



PUBLIC NOTICE
Regular Meeting of the:
Honey Lake Valley Resource Conservation District
Attachments available 2/26/18 at www.honeylakevalleyrcd.us

Date: Wednesday, February 28, 2018

Location: **USDA Service Center**
170 Russell Avenue, Suite C
Susanville, Ca. 96130
(530) 257-7271 x100

Time: **3:30 PM**

AGENDA

NOTE: THE HONEY LAKE VALLEY RESOURCE CONSERVATION DISTRICT MAY ADVISE ACTION ON ANY OF THE AGENDA ITEMS SHOWN BELOW.

NOTE: IF YOU NEED A DISABILITY-RELATED MODIFICATION OR ACCOMODATION, INCLUDING AUXILIARY AIDS OR SERVICES, TO PARTICIPATE IN THIS MEETING, PLEASE CONTACT THE DISTRICT OFFICE AT THE TELEPHONE NUMBER AND ADDRESS LISTED ABOVE PRIOR TO THE MEETING.

I. CALL TO ORDER. PLEDGE OF ALLEGIANCE. ROLL CALL

II. APPROVAL OF AGENDA

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCd leadership & organizational capacity.

III. PUBLIC COMMENT

Per RCD Board Policy No. 5030.4.1, during this portion of the meeting any member of the public is permitted to make a brief statement, express his/her viewpoint, or ask a question regarding matters related to the District. Five (5) minutes may be allotted to each speaker and a maximum of twenty (20) minutes to each subject matter.

IV. CONSENT ITEMS

- A. Approval of 12/8/2017 revised special meeting minutes (tabled from January 2018 meeting) and January 24, 2018 regular minutes (attachment).
- B. Approval of December 2017/January 2018 Treasurer's Report (tabled from January 2018 meeting - attachment) and January/February 2018 Treasurer's Report.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCd leadership & organizational capacity.

V. REPORTS

- A. District Manager Report (attachment) – Sims.
- B. Correspondence (attachment) - Wheeler.
- C. NRCS Agency Reports (attachment) – Peitz.
- D. Lassen SWAT – Sims/Tippin.

- E. Buffalo Skedadaddle Sage Grouse Working Group – Schroeder.
- F. WAC Report – Langston.
- G. Modoc Regional RCD/CARCD Report – Tippin.
- H. Fire Safe Council Report – Johnson.
- I. Finance Report – Langston/Schroeder.
- J. Policy Report – Claypool/Johnson/Sims.
- K. Unagendized reports by board members.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCD leadership & organizational capacity.

VI. ITEMS FOR BOARD ACTION AND/OR DISCUSSION – RCD

- A. FYE 18 Mid-year budget review (attachment) – Sims.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCD leadership & organizational capacity.

- B. Consideration and approval of CEQA study for the Mitigated Negative Declaration for Diamond Mountain Watershed Restoration and Wildland Urban Interface (WUI) Project – Sims.

Tie to the Strategic Plan: Strategic Issue 2 – Stay Relevant to the Conservation Needs of the Community.

- C. 2017 Annual Operations Plan Review (attachment) – Sims.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCD leadership & organizational capacity.

- D. FYE 19 RCD/MM draft budget discussion – Sims.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCD leadership & organizational capacity.

- E. Submission of article 1 of 5 (“RCD 101 – What’s An RCD”) for review, revision and approval for submission to the Lassen County Times Op/Ed column (attachment) – Johnson.

Tie to the Strategic Plan: Strategic Issue 2 – Stay Relevant to the Conservation Needs of the Community.

- F. Proposal and decision on whether to sell lunch to the participants and spectators at the Susanville Area Bicycle Association Dirt Riders annual “Ridin’ High at the Ranch” mountain bike race as a means to generate some unrestricted funding for the RCD. The race is scheduled for Saturday, May 26, 2018 starting at 10:00 AM – Tippin.

Tie to the Strategic Plan: Strategic Issue 2 – Stay Relevant to the Conservation Needs of the Community.

VII. ITEMS FOR BOARD ACTION AND/OR DISCUSSION– WATERMASTER

- A. Consideration and approval to pay Lozano Smith Invoice No. 2044851 dated 2/12/18 in the amount of \$319.00 (attachment) – Claypool.

Tie to the Strategic Plan: Strategic Issue 1 – Build HLVRCD leadership & organizational capacity.

VIII. ADJOURNMENT

The next Honey Lake Valley RCD meeting will be **March 28, 2018 at 3:30 PM.** The location is the USDA Service Center, 170 Russell Avenue, Suite C, Susanville, CA.

I certify that on Friday, February 23, 2018 agendas were posted as required by Government Code Section 54956 and any other applicable law.



*Ian Sims, District Manager
Honey Lake Valley Resource Conservation District*

agendafebruary2018

HONEY LAKE VALLEY
RESOURCE CONSERVATION DISTRICT

SPECIAL MEETING MINUTES (Revised***)**

Date: Friday, December 8, 2017

Location: USDA Service Center, 170 Russell Avenue, Suite C, Susanville, CA 96130

Present: Board: Jesse Claypool Wayne Langston
Will Johnson Laurie Tippin

Staff: Ian Sims Merry Wheeler Mitch Otto

Attendees: Eric Peitz, NRCS

I. CALL TO ORDER, PLEDGE OF ALLEGIANCE, ROLL CALL

Board Chair Jesse Claypool called the meeting to order at 9:02 am, pledge of allegiance was done and quorum was noted. All board was in attendance.

II. APPROVAL OF AGENDA

Board Member Wayne Langston made a motion to approve the agenda, Board Member Will Johnson seconded and the motion passed. All.

III. PUBLIC COMMENT

Per RCD Board Policy No. 5030.4.1, during this portion of the meeting any member of the public is permitted to make a brief statement, express his/her viewpoint, or ask a question regarding matters related to the District. Five (5) minutes may be allotted to each speaker and a maximum of twenty (20) minutes to each subject matter.

None.

IV. CONSENT ITEMS

A. Approval of 11/9/17 special and closed session meeting minutes.

B. Approval of October/November 2017 Treasurer's Report.

Board Member Laurie Tippin stated the RCD checking account balance seemed lower than usual. District Manager Ian Sims explained that the funds in that account fluctuate depending on grant monies received and that there was no need for concern.

C. Correspondence.

None received.

Board Member Dave Schroeder made a motion to approve the Consent Items, BM Langston seconded and the motion passed. All.

V. REPORTS

A. District Manager Report – Sims.

District Manager Ian Sims presented his report. The new website has been launched – BC Claypool said it looks great. DC Sims has also launched Quickbooks online and is drafting two grant applications (Cal Recycle and DWR). He also mentioned that the fourth Storm Water Resource Planning Grant invoice has been submitted and that he's submitting two invoices a quarter to expedite the State's review and ensure

positive cash flow. The draft SWRP will be available and the end of 2017, with public review beginning in 2018. BM Tippin asked about matching funds.

DM Sims also stated that hand thinning on the Lassen Creek Watershed project is mostly complete, with 250 acres of mechanical treatments to occur next year.

B. NRCS Agency Report – Peitz.

District Conservationist Eric Peitz presented his report. He stated the first batching period in FY 2018 will end 1/19/18. It is anticipated 8 to 12 apps will be ready for the first batch. DC Peitz also mentioned that Jim Reinstra, Modoc Team Engineer in Susanville, will serve as acting Area One Engineer until further notice. Scott Phillips, Ag Engineer in Susanville, will handle some of the team duties.

C. Lassen SWAT – Tippin/Sims.

SWAT will be getting three or four ATV's for use in the Susanville area. There will be a meeting on Monday, 12/11/17 to discuss the MOU. The City of Susanville and Lassen County Board of Education have not yet signed it.

D. Buffalo Skedaddle-Sage Grouse Working Group – Sims.

DM Sims distributed a handout containing comments on the BLM plan revision amendments.

E. WAC Report – Langston.

BM Langston stated there was no WAC meeting scheduled in November.

F. Modoc Regional RCD/CARCD Report – Tippin. *****

BC Tippin distributed the "CARCD Annual Business Meeting Summary" dated 11/18/17:

1. Officers. There were no new nominations – all officers remain the same.
2. Resolutions. The chair and vice-chair must be filled with CARCD board members in good standing. Resolution 2017-01 passed and Resolution 2017-02 failed.
3. Treasurer's Report. Dues are based on audit revenue. Based on this, the HLVRCD dues would be approximately \$2,200 rather than \$167. We currently do not pay full dues. CARCD is working on restructuring revenue plans. The 2018 conference will be in San Diego.

G. Fire Safe Council Report – Johnson.

There was no meeting.

H. Unagendized Reports by Board Members.

BM Johnson happened to be in the HLVRCD office when Mr. Larry Parsons dropped by. Mr. Parsons lives near East Parker Creek and feels one of his neighbors has an illegal lake off the Janesville Grade, which is interfering with Maidu Indian Tribe artifacts, the Bear Dance, a private burial ground – all have been impacted. BM Johnson assured Mr. Parsons that Watermaster Mitch Otto would either contact him by phone or drop by his property. WM Otto explained he had left several messages for Mr. Parsons but had not received any return calls as yet.

BC Claypool was appointed to two committees: one is the CSDA Professional Development Committee and the other is the CSDA Member Services Committee. Both committees co-opt for insurance coverage with other small RCD's. The Board offered its congratulations. BC Claypool also suggested the Board look at some webinars offered by Lozano Smith regarding sexual harassment, Form 700, etc.

BM Tippin said that Mike Bartley had offered to give the Board a tour of his EQIP project. BM Tippin and Johnson were interested, as well as DM Sims and WM Otto. DC Peitz said the Board could look at informative slides in the morning and then tour Mr. Bartley's project in the afternoon. BM Johnson suggested opening it up to the public and media.

VI. ITEMS FOR BOARD ACTION AND/OR DISCUSSION – RCD

- A. Tabled from November 9, 2017 meeting for wording changes. Consideration and approval of Resolution 2017-09 authorizing submittal of application(s) for all Cal Recycle grants for which the Honey Lake Valley Resource Conservation District is eligible – Sims.**

This project would assist the NRCS with a fuel reduction and conservation project on 124 acres owned by John Fitzgerald. Calfire will do piling and burning. The Board wanted the administrative fee more clearly lined out and there was concern that there was not enough detail on funding. Therefore the item was tabled until the November meeting.

BM Tippin made a motion to approve Resolution 2017-09 authorizing submittal of application(s) for all Cal Recycle grants for which the Honey Lake Valley Resource Conservation District is eligible, BM Johnson seconded and the motion passed. All.

- B. Consideration and approval of Singleton-Auman audit proposal engagement letter to conduct the audit for HLVRCD for the period ending June 30, 2017 – Sims/Singleton. *******

DM Sims stated the Singleton-Auman engagement letter for FYE 6/30/17 audit is due in February of 2018. BM Tippin asked about the procurement policy and DM Sims said it was not an issue since the scope of services has not changed and thus the HLVRCD would be within policy guidelines. BM Langston asked if the Board is satisfied with audit provided by S/A. It was decided to send a RFP for next year – FYE 6/30/2018. DM Sims noted that consistency with an auditor is extremely important.

BM Tippin made a motion for approval of Singleton-Auman audit proposal engagement letter to conduct the audit for HLVRCD for the period ending June 30, 2017, BM Schroeder seconded and the motion passed. All.

- C. Consideration and approval to cancel December 27, 2017 regular HLVRCD meeting – Sims.**

BM Langston made a motion for approval to cancel December 27, 2017 regular HLVRCD meeting, BM Schroeder seconded and the motion passed. All.

- D. Third and final reading and approval of 2018 RCD/WM calendar – Sims.**

DM Sims presented the 2018 RCD/WM calendar, which is in a new format in order to capture all dates of importance. Revisions had been made since October meeting and DM Sims was directed to revise the calendar again and present it for final approval at the next meeting:

BC Claypool asked that a date indicating the Board of Supervisors (BOS) appoint HLVRCD directors for vacant seats be added to the calendar. He noted that a resolution is required when requesting the BOS to perform this function. He also wanted the SRWSA report to be submitted to Lassen Superior Court on 12/31 of each year.

BM Schroeder made a motion to approve the 2018 RCD/WM calendar with changes, BM Johnson seconded and the motion passed. All.

- E. Consideration and approval of Resolution 2017-10 for DWR Emergency Flood Protection Grant – Sims.**

BM Tippin made a motion for approval of DM Sims to draft Resolution 2017-10 for the DWR Emergency Flood Protection Grant, BM Langston seconded and the motion passed. All.

- F. Consideration and approval of letter of response to Diana Wemple, Lassen County Auditor, regarding Special District audit requirements – Sims.**

BM Tippin had grammatical edits to be incorporated into the letter. BM Schroeder made a motion to approve a letter of response to Diana Wemple, Lassen County Auditor, with grammatical edits, regarding Special District audit requirements, BM Tippin seconded and the motion passed. All.

- G. Consideration and approval to pay CSDA annual membership dues of \$167 – Wheeler.**

BM Johnson made a motion for approval to pay CSDA annual membership dues of \$167, BM Langston seconded and the motion passed. All.

H. **Updates and information from board members that attended CARCD Annual Conference, November 15th through 18th, 2017 – Claypool, Tippin and Johnson.**

Jesse Claypool:

BC Claypool's focus was primarily focused on agricultural related items:

1. Carbon farming: improves grazing with a 16% increase in yield. Carbon farm plans help create a healthy soil initiative. Growers get a tax credit for bumpers and windbreaks and other environmental concerns.
2. There is a benefit to RCDs as well as farmers and ranchers. BC Claypool discovered that most RCDs are pretty much the same.

Laurie Tippin: *****

1. Connecting to State-level Elected Officials – Panel

HLVRCD Possible Actions: Establish relationship with local state/federal staffers; participate in CSDA/CARCD-CSG/our own legislative days; host a summer field trip of our project work w/ partners.

1. Era of a New Specialty Crop: Cannabis – Panel – Opening Session and Fireside Chat

HLVRCD Possible Actions: Keep informed on Lassen Co. growing/using regulations.

1. Creating State Funding & Policies thru Strategic Partnerships – Joe Caves, CSG – Opening Session

HLVRCD Possible Actions: Track appropriate legislation; participate in legislative days at the capitol; brainstorm project ideas & partners for upcoming funding opportunities.

Will Johnson

BM Johnson interacted with other RCDs. Some ideas were:

1. More development of Board of Directors, including development of public services, possibly using media outlets.
2. More involvement with BOS – have County supervisor or their staff, attend RCD meetings.
3. Diversify board membership.
4. Develop presentation program to Elks, Rotary, Kiwanis, etc. regarding RCD and the services we provide.
5. Write column for Lassen County Times monthly to educate them about RCD.
6. "Trout in the Classroom" – kids raise fingerlings in aquarium in classroom and release the fry into Pine Creek (or other creeks).

VII. **ITEMS FOR BOARD ACTION AND/OR DISCUSSION – WATER MASTER**

- A. **Consideration and final approval of the 2016-2017 SRWSA Annual Usage Report. Per order of the Court, the 2016-2017 SRWSA Annual Usage Report must be lodged with the Lassen County Superior Court by 12/31/17 – Sims/Otto.**


BM Schroeder made a motion for approval of the 2016-2017 SRWSA Annual Usage Report. Per order of the Court, the 2016-2017 SRWSA Annual Usage Report must be lodged with the Lassen County Superior Court by 12/31/17, BM Langston seconded and the motion passed. All.

VIII. ADJOURNMENT

BM Schroeder made a motion to adjourn the meeting, BM Johnston seconded and the meeting was adjourned at 10:54 AM. All.

The next scheduled special Honey Lake Valley RCD meeting is Wednesday, January 24, 2018 at 3:30 pm at the USDA Service Center, 170 Russell Avenue, Suite C, Susanville, CA 96130.

Respectfully submitted,


Merry Wheeler
Executive Secretary

APPROVED: _____
Jesse Claypool, RCD Board Chairperson

DATE: January 24, 2018

HONEY LAKE VALLEY
RESOURCE CONSERVATION DISTRICT

REGULAR MEETING MINUTES

Date: Wednesday, January 24, 2018

Location: USDA Service Center, 170 Russell Avenue, Suite C, Susanville, CA 96130

Present: Board: Jesse Claypool Dave Schroeder Wayne Langston (by phone)
Will Johnson Laurie Tippin

Staff: Ian Sims Merry Wheeler

Attendees: Eric Peitz, NRCS

I. CALL TO ORDER, PLEDGE OF ALLEGIANCE, ROLL CALL

Board Chair Jesse Claypool called the meeting to order at 3:40 pm, pledge of allegiance was done and quorum was noted.

II. APPROVAL OF AGENDA

Board Member Will Johnson made a motion to approve the agenda, Board Member Laurie Tippin seconded and the motion passed. All.

III. PUBLIC COMMENT

Per RCD Board Policy No. 5030.4.1, during this portion of the meeting any member of the public is permitted to make a brief statement, express his/her viewpoint, or ask a question regarding matters related to the District. Five (5) minutes may be allotted to each speaker and a maximum of twenty (20) minutes to each subject matter.

None.

IV. CONSENT ITEMS

A. Approval of 12/8/17 special meeting minutes.

BM Laurie Tippin had revisions to Items V. F "Modoc Regional RCD/CARCD Report" and VI. H "Updates and information from board members that attended CARCD Annual Conference" and Wayne Langston had revisions to Item VI. B "Consideration and approval of Singleton-Auman audit proposal engagement letter to conduct the audit for HLVRCD for period ending 6/30/17".

B. Approval of December 2017/January 2018 Treasurer's Report.

C. Correspondence.

None received.

Due to the number of revisions to the Item A, "Approval of 12/8/17 special meeting minutes, the Board tabled the item until the February 28, 2018 meeting.

V. REPORTS

A. District Manager Report – Sims.

District Manager Ian Sims presented his report. There was some discussion on AB22, "New Option Now Legal for Records Retention" wherein public districts may now store duplicate records using an approved cloud-based storage service.

B. NRCS Agency Report – Peitz.

District Conservationist Eric Peitz presented his report. The first CSP sign up is set for 3/2/18. Scott Phillips will serve as Modoc Team Engineer for 120 days.

C. Lassen SWAT – Tippin/Sims.

The MOU has been approved and signed.

D. Buffalo Skedaddle-Sage Grouse Working Group – Sims.

The group met during the week of January 15th.

E. WAC Report – Langston.

BM Langston stated there was no WAC meeting held in January but there is a special meeting scheduled for February.

F. Modoc Regional RCD/CARCD Report – Tippin.

BM Tippin reviewed the 2018 California Water Bond Information document that was in the agenda packet. This proposition/bond provides \$8.8 billion for conservation and water management.

G. Fire Safe Council Report – Johnson.

BM Johnson asked if there was a sign for the SNC Lassen Creek Watershed Restoration project and was told that it's in the process of being made.

H. Unagendized Reports by Board Members.

BM Johnson distributed a document with many of his ideas on it. Among them were the reformation of the Susan River Watershed (SRW) group as well as having the RCD host an HLVRCD Day/Open House, the objective of which would be to provide a relaxed and convivial atmosphere to engage with local government, interested stakeholders and the public, which would provide information regarding the RCD's activities, facilitate exchanges of ideas, etc.

BM Tippin as well as BC Claypool and BM Johnson attended the SNC meeting. She stated that the RCD was mentioned several times, which shows it's in the public's mind.

BM Schroeder led a discussion on wolf predation.

BC Claypool welcomed DM Sims back from vacation and announced to the Board and staff that the 1st Annual RCD BBQ/Mixer will be held at 3:00 pm on Saturday, 2/10/18 at his barn.

VI. ITEMS FOR BOARD ACTION AND/OR DISCUSSION – RCD

A. Annual Organizational Meeting (RCD 5010.5; PRC 9306 and 9307 – Claypool.

1. Election of officers (chairman, vice-chairman and secretary/treasurer).

BM Tippin made a motion to keep the officers as they are (BC Claypool as board chair, BM Tippin as vice-chair, and BM Langston as secretary/treasurer, BM Schroeder seconded and the motion passed. All.

2. Appointment of Executive Secretary as board secretary.

BM Johnson made a motion to appoint ES Merry Wheeler as board secretary, BM Tippin seconded and the motion passed. All.

B. File Statement of Facts with the Secretary of State – Wheeler.

BM Langston made a motion to file Statement of Facts with the Secretary of State, BM Johnson seconded and the motion passed. All. The Statement of Facts was mailed on January 25, 2018.

C. Assignment of committees (SWAT, Buffalo Skedaddle, WAC, Modoc Regional RCD/CARCD, Fire Safe Council, Finance and Policy – Claypool.

The Board made the following committee assignments:

SWAT -	BM Tippin
Buffalo Skedaddle -	BM Schroeder
WAC -	BM Langston
Modoc Regional RCD/CARCD -	BM Tippin
Fire Safe Council -	BM Johnson
Finance -	BMs Schroeder and Langston
Policy -	BC Claypool and BM Johnson

DM Sims reminded the Board that if they needed to submit a report to have it posted a week before the meeting.

D. Policy update/revisions (RCD 5010.1) – Claypool.

1. Place and time of meeting.

BM Schroeder made a motion to continue to hold the HLVRCD meetings at 170 Russell Avenue, Suite C, Susanville on the fourth Wednesday of each month. From April through October the meetings will start at 5:30 pm and from November through March the meetings will start at 3:30 pm. BM Johnson seconded and the motion passed. All.

2. Addition of winter hours.

See above.

E. FYE 18 mid-year budget review – Sims.

DM Sims requested the FYE 18 mid-year budget review be tabled until the February meeting.

F. Consideration and approval of following policies: – Tippin/Sims:

- 1. Policy 2011 – Individual Development Plan**
- 2. Policy 2009.2 – Signature Acknowledgement Form**
- 3. Policy 2010 – Performance of Evaluation**

BM Tippin made a motion to approve Policy 2011 – Individual Development Plan, Policy 2009.2 – Signature Acknowledgement Form and Policy 2010 – Performance Evaluation, BM Schroeder seconded and the motion passed. All.

G. Final approval and adoption of FY2018 HLVRCD/WM calendar – Sims.

It was noted that the FY2018 HLVRCD/WM calendar had been approved. DM Sims will edit the final line of the calendar in December to add "submitted to court". BM Johnson made a motion to approve the edit, BM Schroeder seconded and the motion passed. All.

H. Discussion regarding engagement with the Susanville India Rancheria (SIR) in development of an EPA watershed plan – Johnson.

BM Johnson asked for the Board's permission on continuing to meet with SIR and provide them with guidance on how to get their project going. DM Sims stated it was a win-win initiative. The Board agreed and directed staff to follow through with SIR.

I. Discussion and consideration of investigating the option of, and development of a print media "editorial/opinion" and informational series of articles in conjunction with the Lassen County Times newspaper that will highlight conservation issues, opportunities, efforts and activities of the local area and the RCD in general – Johnson.

BM Johnson spoke to Sam Williams at the Lassen County Times. BM Johnson offered to draft a few articles and have the Board review them before submission. He feels the RCD needs to educate the public regarding the District's purpose. BM Johnson has also spoken to KSUE radio.

- J. **Discussion and consideration of the HLVRCD planning and hosting an event that would bring local government representatives (City and County) and the RCD Board together for a casual "meet and greet" to present current and future RCD activities – Johnson.**

This item was tabled.

- K. **Discussion and consideration of the RCD supporting the design and issuance of business cards with the HLVRCD logo, staff or directors' name and contact info, and the RCD general contact information as similarly displayed on the example template provided – Johnson.**

DM Sims will look into having Vista Printing design a uniform template and bring an example back to the next meeting.

VII. ITEMS FOR BOARD ACTION AND/OR DISCUSSION – WATER MASTER

- A. **None.**

VIII. ADJOURNMENT

BM Schroeder made a motion to adjourn the meeting, BM Tippin seconded and the meeting was adjourned at 6:05 pm. All.

The next scheduled special Honey Lake Valley RCD meeting is Wednesday, February 28, 2018 at 3:30 pm at the USDA Service Center, 170 Russell Avenue, Suite C, Susanville, CA 96130.

Respectfully submitted,



Merry Wheeler
Executive Secretary

APPROVED: _____
Jesse Claypool, RCD Board Chairperson

DATE: February 28, 2018

Honey Lake Valley Resource

Conservation District

Treasurer's Report
December 2017/January 2018

RCD

RCD bank balance –	12/1/17	\$ 23,334.75	1/24/18	\$ 29,549.20
Quickbooks balance –	12/1/17	\$ 12,609.05	1/24/18	\$ 23,625.06

WATERMASTER

WM bank balance –	12/1/17	\$ 84,578.41	1/24/18	\$154,371.89
Quickbooks balance –	12/1/17	\$ 83,398.76	1/24/18	\$153,082.23

WATERMASTER SAVINGS

WM savings bank balance –	12/1/17	\$ 33,792.75	1/24/18	\$ 33,795.62
Quickbooks balance –	12/1/17	\$ 33,792.75	1/24/18	\$ 33,795.62

SNC MONEY MARKET ACCOUNT

SNC MM bank balance -	12/1/17	\$ 67,523.07	1/24/18	\$26,381.75
Quickbooks balance -	12/1/17	\$ 67,516.41	1/24/18	\$26,381.75

Honey Lake Valley RCD District Manager Report

Ian Sims – District Manager

February 28, 2018

RCD Administration:

- CalRecycle Grant through second review, will be approved!

Susan River Water Master Service

- Working on winter projects, (Mapping/Operations Manual/Water Measurement Devices)
- Irrigation Season begins March 1st

Lahontan Basins IRWM

- HLVRCO will be the lead agency for the DACI Grant!

DOC/RCD Accreditation Program

- Board members to look for trainings they would like to attend

Storm Water Resource Planning Grant

- 5th SWRP Invoice Approved, payment in 4 weeks
- Draft SWRP complete, public review coming in early 2018

Special Weed Action Team

- MOU Signature pages filtering in...

Lassen Creek Watershed

- 2nd request for advance payment to be submitted
- Signage complete

Plans for Next Month:

- Continue work on open grants/agreements: SNC, SWRP and DOC
- Begin work on new grants: CalRecycle and DACI
- Build out archived projects section of website
- 1st reading of FYE19 RCD/WM Budget
- Annual Operation Plan
- FYE19 WM Budget Review

Honey Lake Valley Resource Conservation District

170 Russell Ave., Suite C.
Susanville, CA 96130
(530)252-7271

www.honeylakevalleyrzd.org



CORRESPONDENCE

February 14, 2018

Lassen Ale Works @ the Boardroom
702-000 Johnstonville Road
Susanville, CA 96130
Attn: Adrienne Sargent

RE: Donation to Honey Lake Valley Resource Conservation District
First Annual Mixer

Dear Adrienne:

On behalf of the Honey Lake Valley Resource Conservation District (HLVRCD), I am writing to thank you for your generous donation of the two growlers. They were thoroughly enjoyed by mixer attendees. Contributions from local businesses such as The Boardroom are greatly appreciated by the HLVRCD, an organization devoted to improving the resource conservation community.

For your records, the HLVRCD Tax I.D. number is 68-0003580. Enclosed is a copy of HLVRCD Board Policy "Public Contributions", Policy Nos. 1060.1 and 1060.3. The amount of your donation was \$27.04 (copy of receipt attached).

Again, thanks very much for your charitable contribution.

Sincerely,



William Johnson, Director
Honey Lake Valley RCD Board of Directors

cc: Honey Lake Valley RCD Board

Enclosures: HLVRCD Board Policy "Public Contributions", Policy Nos. 1060.1 and 1060.3
Copy of The Boardroom receipt in the amount of \$27.04



**Lassen Ale Works @ the
Boardroom**

702-000 Johnstonville Rd Feb 10, 2018
Susanville, CA 96130-9149 1:19 PM

Ticket: Beer Cash
Receipt JQCY

FOR HERE

Bizz Johnson Blonde \$13.52
Growler 64
Comp

Almanor Amber \$13.52
Growler 64
Comp

Comps -\$27.04

Total \$0.00
Cash \$0.00
Change \$0.00

We now offer gift cards at the Boardroom!
Available in any amount.

1050.1 Individuals requesting copies of public documents shall be charged a reasonable fee based upon the cost to produce the copy (\$.25 per sheet) to defray expenses associated with the copying process.

1050.2 Copies of agendas and other writings (except for privileged documents) distributed to a majority of the Board of Directors at open Board meetings shall be made available to the public. A limited quantity of such documents (based on normal audience attendance) shall be copied in advance of each meeting and made available to the public in attendance at no charge. Individuals requesting copies of such documents prior to the Board meeting will be charged \$.25 per sheet. The copy charge may be levied at Board meetings for copies of documents if more are needed and/or requested in addition to those normally prepared for the public at Board meetings.

g.	POLICY TITLE:	Public Contributions
	POLICY NUMBER:	1060

1060.1 Donations from members of the public to the District for a public purpose that is within the scope of the District's responsibilities will be accepted. The Executive Secretary will provide a receipt for said donation and include the District's tax identification number thereon.

1060.2 Donations must be clearly marked as such. Deposits by a property owner with a service account will be assumed to be a payment toward their account's unpaid balance, or payment in advance of billing in the event the account does not have an unpaid balance, if the deposit is not clearly marked as being a donation for a specific public purpose.

1060.3 By accepting donations, the District is not claiming to be qualified by the Internal Revenue Service as being a charitable organization for which donations may be considered tax deductible. Determination of how donations to the District are to be treated relative to the donor's tax liability is strictly the responsibility of the donor.



Natural Resources Conservation Service
Susanville Service Center
170 Russell Ave. Ste. C
Susanville, CA 96130

February 28, 2018

Honey Lake Valley RCD
NRCS Activity Report

Administration/Programs:

• **FY 2018 Program Information**

- 2 applications were selected for funding in first batching period in FY18'. It's anticipated that 5-7 applications will be submitted for Batch #2.
- The 2018 Sign-up for CSP will end in March 2, 2018.
- The Second EQIP batching period deadline in FY18' is April 6, 2018.

Staffing:

- Currently there are no updates on staffing.
- There is a budget shortfall statewide in terms of agreements the big four agreements mostly utilized in Area 1 (POWTEC, ACES, Pt. Blue, and RCD agreements) a \$1 million dollar shortfall out of \$4.6 million last year.

• **Performance/Outreach/Other:**

- The next Modoc Regional RCD Meeting is tentatively scheduled for April of 2018.

Questions, Comments, Discussion:

Submitted by: *Eric Peitz*

2/21/2018

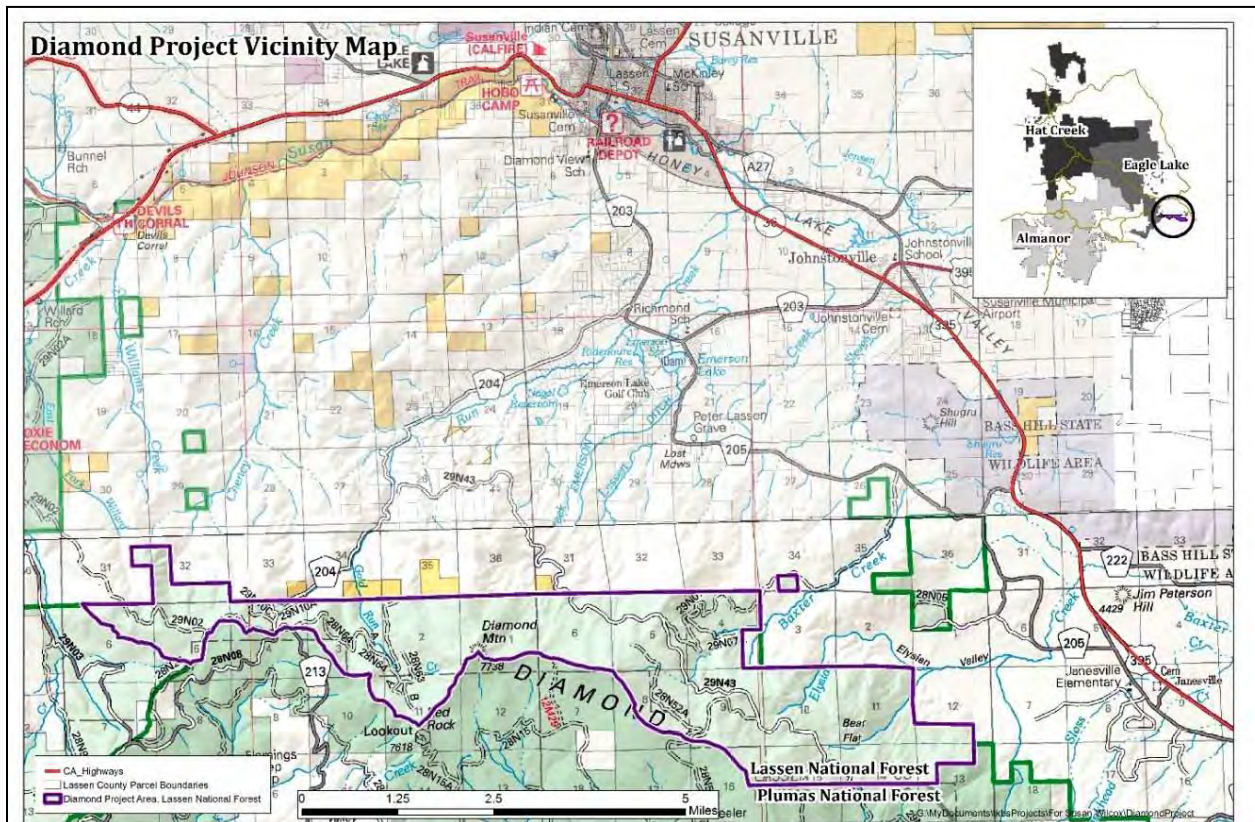
California Environmental Quality Act (CEQA) Initial Study

Project Title: Diamond Mountain Watershed Restoration and Wildland Urban Interface (WUI) Project

Lead Agency Name and Address: Honey Lake Valley Resource Conservation District
170 Russell Ave., Suite C, Susanville, CA 96130

Contact Person and Phone Number: Ian Sims, (530) 257-7271 x110

Project Location: 7 miles south of the City of Susanville



Project Sponsors Name and Address: Lassen County Fire Safe Council (LCFSC)
P.O. Box 816, Susanville, CA 96130-0816

General Plan Designation: Extensive Agriculture, Open Space, General Forest Environment

Zoning: Upland Conservation District (U-C)
Upland Conservation District/Resource Management District (U-C-2)
Open Space District (O-S)
General Agricultural District (A-1)

Project Description and Background:

Background

Eagle Lake Ranger District (ELRD) of the Lassen National Forest (LNF) is proposing watershed restoration, forest health, and fuels treatments in the Diamond Mountain watershed. The Diamond Mountain Watershed Restoration and WUI Project (hereafter Diamond Mountain project) planning area encompasses approximately 8,195 acres of National Forest System lands administered by the Eagle Lake Ranger District (ELRD) of the Lassen National Forest (LNF).

The Diamond Mountains are composed of a mix of public and private land. The National Forest System (NFS) lands occupy the upper, southern reaches of the mountain; the private lands are located from mid-slope to the lower reaches. The entire project area lies within a wildland urban interface zone (WUI), which is an area where human habitation is mixed with areas of flammable wildland vegetation. It extends out from the edge of developed private land into Federal, private, and State jurisdictions.

The project area is generally located 7 miles south of Susanville, CA; 2 miles west from Janesville, CA, and abuts the Plumas National Forest on the south. It includes Township (T) 29 North (N), Range (R) 11 East (E), Sections 31 and 32; T28N, R11E, Sections 1 through 6, 10 and 11; T28N, R12E, Sections 4 through 6 and 8 through 16; T29N, R12E section 34 of the Mount Diablo Meridian (Figure 1). The project planning area encompasses 8,195 acres of NFS lands located within the Diamond Management Area (MA 33), as identified in the LNF Land and Resource Management Plan (LRMP).

The elevation of the project area ranges from 4,300 to 7,700 feet with annual precipitation ranging from 20 to 40 inches. The majority of the project area consists of north facing slopes and drainages with the highest annual precipitation occurring at the upper elevations. Topography is highly variable, including flat areas, sloping terrain, and steep slopes. Typically, tree density decreases from mid-slope to higher elevation areas.

Species composition and structure of forest stands are influenced by elevation, landscape position, aspect, and stand history. Forest stands are comprised of red fir (*Abies magnifica*) with scattered western white pine (*Pinus monticola*) at upper elevation sites that retain more snow; Jeffrey pine (*Pinus jeffreyi*) and white fir (*Abies concolor*) on drier upper elevation sites; and Sierra mixed conifer stands at mid and lower elevations. The Sierra mixed conifer stands consist of ponderosa pine (*Pinus ponderosa*), Jeffrey pine, sugar pine (*Pinus lambertiana*), white fir, Douglas-fir (*Pseudotsuga menziesii*) and incense cedar (*Calocedrus decurrens*). At the base of the mountain, ponderosa and Jeffrey pine and California black oak (*Quercus kelloggii*) occur. Riparian areas include lodgepole pine (*Pinus contorta*), mountain alder (*Alnus incana* ssp. *tenuifolia*), trembling aspen (*Populus tremuloides*), and black cottonwood (*Populus trichocarpa*). Hardwoods are scattered throughout the project area and include black oak, bigleaf maple (*Acer macrophyllum*), trembling aspen, and Scouler's willow (*Salix scouleriana*). Plantations of various tree sizes and age classes also occur in the project area.

Fires were a key landscape process that shaped natural forest patterns at stand and landscape scales in the Diamond Mountains prior to the onset of fire suppression. In general, fires were frequent with smaller burn areas occurring more often than large areas. Fire return intervals varied with elevation and forest type with shorter intervals in low elevation pine-oak forests, longer in upper-elevation fir-mixed conifer forests, and intermediate in mid-elevation pine-mixed conifer forests. The Diamond Mountain project area has not had a wildland or prescribed fire greater than 100 acres in size since 1910 (Lassen National Forest fire history records). This reduction in frequency and extent of fire has caused an increase in forest density, a compositional shift to more fire-sensitive species, a loss in irregular tree patterns (stand and landscape heterogeneity), accumulation of surface fuels, and an increase in ladder and canopy fuels.

The changed condition of forest stands in the Diamond Mountain project area have made them vulnerable to an array of mortality factors, including drought stress, bark beetle outbreaks, and disease. Successive dry years can exacerbate these unhealthy stand conditions. Recent aerial detection surveys show that successive dry years from 2007 to 2009 led to increased levels of tree mortality from 2009 to 2012 in the Diamond Mountain area. Although the majority of the mortality over the past 15 years has occurred in adjacent stands just south of the project area on drier south-facing slopes, a major mortality event occurred on the north-facing slope and drainages within the project area 20 years ago (Cluck and Woodruff 2014).

Periodic mortality events combined with high stand densities has led to heavy fuel loadings in some areas and a corresponding increase in fire hazard. These changed conditions have occurred throughout many forests in the southern Cascades and Sierra Nevada and are one of the major causes of the recent increase in the extent and severity of wildfires in the western United States. In the vicinity of the Diamond Mountains, south and west of the project area, there have been fires where the majority of the landscape burned at high severity in 2001, 2006, and 2007; one of these was the Moonlight Fire of 2007. Fire history studies from this area show that prior to the fire suppression period these fires would not have burned such a large proportion of the landscape at high severity, reflecting the increase in fuel accumulation during the last 100 years (Gill and Taylor 2009).

The combination of fuel and vegetation changes within and surrounding the Diamond Mountains has resulted in a landscape that is less resilient to the inherent disturbances for this area including wildland fire, drought, insects, and disease. Consequently, the project area was evaluated for potential opportunities to incorporate WUI objectives (e.g. hazardous fuel reduction treatments and ingress and egress for fire suppression activities and public safety), increase forest resiliency, and improve watershed function. Additionally, expected future conditions would be considered for resiliency objectives since climate change is anticipated to intensify landscape stressors. Creating both landscape and forest stand heterogeneity is a key strategy that incorporates all these goals.

The 2004 Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA ROD) emphasizes management of hazardous fuels with strategic placement of fuels treatments across broad landscapes to modify wildland fire behavior by interrupting potential fire spread causing fires to burn at lower intensities, thereby reducing the size and severity of wildfires. This would be accomplished in the Diamond Mountain project by various vegetation and fuels treatments which overlap across the general direction of historical fire spread. The northern boundary of the project has steep slopes, is located mid-slope, and borders private land, which does not provide the most desirable opportunity for direct suppression on public land. However, fire suppression on public and private land would be enhanced by fire behavior modification within the Diamond Mountain project.

The purpose of the Diamond Mountain project is to achieve the following goals of the Sierra Nevada Forest Plan Amendment (SNFPA USDA 2004), the Lassen National Forest LRMP (Lassen LRMP USDA 1992), the Region 5 Ecological Restoration Leadership Intent (USDA 2011a), and General Technical Report PSW-GTR-220: An ecosystem management strategy for Sierran Mixed-Conifer Forests (North et al. 2009).

1. Reduce threats to communities and wildlife habitat from large, severe wildfires and reintroduce fire into fire-adapted ecosystems. (SNFPA 2004). Improve ingress and egress along roads used by the public and during fire suppression activities.
2. Improve forest health conditions that are characterized by creating a more open and spatially heterogeneous forest dominated by fire-resistant tree species and reducing tree densities to

decrease risk of mortality from insects, drought, disease, and fire. Fire-resistant trees are characterized as having a lower probability of being injured or killed by fire; locally, these species are primarily ponderosa and Jeffrey pines, as well as incense cedar.

3. Restore function of aspen, meadow, and riparian systems to improve watershed condition, increase landscape diversity, and decrease fuel continuity and type across the landscape (SNFPA 2004).
4. Achieve compliance with Region 5 stocking guidelines for plantations. (Lassen LRMP 1992). Improve health and fire resilience of plantations.
5. Provide a stable and cost-efficient road system through appropriate construction, reconstruction, and/or maintenance (Lassen LRMP 1992).
6. Provide a wide range of outdoor recreation opportunities to meet public demand by furnishing different levels of access, service, facilities, and information. (Lassen LRMP 1992).

Goal 1: Reduce threats to communities and wildlife habitat from large, severe wildfires and reintroduce fire into fire-adapted ecosystems. Improve ingress and egress along roads used by the public and during fire suppression activities.

Existing Condition: High densities of small trees and high fuel loads are contributing to high accumulations of ladder and canopy fuels in the Diamond Mountain WUI. Trees killed by region wide drought in the 1980s have now fallen and created extremely high surface fuel loads throughout much of the project area. The amount and continuity of surface, ladder, and canopy fuels contribute to crown fire initiation and spread and increase the potential for large scale, high severity stand replacing fire events. This potential fire behavior could lead to increased risk to fire fighters, public users, resources (e.g. biological, ecological, and watershed), and private property adjacent to the project area. Many of the roads within the project area have dense vegetation growing right up to the road edge, which limits the number of anchor points available during fire suppression activities and reduces visibility and safety when traveling on these roads.

Desired Condition: Stands are fairly open and dominated primarily by larger, fire tolerant trees. Hazards to firefighters and the public are reduced by managing snag levels and downed woody debris in locations likely to be used for control of prescribed fire and fire suppression activities, and along roads used as primary ingress and egress routes. Tree density has been reduced to a level consistent with the site's ability to sustain forest health during drought conditions. Under high fire weather conditions, wildland fire behavior in treated areas is characterized as follows:

- Flame lengths at the head of the fire are less than 4 feet.
- Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely.
- The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.

Currently, the flame lengths and fire type do not meet the desired condition for this area (Table 1). Fire behavior within the Diamond Mountain project area is predicted to have average flame lengths of 33 feet. The torching and crowning indices and canopy base heights within most of the stands in this area also do not meet the desired conditions.

Table 1 Fire behavior and effects indicators under 90th percentile weather conditions.

Effects Indicators	Existing Condition		Desired Condition
	average	range	
Flame length (feet)	32	5 to 74	<4
Fire type	Passive Crown	Surface to Active Crown	Surface only
Torching Index (TI)	4	0 to 49	>30
Crowning Index (CI)	20	6 to 65	>35
Canopy Base Height (CBH) (feet)	9	2 to 42	15-25

Source: Forest Vegetation Simulator-Fire Fuels Extension (FVS-FFE)

Fuels treatment objectives include reducing and rearranging surface fuels, removing ladder fuels, increasing canopy base heights, and disrupting contiguous forest canopy by removing canopy fuels. Canopy fuels are modified to reduce the potential for spread of crown fire. Fire behavior is the manner in which a fire reacts to available fuels, weather, and topography. Available fuel is the only factor that can be changed through management actions. Reducing and disrupting the continuity of surface fuels is directly correlated to decreased flame lengths. The torching index (TI) is a measure of how susceptible a stand is to the vertical movement of fire; this is called a passive crown fire. The higher the TI, the less susceptible a stand is to the vertical movement of fire. Reducing ladder fuels and raising the canopy base height within a stand is directly correlated to an increased TI and the reduced potential for passive crown fire. The crowning index (CI) is a measure of the ability of a stand to sustain a fire that moves through the canopy; this is called an active crown fire. The higher the CI, the less susceptible a stand is to an active crown fire. Reducing canopy fuels is directly correlated to an increased CI and the reduced potential for spread of active crown fire.

Achieving the desired fire behavior conditions in the project area would provide fire suppression personnel a safer location from which to take action against a wildfire, and would reduce the expected fire intensity and severity. Suppression efficiency would be improved within the project area by creating an environment where wildfires would burn at lower intensities and fire firefighting production rates would be increased because fewer ground fuels and small diameter trees would need to be cleared for fire line construction or backfiring. Safety on roads used as ingress and egress routes would be improved for firefighters and public users. Completed treatments would provide consistency with the Lassen County Fire Safe Council's efforts to reduce fuels and enhance fire suppression capabilities within the Diamond Mountain WUI on private land, which would potentially lead to better protection of life and property. Achieving the desired condition in the project area would allow for the use of prescribed fire across the landscape as a tool to create forest conditions that are more resilient to wildland fires and as a means to help restore ecological processes that include opening growing space, providing a flush of soil nutrients, and increasing plant diversity, while maintaining desired forest structure.

Need for Action: Based on the current stand structure and predicted fire behavior, there is a need to reduce surface, ladder, and canopy fuels to reduce the size, intensity, and severity of fires within the Diamond Mountain project area, which in turn would reduce the detrimental effects of large-scale, high severity wildfire. There is a need to create areas along roads within the project area that benefit and

enhance fire suppression activities and to improve safety for firefighters and the public traveling along roads used as ingress and egress routes that access Gold Run Road and Baxter Creek Road. Recognizing that fire was a key landscape process that shaped natural forest patterns at stand and landscape scales prior to the onset of fire suppression, there is a need to reintroduce fire, in the form of low intensity under burning, on the landscape to reduce surface fuels, and to help restore and maintain ecosystem structure, composition, and function.

Goal 2: Improve forest health conditions that are characterized by creating a more open and spatially heterogeneous forest dominated by fire-resistant tree species and reducing tree densities to decrease risk of mortality from insects, drought, disease, and fire.

Existing Condition: The densification of trees in many forested stands, as well as the overabundance of white fir in previously pine-dominated forests are contributing to stand conditions in which trees are stressed due to competition for water, light, and nutrients. Table 2 shows the existing range and average basal area for each forest type. These dense stand conditions facilitate high levels of insect and disease activity. Large-scale bark beetle outbreaks are more likely to occur periodically in response to extended drought periods. In addition, these high stand densities create conditions where stands are more susceptible to mortality caused by drought, insects, disease, and wildfire. These factors slow individual tree growth, increase the risk of mortality, and slow the potential transition of existing forest stands to have old forest characteristics.

Table 2. Existing and desired basal area per acre for dominant conifer communities in the Diamond Mountains.

Vegetation Type	Existing Basal Area Range (square ft/acre)	Average Existing Basal Area (square ft/acre)	Desired Basal Area Range (square ft/acre)
Jeffrey/ponderosa pine	80-270	150	50-120
Mixed Conifer (pine)	100-255	165	80-160
Mixed Conifer (red fir)	165-270	190	100-200
Mixed Conifer (white fir)	100-220	160	80-180
Red fir	135-230	175	100-160
White fir	80-290	160	80-200

High stand densities also create closed canopy conditions that are not favorable for regeneration (especially of shade-intolerant pine and hardwoods) or growth. Closed canopy shaded environments also reduce the amount of understory vegetation and decrease forage, plant diversity, and create conditions that intercept more snow. Increased intercept reduces snow accumulations thereby decreasing the amount of soil moisture availability during the growing season.

Desired Condition: Stands composed of uneven-aged trees, varying in size, species composition, and structure. Multistoried stands containing a modified species composition to favor fire-resistant pines with tree size ranging from seedling to very large diameter trees. Reduced stand densities, especially in smaller diameter trees and shade-tolerant white fir to decrease competition for soil moisture and light resources, reduced fuel levels, and to reduce susceptibility to density related mortality. Forest stands comprised of high levels of horizontal and vertical diversity at the landscape scale with sufficient discontinuity to limit the initiation and spread of crown fires.

A heterogeneous landscape that would allow the remaining trees and forest stands to better cope with drought stress, insect infestation and disease outbreaks and would modify landscape-level wildfire behavior by reducing the spread and extent of high severity wildfire.

Need for Action: There is a need to implement landscape level treatments that would allow the remaining trees and forest stands to better cope with drought stress, insect infestation and disease outbreaks and move toward desired conditions.

Goal 3: Restore function of aspen, meadow, and riparian systems to improve watershed condition, increase landscape diversity, and decrease fuel continuity and type across the landscape.

Existing Condition: The encroachment of conifers in aspen, meadow, and riparian systems have created highly shaded environments resulting in a loss of aspen, riparian hardwoods, and meadow vegetation. These areas often have accumulated high conifer stem densities and fuel loads due to the lack of wildfire. The degree of conifer encroachment in many of these areas has led to the loss of natural openings and landscape diversity. The high density and continuity of conifers also make many riparian areas vulnerable to the effects of severe wildfire. There is a higher risk for loss of functioning aspen, meadow, and riparian systems in drainage areas because fire intensity typically increases in drainages because these features can rapidly funnel hot air upslope, increasing the flame lengths and rate of spread, which correlates to high severity fire effects.

Conifers also outcompete and shade existing aspen, riparian hardwoods, and meadow understory plant species. These species are shade-intolerant, and current conditions reduce aspen and riparian hardwood tree growth and regeneration, and reduce the abundance and cover of meadow understory plants. Condition surveys of the aspen communities within the Diamond Mountain project area indicate that 50 percent are classified as high/very high risk for loss, and 43 percent are classified as moderate risk for loss. Ninety-nine percent of the aspen communities have conifers shading or encroaching the aspen in the Diamond Mountain project area.

In 36 percent of the aspen stands, excessive browsing by deer is also leading to suppressed regeneration and recruitment. Additionally, there is a decline in ecosystem services and functions provided by these communities, such as habitat for a variety of wildlife and insect species; an herbaceous layer that decreases soil erosion, provides forage, and contributes to community diversity; higher soil moisture availability; improvement of aesthetics and recreational values; and better resiliency to high-severity fire compared to conifer-dominated forests.

Poorly-located roads within and adjacent to riparian areas and wet meadows have contributed to increased sedimentation, altered surface and subsurface flow interactions, and degraded channel morphology. There is a need to improve, relocate, or decommission roads within and adjacent to riparian areas to reduce non-point sources of pollution, improve surface and subsurface flow paths, increase soil infiltration, facilitate more stable channels and aquatic habitat near roads, and allow for adequate passage of water, bed load material, and debris through road-stream crossings during high flow events.

Desired Condition: Functioning aspen, meadow, and riparian communities that contribute to a reduction of fire initiation and spread by decreasing fuel continuity and type across the landscape. A modified species composition to favor shade-intolerant aspen and riparian hardwoods and dominated by non-coniferous trees in multiple size classes. A significantly reduced relative conifer density in meadows. An abundant and diverse cover of understory plant species in aspen and meadow communities, and riparian systems.

Need for Action: Based on the existing conditions, there is a need to reduce conifer densities within aspen, meadow and riparian systems, restore associated understory vegetation in each community, reduce the effects of roads on riparian areas, and protect aspen regeneration from being browsed.

Goal 4: Achieve compliance with Region 5 stocking guidelines for plantations. Improve health and fire resilience in plantations.

Existing Condition: There are seven plantations covering approximately 120 acres. These plantations were planted between 1991 and 1995 with approximately 680 trees per acre at an 8 by 8 foot spacing with a mix of conifer species, including Jeffrey pine, ponderosa pine and red fir. Since the initial tree planting activities, natural tree regeneration and shrubs have established, covering greater than 50 percent of the plantation area. These plantations have not received any thinning or fuel treatments since the initial reforestation activities and the current tree and shrub densities within these stands have created crowding and fuel load concerns. Low canopy base heights and dense ladder fuels have increased the potential for torching, crown fire, and high mortality within the stands during a wildfire event.

Desired Condition: Plantations that are adequately stocked to R5 guides in the Silviculture Handbook for the appropriate forest type and site class, with approximately 150 trees per acre at a 17 by 17 feet spacing. Spacing would vary up to 25 percent to allow the most desirable trees to be left and provide some stand heterogeneity. Residual trees would reflect the largest, healthiest, most vigorous mix of individual trees. Reduced surface, ladder, and canopy fuels in the stands to decrease fire behavior and improve the plantations resiliency to fire. Less than 50 percent surface area with live and dead brush. Pruned lower limbs, increased canopy base heights, and canopy separation within the plantations to reduce the probability of torching, reduce the initiation and spread of crown fire, and reduce the potential mortality during a wildfire.

Need for Action: There is a need to decrease density in these 22- to 26-year-old plantations to approximately 150 trees per acre with an approximate 17 by 17 feet spacing to provide conditions for continued stand health and tree growth. Thinning of trees and shrubs is also needed to decrease fuel loading, disrupt fuel continuity, modify fire behavior, and increase the resiliency to fire in the plantations.

Goal 5: Provide a stable and cost-efficient road system through appropriate construction, reconstruction, and/or maintenance.

Existing Condition: The current transportation system within the project area consists of National Forest System roads and county roads. Non-system roads are also present. The existing transportation system provides access for forest stands, recreation areas, mining claims, and other uses.

Desired Condition: An efficient transportation system that provides access for current and anticipated management needs. Unneeded roads and roads causing resource damage are decommissioned. Poorly located roads are relocated to stable areas. Roads that are needed are maintained and/or improved to provide safe public access and travel, and contribute to efficient management of National Forest System lands.

Need for Action: There is a need to maintain the transportation system for public safety and access. Existing Forest system and non-system roads in the project area are needed to provide access for the implementation of the proposed Diamond Mountain project. Some existing nonsystem roads may be needed for long-term future management and would need to be upgraded to Forest transportation standards and added to the Forest transportation system. Some road segments may need to be relocated or decommissioned because they are situated on unstable slopes or places with the potential to cause ecological impacts and adverse effects to the watershed.

Goal 6: Provide a wide range of outdoor recreation opportunities to meet public demand by furnishing different levels of access, service, facilities, and information.

Existing Condition: Currently, hunting and driving for pleasure are the primary recreational opportunities within the Diamond Mountain project area. There are no developed hiking trails resulting in an underutilization of the forest's recreational potential. The Lassen LRMP (1992) provides direction for the development of forest trails to provide a wide range of outdoor recreation opportunities to meet public demand by furnishing different levels of access into desired areas, enhance recreation experiences, and disperse use.

Desired Condition: A well-designed trail system to meet the demand for hiking from communities within the Honey Lake Valley and surrounding regions and benefit local businesses including restaurants, hotels, grocery and general stores, and gift shops. A trail that is attractive to day users and includes self-guided interpretation amenities. Location and construction of a trail system that is sustainable for hiking, low maintenance, fun to use and manages risk, mitigates environmental impact, and minimizes user conflict.

Need for Action: There is a need to provide a natural forested hiking opportunity to improve non-motorized forest user access and provide additional non-motorized recreational opportunities

Project Description

The Forest Service proposes to implement fuels thinning activities that address Goals 1-4 related to improving forest health and reducing wildfire risk, transportation actions that address Goal 5, and the construction of a hiking trail to address Goal 6.

Forest Thinning

Approximately 4,669 acres of the 8,195-acre planning area were identified for forest treatments to meet the Diamond Mountain project purpose and need. An integrated approach was used to delineate site-specific treatments across a broad landscape to improve ecosystem health and reduce wildfire risk as stated in Goals 1-4. Proposed treatment areas were limited by access, steep slopes, wildlife canopy cover restrictions, erodible soils, and operability. Concepts from PSW-GTR-220, *An Ecosystem Strategy for Mixed Conifer Forests* (North et al. 2009), and PSWGTR-237, *Managing Sierra Nevada Forests* (North et al. 2012) were applied as a step toward achieving an ecologically resilient landscape, recognizing the uncertainty of climate change and risk of future disturbances.

Design of treatment prescriptions in the Proposed Action were informed by site-specific stand exam data. Basal area and canopy cover descriptions were derived from modeling these data with the Forest Vegetation Simulation (FVS) program. Fuels effects indicators were derived from modeling these data with the Forest Vegetation Simulator-Fire Fuels Extension (FVS-FFE). Thinning (mechanical and hand) and prescribed fire (pile burning and under burning) would be implemented throughout the project area. Treatments would be implemented using commercial timber sales, service contracts, and the work of Forest Service personnel. Table 3 describes the proposed actions within each vegetation type and corresponding acreage. Project maps are located at the end of this document. Map 1 provides an overview of the Diamond Mountain project area. Maps 2-5 show the vegetation types mapped for the project area. Maps 6-10 illustrate the forest thinning and prescribed fire treatments proposed under Alternative 1. Map 11 provides an overview of where mastication may be used under Alternative 1.

Mechanical Thinning

In areas proposed for mechanical treatment, mechanical ground-based equipment would be used to harvest select trees greater than or equal to three inches in diameter at breast height (dbh) up to 30 inches dbh. Whole-tree yarding would be used when possible. Activity generated landing slash would be machine piled and later burned. Sawlogs and biomass would be removed. Where access for mechanical ground-based equipment and/or chip vans is not restricted, biomass would be removed in the form of chips.

Table 3. Acreages by vegetation type and by proposed treatment type in the Diamond Mountain project area.

Vegetation Type	Treatment				
	Mechanical Thin/ Hand Pile and Burn/ Underburn	Hand Thin/ Hand Pile and Burn/ Underburn	Hand Thin/ Hand Pile and Burn Only	Underburn Only	Roadside – Hand Thin/ Hand Pile and Underburn
	Acres	Acres	Acres	Acres	Acres
Pine/Oak	32				
Jeffrey/ponderosa pine	99	37		9	
Mixed Conifer (pine)	697	224			144
Mixed Conifer (red fir)	216	28			74
Mixed Conifer (white fir)	353	587		22	53
Red fir	182	18			7
White fir	256	304			38
Aspen	745	294	122		
Meadow	7				
Plantation	120				
Project totals	2,707	1,493	122	31	316

Seven units (A63, A64, 056M, 116, 117, 119, and 161), totaling 161 acres, are accessed by roads with steep grades or tight corners and would require treating non-sawlog material without using standard chip vans. Alternative methods such as grapple piling, mastication, or cut and deck on landing would be used to remove biomass and activity generated fuels.

Trees greater than 30 inches and legacy trees¹ would be retained unless felling is required to meet safety and operability requirements. All available snags, 15 inches or larger dbh, would be retained unless required to be felled during project implementation to meet operability or safety needs. If felled, such snags would be left in place as a downed log. All felled snags and existing downed logs that are at least 15-inch diameter at the large end and at least 15 feet long, would be retained except where logs need to be removed due to fuels concerns (e.g. logs within 200 feet of roads and future firelines, and within 200 feet of property boundaries).

Within areas proposed for mechanical thinning, hand treatments would occur where equipment cannot be used (i.e. slopes greater than 35 percent, rocky or other inoperable areas), when the economics make mechanical treatments unfeasible, or in areas designated as control lines during prescribed fire operations. Hand treatments would include felling trees up to 12 inches dbh, cutting shrubs, lopping and scattering, and piling and later burning.

Treatment in Riparian Conservation Areas (RCAs) would be the same as the surrounding vegetation types. Integrated Design Features (IDFs) and Best Management Practices (BMPs) would be implemented to protect various resources including riparian areas.

Thinning prescriptions for mechanically-thinned stands by vegetation type

Conifer Communities - (Pine/oak, Jeffrey pine/ponderosa pine, Mixed Conifer-Pine, Mixed Conifer-White fir, Mixed Conifer- Red fir, and White fir, Red fir)

Treatment designs for upland conifer communities totaling 1,835 acres were developed using the GTR 220 (North et al. 2009) concepts to create forest heterogeneity at both the stand and landscape-scale. At the landscape scale, topography and aspect influences residual stand densities, generally lower near the ridge and dry southwest facing slopes and increasing further downslope and northeast facing aspects (Table 4). Thinning treatments were designed to achieve sustainable stocking levels and stand densities that would be more drought tolerant. Stands would be thinned to target stand basal areas, applied as an average across the stand and associated with slope position, aspect, and soil productivity/site quality, and existing stand attributes (Table 5). Desired target basal areas for each forest community would tend to be on the lower end of the range on ridgetops and south/southwest facing slopes and on the higher end of the range mid-slope and north/northwest facing slopes.

At the stand level, tree pattern would be highly variable creating horizontal diversity conditions characterized by clumps, openings, and the matrix. Densities would be reduced throughout the diameter range by retaining a mixture of species, sizes, and ages to create vertical diversity. Clumps are portions of treatment units with higher densities and canopy cover than surrounding area, while openings would have lower densities and more open canopies. Emphasis would be placed on maintaining existing clumps of healthy-fire resistant trees across all size classes. Clumps would range from two to twenty individual trees covering 0.05 to 0.2 acres. Some thinning may occur in the clumps to reduce ladder fuels and ensure the clumps would persist through time. Preferences for both large and small healthy fire-resistant trees would contribute to vertical heterogeneity. Openings are areas where lower than average stocking levels would be retained. Openings would resemble small scale disturbances (e.g. 0.1 - 0.2 acre), placed in areas that increase the aerial extent of existing openings, disease pockets, or areas with small non-fire-resistant trees. These occasional openings allow for small gap regeneration and recruitment. Reducing stand density while creating spatial diversity would reduce canopy interception and protect snow from wind and

¹ Legacy trees display old-growth characteristics. For ponderosa and Jeffrey pine a legacy tree is defined as a tree that has the following characteristics: (1) platy, yellow bark on four panels (on at least ½ to ¾ of the bole), (2) downward or outward sweeping branches on at least the top 1/3 of the tree, and (3) a rounding or flat top, regardless of age or diameter.

solar loss resulting in increased snow pack, extended duration of snow cover, and increased soil moisture availability.

Where possible thinning treatments were designed to be effective for approximately 50 years post treatment due to the inherent complexity to implement treatments in the project area (e.g. access, steep slopes, erodible soils, and wildlife constraints). Trees free of disease or insect infection would be favored for retention.

Table 1. Desired basal area per acre along topographic gradient and aspect in the Diamond Mountains.

Topographic Position/Aspect	Desired Basal Area/ac (BA/ac)
Ridge top and higher slope position	0-120
Mid slope / North-Northeast	120-200
Mid slope / South-Southwest	80-140
Lower slope North – Northeast	80-120

Table 2. Desired basal area per acre by vegetation type in the Diamond Mountains.

Forest Community	Residual BA ft ² /ac	Species Preference	Additional Objectives
Meadow	<60	hardwoods	
Aspen	<40	Aspen	Conifer retention would not directly shade aspen.
Pine/Oak	120	BO/PP/JP	Remove conifers shading black oaks.
Jeffrey and ponderosa pine	50-120	JP/PP/SP	Emphasize reduction in white fir component.
Mixed Conifer (pine)	80-160	JP/PP/SP/IC /DF	Emphasize reduction in white fir component and preferably retain shade-intolerant species where present; preference removal of tress heavily infected with dwarf mistletoe, root disease, and trees infested with bark beetles.
Mixed Conifer (red fir)	100-200	RF/SP/JP	Maintain patches of red fir regeneration (conifers less than 10 inches dbh) to maintain near ground wildlife cover.
Mixed Conifer (white fir)	80-180	WF/ SP/JP	Preference removal of tress heavily infected with dwarf mistletoe and trees infested with bark beetles.
Red fir	100-160	RF – with preference for minor species (IC or WWP)	Maintain patches of red fir regeneration (conifers less than 10 inches dbh) to maintain near ground wildlife cover. Radial thin around western white pine greater than 15 inches dbh.
White fir	80-200	WF – with preference for minor species (IC or WWP)	Preference removal of Heterobasidion root disease centers; removal of tress heavily infected with dwarf mistletoe and trees infested with bark beetles. Radial thin around western white pine greater than 15 inches dbh.

Lower range of basal area retention is proposed for stands with more southerly aspect and low productivity compared to higher residual basal area for stands with more northerly and higher productivity stands. (BO – black oak, DF – Douglas fir, IC – incense cedar, JP – Jeffrey pine, PP – ponderosa pine, RF – red fir, SP – sugar pine, WF – white fir, WWP – western white pine). Calculations based on all aspen stands and forest communities within mechanical treatments only.

Meadow

Seven acres of meadow would be enhanced by removing encroaching conifers, primarily lodgepole pine, to maximize light and increase riparian vegetation. Mechanical removal would be used where possible with the remaining area by hand. Basal area retention for conifers would not exceed 60 ft²/acre. Conifer retention in areas bordering the meadow would vary, with lower retention adjacent to existing riparian hardwoods and increasing retention along a gradient upslope in the surrounding forest. All trees greater than 29.9 inches dbh or with legacy tree characteristics would be retained. If meadow/riparian vegetation does not establish within three years, these areas would be seeded with native vegetation.

During prescribed fires in the adjacent conifer stand, fire would be allowed to back into the edge of meadow communities at a low intensity to maintain the forested-non-forested boundary.

Aspen

Conifers less than 30 inches dbh that do not exhibit legacy characteristics would be removed from 745 acres of aspen units (aspen and buffers) to restore proper growing conditions. Mechanical removal would be used where possible with the remaining area treated using hand-thinning. A minor conifer component (less than 40 square feet/acre of basal area) of fire resistant pine greater than 20-inch dbh that are not directly shading aspen would be retained. Boundaries for mechanically-thinned aspen treatment units have been drawn to extend outward from existing aspen communities (approximately 150 feet to the east, west, and south, and 100 feet to the north) or to a logical break, (e.g., open community edge, slope break, or road) to allow more sunlight to reach stands and the expansion of stands as they respond to treatment. Existing mature aspen trees would be protected during logging and vegetation treatment operations. Aspen units with excessive browsing from wildlife would either be fenced or a barrier would be created by hinging standing conifers in a jackstraw pattern to reduce browse impacts immediately following project implementation or when monitoring indicates that browsing pressure is impeding successful aspen recruitment.

Hand Thinning

Hand thinning would be used to meet goals for aspen restoration and fuels reduction. Prescriptions specific to these goals are described below.

Thinning prescriptions for hand-thinned stands

Aspen

Within 416 acres of aspen units, hand thinning would be used in areas inaccessible to mechanical equipment. Inaccessible areas include those that are too steep (slopes greater than 35%) or rocky for mechanical equipment to operate or have no access by road. Treatment unit boundaries for hand-thinned stands extend 100 feet in all directions beyond existing aspen communities if these units fall within a general hand-thin area. For isolated aspen treatment units, the treatment unit boundary would extend to 20 feet on all sides.

The extent of conifer removal would depend on the existing conifer basal area. In aspen communities with a conifer basal area greater than 100 ft²/ac, conifers less than 20 inches dbh would be felled with an emphasis in removing white fir, red fir, and lodgepole pine. The majority of trees removed would consist of trees less than 10 inches dbh; and selectively removing up to 20 percent of the 10-16 inch dbh conifers and ten percent of the 16-20 inch dbh conifers that are directly shading aspen or are on the south side of the stand. The same treatment is proposed for aspen communities with a conifer basal area less than 100 ft²/ac except selective removal of the 10-16 inch dbh conifers would increase to 40 percent and increase to 20 percent for the 16-20 inch dbh conifers. These prescriptions balance tree removal with the amount of thinned material left on the ground because the thinned biomass would not be removed, and surface

fuels cannot always be piled and burned in place due to the sensitivity of aspen roots to high temperatures created when burning slash.

Hand treatments include cutting conifer trees and shrubs. Material would be lopped and scattered or piled and later burned. Because of aspen's susceptibility to heat damage, burn piles would generally be located away from aspen boles and roots. Underburning would take place within aspen stands located in larger treatment areas after the next cohort of aspen is successfully recruited and only if light surface fuels exist within the stand.

Aspen units with excessive browsing from wildlife would either be fenced or a barrier would be created by hinging standing conifers in a jackstraw pattern to reduce browse impacts immediately following project implementation or when monitoring indicates that browsing pressure is impeding successful aspen recruitment.

Fuels Hand Thinning

Surface, ladder, and canopy fuels would be treated across all treatment areas using a combination of forest thinning treatments (described in previous section), and specific fuels treatments (described in this section) such as hand thinning and prescribed fire treatments (underburning and pile burning), designed to meet the desired conditions. However, thinning treatments in many of the fuels hand thinning areas are constrained due to wildlife canopy cover restrictions, so the primary fuel objectives being addressed in these areas are the reduction of surface and ladder fuels. Even though canopy fuels cannot be properly addressed in these areas, surface and ladder fuel treatments would reduce the potential for crown fire initiation and fire behavior (e.g., flame length and torching) would be reduced. Treatments would focus on reducing fuels along roads, ridgelines, and within riparian and aspen stands because these areas provide strategic locations for fire suppression activities to occur.

In areas proposed for fuels hand thinning treatments only, treatments would consist of hand thinning conifers and shrubs and hand piling the existing and activity generated surface fuels. Approximately 90-95 percent of trees 5 inches dbh and less and approximately 30-40 percent of the shrubs within a treatment unit would be cut, targeting trees and shrubs that act as a ladder fuels to the remaining stand and trees and shrubs found along control lines used during prescribed fire operations. The remaining conifers within these stands would be limbed to increase the canopy base height to 5-6 feet high. The cut material would be hand piled and burned, or mechanically chipped. All piled material would be bucked into 4-foot lengths and smaller. All piles would be constructed away from the boles and outside the drip line of the leave trees. Underburning would occur in these areas once the hand thinning and pile burning treatments have been completed. Fuels hand thinning treatments would occur on approximately 1,199 acres: In areas proposed for fuels hand thinning treatments, any roads within these treatment areas would receive the same treatment that is described below for the Fuels Roadside Hand Thinning treatment areas.

Treatment in RCAs would be the same as the surrounding vegetation types. Integrated Design Features (IDFs) and Best Management Practices (BMPs) would be implemented to protect various resources including riparian areas.

Fuels Roadside Hand Thinning

There are areas along roads within the project that are outside the forest thinning and fuels hand thinning treatment areas. Along these roads within a 200-foot buffer extending outward from each side of the roadbed, treatments would consist of hand thinning conifers and shrubs and hand piling the existing and activity generated surface fuels. All trees 5 inches dbh and less and all shrubs would be cut within the 200-foot buffer along these roads. From the road edge and 20 feet into the 200-foot buffer, up to 40

percent of trees 8 inches dbh and less would also be cut. The intent for cutting additional larger trees in the first 20 feet of the road buffer is to create canopy separation along and between both road edges, which contributes to a reduced torching and spotting potential along the road while underburning or during a wildfire. Visibility and travel safety would also be improved along the ingress and egress routes.

The remaining conifers within these road buffers would be limbed to increase the canopy base height to 5-6 feet high. The cut material would be hand piled and burned, or mechanically chipped. All piled material would be bucked into 4-foot lengths and smaller. All piles would be constructed away from the boles and outside the drip line of the leave trees. Underburning would occur in these areas once the hand thinning and pile burning treatments have been completed. Fuels hand thinning road buffer treatments would occur on approximately 316 acres. Mastication would also occur along some of these roads. From the road edge and 35 feet into the 200-foot buffer, all trees 5 inches dbh and less and all shrubs would be masticated. From the road edge and 20 feet into the buffer, up to 40 percent of trees 8 inches dbh and less would be masticated. Existing surface fuels would also be masticated. The equipment would need to stay on the road and treatments would reach a maximum distance of 35ft off the road edge on flat ground. Steeper slopes reduce the distance off the road the equipment can reach. Mastication would not occur in any aspen stands.

Prescribed Fire

Prescribed fire treatments would be conducted in most treatment units after forest thinning treatments and fuels hand thinning treatments have been completed. Prescribed fire treatments would occur on approximately 4,669 acres. There are two stands within the project area where the only proposed treatment is underburning. On the west side of the project, unit 030 (22 acres) is sparsely vegetated and primarily composed of rock, but was added to connect the fuels hand thinning treatments to the mechanical treatments along Gold Run and should reduce the amount of fireline needed between the two areas while underburning. On the east side of the project, unit 135b (9 acres) is between a switchback in the road and connects a fuels roadside hand thinning treatment to a mechanically treated stand near Baxter Creek. Low intensity underburning in this stand would contribute to and help reinforce the other fuels reduction treatments in the northeast corner of the project, which borders private land and is close to private structures.

Firelines would be constructed for prescribed fire operations, except where existing roads, skid trails, or natural barriers would serve as control lines. Firelines would primarily be hand lines constructed using hand tools, but in some areas where access allows, a Bobcat could be used to construct fireline. When underburning within the spotted owl HRCA (majority of project area), prescribed fire burn prescriptions would be developed to favor low intensity fire behavior, with the intent of limiting the amount of basal area mortality in the canopies of the remaining stands because canopy density is an important wildlife attribute in these areas. Underburning treatments would not be used in aspen until it is in a healthy ecological condition and coordination with Eagle Lake Ranger District staff would occur prior to underburning in aspen. Prior to underburning in plantations, coordination with Eagle Lake Ranger District staff would occur. Prescribed burn prescriptions would be developed to favor low intensity fire behavior, with the intent of limiting the amount of basal area mortality in the canopies within the plantations.

Thinning and prescribed fire in plantations

In seven plantation areas covering approximately 120 acres, stocking levels would be reduced to improve stand health, tree growth, and increase fire resiliency. Stocking levels would be reduced to the lower end of full stocking levels described in the R5 Silviculture Handbook to extend the efficacy of the treatment for a longer period. Plantations would be thinned via pre-commercial hand and/or mechanical means to

approximately 17 by 17 feet spacing (150 trees per acre), with an allowable variance of up to 25 percent. The shrub component would be decreased a minimum of 50 percent to release residual trees and reduce or re-arrange fuel loading, thus disrupting fuel continuity. Cut trees and shrub material would be treated using lop and scatter (which includes entire limbing of conifer boles, lopping material into 2 feet sections, and dispersing material away from residual trees), hand pile and burning, or mastication depending on fuel loads. At least one-half of the live crown would be maintained when pruning the lower limbs of residual trees in the plantations. Underburning would take place in plantations once the thinning, pruning, mastication, and/or pile burning treatments are completed. Canopy base heights should be, at a minimum, 15 to 20 feet in order to underburn; however, at least two-thirds of the live crown needs to be maintained on the trees post burn.

Watershed Improvements

See the following transportation management section for specific actions and mileages of road improvements and decommissions that are planned to improve stream and riparian functions by reducing potential sources of sediment, improve surface and subsurface flow paths, and support more stable channel morphology.

On a user created trail, trees would be felled and used to obstruct ATV or other motorized vehicles. Rocks or boulders may be placed at the base of the trail to further impede access if monitoring indicates the need. The trail would be seeded with native vegetation unless natural vegetation establishes within three years following tree felling to block use.

Transportation Management

Proposed changes to the National Forest Transportation System (NFTS) are summarized in Table 6 and are shown in Maps 12-15. If adopted, any proposed modifications to the NFTS that would result in changes to public access would amend the Lassen National Forest Motorized Travel Management Plan (2010).

Table 3. Summary of proposed transportation actions.

Action	Miles
Add to NFTS as ML1 (existing non-system road)	2.7
Add to NFTS as ML2 (existing non-system road)	1.8
Decommission NFTS road	1.1
Decommission non-system road	1.6
NFTS road: Reduce from ML2 to ML1	0.7
NFTS road: Raise from ML1 to ML2	1.4
New Construction for road realignment	1.0
Add to NFTS as motorized trail (existing non-system road)	0.5
Reconstruct and stormproof existing road	9.0

Note: Mileages are approximate and affected by rounding.

The existing forest transportation system would provide access to treatment units. Road maintenance would be performed on a portion of that system as needed for project implementation.

Upgrades and Additions to National Forest Transportation System (NFTS)

Approximately 1.4 miles of existing NFTS maintenance level 1 (ML1) road would be raised to ML2 and opened to motor vehicle traffic (28N65, 28N65A, 28N66, 28N66A, 29N10B). This would allow for continual use for management activities and access for immediate fire suppression response.

Approximately 4.5 mile of non-system road would be upgraded to Forest transportation standards and added as NFTS roads. These roads were determined to have long-term needs for future management.

- Approximately 2.7 miles of these additions would be classified as ML1² and closed to wheeled motor vehicle traffic after their use for this project (UNE535, Spur F, Spur L, Spur K, segment of ULA532).
- Approximately 1.8 mile of these additions would be classified as ML2³ and would be open for use by high-clearance vehicles (ULA527, ULA533, ULA536, ULA537, Spur B, segment of ULA532).

Approximately 0.5 miles of existing non-system road (ULA525) was determined to provide access to a recreational public viewpoint on the Diamond Mountain ridgeline. Large portions of the existing road are poorly located and lack any functioning drainage structures, which has led to severe erosion and degradation to sensitive vegetation species. To continue to provide public access to this viewpoint, 0.2 miles of the existing road would be added to the NFTS as a motorized trail and the remainder would be realigned (0.3 miles new construction) in order to incorporate improved drainage functionality and avoid degradation of sensitive vegetation. Boulders would be placed along portions of the new alignment and at the end of the roadway at the ridgeline to clearly define the travel-way and keep vehicles from entering sensitive habitat. The portion of the existing alignment that would no longer be used would be decommissioned through a combination of blocking with boulders, importing material to assist with full recontouring, installing rock and earthen water bars to assist with hillslope drainage, and using straw wattles and native seeding to assist with revegetation where needed. This new route to the ridgeline would be managed as a motorized trail with 4-wheel drive vehicles as the design vehicle.

Road Decommissioning and Downgrading

A total of approximately 1.1 miles of existing NFTS road would be decommissioned as they are not needed for long-term future management (28N62A, 29N10A); approximately 1.6 miles of non-system roads were determined to have no long-term future management needs and would be decommissioned (Spur G, ULA526, ULA 529). These routes would be decommissioned by scarifying, recontouring, revegetating, and/or blocking as needed.

Approximately 0.7 miles of existing NFTS maintenance level 2 (ML2) road would be reduced to ML1 and closed to motor vehicle traffic once the project is complete (28N63A, 28N63B).

Realignment

Approximately 0.7 miles of existing NFTS (28N64) and non-system (segments of Spur B and ULA532) roads that are poorly located within riparian habitat would be realigned outside of these areas. Once the new realignment section is constructed, the original road template would be decommissioned and blocked

² Road management level 1 is defined in the FSH 7709.59, sec. 62.32 as: "These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level." "Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic." The only traffic management strategy that is appropriate for maintenance level 1 roads is prohibit (USDA 2012a).

³ Road maintenance level 2 is defined in the FSH 7709.59, sec. 62.32 as: "Assigned to roads open for use by high-clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 "No Traffic Signs" may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic normally is minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level." Appropriate traffic management strategies are encouraged, accept, discouragement, and prohibit (USDA 2012a).

to motor vehicle traffic. Decommissioning would not occur until the realignment construction is complete to prevent administrative and public access issues.

Temporary Roads

Approximately 5 miles of temporary road would be constructed for access during project implementation. These temporary roads would then be decommissioned by obliteration upon project completion.

Reconstruction and Stormproofing

Approximately 9.0 miles of road within the project area would receive reconstruction and stormproofing work. This reconstruction stormproofing work would include upgrading culverts, surfacing drainage crossings, clearing encroaching vegetation, constructing drainage dips and low water crossings, and surfacing with crushed aggregate to improve roadway drainage. No stormproofing or roadwork would occur on the 0.4-mile section of 29N43 in the Upper Boulder Creek watershed.

NFTS roads and non-paved county roads used for haul would receive pre-, during-, and/or post-haul maintenance as per Forest Service Road Maintenance T-Specifications for Timber Sale Contracts. Maintenance items include surface blading, surfacing, clearing for sight distance, installation of rolling dips, and cleaning drainage facilities. A dust abatement plan would also be included to control wind-caused erosion from road use. A surface replacement deposit collection would be required based on haul volume on any gravel-surfaced NFTS roads.

The proposed water source for this project is located off of NFTS road 29N43 (T28N R12E NW1/4 Sec 9). This is an existing water source that conforms to the applicable BMPs. This water source would continue to be maintained, and improvements would be made as needed.

Construction of Recreational Hiking Trail

Approximately 12.6 miles of new developed hiking trail would be constructed by hand crews from Bear Flat to Gold Run. The trail would pass through various forest communities and access multiple vistas. The hiking trail would be designed and designated for foot travel only, with a width of approximately 24 inches (Maps 12-15). Tread work would entail clearing downfall and debris along the proposed route, removing vegetation from the route, and creating a tread base within the specified trail width. The trail would be laid out at an average grade of 6-12% with grade reversal and water bars to prevent water erosion. The trail would be generally outsloped 3-5%. Some sections of the trail would include abandoned road templates which would reduce new disturbance. On sections of trail where grades are sufficient to create erosion patterns, water bars would be installed. Water bars would be constructed on down slopes where necessary. Disturbance alongside the tread base would be minimized; disturbed areas would be mulched with native materials, such as pine needles, where needed. Parking for trail access would use existing pullouts near Bear Flat and Gold Run. Interpretive signs would be located along the trail to describe management activities, resource concerns, or local areas of interest.

Surrounding Land Uses and Setting: The project area and surrounding area is in a rural natural setting with coniferous and hardwood forests and montane meadows. The project area is surrounded by USDA Forest Service managed lands and private lands used for timber production, livestock production, and recreation. The City of Susanville, with approximately 15,000 residents is 7 miles north of the project area.

Other public agencies whose approval is required: USDA Forest Service

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" as indicated by the checklist on the following pages.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agricultural Resources	<input checked="" type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input checked="" type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards & Hazardous Materials	<input checked="" type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Transportation/Traffic	<input checked="" type="checkbox"/>	Tribal Cultural Resources	<input type="checkbox"/>	Utilities/Service Systems
<input type="checkbox"/>	Mandatory Findings of Significance				

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.

Signature

Date

Printed Name

For

INITIAL STUDY CHECKLIST

Introduction:

This checklist is to be completed for all projects that are not exempt from environmental review under the California Environmental Quality Act (CEQA). The information, analysis and conclusions contained in the checklist are the basis for deciding whether an Environmental Impact Report (EIR) or Negative Declaration is to be prepared. Additionally, if an EIR is prepared, the checklist shall be used to focus the EIR on the effects determined to be potentially significant.

1. AESTHETICS

Environmental Setting: Forest Service Visual Quality Objectives (VQOs) for the project are:

- Partial Retention (PR) - Changes are noticed but do not attract attention
- Retention (R) - Changes are not evident

The combination of fuel and vegetation changes within and surrounding the Diamond Mountains during the past century has resulted in a landscape that is less resilient to wildland fire, drought, insects, and disease. The lack of management activities has contributed to the current condition.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?				<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			<input checked="" type="checkbox"/>	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				<input checked="" type="checkbox"/>

Impact Discussion: During treatment activities and immediately afterward, changes to the visual quality of the landscape may be observable, but would meet the VQOs of retention and partial retention for the project area.

All vegetation treatments with the purpose of providing heterogeneity across the landscape with respect to density, species, and reduced fuels would benefit the visual objectives in the project area. A variety of plant communities varying in size, age, and structure provide diversity in the visual character of the area. Reducing the possibility of stand replacing fires, disease or insect mortality, and improving the resiliency of the vegetation to climate change would improve and maintain the aesthetic integrity of the Diamond Mountain area.

The proposed hiking trail would not alter the visual landscape and thus would meet the VQOs for the project area.

Reducing the competition between vegetation would enhance the long-term forest aesthetics by promoting healthy stands of hardwoods, mature timber, and riparian areas. Effects from the proposed activities would only serve to enhance and benefit the resources in the area, including recreational opportunities and visual quality, and reduce the possibility of losing the entire area to wildfire or insect-related mortality and disease.

The Diamonds provide a spectacular view of the Honey Lake Valley and the mountain ranges that surround it. Proposed activities would improve both near and far visuals by creating diversity on the landscape. The proposed trail would provide designated access for recreationists to enjoy the diversity of vegetation, wildlife, and views the Diamonds provide. Interpretive signage would educate visitors about areas of interest and encourage safe and responsible use of the area, including appropriate uses and fire restrictions.

Mitigation Measures: None required.

2. AGRICULTURE/FOREST RESOURCES

Environmental Setting: Species composition and structure of forest stands are influenced by elevation, landscape position, aspect and stand history. Forest stands are comprised of red fir (*Abies magnifica*) with scattered western white pine (*Pinus monticola*) at upper elevation sites that retain more snow; Jeffrey pine (*Pinus jeffreyi*) and white fir (*Abies concolor*) on drier upper elevation sites; and Sierra mixed conifer stands at mid and lower elevations. The Sierra mixed conifer stands consist of ponderosa pine (*Pinus ponderosa*), Jeffrey pine, sugar pine (*Pinus lambertiana*), white fir, Douglas-fir (*Pseudotsuga menziesii*) and incense cedar (*Calocedrus decurrens*). At the base of the mountain, ponderosa and Jeffrey pine and California black oak (*Quercus kelloggii*) occur. Riparian areas include lodgepole pine (*Pinus contorta*), mountain alder (*Alnus incana* ssp. *tenuifolia*), trembling aspen (*Populus tremuloides*), and black cottonwood (*Populus trichocarpa*). Hardwoods are scattered throughout the project area and include black oak, bigleaf maple (*Acer macrophyllum*), trembling aspen, and Scouler's willow (*Salix scouleriana*). Plantations of various tree sizes and age classes also occur in the project area.

Fires were a key landscape process that shaped natural forest patterns at stand and landscape scales in the Diamond Mountains prior to the onset of fire suppression. In general, fires were frequent with smaller burn areas occurring more often than large areas. Fire return intervals varied with elevation and forest type with shorter intervals in low elevation pine-oak forests, longer in upper-elevation fir-mixed conifer forests, and intermediate in mid-elevation pine-mixed conifer forests. The Diamond Mountain project area has not had a wildland or prescribed fire greater than 100 acres in size since 1910 (Lassen National Forest fire history records). This reduction in frequency and extent of fire has caused an increase in forest density, a compositional shift to more fire-sensitive species, a loss in irregular tree patterns (stand and landscape heterogeneity), accumulation of surface fuels, and an increase in ladder and canopy fuels.

The changed condition of forest stands in the Diamond Mountain project area have made them vulnerable to an array of mortality factors, including drought stress, bark beetle outbreaks, and disease. Successive dry years can exacerbate these unhealthy stand conditions. Recent aerial detection surveys show that successive dry years from 2007 to 2009 led to increased levels of tree mortality from 2009 to 2012 in the Diamond Mountain area. Although the majority of the mortality over the past 15 years has occurred in adjacent stands just south of the project area on drier south-facing slopes, a major mortality event

occurred on the north-facing slope and drainages within the project area 20 years ago (Cluck and Woodruff 2014).

Periodic mortality events combined with high stand densities has led to heavy fuel loadings in some areas and a corresponding increase in fire hazard. These changed conditions have occurred throughout many forests in the southern Cascades and Sierra Nevada and are one of the major causes of the recent increase in the extent and severity of wildfires in the western United States. In the vicinity of the Diamond Mountains, south and west of the project area, there have been fires where the majority of the landscape burned at high severity in 2001, 2006, and 2007; one of these was the Moonlight Fire of 2007. Fire history studies from this area show that prior to the fire suppression period these fires would not have burned such a large proportion of the landscape at high severity, reflecting the increase in fuel accumulation during the last 100 years (Gill and Taylor 2009).

The combination of fuel and vegetation changes within and surrounding the Diamond Mountains has resulted in a landscape that is less resilient to the inherent disturbances for this area including wildland fire, drought, insects, and disease. Consequently, the project area was evaluated for potential opportunities to incorporate WUI objectives (e.g. hazardous fuel reduction treatments and ingress and egress for fire suppression activities and public safety), increase forest resiliency, and improve watershed function. Additionally, expected future conditions would be considered for resiliency objectives since climate change is anticipated to intensify landscape stressors. Creating both landscape and forest stand heterogeneity is a key strategy that incorporates all these goals.

The 2004 Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA ROD) emphasizes management of hazardous fuels with strategic placement of fuels treatments across broad landscapes to modify wildland fire behavior by interrupting potential fire spread causing fires to burn at lower intensities, thereby reducing the size and severity of wildfires. This would be accomplished in the Diamond Mountain project by various vegetation and fuels treatments which overlap across the general direction of historical fire spread. The northern boundary of the project has steep slopes, is located mid-slope, and borders private land, which does not provide the most desirable opportunity for direct suppression on public land. However, fire suppression on public and private land would be enhanced by fire behavior modification within the Diamond Mountain project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 1 222O (g)) or timberland (as defined by Public Resources Code section 4526)?				☒
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?				☒

Impact Discussion:

Forest Health Indicators

Indicators of forest health and fire-resistant stand structure were used to assess the effects of the proposed actions on vegetation. Stand density as characterized by trees per acre, basal area, and stand density index were used as metrics of forest health. Fire resistant stand structure was assessed with respect to distribution of trees per acre, canopy cover by diameter size classes, species composition, and landscape structure (i.e., CWHR vegetation types, size classes, and density classes). Forest stands within the proposed treatment areas were aggregated by CWHR size class because the proposed treatments, stand structure, and effects of treatments on stand structure would not substantially vary by forest vegetation type (as classified by CWHR habitat type).

A summary of the stand data modeled using the Forest Vegetation Simulator (FVS) program (USDA 2017) for the existing condition and the proposed vegetative treatments and an explanation of the indicators can be found in the project record in the Silviculture Report. Averages of stand attributes are shown in Table 15.

Table 4. Summary of effects on forest health and stand structure indicators by Alternative.

Stand Types	Condition	TPA	BA	SDI	QMD	%CC	CWHR
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Mechanical Thinning Treatments							
Mechanical Thinning Treatments in Conifer Communities	Existing	257	160	281	12	41	4M
	Post-Treatment	85	120	180	17	28	4P
Mechanical Thinning Treatments in Aspen Communities	Existing	211	156	261	13	40	4M
	Post-Treatment	17	44	55	34	10	5S
Hand Thinning Treatments							
Hand Thinning Treatments in Fuels Hand Thinning Areas	Existing	271	166	280	11	42	4M
	Post-Treatment	153	156	251	14	38	4P
Hand Thinning Treatments in Aspen Communities	Existing	251	159	275	13	42	4M
	Post-Treatment	80	138	197	20	30	4P

Source: Diamond Mountain Stand Exam data modeled with Forest Vegetation Simulator program, Eagle Lake Ranger District. Note: TPA = trees per acre, BA = square feet of basal area per acre, QMD = quadratic mean diameter in inches, %CC = percent canopy closure, SDI = stand density index, CWHR = California Wildlife Habitat Relationship, a classification of trees $\geq 5"$ dbh where size class 3 = 6.0-10.9", size class 4 = 11.0-23.9", and size class 5 = 24"+ QMD and where canopy closure S = sparse or 10-24%, P = open or 25-39%, M = moderate or 40-59%, D = dense or greater than 60%.

Mechanical thinning

Mechanical thin areas would employ variable density thinning (VDT). VDT would promote a more desired mixture of tree species (increased proportion of fire-resistant species) and sizes as well as structural diversity (a mixture of clumps of trees, openings, and matrix) that provides for improved forest health (increased tree and stand vigor) and a variety of wildlife elements while creating a fire resilient stand (decrease canopy continuity and the reduction of surface and ladder fuels).

Shade-intolerant species (Jeffrey pine, ponderosa pine) would be preferred for retention. Larger legacy trees would either be stand-alone trees heavily thinned around or incorporated into residual clumps. Black oaks would be highlighted by heavier thinning of competing/overtopping conifers. Also, when selecting trees for removal, preference would be given to trees heavily infected with dwarf mistletoe, root disease, and trees infested with bark beetles.

Variable density thinning would remove poor vigor, diseased, and damaged trees. In addition, thinning some of the suppressed, intermediate, and codominant tree classes would help maintain the growth and vigor of codominant and dominant conifers, that is the older, mature, larger trees would be retained longer in the overstory. Stand health would be maintained or improved, and individual tree mortality would be reduced. The overstocked stands or aggregations within stands would be thinned to reduce stress from inter-tree competition. Stand growth and vigor would be maintained or improved, making stands and aggregations less susceptible to insect attacks.

Trees per acre, basal area, stand density index, and canopy cover would be reduced in all forest types (Table 15). Conifer basal area, trees per acre, and canopy cover would be reduced to minimal proportions within aspen stands. Trees greater than 30 inches dbh would be retained for wildlife purposes, structure, species diversity, and aesthetic value.

The project would improve aspen and meadow health and vigor and encourage aspen and understory vegetation regeneration by removing overtopping conifers within and adjacent to the aspen and meadow communities. Removal of competing conifers would allow full sunlight to reach the forest floor and would enhance any natural sucker production that is already occurring in declining aspen clones and promote an understory vegetation response. Adult aspen, where existing, would be released from conifer competition. Some aspen trees may be damaged by harvesting operations. Damage to the crown or breakage of the bole would cause suckering to take place in aspen. Aspen has a shallow root system and is susceptible to windthrow in some situations. Removal of conifers surrounding aspen may predispose some aspen to windthrow.

Biomass removal, mastication, hand cutting, and hand piling

Thinning (biomass, mastication, or hand cutting) would occur primarily in sapling to pole-sized trees and would re-arrange brush and conifer tree ladder fuels up to 5 inches dbh within fuels hand thinning zones, up to 8 inches dbh within the first 20 feet of the fuels roadside hand thinning zones, and generally up to 10 inches dbh in plantations. Post-treatment residual conifer tree spacing would range from 17 to 22 feet, on average. Hand thinning in aspen and meadow communities would thin up to larger diameters, although only small percentages would be removed in these larger diameter classes. Trees per acre, basal area, stand density index, and canopy cover would be reduced, but to a much lesser extent than in mechanically-treated stands (Table 15), and not to desired basal areas to affect long-term forest health. Residual tree density would be almost twice as great in hand-thinned conifer stands and 90% greater in aspen/meadow units as compared to mechanically thinned stands. Reductions in basal area would not be as great in hand-thinned stands due to primarily small-diameter trees being removed. Residual basal areas would be a quarter greater in hand thinned conifer stands and 70% greater in aspen/meadow units as compared to mechanically thinned stands. Reductions in stand density, basal area, and SDI would improve forest health by reducing competition for limited resources and would make stands more resilient. Hand-thinning treatments would be effective over a shorter period of time and would need to be re-treated sooner than mechanically treated stands to maintain forest health objectives.

The reduction of stand densities would increase the available water, nutrients and growing space for residual trees improving tree resistance to disturbance agents such as insects and drought. The removal of competing conifers and brush would result in better individual tree growth and vigor of remaining conifers. Densities would be reduced, although not to desired basal areas to affect long-term forest health. QMD would increase under all treatments due to the removal of small-diameter stems. There may also be an opportunity to selectively remove dwarf mistletoe infected trees, which would limit its spread to adjacent uninfected trees. Thinning (biomass, mastication, or hand cutting) would reduce the risk of bark beetle mortality in each stand. When periodic droughts and associated bark beetle epidemics occur, there is a low probability of extensive pine mortality in the thinned stands. Maintaining good stand growth and vigor would reduce the risk of beetle populations increasing and attacking adjacent stands. Because the conifer stands are currently in the most vigorous growth period of their lifespan, stand densities could again approach undesirable densities within 10 to 20 years after treatment.

Pile burning and Underburning

Prescribed fire treatments would reduce trees per acre by causing fire-induced mortality primarily in the 1 to 10-inch diameter classes and some mortality in the 10 to 20-inch diameter classes (future snags). Mortality in the larger diameter classes may occur as the result of torching or delayed conifer mortality as

a result of fire-damage and subsequent bark beetle attack. Overstory canopy is usually not affected by underburning, although torching of individual or small groups of trees can occur where high surface fuel concentrations and ladder fuels occur together. Localized torching from underburning would provide some small openings in the overstory where shade-intolerant species may become established and grow, depending upon the opening size.

Prescribed burning is nonselective and may not remove diseased or dwarf mistletoe infected trees. Within the treatment area, dwarf mistletoe trees in the overstory would continue to infect the understory trees and adjacent stands. Potential damage to aspen roots from pile burning would be minimized by optimizing pile locations in aspen stands.

Fire Resistant Stand Structure

Mechanical thinning

Stand Structure: Proposed variable density thinning (VDT) in conifer stands, which treats throughout the diameter ranges, would retain fluctuating tree densities, in the form of clumps of trees and scattered individuals. Trees per acre would be reduced, removing sapling and pole-size trees and some codominant trees, creating 1/10 acre to ½ acre gaps, and skipping other areas by leaving moderate to high density areas. Densities would be reduced to desired basal areas to affect long-term forest health. Stems per acre and canopy cover would be reduced. Vertical and horizontal diversity, as evidenced by a more even distribution of canopy cover by size class and by clumping, respectively, would increase through mechanical treatments. Shade-intolerant species would comprise a greater proportion of species present on the landscape as these would be favored by retention under both mechanical and hand-thinning treatments in mixed conifer stands.

Aspen treatments, consisting of individual tree selection (ITS), to create proper growth environment conditions conducive to promote aspen regeneration can only be created by drastically reducing and removing competing conifer trees, requiring treatment throughout the diameter ranges. Densities and canopies of these competing conifers have to be reduced to levels to improve aspen growing conditions, which require full sunlight and other resources such as water. In addition, thinning through the diameter ranges allows the opportunity to substantially remove conifer seed sources. Mechanical treatments also act as a slight disturbance that promote suckering. Objectives for meadow treatments are very similar to aspen, in that the goal is to increase the cover and abundance of meadow understory vegetation and restore function, which is achieved by reducing and removing overtopping conifers to create a proper growth environment. When resorting to hand thinning in these areas, with its associated limitations, conifer cover cannot be fully reduced for maximum benefits of restoration and increased landscape diversity.

QMD would increase as a result of small tree removal (Table 15). Larger trees would make up a greater proportion of stems post treatment. The greatest increase in QMD would be seen in aspen stands where only aspen and large conifers would be retained. Canopy cover would be reduced across mechanically-thinned stands thereby reducing canopy continuity and bulk density. Removal of the small-diameter shade-tolerant species that make up the dense understory in many stands would increase the canopy base height (CBH). The substantial reductions in canopy cover in aspen stands from removing the majority of conifers 3.0 inches and greater using individual tree selection (ITS) would accelerate the development of desired stand structure for this forest type.

Although not modeled, it is expected over time, that trees per acre would increase due to the establishment of natural regeneration. It would be expected under optimal conditions that shade-intolerant trees species would become established throughout due to open canopy conditions and more shade-

tolerant tree species would become established in favorable microsites (e.g. north side of residual tree boles).

Landscape Structure: For the purpose of this analysis, landscape structure refers to the distribution of relative successional (seral) stages on the landscape, and the relative distribution of closed-canopy and open-canopy stands. This is an important indicator because it may be used as a measure of landscape heterogeneity and diversity, and as a measure of cumulative effects to forest vegetation on the landscape scale. Landscape structure is measured by calculating the distribution of these seral stages within the vegetation analysis area. The relative distribution of seral stages within the landscape is measured by using CWHR size class as a proxy for seral stage.

The implementation of VDT and ITS prescriptions would improve heterogeneity within the project area by increasing vertical and horizontal structural diversity by maintaining dense clumps of trees, creating canopy openings and leaving variable tree retention levels within the matrix. This mosaic would augment the project area's resilience to disturbances such as wildfire, insects, disease, drought, and climate change. Thinning through the diameter ranges also allows greater opportunity to adjust species composition and densities to desired levels by focusing retention on fire resistant, shade intolerant species and removing species that are not as fire resistant and more shade tolerant. This is especially important to be able to make these adjustments in the overstory, to assure regeneration of desired species that are being diminished on the landscape, and fully affect densities in all layers and fuels types (surface, ladder, and crown). Thinning through the diameter ranges provides for trending species composition to a desired mix that is more sustainable considering species moisture needs and actual precipitation within the project area.

The majority of stands where mechanical treatments are proposed are CWHR size class 4, mid-seral size trees (11.0 to 24.0-inch DBH). There would be an increase in QMD post treatment and a continued increase through 50 years. The immediate increase would be due to the removal of smaller trees, and over time, due to improved growth and vigor associated with the increase in the amount of limited resources (water, nutrients, sunlight) and growing space available to residual trees.

Immediately following project implementation there would be a shift in the proportion of CWHR size and canopy class 4P (which comprises almost half of the treatment stands) to 4S as dense pole-sized trees would be removed; some 4M stands would shift to 4S and 5P. These changes in the distribution of size and canopy class on the landscape indicate increased heterogeneity at the landscape scale. Early seral conditions would be created at the fine scale by the creation of openings through VDT implementation, although this is not indicated in modeling.

A majority of proposed treatment areas would stay in a mid-seral stage over time with the exception of some transitioning into a late seral stage represented by size class 5. Fifty years post project, Alternative 1 would result in a greater proportion of stands characterized by large trees (5P and 5M) than would develop without project implementation.

Table 16 displays the pre- and post-treatment distribution of CWHR size class and density values (canopy cover) at the treatment level and the 50-year post-treatment distribution. Most of the post-treatment changes (including 50 years post) have occurred in the 4P size and density class.

Biomass removal, mastication, hand cutting, and hand piling

Biomass removal, mastication, and hand cutting would change the structure (by reducing ladder fuels), density, and size of fuels in the stand. Biomass removal and hand piling would contribute to the reduction of surface fuels. However, hand thinning keeps diameters closer to the small end of CWHR size class 4

range. Reduction of canopy cover in conifer stands would be minor (4%) as compared to under mechanical treatments (13%) (Table 15). Hand thinning maintains more density classes in their current state, keeping them in a homogeneous condition.

Hand thinning would remove trees of poor health/vigor and decrease the number of shade-tolerant trees. Healthy, vigorous shade-intolerant species would be favored for retention; healthy vigorous smaller trees would be retained where gaps in the overstory exist to maintain/encourage vertical structural development. Hand thinning would only have a direct effect on the understory species composition and not the overstory. Biomass removal, mastication, and hand cutting treatments would employ species preferences to retain species native to the forest stand ecological type. Desired shade-intolerant species such as rust-resistant sugar pine, black oak, ponderosa/Jeffrey pine, and Douglas-fir would typically receive preference for retention while allowing for a diverse mix of species occupying the site.

When resorting to hand thinning in aspen and meadow communities, with its associated limitations, canopy cover cannot be fully reduced for maximum benefits of restoration and increased landscape diversity.

Table 5. Existing, post-treatment, and 50 years post-treatment acres of CWHR size and density classes for conifer stands within the Diamond Mountain project area under the proposed project.*

CWHR Size and Density Class/Veg Type	Existing Acres	Post-treatment Acres	Acre Changes Post-treatment	50 Years Post-treatment Acres	Acre Changes 50 Year Post-treatment	Size Class Summary	Density Class Summary
3S	4	0	-4	0	-4	Size Class 3	Density Class S
3P	43	64	+21	0	-43		
3M	105	46	-59	0	-105		
3D	7	0	-7	0	-7	Existing = 159 Post = 110 50 years = 0	Existing = 209 Post = 891 50 years = 298
4S	182	891	+709	72	-110	Size Class 4	Density Class P
4P	2,242	1,188	-1,054	552	-1,690		
4M	1,133	1,088	-45	482	-651		
4D	37	0	-37	0	-37	Existing = 3,594 Post = 3,167 50 years = 1,106	Existing = 2,291 Post = 1,292 50 years = 1,789
5S	23	0	-23	226	+203	Size Class 5	Density Class M
5P	6	40	+34	1,237	+1,231		
5M	0	0	0	760	+760		
5D	0	0	0	0	0	Existing = 29 Post = 40 50 years = 2,223	Existing = 1,238 Post = 1,134 50 years = 1,242
							Density Class D
							Existing = 44 Post = 0 50 years = 0

*Values rounded to the nearest acres. Model output of CWHR types does not include 120 acres of plantations and 31 acres of underburn only

In roadside thinning treatments, some stands adjacent to roads would receive heavier thinning (removal of more trees to a slightly higher diameter limit) to create open-canopy stands and enhance diameter growth of residual trees. In these same stands, those areas farther away from roads would receive lighter thinning (less removal of trees thinning to a lower diameter limit) to maintain closed-canopy stand conditions of later seral stands while reducing ladder fuels and stand density to reduce negative impacts of future fires, drought, and insect and disease occurrences.

Biomass removal, mastication, and hand cutting treatments would move towards creating more open-canopied stands within plantations. These treatments would enhance the development of CWHR 2 sized stands into CWHR 3 sized stands with Open (P) canopy cover (25-39 percent canopy cover) (Table 16).

Pile burning and Underburning

Pile burning and underburning would reduce surface fuels. Underburning is nonselective, can damage roots and boles, and may kill some dominant and codominant trees that may have otherwise been retained. Implementation of prescribed burning treatments would have a negligible to minor effect on species composition in underburn units. Localized torching from underburning would occur, thereby creating small openings in the overstory where shade-intolerant species may become established and grow, depending on size.

Prescribed fire treatments would not notably affect species composition. However, prescribed fire treatments are the first step in the process of re-introducing fire into landscapes that have not burned for decades. Multiple entries of prescribed or natural fire may favor fire-adapted shade-intolerant species over decades if not a century.

Prescribed fire treatments would not notably affect stand size class and density. Prescribed fire treatments would incur mortality of the smaller diameter trees, primarily those less than 10 inches in diameter with some incidental mortality of larger trees due to torching or post-fire delayed conifer mortality. Canopy cover density could be reduced by isolated torching; however, most tree mortality resulting from prescribed fire treatments would occur in the understory which would not notably affect the overstory canopy cover.

Mitigation Measures: Healthy sugar pine that show minimal signs of blister rust in the branches would be favorably retained in all treatment units. Additional precautions described in the Sugar Pine Action Plan (USDA 2006) prepared by the R-5 Genetics Group for northern California forests, would also be taken to protect rust-resistant sugar pines in all treatment units.

Cut stumps 14 inches in diameter and greater of live conifer trees would be treated in all vegetation types except aspen and meadow, with an EPA-approved and California registered borate compound (Sporax® or Cellu-Treat®) to prevent the spread of Heterobasidion root disease. Borate compound would be applied to conifer stumps within 4 hours of creation. Borate compound would not be applied to stumps within 25 feet of known sensitive, and special interest plants, or streamcourses, meadows, seasonal wetlands, and special aquatic features, shown on the contract map.

Where mechanical vegetation treatments occur along roads and private property boundaries, lower basal area retention would be favored within a 200-foot buffer starting from the road edge or private property boundary, while increasing basal area retention further into the unit.

Where clumps occur within mechanical vegetation treatments that are within a 100-foot buffer along roads and private property boundaries, trees favored for clumps would have high canopy base heights, ladder fuels would be reduced within the clumps, and discontinuity of canopy fuels should be present outside the clumps.

Douglas-fir tussock moth (DFTM) trap lines would be protected. Pile all material outside the drip line of

leave trees along the DFTM trap lines.

3. AIR QUALITY

Environmental Setting: The project area lies within the Lassen County Air Pollution Control District (LCAPCD). In accordance with Title 17 of the California Code of Regulations, a smoke management plan would be submitted to and approved by the LCAPCD prior to any prescribed fire ignitions that are part of the Proposed Action. Adherence to the smoke management plan (SMP) for pile and understory burning would decrease the chance of negative impacts to communities and other smoke sensitive areas. It would also help to ensure that emissions from pile or understory burning would not violate the National Ambient Air Quality (NAAQ) emission standards. Since the proposed project area falls within a federal attainment area for air quality, no conformity determination is required.

Prescribed burning would only occur on ‘permissive’ burn days as defined by the California Air Quality Board (CARB). CARB makes daily determinations of smoke transport conditions and grants permission to burn only on days with adequate smoke transport and dispersal conditions. Short-term production of smoke and associated emissions would occur during prescribed burning in the project area. However, daily coordination among local fire management officials, adherence to the SMP, and the daily determination of smoke transport conditions by CARB would help to ensure that the smoke and related emissions for the proposed prescribed fire activities would stay within the standards of the Clean Air Act. The direct effects to air quality would be minimal and mitigated by following the guidance of the SMP and CARB.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?		☒		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?		☒		

Impact Discussion: The direct effects of the prescribed fire treatments would be smoke produced from burning forest litter, duff, and downed woody debris and a release of particulate matter into the environment. Short-term impacts from smoke and associated particulate matter from the proposed prescribed fire treatments, combined with emissions from other vegetation burning on public and private land, is possible.

The indirect effects of prescribed fire treatments could be an increase in the number of smoke related nuisance phone calls from the public during underburning or pile burning operations. Within the project and surrounding area, there could be short term impacts to visibility along roads. In the event of a wildland fire, treatments would result in decreased smoke production and associated emissions. This decrease in emissions would help to reduce smoke related impacts to nearby communities.

Fugitive dust could result from logging operations such as skidding and hauling during dry seasons.

Impacts to air quality from prescribed underburning, machine pile burning, and hand pile burning in the project and adjacent areas, during the last five years have been minimal and no Notice of Violation of air quality standards has been issued on the Lassen National Forest during this period. The proposed project would increase the amount of prescribed fire activities in the area above what has been implemented for the last five years, but would not heavily impact the air quality of the area, when combined with ongoing and reasonably foreseeable future actions, beyond what has occurred during this time.

Mitigation Measures: Direct impacts from proposed prescribed fire treatments would be mitigated by adherence to the SMP and CARB. In addition to these safeguards, a daily Air Quality Conference Call is conducted during the prescribed fire season. They are attended by representatives of the Air Quality Management Districts, the California Air Resources Board, Geographical Area Coordination Center meteorologists and agencies that are conducting prescribed fire operations. These calls help ensure that burning only occurs when atmospheric conditions are conducive to good smoke dispersion and that the cumulative effects of all prescribed burning remain at levels that are within the provisions of the Clean Air Act.

Fugitive dust from logging operations would be mitigated by standard contract requirements for road watering or other dust abatement techniques.

4. BIOLOGICAL RESOURCES

Environmental Setting:

Wildlife Resources

Wildlife-related land allocations within the project area include two northern goshawk protected activity centers (PACs) and two California spotted owl PACs and their associated home range core areas (HRCAs) exist in the project area. In addition, portions of a California spotted owl PAC and HRCA from the Plumas National Forest also occur within the project area.

In August of 2016, the US Fish and Wildlife Service designated critical habitat for the federally listed Sierra Nevada yellow-legged frog. A small portion of this designated critical habitat, totaling approximately 123 acres, is at the very eastern edge of the project area. Proposed treatments avoid potential effects to suitable habitat within this area.

Due to the project area being outside the range of the species, or due to the lack of suitable habitat or habitat components or effects to those components in the project area, it was determined that the action alternatives would have no effect on the following Federally Listed threatened or endangered species or their critical habitat:

Gray wolf (*Canis lupus*), northern spotted owl (*Strix occidentalis caurina*), valley elderberry beetle (*Desmocerus californicus dimorphus*), Central Valley steelhead DPS (*Oncorhynchus mykiss*), Central Valley chinook salmon ESU (*Oncorhynchus tshawytscha*), Delta smelt (*Hypomesus transpacificus*), Winter-run chinook salmon ESU (*Oncorhynchus tshawytscha*), Sierra Nevada yellow-legged frog (*Rana sierrae*), California red-legged frog (*Rana aurora draytonii*), Shasta crayfish (*Pacifastacus fortis*), conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), and giant garter snake (*Thamnophis gigas*).

Due to the project area being outside the known range of the species, or due to the lack of suitable habitat or habitat components in the project area, it was determined that the action alternatives would have no effect on the following Forest Service Sensitive species:

Northern bald eagle (*Haliaeetus leucocephalus*), California wolverine (*Gulo gulo luteus*), American marten (*Martes caurina*), Pacific fisher (*Pekania pennanti*), Sierra Nevada red fox (*Vulpes vulpes necator*), Townsend's big-eared bat (*Corynorhinus townsendii*), great gray owl (*Strix nebulosa*), willow flycatcher (*Empidonax traillii*), greater sandhill crane (*Grus canadensis tabida*), yellow rail (*Coturnicops noveboracensis*), Shasta hesperian snail (*Vespericola shasta*), foothill yellow-legged frog (*Rana boylei*), Cascade frog (*Rana cascadae*), northwestern pond turtle (*Clemmys marmorata marmorata*), California floater (*Anodonta californiensis*), Great Basin rams-horn (*Helisoma newberryi newberryi*), scalloped juga (*Juga occata*), topaz juga (*Juga acutifilosa*), montane peaclam (*Pisidium ultramontanum*), nugget pebblesnail (*Fluminicola seminalis*), black juga (*Juga nigrina*), kneecap lanx (*Lanx patelloides*), Goose Lake redband trout (*Oncorhynchus mykiss ssp.*), hardhead (*Mylopharodon conocephalus*), Pacific lamprey (*Entosphenus tridentatus*), and Eagle Lake rainbow trout (*Oncorhynchus mykiss aquilarum*).

Sensitive species analyzed in detail for the Diamond Mountain project were northern goshawk (*Accipiter gentilis*), California spotted owl (*Strix occidentalis occidentalis*), pallid bat (*Antrozous pallidus*), fringed myotis (*Myotis thysanodes*), and western bumble bee (*Bombus occidentalis*). Effects to these Sensitive wildlife species are summarized below and are discussed in detail in the Biological Evaluation for the Diamond Mountain Watershed Restoration and WUI Project (project record). The effects of project on habitat for these species were modelled using FVS and are shown in Tables 16, 17, and 18.

Botanical Resources

Three Region 5 Sensitive plant species are known to occur within the Diamond Mountain project area: *Botrychium minganense* (one occurrence), *Lomatium roseanum* (four occurrences), and *Penstemon sudans* (one occurrence). In addition, the project contains potential habitat for *Botrychium ascendens*, *Botrychium crenulatum*, *Botrychium lunaria*, *Botrychium montanum*, *Botrychium pedunculatum*, *Botrychium pinnatum*, and *Pyrrocoma lucida*. No other currently listed Region 5 Sensitive plant species or federally listed plant species are known to occur or have potential habitat within the project area.

Effects to Sensitive plant species are discussed in detail in the Biological Evaluation and Assessment for R5 Sensitive and Federally Listed Plant Species, Diamond Mountain Watershed Restoration and WUI Project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?		<input checked="" type="checkbox"/>		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		<input checked="" type="checkbox"/>		
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?		<input checked="" type="checkbox"/>		
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.			<input checked="" type="checkbox"/>	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				<input checked="" type="checkbox"/>
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?				<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
g) A reduction in the numbers, a restriction in the range, or an impact to the critical habitat of any unique, rare, threatened, or endangered species of animals?		☒		
h.) A reduction in the diversity or numbers of animals onsite (including mammals, birds, reptiles, amphibians, fish or invertebrates)?			☒	
i.) A deterioration of existing fish or wildlife habitat (for foraging, breeding, roosting, nesting, etc.)?		☒		
j. Introduction of barriers to movement of any resident or migratory fish or wildlife species?			☒	
k. Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife?		☒		

Impact Discussion:

Wildlife Resources

Northern goshawk

Two known goshawk nests are located within the project boundaries: Elysian Valley and Baxter Creek. Structural stages present within the project area that are considered to provide moderate or high suitability ratings for northern goshawk reproductive value and foraging habitat are 4M and 4D. Structural stages 3S, 3P, 3M, 3D, and 4S also provide moderate foraging value.

No goshawk PACs would be directly affected by mechanical treatments. Proposed treatments within goshawk PACs were limited to roadside hand thinning of 8-inch diameter trees and less within the Baxter Creek goshawk PAC. These treatments would have no negative effect on the forest structure important for goshawks, which are the larger diameter trees and overall canopy closure, which would not be substantively affected by the hand thinning treatments. Removing brush would remove habitat for small mammals, but cut shrubs would be expected to resprout and regain pre-treatment stature within a few years. Overall, the benefit to reducing the risk of wildfire or to improve fire fighter ability to fight fires on these roads outweighs the negligible negative effects of these hand thinning treatments.

Of the approximate 4,517 acres of proposed treatments within natural forest units (those units that are not plantations), about 1,170 acres (about 26%) were classified as being 4M or 4D and thus representative of potential goshawk nesting habitat based on the existing forest structure.

The project-level analysis indicated that the proposed actions would serve to reduce the amount of CWHR 4M and 4D forested habitat within the project by about 82 acres. All affected acres would remain as foraging habitat post-treatment.

While the assessment of CWHR labels indicates a reduction of 82 acres of potential nesting habitat to non-nesting habitat based on CWHR labels, there is other information and effects not captured by labels.

As reflected by silvicultural data collected for this project, of 98 units that were estimated to be a 4M or 4D pre-treatment, the existing Quadratic Mean Diameter (QMD) was about 11.4 inches dbh. This is at the bottom end of this CWHR size class category, which has a range of 11 to 23.9" dbh. These low QMDs reflect the high numbers of small diameter trees that characterize most of the project area, as well as the paucity of larger diameter trees within these units. The largest QMD for these units was 19.4", and the QMD was less than 15 inches dbh for 88 of the 98 units. In addition, the average canopy cover for these 98 units was 51%, just above the midpoint of the CWHR M canopy cover label (40-59%). Canopy closure was less than 50% in 49 of these units. Overall, these units do not represent high quality nesting habitat for goshawks, being at the bottom of the size class 4 category, and the midpoint of the canopy closure M category. The greatest value of these units may be more as foraging habitat than nesting habitat.

In addition, post-treatment the average QMD would increase to 18.7 inches dbh, or just above the midpoint of the size class 4 diameter range. This increase in QMD reflects the thinning of smaller diameter trees and the retention of the larger trees within the units. Due to this thinning, the average canopy closure would decline to about 35%, which is at the upper end of the CWHR P canopy cover category (25-39%). Canopy cover would decline to less than 50% in 91 of the 98 stands. Thus while there would be only an 82 acre reduction in CWHR 4M and 4D in treatment units, most of these units would be at the low end of the M canopy cover category immediately after treatment. Thus, due to reductions in canopy cover the majority of the units would be marginal nesting habitat even though they would retain the M CWHR label. However, as indicated in the previous paragraph, these same stands were already rather marginal as nesting habitat given small QMDs and rather low existing canopy closures. Given this, the primary value of these stands may be as foraging habitat.

Silvicultural modeling (Silviculture Report, project record) indicated that after 50 years post-treatment, approximately 482 acres of 4M would exist within these same units, as well as 760 acres of 5M, for a total of 1,242 acres of habitat representing potential goshawk nesting habitat. Thus, modeling indicates that after a 50-year period post-treatment, the amount of goshawk reproductive habitat within treatment units would be similar to the existing amount, but with 760 acres being in the larger size class 5 condition.

The heterogeneity within stands resulting from the proposed treatments as well as the retention of snags and downed logs, would enhance habitat for a number of prey species as understory vegetation increases in abundance and diversity, and in turn should enhance the value of these stands as foraging habitat for goshawks.

Treatments to restore non-coniferous forested communities would restore a largely unforested condition to what were historically aspen-dominated areas and a meadow. Restoring the historical extent and ecological function of these communities would restore habitat conditions for goshawk prey species such as woodpeckers, blue grouse and other species.

There would be additional benefits from the treatments such as protection from widespread loss of habitat due to wildfire, improving the health and vigor of remnant old-growth trees within the treatment areas, promoting the recruitment of a large tree component currently lacking in the Diamond Mountain project area, as well as aspen enhancement projects. Cumulatively, project activities would reverse some long-term vegetative trends within the project area, and the treatments would confer some protection against widespread habitat loss due to wildfire.

California Spotted Owl

Two spotted owl activity centers exist within the project area: Gold Run and Baxter Creek. The Gold Run activity center was based on owl detections from the late 1980s to the mid-1990s. The Baxter Creek

activity center is currently occupied. This site continues to be reproductive, with young owls confirmed in 2012 (2 young), 2014 (3), and 2015 (2). No young were observed in either 2016 or 2017. Another activity center on the Lassen NF, Will-Lights, is sufficiently near the project area that the territory circle for this site overlaps the project area. In addition to the Gold Run and Baxter Creek activity centers, mapped portions of an additional PAC and Home Range Core Area (HRCA) from an activity center located on the Plumas NF (PLU0301) overlaps project boundaries in the Bear Flat area in the eastern portion of the project. This site is not known to be occupied (C. Dillingham pers. comm. 2017). Territory and home range circles drawn around 3 other spotted owl activity centers located on the Plumas NF also overlap the project area: LAS0007, (overlap at both the territory and home range scales), and PLU0220 and PLU0286 (overlap at the home range scale only) (Map 16). Spotted owl habitat is mature or late successional forest habitat that is relatively dense with multiple canopy layers in the middle and upper layers. Approximately 1,170 acres of designated owl habitat (4 M and 4D) fall within the project area. Seven spotted owl sites were analyzed for potential effects. These included two with activity centers within the project area (Gold Run and Baxter Creek), one nearby activity center on the Eagle Lake RD (Will-Lights), and four on the Plumas NF that overlapped the project area at one or more of the above scales (LAS0007, PLU0301, PLU0220 and PLU0286). The analysis of effects for each of these sites was conducted at five different scales for: PAC, project area, territory, home range, and a cumulative effects analysis area.

At the PAC scale (Gold Run, Baxter Creek and PLU0301), hand thinning would occur in each of the three PACs. These hand thin units along roads would slightly affect habitat, but would also confer some protection in case of wildfire. These hand thin units were not considered impacting to these three PACs. At the project scale, the proposed actions would cause an overall loss of approximately 82 acres of 4M. In addition, canopy cover in other units would be reduced to lower end of the M canopy cover category. However, less than half of the available habitat was included within proposed treatment units, and given the project design of managing for heterogeneity and large tree retention, overall project level effects were not considered substantive to overall habitat conditions for this species.

As discussed above in the northern goshawk account, while the assessment of CWHR labels indicates a reduction of 82 acres of potential habitat to non-nesting habitat based on CWHR labels, there are additional effects and information not captured by labels. As reflected by silvicultural data collected for this project, of 98 units that were estimated to be a 4M or 4D pre-treatment, the existing Quadratic Mean Diameter (QMD) was about 11.4 inches dbh. This is at the bottom end of this CWHR size class category, which has a range of 11 to 23.9" dbh. These low QMDs reflect the high numbers of small diameter trees that characterize most of the project area, as well as the paucity of larger diameter trees within these units. The largest QMD for these units was 19.4", and the QMD was less than 15 inches dbh for 88 of the 98 units. In addition, the average canopy cover for these 98 units was 51%, just above the midpoint of the CWHR M canopy cover label (40-59%). Canopy closure was less than 50% in 49 of these units. Overall, these units do not represent high quality nesting habitat for California spotted owls, being at the bottom of the size class 4 category, and the midpoint of the canopy closure M category. In addition, about half of the stands (43 of 98) had existing basal areas of less than 185 square feet per acre, which is the lowest basal area value typical of nest stands. The greatest value of the majority of these stands would be more as foraging habitat than nesting habitat.

In addition, the average QMD post treatment would increase to 18.7 inches dbh, or just above the midpoint of the size class 4 diameter range. This increase in QMD reflects the thinning of smaller diameter trees and the retention of the larger trees within the units. Due to this thinning, the average canopy closure would decline to about 35%, which is at the upper end of the CWHR P canopy cover category (25-39%). Canopy cover would decline to less than 50% in 91 of the 98 stands. Thus, while there would be only an 82-acre reduction in CWHR 4M and 4D in treatment units, most of these units

would be at the low end of the M canopy cover category immediately after treatment. Thus, due to reductions in canopy cover the majority of the units would be marginal habitat even though they would retain the M CWHR label.

At the territory scale, the proposed actions would affect habitat at various degrees for each of the five owl sites that overlapped the project at the territory circle scale. Reductions in habitat ranged from about 4 acres (LAS0007) to 161 acres (Gold Run). All territories but Gold Run would continue to provide an amount of suitable habitat that was greater than the minimum recommended by the interim recommendations for this scale for west side owl territories. Due to the Gold Run site not currently being occupied, this reduction in habitat for the Gold Run territory would not affect current owl distribution. As a result, and given the benefits of the proposed actions to reduce the risk of widespread wildfire, the impacts at this scale were not considered substantive for this species.

At the home range scale, the proposed actions would affect habitat at various degrees for each of the seven owl sites that overlapped the project at this scale. Reductions in habitat ranged from no affect to habitat (PLU0286) to a reduction of about 282 acres of habitat (PLU0301). Reductions in habitat for the home ranges for the two owl sites with activity center locations within the project area were 128 acres for Gold Run and 248 acres for Baxter Creek. All sites, including Gold Run and Baxter Creek, would continue to provide a greater amount of habitat at this scale than the minimum recommended for west side home ranges by the interim recommendations. While Gold Run and Baxter Creek are considered “east side” owl sites due to the fact the activity centers are located on the Eagle Lake RD, as discussed in the project BE, the habitat conditions at these sites are most similar to west side owl sites, and thus the west side recommendations would be more pertinent to these sites than the interim recommendations for east side sites. As a result, and given the benefits of the proposed actions to reduce the risk of widespread wildfire, the impacts at this scale were not considered substantive for this species.

Within the cumulative effects analysis area, due largely to the lack of ongoing and foreseeable future projects in the spotted owl analysis area that included the home range circles for each of the seven owl sites, it was concluded that the Diamond Mountain project would not represent substantive cumulative effects to spotted owls or their habitat at any of the seven owl sites.

Pallid bat

Proposed variable density thinning treatments, hand thinning, aspen and meadow treatments, and the retention of snags would likely benefit this species by encouraging understory vegetation and invertebrate populations while retaining potential roost sites. Treatments proposed in this project are consistent with suggested conservation measures for this species, which include reducing overstocked stand conditions and implementing vegetation treatments to create open understories that allow for unencumbered flight.

Fringed myotis

The variable density thinning, aspen and meadow restoration treatments, and prescribed burning would open coniferous canopies and increase understory vegetation. An increase in understory vegetation should also increase the amount and diversity of larval food plants for moths as well as increase the diversity and abundance of other insects, possibly leading to greater food sources for this insectivorous species. Snag retention, and the retention of legacy pines and trees ≥ 30 " dbh would serve to retain potential roost trees.

Western bumble bee

Proposed forest health and ecosystem restoration treatments would result in increased understory vegetation within some treated areas, and improved condition and function of meadows and aspen communities. Such objectives and treatments would lead to an increase in flowering plants as compared to the existing condition, which would improve foraging habitat for this species. No substantive cumulative effects were identified.

It is the determination of the Biological Evaluation and Assessment for R5 Sensitive and Federally Listed Terrestrial and Aquatic Wildlife Species, Diamond Mountain Watershed Restoration and WUI Project that with the incorporation of mitigation measures, the implementation of the Diamond Mountain project may affect individuals of or habitat for California spotted owl, northern goshawk, pallid bat, fringed myotis, and western bumble bee but is not likely to result in a trend toward federal listing or loss of viability for these species.

Botanical Resources

Direct effects involve physical damage to plants or their habitat. Thinning and prescribed fire (pile burning, underburning) treatments have the potential to directly affect plant species, resulting in death, altered growth, or reduced seed set or spore production through physically breaking, crushing, burning, scorching, or uprooting plants.

Botrychium minganense (BOMI-044) is located within a unit where hand-thinning, underburning, and pile burning treatments are proposed. However, mitigation measures specify that ground-disturbing activities would be excluded from within 50 ft. of this occurrence, and that no ignitions would occur within the occurrence. Direct effects would only be anticipated should fire back into the occurrence, although most species of *Botrychium* have been found tolerant of the low severity fire anticipated under prescribed underburning conditions.

Although adequate botanical surveys have been performed in the project area, it is possible that isolated individuals of *Botrychium minganense* or other Sensitive *Botrychium* species may have been missed. *Botrychium* species may persist below-ground in some years without sending up a trophophore. Treatments that occur within RCAs would have the highest potential to affect undiscovered individuals of *Botrychium* species, because these species are found primarily on streambanks in areas of permanently saturated soil. However, with the implementation of mitigation measures, mechanical equipment is excluded within 20 ft. of stream channels, reducing the risk that potential habitat would be impacted by mechanical equipment. In addition, while the above ground parts of *Botrychium* species could be killed by fire during fuels treatments activities, these species have been found over the long-term to tolerate the low to moderate intensity fires that would be most likely to occur within RCAs, since mitigation measures specify that fire intensity would be limited within riparian areas. As a result, any impacts to undiscovered occurrences of *Botrychium* species would likely be short-term in nature.

Two occurrences of *Lomatium roseanum* (LORO7-001, LORO7-004) are within proposed treatment units, but would be avoided by ground-disturbing activities, with the exception of trail construction. Trail construction activities may occur within occurrence LORO7-001, but this would result in ground disturbance across a maximum of 0.25 acres, which represents 0.24% of total occurrence acres (86 acres). In addition, scraping is prohibited within the occurrence, further minimizing trail construction impacts.

One occurrence of *Penstemon sudans* (PESU10-023) is located within a treatment unit. While hand thinning activities that are permitted within the occurrence may result in incidental impacts to individuals, the occurrence is within an opening where few trees would be removed. Piles would be excluded from the occurrence to prevent the potential for direct effects from this activity. In addition, fire would only be

allowed to back in to larger patches of *P. sudans*, reducing the risk of direct effects from underburning activities.

Direct effects would occur to *Pyrracoma lucida* only if occurrences were missed during field surveys. This is unlikely, however, because this species is easily identifiable throughout the growing season and potential habitat was well-surveyed. No direct effects are anticipated to occur to this species.

If new occurrences of any R5 Sensitive species are found before or during ground disturbing activities, they would be protected by similar measures as described above. Overall, there is minimal potential for direct effects to R5 Sensitive species, none of which would be expected to affect the viability of these species.

Indirect effects are separated from an action in either time or space. These effects, which can be beneficial or detrimental to rare species, may include changes in plant community composition, changes in environmental conditions within habitat, changes in recreational use patterns within habitat, or changes in invasive plant distribution and abundances as a result of project activities.

Project-related changes to tree species composition may include the removal of incense cedar trees during thinning activities. Because incense cedar trees are presumed to establish connections with mycorrhizal fungi which may also support *Botrychium* species, this activity may affect potential habitat for *Botrychium* species. Indirect effects to *Botrychium minganense* or potential habitat for this and other *Botrychium* species could also occur if the hydrology of associated springs and riparian features were to be altered by project activities. However, with the incorporation of mitigation measures for RCAs that would exclude mechanical equipment from within 20 feet of stream channels, and the retention of incense cedar within 150 ft. of known *Botrychium* occurrences, this effect would not be anticipated to occur to known occurrences with the implementation of the project.

The proposed action may result in beneficial indirect effects to *Penstemon sudans* and *Pyrracoma lucida* where project actions reduce canopy cover. Most occurrences of *Penstemon sudans* across its range are associated with openings and rocky features, and therefore, hand-thinning treatments within and adjacent to the known occurrence may enhance and expand current habitat. Although no occurrences of *Pyrracoma lucida* are known to the project area, potential habitat for this species occurs within mesic openings and high-light conditions at meadow edges. Project activities that reduce canopy cover in these areas would constitute a beneficial effect to this species.

The proposed recreational hiking trail would pass through a known occurrence of *Lomatium roseanum*. Indirect effects from this action may include increased foot traffic along and adjacent to the trail. This could result in additional risk of impacts to plants. However, because *Lomatium roseanum* is above-ground only in the month immediately following snowmelt, the risk posed by increased foot traffic within habitat is minor.

The Invasive Plant Species Risk Assessment for this project determined that the implementation of the project would result in a moderate risk of invasive plant introduction and spread (Invasive Plant Species Risk Assessment, Diamond Mountain project record). One occurrence of Canada thistle is within 30 ft. of a known *Botrychium* occurrence, and additional occurrences of Canada thistle are within riparian vegetation that constitutes potential habitat for *Botrychium* species. Canada thistle, however, would be avoided by all project activities unless eradicated by weed treatments, minimizing the risk that project activities would result in Canada thistle spread and a degradation of known or potential habitat for *Botrychium* species. Design features also specify that cheatgrass would be avoided by project activities. As there are no known cheatgrass occurrences in proximity to TES plant occurrences, the risk posed by this species is minor.

Cumulative effects for all species analyzed within this document are spatially bounded by the Diamond Mountain project area and temporally bounded by a 20-year time frame. Cumulative effects would result when the direct and/or indirect effects of the project on a given species add incrementally to the effects of past, present, and reasonably foreseeable future actions.

Cumulative effects were analyzed for *Botrychium minganense*, *Lomatium roseanum*, *Penstemon sudans*, and other species with potential habitat within the project area (*Botrychium ascendens*, *Botrychium crenulatum*, *Botrychium lunaria*, *Botrychium montanum*, *Botrychium pedunculatum*, *Botrychium pinnatum*, *Pyrocoma lucida*). Ongoing actions have similar effects to these species as the Diamond Mountain project, since all projects have either been surveyed to similar standards as the Diamond Mountain project or would be prior to project implementation. Actions such as road maintenance, firewood gathering, or dispersed camping may be contributing only incidental effects to these species, if any (PORFFA Report). Ongoing invasive plant treatments include herbicide treatments of Canada thistle within the project area under the Pioneer Invasive Plant Treatment Project (Pioneer Project). The Pioneer Project, however, specifies that effects to Sensitive plant species will be minimized through buffers on herbicide use in the vicinity of Sensitive plant species, and are not expected to add cumulatively to the direct and indirect effects of the Diamond Mountain project on R5 Sensitive plant species. Ongoing and future actions on adjacent private lands may also add cumulatively to those effects from the implementation of Alternative 1, but since survey requirements and mitigations are not known on these lands, the type and extent of impacts to these species or their potential habitat cannot be quantified. As with ongoing actions, future actions would be surveyed to similar standards to ensure that any impacts to Sensitive plant species are either beneficial or mitigated so that the long-term viability of the Sensitive species on the forest is maintained.

In summary, the Diamond Mountain project would treat approximately 4,669 acres with mechanical thinning, hand thinning, hand piling, and/or underburning treatments. With the incorporation of mitigation measures, these actions would avoid or minimize impacts to known occurrences of Sensitive plant species and their habitats. Although project effects would add cumulatively to the effects of past, ongoing and future actions on *Botrychium ascendens*, *Botrychium crenulatum*, *Botrychium lunaria*, *Botrychium minganense*, *Botrychium montanum*, *Botrychium pedunculatum*, *Botrychium pinnatum*, *Lomatium roseanum*, *Penstemon sudans* and *Pyrocoma lucida*, these effects would not lead to a loss of viability for these species within the Diamond Mountain project area or across the Lassen NF for at least the next 20 years.

It is the determination of the Biological Evaluation and Assessment for R5 Sensitive and Federally Listed Plant Species, Diamond Mountain Watershed Restoration and WUI Project that with the incorporation of project mitigation measures, the implementation of the Diamond Mountain project may affect individuals of or habitat for *Botrychium ascendens*, *Botrychium crenulatum*, *Botrychium lunaria*, *Botrychium minganense*, *Botrychium montanum*, *Botrychium pinnatum*, *Botrychium pedunculatum*, *Lomatium roseanum*, *Penstemon sudans*, or *Pyrocoma lucida* but is not likely to result in a trend toward federal listing or loss of viability for these species.

Mitigation Measures:

Wildlife Resources:

Spotted owl limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation and fuels treatments within approximately ¼ mile of the activity center during the breeding season (March 1 through August 15), unless surveys confirm that California spotted owls are not nesting. Prior to implementing activities within or adjacent to a California spotted owl PAC and the location of the nest site

or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.

Northern goshawk limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation and fuels treatments within approximately ¼ mile of a goshawk nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand within a protected activity center (PAC) is unknown, either apply the LOP to a ¼-mile area surrounding the PAC, or survey to determine the nest stand location.

Northern goshawk limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation treatments within unsurveyed suitable nesting habitat (February 15 through September 15) unless surveys are conducted to confirm that northern goshawks are not nesting.

Gray wolf limited operating period: Maintain a limited operating period (LOP) prohibiting vegetation and fuels treatments from March 1 through August 15 within 1 mile of wolf activity indicative of a potential den location or a pup rendezvous site.

All existing snags, 15 inches or larger dbh, would be retained unless required to be felled during project implementation to meet operability or safety needs. If felled, such snags would be left in place as a downed log, unless the log needs to be removed or rearranged to address fuels concerns (e.g. logs within 200 ft. of roads and future firelines, and within 200 ft. of property boundaries).

All existing downed logs that are at least 15” diameter at the large end and at least 15 feet long, would be retained except where logs need to be removed or rearranged due to fuels concerns (e.g. logs within 200 ft. of roads and future firelines, and within 200 ft. of property boundaries). In such cases, 3 downed logs per acre would be retained, with preference given to the largest sized log first, with size being a combination of total length and diameter. Logs would be counted once to meet this guideline.

During prescribed burning operations, snags larger than 15 inches dbh and downed logs that are a minimum of 15 inches in diameter and 15 feet in length would not be actively ignited.

Within hand-thin treatment units other than road corridors, retain approximately 10% of treatment unit acreage in unthinned patches. Such patches would not be placed within 200 feet of roads or private land boundaries.

Botanical Resources

1. All ground-disturbing activities would be excluded from within 50 feet of occurrences of *Botrychium* species. Locations would be displayed as control areas on all contract maps. No ignitions would occur within occurrences of *Botrychium* species; however prescribed fire would be permitted to back into occurrences. All incense cedar would be retained within 150 ft. of *Botrychium* occurrence.

2. Hand-thinning activities may occur within all occurrences of *Penstemon sudans*, but piles would be excluded from occurrences. No ignitions would occur within any occurrences of *Penstemon sudans*, and underburning would be excluded from patches less than 0.25 acres in size.
3. Ground-disturbing activities would be excluded from within 150 ft. of Gilman Fen.
4. All ground-disturbing activities associated with forest-thinning and fuels treatments would be excluded from occurrences of *Lomatium roseanum*, *Penstemon janishiae*, and *Phlox muscoides*. Locations would be displayed as control areas on all contract maps. No ignitions would occur within occurrences of these species; however prescribed fire would be permitted to back into occurrences.
5. Hand and mechanical treatments would be permitted within occurrences #2, #4, #5 and #6 of *Hackelia amethystina* and within occurrence #1 only within Unit A07H and A07M. Hand and mechanical treatments would be excluded from all other occurrences. Underburning would be permitted within occurrences #2, #7, #12, and #13 of *Hackelia amethystina* but excluded from all other occurrences. Piles and landings would be excluded from all occurrences of *Hackelia amethystina*.
6. Trail construction would avoid invasive plant occurrences and small (< 1 acre) occurrences of TES or special interest plant species. Trail construction activities would avoid large occurrences (> 1 acre) of TES and special interest plants where practicable. Trail would be monumented with cairns or other surface indicators where it occurs within TES and SI plant occurrences. No scraping would occur within TES and SI occurrences.
7. *Senecio hydrophiloides* (#33) and *Sparganium natans* (#1) would be flagged and avoided by all ground-disturbing activities.
8. *Addition: New occurrences of TES or Special Interest plant species discovered before or during ground-disturbing activities would be protected through flag and avoid methods or measures similar to those described above.*

Fire and Fuels

9. Ignition for underburning would not occur within wet meadow areas where graminoid and forb indicator species of a wet site are present; however, fire used in adjacent areas would be allowed to back into portions of these meadows.
10. Where riparian communities are established, minimize disturbance to riparian vegetation and retain sufficient ground cover by conducting prescribed fire in a manner which limits the intensity of fire.
11. In aspen and cottonwood communities, hand piles would be located either outside of mapped stands, or at least 20 feet from any live tree or sprout greater than three feet tall. Where surface fuels concentrations are low, material can be lopped and scattered within these stands.
12. When underburning in plantations, conduct prescribed fire in a manner which limits the intensity of fire.

Invasive Plants

13. Known occurrences of Canada thistle would be treated annually with herbicides as part of the Pioneer Project EA completed in 2015. Prior to implementation, LNF Botany personnel would review and monitor each site to determine its extent (or viability). If no sprouts have been identified within known infestations for two seasons all project restrictions would be lifted on that infestation.

14. Any extant Canada thistle sites within the project area would be avoided by all project activities including hand thinning and underburning until the conditions required in the above mitigation measure (#5) are met.
15. Cheatgrass occurrences would be flagged and avoided by ground-disturbing activities, including prescribed fire activities. Locations would be displayed as control areas on all contract maps.
16. Staging of equipment would be done in weed-free areas.
17. New small infestations identified during project implementation would be evaluated and treated according to the species present and project constraints and avoided by project activities. If larger infestations are identified during implementation, they would be isolated and avoided by equipment, or equipment used would be washed on site before leaving the infested area and entering un-infested areas.
18. Post-project monitoring for implementation and effectiveness of weed treatments and control of new infestations would be conducted as soon as possible and for a period of multiple years after completion of the project.
19. If project implementation calls for mulches or fill, they would be certified weed-free. Seed mixes used for re-vegetation of disturbed sites would consist of locally-adapted native plant materials to the extent practicable.

5. CULTURAL RESOURCES

Environmental Setting: The entire Area of Potential Effects (APE) for the Diamond Mountain Watershed Restoration and WUI Project has been inventoried for cultural resources. All documented survey coverage for the area is adequate for the purpose of identifying historic properties that could be affected by the undertaking; 27 historic properties have been identified within the project area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 as defined in 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?				☒

Impact Discussion: The proposed project would have no direct effect on cultural resources. Standard Resource Protection Measures (SRPM) would be employed as mitigation measures and applied to all cultural resources within the project area. Application of SRPMs would eliminate any potential adverse

effects to cultural resources. This undertaking would be consistent with stipulations in the *First Amended Regional Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region*. The project would have a positive indirect effect on cultural resources because of reduced potential for high intensity wildfire.

Mitigation Measures: Cultural Resource mitigation measures would be developed based on the *Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region*.

The following mitigation measures have been identified.

Vegetation and Fuel Treatments

1. All historic properties within Areas of Potential Effects (APEs) shall be clearly delineated prior to implementing any associated activities that have the potential to affect historic properties. Regional Programmatic Agreement (RPA) Appendix E section 1.3(1)(2).
 - a. Historic property boundaries shall be delineated with coded flagging and/or other effective marking.
 - b. Historic property location and boundary marking information shall be conveyed to appropriate Forest Service administrators or employees responsible for project implementation so that pertinent information can be incorporated into planning and implementation documents, contracts, and permits (e.g., clauses or stipulations in permits or contracts as needed).
2. Felling and removal of hazard, salvage, and other trees within historic properties under the following conditions: RPA Appendix E section 2.2a(1)(2) (3)(4)(5)
 - a. Trees may be limbed or topped to prevent soil gouging during felling;
 - b. Felled trees may be removed using only the following techniques: hand bucking, including use of chain saws, and hand carrying, rubber tired loader, crane/selfloader, helicopter, or other non-disturbing, Heritage Program Manager (HPM)-approved methods;
 - c. Equipment operators shall be briefed on the need to reduce ground disturbances (e.g., minimizing turns);
 - d. No skidding nor tracked equipment shall be allowed within historic property boundaries; and
 - e. Where monitoring is a condition of approval, its requirements or scheduling procedures should be included in the written approval.
3. Vegetation to be burned shall not be piled within the boundaries of historic properties unless locations (e.g., a previously disturbed area) have been specifically approved by HPMs or qualified Heritage Program staff. RPA Appendix E section 2.2.1(H)
4. Mechanically treated (crushed/cut) brush or downed woody material may be removed from historic properties by hand, through the use of off-site equipment, or by rubber-tired equipment approved by HPMs or qualified Heritage Program staff. Ground disturbance shall be minimized to the extent practicable during such removals. RPA Appendix E section 2.2.1(I)
5. Fire crews may monitor sites to provide protection as needed. RPA Appendix E section 2.2.1(A)
6. Fire lines or breaks may be constructed off sites to protect at risk historic properties. RPA Appendix E section 2.2.1(B)
7. Fire shelter fabric or other protective materials or equipment (e.g., sprinkler systems) may be utilized to protect at risk historic properties. RPA Appendix E section 2.2.1(D)

8. Fire retardant foam and other wetting agents may be utilized to protect at risk historic properties and in the construction and use of fire lines. RPA Appendix E section 2.2.1(E).
9. Surface fuels (e.g., stumps or partially buried logs) on at risk historic properties may be covered with dirt, fire shelter fabric, foam or other wetting agents, or other protective materials to prevent fire from burning into subsurface components and to reduce the duration of heating underneath or near heavy fuels. RPA Appendix E section 2.2.1(F)
10. Trees that may impact at risk historic properties should they fall on site features and smolder can be directionally felled away from properties prior to ignition, or prevented from burning by wrapping in fire shelter fabric or treating with fire retardant or wetting agents. RPA Appendix E section 2.2.1(G)

Recreational Hiking Trail and Transportation Management

11. Proposed undertakings shall avoid historic properties. Avoidance means that no activities associated with undertakings that may directly affect historic properties, unless specifically identified in this RPA, shall occur within historic property boundaries, including any defined buffer zones. Portions of undertakings may need to be modified, redesigned, or eliminated to properly avoid historic properties. RPA Appendix E section 1.1

Recreational Hiking Trail

12. Buffer zones may be established to ensure added protection where HPM/ delegated Heritage Program staff (DHPS) determine that they are necessary. The use of buffer zones in avoidance measures may be applicable where setting contributes to property eligibility under 36 CFR 60.4, or where setting may be an important attribute of some types of historic properties (e.g., historic buildings or structures with associated historic landscapes, or traditional cultural properties important to Native Americans), or where heavy equipment is used in proximity to historic properties. RPA Appendix E section 1.1a

13. The size of buffer zones must be determined by HPMs or qualified Heritage Program staff on case-by-case bases. RPA Appendix E section 1.1a(1)

Transportation Management

14. Temporary or long-term closures of roads or trails through historic properties may not involve any new ground disturbance; RPA Appendix D section 2.3r

6. GEOLOGY AND SOILS

Environmental Setting: Current fuel loads and continued accumulation of fuels result in increasing risk of high intensity wildfire. High intensity wildfires adversely impact soil resources through combustion of ground cover which leaves areas of bare soil and increases the risk of soil loss by erosion. Combustion of the litter and duff layer, which is the forest's nutrient reservoir, leads to reduced long-term productivity. High intensity wildfires can also adversely impact the soil's hydrologic function by creating a hydrophobic layer, and by reducing soil organic matter and stable aggregates, all of which can lead to lower water infiltration rates, increased erosion risk, and reduced soil water storage.

Effects on soils are analyzed using the following indicators: soil cover (for erosion prevention), soil porosity, and organic matter (soil organic matter, litter and duff, & large woody material (LWM)). The Lassen National Forest Land and Resource Management Plan (LRMP) provides the following standards and guidelines for soil resource protection.

Soil cover:

- The areal extent of detrimental soil disturbance will not exceed 15 percent of the area dedicated to growing vegetation.

- Soil cover is sufficient to prevent the rate of accelerated soil erosion from exceeding the rate of soil formation. (a minimum of 50% cover)

Porosity:

- Soil porosity is at least 90 percent of the measurements found under undisturbed or natural conditions (Tippin, 2007).

Organic Matter:

- Organic matter is present in amounts sufficient to prevent significant short or long-term nutrient cycle deficits.
- Soil organic matter in the upper 12 inches of soil is at least 85 percent of the total soil organic matter found under undisturbed or natural conditions.
- Litter and duff occurs on at least 50 percent of the area.
- Large woody material (LWM), when occurring in the forested area, is at least 5 logs per acre in contact with the soil surface; and represents the total range of decomposition.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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.				<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?				<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?				<input checked="" type="checkbox"/>
iv) Landslides?			<input checked="" type="checkbox"/>	
b) Result in substantial soil erosion or the loss of topsoil?		<input checked="" type="checkbox"/>		
c) 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?				<input checked="" type="checkbox"/>
d) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal				<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
systems where sewers are not available for the disposal of waste water?				

Impact Discussion:

The direct and indirect effects of the project are analyzed for their direct and indirect effects on soil productivity based on the desired condition indicators. Hand treatments are considered a minimal disturbance and are not analyzed here.

Soil Cover (for erosion prevention)

Mechanical thinning units as a whole are expected to have greater than 50 percent cover at the conclusion of implementation, well distributed throughout, which is considered adequate for erosion prevention. This expectation is supported by extensive post-project soil monitoring conducted on the Lassen, Plumas and Tahoe National Forests in which soil cover was monitored in 73 mechanical thin units and found to have an average of 83 percent soil cover.

Skid trails would reduce levels of soil cover compared to the surrounding areas, and collectively could occupy approximately 15 percent of the project area. Of greatest concern would be skid trails on sandy, granitic soils, which comprise over half of the mechanical treatment units, because these soils are less cohesive and more easily detached. BMPs and mitigation measures to prevent erosion on skid trails and a special mitigation measure to add soil cover to skid trails, as needed, would minimize potential detrimental impacts.

Roadside fuels treatments include use of low ground pressure equipment to masticate or grapple pile fuels. Effects on soils from mastication are considered to be beneficial since the result is additional ground cover for erosion protection. Project mitigation measures would limit potential loss of woody debris cover as a result of grapple piling to non-detrimental levels.

Burning would impact soil cover. Pile burning would leave relatively small, discontinuous patches without litter, duff, or vegetative cover until those components of soil cover re-establish. Unburned residue and surface rock would continue to provide some cover in those spots. Because of the small, discontinuous amount of soil surface involved, pile burning in the Diamond Mountain project area would not likely contribute to soil erosion. To minimize the area of soils burned a mitigation measure requires piles to be constructed as tall as safely practicable.

The direct effect of underburning would be an immediate reduction in cover, possibly below the standard. However, this would be short-lived and cover would be reestablished in one or two years. Needle cast immediately after the burn would provide some cover. Throughout the areas where conifers are removed, grasses, forbs, and low-growing shrubs would have access to more resources (light, water, and nutrients) enabling them to grow and spread, providing additional vegetative soil cover. Prescribed fires are designed to leave some residual duff to protect the mineral soil and maintain high infiltration rates, which minimizes potential erosion.

Porosity Loss

Mechanical equipment would cause detrimental porosity loss (soil compaction) on landings and skids trails close to landings. The areal extent of detrimental porosity loss would be minimized through judicious re-use of existing skid trails and landings, and by adhering to soil moisture standards. Some

compaction would occur in other areas where low ground-pressure equipment, such as feller bunchers, masticators and grapple pilers operate. By adhering to the mitigation measures, compaction by low ground-pressure equipment would not be expected to exceed the 10 percent loss of porosity standard. Post-project soil monitoring and possible remediation of compacted soils are also specified in the project mitigation measures.

The sandy granitic soils in the project area are not susceptible to extreme compaction and some compaction can even be beneficial in these soils because of the effect of increased water holding capacity.

Organic Matter Loss

Soil Organic Matter

Soil organic matter can be lost through displacement. Soil displacement is the mechanical movement of soil materials by equipment and movement of logs. It can cause the loss of soil organic matter by moving it or burying it, and leave low-organic matter subsoil exposed at the surface. Displacement can detrimentally alter the slope hydrology, channeling and concentrating water flow which can lead to rill and gully erosion which transports the high organic matter topsoil downslope. Equipment turning on slopes, and log skidding are the actions in the Diamond Mountain project that increase the risk of detrimental displacement.

The sandier, granitic soils in the project area are the most easily displaced, especially when dry. To prevent loss of organic matter from these soils, a mitigation measure requires that equipment operations on the sandier units be conducted when soils are not dry. On the volcanic, Miocene gravel, and alluvial/glacial soils, a measurable loss of soil organic matter due to displacement would not be likely except for on portions of landings and the first few hundred feet of main skid trails. Where any losses of organic matter would occur, it is anticipated to be within the defined LRMP soil standard in terms of areal extent. Displacement occurring as a result of the proposed project would not be moving soil materials over large enough distances to significantly impact productivity at the stand level.

Pile burning would cause some soil organic matter loss in the upper few centimeters of mineral soil near the center of the burn pile. However, these losses would be minor and would not exceed the standard of a maximum loss of 15%. Underburning would have little direct effect on soil organic matter because soil organic matter is located within the mineral soil where soil temperatures would not reach temperatures high enough to burn under controlled conditions.

Litter and Duff

Post project litter and duff levels would continue to exceed the LRMP standard of 50 percent areal extent. Where underburning occurs, there would be a net loss in litter and duff. This temporary loss of litter and duff would be restored over a short time period, 2 to 3 years, with new needlecast.

Large Woody Material

The Diamond Mountain project area is well-stocked with large woody material. There would be some losses, particularly in the higher decomposition classes due to equipment disturbance or burning but adhering to mitigation measures would insure that the post-implementation log count would remain within the LRMP standard of 5 logs per acre.

Effects of Transportation Actions

Changes in the Forest transportation system that involve constructing new roads or decommissioning existing roads impact soil productivity by either removing land from vegetative production or adding land that was non-productive. In the Diamond Mountain project most of the changes to the transportation

system would involve changing the status of roads that already exist on the landscape by adding them to the transportation system, changing their maintenance level, or improving them. The project includes new construction of 1.0 mile of road which would remove approximately 1.2 acres of soil from productivity, and the decommissioning of 2.7 miles of road would return approximately 3.3 acres of soil to productivity for a net permanent increase in soil productivity of 2.1 acres. Five miles of temporary road construction would temporarily remove 6.1 acres from productivity which would be restored following project implementation with the planned obliteration of those roads.

Mitigation Measures:

1. Soil quality standards and appropriate Best Management Practices (BMP) that protect forest soils would be implemented for the entire project. BMPs are described in *Water Quality Management for Forest System Lands in California, Best Management Practices* (2011b), LNF LRMP (1993), and the 2004 SNFPA ROD.
2. In treatment units outside of WBBZs, soil moisture conditions would be evaluated using Forest established visual indicators before equipment operations proceed. Lassen National Forest Wet Weather Operations and Wet Weather Haul Agreements would be followed to protect the soil and transportation resources.
3. Aerial extent of detrimental soil disturbance would not exceed 15 percent of the area dedicated to growing vegetation. Soil porosity would not decrease by 10 percent or greater and soil bulk density would not increase by 10 percent or greater when compared to natural or undisturbed conditions.
4. Following implementation, the treatment units would be evaluated by a qualified specialist to determine if detrimentally compacted ground exceeds the LRMP standard of 15 percent areal extent. If restoration is needed to achieve compliance an appropriate subsoiler, ripper or other implement would be used to fracture the soil in place leaving it loose and friable. Landings no longer needed for long-term management would be remediated as described. Where landing construction involved cut and fill, the landing would also be re-contoured to match the existing topography.
5. To the extent possible, existing landings and skid trails would be utilized.
6. Where available 5 logs per acre would be left on the ground representing the range of decay classes. A log is at least 20" diameter and 10 feet long.
7. Treatment areas, skid trails, and landings on slopes greater than 20 percent would be left with more than 50 percent soil cover. Soil cover can consist of any combination of rock, woody debris, slash, forest litter, plants, or mulches such as wood chips or weed-free straw.
8. Mechanical equipment would not operate on slopes greater than 35 percent. *Addition: Exceptions may be made for skid trails on short pitches (100 feet or less) within the interior of units where slopes exceed these limits in order to access treatable ground. In such cases, additional mitigations such as mulch or retaining higher canopy cover may be added at specialist discretion based on field visits.*
9. In units where mechanical treatment occurs on very high erosion hazard soils (granitic soils on slopes greater than 20%) skid trails and landings would be left with at least 70% soil cover. Three years following treatment implementation, if monitoring indicates areas showing erosion or lack of revegetation greater than 0.25 acres, these areas would be seeded using native vegetation and/or mulch would be placed. Soil cover can consist of any combination of rock, woody debris,

slash, forest litter, plants, or mulches such as wood chips or weed-free straw. Travel of heavy equipment in these areas would be planned in order to avoid turning and minimize cutting across slopes. Skid trails would be water barred according to the FS Sale Administrator Handbook at the rate prescribed for very high erosion hazard soils. Areas of excessive soil displacement caused by equipment operating in the Diamond Mountain project would be re-contoured. *Addition: Skid trails would have erosion control (waterbars or waterbars and mulch) installed according to the Forest Service Handbook 2409.15 (TimberSale Administration Handbook) standards for very high erosion hazard soils.* Areas of excessive soil displacement caused by equipment operating in the Diamond Mountain project area would be re-contoured. *Slash or other weed-free cover may be used to mitigate soil displacement. (See EA Appendix 1 for a list of units with very high erosion hazard).*

10. Machine piling operations would remove only enough material to accomplish project objectives and would minimize the amount of soil being pushed into burn piles. Equipment would be chosen to minimize detrimental impacts to soil, primarily by utilizing features such as booms and low ground pressure tracks. Duff and litter layers would remain as intact as possible, and the turning of equipment would be minimized. Piles would be constructed as tall as possible, within limits of safety and feasibility. A mixture of fuel sizes in each pile is preferred, avoiding piles of predominately large wood when practicable.
11. Project implementation planners should use the soil parent materials maps, found in the soils report, to plan mechanical equipment operations on the granitic soils while they are not dry or with additional mitigations designed to reduce potential displacement, such as slash mats. Conversely, the Miocene gravel soils should be as dry as possible during mechanical operations, or additional mitigations should be implemented to prevent damage.

7. GREENHOUSE GAS EMISSIONS

Environmental Setting: The projects location in rural Lassen County with a surrounding population of less than 15,000 in Susanville, CA is not a highly industrialized area. The greatest greenhouse gas emissions in the area are from timber harvesting, livestock production, and off highway vehicles.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			☒	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			☒	

Impact Discussion: The proposed project would contribute to the existing greenhouse gas inventory for Lassen County. Project operation would generate direct emissions through the burning of piled fuels, prescribed burning, operation of chainsaws, equipment and vehicles. The project as proposed should have a net positive effect by reducing potential emission of carbon dioxide greenhouse gas over the long-term. Proposed actions will promote and increase the health and vigor of trees left after thinning. In turn, these trees will improve growth rates and sequester carbon dioxide more rapidly through photosynthesis. Fuel reduction activities should also reduce the potential for a devastating wildfire that could release significant amounts of greenhouse gases to the atmosphere.

Mitigation Measures: No mitigation required.

8. HAZARDS AND HAZARDOUS MATERIALS

Environmental Setting: The project area is in a natural setting. There are no known hazards, nor hazardous materials in the project area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?		☒		

Impact Discussion: The heavy equipment used to implement the project will be fueled with diesel fuel. A spill of this fuel could be hazardous to the environment. Mitigation measures are listed below to ensure that an accidental spill will not harm the environment.

Project operations would involve the routine transportation, use, or disposal of gasoline, oil and diesel used in the power equipment and as a fuel for torches. Operations will follow all applicable state and federal laws. All personnel will wear the appropriate personal protection equipment. Equipment used on this project will not be serviced in locations where grease, oil, or fuel could pass into a watercourse. There will be a less than significant impact with mitigation.

Project operation of the prescribed burn and piling and burning involves a chance of escape. Personnel carrying out burns shall be trained pile burning and prescribed burning and shall take all safety precautions necessary to avoid an escaped fire

Mitigation Measures: The USDA Lassen National Forest shall be responsible for overseeing burn operations, ensuring personnel are properly trained and that adequate resources are present to prevent escaped fire.

Personnel shall wear appropriate personal protection equipment. Equipment used on this project shall not be serviced in locations where grease, oil, or fuel could pass into a watercourse. Operations shall follow all applicable state and federal laws.

Equipment will be refueled and serviced outside of riparian areas. In the event of an accidental spill, hazmat materials for quick on-site clean up will be kept at the project site during all project activities. For fire prevention, a water truck will be on-site at all times.

9. HYDROLOGY AND WATER QUALITY

Environmental Setting: There are approximately five miles of perennial streams, and 21 miles of seasonal streams in the project area. In addition, there are 296 acres of wetlands within the Diamond Mountain project boundaries, as indicated by US Fish and Wildlife Service’s National Wetlands

Inventory geospatial data updated in 2017 (USFWS, 2017). The vast majority of these wetlands are classified as forested or shrub wetlands, with a smaller component of 31 acres labeled as riverine along stream channels, 2.8 acres of freshwater ponds, and 3.5 acres of freshwater emergent wetlands in the form of small meadows.

Without the implementation of the project continued conifer encroachment would result in lowered water tables and decreased herbaceous plant diversity and productivity, particularly in aspen stands and wetlands. No roads would be decommissioned or realigned outside of riparian areas, and there would be no improvements to existing roads, such as upgrades to culverts and stream crossings. Roads of concern that are currently impairing hydrologic functions and riparian areas would not be removed, and would continue to impede subsurface flow, and increase surface runoff, thereby increasing sedimentation. Temporary roads and the non-motorized trail would not be constructed.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?				<input checked="" type="checkbox"/>
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)?				<input checked="" type="checkbox"/>
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?		<input checked="" type="checkbox"/>		
d) 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?				<input checked="" type="checkbox"/>
e) Otherwise substantially degrade water quality?				<input checked="" type="checkbox"/>
f) 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?				<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				<input checked="" type="checkbox"/>
h) 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?				<input checked="" type="checkbox"/>
i) Inundation by seiche, tsunami, or mudflow?				<input checked="" type="checkbox"/>

Impact Discussion: The proposed project’s potential to affect water quality include the proposed mechanical and prescribed burning treatments, road-related activities, including maintenance and improvements, realignment, and decommissioning. Water Quality Management Handbook (WQM) Best Management Practices (USDA FS 2012b and USDA FS 2011b) and mitigation measures would be implemented to avoid potential impacts associated with these activities. As directed by the Lahontan and Central Valley Regional Water Quality Control Board, the Forest Service would also be enrolled in California’s Water Board Timber Waiver program and would comply with the conditions set forth in the waiver to protect water quality (LRWQCB, 2014). As a result of implementing mitigation measures and BMPs to protect water quality, no direct or indirect adverse effects to water quality are expected from mechanical treatments and prescribed burning in the Diamond Mountain project area.

Construction of a non-motorized trail designed for hiking in the project area is not expected to have significant effects to water quality, as the trail width would be narrow, the trail would be constructed to Forest Service standards, and use would be limited to foot traffic. Where practicable, the trail would align with existing road features along existing road templates, thereby minimizing the amount of new construction needed. BMPs specific to trail-building activities would be used to avoid potential impacts to water quality. Additionally, the Forest Service would enroll in all applicable permits from state and federal agencies under the Clean Water Act prior to construction, as this activity requires more than one acre of new disturbance and would not be used for silvicultural activities.

The project proposes to manage the transportation system through road-related watershed improvements, realignment of problematic roads, and maintenance. These upgrades to the existing road system include improving culverts, surface crossings, low water crossings, and removing unnecessary crossings, which would have a beneficial effect of improving flow at stream crossings. Upgrading crossings would allow streams to accommodate more bedload and pass higher flows, and maintenance activities including cleaning out existing culverts would improve flow passage and prevent crossing failure. New permanent road construction would only involve decommissioning of existing transportation routes that are poorly located and rerouting them away from sensitive areas to reduce resource damage. The temporary roads to be used by the project would be obliterated after project implementation.

The proposed road related activities also include new construction through upgrading existing unauthorized routes, road maintenance, and decommissioning. Localized disturbance of sediments could result from road reconstruction, construction, and watershed improvements, however, any increased sedimentation at stream crossing improvement sites would be temporary. The likelihood of resource damage, erosion, and sediment delivery at crossings would be minimized using Best Management Practices (BMPs) suited to each location BMPs would be implemented in the decommissioning of roads

to ensure stabilization and effective drainage and to reduce the risk of sediment entering waterways. A beneficial indirect effect of road-related watershed improvement activities in RCAs and at stream crossings would be a reduction in runoff and sediment entering waterways post-implementation.

Timber harvest and prescribed burning can affect channel morphology. Ground disturbance by mechanized equipment can physically change stream bed and stream bank shape by displacing soil, creating ruts, and crushing banks. Removal of groundcover, rutting and soil displacement can lead to increased erosion rates. Reductions in the amount of vegetation on the landscape can lead to increased runoff. Increases in peak flows can also cause a change in channel morphology.

BMPs and mitigation measures would be implemented to protect channel morphology from adverse changes along streams showing evidence of concentrated flow (scour and deposition), including a “no mechanical equipment” zone, with the exception of stream crossings at designated and existing locations. These measures would help protect bed/bank stability in order to minimize adverse effects. In addition, conifers necessary for stream bank stability would be retained. No increase in peak flows would be expected as a result of project implementation due to the small percentage of subwatershed acres treated. Therefore, it is not expected that channel morphology would be adversely affected.

Riparian areas and wetlands are particularly susceptible to impacts from timber harvest activities since they typically have higher soil moisture for longer timeframes than the surrounding upland areas. Ground disturbing activities in and around riparian areas and wetlands can result in rutting, ponding, and stripping of vegetation especially in areas of repeat traffic (e.g. skid trails). Potential adverse effects associated with timber harvest activities within RCAs would be avoided by implementing BMPs for vegetation management and mitigation measures.

With the implementation of previously described mitigations, no adverse effects are expected to occur within riparian areas, wetlands, or water bodies as a consequence of prescribed burning or burning of piles.

Cumulative watershed effects (CWE) include past, present and reasonably foreseeable future ground disturbing activities within the analysis area, which are incorporated into the effects analysis. Cumulative watershed effects can occur on site or downstream of land disturbing activities. These effects may be either beneficial or adverse and result from additive changes in watershed structures and processes caused by multiple land management activities or natural events, such as wildfire, within a watershed. Changes in flow regimes, especially peak flows, and sediment introduced to streams can combine to upset the dynamic sediment transport/stream flow equilibrium conditions.

Past activities include vegetation management primarily in the form of timber harvest on both private and Forest Service lands. Ongoing activities include existing road infrastructure and related maintenance, fuelwood cutting, dispersed recreation, woodcutting, and grazing on private lands and adjacent allotments on the Plumas National Forest. Foreseeable future activities that were incorporated into the CWE modeling include implementation of additional private timber harvest activities, as well as the Wimpcat Stewardship portion of the Wildcat Project on the Plumas National Forest in the Upper Boulder Creek subwatershed, which includes mechanical and hand thinning as well as pile burning.

Equivalent Roaded Acres

The method used for quantifying cumulative watershed effects (CWE) is the Equivalent Roaded Acres (ERA) model, which was developed for National Forests in Region 5 (USDA FS 1988). Under this method, each watershed is rated by soils, streams, roads, fire history, and past activities and given a number showing susceptibility to adverse watershed effects from management activities. Proposed

activities are rated to evaluate the effect of management activities on soil and water for each subwatershed. The ERA model of analyzing CWEs operates under several assumptions. These include that different types of management activities have different impact levels, watershed conditions recover from logging activities after 30 years, and fire activities recover after 10-to-15 years. The ERA model assigns a risk using cumulative effects from activities that may occur. A low risk of cumulative watershed effects is defined as an ERA of less than 50 percent of the threshold of concern (TOC); moderate risk is between 50 and 80 percent of TOC; and high risk of cumulative watershed effects is between 80 and 100 percent. The threshold of concern for all subwatersheds within the Diamond Mountain analysis area is 15 percent (USDA FS LRMP, 1992). While the contribution to ERA from the proposed action is shown in 2017, in reality, treatments are unlikely to occur simultaneously and would continue in subsequent years, postponing some effects. The closer the calculated ERA value for the subwatershed is to the threshold of concern (15 percent), the greater the chance of cumulative effects to the watershed and downstream beneficial uses. The effect of past activities decreases over time although the contribution of permanent roads to ERA does not change over time. Table 13 provides information regarding the cumulative watershed effects of current management using equivalent roaded acres for each of the 7th field subwatersheds.

Table 6. Existing condition Equivalent Routed Acre (ERA) values. All ERA percentages for project subwatersheds are currently below 50 percent of the Threshold of Concern (TOC).

Subwatershed	Total Acres	Forest Plan TOC (ERA percent)	Existing Condition		
			ERA	ERA percent	ERA percent as percent of TOC
Baxter Creek	4412	15	142	3.2	21
Diamond Mountain	2404	15	106	4.4	29
East Fork Willard Creek	1551	15	24	1.6	10
Elysian Valley	8165	15	265	3.3	22
Lassen Creek	5478	15	208	3.8	25
Upper Boulder Creek	10814	15	232	2.2	14
Upper Cheney Creek	3255	15	95	2.9	20
Upper Gold Run	3573	15	93	2.6	17
Upper Willard Creek	6504	15	145	2.2	15

Source: Lassen National Forest (LNF) Geographic Information Systems (GIS) data

Table 14 provides a summary of ERA values for the Diamond Mountain project compared to existing conditions. Most subwatersheds are considered low risk for cumulative watershed effects with the exception of Baxter Creek, which would be at moderate risk. There are no watersheds at high risk or that exceed the TOC. By 10 years after the proposed action, all subwatersheds are expected to be at low risk for cumulative watershed effects.

Under existing conditions, only previously identified, ongoing, and future activities would take place within the subwatersheds (PORFFA, project record). ERA values within all subwatersheds are currently well below threshold and further recovery from past actions is anticipated to continue. Cumulative effects

of ongoing actions and developments on private lands would also continue. There would be no beneficial cumulative effects associated with the improvement of roads through stormproofing that would help reduce peak flows and maintaining longer duration base flows throughout the watersheds.

Forested areas would not be treated for fuels, continuing a trend toward increased stand densities and conifer encroachment. Over time, this could decrease water yields and lower water tables, particularly in wetlands. This would also leave subwatersheds at higher risk of effects from large wildfires with moderate- to high- soil-burn severity. Fire-damaged soils could lead to increased ERA values and potentially cause watersheds to exceed the threshold of concern for cumulative effects, ultimately leading to altered hydrologic regimes, increased flood and debris flows during post-fire rainfall events, and reduced water quality.

Over the long term, implementing the proposed activities, particularly to reduce fuels, would decrease the risk of cumulative watershed effects to hydrologic resources resulting from high severity wildfire. Watersheds that have been denuded of vegetation and ground cover by wildfire are subject to significantly increased soil erosion that often yields large amounts of sediment and runoff. Precipitation events shortly after large scale wildfires also can cause mass wasting, and debris flows that would degrade further water quality and channel morphology.

Table 7. Summary table of ERA values for each alternative in the Diamond Mountain project.

Subwatershed	1 Year Post Action (2018)			10 Years Post Action (2027)		
	ERA	ERA percent	ERA percent as percent of TOC	ERA	ERA percent	ERA percent as percent of TOC
Proposed Project						
Baxter Creek	360	8.2	54	167	3.8	25
Diamond Mountain	118	4.9	33	64	2.6	18
East Fork Willard Creek	45	2.9	19	29	1.9	12
Elysian Valley	529	6.5	43	228	2.8	19
Lassen Creek	210	3.8	26	209	3.8	25
Upper Boulder Creek	396	3.7	24	96	0.9	6
Upper Cheney Creek	156	4.8	32	68	2.1	14
Upper Gold Run	183	5.1	34	100	2.8	19
Upper Willard Creek	193	3.0	20	107	1.6	11
Existing Conditions						
Baxter Creek	151	3.4	23	131	3.0	20
Diamond Mountain	106	4.4	29	64	2.6	18
East Fork Willard Creek	24	1.6	10	22	1.4	10

Elysian Valley	265	3.2	22	176	2.2	14
Lassen Creek	135	2.5	16	204	3.7	25
Upper Boulder Creek	377	3.5	23	191	1.8	12
Upper Cheney Creek	95	2.9	20	64	2.0	13
Upper Gold Run	94	2.6	17	81	2.3	15
Upper Willard Creek	145	2.2	15	95	1.5	10

Source: CWE analysis and PORFFA (Past, Ongoing and Reasonably Foreseeable Future Actions) Summary for the Diamond Mountain project located in the project record, Eagle Lake RD, Lassen National Forest.

Mitigation Measures:

Riparian Conservation Areas and Water Quality Protection Measures

Riparian Conservation Area (RCA) widths are allocated along all streams, wetlands, wet meadows, and other special aquatic features in accordance with the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD). Additionally, Water Body Buffer Zones (WBBZ) are defined by the Lahontan Regional Water Quality Control Board in the 2014 Timber Waiver (Board Order No. R6T-2014-0030) as areas with additional equipment operation limitations and protections near waterbodies. WBBZ widths are classified (see Class Type in Table 7) by biological habitat and ability to transport sediment, as defined in the California Code of Regulations, title 14 Watercourse and Lake Protection Zones. Features are as described in the table below, and the following mitigation measures apply within RCAs.

1. Soil conditions must be operable for mechanical equipment to enter WBBZs. Equipment may not enter WBBZs or RCAs when soils are saturated. Within granitic soil types, some moisture is preferred to provide cohesion and minimize soil displacement.
2. Landings would be located outside of RCAs. Existing landings within RCAs would not be used.
3. Conifers would be harvested using feller-bunchers that have 24-inch or greater track widths.
4. Turning of equipment would be minimized.
5. Ground-based equipment would be excluded from slopes more than 20% in RCAs.
6. Skid trails would be kept to a minimum and no waterbars would be installed after treatment. To the extent possible, existing skid trails would be utilized. Stream and meadow crossing locations would be agreed to and designated on the ground by qualified specialists prior to use.

Table 8: Riparian Conservation Area widths within the Diamond Mountain project area.

RCA Type	RCA Width	Class Type (Timber Waiver)	WBBZ Width	Features within Project Area
Special Aquatic Features (wet meadows, springs, fens)	300 feet from edge of feature or riparian vegetation, whichever width is greater	II-III, unclassified	50-25 feet, 0 feet	Small stringer wetlands and meadows associated with streams; seeps and springs; small ponds and shrub wetlands including those in the Bear and Aspen Flat areas, Gilman Fen.

Perennial Streams	300 feet (each side of stream), measured from bankfull edge of stream or top of the inner gorge (stream adjacent slopes >70%) where present	I-II	75-50 feet	Gold Run Creek, Lassen Creek, Baxter Creek, Elysian Creek, and Bear Flat tributary to Elysian Creek
Seasonally Flowing Streams (includes ephemerals with defined stream channel and evidence of scour)	150 feet (each side of stream) measured from bankfull edge of stream or top of the inner gorge (stream adjacent slopes >70%) where present	III, unclassified	25-0 feet	Upper Cheney Creek, Hills Creek, and seasonally flowing tributaries to: Gold Run Creek, Boulder Creek, East Fork Willard Creek

7. Ground-based equipment would be used to remove timber using one-end suspension.
8. Skid trails within RCAs would require placement of 90% of existing ground cover on bare soil on the trails after treatment. Cover can consist of any combination of rock, woody debris, slash, litter, seeding, plants or mulches including wood chips or certified weed-free straw.
9. Machine piling would not occur within RCAs. Hand piling may occur beyond the inner 30 feet of RCAs, with piles no more than 10 feet in diameter and 5 feet high. No more than 10 percent of the area within the inner 50 feet of the RCA would be covered in piles.
10. Hand line construction within the Riparian Conservation Areas (RCA) is permitted outside the inner 30-foot zone for seasonal RCAs and 50-foot zone for perennial and special aquatic feature RCAs. If needed, wet line would be used.
11. Chipped material within WBBZs may not exceed an average of two inches in depth, with a maximum depth of four inches, and material may not be deposited within stream channels or other waterbodies.
12. Retain riparian species and other hardwoods (e.g., aspen, cottonwood, alder, willow, dogwood, black oak).
13. Retain conifers necessary for bank stability, with species preference dependent on stand type. In general, prefer to retain shade-intolerant species (e.g., ponderosa, Jeffrey pine, rust-resistant sugar pine, black oak) where possible.
14. A minimum 20-foot “no mechanical equipment” buffer would be designated along all stream channels. This does not include existing crossings and transportation routes. These buffers would be measured from the top of the inner gorge where present. Equipment may reach into these buffers to remove material.
15. For RCAs within the Boulder Creek watershed, no treatment would occur within the inner 90 feet. Piling would also not occur within the inner 90 feet.

10. LAND USE AND PLANNING

Environmental Setting: The project site is located on public lands managed by the USDA Forest Service for timber production, recreation, woodcutting, and to promote natural watershed function and is surrounded by other public lands managed by the USDA Forest Service as well as private lands used for timber production and livestock grazing.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				<input checked="" type="checkbox"/>
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?				<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				<input checked="" type="checkbox"/>

Impact Discussion: Project activities will not alter any existing land use. The project complies with zoning and plan designations as documented in the Lassen County General Plan (2000) and the Richmond/Gold Run Planning Area. The project is consistent with the Richmond-Gold Run-Johnstonville Community Fire Safe Plan (2006). There is no established community in, or close to, the project sites

Mitigation Measures: No mitigation required.

11. MINERAL RESOURCES

Environmental Setting: There are no known mineral resources in or near the project site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?				<input checked="" type="checkbox"/>
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?				<input checked="" type="checkbox"/>

Impact Discussion: The project will not impact the availability of any known mineral resource.

Mitigation Measures: No mitigation required.

12. NOISE

Environmental Setting: The project is within a natural setting. There are no airstrips near the project area. There are no sources of noise in or near the project area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?				☒

Impact Discussion: Project implementation will require logging equipment and construction equipment. Once the work is complete, the project site will return to its natural state with no new sources of noise other than those already existing. There will be temporary noise during project implementation, but the project noise should dissipate before reaching local communities.

Mitigation Measures: No mitigation required.

13. POPULATION AND HOUSING

Environmental Setting: There are no houses near the project site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?				<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				<input checked="" type="checkbox"/>

Impact Discussion: The project would not affect population or housing in any way. The nearest population center is in Susanville, CA, 7 miles north of the project. The project will treat fuels within the WUI of Susanville resulting in improved wildfire protection for the community.

Mitigation Measures: No mitigation necessary.

14. PUBLIC SERVICES

Environmental Setting: The project is within a natural setting. No public services are available in the area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?				<input checked="" type="checkbox"/>
Police protection?				<input checked="" type="checkbox"/>
Schools?				<input checked="" type="checkbox"/>
Parks?				<input checked="" type="checkbox"/>
Other public facilities?				<input checked="" type="checkbox"/>

Impact Discussion: The project is a restoration project within a natural setting, and would not affect populations or public services.

Mitigation Measures: No mitigation required.

15. RECREATION

Environmental Setting: Current recreational opportunities in Diamond Mountain project area are limited. Hunting and sight-seeing by vehicle are the most common recreational uses. There are no developed recreation sites in the project area or in close proximity. Recreationists typically access the area via Lassen County Road 204 (Gold Run) and Forest Road 29N43 which connects through the Plumas National Forest south of the project area.

The Forest Service designation based on the Recreation Opportunity Spectrum (ROS) for the entire project area is Roaded Natural (RN):

- Sights and sounds of man are moderate. Mostly natural appearing as viewed from sensitive roads and trails. Landings, roads, slash, and debris are evident. Access travel is conventional motorized.

The Diamonds provide a spectacular view of the Honey Lake Valley and the mountain ranges that surround it. Proposed activities would improve both near and far visuals by creating diversity on the landscape. The proposed trail would provide designated access for recreationists to enjoy the diversity of vegetation, wildlife, and views the Diamonds provide. Interpretive signage would educate visitors about

areas of interest and encourage safe and responsible use of the area, including appropriate uses and fire restrictions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact Discussion: Direct effects to recreation from forest thinning, prescribed burning, and transportation-related activities would be minimal. During treatment activities, travel and general access through the area may be interrupted occasionally. There would be an increase in large equipment traffic, which may detract from the typically remote feeling experienced when traveling through the area. This would be intermittent and short-term in nature. The improvement of road surface conditions and visibility resulting from project implementation could bring more visitors to the area, which would meet National Forest goals for increased recreation use on forest lands.

Addition of a new non-motorized trail that traverses the project area would add recreational opportunity that would meet the ROS and VQO for the Diamond Mountain Management Area. Currently, the trail would not connect to other routes and would primarily be a day-use opportunity. The trail would add to the potential in the county to create a trail system connecting the mountains surrounding the Honey Lake Valley as well as many trails already in existence around and within the local community. The proposed trail would increase the potential for future outdoor recreation needs, and ensure public satisfaction.

Planned treatments would improve habitat for a range of wildlife species. Treatments could increase browse which could increase the number of deer and improve hunting opportunities for recreationists.

The combination of fuel and vegetation changes within and surrounding the Diamond Mountains during the past century has resulted in a landscape that is less resilient to wildland fire, drought, insects, and disease. The lack of management activities has contributed to the current condition. Effects from the proposed activities would only serve to enhance and benefit the resources in the area, including recreational opportunities, and reduce the possibility of losing the entire area to wildfire or insect-related mortality and disease.

Mitigation Measures: No mitigation required.

16. TRANSPORTATION/TRAFFIC

Environmental Setting: The 8,195-acre Diamond Mountain analysis area contains multiple National Forest Transportation System (NFTS) roads ranging from smooth, gravel-surfaced roads to rough,

primitive, and un-surfaced roads. NFTS roads within the analysis area are managed in accordance with the Lassen National Forest Motorized Travel Management Plan (2010) for access and use of forest resources. Accordingly, these roads are operated and maintained for use by high clearance vehicles, over snow vehicles, and non-motorized uses such as hiking, horseback riding and cross-country skiing.

Under existing conditions, no treatments would be performed and the existing road system within the project area would remain as is. There would be no direct or cumulative effects. A forest road system that is lacking adequate maintenance would not receive supplemental maintenance on NFTS roads. Roads would continue to deteriorate through use (by high clearance vehicles, off-highway vehicles (OHV), etc.) without concurrent maintenance and upkeep. Non-system roads would remain physically open; use of these improperly maintained and drained roads would continue to cause erosion-related resource damage.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but 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 supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				☒

Impact Discussion: Activities with potential to affect the existing transportation system include proposed temporary road construction, addition of existing non-system road as a NFTS road, new road construction for realignment, road decommissioning, road maintenance, and increased traffic.

For the short term during the sale contract, depending on the length and timing of the project, there would be potential of erosion from the construction and reconstructions of NFTS roads. There would be standard provisions in the contracts to require erosion control measures during operations and during seasonal closures, if needed. Mitigation measures and Best Management Practices (BMPs) would be incorporated into project design to minimize potential impacts to roads from use and maintenance. Short-term increases in traffic would be a direct effect of moving equipment, materials, and personnel into and out of the project area. Increased traffic can impact the safety of the public and employees using the roads in the area. Standard contract provisions for traffic management and control would minimize these impacts. Road use may increase in response to construction and subsequent use of the hiking trail. Impacts to roads from hikers accessing the new trail would be negligible.

Road reconstruction and stormproofing, as well as the road realignments, would greatly reduce roadway erosion and washout potential, thus reducing future road maintenance costs. Adding and stormproofing non-system routes to the NFTS would allow monitoring and maintenance activities on these roads which would permit proper management of these routes that have received continual use from motorized traffic. These roads are needed for management and recreation.

A well-managed and maintained road system provides for safe and efficient public access and firefighter safety. The road maintenance activities proposed would improve both public access and firefighter safety. In addition, forest thinning along roadsides would improve visibility, and therefore safety, along thinned routes. Standard contract provisions would minimize the risk of temporary project roads or remnants being left open for continued motorized vehicle use once the project is complete. In addition, temporary roads would not be added to nor displayed on the LNF Annual Motor Vehicle Use Map (MVUM).

Past actions have led to the establishment of the existing transportation system, which includes county roads, NFTS roads, non-system roads on National Forest lands, and roads located on private lands, which are owned and operated by timber management companies. The transportation actions, road maintenance, and road related watershed improvements proposed in this project would create a more efficient road system that would provide the necessary access for project implementation, future management, fire suppression, and improved public access. Active management of the official transportation system would improve public access, firefighter safety, minimize adverse environmental effects, and reduce future maintenance costs.

Mitigation Measures: No mitigation required.

17. TRIBAL CULTURAL RESOURCES

Environmental Setting: The entire Area of Potential Effects (APE) for the Diamond Mountain Watershed Restoration and WUI Project has been inventoried for cultural resources. All documented survey coverage for the area is adequate for the purpose of identifying historic properties that could be affected by the undertaking; 27 historic properties have been identified within the project area.

The project area is located within the ancestral homelands of the Maidu, Northern Paiute, Pit River and Washoe Tribes. The Susanville Indian Rancheria (SIR), a federally recognized Indian Tribe with

ancestral ties to the Maidu, Northern Paiute, Pit River, and Washoe was consulted regarding the project on October 14, 2015 and January 13, 2016.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and this is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k) or		☒		
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		☒		

Impact Discussion: The proposed project would have no direct effect on cultural resources. Standard Resource Protection Measures (SRPM) would be employed as mitigation measures and applied to all cultural resources within the project area. Application of SRPMs would eliminate any potential adverse effects to cultural resources. This undertaking would be consistent with stipulations in the *First Amended Regional Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region*. The project would have a positive indirect effect on cultural resources because of reduced potential for high intensity wildfire.

Mitigation Measures: See Mitigation Measures in Section 5. Cultural Resources.

18. UTILITIES AND SERVICE SYSTEMS

Environmental Setting: The project area is within a natural setting with no utilities or public service systems.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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) 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?				☒
e) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				☒
f) Comply with federal, state, and local statutes and regulations related to solid waste?				☒

Impact Discussion: The project is a restoration project that will not affect utilities in this uninhabited area.

Mitigation Measures: No mitigation required.

18. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

<p>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?</p>		<input checked="" type="checkbox"/>		
<p>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)?</p>			<input checked="" type="checkbox"/>	
<p>c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>				<input checked="" type="checkbox"/>

Impact Discussion: With the implementation of mitigation measures included in the Initial Study, the proposed project would not degrade the quality of the environment; result in an adverse impact on fish, wildlife, or plant species including special status species, or prehistoric or historic cultural resources. Individual impacts are limited with this project and cumulatively are not considerable when viewed in connection to past or future projects. This project does not have environmental effects which will cause substantial adverse effects on human beings.

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Mitigation, Monitoring, and Reporting Program

Summary of Mitigations:

Air Quality

Direct impacts from proposed prescribed fire treatments would be mitigated by adherence to the SMP and CARB. In addition to these safeguards, a daily Air Quality Conference Call is conducted during the prescribed fire season. They are attended by representatives of the Air Quality Management Districts, the California Air Resources Board, Geographical Area Coordination Center meteorologists and agencies that are conducting prescribed fire operations. These calls help ensure that burning only occurs when atmospheric conditions are conducive to good smoke dispersion and that the cumulative effects of all prescribed burning remain at levels that are within the provisions of the Clean Air Act.

Fugitive dust from logging operations would be mitigated by standard contract requirements for road watering or other dust abatement techniques.

Agricultural/Forest Resources

1. Healthy sugar pine that show minimal signs of blister rust in the branches would be favorably retained in all treatment units. Additional precautions described in the Sugar Pine Action Plan (USDA 2006) prepared by the R-5 Genetics Group for northern California forests, would also be taken to protect rust-resistant sugar pines in all treatment units.
2. Cut stumps 14 inches in diameter and greater of live conifer trees would be treated in all vegetation types except aspen and meadow, with an EPA-approved and California registered borate compound (Sporax® or Cellu-Treat®) to prevent the spread of Heterobasidion root disease. Borate compound would be applied to conifer stumps within 4 hours of creation. Borate compound would not be applied to stumps within 25 feet of known sensitive, and special interest plants, or streamcourses, meadows, seasonal wetlands, and special aquatic features, shown on the contract map.
3. Where mechanical vegetation treatments occur along roads and private property boundaries, lower basal area retention would be favored within a 200-foot buffer starting from the road edge or private property boundary, while increasing basal area retention further into the unit.
4. Where clumps occur within mechanical vegetation treatments that are within a 100-foot buffer along roads and private property boundaries, trees favored for clumps would have high canopy base heights, ladder fuels would be reduced within the clumps, and discontinuity of canopy fuels should be present outside the clumps.
5. Douglas-fir tussock moth (DFTM) trap lines would be protected. Pile all material outside the drip line of leave trees along the DFTM trap lines.

Biological Resources

Wildlife Resources:

Spotted owl limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation and fuels treatments within approximately ¼ mile of the activity center during the breeding season (March 1 through August 15), unless surveys confirm that California spotted owls are not nesting. Prior to implementing activities within or adjacent to a California spotted owl PAC and the location of the nest site

or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.

Northern goshawk limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation and fuels treatments within approximately ¼ mile of a goshawk nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand within a protected activity center (PAC) is unknown, either apply the LOP to a ¼-mile area surrounding the PAC, or survey to determine the nest stand location.

Northern goshawk limited operating period: Maintain a limited operating period (LOP), prohibiting vegetation treatments within unsurveyed suitable nesting habitat (February 15 through September 15) unless surveys are conducted to confirm that northern goshawks are not nesting.

Gray wolf limited operating period: Maintain a limited operating period (LOP) prohibiting vegetation and fuels treatments from March 1 through August 15 within 1 mile of wolf activity indicative of a potential den location or a pup rendezvous site.

All existing snags, 15 inches or larger dbh, would be retained unless required to be felled during project implementation to meet operability or safety needs. If felled, such snags would be left in place as a downed log, unless the log needs to be removed or rearranged to address fuels concerns (e.g. logs within 200 ft. of roads and future firelines, and within 200 ft. of property boundaries).

All existing downed logs that are at least 15” diameter at the large end and at least 15 feet long, would be retained except where logs need to be removed or rearranged due to fuels concerns (e.g. logs within 200 ft. of roads and future firelines, and within 200 ft. of property boundaries). In such cases, 3 downed logs per acre would be retained, with preference given to the largest sized log first, with size being a combination of total length and diameter. Logs would be counted once to meet this guideline.

During prescribed burning operations, snags larger than 15 inches dbh and downed logs that are a minimum of 15 inches in diameter and 15 feet in length would not be actively ignited.

Within hand-thin treatment units other than road corridors, retain approximately 10% of treatment unit acreage in unthinned patches. Such patches would not be placed within 200 feet of roads or private land boundaries.

Botanical Resources

All ground-disturbing activities would be excluded from within 50 feet of occurrences of *Botrychium* species. Locations would be displayed as control areas on all contract maps. No ignitions would occur within occurrences of *Botrychium* species, however prescribed fire would be permitted to back into occurrences. All incense cedar would be retained within 150 ft. of *Botrychium* occurrence.

Hand-thinning activities may occur within all occurrences of *Penstemon sudans*, but piles would be excluded from occurrences. No ignitions would occur within any occurrences of *Penstemon sudans*, and underburning would be excluded from patches less than 0.25 acres in size.

Ground-disturbing activities would be excluded from within 150 ft. of Gilman Fen.

All ground-disturbing activities associated with forest-thinning and fuels treatments would be excluded from occurrences of *Lomatium roseanum*, *Penstemon janishiae*, and *Phlox muscoides*. Locations would be displayed as control areas on all contract maps. No ignitions would occur within occurrences of these species, however prescribed fire would be permitted to back into occurrences.

Hand and mechanical treatments would be permitted within occurrences #2, #4, #5 and #6 of *Hackelia amethystina* and within occurrence #1 only within Unit A07H and A07M. Hand and mechanical treatments would be excluded from all other occurrences. Underburning would be permitted within occurrences #2, #7, #12, and #13 of *Hackelia amethystina* but excluded from all other occurrences. Piles and landings would be excluded from all occurrences of *Hackelia amethystina*.

Trail construction would avoid invasive plant occurrences and small (< 1 acre) occurrences of TES or special interest plant species. Trail construction activities would avoid large occurrences (> 1 acre) of TES and special interest plants where practicable. Trail would be monumented with cairns or other surface indicators where it occurs within TES and SI plant occurrences. No scraping would occur within TES and SI occurrences.

Senecio hydrophiloides (#33) and *Sparganium natans* (#1) would be flagged and avoided by all ground-disturbing activities.

New occurrences of TES or Special Interest plant species discovered before or during ground-disturbing activities would be protected through flag and avoid methods or measures similar to those described above.

Botanical Resource Mitigation Measures in relation to Fire and Fuels

Ignition for underburning would not occur within wet meadow areas where graminoid and forb indicator species of a wet site are present; however, fire used in adjacent areas would be allowed to back into portions of these meadows.

Where riparian communities are established, minimize disturbance to riparian vegetation and retain sufficient ground cover by conducting prescribed fire in a manner which limits the intensity of fire.

In aspen and cottonwood communities, hand piles would be located either outside of mapped stands, or at least 20 feet from any live tree or sprout greater than three feet tall. Where surface fuels concentrations are low, material can be lopped and scattered within these stands.

When underburning in plantations, conduct prescribed fire in a manner which limits the intensity of fire.

Botanical Resource Mitigation Measures in relation to Invasive Plants

Known occurrences of Canada thistle would be treated annually with herbicides as part of the Pioneer Project EA completed in 2015. Prior to implementation, LNF Botany personnel would review and monitor each site to determine its extent (or viability). If no sprouts have been identified within known infestations for two seasons all project restrictions would be lifted on that infestation.

Any extant Canada thistle sites within the project area would be avoided by all project activities including hand thinning and underburning until the conditions required in the above mitigation measure (#5) are met.

Cheatgrass occurrences would be flagged and avoided by ground-disturbing activities, including prescribed fire activities. Locations would be displayed as control areas on all contract maps.

Staging of equipment would be done in weed-free areas.

New small infestations identified during project implementation would be evaluated and treated according to the species present and project constraints and avoided by project activities. If larger infestations are identified during implementation, they would be isolated and avoided by equipment, or equipment used would be washed on site before leaving the infested area and entering un-infested areas.

Post-project monitoring for implementation and effectiveness of weed treatments and control of new infestations would be conducted as soon as possible and for a period of multiple years after completion of the project.

If project implementation calls for mulches or fill, they would be certified weed-free. Seed mixes used for re-vegetation of disturbed sites would consist of locally-adapted native plant materials to the extent practicable.

Cultural Resources/Tribal Cultural Resources:

Cultural Resource mitigation measures would be developed based on the *Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region*. The following mitigation measures have been identified.

Cultural Resource Mitigation Measures related to Vegetation and Fuel Treatments

1. All historic properties within Areas of Potential Effects (APEs) shall be clearly delineated prior to implementing any associated activities that have the potential to affect historic properties. Regional Programmatic Agreement (RPA) Appendix E section 1.3(1)(2).
 - a. Historic property boundaries shall be delineated with coded flagging and/or other effective marking.
 - b. Historic property location and boundary marking information shall be conveyed to appropriate Forest Service administrators or employees responsible for project implementation so that pertinent information can be incorporated into planning and implementation documents, contracts, and permits (e.g., clauses or stipulations in permits or contracts as needed).

2. Felling and removal of hazard, salvage, and other trees within historic properties under the following conditions: RPA Appendix E section 2.2a(1)(2) (3)(4)(5)
 - a. Trees may be limbed or topped to prevent soil gouging during felling;
 - b. Felled trees may be removed using only the following techniques: hand bucking, including use of chain saws, and hand carrying, rubber tired loader, crane/self-loader, helicopter, or other non-disturbing, Heritage Program Manager (HPM)-approved methods;
 - c. Equipment operators shall be briefed on the need to reduce ground disturbances (e.g., minimizing turns);
 - d. No skidding nor tracked equipment shall be allowed within historic property boundaries; and
 - e. Where monitoring is a condition of approval, its requirements or scheduling procedures should be included in the written approval.
3. Vegetation to be burned shall not be piled within the boundaries of historic properties unless locations (e.g., a previously disturbed area) have been specifically approved by HPMs or qualified Heritage Program staff. RPA Appendix E section 2.2.1(H)
4. Mechanically treated (crushed/cut) brush or downed woody material may be removed from historic properties by hand, through the use of off-site equipment, or by rubber-tired equipment approved by HPMs or qualified Heritage Program staff. Ground disturbance shall be minimized to the extent practicable during such removals. RPA Appendix E section 2.2.1(I)
5. Fire crews may monitor sites to provide protection as needed. RPA Appendix E section 2.2.1(A)
6. Fire lines or breaks may be constructed off sites to protect at risk historic properties. RPA Appendix E section 2.2.1(B)
7. Fire shelter fabric or other protective materials or equipment (e.g., sprinkler systems) may be utilized to protect at risk historic properties. RPA Appendix E section 2.2.1(D)
8. Fire retardant foam and other wetting agents may be utilized to protect at risk historic properties and in the construction and use of fire lines. RPA Appendix E section 2.2.1(E).
9. Surface fuels (e.g., stumps or partially buried logs) on at risk historic properties may be covered with dirt, fire shelter fabric, foam or other wetting agents, or other protective materials to prevent fire from burning into subsurface components and to reduce the duration of heating underneath or near heavy fuels. RPA Appendix E section 2.2.1(F)
10. Trees that may impact at risk historic properties should they fall on site features and smolder can be directionally felled away from properties prior to ignition, or prevented from burning by wrapping in fire shelter fabric or treating with fire retardant or wetting agents. RPA Appendix E section 2.2.1(G)

Cultural Resource Mitigation Measures related to Recreational Hiking Trail and Transportation Management

11. Proposed undertakings shall avoid historic properties. Avoidance means that no activities associated with undertakings that may directly affect historic properties, unless specifically identified in this RPA, shall occur within historic property boundaries, including any defined buffer zones. Portions of undertakings may need to be modified, redesigned, or eliminated to properly avoid historic properties. RPA Appendix E section 1.1

Cultural Resource Mitigation Measures related to Recreational Hiking Trail

12. Buffer zones may be established to ensure added protection where HPM/ delegated Heritage Program staff (DHPS) determine that they are necessary. The use of buffer zones in avoidance measures may be applicable where setting contributes to property eligibility under 36 CFR 60.4, or where setting may be an important attribute of some types of historic properties (e.g., historic buildings or structures with associated historic landscapes, or traditional cultural properties important to Native Americans), or where heavy equipment is used in proximity to historic properties. RPA Appendix E section 1.1a
13. The size of buffer zones must be determined by HPMs or qualified Heritage Program staff on case-by-case bases. RPA Appendix E section 1.1a(1)

Cultural Resource Mitigation Measures related to Transportation Management

14. Temporary or long-term closures of roads or trails through historic properties may not involve any new ground disturbance; RPA Appendix D section 2.3r

Geology/Soils

1. Soil quality standards and appropriate Best Management Practices (BMP) that protect forest soils would be implemented for the entire project. BMPs are described in *Water Quality Management for Forest System Lands in California, Best Management Practices* (2011b), LNF LRMP (1993), and the 2004 SNFPA ROD.
2. In treatment units outside of WBBZs, soil moisture conditions would be evaluated using Forest established visual indicators before equipment operations proceed. Lassen National Forest Wet Weather Operations and Wet Weather Haul Agreements would be followed to protect the soil and transportation resources.
3. Aerial extent of detrimental soil disturbance would not exceed 15 percent of the area dedicated to growing vegetation. Soil porosity would not decrease by 10 percent or greater and soil bulk density would not increase by 10 percent or greater when compared to natural or undisturbed conditions.
4. Following implementation, the treatment units would be evaluated by a qualified specialist to determine if detrimentally compacted ground exceeds the LRMP standard of 15 percent areal extent. If restoration is needed to achieve compliance an appropriate subsoiler, ripper or other implement would be used to fracture the soil in place leaving it loose and friable. Landings no longer needed for long-term management would be remediated as described. Where landing construction involved cut and fill, the landing would also be re-contoured to match the existing topography.
5. To the extent possible, existing landings and skid trails would be utilized.
6. Where available 5 logs per acre would be left on the ground representing the range of decay classes. A log is at least 20" diameter and 10 feet long.
7. Treatment areas, skid trails, and landings on slopes greater than 20 percent would be left with more than 50 percent soil cover. Soil cover can consist of any combination of rock, woody debris, slash, forest litter, plants, or mulches such as wood chips or weed-free straw.
8. Mechanical equipment would not operate on slopes greater than 35 percent. *Addition: Exceptions may be made for skid trails on short pitches (100 feet or less) within the interior of units where slopes exceed these limits in order to access treatable ground. In such cases, additional*

mitigations such as mulch or retaining higher canopy cover may be added at specialist discretion based on field visits.

9. In units where mechanical treatment occurs on very high erosion hazard soils (granitic soils on slopes greater than 20%) skid trails and landings would be left with at least 70% soil cover. Three years following treatment implementation, if monitoring indicates areas showing erosion or lack of revegetation greater than 0.25 acres, these areas would be seeded using native vegetation and/or mulch would be placed. Soil cover can consist of any combination of rock, woody debris, slash, forest litter, plants, or mulches such as wood chips or weed-free straw. Travel of heavy equipment in these areas would be planned in order to avoid turning and minimize cutting across slopes. Skid trails would be water barred according to the FS Sale Administrator Handbook at the rate prescribed for very high erosion hazard soils. Areas of excessive soil displacement caused by equipment operating in the Diamond Mountain project would be re-contoured. *Addition: Skid trails would have erosion control (waterbars or waterbars and mulch) installed according to the Forest Service Handbook 2409.15 (TimberSale Administration Handbook) standards for very high erosion hazard soils.* Areas of excessive soil displacement caused by equipment operating in the Diamond Mountain project area would be re-contoured. *Slash or other weed-free cover may be used to mitigate soil displacement. (See EA Appendix 1 for a list of units with very high erosion hazard).*
10. Machine piling operations would remove only enough material to accomplish project objectives and would minimize the amount of soil being pushed into burn piles. Equipment would be chosen to minimize detrimental impacts to soil, primarily by utilizing features such as booms and low ground pressure tracks. Duff and litter layers would remain as intact as possible, and the turning of equipment would be minimized. Piles would be constructed as tall as possible, within limits of safety and feasibility. A mixture of fuel sizes in each pile is preferred, avoiding piles of predominately large wood when practicable.
11. Project implementation planners should use the soil parent materials maps, found in the soils report, to plan mechanical equipment operations on the granitic soils while they are not dry or with additional mitigations designed to reduce potential displacement, such as slash mats. Conversely, the Miocene gravel soils should be as dry as possible during mechanical operations, or additional mitigations should be implemented to prevent damage.

Hazards and Hazardous Material:

The USDA Lassen National Forest shall be responsible for overseeing burn operations, ensuring personnel are properly trained and that adequate resources are present to prevent escaped fire.

Personnel shall wear appropriate personal protection equipment. Equipment used on this project shall not be serviced in locations where grease, oil, or fuel could pass into a watercourse. Operations shall follow all applicable state and federal laws.

Equipment will be refueled and serviced outside of riparian areas. In the event of an accidental spill, hazmat materials for quick on-site clean up will be kept at the project site during all project activities. For fire prevention, a water truck will be on-site at all times.

Hydrology/Water Quality:

Riparian Conservation Areas and Water Quality Protection Measures

Riparian Conservation Area (RCA) widths are allocated along all streams, wetlands, wet meadows, and other special aquatic features in accordance with the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD). Additionally, Water Body Buffer Zones (WBBZ) are defined by the Lahontan Regional Water Quality Control Board in the 2014 Timber Waiver (Board Order No. R6T-2014-0030) as areas with additional equipment operation limitations and protections near waterbodies. WBBZ widths are classified (see Class Type in Table 7) by biological habitat and ability to transport sediment, as defined in the California Code of Regulations, title 14 Watercourse and Lake Protection Zones. Features are as described in the table below, and the following IDFs apply within RCAs.

1. Soil conditions must be operable for mechanical equipment to enter WBBZs. Equipment may not enter WBBZs or RCAs when soils are saturated. Within granitic soil types, some moisture is preferred to provide cohesion and minimize soil displacement.
2. Landings would be located outside of RCAs. Existing landings within RCAs would not be used.
3. Conifers would be harvested using feller-bunchers that have 24-inch or greater track widths.
4. Turning of equipment would be minimized.
5. Ground-based equipment would be excluded from slopes more than 20% in RCAs.
6. Skid trails would be kept to a minimum and no waterbars would be installed after treatment. To the extent possible, existing skid trails would be utilized. Stream and meadow crossing locations would be agreed to and designated on the ground by qualified specialists prior to use.

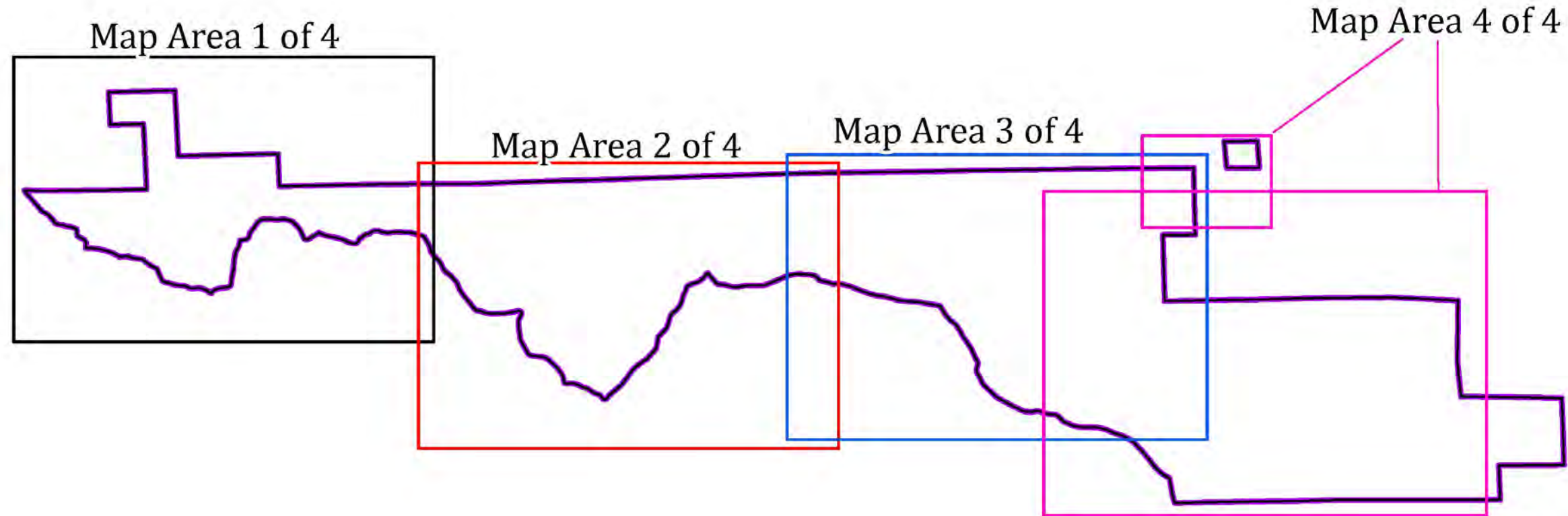
Table 9: Riparian Conservation Area widths within the Diamond Mountain project area.


RCA Type	RCA Width	Class Type (Timber Waiver)	WBBZ Width	Features within Project Area
Special Aquatic Features (wet meadows, springs, fens)	300 feet from edge of feature or riparian vegetation, whichever width is greater	II-III, unclassified	50-25 feet, 0 feet	Small stringer wetlands and meadows associated with streams; seeps and springs; small ponds and shrub wetlands including those in the Bear and Aspen Flat areas, Gilman Fen.
Perennial Streams	300 feet (each side of stream), measured from bankfull edge of stream or top of the inner gorge (stream adjacent slopes >70%) where present	I-II	75-50 feet	Gold Run Creek, Lassen Creek, Baxter Creek, Elysian Creek, and Bear Flat tributary to Elysian Creek
Seasonally Flowing Streams (includes ephemerals with defined stream channel and evidence of scour)	150 feet (each side of stream) measured from bankfull edge of stream or top of the inner gorge (stream adjacent slopes >70%) where present	III, unclassified	25-0 feet	Upper Cheney Creek, Hills Creek, and seasonally flowing tributaries to: Gold Run Creek, Boulder Creek, East Fork Willard Creek

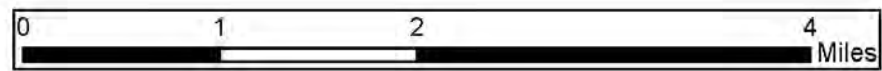
7. Ground-based equipment would be used to remove timber using one-end suspension.
8. Skid trails within RCAs would require placement of 90% of existing ground cover on bare soil on the trails after treatment. Cover can consist of any combination of rock, woody debris, slash, litter, seeding, plants or mulches including wood chips or certified weed-free straw.
9. Machine piling would not occur within RCAs. Hand piling may occur beyond the inner 30 feet of RCAs, with piles no more than 10 feet in diameter and 5 feet high. No more than 10 percent of the area within the inner 50 feet of the RCA would be covered in piles.
10. Hand line construction within the Riparian Conservation Areas (RCA) is permitted outside the inner 30-foot zone for seasonal RCAs and 50-foot zone for perennial and special aquatic feature RCAs. If needed, wet line would be used.
11. Chipped material within WBBZs may not exceed an average of two inches in depth, with a maximum depth of four inches, and material may not be deposited within stream channels or other waterbodies.
12. Retain riparian species and other hardwoods (e.g., aspen, cottonwood, alder, willow, dogwood, black oak).
13. Retain conifers necessary for bank stability, with species preference dependent on stand type. In general, prefer to retain shade-intolerant species (e.g., ponderosa, Jeffrey pine, rust-resistant sugar pine, black oak) where possible.
14. A minimum 20-foot “no mechanical equipment” buffer would be designated along all stream channels. This does not include existing crossings and transportation routes. These buffers would be measured from the top of the inner gorge where present. Equipment may reach into these buffers to remove material.
15. For RCAs within the Boulder Creek watershed, no treatment would occur within the inner 90 feet. Piling would also not occur within the inner 90 feet.

Maps

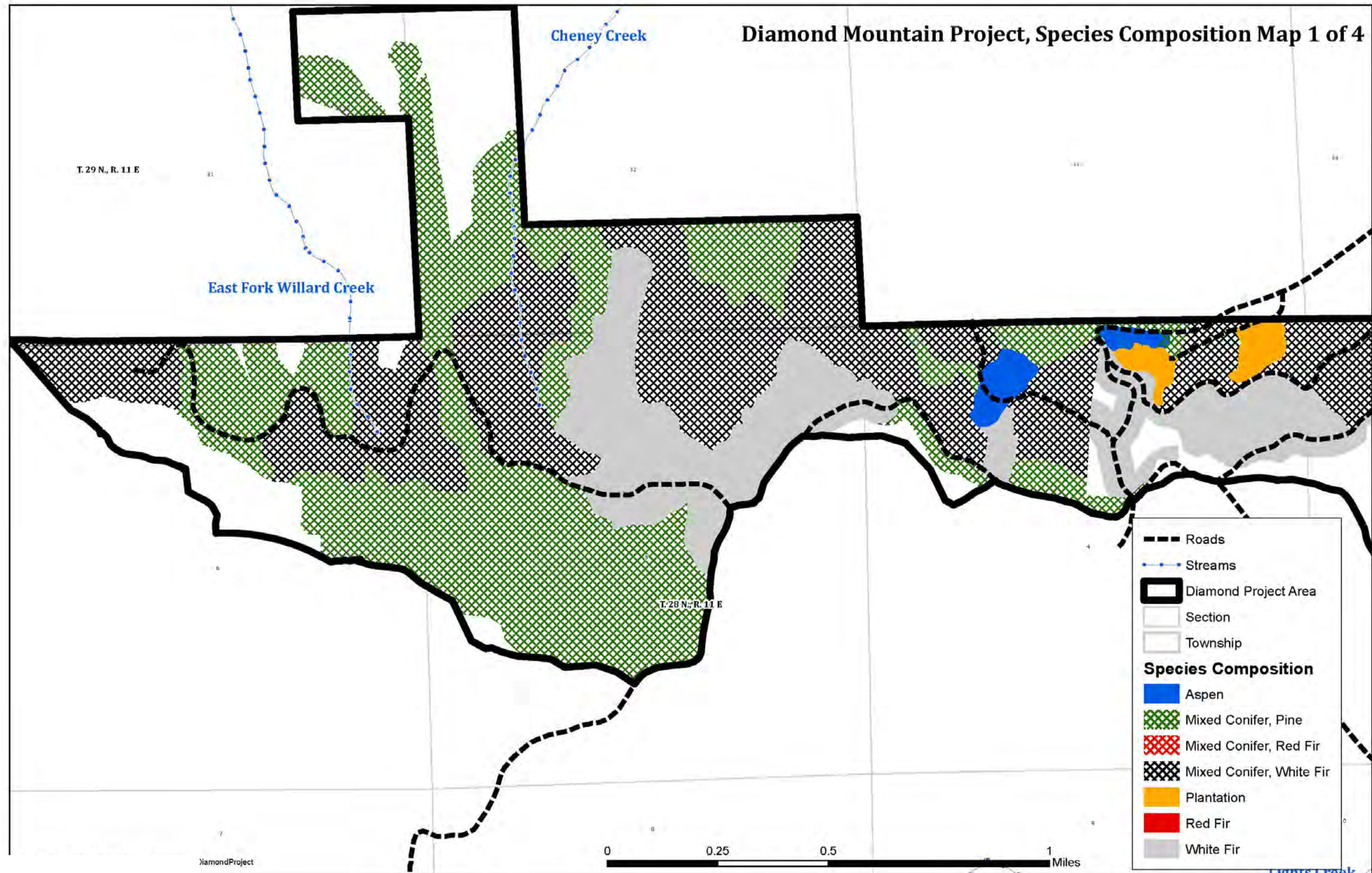
Diamond Project Map Areas



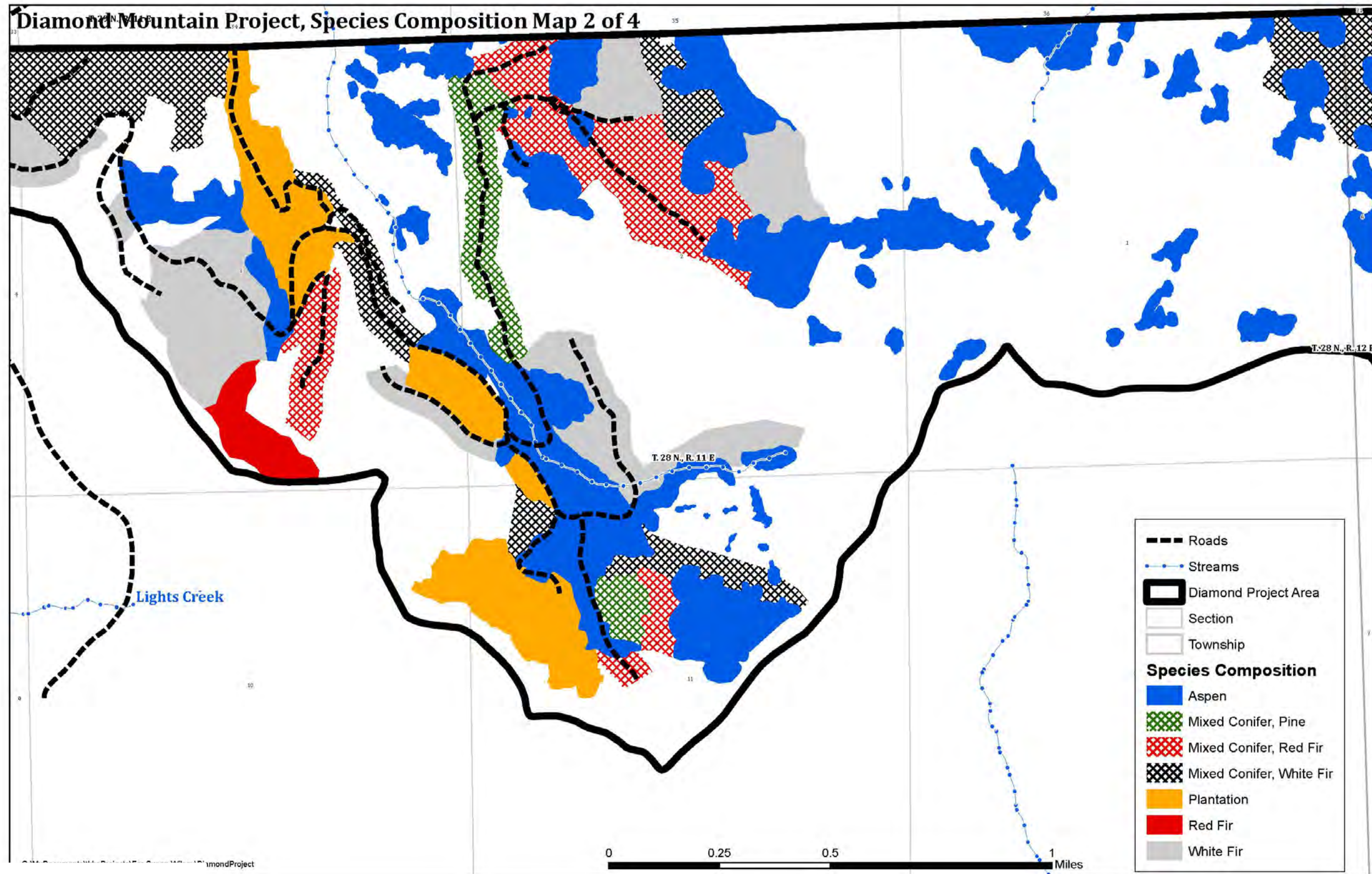
 Diamond Project Area, Lassen National Forest



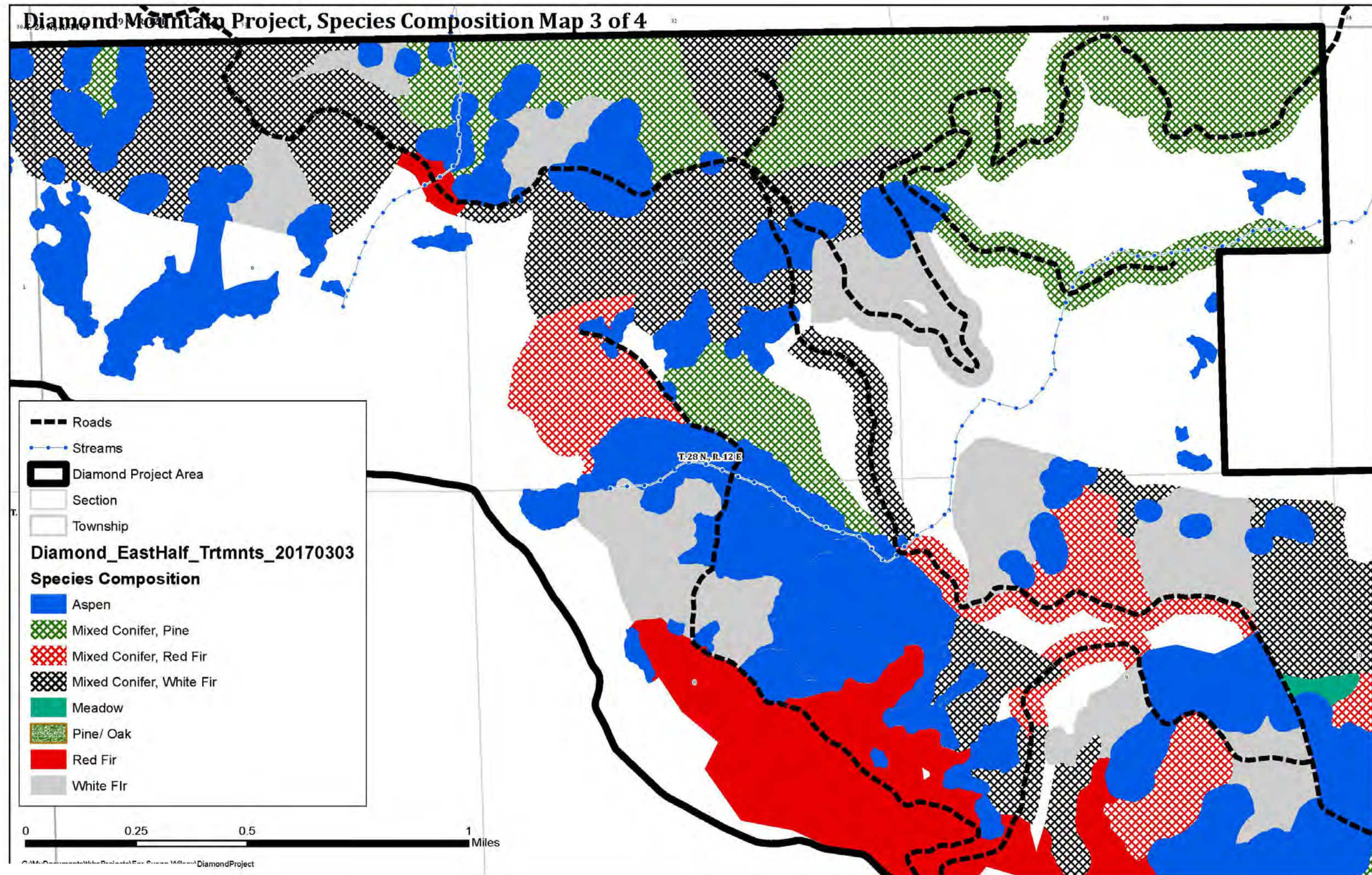
Map 1. Diamond Mountain project area with key to map insets.
Diamond Mountain Project CEQA Initial Study



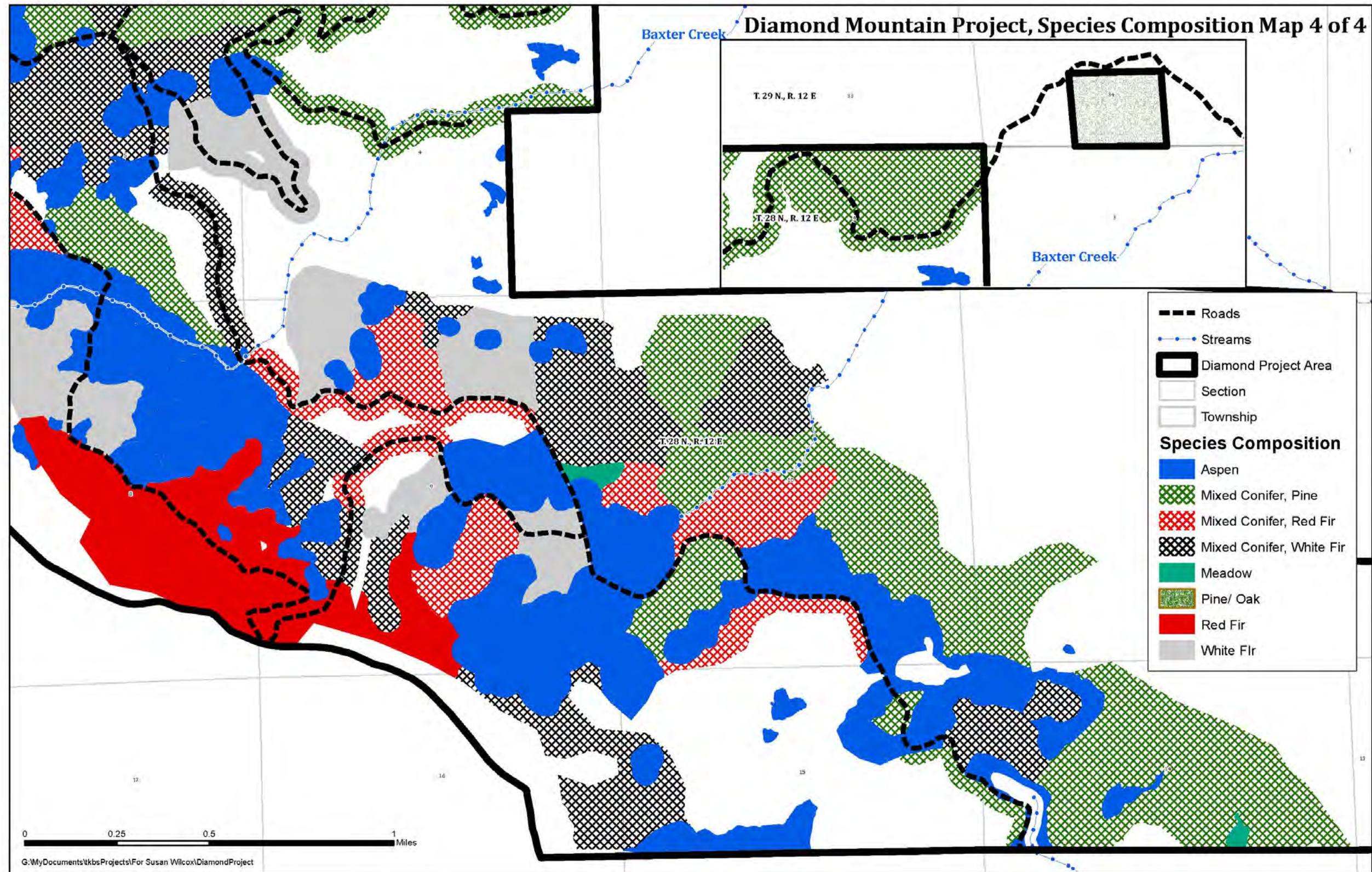
M3ap 2. Diamond Mountain project species composition 1 of 4.



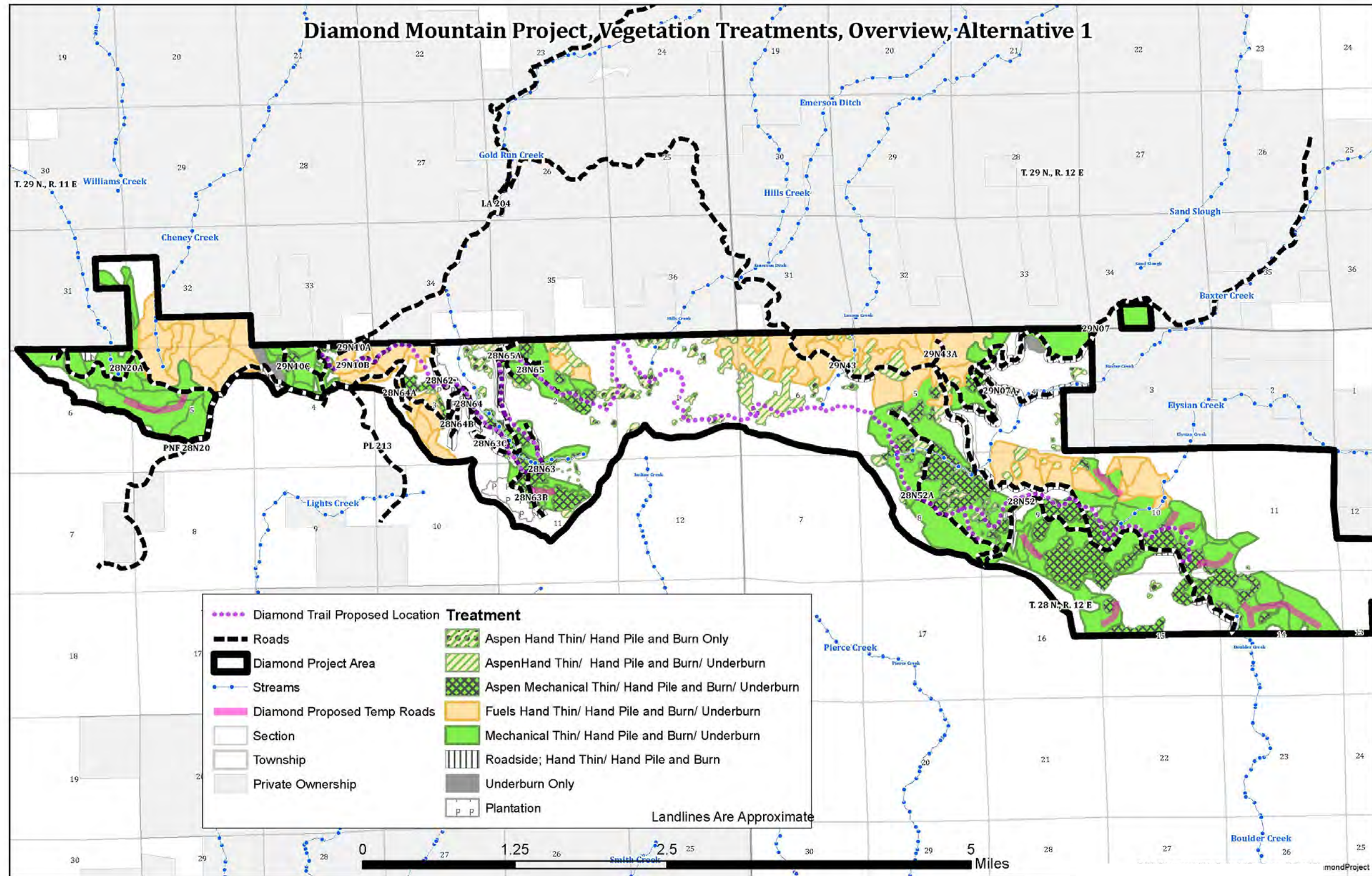
Map 3. Diamond Mountain project species composition 2 of 4.



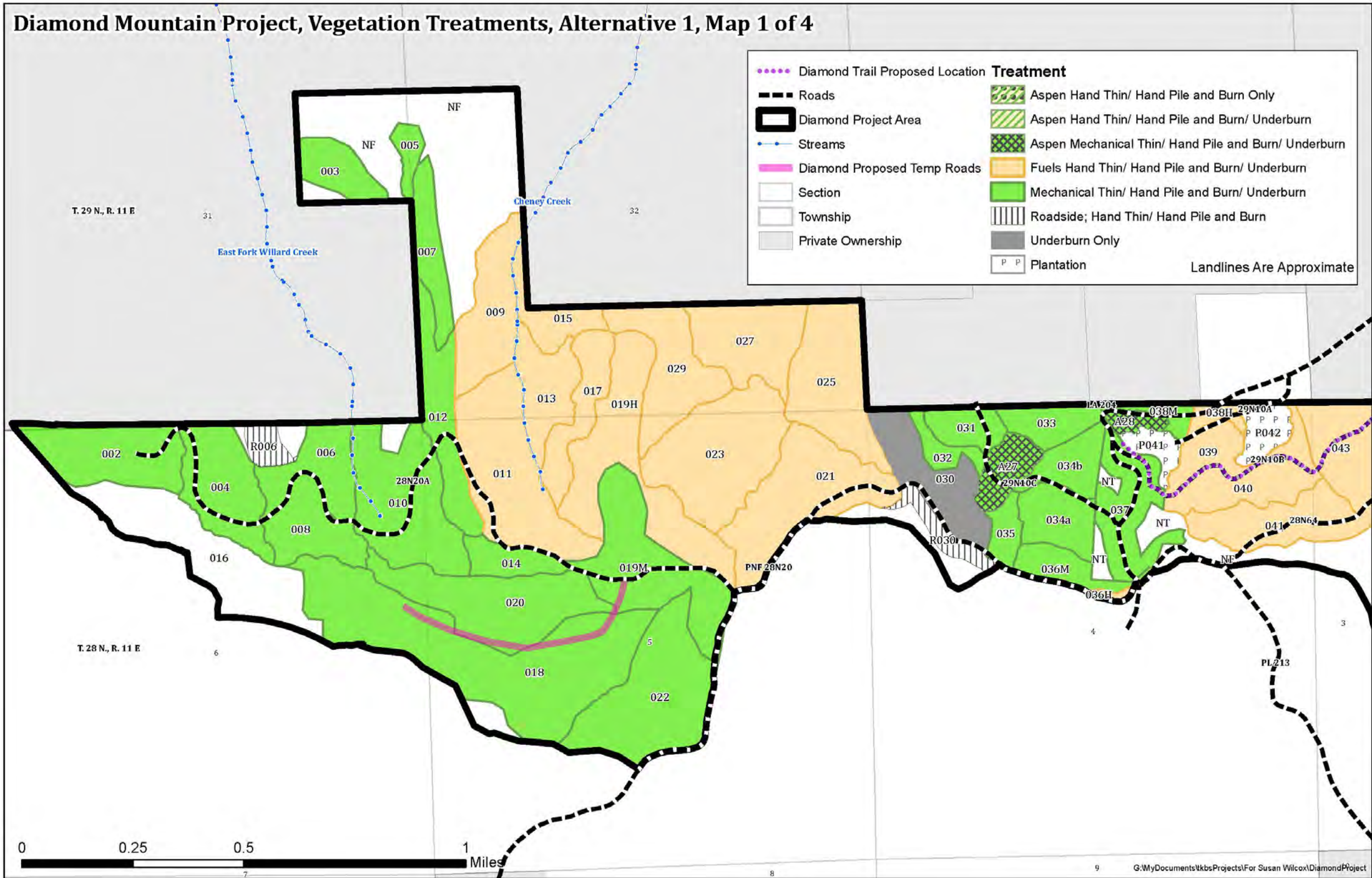
Map 4. Diamond Mountain project species composition 3 of 4.



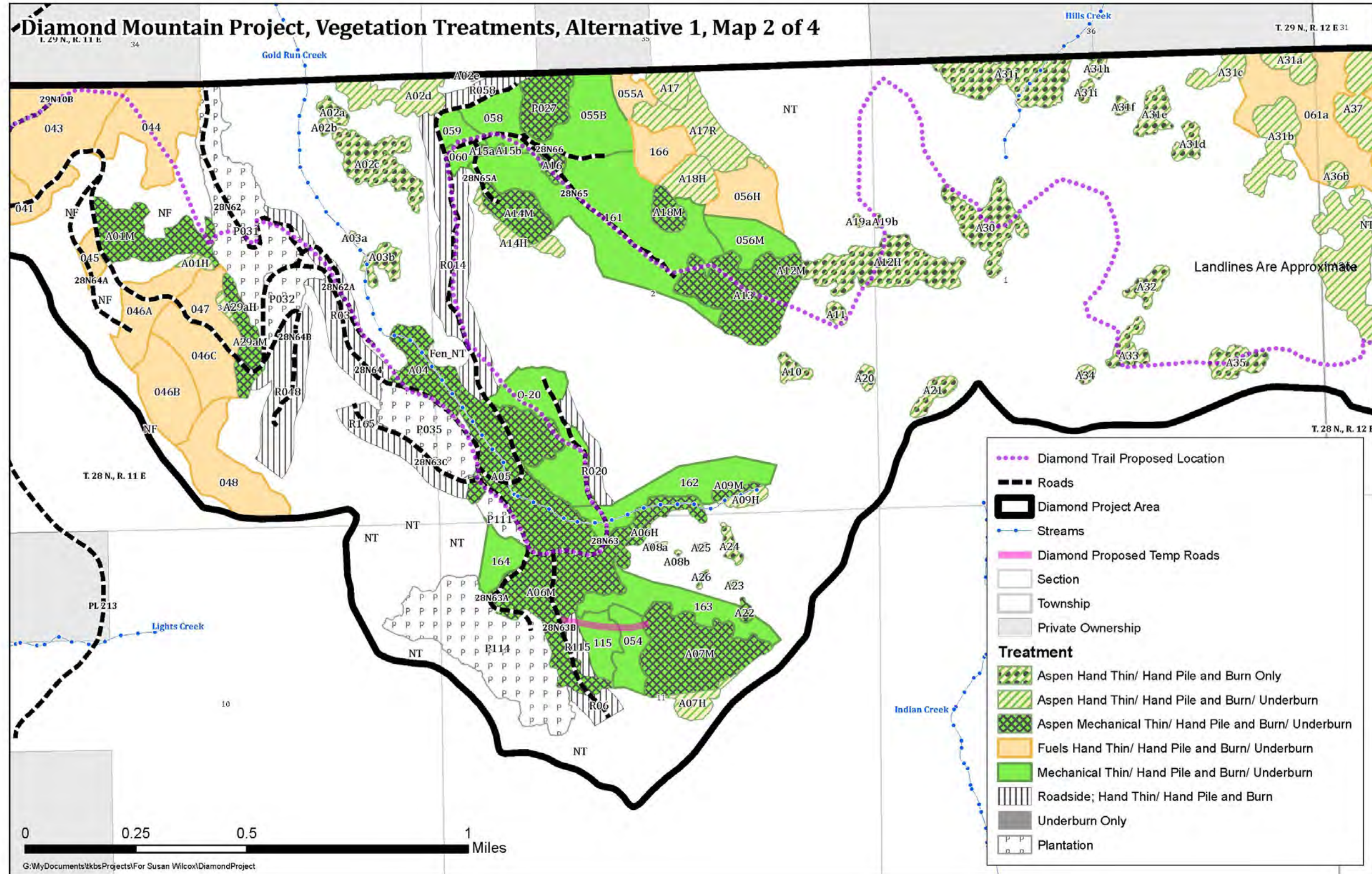
Map 5. Diamond Mountain project species composition 4 of 4.



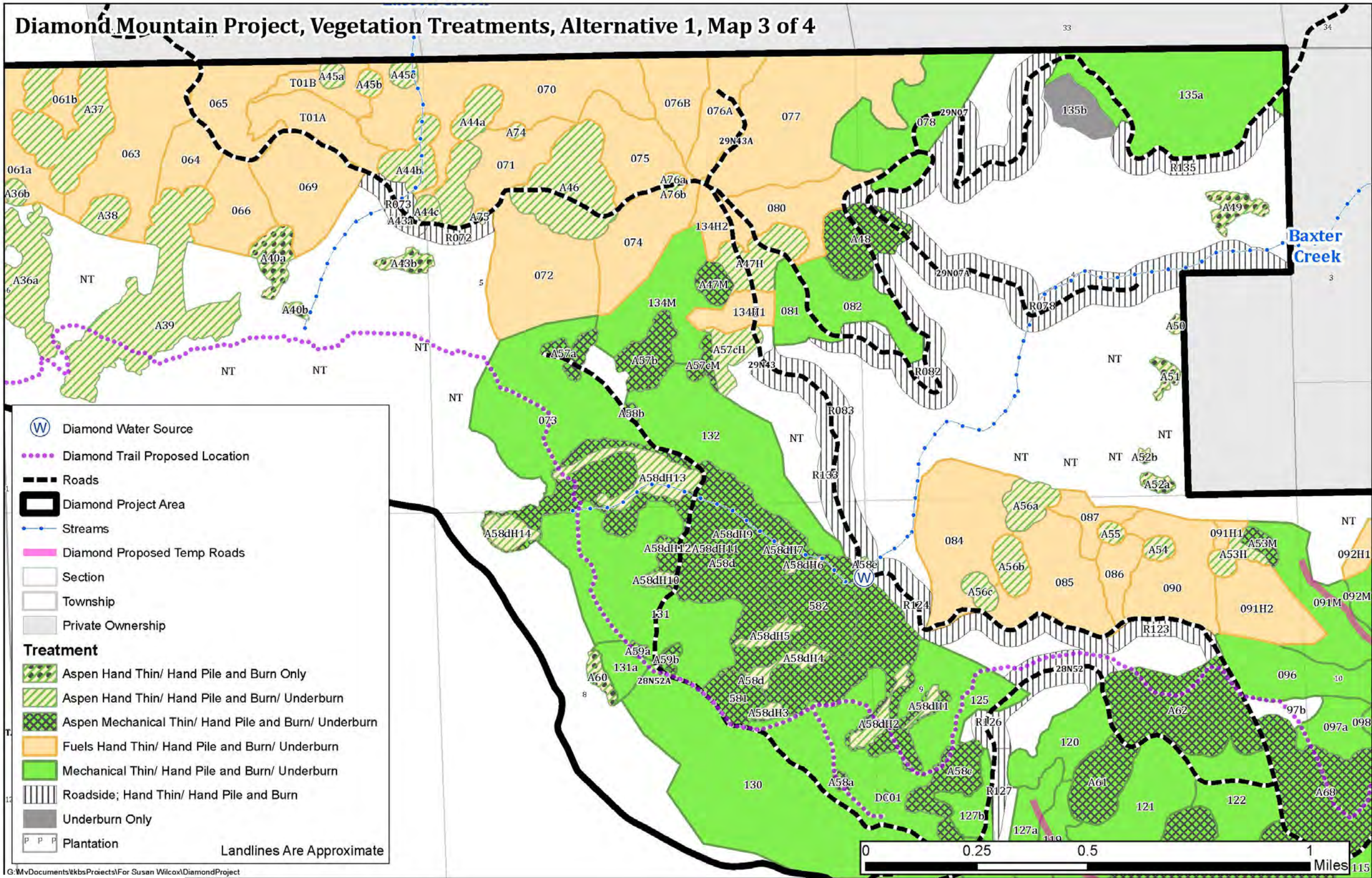
Map 6. Overview of the forest thinning treatments proposed under the Diamond Mountain project (Alternative 1).



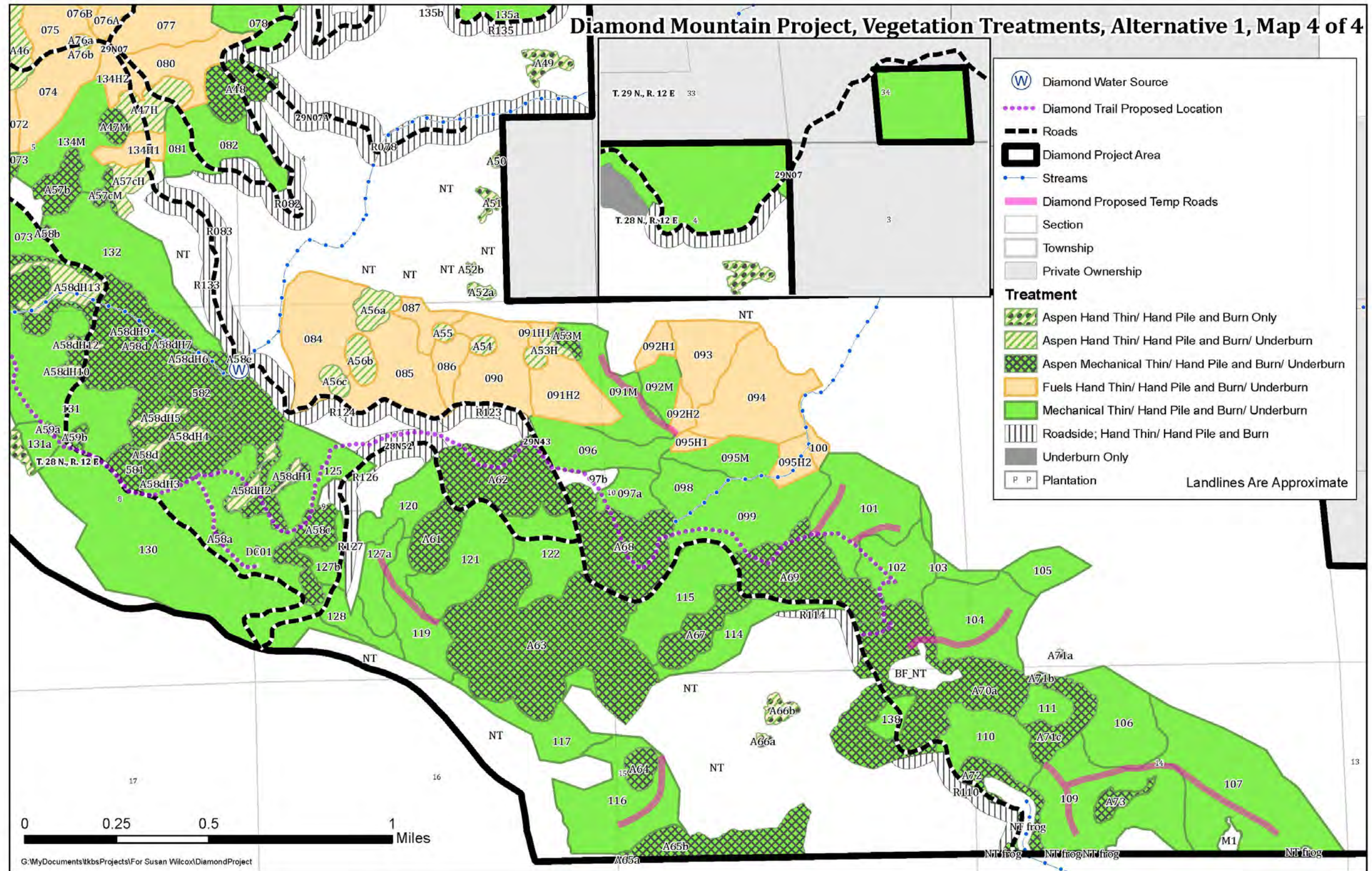
Map 7. Forest thinning treatments proposed under Alternative 1 of the Diamond Mountain project, Map 1 of 4.



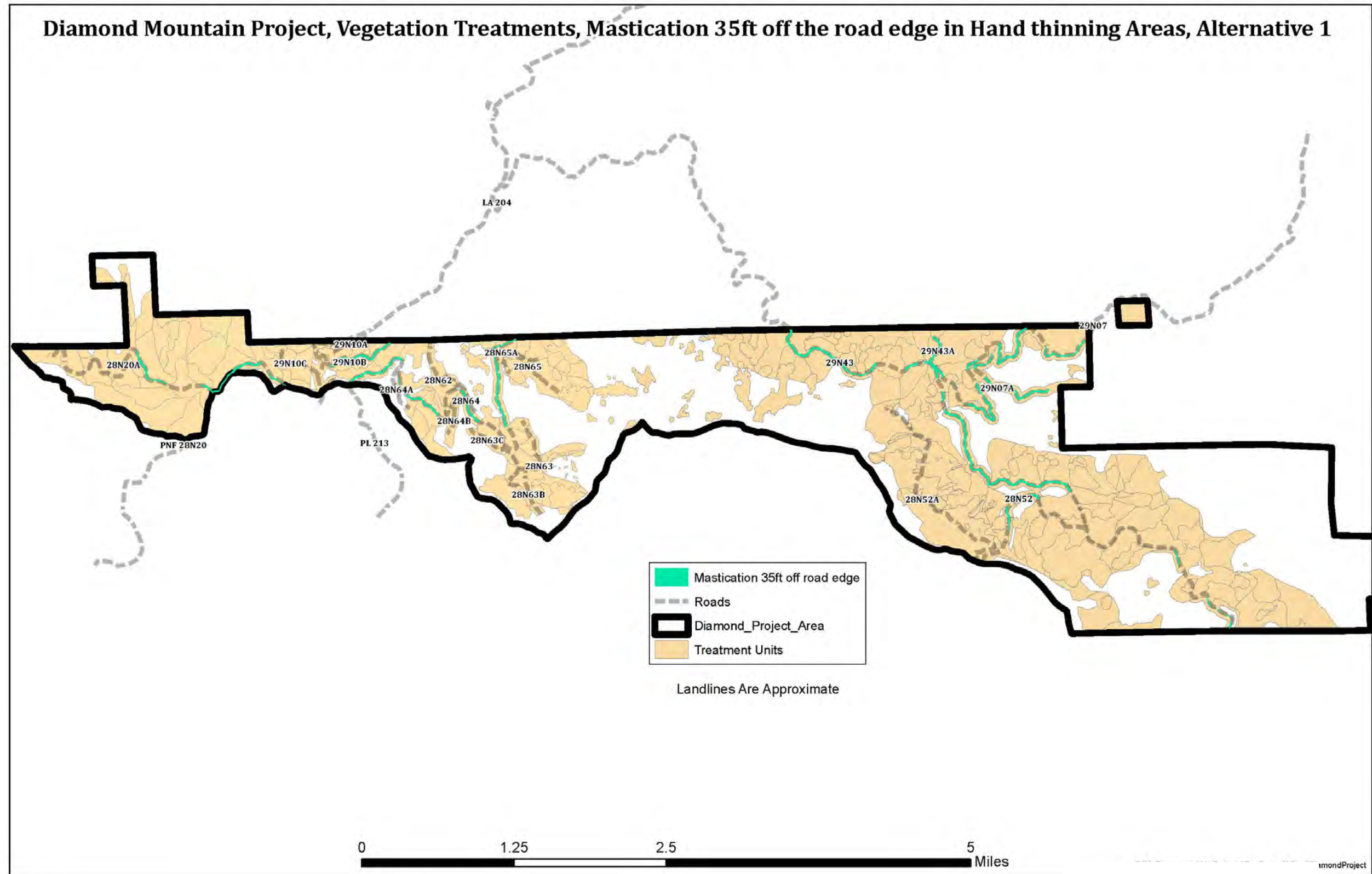
Map 8. Forest thinning treatments proposed under Alternative 1 of the Diamond Mountain project, Map 2 of 4.



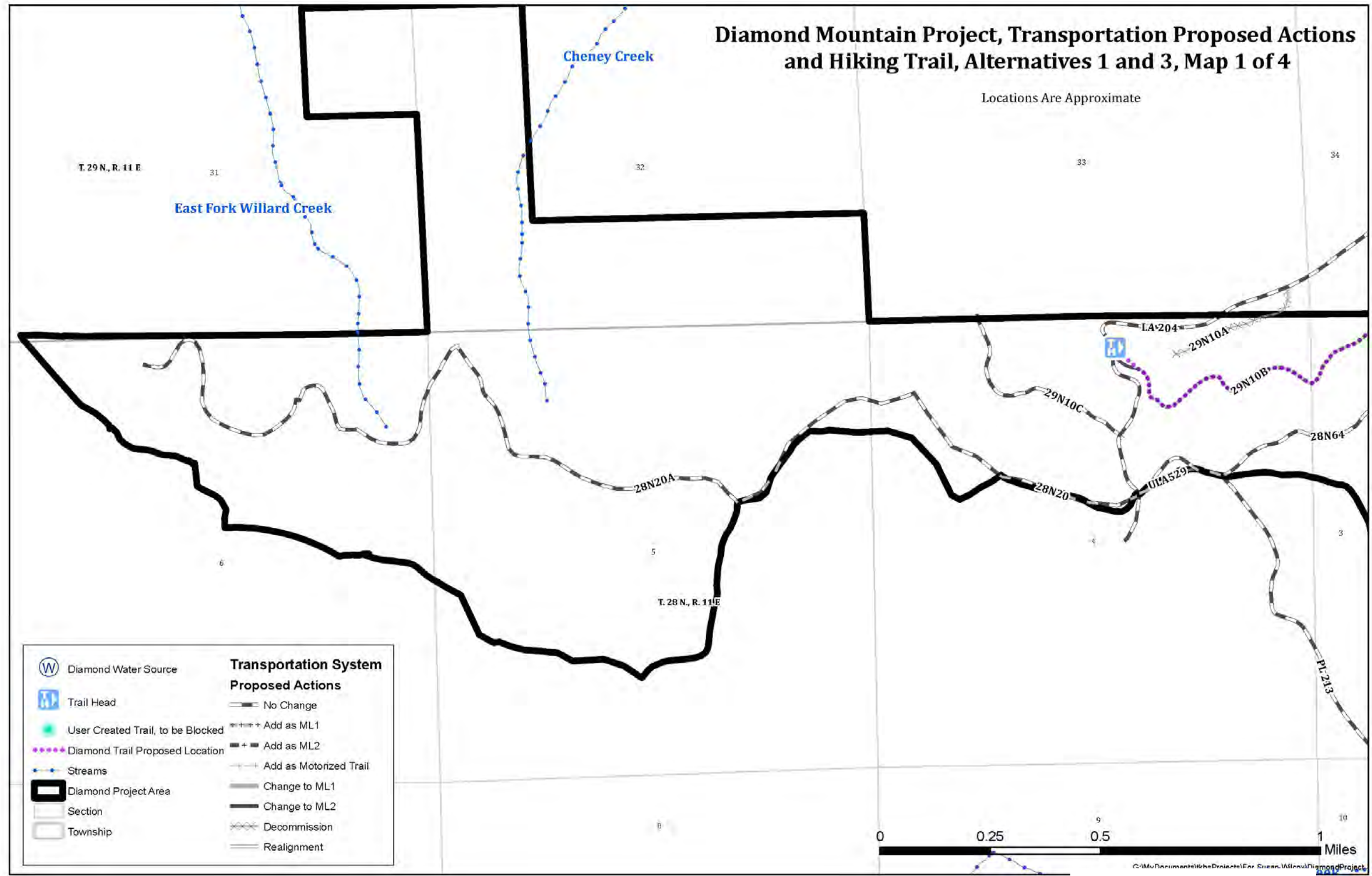
Map 9. Forest thinning treatments proposed under Alternative 1 of the Diamond Mountain project, Map 3 of 4.



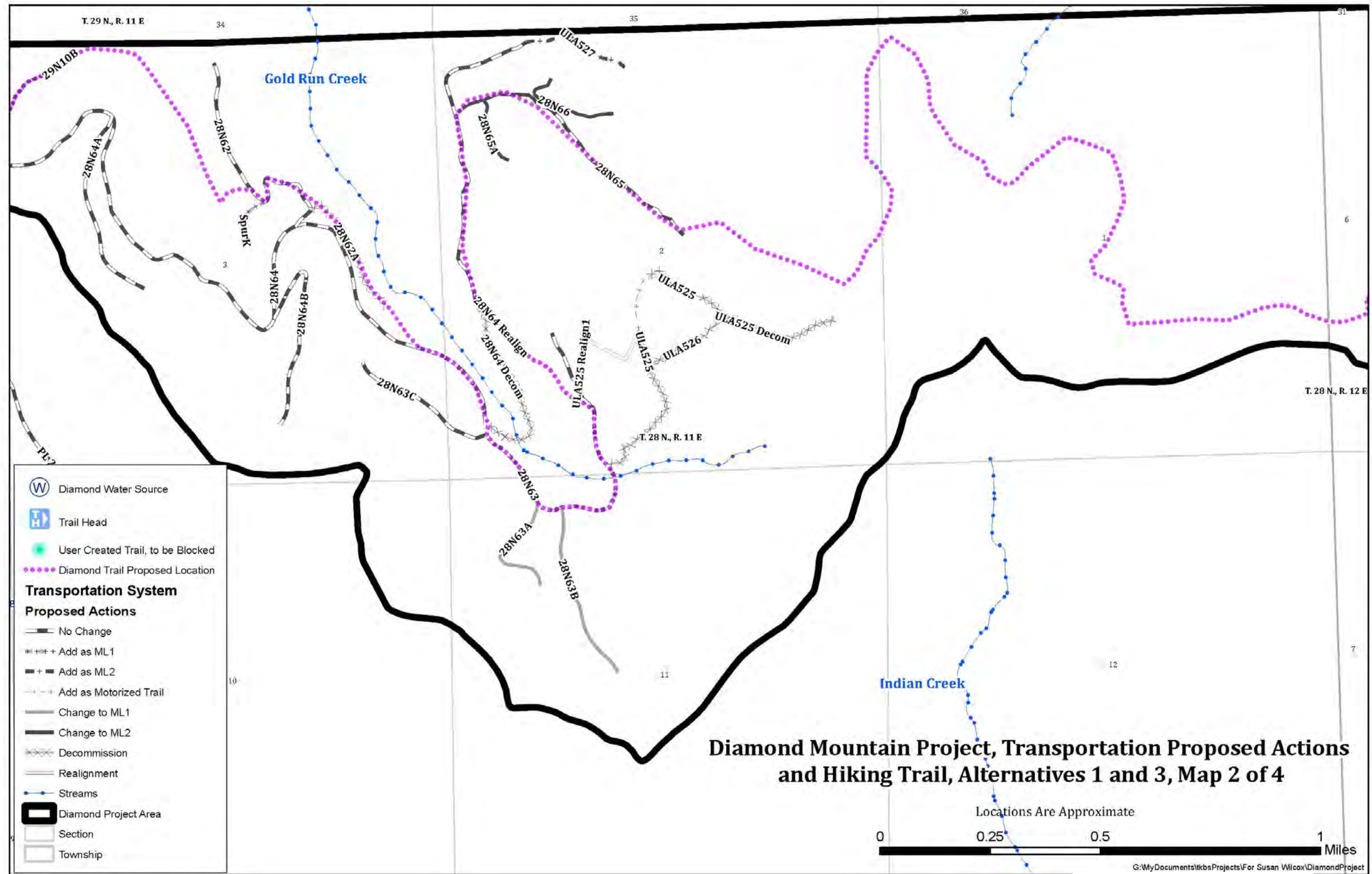
Map 10. Forest thinning treatments proposed under Alternative 1 of the Diamond Mountain project, Map 4 of 4.



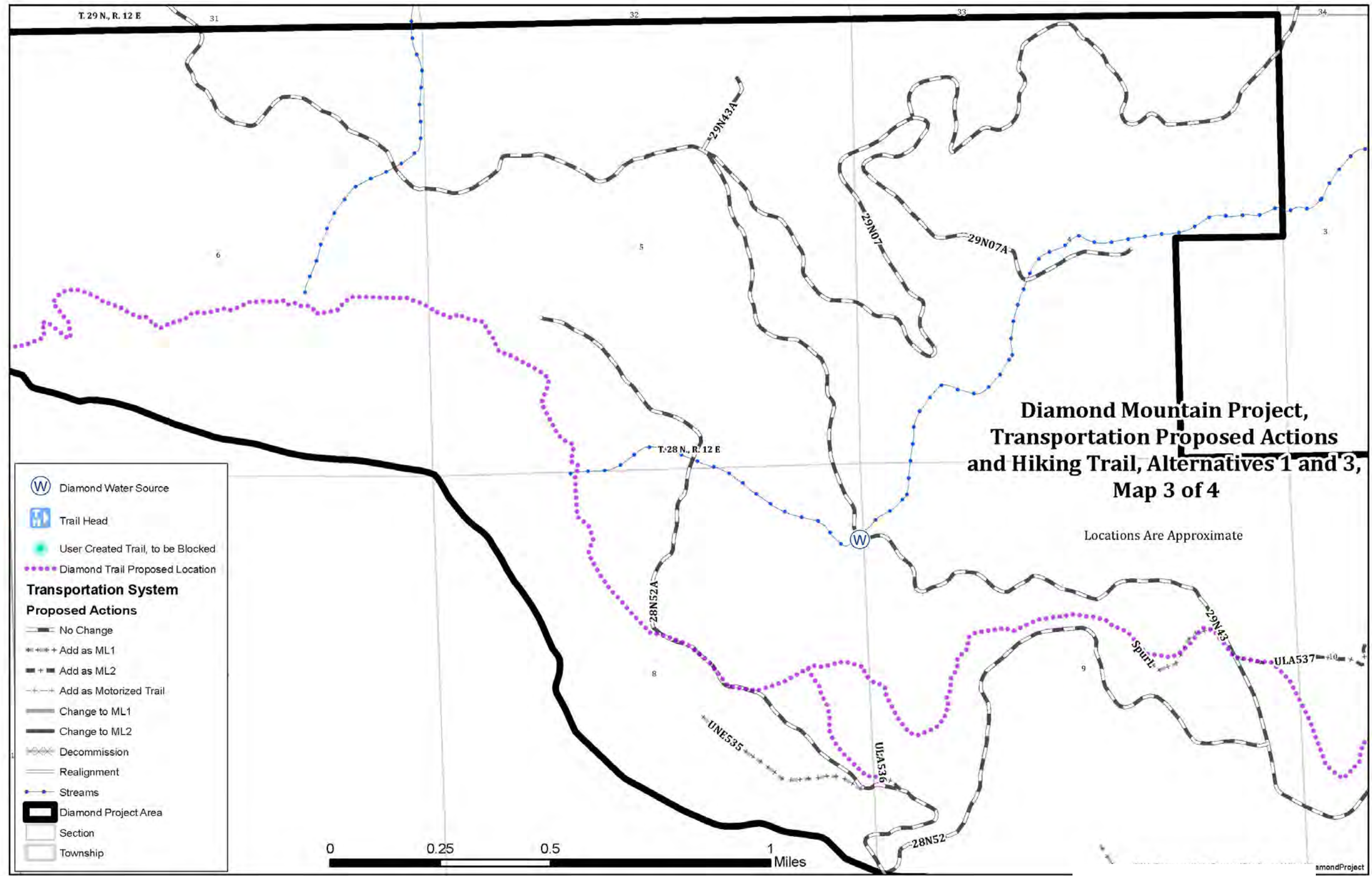
Map 11. Areas where mastication may be used along roads under Alternative 1 of the Diamond Mountain project.



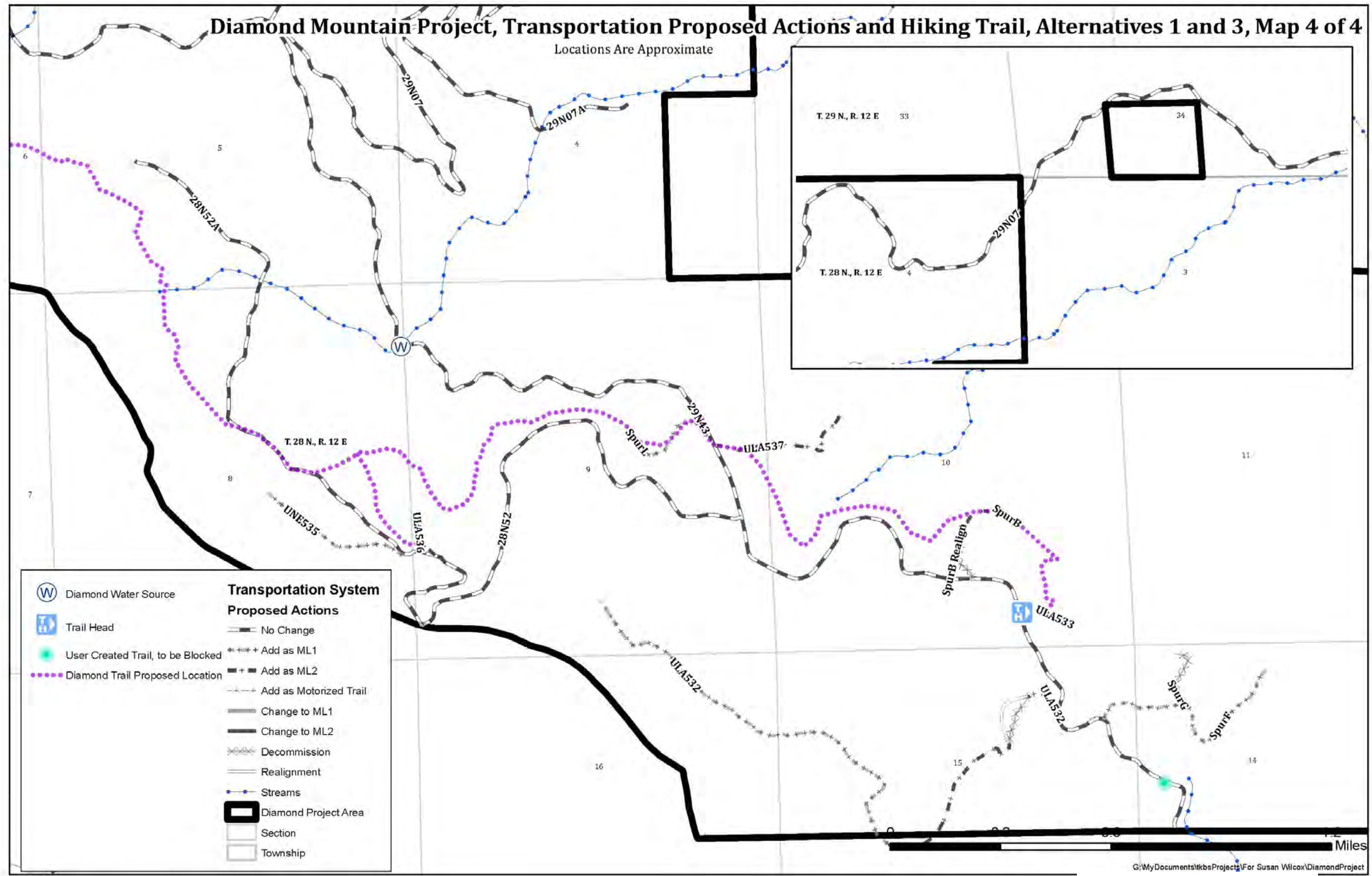
Map 12. Locations of proposed transportation actions and hiking trail under Alternatives 1 and 3 of the Diamond Mountain project, Map 1 of 4.



Map 13. Locations of proposed transportation actions and hiking trail under Alternatives 1 and 3 of the Diamond Mountain project, Map 2 of 4.



Map 14. Locations of proposed transportation actions and hiking trail under Alternatives 1 and 3 of the Diamond Mountain project, Map 3 of 4.



Map 15. Locations of proposed transportation actions and hiking trail under Alternatives 1 and 3 of the Diamond Mountain project, Map 4 of 4.

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Appendix A. Very High Erosion Hazard Soils

The following mechanical treatment units, wholly or in part, are on very high erosion hazard granitic soil and require special erosion control measures:

022	110	038M	A57b
033	111	055B	A57cM
035	114	091M	A58a
037	115	092M	A58b
058	116	095M	A58c
059	117	097a	A58d
060	119	127b	A59b
073	120	134M	A61
078	121	135a	A62
081	122	A04	A63
082	125	A05	A65b
096	128	A14M	A67
098	130	A15a	A68
099	131	A15b	A69
101	132	A16	A70a
102	136	A18M	A71b
103	138	A27	A71c
104	161	A28	A72
105	162	A47M	A73
106	581	A48	O-20
107	582	A53M	P027
109	034a	A57a	P041
	034b		P042

Honey Lake Valley Resource Conservation District Annual Work Plan

For July 1, 2017 – June 30, 2018



Prepared For:

Honey Lake Valley Resource Conservation District Board of Directors
170 Russell Ave., Suite C, Susanville, CA 96130

Prepared By:

Ian Sims, District Manager

May 24, 2017

Introduction

This work plan was developed to provide an annual roadmap for implementation of the existing Honey Lake Valley RCD Strategic Plan, adopted in 2017. The Strategic Plan identifies several Strategic Issues, with corresponding Goals and Strategies, to be dealt with by the District over a five year timeframe. The activities proposed in this work plan relate directly back to the content of the Strategic Plan, with each Issue and Goal identified by number. Each activity represents one of the Strategies from the Strategic Plan that has been converted to an action item. The responsible party, approximate cost and funding source for each activity is identified when possible.

Our mission is to conserve, restore, and sustain local agricultural and natural resources for those who live, work, or visit the service area to foster a viable economy by seeking and coordinating technical, educational, and financial resources.

Strategic Issue 1: Build HLVRCD leadership and organizational capacity.

Goal 1.1: The HLVRCD Board of Directors actively, knowledgeably, and effectively leads the District and its employees in the District’s mission.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source/Grant
Board Diversity	Determine skills desired for a well-rounded Board; Incorporate the desired skills agreed upon into the Board opening announcement;	July/Aug 2017	Board Chair	\$0	Volunteer
Board Diversity	Add two Associate Director to the RCD.	Sept/Oct 2017	Board and Staff	\$0	Volunteer
Board Diversity	Post online and distribute a “New Director Orientation” booklet	Jan 2018	Board Chair and Staff for posting	\$0	Volunteer
District Policies	Provide input on creation of or update to District Policies	Nov/Dec. 2017	Policy Committee	\$0	Volunteer, DOC
Strategic Thinking	Board members complete CSDA’s webinar “Good Governance”.	06/30/18	Board	\$0	Volunteer, DOC
Strategic Thinking	Identify & discuss issues affecting District performance, determine whether action is needed.	Quarterly	Board	\$0	Volunteer
Financial Acumen	Majority of Board completes CSDA’s webinar “Introduction to Special	10/31/17	Board	\$0	Volunteer, DOC

	District Finances for New Board Members”.				
District Visibility	Write & submit 2 “Where I Stand” pieces to the Lassen Times.	04/01/17; 12/31/17	Board Chair or Member	\$0	Volunteer
District Visibility	Inform Board of Supervisors on a regular basis.	Bi-Annually	Board Chair or rotating Board member	\$0	Volunteer
Community Outreach	Sponsor, host, speak, or volunteer at 2 conservation events.	10/31/17; 06/30/18	Board	\$100	Volunteer, DOC
Community Outreach	Seek MOU or similar documentation with NRCS to inform producers of program availability.	06/30/18	Board Chair	\$0	Volunteer
Employee Development	Provide annual performance review to each employee & create individual development plans.	Annually by 6/30/17 and 6/30/18	Board Chair w/ Board input	\$0	Volunteer
Employee Development	Mentor employees, look to assist as needed.	Ongoing	Board	\$0	Volunteer
Collaboration	Participate as a member of the Modoc Plateau Regional RCD.	Bi-Annually	Tippin	\$100	Volunteer
Collaboration	Seek & establish at least 1 new partnership	06/30/18	Board	\$0	Volunteer
Collaboration	Provide leadership to organize & sustain Lassen Co. Special Weed Action Team (SWAT)	Ongoing	Board	\$0	Volunteer
CARCD support & participation	Review/discuss Vision & Standards document	6/30/18	Board	\$0	Volunteer
CARCD support & participation	Meet Tier 2 standards	04/01/18	Board & Staff	\$250	Volunteer, RCD, DOC
CARCD support & participation	Identify actions & estimated timeframe to meet Tier 2 standards.	09/30/17	Board & Staff	\$500	Volunteer, RCD, DOC
CARCD support & participation	As Modoc Plateau Reg’l Chair, participate as CARCD Board member.	Quarterly	Tippin	\$0	Volunteer, CARCD
CARCD support & participation	At least 1 Board Member to attend annual CARCD	Nov 2017	Board member	\$650	RCD, DOC

	conference, preferably a 1 st time attendee.				
CARCD support & participation	At least 1 Board Member to participate on a CARCD committee	Through 06/30/18	Tippin,	\$0	Volunteer

Goal 1.2: The HLVRCD is comprised of a fully functioning staff with the capacity to increase program development and delivery from 2015 levels.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Staffing	Create plan to identify actions & funding/funding sources needed to support a full-time District Manager for Board approval.	12/31/17	Sims	\$1,000	RCD
Training	Working with supervisor, each staff to create an Individual Development Plan to identify needed skills & training to meet/improve position skills.	06/30/17	All Staff	\$1,000	RCD, WM
Training	Create and implement District Safety Plan	06/30/2018	All Staff	\$1,500	RCD, WM
Training	Participate in CARCD's Leadership Academy	11/2017	Sims	\$2,500	RCD, WM, DOC
Program Development	Work with Board to develop programs that meet RCD mission for Board approval.	02/28/2018	Sims, Otto	\$1,000	RCD, WM
Program/Project Tracking	Create an electronic database to track the history of the District's past, current, and future projects, programs, outcomes, and participants.	06/30/18	All Staff	\$1,500	RCD, WM, DOC
District Visibility	Resolve website problems	04/01/16	Sims	\$250	RCD, WM, DOC
District Visibility	Propose website content to Board & update website.	06/30/17	Sims	\$1,500	RCD, WM, DOC
District Visibility	Create semi-annual newsletter.	June & Dec 2017	Staff & Board	\$1,500	RCD, WM, DOC
Partnerships	Create list of current documented partners, source of partnership (eg, MOU), & focus area & a	06/30/17	Sims	\$500	RCD

	list of others where a partnership can be established.				
Partnerships	Establish 1 new partnership.	06/30/18	Sims, Board	\$500	RCD
Community Outreach/District Visibility	Participate in at least 1 community event.	06/30/18	Sims	\$250	RCD, DOC
Network/Collaboration	Establish relationship with surrounding peers.	06/30/18	Sims, Otto	\$250	RCD, DOC
Network/Collaboration	Attend annual CARCD conference	11/17	Sims	\$750	RCD, DOC

Goal 1.3: Diverse and sustainable funding exists.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Fundraising	Invite CARCD or similar organization to provide training on fundraising for Board & Staff, including development of fundraising opportunities list for HLVRCD.	10/31/17	Sims, Board	\$500	RCD, CARCD, DOC, Volunteer
Fee for Services	Invite CARCD or an RCD to provide training on fee for services for Board & Staff, including development of fee for services opportunities list for HLVRCD.	12/31/17	Sims	\$1,000	RCD, CARCD, DOC, Volunteer

Goal 1.4: The Watermaster services are professionally provided.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Build Relationships	Meet on the ground with 100% of the water users.	50% by 12/31/17; 50% by 06/30/18	Otto	\$10,000	WM
Build Relationships	Establish peer relationship with at least 1 CA State Watermaster.	10/31/17	Otto	\$1,000	WM
Build Relationships	Assist 2 landowners to improve measuring capacity and irrigation management	6/30/2018	Otto	\$2,500	WM

Water Decree Implementation	Create GIS database of the Honey Lake Valley water system.	12/31/17	Otto, Sims	\$2,500	WM, SWRP, DOC
Water Decree Implementation	Develop Operations Manual	2/28/18	Otto, Sims	\$5,000	WM
Water Decree Implementation	Develop GIS database of diversions	6/30/2018	Otto, Sims	\$2,500	WM
Water Decree Implementation	Assess all diversions for lockable and measurable capacity.	2/28/2018	Otto	\$2,500	WM
Water Decree Implementation	Develop policy necessary to enforce water code violations.	2/28/2018	Otto, Sims	\$3,000	WM
WAC	Participate in WAC monthly meetings.	Monthly	Otto	\$2,500	WM
Water Decree Implementation	Develop FY17 Annual Report/Water Usage Report	11/30/2017	Otto, Sims	\$1,000	WM

Strategic Issue 2: Stay Relevant to the Conservation Needs of the Community.

Goal 2.1: The HLVRCD contributes to improved and restored health conditions of forested lands within the District, with a focus on the issues of fuel hazard, insect and disease infestations, invasive weeds, conifer encroachment, tree density, and species composition.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Forest Fuel Hazard Reduction	Provide technical assistance to 1 landowner.	10/31/17	Sims	\$1,000	RCD
Special Weed Action Team	Provide leadership to SWAT by signing onto MOU, scheduling & facilitating meetings, working with partners to develop a Strategic Plan, & implement Strategic Plan	06/30/18	Board, Sims	\$2,000	RCD
Conservation Education	Hold 1 workshop/field trip regarding Forest Health issues.	6/30/2018	Sims	\$1,500	RCD, SNC
Project Development	Develop 1 Forest Health Project and apply for funding to implement	9/1/2017; 3/31/2018	Sims	\$2,500	RCD
Project Development Assistance to Others (Fee for Service)	Market Fee for Service program. Enter into at least 1 Fee for Service contract.	6/30/18	Sims	\$500	RCD

Goal 2.2: The HLVRCD contributes to improved water quality and quantity conditions within the District.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Conservation Education	Establish irrigation management training and technical assistance program	12/31/17	Sims, Otto	\$1,000	RCD, WM
Building Relationships	Build relationship with one agency that provides funding for agricultural water efficiency	6/30/18	Sims, Otto	\$1,000	RCD, WM
Project Development	Work with water users on the Old Channel to develop project and apply for funding to address water quality and quantity issues.	12/31/17	Sims, Otto	\$2,500	RCD, WM, SWRP
Project Development	Work with LIC water users to develop project and apply for funding to address water quality and quantity issues.	3/31/18	Sims, Otto	\$2,500	RCD, WM, SWRP
Project Development	Work with Baxter Creek water users to develop project and apply for funding to address Deep Cut.	6/30/18	Sims, Otto	\$2,500	RCD, WM, SWRP
Project Development	Identify 1 landowner & partners to develop & acquire funding for a stream or meadow restoration project.	6/30/18	Sims, Otto		RCD

Strategic Issue 3: Capture conservation opportunities, as appropriate.

Goal 3.1: The HLVRCD acts on opportunities in the following areas when resources can be effectively used or obtained to assist others (landowner, partner, organization, agency, etc.): agriculture land conversion, climate change, range health, soil health, and wildlife.

Project/Program	Activity	Timing	Lead	Total Cost	Funding Source
Conservation Planning	Establish Adobt-A-Highway Project with CalTrans	12/15/17	Sims, Wheeler	\$250	RCD
Conservation Planning	Assist 2 landowners to develop conservation plans and implement projects	6/30/2018	Sims	\$8,000	NRCS CO-OP

Buffalo Skedaddle Sage Grouse Working Group	Attend monthly meetings of the Buffalo Skedaddle Sage Grouse Working Group	Monthly to 6/30/2018	Sims	\$2,000	RCD
Buffalo Skedaddle Sage Grouse Working Group	Work with project partners to develop juniper removal and meadow restoration projects in the Horse Lake Planning area	9/1/2017	Sims	\$2,000	RCD
Lahontan Basins IRWM RWMG	Participate in quarterly Lahontan Basins IRWM RWMG meetings	Quarterly	Sims, Claypool	\$2,000	RCD
North Cal-Neva RC&D	Participate in Bi-annual meetings of the RC&D and monthly Executive Board meetings	Monthly	Sims	\$1,000	RCD
Partnership Development & Assistance	Look for opportunities to work with others to jointly develop project proposals, submit grant applications, implement & administer awarded projects in alignment with RCD mission.	As opportunities are presented	Sims	\$1,000	RCD

1 What's a Resource Conservation District and What does it Do?

2 RCD 101, and introduction.

3 Many of you may have heard of Resource Conservation Districts. You may receive the services of our
4 local Watermaster, Mitch Otto, to manage water allocations for your stock and crops. Maybe you
5 stopped by the RCD's chili booth at the last Lassen Land and Trials Trust chili cook off to taste our chili
6 entry in that event. Irrigation improvements and efficiency? We've helped with that also and much
7 more.

8 The Honey Lake Valley Resource Conservation District, your local district, was formed in 1956. It is a
9 special district of the state of California, set up under California law to be a locally governed agency with
10 their own independent board of directors. Currently, some of the projects we're involved with are:
11 local fire safe efforts with the Lassen County Fire Safe Council, the Lahonton Basin Integrated Regional
12 Water Management Plan and Storm Water and flooding efforts, rangeland management for the Greater
13 Sage Grouse habitat improvement, the Special Weed Action Team which will help coordinate treatment
14 of invasive plants like Scotch and Yellow Star Thistle and Perennial Pepper Weed, as well as other locally
15 impactful endeavors.

16 RCDs are special districts that are a good example of functional local government. They are responsive
17 and accountable to the communities they are in and effectively promote local conservation goals. Since
18 most RCDs do not receive tax payer funding, we bring millions of dollars to local communities through
19 conservation projects funded through grants and private contributions. RCDs that do receive tax dollars
20 return every dollar back to their communities 10 fold on average. Many districts seek to be leaders in
21 on-the-ground conservation efforts by actively seeking out local partnerships in agriculture, resource
22 management, and business, and with private individuals and groups. This is true for the RCD in Lassen
23 County, as we seek active partners and participation within the communities of our County.

24 The Honey Lake Valley Resource Conservation District is a member of the California Association of
25 Resource Conservation Districts (CARCD), a statewide group comprised of multiple independent RCD's
26 that each work to fulfill the needs of our various communities and areas. The 97 resource conservation
27 districts statewide are the center of locally led conservation in their communities and accomplish
28 thousands of practical, hands-on conservation projects every year. Often these projects involve
29 agriculture and private land, but are not strictly limited in this regard. With education, planning and
30 deliverable services, fisheries and habitat improvements, carbon farming and sequestration, water use
31 efficiency and much, much more, an RCD's focus is multifaceted, tailored to their service areas current
32 needs, beneficial and anticipatory of what will best serve future generations.

33 What's the HLVRCD looking into for the future that can be of benefit to our area businesses, the
34 environment and the people who call Lassen County home? We're hoping to be working, through a
35 grant from Cal Recycle, to clean up the waste and debris left over from illegal marijuana grows on
36 private working lands. Non source point pollution within the Susan River Watershed is starting to be
37 tackled via a project with the Susanville Indian Rancheria. As the name implies, this is the casual
38 pollution that runs off our yards, streets and other incidental sources that can threaten our water
39 quality and watershed health.

40 What about a way to increase crop yields per acre, help the environment and the RCD, and add to the
41 bottom line of your agricultural business through carbon farming practices? Community Gardens, farm
42 trails tours, support for new and diversified agricultural Entrepreneurship? Educational partnerships
43 with our local schools and college to get students actively involved in conservation and provide much
44 needed data on our local lands, waters and wildlife? Voluntary ground water monitoring to help in
45 understanding our basins dynamics, manage a finite resource better and plan appropriately for the
46 future. How do we prepare for cyclical, extended drought as a consequence of climate change? What
47 other ideas might you come up with given a voice and the means to be heard?

48 Your local RCD board of directors meets on the 4th Wednesday of the month, April-October @
49 5:30 pm and November-March @ 3:30 pm at the HLVRCO office, 170 Russell Ave. Susanville, CA.
50 We are collocated in the NRCS office, which I'm sure some of you are familiar with, across the
51 street from the Fair and Agriculture offices for Lassen County. The meetings are open to the public
52 and your participation and input is vital and always welcome. The RCD works best when we know
53 what ideas, needs and concerns you the citizens we serve have. For more information, answers to
54 your questions, and more, check our web site at www.honeylakevalleyrcd.org or contact one of
55 the directors and staff via the links on the web site.



Lozano Smith, LLP

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February 12, 2018

Ms. Merry Wheeler, Executive Secretary
 Honey Lake Valley Resource Conservation District
 170 Russell Avenue, Suite C
 Susanville, CA 96130

Client: 001839

For Professional Services Rendered Through January 31, 2018

ACCOUNT SUMMARY

Matter	Invoice #	Previous Balance	Current Charges	Less Payments	Total Due
000001	2044851	\$0.00	\$319.00	\$0.00	\$319.00

Total Current Charges **\$319.00**

Total due **\$319.00**



Lozano Smith, LLP

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February 12, 2018

Ms. Merry Wheeler, Executive Secretary
 Honey Lake Valley Resource Conservation District
 170 Russell Avenue, Suite C
 Susanville, CA 96130

Client: 001839
 Matter: 000001
 Invoice # 2044851

Page: 1

RE: General Legal Matters

For Legal Services Rendered Through January 31, 2018

Legal Services

Date	Person	Description of Legal Services	Time	Rate	Amount
01/15/2018	DEB	Review materials from Board President regarding pending Board and personnel matters and respond, as needed.	0.40	\$290.00	\$116.00
01/17/2018	WPC	Analyze personnel issue.	0.30	\$290.00	\$87.00
01/22/2018	DEB	Review District personnel policies and provide further advice to Board President regarding pending matter.	0.40	\$290.00	\$116.00
Total Legal Services			1.10		\$319.00

Legal Services Recap

Person		Time	Rate	Amount
WPC	William P. Curley III	0.30	\$290.00	\$87.00
DEB	Dale E. Bacigalupi	0.80	\$290.00	\$232.00

Invoice Summary

	<u>Totals</u>
Total Legal Services	\$319.00
Total Current Charges	\$319.00

Total Due \$319.00