At 33% of average, the snowpack of the drought year 2014 could become typical by 2100 if the decline is at the worse end of the predicted changes.

Image credit: NASA/LANCE/EOSDIS MODIS Rapid Response Team

Maximizing snowpack and available water storage will become even more important in the face of climate change as the amount of snow fall declines. The Sierra snowpack today is estimated, on average, to be 10% smaller than it was 100 years ago[10] and is predicted to decline by 30 to 70% by the end of the century. A 50% reduction in snowpack is equal to the loss of 7.5 million acre-feet of water, or enough for 14 million families a year. In addition, scientists predict more rain and less snow in some areas, which will shift peak runoff from late spring to early spring or even winter. Earlier snowmelt combined with the larger rain events expected as a part of climate change could result in flooding and increased strain on levees, as well as an inability to capture the flows for later use. Lower water availability in late summer will make it more difficult to manage saltwater surge into the Delta, putting drinking and agricultural water supplies at risk.[11]

Increased Air Pollution and Greenhouse Gas Emission

As wildfires burn, they release carbon dioxide, nitrogen oxide, volatile organic compounds, and particulate matter into the atmosphere.[12] The effects on public health range from eye and respiratory tract irritation to more serious disorders, including reduced lung function, bronchitis, exacerbation of asthma and other pre-existing respiratory and cardiovascular diseases, pulmonary inflammation, a compromised immune system, and even premature death.

With about 420 million tons of carbon stored in Sierra forests, wildfires can emit, within a few weeks, the equivalent of a year's worth of emissions from millions of cars. Initial estimates

Photo Credit – Huffington Post (http://www.huffingtonpost.com/2013/08/28/yosemite-fire-smoke-photo_n_3830612.html)

indicate that the Rim Fire released 11 million metric tons of greenhouse gases (GHGs). Based on the U.S. EPA's web site, that's roughly equivalent to the annual GHG emissions from 2.3 million cars. Computer modeling of the Sierra have found that fuel treatments that alter the size and intensity of wildfires could reduce the amount of carbon emitted by fires from 36-85%. In addition, removing smaller, overgrown biomass from stands reduces the water stress for the remaining trees, enabling them to thrive. This is important, because larger trees accumulate carbon faster than smaller trees.[13]

CURRENT EFFORTS

There are a number of important efforts occurring in an attempt to address the current situation. Building upon and enhancing these efforts provide a sound foundation for increasing pace and scale of restoration.

The Sierra Nevada Forest and Community Initiative. The intensity of the issues facing the Sierra, has led to unprecedented collaboration among groups and stakeholders who previously found themselves in conflict, with litigation often being the outcome. In general, there is consensus that many federally managed forests in the Region are dangerously overgrown and that action needs to be taken now to avert crippling problems in the future. A broad array of interests are actively working with the USFS and industry to develop approaches to remove the excessive growth and turn the resulting wood and biomass into products that have economic value.

At the State level, the Sierra Nevada Conservancy (SNC) is actively working to build on this consensus and is supporting efforts to increase the pace and scale of restoration through the Sierra Nevada Forest and Community Initiative (SNFCI). Established in 2011, the SNFCI Regional Coordinating Council includes a wide range of diverse perspectives, including local government, environmental and conservation organizations, the wood products industry, fire safe councils, and public land management agencies. The work of the Coordinating Council supports and informs local collaborative efforts as they convene, identify issues, develop projects and secure funds to implement projects and processes in local areas in support of Initiative goals. Generally speaking, the Coordinating Council focuses on policy, investment, and science and research issues that affect the success of the SNFCI. Among other activities, the Coordinating Council has been actively working with USFS Region 5 leadership to help them turn the vision of the Leadership Intent into tangible implementation measures, including identifying and coming together to address policy-level barriers that must be overcome for us to reach our goals. This level of support for USFS at the regional and statewide levels is needed, given that, according to the USFS, "Only an environmental restoration program of unprecedented scale can alter the direction of current trends."

Participants at the Rim Fire Restoration EIS meeting, co-facilitated by the SNC and USFS.

At the local level, the Sierra Nevada Region can boast significant collaborative efforts of highly diverse and productive stakeholders. This culture of collaboration has yielded a number of successes at the local level, although much more needs to be done across the Region. Significant efforts include the following:

- Three Collaborative Forest Landscape Restoration Program (CFLRP) Funding Awards went to projects in the Sierra Nevada: the Dinky Creek Collaborative in 2010 ($829,000); and the Amador-Calaveras Collaborative Cornerstone Project ($730,000) and the Burney Hat Creek Basins Project ($605,000) in 2012;
- The Cabin Creek biomass facility in eastern Placer County is nearing commencement of construction activities. The North Fork Biomass Project in eastern Madera County cleared their last planning hurdles in April, 2014 with the approval of a Conditional Use Permit (CUP) that supports the construction of a state-of-the-art bioenergy facility. The SNC is currently tracking numerous other biomass utilization efforts on in different stages of development throughout the Region;
- Significant funding was secured for Biomass Utilization Projects in June, 2013 from the USDA Forest Service's Woody Biomass Utilization Grant Program including the Sierra

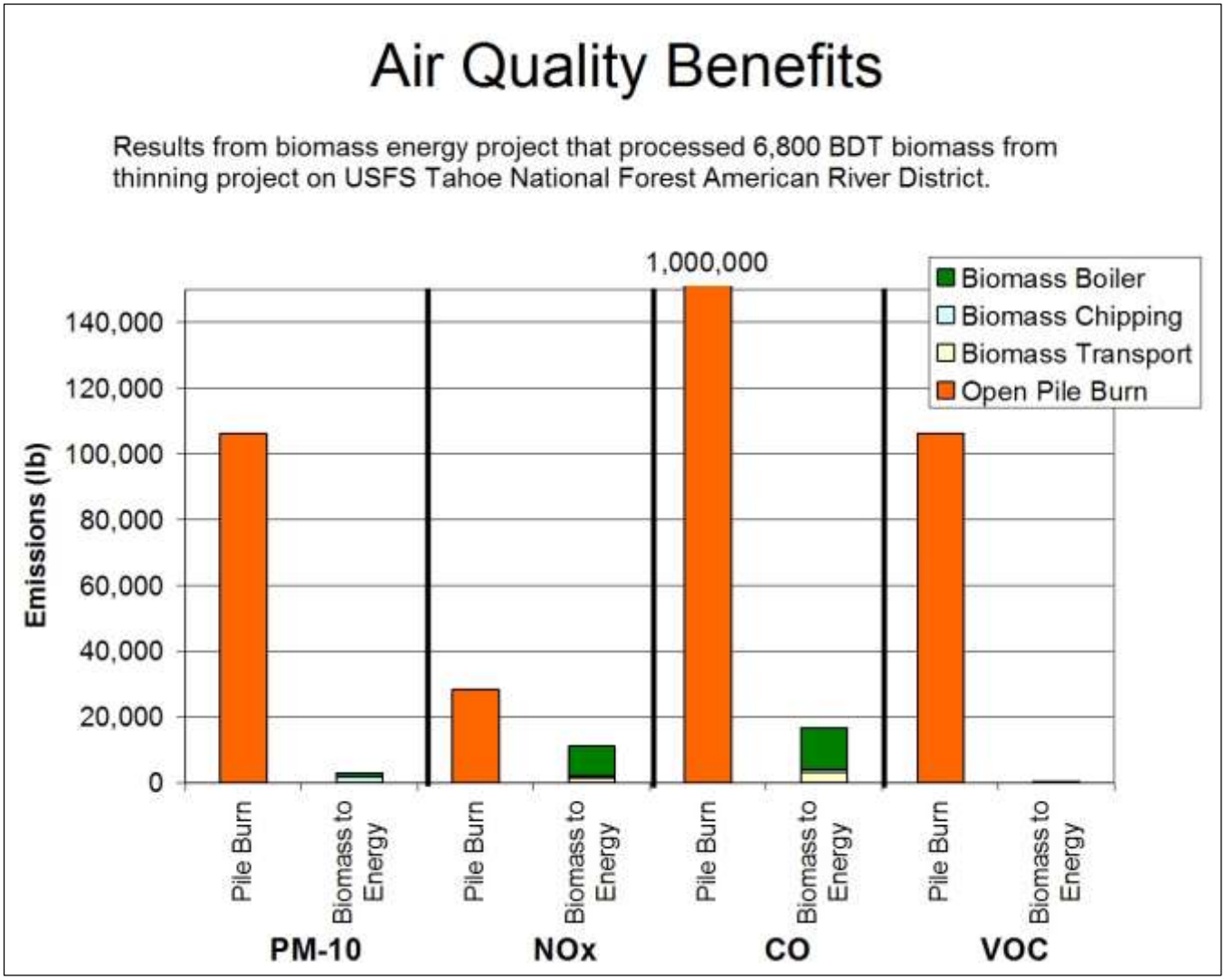
Institute for Community and Environment, in Plumas County ($250,000), and Calaveras Healthy Impact Products Solution, in Wilseyville ($184,405); and

- A highly collaborative expedited National Environmental Policy Act (NEPA) process was developed for Rim Fire Restoration Salvage Environmental Impact Study (EIS) in the spring of 2014.

Biomass Utilization. Although there is a clear need to thin smaller trees and other biomass from the forests to improve ecological function and reduce fire risk, these projects are often not feasible from a financial perspective, because there is often no market value for the biomass that is removed. Converting biomass to clean, renewable energy and value added products, such as landscaping materials, not only creates local economic development opportunities, but also generates revenue that can help fund needed forest restoration projects.

Recent State planning efforts and policies are increasing support for the use of biomass to create renewable energy while reducing the risk of wildfire. California's 2012 Bioenergy Action Plan includes a broad array of action items to promote forest bioenergy. The SNC is identified as one of the key responsible agencies for these action items, particularly in assisting forested communities to develop small scale forest bioenergy facilities.

Shortly following the adoption of the Bioenergy Action Plan, legislation requiring large utilities to purchase bioenergy was signed into law. Senate Bill 1122 (Rubio, 2012)[14] requires the state's three large investor owned utilities to collectively purchase 50 Megawatts (MW) of energy from new facilities sized at 3 MW or less using byproduct of sustainable forest management. This would dispose of forest waste from roughly 31,000 acres of forest restoration annually. The California Public Utilities Commission is currently considering implementation orders for this legislation and at this time it is unclear how helpful this may be in promoting smaller scale biomass energy facilities. Even with the potential assistance provided by SB 1122, additional efforts are needed to promote increased biomass utilization.



An estimated 125,000 acres of 32 million forested acres statewide (0.4%) are currently managed each year with mechanical treatments that remove biomass. On 75,000 of those acres, the removed biomass is disposed of through piling and open burning. This available biomass could sustain over 100 MW of renewable electricity generation if it were brought to a bioenergy facility and diverting pile and burn material to produce renewable energy reduces GHG emissions by over 30%.

It is estimated that about 500,000 acres of treatments on USFS lands annually would restore the health of the forests and help keep pace with future forest growth. Diverting the biomass generated by these forest treatments from pile and burn material to bioenergy facilities could reduce GHG emissions by 3.15 million metric tons annually. This would add up to 18.37 million metric tons of GHGs over 10 years, which is equivalent to eliminating 3.9 million cars from the road.

Integrated Regional Water Management (IRWM). The Department of Water Resources (DWR) developed the IRWM program to promote regional collaboration in managing the many

aspects of water-related issues such as economic vitality, water supply reliability, storm water and flood management, water quality improvements, and ecosystem protection and enhancement. IRWM crosses jurisdictional and political boundaries and involves multiple agencies, stakeholders, individuals and groups. Ultimately, IRWM establishes a prioritization process intended to determine which projects best meet regional needs and to encourage the development of those projects.

There are 23 IRWM groups in the Sierra, covering 47 watersheds. These groups have developed prioritized lists of projects needing funding within these watersheds and are seeking funding for them from DWR and other sources. Because many of these groups recognize the linkages between forest health and water quality and supply as well as other environmental benefits, some of them are seeking funding for projects to implement forest management and watershed protection and restoration projects. Sierra IRWM applications have ranged from forest and forest ecosystem support projects such as fuels reduction and meadow, creek and stream restorations to removal of invasive species and water supply and infrastructure projects. Unfortunately, very few forest related IRWM projects have been funded to date. Nonetheless, the IRWM funding process provides a significant and relevant opportunity for investment in forested watersheds.

The California Water Action Plan. At the end of 2013, the Secretaries for Natural Resources, Environmental Protection, and Food and Agriculture came together, under the Governor's direction, to develop The California Water Action Plan. At a statewide scale, the plan identifies "key actions for the next one to five years that address urgent needs and provide the foundation for sustainable management of California's water resources."

The importance of the Sierra to the State's water resources is clearly recognized in the plan, which identifies a set of activities to reduce the significant risks posed to the water resources flowing from the Sierra and other watersheds in the State. Specifically, it calls for:

- Restoration of forest health through ecologically sound forest management;
- Protection and restoration of degraded stream and meadow ecosystems to assist in natural water management and improved habitat; and,
- Support and expansion of funding for protecting strategically important lands within watersheds to ensure that conversion of these lands does not have a negative impact on our water resources.

Ongoing Research. A significant amount of research has been done on the issues associated with unhealthy forests and there is substantial scientific information available that supports the need for restoration and the benefits associated with such activity. Additional research is also currently underway, which will help us to further understand and quantify the dynamics of the resources within the Region and how specific activities that improve the health of Sierra forests and watersheds impact the resource values they provide. Specific research is aimed at learning more about:

- How management techniques that improve the ecological resilience of forests can enhance and protect the snowpack, thereby increasing water supply reliability;

- The amount of current available storage in our key reservoirs, the rate at which they are filling in, and actions we can take to minimize storage loss though restoring forest and watershed health;
- The impact of forest health treatments on endangered species;
- The carbon benefits of forest health treatments, and how those benefits could be multiplied through the appropriate use of biomass;
- The water storage and release benefits of restoring degraded meadows;
- The water use of overgrown forests and the potential increase in water yield that will result from forest thinning treatments; and,
- More comprehensive quantification of the costs of extreme fire events, including impacts on health, tourism, insurance, and utilities.

ONGOING CHALLENGES

Though there are many positive efforts underway in the Sierra Nevada, the need for restoration is so great that our progress towards restoring balance and health to our forests, communities and economies is inadequate. Major impediments to increasing pace and scale exist, and must be addressed on the appropriate scale if we expect to make meaningful progress towards our goals. There are a multitude of challenges, but we have identified the following five as the most immediate and limiting ones to increasing the pace and scale of restoration:

Insufficient funding and resources

The amount of funding available for forest restoration is inadequate to meet the need. According to USFS Regional Forester Randy Moore, the pace and scale of forest restoration needs to increase 2 to 3 times in order to restore the ecological health of the state's National Forests. Given the nature of the National Forest lands, restoration efforts must include mechanical treatment as well as the increased use of prescribed and managed fire. By strategically conducting mechanical fuels reduction efforts combined with the careful use of fire, costs associated with fire suppression can be reduced significantly over time.

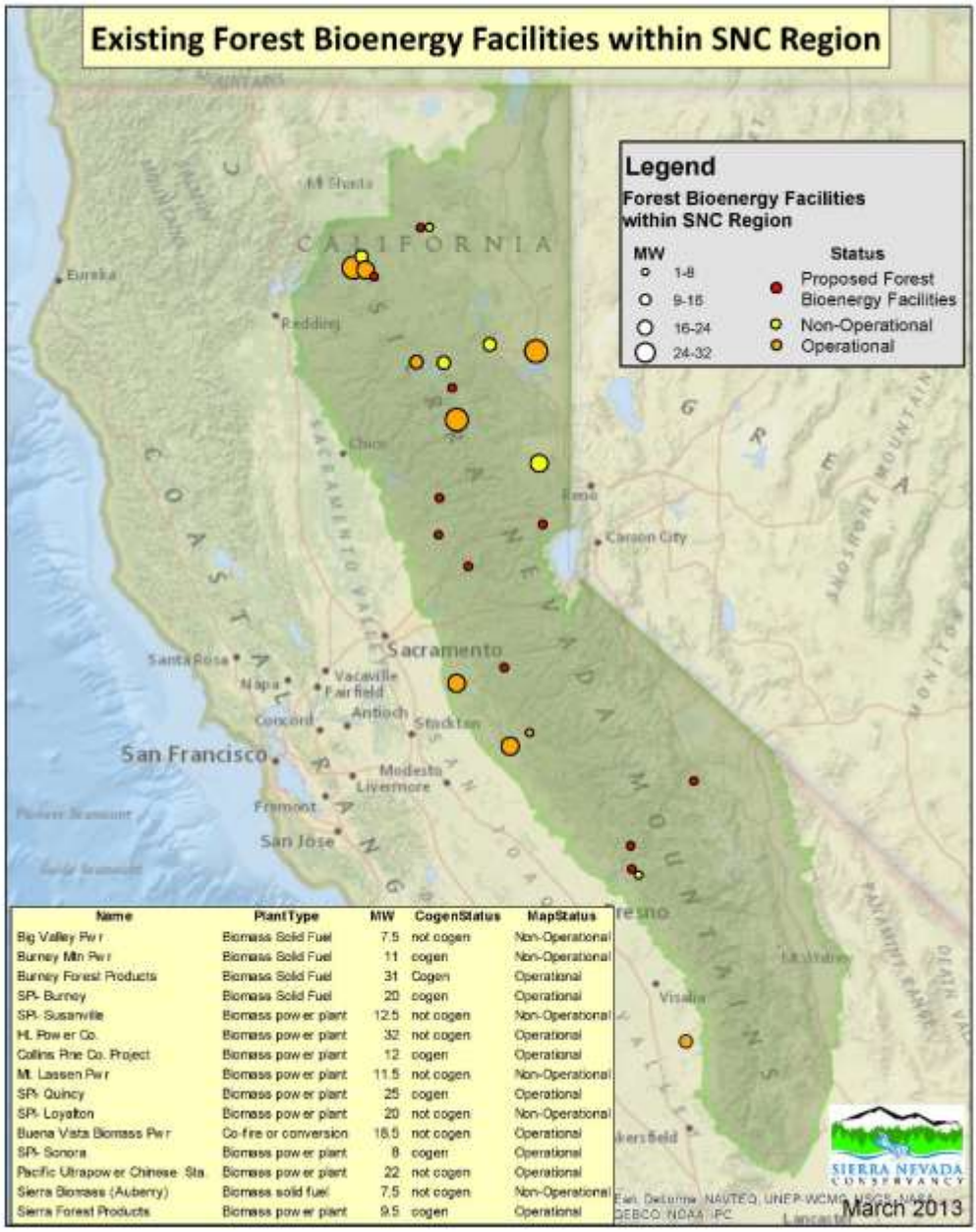
While many projects can "pay for themselves" through the sale of wood products (including biomass), that is not feasible for many other crucially important projects, so that funding is needed to complete them. Not only is the level of funding inadequate to meet the need, federal funding policies often further limit resources for restoration projects. For example, policies related to funding fires suppression often result in funds that would otherwise be available for restoration being "swept" to pay for suppression. The inability to fund restoration projects ultimately leads to higher suppression costs, and the cycle is repeated.

Increasing the harvest of timber in an ecologically sound manner can offset a portion of the need for additional, dedicated funding for restoration efforts. While this subject continues to garner some controversy, progress had been made in an approach to managing federal lands, including timber harvesting which has support from many environmental groups. There is broad consensus support among a wide range of stakeholders for General Technical Report 220 (and associated information). This guidance documents proposes an ecosystem management strategy for Sierran mixed-conifer forests. This Report was published by Forest

Service Pacific Southwest Region scientists, and the management recommendations in it emphasize the ecological role of fire, changing climate conditions, sensitive wildlife habitat, and the importance of forest structure heterogeneity.

Lack of wood/biomass processing infrastructure

The decline in timber output from public lands has also affected the timber industry that was historically a central component of the Sierra Nevada economy, leading to mill closings, lost jobs, and decreasing potential financial capital. Though there is now a focus on re-establishing a smaller-scale, highly distributed wood processing industry to add value to the forest treatment by product and support local economic development, the existing capacity is not adequate to handle the pace and scale of restoration needed in the Sierra Nevada. For instance, last summer, the Honey Lake biomass power plant had a full yard and stopped all chip deliveries for the year on August 1, 2013, at a time when forest restoration was in full swing and biomass outlets were still very much in demand.[15] This resulted in a number of proposed projects not being completed.



Name	PlantType	MW	CogenStatus	MapStatus
Big Valley Pwr	Biomass Solid Fuel	7.5	not cogen	Non-Operational
Burney Mtn Pwr	Biomass Solid Fuel	11	cogen	Non-Operational
Burney Forest Products	Biomass Solid Fuel	31	Cogen	Operational
SPI- Burney	Biomass Solid Fuel	20	cogen	Operational
SPI- Susanville	Biomass power plant	12.5	not cogen	Non-Operational
HL Power Co.	Biomass power plant	32	not cogen	Operational
Collins Pine Co. Project	Biomass power plant	12	cogen	Operational
Mt. Lassen Pwr	Biomass power plant	11.5	not cogen	Non-Operational
SPI- Quincy	Biomass power plant	25	cogen	Operational
SPI- Loyalton	Biomass power plant	20	not cogen	Non-Operational
Buena Vista Biomass Pwr	Co-fire or conversion	18.5	not cogen	Operational
SPI- Sonora	Biomass power plant	8	cogen	Operational
Pacific Ultrapower Chinese Sta.	Biomass power plant	22	not cogen	Operational
Sierra Biomass (Auberry)	Biomass solid fuel	7.5	not cogen	Non-Operational
Sierra Forest Products	Biomass power plant	9.5	cogen	Operational

The increase of large fires, such as the Rim Fire, puts additional pressure on the system as the limited capacity for wood processing in the Sierra Nevada becomes focused on

processing salvage logged timber. This throws into question the fate of the desperately needed restoration treatments slated for unburned but overgrown areas, if there is nowhere for this wood to go for processing.

Lengthy/complex planning processes (NEPA, CEQA, and ESA)

Projects on federally managed lands are subject to review under the National Environmental Policy Act (NEPA) while projects on other lands in California are subject to the California Environmental Quality Act (CEQA). The complexity of completing these processes and the length of time necessary to complete them is usually dependent on the scope and location of the project and may also be impacted if the project is in a sensitive location, impacts sensitive species, or other factors. Completion of the environmental assessment process under NEPA for complex fuel reduction projects can take up to two years or more. Completion of the environmental assessment process under CEQA for complex projects can take up to one year or more. Both processes can also be costly, requiring large amounts of staff time and/or contracts with private consulting firms.

When a project is located on federally managed lands and the project is funded in part or in whole through state or local public funds, both NEPA and CEQA requirements must be met. The best scenario for this requirement is to prepare a joint document incorporating the requirements of both laws simultaneously. When this is not possible, a two tiered environmental review process may be required resulting in additional staff resources, costs, and time.

Projects may also be impacted by the Federal and/or State Endangered Species Act (ESA). The primary goal of the ESA is to prevent extinction of imperiled plant and animal life (listed species) and secondarily, to recover or lessen threats to the survival of listed species. When a listed species or its habitat is present within a project area, measures must be incorporated into the project to ensure protection of the species or a special permit must be obtained.

Developing larger landscape restoration projects has the potential of providing greater efficiency in complying with these laws. Further, addressing environmental issues in a proactive, collaborative manner can significantly reduce conflict, which has often led to delay or non-implementation in the past.

Need for increased use of fire as a management tool for restoration

a significant portion of USFS lands are not able to be treated through mechanical means for a variety of reasons. Even if the current rate of mechanical treatments increased 4 – 5 times it would still be less than 1/3 of what is needed.[16] Therefore, an effective approach to restoration must include conducting mechanical fuels reduction efforts where feasible and, for the high percentage of ground where mechanical thinning is not possible, using planned fires (fires that are set intentionally to remove unwanted vegetation) or managed fire (fires that are started unintentionally but which can be managed to provide ecological benefits) to treat the landscape.[17]

Fire had a much more active role in the Sierra Nevada in the past than it does today and current best science makes a strong case for an expanded managed fire program to increase the pace and scale of restoration. For instance, studies have shown that biodiversity increases

in multiple fire entries.[18] In addition, some local Air Quality Management Districts have been working cooperatively with land managers, understanding that the consequences of uncontrolled wildfires are far more detrimental than fire used as a management tool.

Use of prescribed fire is also cost effective: per acre prescribed fire is the lowest cost treatment, mechanical often 2 – 4 times more and wildfire 6 – 15 times more. Future costs of mechanical treatments are likely to increase, particularly for maintenance (2nd entry and on).

As fuel loads increase, rural home construction expands, and budgets decline, delays in implementation will only make it more difficult to expand the use of managed fire. Without proactively addressing some of these conditions, the status quo will relegate many ecologically important areas (including sensitive species habitat) to continued degradation from either no fire or wildfire burning at high-intensity.[19]

While the case for increasing managed fire on the landscape is strong, there are some challenging issues standing in the way. One of the most formidable is regulatory requirements. The California Air Resources Board (CARB) and local air districts impose very tight restrictions on burn windows and duration of prescribed fires, which can make it difficult to implement them. Unfortunately, this may have the unintended consequence of enabling larger, more damaging fires to occur, which emit far more pollution into the atmosphere than would have been released by the prescribed fires. Providing greater flexibility to use fire to prevent megafires is essential to restoring our forests to resiliency.

One of the best tools available is increasing communication and outreach with regulatory agencies, partners and stakeholders. This outreach should include engaging CARB, Federal Environmental Protection Agency (EPA) and Forest Service leadership more effectively and developing strong messaging that stakeholders must “Pick Your Smoke” given the realities of life in a fire prone environment and the potential for increased fire size and intensity if we don’t take immediate action.

Habitat for species such as the American Marten may be at risk from high intensity fire. Photo courtesy of the U.S. Forest Service.

Need to increase use of contracting tools that maximize local benefits to forest communities

Declines in available timber harvest for local companies to process has significantly impacted the economy of the Sierra Nevada and the well-being of its residents. For example, between 2000 and 2008, the Sierra Nevada Region Gross Domestic Product (GDP) averaged between $14,000 and $17,000 less per person than the rest of California. Despite the USFS's expressed desire to keep economic benefits in local communities and a number of innovative collaborations underway throughout the Sierra Nevada, it has proven very difficult for most local contractors and wood processing businesses to compete successfully for forest service contracts against larger, often out-of-state, businesses with lower overhead and operational costs.

Some forests in Region 5 have begun to identify mechanisms that provide some level of local preference in the bidding process and the SNFCI Regional Coordinating Council is currently working closely with USFS Regional Office and Sierra Cascades All Lands Enhancement group (SCALE) to develop a toolkit that will help forest supervisors and collaboratives throughout the Region give greater weight to local socioeconomic benefit when awarding contracts. While these efforts are a good start, a much larger group of unified, high-level leadership is needed to make the paradigm shift that will be required to overcome institutional barriers and a lack of clear policy direction at the federal level.

Calaveras Healthy Impact Product Solutions, Inc. crews working in the forest.

CONCLUSION

Without bold action to increase the pace and scale of forest restoration in the Sierra Nevada California will face ongoing adverse impacts to its environment and economy. The foundation for such an effort exists, but strong policy and investment actions identified in this document must be taken by federal and state government.

The SNC is developing a Sierra Nevada Forest and Community Action Plan building upon and enhancing existing efforts, both at a Regional and watershed level. The SNC will provide leadership and focus, and engage interested parties who share our vision and commitment to restoring our forest to health and resiliency. The alternative of continuing down the path we are on should not be acceptable to anyone who benefits from, and cares about, this incredible piece of the California landscape.

Above image: Photo courtesy of the Friends of the South Fork Kings River.

---

[1] Water Education Foundation. (2011). *Looking to the Source: Watersheds of the Sierra Nevada* (p. 27). Sacramento.

[2] Vicuna, S., Leonardson, R., Hanemann, M. W., Dale, L. L., & Dracup, J. a. (2007). Climate change impacts on high elevation hydropower generation in California's Sierra Nevada: a case study in the Upper American River. *Climatic Change*, *87*(S1), 123–137. doi:10.1007/s10584-007-9365-x

[3] US Forest Service Pacific Southwest Region. (2011). *Ecological Restoration: Engaging Partners in an All Lands Approach--Region 5 Ecological Restoration* (pp. 1–4).

[4] Miller, J. D., & Safford, H. D. (2008). Sierra Nevada fire severity monitoring 1984-2004. Vallejo, CA, USA: U. S. Departement of Agriculture, Forest Service, Pacific Southwest Region.

[5] Stevens, J. T., Safford, H. D., & Latimer, A. M. (2014). Wildfire-contingent effects of fuel treatments can promote ecological resilience in seasonally dry conifer forests, *854*(April), 843–854. Retrieved from http://www.stevensjt.net/wp-content/uploads/2014/06/Stevens-et-al-CJFR-2014.pdf

[6] Lanini, J. S., Clark, E. A., & Lettenmaier, D. P. (2009). Effects of fire-precipitation timing and regime on post-fire sediment delivery in Pacific Northwest forests. *Geophysical Research Letters*, *36*.

[7] Storck, P., Lettenmaier, D. P., & Bolton, S. M. (2002). Measurement of snow interception and canopy effects on snow accumulation and melt in a mountainous maritime climate, Oregon, United States. *Water Resources Research*, *38*(11), 1123. doi:10.1029/2002WR001281

[8] Koivusalo, H., & Kokkonen, T. (2002). Snow processes in a forest clearing and in a coniferous forest. *Journal of Hydrology*, *262*(1-4), 145–164. doi:10.1016/S0022-1694(02)00031-8

[9] Bales, R. C., Battles, J. J., Chen, Y., Conklin, M. H., Holst, E., O'Hara, K. L., … Stewart, W. (2011). *Forests and Water in the Sierra Nevada: Sierra Nevada Watershed Ecosystem Enhancement Project* (p. 43). Retrieved from http://snri.ucmerced.edu/sites/snri/files/public/documents/SWEEP_published_112911.pdf

[10] California Department of Water Resources. (2008). *Managing An Uncertain Future* (pp. 1–34). Sacramento, CA. Retrieved from http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf

[11] California Department of Water Resources. (2008). *Managing An Uncertain Future* (pp. 1–34). Sacramento, CA. Retrieved from http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf

[12] Pfister, G. G., Wiedinmyer, C., & Emmons, L. K. (2008). Impacts of the fall 2007 California wildfires on surface ozone: Integrating local observations with global model simulations. *Geophysical Research Letters*, *35*(19), 1–5. doi:10.1029/2008GL034747

[13] Stephenson, N. L., Das, A. J., Condit, R., Russo, S. E., Baker, P. J., Beckman, N. G., … Zavala, M. A. (2014). Rate of tree carbon accumulation increases continuously with tree size. *Nature*, *507*(7490), 90–93. Retrieved from http://dx.doi.org/10.1038/nature12914

[14] Senate Bill No. 1122. Rubio (2012). http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_1101 1150/sb_1122_bill_20120927_chaptered.pdf

[15] Anecdotal comment from Region 5 FS/SNFCI Council meeting, 2/18/14
[16] Marc Meyer PPT presentation—Defining Resource Benefits of Wildland Fire in the Southern Sierra Nevada
[17] PSW/R5 PowerPoint, SNFCI Council Meeting, April 2014
[18] Webster and Halpern 2010
[19] North et al. 2012. Using Fire to increase pace and scale of treatments.

---

[21] OFRI. (2006). *Biomass Energy and Biofuels from Oregon's Forests; Sierra Nevada Forest Plan Amendment--Volume 2, Chapter 3, Part 5.9*. Portland, OR.

--- DRAFT August 6, 2014 ---

Sierra Nevada Forests and Community Action Plan

This Sierra Nevada Forest and Community Action Plan is intended to address key issues and impediments affecting the successful achievement of increased forest resiliency through restoration in the Sierra Nevada Region. The key objectives of the plan are:

- Increase state and federal investment in forest restoration activities;
- Address state and federal policy issues that affect increasing pace and scale of forest restoration;
- Develop new wood and biomass processing facilities in the Region, while supporting those currently in operation; and,
- Secure investment from downstream beneficiaries.

Because federally managed lands comprise more than half of the forested land in Sierra Nevada, increasing the pace and scale of forest restoration on these lands is the primary focus of this Plan. Implementation of the Plan will improve forest resilience, thereby reducing the risk of large damaging fires. This will result in a number of important outcomes:

- ✓ Protection of people, communities and property
- ✓ Improved water yield and reliability
- ✓ Improved water quality
- ✓ Protection of existing water storage capacity
- ✓ Enhanced storage of carbon
- ✓ Reduced GHG and particulate matter emissions
- ✓ Protection of important habitat
- ✓ Protection of recreational opportunities
- ✓ Increased economic and social well-being in Sierra communities

Plan Development
The Plan is being developed by the Sierra Nevada Conservancy (SNC) in cooperation with the wide variety of partners that share the SNC vision on these issues. This effort builds upon and integrates a number of existing efforts at the local, regional and State levels, including:

- The 2011 Sierra Nevada Forest and Community Initiative (SNFCI) Resolution.
- The vision articulated in the US Forest Service (USFS) Region 5 Leadership Intent for Ecological Restoration.
- Existing local collaborative efforts throughout the Sierra Nevada (including the CFLRA projects).

- Focus areas for increasing restoration pace and scale identified by the SNFCI Regional Coordinating Council.
- The California Bioenergy Action Plan.
- The California Water Action Plan.
- The State Water Plan and Integrated Regional Water Management Plans.
- The AB 32 Scoping Plan Update.

Plan Implementation
Upon approval of the Plan by the SNC Governing Board, the SNC will implement it the Sierra Nevada Region. For purposes of the Regional efforts, the SNC will utilize the SNFCI Coordinating Council to help direct, monitor and act upon Regional priorities. Securing adequate federal, state and beneficiary investment to achieve forest restoration objectives is a key element of the plan.

Initial actions under the plan may include the following:

- **Identify existing projects that have completed environmental review (or in process) but lack funding to be implemented**
- **Work with the USFS and stakeholders to identify 10 year forest restoration goals by watershed/National Forest/county, as appropriate and necessary. This should include estimates of acres in need of treatment and costs associated with such treatment**
- **Continue efforts on five key policy areas identified by the SNFCI Coordinating Council and concurred upon by the USFS**
- **Work with local stakeholders to identify additional needs and create processes for prioritization of projects**

The SNC will work with partners to advocate for support of the action plan at the federal, state and local level. This includes efforts to secure adequate funding and address key policy issues.

At the watershed, Forest or county level, the SNC may work with interested parties to create a Memorandum of Agreement (MOA) committing parties to work together to achieve agreed upon objectives, consistent with the plan. Any such MOA would only be pursued where there is consensus for the need for such an approach and would build upon, and be consistent with, existing efforts to achieve similar objectives. The MOA may include the creation of a Joint Powers Authority (JPA), where such an entity can assist in the achievement of Plan objectives and develop more locally focused actions. The MOA/JPA will be developed in close cooperation and coordination with existing efforts in the area, including collaboratives that have been created to address these issues. The watershed-based efforts will include coordination with the Integrated Regional Water Management (IRWM) organizations in the area.

Parties to be potentially included in the MOA are Counties, Resource Conservation Districts, water agencies, dam operators/power providers, environmental/conservation

organizations, wood processing industry, IRWMs, local fire districts, State agencies, federal agencies, Fire Safe Councils, watershed organizations and other organizations who support the objectives identified in the plan. Potential parties to a JPA would include the various governmental entities identified in the previous sentence.

The SNC will strategically identify the use of its staff and financial resources to implement the Plan. This may include dedication of a portion of available bond funding to support needed activities to achieve the objectives of the Plan. Regular updates will be provided to the SNC Governing Board.

Potential Performance Metrics

- Increase in federal funding for restoration efforts
- Increase in state funding for restoration efforts
- Increase in beneficiary funding for restoration efforts
- Increase in number of acres restored (quantitative and qualitative)
- Maintaining existing, and developing new, wood and biomass processing facilities (including currently non-operational facilities)
- Increase in amount federal contracting dollars staying in local communities

Timeline	
June 23 – August 1	Discussion Draft Developed by SNC Staff
August 4 – 29	Draft Circulated Among Partners/Stakeholders
September 4, 2014	Draft Plan Approved by SNC Governing Board
September – November 2014	SNC Staff solicits additional input and public comment, prepares final draft
December 4, 2014	SNC Governing Board Approves Final Plan

It's essential that we keep the quality of our programming strong...

A letter from Larry Mantle
HOST OF AIRTALK

READ LARRY'S LETTER

TAKE TWO ™

Weekdays 9 to 11 a.m.
with Alex Cohen & A Martínez

Maya Angelou, Gun control, poor California cherry crop, LA's best burger and more

Rim Fire restoration offers chance for a new approach

Take Two | May 28th, 2014, 11:00am

Jae C. Hong/AP

A firefighter stands on top of a fire truck at a campground destroyed by the Rim Fire near Yosemite National Park, Calif., on Monday, Aug. 26, 2013. Crews working to contain one of California's largest-ever wildfires gained some ground Monday against the flames threatening San Francisco's water supply, several towns near Yosemite National Park and historic giant sequoias. (AP Photo/Jae C. Hong)

The Rim Fire last August near Yosemite National Park was the worst on record in the Sierra Nevada Mountains.

It burned 400-square miles over three months and in some areas, the flames were so hot they completely charred the entire landscape, burning everything in their path and leaving the earth a molten crust.

But despite the devastation, the forest is growing back and restoration plans are underway. Jim Branham, executive officer with the Sierra Nevada Conservancy said the first priority is deciding whether the Forest Service will allow salvage logging, a process where logging companies come in and remove the dead and burned wood.

Burn areas can provide habitat for certain species, like the black-backed woodpecker, so salvage logging can be controversial. Branham said the various stakeholders are weighing many approaches and trying to learn from past mistakes as they plan a new future for the burned forest.

View the Rim Fire on KPCC's Fire Tracker (http://projects.scpr.org/firetracker/rim-fire/)

Keri Brenner
kbrenner@theunion.com

Back to:
May 31, 2014

At least 7 sites on radar for Nevada County biomass plant

At least seven sites in Nevada County are under consideration for a proposed 3 megawatt biomass plant, organizers said this week.

"Each one will get at least an initial review," Steve Eubanks, a member of the Nevada County Biomass Task Force and former Tahoe National Forest supervisor told about 70 people at an open house Thursday at the Banner Grange.

"TSS Consultants, who are doing the feasibility assessment, will be ranking sites in terms of access — access to the site itself and access to the (power) grid," Eubanks said.

Eubanks acknowledged that the county's transfer station on McCourtney Road was one of the seven locations under consideration, but he said that it was not necessarily the first choice.

He said planners had to consider it from a professional standpoint, but that it was not a done deal by any means.

> "We know how sensitive McCourtney Road is. We're not going to put it there unless the concerns can be mitigated."
> Steve Eubanks
> a member of the Nevada County Biomass Task Force and former Tahoe National Forest supervisor

"We know how sensitive McCourtney Road is," he told the crowd. "We're not going to put it there unless the concerns can be mitigated.

"Nothing is going to be rammed down your throat," he added.

He said the plant would likely be enclosed and so would not generate bad smells or noise to the surrounding areas.

The feasibility study, to be done by the end of the year, will identify the top three sites.

Those will be vetted with the public and will receive much local input.

Some residents were skeptical.

"We already have 20 to 25 semitrucks (of private trash haulers) plus all the Waste Management trucks every day," said Rick Gerdl, who lives near the transfer station. "We don't have a lot of trust in government."

Gerdl said he was in favor of the biomass plant, but not at the transfer station on McCourtney Road.

"I think they should put it anywhere but here," he said. He suggested a soon-to-be vacated county industrial site off Loma Rica Road in Grass Valley.

Eubanks and Jodie Monaghan, a mediator hired under a grant from Sierra Nevada Conservancy, urged Gerdl and any other interested residents to send their suggestions and questions to the task force via the Fire Safe Council of Nevada County website, www.areyoufiresafe.com

Residents are also invited to join an email list the task force will use to send out updates and newsletters.

Tad Mason, CEO of Rancho Cordova-based TSS Consultants, told the group that he will be using a measure of 72 bone-dry-tons, or BDTs, of woody waste per day as the estimated appetite of the proposed facility.

"The rule of thumb is it will consume one bone-dry-ton per hour per megawatt," he said. "So three bone-dry-tons per hour for a 3 megawatt plant, times 24 hours, is where I get the 72 BDTs."

Mason said a bone-dry-ton is the unit of measurement used for payment for loads of wood chips or other woody waste.

An estimated six to eight trucks per day will carry the wood chips into the facility.

As to whether there was enough supply, Tom Quinn, forest supervisor for the Tahoe National Forest, said between public lands, private commercial property and private residential land there were enough fuel reduction materials to create "a string of pearls (biomass plants) down all the small Sierra foothills towns," he said.

"Supply is not going to be an issue." Quinn said.

He said having a chain of small plants would greatly improve wildfire prevention by keeping the fuel reduction facility access close by.

"The chain idea is very compelling," said Cathy Le Blanc of Camptonville Community Partnership. Camptonville is also looking at building a small biomass plant, she said.

"The forest fire threat is so intense, especially after the Rim Fire," she said. "And the plants are clean and hardly use any water."

A state Senate Bill passed in 2012 is specifically set up to provide tariff incentives for small biomass plants in the Sierra foothills. That means the energy generated by the plant would command a higher price when it's fed back to the power grid.

Eubanks said a Nevada County plant would cost investors about $15 million to $18 million and would create up to 20 jobs in operations and transport.

In addition to residents, task force members and consultants, Thursday's event drew several public officials and candidates, including Grass Valley Mayor Dan Miller, a candidate for Nevada County Supervisor in District 3; incumbent District 3 Supervisor Terry Lamphier; and Jedediah Biagi, a candidate for District 4 Nevada County supervisor.

To contact Staff Writer Keri Brenner, email kbrenner@theunion.com or call 530-477-4239.

©2005 - 2014 Swift Communications, Inc.

newsreview.com think
green > sustainability

Return of the spring-run

After plan to fix fish ladder is abandoned, salmon spotted in Big Chico Creek for first time since 2011

By Howard Hardee
howardh@newsreview.com

This article was published on 06.05.14.

The Iron Canyon Fish Ladder on Big Chico Creek in Upper Bidwell Park has fallen into disrepair since its construction in 1958.

After languishing in the planning stage for going on a decade, a project to rehabilitate a fish ladder on Big Chico Creek in Upper Bidwell Park was recently abandoned by the city of Chico. Since its initial proposal, there has been debate—should millions of dollars be invested in a ladder that would benefit a relatively small salmon run? Ultimately, that decision was no.

After all, there hasn't been an official report of spring-run chinook salmon in Big Chico Creek since 2011, the last year the North State experienced above-average precipitation. The California Department of Fish and Wildlife counted 124 chinook salmon in the creek that year; none have been recorded since. Until now.

"Big Chico Creek is one of those tributaries where returns are intermittent," said Michael Hellmair, a fisheries biologist at local environmental consulting company FISHBIO. "Some years, they number in the hundreds. Other years, you don't see any."

Given the ongoing drought conditions that appear to be persisting into summer, Hellmair said, he and his colleagues did not anticipate seeing salmon in the creek this year. But during FISHBIO's Bidwell Park 5K Salmon Run and World Fish Migration Day celebration last Saturday, a race participant told an employee he had seen "some pretty big fish in Upper Park," said Gabriel Kopp, the company's director of operations.

Acting on the tip, FISHBIO biologists ventured to Salmon Hole on Wednesday, May 28, but visibility became poor as afternoon shadows darkened the water and the team failed to spot any fish. The biologists returned the next morning and were rewarded—there, milling about in the placid water, were about a dozen spring-run chinook salmon.

It was an exciting discovery for the FISHBIO researchers.

Below: One of the dozen or so spring-run chinook salmon recently spotted by FISHBIO researchers at Salmon Hole. PHOTOS COURTESY OF FISHBIO

“We were all a bit surprised to see spring-run salmon in Big Chico Creek during this drought,” Kopp said. “We didn’t think it would happen this year.”

The biologists kept a respectful distance, not getting close enough for detailed observation, though they did note that the fish appeared to be healthy.

“The odds were against them,” Hellmair said, “yet they are here.”

It remains to be seen whether the salmon will progress farther up Big Chico Creek, given that a significant obstacle—the Iron Canyon Fish Ladder—awaits them just upstream. The quarter-mile-long ladder, made up of a series of staggered concrete pools, or “weirs,” has deteriorated substantially since its construction in 1958, becoming a difficult passage for fish attempting to reach the higher elevations and cooler water beyond.

“Where [the fish] get into trouble is in these drought years, where the water level drops,” said city of Chico Parks and Natural Resources Manager Dan Efseaff. “The water in the ladder gets so diffuse and goes through smaller channels. It becomes hard for the fish to make their way up, unless you’ve got that stronger flow.”

The city has considered rehabilitating the ladder since 2004, Efseaff said, but the proposed project always has been controversial. The ladder is located in a steep and rugged section of canyon between Salmon and Brown’s holes, and access is limited. As a result, getting construction crews and their heavy machinery on-site would be challenging and possibly damaging to the Upper Park access road and surrounding vegetation.

Further complicating the issue, exactly how impassable the ladder is for fish remains uncertain.

“It’s a difficult thing to study,” Hellmair said. “Under certain conditions, like during a drought year, you have no fish in the system and there’s no way to test whether they can get up. The only positive confirmation you can have is if you see them upstream. But then, tracking a range of flow conditions over the past several months and pinpointing exactly when they made it up is really difficult.”

Complex computer modeling likely would do the trick, Kopp said, but could be just as expensive as fixing the ladder itself.

In any case, those issues are now moot. Efseaff went before the Bidwell Park and Playground Commission on Tuesday, May 27, to tell the panel that, despite support from the Sierra Nevada Conservancy, the California Department of Parks and Recreation, Caltrans, U.S. Fish and Wildlife Service and an anonymous private donor, funding for the project was about $400,000 short of the estimated $2.2 million cost. The funds have been returned and grant agreements canceled.

“We made that realization in talking to the partners and agencies that it made sense to turn back the money so it could be used for other projects,” Efseaff told the CN&R. “The overlying

problem is that there wasn't funding for the project. Certainly, if it had moved forward, I would have had my concerns and questions."

Spring-run chinook salmon are a "species of concern" on the California Endangered Species Act list, and, as Hellmair emphasized, even small populations in tributaries such as Big Chico Creek are important to biological diversity.

"You put the salmon eggs in as many baskets as possible," Hellmair said. "Say there's a disaster—a wildfire, an earthquake, a chemical spill—in Antelope Creek, and it wipes out the spring-run salmon there. The more localized populations there are to make up for a loss like that, the species is better off, overall."

On that note, the researchers at FISHBIO fully recognize that "the city was faced with a tough decision," Kopp said, but they hope the community may revisit the idea of rehabilitating the Iron Canyon Fish Ladder in the future.

"We all have to prioritize, but you don't want to forget about protecting natural resources for future generations," he said. "Keeping that awareness alive is what we do."

Trust purchases land along river

Grass Valley Union | Posted: Monday, June 9, 2014 12:07 am

The Bear Yuba Land Trust is in the process of purchasing 2,707 acres of land along nine miles of the Yuba River, adjacent to the South Yuba River State Park, as well as the Plumas and Tahoe national forests.

Escrow is scheduled to close June 25, and the $3.2 million deal is being funded by grants from Caltrans, the Sierra Nevada Conservancy and the California Resources Agency.

"We've been working on this for about six or seven years now," said BYLT Executive Director Marty Coleman-Hunt.

"And we've been negotiating with the landowners and closing the deal for two to three years."

The property was purchased from PG&E in 1999 and used for timber harvest until 2007.

It's being used for cobble mining and grazing.

Rice's Crossing is under the ownership of a group known as the New Bullards Bar Partnership, which consisted of at least three local investors, including Pat Browning, Scott Leonard and Phil Lester.

Lester, the CEO of Gold Country Lenders, is currently set to go to trial on a complex fraud case in late October.

The Bullards Bar property was one of the properties listed in the indictment of Lester by a criminal grand jury for allegedly defrauding multiple investors of millions of dollars over a period of eight years.

In Nevada County Superior Court recently, Lester's attorney, Mary Beth Acton, noted for the record that Lester has signed documents that remove him from ownership of the property, so that the sale to the land trust could go through.

After the deal closes, the land trust plans to continue using the land for cattle grazing and nonindustrial timber harvest.

They also plan to restore the wildlife corridor and establish it as a permanent conservation area.

The primary use, however, will be for public recreation, Coleman-Hunt says.

The BYLT plans to spearhead the construction of 15 to 20 miles of multi-use trails for hiking, biking and horseback riding.

"Our intention is to open it up for public access," said Coleman-Hunt. "I think it's going to take a lot of pressure off the state park."

Drought Impact: Water, Agriculture and Farmers

Tuesday, June 10, 2014 - Placer County RCD

Rocklin & Roseville Today *http://www.rocklintoday.com/*

AUBURN, Calif. More than 85 local, state, and federal representatives toured Placer County last week to learn about local water resources, agriculture, and how farmers are dealing with the drought.

The tour began at Placer County Water Agency (PCWA), where participants were welcomed by Placer County Supervisor Jim Holmes, PCWA General Manager David Breninger, and Placer Resource Conservation District (RCD) Executive Director Elisa Noble.

PCWA staff began by providing an overview of the water resources in Placer County and of the PCWA system, in particular. Participants then loaded onto buses and traveled to the PCWA American River pump station near the Auburn Dam overlook. Here they saw and learned about the river restoration project and the associated pump station that lifts water 400-feet to make it available to PCWA customers, including farmers in western Placer County. PCWA were gracious hosts, and participants thoroughly enjoyed this portion of the tour.

The second stop was a ranch just west of Auburn where Dan Macon of Flying Mule Farm grazes his sheep. Dan provided an overview of their business that sells lamb meat and wool, and demonstrated the ability of his herding dog, "Mo," to move sheep. Some of the biggest impacts of drought on Flying Mule Farm have been the need to downsize their flock, find additional feed, and make the decision to not sell any meat products this year.

The third and final stop was Highland Orchard, a mandarin orchard and cane berry farm owned by the Tony Aguilar family in Penryn. Tony explained how they manage their farm, and what management decisions they have had to make because of the drought. Highland Orchard runs a very efficient irrigation system, utilizing automatic controllers to guarantee the timing and exact amount of water applied.

Participants were then provided a delicious lunch of tri-tip and salad sourced from local farms, and ice cream with fresh-picked Highland Orchard berries. Placer High FFA barbequed the tri-tip, served the meal, and helped with many other logistics.

The annual Ag Tour is coordinated by Placer Resource Conservation District with the goal of providing government officials an on-the-ground exposure to Placer County agriculture. The tour is sponsored and supported by the Placer County Board of Supervisors, PCWA, Nevada Irrigation District (NID), Placer County Farm Bureau, Sierra Nevada Conservancy, the United Auburn Indian Community, and several other partners.

MORE DROUGHT RELATED ARTICLES

Rocklin & Roseville Today *http://www.rocklintoday.com/*

From YubaNet.com

REGIONAL

Foothill communities receive grants from the Sierra Nevada Conservancy for forest, watershed health projects

Author: Sierra Nevada Conservancy (SNC)
Published on Jun 12, 2014 - 1:19:16 PM

McArthur June 12, 2014 - Funding awarded today by the Sierra Nevada Conservancy's Governing Board may facilitate the conversion of unused industrial sites into new community assets. The Conservancy authorized $143,590 during the its quarterly meeting in McArthur for two projects that will improve forest and watershed health, and provide for future economic development in Yuba and Amador Counties. The funding is from Proposition 84, passed by voters in 2006.

"Reducing the risk of large, damaging fires and cleaning up mining legacy lands are among our highest priorities," said SNC Executive Officer Jim Branham. "Having high quality projects like these coming from our communities are great opportunities to invest the public's funds wisely."

Funding was awarded to the **Camptonville Community Partnership** for the Camptonville Forest Biomass Business Center Feasibility Study. This grant will enable the community to explore developing a biomass-to-energy facility at the site of a sawmill that closed in the 1990's near Camptonville, CA. Excess biomass, or the small-diameter woody material, branches, and diseased or insect infested wood removed from forests, can be used to create renewable energy, while at the same time protecting forests and communities from large, damaging wildfires.

"The people of Camptonville and the surrounding community are excited to be moving forward with our plans to develop the former Sierra Mountain Mills site as a center for businesses that utilize woody biomass and small diameter logs," said Cathy LeBlanc, Co-Executive Director of the Camptonville Community Partnership. "We appreciate and value this effort for its potential to help reduce fire threat, protect the watershed and create local jobs."

The **City of Jackson** was awarded a grant to evaluate the removal of abandoned mine waste tailings on a 159 acre parcel of legacy mine lands adjacent to the City. This property was purchased by the City of Jackson in 2006 and is slated to be used for a park and open space after the mine land remediation is completed.

"The City of Jackson has been working with EPA, Department of Toxic Substance Control, and the Sierra Nevada Conservancy to evaluate and clean up this former gold mine disposal area," said City Manager Mike Daly. "Granting these funds is a critical â€˜next step' towards opening the property to the public."

Toxic substances associated with legacy mining, in particular mercury, have far reaching impacts to human health and water quality. The Oro De Amador Removal Action Workplan Project will assess removal strategies and develop management alternatives for the mine waste tailings in order to protect human health and nearby waterways.

In addition to the grant awards, the Board also reviewed the Conservancyâ€™s accomplishments over the past year, approved an Action Plan for next fiscal year, and heard a guest presentation on agritourism from Penny Leff, Agritourism Coordinator for the University of Californiaâ€™s Small Farm Program.

About the Sierra Nevada Conservancy, Governing Board

Created in 2004, the Sierra Nevada Conservancy (SNC) is a state agency whose mission is to improve the environmental, economic, and social well-being of the Sierra Nevada Region. The SNC has awarded over $50 million in grants for projects to protect and enhance the health of Californiaâ€™s primary watersheds by improving forest health, remediating mercury contamination from abandoned mines, protecting critical natural resources and reducing the risk of catastrophic wildfire. Funding for these projects comes from Proposition 84 passed by voters in 2006.

© Copyright YubaNet.com

Categories

Search news

News
Breaking News
Crime & Courts
Government
Schools
Columnists
Roads & Traffic
Vital Statistics

Sports
High School
Recreational
Adult
Columnists

Lifestyles
Art
Music
Theater
Business
Community
Religion
Columnists
Wine & Dine
Clubs
Medical
Announcements

Opinion
Ledger Editorials
Letters to the Editor
Guest Commentary

Obituaries

News

Sierra Nevada Conservancy grants $75,000 to Jackson for Oro de Amador cleanup

Matthew Hedger
2 days ago
FOLLOW

0 COMMENT 0

The Sierra Nevada Conservancy Board on Friday awarded a grant of $75,000 to the City of Jackson to complete a "Removal Action Workplan" for a 159 acre parcel of legacy mine lands adjacent to the city known as the Oro de Amador property. The workplan seeks to identify ways and means to remove abandoned mine waste tailings.

The property was purchased by the City of Jackson in 2006 and is slated to be used for a park and open space after the mine land remediation is completed.

For a story on the property written by former Amador Dispatch Reporter David Dirkes, click here.

Copyright © 2014 Amador Ledger Dispatch

Comment | Report abuse

Write a comment...

Copyright © Amador Ledger Dispatch

NORTHERN SIERRA PARTNERSHIP

JUNE 2014

Dear Friends,

Oh the joys of summer in the Sierra! Meadows bejeweled with dazzling wildflowers, rivers and creeks swollen with snowmelt, great towers of cumulus clouds looming over the mountains in late afternoon, the raucous calls of Clark's Nutcrackers, the pungent scent of Jeffrey pine. The Sierra offers up her seemingly endless delights without reservation.

On July 5th, we hope you'll join us for a day of outdoor adventure and fun in one of the loveliest places in the northern Sierra Nevada -- Perazzo Meadows. At our 3rd Annual NSP Celebration and Picnic you'll have a chance to explore the little known beauties of the Little Truckee River watershed with others who share your passion for our region. The details of the event and how to buy your tickets are listed below.

This month, we'd also like to call your attention to some research recently completed by our partner, The Nature Conservancy (TNC). Working with a host of other public and private partners, TNC investigated the relationship between forest management, fire and water quality in the Mokelumne River watershed. Among their many interesting findings: the economic benefits of forest

SUPPORT OUR CAMPAIGN!

Online donations to NSP are secure and tax-deductible.

DONATE NOW

NSP ELSEWHERE

SHARE THIS EMAIL

FOLLOW *on* TWITTER

JOIN *on* FACEBOOK

UPCOMING EVENTS

Saturday, June 21st Tour De Manure Bike Ride | Sierra Valley | Sierraville Volunteer Fire House

Saturday, July 5th
3rd Annual NSP Celebration &

management activities undertaken to reduce the threat of high intensity wildfire can exceed the cost of those activities by three or more times. Read more below.

Finally, hats off to our partner, Feather River Land Trust (FRLT), for securing a spectacular outdoor classroom for the Loyalton schools, the latest addition to FRLT's award-winning Learning Landscapes Initiative. Students and teachers, from 1st grade to high school are already out there on the land, gaining knowledge and inspiration from the complexities of our natural systems.

I hope to see you on July 5th!

For the Sierra,

Lucy Blake
President
Northern Sierra Partnership

Picnic | Perazzo Meadows | Northern Sierra Partnership

Saturday, July 12th
Volunteer Trailbuilding Day | Greater Truckee | Truckee Donner Land Trust

Sierra Forest Fuel Treatments Make Economic Sense

High-severity wildfire activity in California has increased significantly in recent years, posing a serious threat to people and places. Our partner, The Nature Conservancy, along with the Sierra Nevada Conservancy, and the U.S. Forest Service, recently completed a study investigating the economic benefit of investing in increased forest management to reduce the risk of these wildfires. Using the upper Mokelumne River watershed as a representative case, they found that the economic benefits of fuel treatments are 2-3 times the cost.

The economic costs associated with wildfires can be staggering. The 2013 Rim Fire in the central Sierra Nevada burned nearly 257,000 acres and cost an estimated $127 million, excluding the impact of the fire on property values and environmental services like carbon sequestration. Wildfires also pose a threat to our water supply. In 2002 a fire in Colorado burned 138,000 acres and deposited more than one million cubic yards of sediment into the Strontia Springs Reservoir, which is the primary drinking water source for the city of Denver, at a growing cost that now exceeds $150 million.

This study found that forest management could significantly reduce fire severity. In the model scenario used, fuel treatments reduced the acreage of high-intensity wildfires by almost 75%. Along with avoided costs of wildfires, fuel treatment programs also have the added benefit of creating jobs in these rural areas. They estimated the creation of 35-45 jobs related to fuel treatment and 7-10 biomass-to-energy jobs over a 10-year period.

It is clear that it makes economic sense to invest in forest management in the upper Mokelumne watershed. Though it would be an increased cost now, the long term savings far exceed the costs. This study has implications not only for the management of the Mokelumne watershed but also for all western forests. For more details on the report, please view an electronic copy here.

Securing an outdoor classroom for every child in Loyalton

The Feather River Land Trust (FRLT) recently completed a conservation easement on the 142-acre Chadwick property in Sierra Valley, securing permanent access to an important working ranch in the small Sierra Valley community of Loyalton. This property also features important wildlife habitat, scenic open space, and an outdoor classroom for local schools.

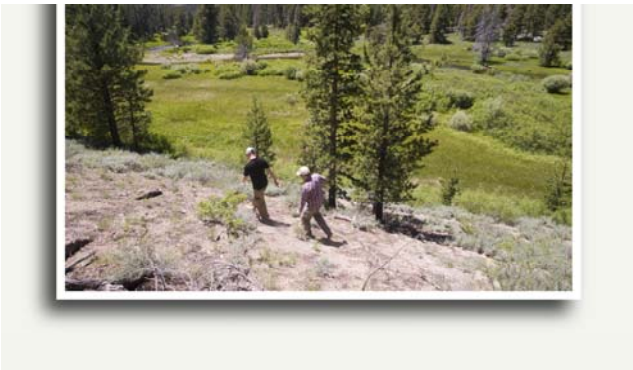
Loyalton Elementary and Loyalton High schools are located just across the street from this property, which will provide the ideal space for an outdoor classroom. Staff and students from the schools are eager to integrate outdoor learning on the site into their program. FRLT's school-based K-12 Learning Landscapes Initiatives program will highlight agriculture and local food production as well as stream and meadow restoration and ecology.

This project was made possible through the generous support of the landowner, Anne Chadwick, the Sierra Nevada Conservancy, Northern Sierra Partnership, Hind Foundation, and Gimbel Foundation, with generous support for preliminary conservation work from the Mellam Family Foundation, Firedoll Foundation, Morgan Family Foundation and FRLT members.

This represents an important victory for conservation in the Feather River watershed. This easement ensures that this working landscape remains intact, providing habitat to wildlife and waterfowl, forage for a beef cattle operation, and an outdoor classroom for children in the community of Loyalton.

Annual Celebration & Picnic at Perazzo Meadows on July 5th!

Join the Northern Sierra Partnership and our five partner organizations as we celebrate



another year of conservation victories in the northern Sierra Nevada. The event will be held at beautiful Perazzo Meadows, in the heart of the Little Truckee River watershed, just north of the town of Truckee. Bring your friends and family—this is an event for all ages and abilities!

There will be guided activities for attendees to join, followed by a catered picnic lunch and bluegrass music at the Perazzo Meadows picnic grounds. At lunch, we will be giving away some great outdoor apparel thanks to Patagonia.

BUY TICKETS

Activities

Hike in Lacey Meadows
Birds & Wildflowers in Lacey Meadows
Interpretive walk in Perazzo Meadows
Tour of Independence Lake
Mountain Bike Tour
Historic Tour of Henness Pass

Please be sure to buy your tickets before they run out! More information on the event can be found on our event website.

Photo credits (top to bottom): Hikers at Lake of the Woods in the American River watershed ©Rich Reid Photography | North Fork of the Mokelumne River ©Katheryn Evatt | Loyalton students at the new Learning Landscapes outdoor classroom on the Chadwick property ©Feather River Land Trust | Hikers in Perazzo Meadows ©Rich Reid Photography

unsubscribe from this list | update subscription preferences

Copyright © 2014 Northern Sierra Partnership, All rights reserved.

Our mailing address is:
130A Seale Avenue

Dave Brooksher
dbrooksher@theunion.com

Back to:
June 25, 2014

Bear Yuba Land Trust acquires 2,707 acres for $3.25M

Bear Yuba Land Trust board members celebrated the acquisition of 2,707 acres known as Rice's Crossing on Tuesday.

Rice's Crossing.

Rice's Crossing includes six miles of frontage along the Yuba River.

Bear Yuba Land Trust Trails Coordinator Larry Gruver has been scouting the 2,707 acre Rice's Crossing property in preparation for future public access trails.

- «
- 1 of 4 images
- »

The Bear Yuba Land Trust has acquired 2,707 acres along the Yuba River, including six miles of river frontage. Escrow closed Wednesday, but this project has been in the works since 2007.

The multimillion-dollar price tag was covered in part by $1.9 million in Proposition 84 funding, $1 million from the Sierra Nevada Conservancy and an additional $350,000 from CalTrans. The Sierra Fund and the Trust for Public Land also played key roles in moving this acquisition forward.

Rice's Crossing is currently private land, but staffers at the BYLT are working to make river access points and open spaces available for public use as soon as possible.

Larry Gruver, the BYLT's trails coordinator, has been scouting the property to identify the future locations of public access trails. They hope to have the first ones open by the end of 2014.

"That's going to happen as quickly as we can make it happen," said Marty Coleman-Hunt, the BYLT's executive director.

"We are kicking off our annual Trails Appeal fundraising campaign, which will build much needed financial resources to do this work."

In the coming years, Coleman-Hunt hopes to see the trails within Rice's Crossing connect South Yuba River State Park, Plumas National Park, Tahoe National Forest and the New Bullards Bar Recreation Area. Rice's Crossing is also adjacent to land owned by the Bureau of Land Management, the Army Corps of Engineers and the Yuba County Water Agency.

There are plans to start river restoration efforts, creating habitat for trout. Environmentalists also hope to see the return of threatened and endangered salmonids.

"Our acquisition helps facilitate the restoration work. In the end, the river will become a better fish habitat," Coleman-Hunt said.

"In addition to the benefits of healthy natural processes, this is going to make a lot of anglers happy."

Readers can find out more about Rice's Crossing and the Bear Yuba Land Trust at www.bylt.org.

To contact staff writer Dave Brooksher, send emails to dbrooksher@theunion.com or call 530-477-4230.

©2005 - 2014 Swift Communications, Inc.

YubaNet.com
We Deliver News to the Sierra
Thanks for the feedback! Back
We'll review this ad to improve your experience in the future.
Help us show you better ads by updating your ads settings.
Google
Friday
search YubaNet.c
NEWS Fire News Latest Regional California USA World Op-Ed Enviro Sci/Tech Life Odd News Cartoons
FEATURES The Calendar Weather Sierra NightSky Road Conditions Home
Regional

RICE'S CROSSING: Six Miles of Yuba River Purchased by Bear Yuba Land Trust

Published on Jun 25, 2014 - 4:47:45 PM

Be a real reader: Subscribe

Tweet
Like Share 65 people like this.

By: Bear Yuba Land Trust (BYLT)

Photo: Chris Gee Chris Gee

June 25, 2014 - This week, after three years working with The Trust for Public Land (TPL) and a myriad of state, federal and local agency partners, Bear Yuba Land Trust (BYLT) acquired 2,707 acres in Nevada and Yuba counties - including six miles of Yuba River frontage - known as Rice's Crossing.

The $3.25 million acquisition was funded by Proposition 84 funds through the California Natural Resources Agency's River Parkways Program ($1.9 million) and Sierra Nevada Conservancy ($1 million) in addition to funding from the CalTrans Environmental Enhancement and Mitigation Program ($350,000).

"The views on the ridge top are gorgeous and stretch beyond Grouse Ridge to the high Sierra. The entire Yuba watershed comes together right there and will be protected forever," said BYLT Executive Director Marty Coleman-Hunt.

"We are so grateful to our project partner, The Trust for Public Land, specifically Markley Bavinger, and the funders for working so hard to make this dream a reality."

Sandwiched between existing public lands at both ends, the property begins below New Bullard's Bar Dam and the confluence of the North and Middle Yuba River. The Yuba River cascades for six miles through a steep canyon and joins the South Yuba and Englebright Reservoir. In total, the Rice's Crossing landscape connects to nine river miles of adjacent public lands. The resulting 15 miles of this critical Sierra foothill's river flows through over 8,400 acres of now contiguous public open space along the Yuba River watershed.

The acquisition of Rice's Crossing was initiated in 2007 by a group of conservationists including Shawn Garvey and Janet Cohen who, in partnership with The Trust for Public Land, applied for initial funding. The Trust for Public Land played a critical role supporting the project, partnering with BYLT in 2011, and providing the expertise to complete the acquisition. The Sierra Fund has also remained a key project supporter and fiscal agent from beginning to end.

This keystone property now permanently conserved and kept from development is the largest to date owned by the Land Trust. The purchase follows on the heels of the acquisition of 652-acre Garden Bar Preserve on the Bear River as a working cattle ranch.

Photo: Chris Gee

An estimated 250,000 people visit and enjoy the Yuba River every year. The acquisition and protection of Rice's Crossing will make open space and river access points available along a six mile stretch of the Yuba River, previously private property and closed to the public. BYLT is working to open sections of the landscape in stages to the public as soon as possible.

River restoration, a working landscape and miles of trails

In addition to public access, the Land Trust acquisition of Rice's Crossing will pave the way for restoration of wildlife corridors and important river fish habitat disrupted by historic dam building and mining. Sustainable timber harvests and cattle grazing will play an important role in land stewardship.

Sign up for YubaNetNews, our weekly newsletter featuring the latest regional stories and more.
email address
Sign up

Latest Headlines

Regional

Happening Now - June 2014

Op-Ed | Chris Kysar: My Red Cloud Story

July 14 Forum: Community Health Impacts of Mining Exposure - Sixty local women needed for study

Plumas National Forest fire restrictions increased effective July 1

Free day at the beach for Tahoe license plate owners on July 12th

Town of Truckee Grants Sierra Business Council Funding for Regional Business Development Center

Warrior Hike "Walk Off The War" veterans visit Plumas County

Fourth Of July Expected To Be Busy In Eldorado National Forest.

ire restrictions begin in the Lake Tahoe Basin

NID Board Contracts for $2.5 Million Pump Station Upgrade

More

Thanks for the feedback! Back
We'll review this ad to improve your experience in the future.
Help us show you better ads by updating your ads settings.
Google

Thanks for the feedback! Back
We'll review this ad to improve your experience in the future.
Help us show you better ads by updating your ads settings.
Google

Rice's Crossing will offer miles of outstanding river corridor and river canyon ridge trails for mountain biking, horseback riding and hiking. Eventually, these trails will provide connectivity to public lands in South Yuba River State Park, Plumas National Forest, New Bullard's Bar Recreation Area and Tahoe National Forest. Other adjacent public land includes Army Corps of Engineers recreation land, the Bureau of Land Management and Yuba County Water Agency.

Already, trail crews from the Land Trust have begun scouting future trail sites, with hopes of opening the first section by year's end.

The lower reaches of Rice's Crossing near Bridgeport and South Yuba River State Park will require road building and the creation of safe river points, which is expected to take several years to construct. In the meantime this particular stretch river shorelines will be closed. When work is complete anglers and kayakers will have unprecedented river access, helping to alleviate pressures on neighboring State Parks.

"That's going to happen as quickly as we can make it happen. We are kicking off our annual Trails Appeal fundraising campaign which will build much needed financial resources to do this work," said Coleman-Hunt.

Historic hydraulic mining and dam construction caused erosion and left behind cobble that changed the course of the river. In addition, flows of water coming through Yuba County Water Agency's Colgate Powerhouse rise and fall depending on electrical demand. With Federal Energy Regulatory Commission (FERC) re-licensing of the Water Agency's projects underway, more water for fish habitat is possible.

The South Yuba River Citizens League (SYRCL) has expressed interest in restoring the river as spawning habitat for salmon in preparation for fish passage if and when it is allowed beyond Englebright Dam. Already, this section of river is considered important for trout species.

With the Land Trust now in ownership of Rice's Crossing, there is the hope for river restoration and the creation of critical habitat for fisheries such as native trout and perhaps, someday, the return of threatened and endangered salmon and steelhead.

"Our acquisition helps facilitate the restoration work. In the end the river will become a better fish habitat," Coleman-Hunt said. "In addition to the benefits of healthy natural processes, this is going to make a lot of anglers happy."

Besides the recreation component, a history of sustainable timber harvesting and cattle grazing will continue on Rice's Crossing. Cattle will graze to keep the fuel load down and timber industry jobs will be created for the surrounding communities of Dobbins and North San Juan, making this region safer from the threat of wildfire.

"The Land Trust promotes sustainable working landscapes as a land management strategy," said Coleman-Hunt. "Rice's Crossing demonstrates three parts of our conservation mission converging: the offering of public recreation, the restoration and stewardship of an aquatic and wildlife habitat, and a timber and grazing operation that promotes land health."

The land deal results in the community-supported nonprofit group's total conserved acreage within the Bear River and Yuba River watersheds to nearly 9,000 acres. A community celebration of the property will be announced next spring.

"It's a part of the river close to my childhood home where I spent a lot of time swimming and fishing. It's a great stretch of open space that's been blocked to public access," said BYLT President Andy Cassano. "It's a crowning achievement for the Land Trust and it is truly exciting for our community."

Learn more about Bear Yuba Land Trust: www.bylt.org

Help us bring you the news. Be a real reader: Subscribe

8

By submitting a comment you consent to our rules. **You must use your real first and last name, not a nickname or alias.** A comment here is just like a letter to the editor or a post on Facebook. Thank you.

6 comments livefyre

Sign in or Post as Guest **2 people listening**

+ Follow Share Post comment as...

Newest | Oldest | Top Comments

June 26, 2014 - Auburn - This week the Bear Yuba Land Trust (BYLT) acquired 2,707 acres in Nevada and Yuba Counties - including six miles of Yuba River frontage - known as Rice's Crossing.

View of the Rice's Crossing property. Photo courtesy of the Bear Yuba Land Trust.

The $3.25 million acquisition was funded by Proposition 84 funds from the Sierra Nevada Conservancy ($1M) and the California Natural Resources Agency's River Parkways Program ($1.9M), in addition to funding from the CalTrans Environmental Enhancement and Mitigation Program ($350K). The Sierra Fund has also remained a key project supporter and fiscal agent from beginning to end.

"Protecting the lands that provide more than 60 percent of California's developed water supply is a primary focus for the Sierra Nevada Conservancy," said Bob Kingman, Sierra Nevada Conservancy Program Manager. "This project supports that goal and will provide the public access to a beautiful stretch of river."

Sandwiched between existing public lands at both ends, the property begins below New Bullard's Bar Dam and the confluence of the North and Middle forks of the Yuba River. In total, the Rice's Crossing landscape connects to nine river miles of adjacent public lands. The resulting 15 miles of this critical Sierra foothills river flows through over 8,400 acres of now-contiguous public open space along the Yuba River watershed.

"The entire Yuba watershed comes together here and will be protected forever," said BYLT Executive Director Marty Coleman-Hunt. "We are so grateful to our project partner, The Trust for Public Land, and the funders for working so hard to make this dream a reality."

An estimated 250,000 people visit and enjoy the Yuba River every year. The acquisition and protection of Rice's Crossing will make open space and river access points available along a six-mile stretch of the Yuba River which was previously private property and closed to the public. BYLT is working to open sections of the landscape in stages to the public as soon as possible.

Rice's Crossing will offer miles of outstanding river corridor and river canyon ridge trails for mountain biking, horseback riding and hiking. Eventually, these trails will provide connectivity to public lands in South Yuba River State Park, Plumas National Forest, New Bullard's Bar Recreation Area, and Tahoe National Forest. Other adjacent public land owners include the Army Corps of Engineers, the Bureau of Land Management, and Yuba County Water Agency.

In addition to public access, the Land Trust acquisition of Rice's Crossing will pave the way for restoration of wildlife corridors and important river fish habitat disrupted by historic dam building and mining. Sustainable timber harvests and cattle grazing will play an important role in land stewardship.

The land deal brings the community-supported nonprofit group's total conserved acreage within the Bear River and Yuba River watersheds to nearly 9,000 acres.

About the Sierra Nevada Conservancy

Created in 2004, the Sierra Nevada Conservancy (SNC) is a state agency whose mission is to improve the environmental, economic, and social well-being of the Sierra Nevada Region. The SNC has awarded over $50 million in grants for projects to protect and enhance the health of California's primary watersheds by improving forest health, remediating mercury contamination from abandoned mines, protecting critical natural resources and reducing the risk of catastrophic wildfire. Funding for these projects comes from Proposition 84 passed by voters in 2006.

Trails, Yuba River access sought in deal

Grass Valley Union | Posted: Monday, June 30, 2014 12:04 am

The Bear Yuba Land Trust has acquired 2,707 acres along the Yuba River, including six miles of river frontage.

Escrow closed last week, but this project has been in the works since 2007.

The multimillion-dollar price tag was covered in part by $1.9 million in Proposition 84 funding, $1 million from the Sierra Nevada Conservancy and an additional $350,000 from Caltrans. The Sierra Fund and the Trust for Public Land also played key roles in moving this acquisition forward.

Rice's Crossing is private land southeast of Dobbins, but staffers at the BYLT are working to make river access points and open spaces available for public use as soon as possible.

Larry Gruver, the BYLT's trails coordinator, has been scouting the property to identify the future locations of public access trails. They hope to have the first ones open by the end of 2014.

"That's going to happen as quickly as we can make it happen," said Marty Coleman-Hunt, the BYLT's executive director.

"We are kicking off our annual Trails Appeal fundraising campaign, which will build much needed financial resources to do this work."

In the coming years, Coleman-Hunt hopes to see the trails within Rice's Crossing connect South Yuba River State Park, Plumas National Park, Tahoe National Forest and the New Bullards Bar Recreation Area. Rice's Crossing is also adjacent to land owned by the Bureau of Land Management, the Army Corps of Engineers and the Yuba County Water Agency.

There are plans to start river restoration efforts, creating habitat for trout. Environmentalists also hope to see the return of threatened and endangered salmonids.

June 26, 2014 - Auburn - This week the Bear Yuba Land Trust (BYLT) acquired 2,707 acres in Nevada and Yuba Counties - including six miles of Yuba River frontage - known as Rice's Crossing.

View of the Rice's Crossing property. Photo courtesy of the Bear Yuba Land Trust.

The $3.25 million acquisition was funded by Proposition 84 funds from the Sierra Nevada Conservancy ($1M) and the California Natural Resources Agency's River Parkways Program ($1.9M), in addition to funding from the CalTrans Environmental Enhancement and Mitigation Program ($350K). The Sierra Fund has also remained a key project supporter and fiscal agent from beginning to end.

"Protecting the lands that provide more than 60 percent of California's developed water supply is a primary focus for the Sierra Nevada Conservancy," said Bob Kingman, Sierra Nevada Conservancy Program Manager. "This project supports that goal and will provide the public access to a beautiful stretch of river."

Sandwiched between existing public lands at both ends, the property begins below New Bullard's Bar Dam and the confluence of the North and Middle forks of the Yuba River. In total, the Rice's Crossing landscape connects to nine river miles of adjacent public lands. The resulting 15 miles of this critical Sierra foothills river flows through over 8,400 acres of now-contiguous public open space along the Yuba River watershed.

"The entire Yuba watershed comes together here and will be protected forever," said BYLT Executive Director Marty Coleman-Hunt. "We are so grateful to our project partner, The Trust for Public Land, and the funders for working so hard to make this dream a reality."

An estimated 250,000 people visit and enjoy the Yuba River every year. The acquisition and protection of Rice's Crossing will make open space and river access points available along a six-mile stretch of the Yuba River which was previously private property and closed to the public. BYLT is working to open sections of the landscape in stages to the public as soon as possible.

Rice's Crossing will offer miles of outstanding river corridor and river canyon ridge trails for mountain biking, horseback riding and hiking. Eventually, these trails will provide connectivity to public lands in South Yuba River State Park, Plumas National Forest, New Bullard's Bar Recreation Area, and Tahoe National Forest. Other adjacent public land owners include the Army Corps of Engineers, the Bureau of Land Management, and Yuba County Water Agency.

In addition to public access, the Land Trust acquisition of Rice's Crossing will pave the way for restoration of wildlife corridors and important river fish habitat disrupted by historic dam building and mining. Sustainable timber harvests and cattle grazing will play an important role in land stewardship.

The land deal brings the community-supported nonprofit group's total conserved acreage within the Bear River and Yuba River watersheds to nearly 9,000 acres.

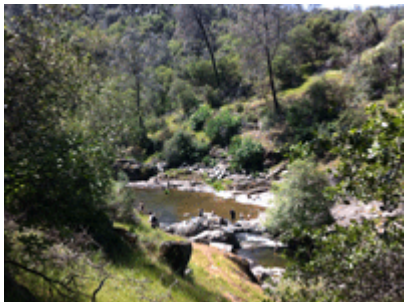
About the Sierra Nevada Conservancy

Created in 2004, the Sierra Nevada Conservancy (SNC) is a state agency whose mission is to improve the environmental, economic, and social well-being of the Sierra Nevada Region. The SNC has awarded over $50 million in grants for projects to protect and enhance the health of California's primary watersheds by improving forest health, remediating mercury contamination from abandoned mines, protecting critical natural resources and reducing the risk of catastrophic wildfire. Funding for these projects comes from Proposition 84 passed by voters in 2006.

Hidden Falls Regional Park Receives Grant

Thursday, July 31, 2014 - Placer County

Rocklin & Roseville Today *http://www.rocklintoday.com/*



Placer County's "gem of the foothills," Hidden Falls Regional Park, is the recipient of a grant that will fund innovative projects protecting long-term ecological values and economic viability of working ranches and agricultural lands, and also the health of associated watersheds.

Use of the grant was approved by the Board of Supervisors, who authorized a budget revision to create a capital improvement project, using a $325,000 grant from the Sierra Nevada Conservancy, in addition to $82,500 in county in-kind services.

The work will rehabilitate the existing stock pond and irrigation canal, abandon steep and unstable ranch roads, construct three animal watering troughs, and replace portions of existing perimeter fencing at the park. Each of these park improvements supports the long-term management goals of the regional park, including continued grazing for vegetation management, which is consistent with goals of the Placer Legacy Open Space and Agricultural Preservation Program.

"We are lucky to have this regional park as part of the open space in Placer County," said Supervisor Robert M. Weygandt, whose 2nd District includes the park. "The preservation of these foothills lands with their unique oak habitat is something that current and future generations will enjoy. This grant will help improve the park and the experiences residents and visitors have when they visit."

Hidden Falls, located in rolling oak woodlands between Auburn and Lincoln, was first dedicated as a 221-acre regional park by the county in 2007. Since then, the park has expanded to its current 1,200 acres, which includes some 30 miles of natural surface trails suitable for hiking, running, biking and horseback riding. The trails provide access to scenic views of the riparian habitat along the two creeks that run through the property. There are interpretive panels mounted along the trails, picnic areas, and fishing access trails.

The development of Hidden Falls was made possible by the Placer Legacy Open Space Program. Placer Legacy is a voluntary program formed to conserve open space, help preserve the local farm economy, protect native plants and wildlife, and provide more passive recreation opportunities to the public. Major support is being provided by a combination of funding partners and volunteers. Supporters include the California Natural Resources Agency, Sierra Nevada Conservancy, California Conservation Corps, REI, Inc., Folsom Auburn Trail Riders Action Coalition, Sun City Lincoln Hills Hiking Club, and California State Parks.

When first opened the seven-year old park initially had an observation deck allowing close-up views of the 30-foot waterfall that gives the park its name, multiple-use trails, picnic areas, and fishing access. Expansion has added sweeping views of the Sacramento Valley to the Sutter Buttes and beyond. Two bridge crossings were installed that connect trail users to both sides of the Coon Creek watershed. Additionally, there are more picnic areas and a second observation deck above another waterfall.

The park is open from sunrise to sunset, 365 days a year at no charge to visitors. For additional park information, including location and trail system maps, please click on the following link: Hidden Falls Park.

- **Hidden Falls, a Great Escape, but No Secret** (Monday, April 15, 2013)
  The name conjures up a remote, wilderness experience. The reality is a bit less wild and distant than one might anticipate.

- **The Hidden Falls and Harvego Bear River Connection** (Monday, April 29, 2013)
  The Placer County Board of Supervisors approved three land acquisitions Tuesday that will help accomplish a big goal: creating public access between Hidden Falls Regional Park and the Placer Land Trust's Harvego Bear River Preserve
- **Hidden Falls Regional Park Expansion Celebration** (Saturday, May 25, 2013)
  More than 100 people gathered at the foot of a rustic-looking bridge that traverses a scenic creek deep in a secluded canyon Tuesday to celebrate the expansion of Placer County's Hidden Falls Regional Park.
- **Hidden Falls Regional Park to the Bear River Trail Connection** (Monday, January 06, 2014)
  Auburn, CA -- Placer County acquired the final three links last month needed to lay out a public trail network that someday will connect Hidden Falls Regional Park to the Bear River.

Rocklin & Roseville Today *http://www.rocklintoday.com/*

Sunday Aug 03 2014 | 1 comments 0

Placer County Hidden Falls Park livestock grazing efforts get boost

$325K grant from Sierra Nevada Conservancy aids vegetation management

By: Gus Thomson, of the Auburn Journal

The return of Hidden Falls Regional Park's stealth weed whackers is getting a boost from a Sierra Nevada Conservancy grant.

Cattle grazing has traditionally taken place on the property, and funding is now in place to assist with its continuance after a previous grazing lease expired in 2013.

The Auburn-based state conservancy has approved $325,000 in funding that will rehabilitate the Placer County park's stock pond and irrigation canal, construct three animal watering troughs and replace some of the perimeter fencing at the 1,200-acre park.

Parks Administrator John Ramirez said that development of the canal and stock pond will negate the need for water to be trucked in for grazing livestock. Once work is completed, the county would be prepared to lease parkland areas for grazing by sheep and goats as well as cattle, he said.

A statement from the county says the grant -- plus $82,500 in in-kind services related to the grazing upgrade project -- supports a set of goals for the county's open space and agricultural preservation programs.

Some steep and unstable roads used in the past for ranching will also be prepared for returning to nature, said Facility Services Deputy Director Mark Rideout. Work is expected to start this year.

Hidden Falls is located about halfway between Auburn and Lincoln. It was opened in October 2006.

Keywords:
hidden falls livestock sierra nevada conservancy funding

CONTRIBUTE TO THIS STORY

SEND LETTER TO THE EDITOR | SEND STORY IDEAS | SEND CORRECTIONS | SIGN UP FOR OUR EMAIL NEWSLETTER

Related Stories

Off-roaders tackle the Rubicon
Media Life: Auburn-area locales getting Disney, American Pickers screen time
Volunteer groups clear the way for salmon
Drought no hindrance to raft tours
American Fire site targeted for tree planting, salvage harvesting, hazard tree reduction

Sunrun® Home Solar
sunrun.com
Sunrun Helps You Save on Utilities. America's Leading Solar Company.

Auburn Journal Special Sections

Latest Section :

Best of the Best 2014 Auburn

View All Sections

Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

NEWS ARTICLES

Add This Page Email this Page Print this Page

California Wildfires Kill More Than Trees, And That May Help Us Prevent Them In The Future

Author: Kelli Barrett

One year ago this month, the infamous Rim Fire started burning in northern California's Sierra Nevada mountains. It raged for two full months and destroyed hundreds of homes, but the real cost came in the form of muddier water, reduced pollination, and dirty air. Then something peculiar happened: the fire slowed when it hit the more naturally-managed Yosemite forest, offering one more key to help us manage forests in a changing climate.

Tweet 6
Share 3

5 August 2014 | The Hetch Hetchy watershed is 160 miles from the San Francisco Bay area, but the people of the Bay rely on this granite-surrounded water supply as their drinking source.

Located in the Yosemite National Park, the Hetch Hetchy is situated along the Tuolumne River in California's Sierra Nevada and acts as a reservoir collecting the mountain range's melting snow. Its water travels to San Francisco through miles of pipelines and tunnels called the Hetch Hetchy Regional Water System, which supplies over 2 million people in four counties with water.

Last year, the now-infamous Rim Fire burned 250,000 acres of Sierra Nevada forestland from August 17, 2013 to October 24. But something stunning happened when it moved out of Stanislaus National Forest and into Yosemite: its **intensity was immediately waned**. That helped save the Hetch Hetchy and San Francisco's water supply, but the fires still cost the San Francisco Public Utilities Commission (SFPUC) $55 million in infrastructure costs.

These damages – and the fact that the fire came so close to threatening its water – got the SFPUC thinking about natural losses. They wondered what the real costs of the fire were in terms of muddied water, lost pollination, dirty air, and a general loss of quality in the region – and how high could those costs could go if the winds went against them.

To answer that question, they hired Earth Economics (EE), a nonprofit specializing in the economic valuation of ecosystem services to look at the cost of the Rim Fire itself – not just in terms of infrastructure, but in terms of ecosystem services.

The result is **The Economic Impact of the Rim Fire 2013**, which EE hammered out even as the fires still burned. By incorporating the loss of ecosystem services into the equation, it showed that damage from the Rim Fire itself had been dramatically undervalued – from an initial infrastructure assessment of less than $50 million to anywhere from $100 million to $736 million once ecosystem services were factored in. Governor Jerry Brown used that assessment to qualify for federal disaster aid after the state was initially turned down by FEMA (Federal Emergency Management Agency), and it shined a light on the economic return that good forest management brings.

"We believe this to be the first time environmental values have been included in an application for a major disaster declaration," says Rowan Schmidt, a project leader at EE and report author.

EE arrived at its figures in part using the Benefit Transfer Methodology, which uses local values and past valuation studies on similar or the same services, along with satellite data. The report estimated monetary values on 10 ecosystem services

on eight different land types impacted by the fire. The services valued include air quality, carbon sequestration, pollination, water regulation and biodiversity.

Old Fire in a New Climate

Fires aren't always bad. In fact, they're an important component of forest ecology, EE's report says, because they restore natural species and the ash nourishes new growth. But climatic changes that cause higher temperatures for longer coupled with an increase in human-caused fires means the wildfire season lasts longer and burns hotter than ever before.

"California's wildfire season never ended," says Kim Carr, a sustainability specialist at Sierra Nevada Conservancy, a state agency designed to support preservation of the region.

On average, there are now seven times as many wildfires over 10,000 acres every year, according to the report.

There is another element practitioners in the field say heavily contributed to the Rim Fire's intensity, and it's one that EE's report can now help correct. Pre-1970s, a no-burn policy in the Forest Service that suppressed all fires led to an increase in fuel loads (flammable material like underbrush). Forests became overgrown and dense, increasing their vulnerability to high intensity wildfires. And even though policy has been gradually changing since then, the buildup makes controlled burning and other techniques difficult to manage.

TABLE 1 TOTAL ENVIRONMENTAL BENEFITS LOST TO THE RIM FIRE IN THE FIRST YEAR POST-FIRE

Land Cover	Area (Acres)	Description	Low ($/year)	High ($/year)
Grassland and Meadow	20,201	Includes annual and perennial grasslands that dominate major regions around coniferous forests	$30,569,395	$69,202,212
Herbaceous Wetland	577	Includes wetlands dominated by herbaceous meadow vegetation; areas where total herbaceous wetland vegetation coverage is greater than 20%	$515,158	$20,284,851
Shrub	31,923	Riparian areas alongside riverine and wetland regions; exists through various altitudes	$541,959	$37,247,933
Lake	447	Contains areas dominated by shrubs less than 5 meters tall. This class includes chaparral shrubs and mixed montane shrubs	$93,926	$2,877,038
River	161	Includes areas of open water, generally with less than 25% cover of vegetation or soil	$4,073	$907,523
Riparian	190	Includes stream and creek systems and sometimes areas of open water	$47,071	$325,824
Forest (Broad Leaf and Mixed)	32,213	Includes a mixture of aspen, blue oak woodlands, and montane hardwoods that occur sporadically throughout National Parks Service and Forest Service lands	$5,098,191	$284,804,356
Forest (Coniferous)	168,941	Includes many conifer-dominated vegetation types such as Blue Oak-Foothill Pine, Closed-Cone Pine-Cypress, Douglas Fir, Jeffrey Pine, Lodgepole Pine, Ponderosa Pine, Red Fir, Sierran Mixed Conifer, and Mixed Montane Hardwoods Conifers	$63,147,300	$320,363,902
Total	*254,654*		*$100,017,074*	*$736,013,639*

"When fires hit the landscape now, it does a lot of damage because it burns too hot," Carr says.

What the West's forests need, Carr says, are fuel thinning treatments that mechanically remove a forest's fuel, but those cost money – about $68 million in the nearby Mokelumne watershed, according to a **cost-benefit analysis** carried out there. That analysis, however, conservatively estimates the benefits generated from fuel treatment at $126 million.

Such treatment makes it safe to re-introduce fire that will burn at a lesser intensity. The less intense fires will continue to remove understory and increase its overall health.

"More fuel treatment is needed on a larger amount of acres," says Carr.

"We can't keep throwing money at suppression; we want to get to a point where we're not just suppressing fires but proactively managing and restoring forest."

The Natural Buffer

The fire burned below Hetch Hetchy so its water wasn't under as much of a threat had the fire started closer to the reservoir. Also, there is less vegetation to burn around Hetch Hetchy compared to other areas. The huge granite structures surrounding the water acted as a buffer against the fire as well. However, both Carr and Manager of SFPUC's Natural Resources and Land Management Division, Tim Ramirez, say the overall greater health of Yosemite's forests contributed to the reduced damage – reiterating Carr's contention that good forest management pays off over the long run.

"The National Park Service doesn't fight fires," says Ramirez. "And as a consequence, the Rim Fire in Hetch Hetchy wasn't catastrophic."

And that, say scientists from the non-profit organization, Point Blue Conservation Science, is why the **Rim Fire ran out of steam** upon moving out of Stanislaus and into Yosemite's forests.

Water Comes from the Forests

As of right now, San Francisco's water supply doesn't need to be filtered. It's treated but the high quality nature of the source allows **exemption** from the Environmental Protection Agency's filter regulations.

But the huge threat of wildfires means this unique source of water-and others throughout the western US-are at risk. The Sierra Nevada Conservancy and other organizations are looking at potential investors in the needed fuel reduction treatments that will lower the risk of wildfire and initiate healthier forests.

One group of investors they're targeting is water utilities. Raising peoples' monthly utility bill by just a dollar or so, Carr says, could fund fuel treatments on a large scale.

As of right now, there isn't any policy in development for this scenario to play out in the Sierra Nevada, but initiatives like it are happening elsewhere. In Arkansas, for instance, the utility that services Little Rock implemented a "**Watershed Protection Fee,**" which funds acquisition and conservation of land near Lake Maumelle-Little Rock's drinking water source. It also funds environmental regulation and water quality monitoring activities.

Another example operating similarly is in North Carolina's capital, Raleigh. A monthly watershed protection fee of about 45 cents is added on to ratepayer's bills. The funds are used to purchase land near the water source and conserve it.

And there are many more **cases**. The **Forest to Faucet Partnership** between the utility, Denver Water, and the US Forest Service uses additional fees to practice forest treatment and watershed protection. It's a well-known initiative that other municipalities are looking closely at. Wildfire risk was a prime reason Denver Water thought it smart to invest in a watershed protection project that enhances forest health.

And with the Rim Fire's heavy economic and natural losses fresh in everyone's mind and also the knowledge that the fire came within a hair of contaminating a huge water supply, the communities of San Francisco and perhaps all of California might look at programs such as Denver's with a new-found interest.

FOLLOW US ON twitter

Kelli Barrett is a freelance writer and editorial assistant at Ecosystem Marketplace. She can be reached at kbarrett@ecosystemmarketplace.com.

Please see our Reprint Guidelines for details on republishing our articles.

Add a comment...

Comment

Facebook social plugin

Saturday Aug 09 2014 | 0 comments 1

Conservancy grant to fund fuel break effort

By: Auburn Fire Chief Mark D'Ambrogi/ For the Auburn Journal

The City of Auburn Fire Department will once again make significant strides in protecting the community from wildfire's catastrophic destruction thanks to a grant award by the Sierra Nevada Conservancy.

The funds will be applied toward the American River Canyon Shaded Fuel Break on U.S. Bureau of Reclamation lands and the Auburn State Recreation Area adjacent to the city of Auburn, in the Robie Point to Highway 49 area.

This project will treat approximately 40 acres by cutting, hauling and chipping vegetation fuels in an effort to reduce the natural vegetation to create added protection to the community, recreation area, cultural resources and pristine watershed.

This is a multi-agency collaborative project with the U.S. Bureau of Reclamation, California State Parks, Cal Fire, the city of Auburn, the Greater Auburn Area Fire Safe Council and numerous local neighborhoods that have teamed together to assist in addressing wildfire issues.

The Sierra Nevada Conservancy has awarded more than $157,000 to this project, while the collaborative agencies will contribute various services to bring the project total to more than $288,000.

This is the second such award provided by the Sierra Nevada Conservancy within the last two years and identifies a true commitment in protecting not only our communities where we work and live, but the natural resources we depend on for our recreation, cultural heritage and watershed.

Work is anticipated to start in the coming months when the fire danger is not so critical. Crews with chainsaws and chippers will be operating in the project area Monday through Friday. Although trails are not scheduled to be closed, recreational use may be impacted during periods of work.

Please use extreme caution in these areas, be alert and read all signage regarding the project. Alternative routes may be recommended during fuel reduction operations.

While this is a significant contribution to the American River Canyon Shaded Fuel Break, residents are urged to continue to create and maintain "defensible space" by removing brush, downed tree limbs, limb up tree branches 8-10 feet above the ground, keep roof areas free and clear of overhanging tree branches, leaves and needles, and remove dried grasses around structures.

Whatever an individual does to protect their own home also protects the community.

Keywords:
Auburn Fire Chief Mark D'Ambrogi shaded fuel break sierra nevada conservancy

Related Stories

Family business Driftwood Village marks 50 years in Auburn

Council to focus on variety of topics at meeting

Robin Enos announces Newcastle Fire board candidacy

Second Chance Bunnies rescue group offers refuge for rabbits

Cruise Nite: A classic with some history

2014 Grant Applications
newusafunding.com
New Funding Released All the Time. Deadlines Approaching. Apply Now

Auburn Journal Special Sections

Latest Section :

Best of the Best 2014 Auburn

View All Sections

Modesto Bee

Previous Story
Next Story

Jeff Jardine: Will major fires like Rim spark changes in forest management practices?

By Jeff Jardine

jjardine@modbee.comAugust 9, 2014 Updated 1 hour ago

Facebook Twitter Google Plus Reddit E-mail Print

Bridget Fithian of the Sierra Nevada Conservancy displays a map showing the part of the Stanislaus National Forest burned during the Rim fire. The Conservancy sponsored a recovery area tour on Friday. JEFF JARDINE — jjardine@modbee.com |Buy Photo

-

When the Rim fire burned more than 400 square miles of Stanislaus National Forest and Yosemite National Park land last year, it became immediately obvious that the forest's recovery will take decades and the fire's impacts will be long-lasting.

Folks at the Sierra Pacific sawmill near Sonora got a not-so-subtle reminder of that last month when a deck of logs salvaged and trucked in from the company's plantation that burned in the Rim fire suddenly caught fire again at the mill.

"A whole deck of cedar," Tim Tate, Sierra Pacific's division manager, said. It's quite possible, he said, that embers still burning inside one of the logs ignited the entire pile. Why? Because a few days before the deck burned, a sawyer in the mill cut into one of the logs.

"It was still smoking," Tate said.

Those incidents occurred in July, nearly 11 months after the Rim fire began on Aug. 17, 2013 – one week shy of a year ago today. Keith Emerald, a 32-year-old Columbia man who had been hunting deer in the area the day it started has been indicted on charges of setting the fire and will appear in federal court at some point.

But this isn't about who started the blaze. This is about the recovery of the private and national forest lands destroyed by the Rim fire. It is about fires past, present and future as climate change, drought and forest management practices combine to create the perfect conditions for mega events.

Decades of fire suppression paired with decades of declining timber harvesting on public lands simply hasn't worked. The forests are far more dense than they were more than a century ago. Fuel in the form of brush and dead wood on the forest floor becomes pure kindling. When coupled with drought, it's a formula for exactly what we're seeing throughout the West: Huge fire after huge fire.

Many of the 7,000-plus firefighters came directly from other major fires throughout the Western states to battle the Rim fire, which cost taxpayers $127 million to extinguish.

“Every rural county feels like it will be home to the next Rim fire,” Tuolumne County Supervisor Sherri Brennan said.

On Friday, the Sierra Nevada and Sierra Foothill conservancies and Calforests, a timber industry group, organized a tour of the Rim fire area. They assembled a panel that included representatives from the U.S. Forest Service, timber industries, Brennan, UC Merced scientist Phil Saksa and Patrick Koepele, who is the executive director of the Tuolumne River Trust, an environmental organization.

A majority of the panelists believe national forests and the U.S. Forest Service are under the Department of Agriculture for a reason: that forests are resources to be managed for the benefit of the people. Conversely, the National Park system is under the Department of Interior to be preserved and protected, which is why firefighting, recovery practices and jurisdiction changed where the Rim fire burned its way into the park.

They might not agree on everything, but they steadfastly feel forest management practices need to change in order to prevent future catastrophic events like the Rim fire and to protect the watersheds. And there is no better time to push an agenda or for rules changes than right after the forest burned to smithereens and took the local economy down with it.

“The Groveland corridor has suffered immensely and has been slow in coming back,” Brennan said. “It is one of the gateways to Yosemite.”

Ranchers who graze their animals in the forests took a huge hit from the fire and the Forest Service refused to allow some to bring their animals into the burn area this year.

“It’s heavily impacted the permittees in huge numbers,” she said.

Much of the timber salvaged from the Rim fire area has come from privately owned lands surrounded by the national forest. A federal judge will review an environmental report Aug. 22 that could speed up salvage on public lands – if the document isn’t challenged in court by some environmental groups, which usually happens. Those in the timber industry, including Sierra Pacific’s Tate, Paul Violett of Calforests and Mike Albrecht of Sierra Resource Management, say the burned trees generally must be salvaged within two years to have any value.

“From the logging communities, it has been an outstanding effort by the timber industry,” Albrecht said. The 200 loads of logs emerging from the forest each day, he said, “are enough to build 50 homes a day.”

Sierra Pacific owns about 16,000 acres within the Rim fire perimeter, Tate said. “About 9,000 of it got scorched,” he said.

“These large fires are very disruptive events to those of us in the timber management business,” Tate said. “We’ve had to shut down all our green (forest-thinning) operations and bring everybody over to (salvage). It all changed very suddenly.”

Ironically, the drought contributing to the bone-dry, fire-friendly conditions so prevalent throughout the state actually aided the Rim fire area in one aspect. A normal rainfall year, let alone a strong one, would have triggered major erosion and mudslides, the sediment of which would have ended up in the reservoirs.

“The low-water year was not the worst thing to happen (for the burn area),” said Saksa, of UC Merced’s Sierra Nevada Research Institute. “It gave the area an opportunity to restabilize.”

The other good news is that the fire has brought together representatives of environmental groups, the timber industry, ag, tourism, economic development and government under the banner of Yosemite Stanislaus Solutions.

“We don’t agree on everything,” Albrecht said. “We do agree that what we have done isn’t working.”

A year later, 400-plus square miles of charred landscape offers a jaw-dropping reminder.

There are also embers still smoldering here and there, too, as the folks at Sierra Pacific can attest.

Bee columnist Jeff Jardine can be reached at jjardine@modbee.com or (209)Â 578-2383. Follow him on Twitter @JeffJardine57.

Facebook Twitter Google Plus Reddit E-mail Print

Join The Conversation

Modesto Bee is pleased to provide this opportunity to share information, experiences and observations about what's in the news. Some of the comments may be reprinted elsewhere in the site or in the newspaper. We encourage lively, open debate on the issues of the day, and ask that you refrain from profanity, hate speech, personal comments and remarks that are off point. Thank you for taking the time to offer your thoughts.

Commenting FAQs | Terms of Service

Today's Circulars

WALMART
VALID UNTIL SEP 06

SPORTS AUTHORITY
THIS WEEK ONLY

JCPENNEY
EXPIRES TOMORROW

DOLLAR GENERAL
VALID UNTIL AUG 17

View All Circulars

Email Newsletters >
Manage newsletter subscriptions
Tablets >
Apps and services for tablet devices
Mobile >
Apps and services for your mobile phone
Social Media >