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Date: August 4, 2016

Dear Interested Citizen:

The Forest Service, Tahoe National Forest, Yuba River Ranger District is seeking comments on the Cal Ida Trail Project Preliminary Environmental Assessment. The Cal Ida Trail Project proposes to construct a new multi-use motorized single-track trail connecting the Cal-Ida area to the greater Downieville trail system. The connection would successfully link the Hall's Ranch trail to the Chimney Rock trail. The connection would also provide access to the Fiddle Creek Trail and Trailhead near Cal Ida Campground. This would provide additional recreational opportunities while mitigating impacts to natural resources such as wildlife, watershed and soils, as well as realigning existing trail segments to provide for a sustainable trail system, address erosion concerns, and improve trail user experience.

The 20 mile project area encompasses national forest lands, located west and northwest of the community of Downieville, and north of the Indian Valley area (T19N,R9E; T20N, R9&10E; and T21N; R10E; Multiple Secs.), north of Hwy 49 off Cal-Ida Rd and parallel to Forest Road 25, all within Sierra County.

The preliminary Cal Ida Trail Project Environmental Assessment is available for review at the Yuba River Ranger District, 15924 Highway 49, Camptonville, CA 95922; or, on-line at: http://fs.usda.gov/projects/tahoe/landmanagement/projects.

This project is subject to the pre-decisional administrative review (objection) process pursuant to 36 CFR 218, Subparts A and B. Only those who submit timely and project-specific written comments during a designated opportunity for public comment are eligible to file a subsequent objection. Individuals or representatives from an entity submitting timely and project-specific written comments must sign the comments or verify identity upon request.

The Forest Service will accept comments on this proposal for 30 days following the publication of the opportunity to comment legal notice in the Union (Grass Valley, CA), which is the exclusive means for calculating the comment period. Commenters should not rely upon dates or timeframe information provided by any other source. It is the commenter's responsibility to ensure that their comments are received by the Forest Service in a timely manner (36 CFR 218.25).

Written comments should be submitted to: Yuba River Ranger District; Attn: Cal Ida Trail EA; Yuba River Ranger District, 15924 HWY 49, Camptonville, CA 96922. Comments may be submitted by FAX (530) 288-0727 or by hand-delivery to the address shown above during business hours (Monday-Saturday 8:00am to 4:30pm). Electronic comments, in common (.doc, .pdf, .rtf, .txt, etc.) formats, may be submitted to: FS-comments-pacificsouthwest-tahoe-yuharriner@fs.fed.us with Subject: Cal Ida Trail EA. Names of commenters will be part of the public record subject to the Freedom of Information Act.

For additional information, contact Paul Hart at the Yuba River Ranger District; (530) 478-6353.

Sincerely,

KAREN L. HAYDEN
District Ranger

*****LEGAL NOTCE*****

OPPORTUNITY TO COMMENT

Cal Ida Trail Project

Environmental Assessment

Tahoe National Forest

Yuba River Ranger District

Sierra County, CA

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For additional information, contact Paul Hart or Dennis Stevens, at the Yuba River Ranger District; or, call (530) 478-6253.

USDA

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Forest
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Pacific
Southwest
Region

August 2016

Preliminary Environmental Assessment for the Cal Ida Trail Project

Tahoe National Forest – Yuba River Ranger District

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Cal Ida Trail Project

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ENVIRONMENTAL ASSESSMENT
for the
Cal Ida Trail Project

USDA Forest Service – Tahoe National Forest – Yuba River Ranger District

Project located in Sierra County, California

Chapter I – Purpose, Need, and Proposed Action

Introduction/Background

The Forest Service is proposing to construct a new multi-use motorized single-track trail connecting the Cal-Ida area to the greater Downieville trail system. The connection would successfully link the Hall's Ranch trail to the Chimney Rock trail. The connection would also provide access to the Fiddle Creek Trail and Trailhead near Cal Ida Campground. This would provide additional recreational opportunities while mitigating impacts to natural resources such as wildlife, watershed and soils, as well as realigning existing trail segments to provide for a sustainable trail system, address erosion concerns, and improve trail user experience. This action is consistent with Forest Plan management direction in the *Tahoe National Forest Land and Resource Management Plan* (1990) as amended by the *Sierra Nevada Forest Plan Amendment Record of Decision* (SNFPA ROD 2004). The name of the project is the "Cal Ida Trail."

Downieville California is a world famous hub for motorcyclist and mountain bike trail opportunities available on the National Forest System Lands that surround the area. This project will analyze and document the environmental effects of a proposal to construct a multi-use motorized single-track trail (Cal Ida Trail) that would connect the trail network surrounding Cal Ida to the greater Downieville trail system.

The 20 mile project area encompasses national forest lands, located west and northwest of the community of Downieville, and north of the Indian Valley area (T19N,R9E; T20N, R9&10E; and T21N; R10E; Multiple Secs.), north of Hwy 49 off Cal-Ida Rd and parallel to Forest Road 25), all within Sierra County.

Purpose and Need

Over the last several years there has been a steady increase in recreational use in this area, which is causing user conflicts on the current trail system. The demand for additional trails and recreational experiences is evident in the number of users on the current trail system. Because of this heavy use, many issues have arisen including the deteriorating condition of system and non-system trails as well as increased concerns for impacts to natural resources such as wildlife, watershed and soil conditions, recreational experience and vegetation.

The purpose of the Cal-Ida Trail project is to respond to resource impacts from increasing and changing demands for trail use and other motorized dispersed recreation on National Forest System lands, to

provide managed trails that are sustainable, and to improve the safety of visitors within the Downieville area. This should result in enhanced recreation opportunities and experience; provide additional outfitter & guiding opportunities, mitigation of existing impacts to wildlife habitat, archaeological sites, and soil and water resources; and should address community interests and safety.

Proposed Action

The following proposed action has been developed to meet the project's purpose and need. The Proposed Action consists of constructing a new trail that would connect Hall's Ranch Trail to Chimney Rock Trail and the greater trail system in Downieville. The actions include:

New Single-track Trail Construction (Approximately 20 miles)

Best management practices (BMPs) for trail construction as identified in the Forest Service Trails Handbook and Specifications for Construction and Maintenance of Trails as well as design features to protect Forest resources would be incorporated into trail design and construction (See Trail Construction BMPs in Appendix C).

The proposed trail layout is designed to avoid all California spotted owl and goshawk activity centers, any known threatened/endangered/sensitive (TES) plant locations, and all known archaeological resources.

Trail Relocation and Improvement

Where natural resources are a concern, trails would be relocated to provide for resource protection and sustainability. Abandoned trail segments would be closed and rehabilitated.

These actions are described below:

> **General Trail Signage and Information:** Replace and improve trail signs as needed to inform the public on current and proposed trail use restrictions to increase compliance and safe, sustainable use of system trails.
>
> **General Trail System (Less than 1 mile):** Realign existing system trails where the current location is resulting in resource impacts or cannot be adequately maintained to standard to provide for a sustainable trail system, address erosion concerns, and improve trail user experience.

Locations of proposed trails and reroutes shown on maps are approximate.

All proposed activities would adhere to the Standards and Guidelines contained within the *Tahoe National Forest Land and Resource Management Plan* (1990) as amended by the *Record of Decision for the Sierra Nevada Forest Plan Amendment* (2004). Future projects would require additional public involvement, site-specific environmental analyses, and separate decisions as required under NEPA.

Public Involvement/Scoping

This project was originally published in the Tahoe National Forest's quarterly *Schedule of Proposed Actions* (SOPA) in January of 2015 and every issue since that time. A public scoping letter was mailed to numerous potentially interested and/or affected individuals on April 1, 2016. A public notice was also put in Grass Valley's *The Union* Newspaper, published on April 4, 2016, and in Downieville's *Mountain Messenger* on April 7, 2016. As a result of this public scoping, Yuba River Ranger District received a total of three letters of comment, plus two requests to be kept informed. These comments were used to identify potential issues associated with the proposed action.

Issues

Issues have a cause-effect relationship to the actions under consideration. An issue statement describes a specific action and the environmental effect(s) expected to result from that action. Cause-effect statements provide a way to understand and focus on the issues relevant to a particular decision. Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand. Issues are identified during scoping early in the process to help set the scope of the actions, alternatives, and effects to consider.

The scoping input letters received were reviewed by the Responsible Official. All comments received through scoping consisted of questions about the proposal and/or recommendations for designing the proposed action. The Responsible Official determined that scoping input received on the Cal Ida Trail proposed action did not raise issues that would require development of additional alternatives or additional environmental effects analyses. The comments received during scoping are addressed with explanations and responses in Appendix B of this EA.

Decision to be Made

The Responsible Official will decide whether to approve the proposed action as presented in this document or choose to not implement any of the actions proposed. The decision would likely be made in late 2016, and implementation beginning in 2017 or 2018.

Chapter II – Alternatives Considered

Alternatives

Alternative A – Proposed Action

This alternative is the Proposed Action, as presented in Chapter 1 (See page 4) of this environmental assessment. Below is a summary of the project treatments.

Table 2-1. Alternative A – Cal Ida Trail Project Treatment Summary.

Treatment	Total Treatment Miles
New single-track Trail construction	20
Trail Relocation and Improvement (Realignment)	Less than 1
Total	**20**

All proposed activities would adhere to the Standards and Guidelines contained within the *Tahoe National Forest Land and Resource Management Plan* (1990) as amended by the *Record of Decision for the Sierra Nevada Forest Plan Amendment* (2004). Proposed management activities are consistent with the applicable forest-wide and land allocation-specific standards and guidelines described in the 2004 SNFPA ROD (pp. 49 through 66). Alternative A is consistent with the *Tahoe National Forest Land and Resource Management Plan* (LRMP), as amended (36 CFR 219.10 (e)[1]).

Alternative B - (No Action)

This alternative does not implement any of actions proposed. No new trail construction would be accomplished. No trail relocation/realignment would be completed. New trail signage would not be installed.

Under this alternative, routine land stewardship, including fire suppression, minimal road and/or trail maintenance, or other administrative activities that address threats to life and property, would continue.

Management Requirements under Alternative A

In response to both internal and public comments on the proposal, management requirements were developed to reduce or prevent some of the potential impacts the various proposed actions may cause. The following management requirements would be applied to Alternative A.

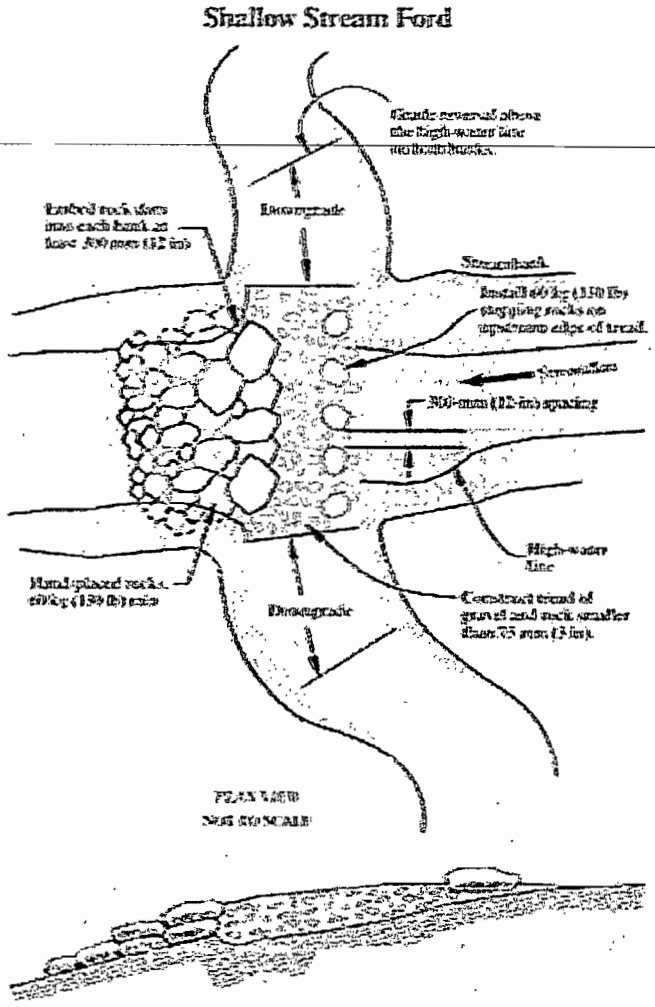
[1] 1982 Planning Rule under which the existing Forest Plan was developed.

Table 2-2. Cal Ida Mine Trail Project Management Requirements

Area of Concern	Management Requirement Designed to Reduce or Prevent Undesirable Effect	Responsible Persons
Cultural Resources - Management of Linear Features.	Existing breaches may be used; if necessary, new breaches would be designated by the District Archaeologist.	District Archaeologist, Contract Specialist, Service Contract COR, Trail Construction Team
Cultural Resources - Management of Sites.	Protect cultural resources with posted and/or flagged control areas. Designate sites on the ground prior to work. Trail Construction Team and/or Archaeologist would walk all affected sites prior to start of construction activities.	District Archaeologist, Contract Specialist, Service Contract COR, Trail Construction Team
Botanical Resources – Equipment Cleaning	All equipment and vehicles (Forest Service and contracted) operating off-road must be free of invasive plant material before moving into the project area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Cleaning shall occur at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area.	District Botanist, Layout/Contract Specialist, and Service Contract COR
Botanical Resources – Equipment Staging	Do not stage equipment or crews in adjacent TES or TNF watch list occurrences during construction. These areas will be flagged in the field and identified on project maps.	District Botanist, Layout/Contract Specialist, and Service Contract COR
Botanical Resources – Weed-Free Construction materials	All gravel, aggregate, fill, mulch, topsoil, erosion control materials and other construction materials are required to be weed-free. When possible, use onsite materials, unless contaminated with invasive species. Otherwise, obtain weed-free materials from sources that have been certified as weed-free.	District Botanist, Layout/Contract Specialist, and Service Contract COR
Wildlife – Northern goshawk	To protect the northern goshawk, Limit the Operating Period for trail construction so that activities do not occur from February 15 through September 15 (unless surveys determine that this is not necessary) in the following trail segments: Within Section 24 SW1/4 and Section 25 NW ¼, Township 20N, Range 9E.	District biologist, Layout/Contract Specialist, Fuels Specialist, and Service Contract COR
Wildlife – Bats	Report all mine openings to a wildlife biologist that are identified during project layout. Coordinate any trail construction within 500 feet of mine openings.	District Biologist, Layout/Contract Specialist

Area of Concern	Management Requirement Designed to Reduce or Prevent Undesirable Effect	Responsible Persons
Wildlife - TES	If new Threatened, Endangered, or Forest Service Sensitive (TES) species are listed or discovered, or nesting TES are found within 0.25 mile of activities, a limited operating period will be implemented as recommended by a qualified biologist.	District Biologist, Layout/Contract Specialist, and Service Contract COR
Wildlife/ Soils—Snags and Downed Wood	Fall and leave hazardous snags to recruit dead wood	Layout/Contract Specialist, and Service Contract COR
Wildlife—large trees	Locate trail to avoid cutting large trees, and trees with evidence of wildlife use (eg. cavities, nests).	Wildlife Biologist, Layout/Contract Specialist, and Service Contract COR
Aquatic resources	Avoid damage to riparian vegetation during trail construction.	Layout, Contract Specialist
Watershed, Soils, & Aquatic Resources – Shallow stream fords.	When constructing shallow stream fords, locate in shallower portions of the stream. The approaches should climb a short distance above the typical high water line so that water isn't channeled down the tread. Avoid locations where the stream turns, because the water will undercut approaches on the outside of a turn. The tread in the ford should be level, ideally made of rock or medium sized gravel that provides solid footing. The plan is to even out the waterflow through the ford so the gravel-sized material isn't washed away, leaving only cobble or boulders. See figure 1.	Trail Construction Team

Area of Concern	Management Requirement Designed to Reduce or Prevent Undesirable Effect	Responsible Persons
Watershed, Soils, & Aquatic Resources – Trail approaches to watercourse crossings.	Design watercourse crossings to avoid diversion of flow down the trail should the crossing fail. Where possible, make crossing approaches short and level, or reverse the grade if possible. Install cross drainage (cut-off waterbreaks) at crossings to prevent water and sediment from being channeled directly into watercourses. Locate cut-off waterbreaks as close to the crossing as possible without being hydrologically connected to the watercourse. Armor steep crossing approaches with stable aggregate or trail-hardening materials. Where possible (for example, at bridges or arch culverts), reverse the grade of the crossing approaches so runoff drains away from the watercourse.	Trail Construction Team
Watershed, Soils, & Aquatic Resources – Trail Decommissioning	On decommissioned trail sections, maintain at least 70 percent effective soil cover prior to winter precipitation.	Trail Construction Team
Watershed, Soils, & Aquatic Resources – Trail Monitoring	Follow BMPs 4.7.1-4.7.8. (Listed below.) BMP 4.7.5 requires trail monitoring once at least every three years. It also requires temporarily close trails that pose immediate significant threats to water quality. BMP 4.7.6 requires closing newly constructed trail for 1 season.	Trail Construction Team



In addition to the above listed management requirements, the following BMPs to protect water quality and riparian resources, listed below, would be followed.

Table 2-3. Cal Ida Trail Project Best Management Practices (BMPs)

Summary of Applicable BMPs

Best Management Practice	Project Application Method
Timber Management	
1.3 Determining Surface Erosion Hazard	Where the post-project hazard is predicted to be "moderate," an onsite evaluation is conducted to determine the need for erosion control measures. Where the hazard is predicted to be "high," or "very high," erosion-control measures are necessary to reduce the potential risk of accelerated erosion to a low or moderate level.

Summary of Applicable BMPs

Best Management Practice	Project Application Method
1.4 Using Sale Area Maps and/or Project Maps for Designating Water-Quality Protection Needs	Water-quality protection features will be designated on the sale area map or project map.
1.5 Limiting the Operating Period of Project Activities	"Limited Operating Period," will be used in to limit the operation to specified periods when adverse environmental effects are unlikely. This can be used to close down operations due to the rainy season, high water, and other adverse operating conditions, to protect resources.
1.6 Protecting Unstable Lands	Where unstable lands are delineated, they are taken out of suitable forest lands and are reclassified as unsuitable forest land.
1.13 Erosion Prevention and Control Measures during project implementation	Equipment will not be operated when ground conditions are such that excessive damage will result. The kinds and intensity of control work required will be adjusted to ground and weather conditions, with emphasis on the need to control overland runoff, erosion, and sedimentation. Erosion-control work required by the contract will be kept current. At certain times of the year this means daily, if precipitation is likely, or at least weekly when precipitation is predicted for the weekend.
1.19 Stream course and Aquatic Protection	Conduct management actions to provide unobstructed passage of streamflow and control sediment and other pollutants entering stream courses.
2.5 Water Source Development and Utilization	Regular monitoring of water supply developments, during construction and use, and enforcement of contract and sale clauses, specifications, and restrictions is the responsibility of inspectors, contracting officer representatives, engineering representatives, sale administrators, and force account crew foreman. Use techniques listed. Develop and implement Erosion Control Plan for water supply site construction and us.
2.8 Stream Crossings	See listed techniques. The forest hydrologist works in conjunction with engineering and administrative personnel to provide additional monitoring and evaluation during implementation, as needed.
2.11 Equipment Refueling and Servicing	Temporary refueling and servicing will occur only at approved locations, which are well away from riparian resources. Develop or use an existing fuel and chemical management plan.
2.13 Erosion Control Plan	An erosion control plan will be developed to minimize sediment during and after project activity has been completed.
5.1 Soil-disturbing Treatments on the Contour	Following NEPA procedures and using interdisciplinary team input, project planners will be responsible for formulating the appropriate contract provisions and/or mitigation measures for the contract, or project plans.
5.2 Slope Limitations for Mechanical Equipment Operation	Project planners will be responsible for ensuring that appropriate equipment operation provisions are included in the decision and activity-controlling documents.

Summary of Applicable BMPs

Best Management Practice	Project Application Method
5.6 Soil Moisture Limitations for Mechanical Equipment Operations	The project coordinator will determine when optimum soil conditions exist, and administer the operation to prevent adverse soil effects, in addition to suspending, or terminating operations for contracted projects as soil moisture conditions warrant.
7.8 Cumulative Off-site Watershed Effects	CWE susceptibility evaluations and development of mitigative measures are accomplished through the environmental documentation process, using an interdisciplinary approach, guided by the Regional methodology.

BMP 4.7.1 - Planning

In:
a. Areas prone to mass wasting,
b. Slopes steeper than 55 percent,
c. Slopes steeper than 45 percent where the erosion potential is high or extreme,

Limit steep pitches to less than 200 feet where possible.

Identify trail segments causing adverse impacts to water resources and prioritize mitigation measures such as:
a. Relocate existing trails or trail segments that are in high-risk locations, including SMZs, riparian areas, and meadows, to restore surface and subsurface hydrologic function;
b. Reconstruct trails to improve, modify, or restore effective drainage;
c. Upgrade stream crossings;
d. Develop or update a trail management objective for each trail;
e. Define the recreation experience and level of difficulty the trail is designed to provide.
f. Identify current and future needs and uses of each authorized trail in the trail management objective.
g. Determine whether existing trail design standards are adequate to support the defined recreational experience, and whether impacts to water, aquatic, and riparian resources are likely to result from not following trail management objectives.
h. Identify trails that are managed differently and/or are serving purposes other than those identified in trail management objectives. Modify the objective to match the intended use and management of the trail.
i. Operate the trail as intended by the trail management objectives until they are revised and/or the trail is reconstructed to accommodate different uses.

BMP 4.7.2 - Location and design

Objective: To reduce the risk that sediment originating from designated OHV trails and OHV areas will enter watercourses and water bodies by locating OHV trails to minimize hydrologic connectivity, and by incorporating drainage structures into trail design to disperse concentrated runoff.

Explanation: Proper on-site location and design of OHV trails are essential, particularly at stream crossings (see BMP 4.3).

The amount of sediment delivered to a water body from an OHV trail is affected by runoff concentration and hydrologic connectivity. Properly located and designed drainage structures disperse concentrated runoff. Typically, runoff as overland flow will not penetrate a buffer strip, but runoff concentrated in rills or gullies will.

1. The potential to deliver sediment originating from OHV trails and OHV areas to watercourses and water bodies is a function of the:
   a. number, location, and design of watercourse crossings,
   b. volume and energy of concentrated flow leaving the trail or area,
   c. ability of the intervening terrain to absorb or disperse concentrated flow, including slope gradient and surface cover,
   d. distance between the trail and the receiving water body,
   e. and, inherent erodibility of the soil.

The first four of these five factors determine the hydrologic connectivity between the trail and the watercourse or water body. Watercourses are so important in managing the effects of OHV use on water quality that they have a BMP of their own (BMP 4.3).

Techniques included in this BMP are intended to improve drainage and reduce or eliminate the hydrologic connectivity of trails and watercourses. The risk from OHV use can be managed by using the appropriate techniques from the following list, adapted as needed to local site conditions.

2. Implementation Techniques:

BMP 4.7.2 – Location and design

Trail Location:

a. Locate trails and drainage structures to minimize hydrologic connectivity.
b. Limit the number of watercourse crossings to those needed to meet the recreational objective.
c. Maximize the filter distance between the trail and the water body.
d. Locate drainage structures where dispersion or absorption of runoff is effective.
e. Avoid sensitive areas such as riparian areas, wetlands, meadows, bogs, fens, inner gorges, and unstable landforms.
f. Avoid the capture, diversion, and/or concentration of runoff from slopes adjacent to OHV trails.
g. Locate steep trail segments on well-armored locations than can sustain traffic without accelerated erosion.

Trail Design to Reduce Potential for Discharge of Pollutants to Surface Waters:

a. Design and space trail drainage structures to remove storm runoff from the trail surface before it concentrates enough to initiate rilling.
b. Design trails to dissipate intercepted water by rolling the grade.

c. Where trails cannot be effectively drained by rolling the grade or using reverse grades, provide trail drainage using OHV rolling dips as specified in Rolling Dips for Drainage of OHV Trails, USDA-Forest Service, Pacific SW Region, January, 2006.
d. Wherever possible, incorporate sediment basins at OHV rolling dip outlets instead of lead off ditches.
e. Where sediment basins cannot be installed, provide energy dissipaters at OHV rolling dip outlets.
f. Design trails to be no wider than necessary to provide the recreation experience defined in the trail management objective.
g. Incorporate design elements that discourage off-route use (for example, taking shortcuts, cutting new lines).
h. Extend drainage outlets beyond the toe of fill or side-cast.
i. Install aggregate, paver blocks, or other surfacing treatment on tread segments that are steep, erodible, or heavily traveled.

BMP 4.7.3 - Watercourse Crossings

Objective: To prevent or minimize the discharge of sediment into water bodies when locating, designing, constructing, reconstructing, and maintaining watercourse crossings.

Explanation: The importance of watercourse crossings in managing the effects of OHV use on water quality cannot be overemphasized. Of the pollutants generated by OHV use, sediment has by far the greatest volume. The greatest potential for sediment delivery is at and near watercourse crossings where the potential for hydrologic connectivity is high. The approaches to watercourse crossings are typically constructed in native soils that can erode and deliver sediment to channels.

Typical OHV watercourse crossings include low-water crossings, fords, bridges, arched pipes, culverts, and permeable fills. Crossing materials and construction vary based on the type of trail and kind of use. To minimize impacts to water quality, design new crossings to provide for the unimpeded flow of water, bed-load, large woody debris, and aquatic organisms. Watercourse crossings must be constructed with minimal disturbance to the streambed and to surface and shallow groundwater resources.

The approaches to watercourse crossings and fill-slopes are especially important. All sediment resulting from erosion on these surfaces is delivered directly into the watercourse.

Construction, reconstruction, and maintenance of watercourse crossings often require equipment to be in and near streams, lakes, and other aquatic habitats. Such disturbance can increase the potential for accelerated erosion and sedimentation by destabilizing stream banks or shorelines, removing vegetation and ground cover, and by exposing and compacting the soil. Permits, including Section 404 permits administered by the U.S. Army Corps of Engineers and Section 401 Water Quality Certifications administered by Regional Water Quality Control Boards may be required for in-stream work associated with stream-crossing construction and maintenance projects.

The risk of sediment delivery at watercourse crossings can be managed by using the appropriate techniques from the following list, adapted as needed to local site conditions. Location, construction,

and maintenance of watercourse crossings, and assessment of watercourse crossing condition, require consultation with qualified personnel.

1. Implementation:

   Crossing Location—

   a. Locate new OHV trails to limit the number of watercourse crossings to those necessary to meet planned activity objectives (see also BMP 4.1).

   b. Avoid long, steep OHV trail segments on approaches to watercourse crossings.

   c. Orient stream crossings perpendicular to the channel in straight and resilient stream reaches.

2. Trail Approaches to Watercourse Crossings—

   a. Where possible, make crossing approaches short and level, or reverse the grade if possible.

   b. Install cross drainage (cut-off waterbreaks) at crossings to prevent water and sediment from being channeled directly into watercourses.

   c. Locate cut-off waterbreaks as close to the crossing as possible without being hydrologically connected to the watercourse.

   d. Armor steep crossing approaches with stable aggregate or trail-hardening materials.

   e. Where possible (for example, at bridges or arch culverts), reverse the grade of the crossing approaches so runoff drains away from the watercourse.

3. Design of Watercourse Crossings—

   a. Design crossing approaches and nearby drainage structures to minimize hydrologic connectivity.

   b. Design watercourse crossings to avoid diversion of flow down the trail should the crossing fail.

   c. Rocked diversion potential prevention dips and rock armoring of downstream crossing fill will be used to minimize potential for failure of trail-stream crossings.

   d. Design watercourse crossings for a 100-year storm event, to allow for unobstructed flow including bed-load and organic debris, and to provide for passage of desired aquatic and terrestrial organisms.

   e. Harden crossing approaches as needed to minimize soil displacement by traffic.

   f. Place stable materials below the outlets of cut-off waterbreaks to dissipate energy.

   g. Set crossing bottoms at natural levels of channel beds.

   h. Harden fords with gravel or cobble of sufficient size and depth to prevent movement by traffic.

   i. Construct watercourse crossings to sustain bankfull dimensions of width, depth and slope, and to maintain streambed and bank resiliency.

   j. Instead of pipe culverts, use bridges, bottomless arches, or buried pipe-arches for watercourses with identifiable floodplains and elevated trail prisms.

   k. Cross wet areas with naturally high water tables with permeable fills, perched culverts, and/or culvert arrays to maintain hydrologic function.

   l. Use Forest Service design specifications for bridges.

4. Construction of Watercourse Crossings—

   a. Conduct construction operations during the least critical periods for water and aquatic resources (usually during low-water conditions and non-spawning/breeding seasons).

   b. Disturb as little area as possible when crossing watercourses.

c. Minimize excavation of stream banks and riparian areas during construction.
d. Keep excavated materials out of channels, floodplains, wetlands, and lakes.
e. Stabilize adjacent areas disturbed during construction.

BMP 4.7.4 - Construction, reconstruction

Objective: To prevent or minimize the discharge of sediment into water bodies during construction, reconstruction, and realignment of OHV trails.

Explanation: Vegetation and ground cover is removed during trail construction and reconstruction, exposing the surface and subsurface soil to erosion. Temporary and long-term erosion control measures are necessary to minimize erosion and sediment delivery. The risk of erosion and sediment delivery from trail construction and reconstruction activities can be managed by using the appropriate techniques from the following list, adapted as needed to local site conditions.

Implementation:

Develop and implement an erosion and sediment control plan that describes:

1. Amount of vegetative clearing and amount of soil material to be moved
2. Proposed erosion control measures to prevent soil detachment and mobilization
3. Proposed sediment control measures to capture mobilized sediment
4. Proposed sequence of implementation for erosion and sediment control treatments

Maintain erosion and sediment control measures to function effectively to prevent discharges of pollutants to surface waters throughout the project area during trail construction and reconstruction.

Keep erosion and sediment control measures sufficiently effective during ground disturbance to allow rapid closure and site stabilization if weather conditions deteriorate. For each project, specify a rainfall probability threshold (generally 30 to 50 percent, based on National Weather Service local forecasts) at which wet-weather sediment control measures will be installed.

Complete all necessary stabilization measures prior to predicted precipitation that could result in surface runoff.

Complete erosion and sediment control treatments before leaving project areas for the winter or rainy season.

Do not operate equipment when ground conditions could result in excessive rutting, or runoff, that could deliver sediment directly to watercourses or water bodies.

When constructing trails near SMZs, do not permit side casting of soil into the SMZ.

Windrow slash and organic litter at the base of fill slopes to trap sediment.
Construct OHV rolling dips when soil moisture is sufficient to allow adequate compaction of OHV rolling dip drainage structures.

Close newly constructed trails for one season to allow consolidation of soils in treads and drainage structures, so treads and structures can better withstand OHV traffic.

BMP 4.7.5 - Monitoring

Objective: To reduce the risk of sediment delivery to water, aquatic, and riparian resources by identifying watercourse crossings and OHV trail segments in need of maintenance, by setting priorities for maintenance, and by identifying OHV areas and trails that require closure and restoration.

Explanation: The Forest Service will schedule systematic monitoring of OHV trails, activities and effects to detect existing and probable impacts to water quality, aquatic and riparian resources. If adverse water-quality effects are occurring, or there is a potential for substantial adverse impacts to water quality, the Forest Service will take immediate corrective action. Corrective actions may include, but are not limited to:

1. Temporary or permanent erosion and sediment control treatments
2. Barriers and signing to redistribute use
3. Temporary closure of trails or areas until completion of corrective action
4. Partial or total closure and restoration of trails or areas
5. Reduction in the amount, type, or season of OHV use

Implementation:

Monitoring specific to OHV trails is included here and in chapter ### of this Water Quality Management Handbook.

Conduct G-Y-R Trail Condition Monitoring as described in Revised OHV Trail Monitoring Form (GYR Form) and Training Guide, USDA-Forest Service, Pacific SW Region, July 30, 2004, to identify trails and watercourse crossings in need of maintenance and to prioritize maintenance activities.

Evaluate all watercourse crossings rated "red" during the G-Y-R Trail Condition Monitoring in consultation with a qualified watershed specialist.

Schedule G-Y-R Trail Condition Monitoring so high-risk and high-maintenance trails are monitored annually; schedule the monitoring of stable trails less frequently, but not less than every 3 years.

Monitor a 2 percent sample of trails each year using the Trail Assessment and Condition Survey (TRACS) protocol.

Monitor the effectiveness of the OHV BMPs using the established the Pacific Southwest Region BMP effectiveness monitoring program.

During routine inspections of OHV trails and while conducting photo point monitoring, use a standardized form to document and report newly created unauthorized OHV use, and trail segments with potential water-quality impacts.

Temporarily close trails that pose immediate significant threats to water quality. As a minimum, install temporary erosion and sediment control treatments prior to the winter season.

Permanently close and restore trails that cannot sustain OHV use without causing adverse effects to the beneficial uses of water per Water Quality Management Handbook objective 2 (page 8).

BMP 4.7.6 - Maintenance and Operations

Objective: To prevent or minimize discharges of sediment into watercourses and water bodies by maintaining OHV trails and associated drainage structures.

Explanation: OHV trails are linear features constructed in native soil that concentrate runoff. Except for occasional hardened segments, trails are not typically surfaced with aggregate. In addition, normal OHV traffic tends to create an outside berm along the tread. Due to the presence of this berm, and to gradients typically steeper than roads, runoff from trails cannot be readily drained by crowning or out-sloping as it can for roads. Drainage and erosion control facilities cease to function if they are worn down by continued traffic. These factors make periodic maintenance and field inspection critically important in minimizing the impacts of OHV use on water quality.

Trail drainage systems may further increase hydrologic connectivity if they deteriorate because of use, weather, or inadequate maintenance. Trail drainage facilities may become inadequate after wildfires or extreme precipitation events due to increased surface runoff, loss of vegetative cover, and stream bulking. New springs and seeps occasionally saturate trails after the occurrence of a wildfire or following unusually wet periods. Timely maintenance can correct these conditions.

Drainage structures constructed with mechanized equipment last longer than hand-constructed drainage. However, trail maintenance with mechanized equipment such as SWECO-type trail tractors and mini-excavators can disturb soil, making it susceptible to erosion. Less aggressive maintenance is often necessary to minimize disturbance of stable sites.

The construction of OHV rolling dips is from native soil material. For these structures to hold up under traffic they need to be well compacted. This requires moist soils and the scheduling of maintenance to exploit the narrow window of time when soil moisture is optimal for compaction.
Obstructions to traffic such as fallen logs and potholes can lead to trail braiding, puddles, and off-trail traffic. Prior to opening trails for use—or periodically for trails open year-round—clearing trails of obstructions can reduce the need for repair and restoration. Volunteers do much of this work.

Trail management objectives define the designed use, type of recreation experience, and the level of difficulty that a trail is designed to provide. It is important to maintain trails to the defined maintenance rotation, designed use and level of difficulty. The deterioration of trails to a more challenging difficulty level due to a lack of maintenance can affect water resources. More challenging trails often produce more sediment.

The effects of trail maintenance activities on water quality are managed by using the appropriate techniques from the following list, adapted as needed to local site conditions.

Implementation

1. Maintenance Planning
   Develop and implement annual maintenance plans based on the results of the G-Y-R and TRACS trail condition surveys and other periodic inspections (see BMP 4.7.5).
   Schedule maintenance to maximize the time period when soils are at optimal moisture levels for soil compaction.
2. Inspection
   Periodically inspect, monitor, and assess trail condition to assist in setting maintenance priorities (see BMP 4.7.5).
   Identify the need for additional drainage structures, spot rocking, or trail hardening to protect and maintain water, aquatic, and riparian resources.
3. After major storm events, to the extent staffing allows, inspect potential problem trails, drainage structures, and runoff patterns and, as needed:
   a. Clean out, repair, or reconstruct drainage structures that are not functioning
   b. Clear the tread of obstructions to traffic that could lead to trail braiding or off-site impacts
4. Maintenance Activities
   As per Regional Forester's direction dated November 8, 2002, follow the maintenance standards and guidelines in A Field Evaluation of the Use of Small Trail Tractors to Maintain and Construct OHV Trails on National Forests in California, USDA-Forest Service Pacific SW Region, August 22, 2001. Specifically, these standards and guidelines are:
   a. Use certified operators, or persons under their direct supervision, to operate trail tractors and mini-excavators.
   b. Construct new trails using R-5 design standards.
   c. Close newly constructed trails to all use for one season.
   d. Construct OHV rolling dips using design standards
   e. Before moving equipment in, examine trails to determine the need for maintenance with mechanical equipment.
   f. Lift the blade and walk equipment across sections of trail that need no maintenance.
   g. Examine drainage structures, and the tread between them, for evidence of tread loss before starting maintenance.
   h. At failed drainage structures, determine the cause of failure before starting repairs.
   i. Recycle soil collected in rolling dip outlets into rolling dip structures or back into the trail tread.
   j. Do not blade outside berms off the trail as side-cast; work berms back into the trail tread.
   k. Repair rills and gullies in treads with soil reclaimed from rolling dip outlets or from outside berms, not with soil bladed from the trail tread.
   l. Blade soil sloughed from cutbanks, or from sideslopes above trails, only as needed to maintain a safe trail; do not undercut or blade into cutbanks.
   m. Repair "stutterbumps" by ripping, blading, and compacting the trail tread when soil is moist (except for non-cohesive soils).
   n. Move the smallest amount of soil necessary to meet the maintenance objective.
   o. Defer maintenance on drainage structures, or do hand maintenance, where soil is too dry or too wet for compaction.
   p. Maintain trail surfaces to dissipate intercepted water in a uniform manner along the trail by the use of OHV rolling dips.

q. Groom trails as needed with a rock rake to keep drainage outlets open.

5. Operations

Restrict OHV travel to designated trails or designated motor vehicle use areas.Prior to opening trails for use, clear obstructions to traffic to avoid braiding.

Close trails or restrict OHV use when the potential for sediment delivery is high or during periods when such use would likely damage the tread or drainage features (also see BMP 4.7.7).

BMP 4.7.7 - Wet-weather operations

Objective: To prevent or minimize the discharge of sediment into water bodies by closing OHV trails to traffic when soil strength is low and trail treads and drainage structures are susceptible to damage.

Explanation: Soil strength decreases as moisture increases. When soil strength is low, OHV traffic can lead to tread failure and damage to drainage structures, including OHV rolling dips. Damage to trail drainage structures increases the risk of sediment delivery to watercourses and water bodies. Soil is easily displaced when soil strength is low. Under these conditions OHV traffic near watercourses and on crossing approaches can result in direct delivery of sediment.

The susceptibility of OHV trails to damage when soil strength is low varies with soil type, amount of traffic, and type of vehicle. Each OHV area has a unique combination of soil types and precipitation patterns that determine the appropriate implementation techniques to minimize impacts to water resources during wet weather.

Implementation: To manage the potential for sediment delivery from OHV use when soils are wet, the Forest Service will use its authority under 36 CFR Section 261 to close designated OHV trails and areas to vehicular travel. This must be done seasonally by a given date, or be based on local conditions such as precipitation, or measurements of soil trafficability. Use the following techniques, as appropriate for local conditions, to manage OHV trail systems under wet weather conditions:

1. Develop a wet-weather management plan.
2. Close trails seasonally for the months when soil moisture is typically high and sedimentation is likely to occur, or
3. Close trails for a core period when soil moisture is expected to be high, and extend the closure period as needed, based on precipitation or soil trafficability, or
4. Determine the levels of soil strength and moisture at which OHV trail damage begins to occur for typical traffic, and close trails when measurements of soil strength predict a high risk of damage to drainage structures and trail treads.

Identify benchmark locations where measurements of precipitation or soil trafficability will be taken to determine when trails will be closed.

Identify trails, or loops of trails, with similar conditions that can be selectively closed.

Identify and reroute or reconstruct trail segments that cause entire trail systems to be closed because they retain moisture longer than is typical for the trail system.

BMP 4.7.8 - Restoration of off-highway vehicle-damaged areas

Objective: To prevent or minimize the discharge of sediment into watercourses and water bodies by permanently restoring OHV-damaged areas, watercourse crossings, and OHV trails no longer designated for use.

Explanation: Loss of surface duff, litter, and vegetation leaves soils exposed and easily eroded. Ruts and tracks created by OHV traffic are unnatural channels that concentrate surface runoff and increase its erosive power. OHV traffic can also compact soils, causing increased surface runoff.

OHV traffic in wet meadows and marshes damages the root network that stabilizes sensitive soils. This can cause stream incision, which lowers the water table and results in a loss of meadow and riparian vegetation.

OHV-damaged areas, and OHV trails no longer available for use, are identified during the route designation process at the forest and watershed level and during trail condition surveys and monitoring (see BMP 4.5). Identify additional trail segments for restoration when rerouting trails.

Restoration of OHV-damaged areas and closed trails includes activities that stabilize and restore the landscape to a more natural state. Treatments can range from simply scattering slash or raking in duff and litter, to watercourse or meadow restoration, to using heavy equipment to break up compaction, fill in incised trails, reshape the area to its natural contour, and install drainage structures. Planting native vegetation helps stabilize slopes by absorbing the impacts of rainfall and overland flow.

Effective closure from OHV traffic is essential to allow restored sites to recover.
Accomplish restoration of OHV-damaged landscapes by using the appropriate techniques from the following list, adapted as needed to local site conditions.

1. Implementation:
   Restoration of Trails and OHV-damaged Areas
   When planning the restoration of OHV-damaged trails and areas, consider the following steps taken from Restoration of OHV-damaged Areas - A Ten-Step Checklist, USDA-Forest Service, Pacific SW Region, May 31, 2006:

   a. Identify the source of the problem
   b. Effectively close the area to OHV traffic
   c. Reshape the land surface to its original contour
   d. Disperse concentrated runoff
   e. Prepare the seedbed
   f. Planting or seeding
   g. Stabilize the surface
   h. Signing
   i. Enforcement and monitoring
   j. Remove signs and barriers

Few sites will require all ten steps. A more complete description of each step is included in the report. Additional information on restoring OHV-damaged areas can be found in Restoration of Off-Highway Degraded Landscapes (in press) USDA-Forest Service, San Dimas Technology and Development Center 2010.

2. Restoration of Watercourse Crossings

Restoration of watercourse crossings should be done under the direction of—or after consulting—a qualified watershed specialist. A permit may be required if in-channel work is necessary.
When restoring OHV watercourse crossings, follow these general guidelines as appropriate:

a. Remove all trail-hardening materials and fill, and restore the channel bottom to its natural gradient and width.
b. If necessary, replace hardening material in the channel with cobble similar in size to the native bed-load.
c. Restore crossing approaches to ensure that surface runoff does not reach the watercourse.
d. If necessary to divert runoff from crossing approaches, install cutoff waterbreaks as close to the crossing as feasible without creating hydrologic connectivity.
e. To the extent possible, reshape the streambanks to their former natural contour.
f. Stabilize and revegetate the streambanks.

Chapter III – Environmental Consequences

Introduction

This chapter discloses the potential consequences or impacts of the alternatives described in Chapter II. Chapter III provides the scientific and analytical basis for the comparison of the environmental consequences of the alternatives summarized in Chapter II.

This chapter discusses the consequences by resource area (i.e., botany, fisheries, fuels, vegetation, wildlife, etc.) as needed that are relevant to the identified important issues, as well as the elements of the finding of no significant impact (FONSI). This chapter compares the consequences of the alternatives, and provides evidence and analysis to determine whether to prepare an environmental impact statement or a finding of no significant impact. The specialist's reports, mentioned and/or incorporated by reference in this document, contain detailed analysis of the consequences of the alternatives. They are located in the project file at the Yuba River Ranger District and are available upon request.

Effects relative to Finding of No Significance Impact (FONSI) elements

In 1978, the Council on Environmental Quality published regulations for implementing the National Environmental Policy Act (NEPA). These regulations (40 CFR Parts 1500-1508) included a definition of "significant" as used in NEPA. The eleven elements of this definition are critical to reducing paperwork through use of a finding of no significant impact (FONSI) when an action would not have a significant effect on the human environment, and is therefore exempt from requirements to prepare an environmental impact statement (EIS). Significance as used in NEPA requires considerations of context and the ten elements of intensity as follows:

(a) Context: Significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, affected interests, and the locality. Significance varies with setting. In the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

The context of the proposed action is limited to minor, local, short-term effects within the area. No significant effects, either long or short term, regional or societal, are anticipated.

The local context of the proposed action is limited to the northwestern portion of the Tahoe National Forest, in locations shown on the attached maps (See Appendix A). The TNF is comprised of approximately 800,000 acres of national forest land. This project's area represents less than one percent of the total Forest landbase. Project activities would occur over a relatively short time period, with the mechanized portion of the trail construction, in all probability, limited to a three year contract. Other project activities would, most likely, all be completed within three to five years of the decision. Also, all these tasks are done seasonally, not year-round. Thus, in terms of the affected area, the proposed action affects a very small portion of the landbase over a relatively short timeframe. Even in the context of seasonality and duration of activities, analyses prepared for this EA indicate that the proposed action would not pose significant short- or long-term effects on forest resources.

(b) Intensity: Refers to the severity of impact, ... and the following ten elements should be considered in evaluating intensity:

1. Impacts both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Effects determinations are summarized in supporting analysis documents and/or in the remaining sections of this chapter. All analyses prepared in support of this document considered both beneficial and adverse effects, but all effects determinations were made on the basis of only adverse effects. The direct and indirect effects are discussed below. (Cumulative effects are addressed in intensity item 7).

Recreation:

The information provided in this section is summarized from the Recreation Report prepared for the Cal Ida Trail Project, which is hereby incorporated by reference. The complete Recreation Report is available in the Cal Ida Trail Project Record.

Direct and Indirect Effects - Alternative A - This alternative should result in enhanced recreation opportunities and experience to OHV's, hikers and mountain cyclists; as well as providing additional outfitter & guiding opportunities. This enhanced experience would come from providing a sustainable single-track trail connection between Cal-Ida and the Downieville area, which then connects riders to a larger network of multiple-use single-track trails. For OHV's, mountain bikes, and hiking user groups the experience of traveling on single-track trails cannot be replicated by traveling on roads, as roads do not provide near the same quality narrow trail experience these user groups seek. The proposed action to build this trail segment as a motorized trail would also provide a consistent management strategy that would reduce trail user confusion and thus, conflict. There is always less confusion if a trail network's management strategy is consistent.

Direct and Indirect Effects - Alternative B - Under the No Action Alternative, the Cal-Ida Trail would not be constructed. There would be no additional impacts to recreation.

Soils and Hydrology:

The information provided in this section is summarized from the Hydrology Report prepared for the Cal Ida Trail Project, which is hereby incorporated by reference. The complete Soils and Hydrology Report is available in the Cal Ida Trail Project Record.

The Tahoe National Forest Land and Resource Management Plan (LRMP 1990), as amended by the Sierra Nevada Forest Plan Amendment (SNFPA 2004), provides direction for maintaining water quality and quantity, protecting streams, lakes, wetlands, and riparian conservation areas; and to prevent excessive, cumulative watershed impacts.

Activity units were evaluated to determine if desired condition for soil and hydrology indicators were met. Soil desired condition are met if tread condition is functional as determined by the Green Yellow Red OHV trail condition monitoring form (GYR form). The measure for this indicator is

miles of trail in the yellow or red condition for the condition codes relating to tread condition. The GYR form is designed to rate segments of trail condition. Green trail segments have functional water control, no accelerated erosion off trail, and minimal tread wear. Yellow segments may have insufficient waterbreaks, rill erosion and/or sediment deposition occurring at waterbreak outlets, or tread incised 6 to 12 inches. Red segments have waterbreaks that no longer divert runoff from the trail, gully erosion occurring at waterbreak outlets, or tread incised greater than 12 inches.

Hydrology desired conditions are met if trail water control is sufficient to prevent hydrologic connectivity. The hydrology indicator is miles of trail hydrologically connected.

Cumulative watershed effects (CWE) are the combined effects of past, present, and future land management activities within a watershed that may affect the watershed's structure or process. The CWE analysis considers a number of assessment methods at multiple scales. The most site-specific assessment is the individual forest assessments that assess the potential for adverse CWE by comparing the current level of watershed disturbance to an estimate of "the upper limit of watershed tolerance to externally applied factors such as climate and land use," called the Threshold of Concern (TOC). The Equivalent Roaded Acre (ERA) is used as the standardized unit of measure for land disturbance and the current level of watershed disturbance is expressed as "percent ERA". The current "percent ERA" of a watershed is compared to the TOC to provide an assessment of CWE potential. ERA coefficients are 1 for new trail construction.

The TOC does not represent the exact point at which cumulative watershed effects will occur. Rather, an ERA/TOC approaching or greater than one serves as a "yellow flag" indicator of increasing susceptibility for significant adverse cumulative effects occurring within a watershed. Susceptibility of CWE generally increases from low to high as the level of land disturbing activities increase towards or past the TOC.

The following section describes the effects of the proposed project (Alternative A) in terms of direct and indirect effects.

Direct and Indirect Hydrologic Effects - Alternative A

Proposed trail construction could result in minor amounts of sediment entering Fiddle Creek, Little Fiddle Creek, Eureka Creek, or Goodyears Creek. Amounts of sediment would depend on rates of accelerated erosion and whether sufficient vegetation exists downslope to filter sediment before entering the channel. Generally, duff and litter below the proposed route are very effective for filtering sediment. Approaches to stream crossings have a higher potential for sediment delivery. Conifers above the trail would continue to add some soil cover to the trail. Following BMPs would limit the slopes and lengths of the stream crossing approaches to decrease the potential for accelerated erosion and sediment entering the channel.

Trail construction is unlikely to result in major impacts to riparian areas. No major impacts to riparian areas were observed on the recently constructed Butcher Ranch connector trail (used for comparative purposes).

Compaction of proposed new trail tread surface would decrease soil porosity and permeability, and increase overland flow. Constructing trails with gradients which are less than one-half the hillslope gradient would minimize the diversion potential.

Beneficial uses of water from the project area watersheds include domestic, municipal, agricultural, and industrial power supply, wildlife and plant habitat, support of cold water ecosystems and aquatic habitats, and contact and non-contact recreation (CA Water Quality Control Board, 2016). The newly constructed trail is not expected to have major impacts to beneficial uses.

There are no documented springs or seeps along the proposed trail.

Direct and Indirect Soils Effects – Alternative A

Soil desired conditions would not be met on approximately 9 acres due to trail construction. Trail construction would remove the top few inches of soil and compact the trail tread surface. By design, topsoil would be removed during trail construction and the trail tread would consist of the more resilient subsurface horizons. This would directly decrease soil productivity and would be a long term impact because continued maintenance would remove encroaching vegetation and soil would remain compacted as trail use continues.

The potential for soil erosion would increase once soil cover is removed. The trail would be designed to limit steep slopes and provide for natural drainage, therefore accelerated erosion is expected to be minimal. The Butcher Ranch connector was constructed with similar design standards to the proposed Cal Ida trail; accelerated erosion on that trail is very minimal and the proposed Cal Ida trail is expected to have similar low rates of accelerated erosion.

Direct and Indirect Effects – Alternative B

Under the No Action Alternative, the Cal Ida Trail would not be constructed. There would be no impacts to soil, water quality, or riparian condition.

Wildlife:

Information used in assessing effects includes: computer Geographical Information System layers (e.g. Digital Orthophoto Quads, Sierra Nevada Forest Plan Amendment Land Allocations, Forest Vegetation and Disturbance layers for public and private land, streams, roads, California spotted owl and northern goshawk Protected Activity Centers and Home Range Core Areas), aerial photos, survey records and species sighting data. Fish and wildlife species-specific surveys conducted in all or portions of the project area include: California spotted owl and northern goshawk. Site-specific stand data includes field review by biologists, Forest GIS layers and Forest vegetation maps.

The following reports address the direct, indirect, and cumulative effects from the alternatives to wildlife species in detail, and they are incorporated into this EA by reference: (1) Biological Evaluation for Birds, Mammals, Amphibians, Reptiles, Fish, and Invertebrates dated July 29, 2016 and (2) Management Indicator Species Report dated July 30, 2016.

This Project is within the range for the Sierra Nevada yellow-legged frog, a federally endangered species. There are no sightings of this species within 5 miles of this project, and this project will not occur within habitat for this species. Therefore, this project will not affect the Sierra Nevada yellow-legged frog. There are no additional federally endangered, threatened, proposed species that range into the project area, nor any proposed or designated critical habitat. The Biological Assessment for this Project has determined that there is no effect from any of the alternatives to any federally protected species.

The following Region 5 Forest Service Sensitive Species, or their habitat, are present either present or have habitats adjacent to this project: California spotted owl, northern goshawk, Townsend's big-eared bat, fringed myotis, and the western bumblebee. The location of the new trail was planned so that it would minimize effects to wildlife as follows: (1) located further than 0.25 miles of any goshawk or California spotted owl nest or roost, (2) located to minimize and avoid crossing riparian areas, (3) avoid steep terrain, and (4) be co-located as much as possible adjacent to existing motorized roads to reduce the distances to which the new trail would add additional noise disturbances from motorized vehicles. Surveys for owls and goshawks were conducted following Region 5 protocol for this project to identify any new territories, and where resource conflicts occurred, the location of the trail was adjusted as previously described to minimize adverse effects to forest resources.

A Biological Evaluation has determined that the action alternative: 1) will not affect the bald eagle, greater sandhill crane, great gray owl, willow flycatcher, pallid bat, American marten, Pacific fisher, Sierra Nevada red fox, California wolverine, western pond turtle, foothill yellow-legged frog, Great Basin ramshorn snail, black Juga snail, Lahontan Lake tui chub, hardhead and California floater, and 2) may affect, but will not lead to a trend toward listing of the California spotted owl, northern goshawk, Townsend's big-eared bat, fringed myotis and the western bumblebee.

Alternative B (No Action) – Direct and Indirect Effects. The No Action Alternative would not affect threatened, endangered, proposed, or Forest Service Sensitive fish or wildlife species because no project actions would be implemented.

Threatened, Endangered, Proposed, or Sensitive Plants and fungi:

Alternative A – Direct, and indirect affects - Based on the limited scope of the proposed action (i.e. construction of trail <5ft wide using only manual construction methods; OHV use restricted to motorcycles and non-motorized users), it is assumed that there will be no effects to any occurrences more than 100ft from the proposed alignment. There is one TES occurrence within 100ft of the proposed alignment: crenulated moonwort (Botrychium crenulatum) (BOCRTNF10). It was last surveyed and flagged in 2016; there were 36 plants (0.2 ac).

There is one Hutchinson's lewisia (*Lewisia kelloggii* ssp. *hutchinsonii*) occurrence (LEKEHTNF13; 50 plants; 1.3 ac) that is 300ft east of trail alignment. It was also flagged for avoidance during construction staging, though it is not anticipated that this area will be used for staging.

During field surveys, suitable habitat was found for the following 16 TES botanical species: upswept moonwort (*Botrychium ascendens*); scalloped moonwort (*Botrychium crenulatum*); common moonwort (*Botrychium lunaria*); Mingan's moonwort (*Botrychium minganense*); western goblin (*Botrychium montanum*); large coralroot (*Cralonia monticola*); clustered lady's slipper (*Cypripedium fasciculatum*); mountain lady's slipper (*Cypripedium montanum*); branched collybia (*Dendrocollybia racemosa*); Butte County fritillary (*Fritillaria eastwoodiae*); Hutchinson's lewisia (*Lewisia kelloggii* ssp. *hutchinsonii*); closed-throated beard-tongue (*Penstemon personatus*); olive phaeocollybia (*Phaeocollybia olivacea*); Sierra bluegrass *Poa sierrae*); stalked orange peel-fungus (*Sowerbyella rhenana*);and Howell's tauschia (*Tauschia howellii*). No suitable habitat was found for any other TES botanical species.

The Cal-Ida Trail project will not affect any federally threatened, endangered, or proposed or any other Forest Service Sensitive botanical species. Determination is based on the lack of occurrences and the absence of suitable habitat known within the project area.

Alternative B – Direct, and indirect affects. The No Action Alternative would not affect threatened, endangered or proposed plants because no project operations would be implemented.

2. The degree to which the proposed action affects public health or safety.

The direct effects of trail construction and maintenance would be that the trails would be safer for travel, and safer for forest visitors, residents, and Forest Service employees.

The proposed actions would have no other effects to public health and safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

Historic/Cultural Resources- The project area is near historic and/or prehistoric sites, but project actions have been designed to avoid cultural resource sites eligible for inclusion in the National Register of Historic Places, with the result that there would be no direct or indirect effects to any cultural resources eligible for inclusion in the National Register. Project actions would fully comply with the National Historic Preservation Act (NHPA), and implementing programmatic agreements (PAs).

Parklands- There are no parklands within the project area.

Prime Farmlands- There are no prime farmlands within the project area.

Wetlands- The project area does not contain peatlands or fens. Riparian/wetland plant communities associated with streams, seeps, and springs, if they exist, will be protected during trail construction.

Wild and Scenic Rivers- The Forest Service recommended that the North Yuba River be designated as a recreation and scenic river, pursuant to the Wild and Scenic Rivers Act (*Record of Decision for the Twenty Westside Rivers Wild and Scenic River Study Report and Final Environmental Impact Statement* 1999). The proposed project area is at least one air mile away from the North Yuba River, and is not visible from populated areas along the North Yuba River or from Highway 49. Visual impacts are expected to be minimal. Implementation of the proposed action would not impact the North Yuba River's outstandingly remarkable values directly, indirectly, or cumulatively.

Ecologically Critical Areas- There are no ecologically critical areas within the project area.

4. The degree to which the effects on the human environment are likely to be highly controversial.

The effects of this project on the quality of the human environment are not likely to be highly controversial. The project was subject to extensive analysis and planning, in addition to requiring the implementation of best management practices (BMPs), mitigation measures, and management requirements listed elsewhere in this document and in the project record. This has resulted in a limited and focused proposed action, which incorporates public concerns into the proposed action.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The proposed actions are routine tasks implemented on a regular basis by the Tahoe National Forest without incurring significant impacts. The results or effects of these actions on the human environment are predictable and known, based on similar past practices. The management requirements, mitigation measures, and best management practices included in the action alternatives, as described this document and the project record would also reduce and minimize any impacts or risks that might have otherwise been uncertain, unique, or unknown.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The proposed actions or any of the alternatives would not establish a precedent for future actions, nor would it represent a decision in principle about a future consideration for other similar projects. Any future decision to treat the same or adjacent areas would be analyzed separately and on its own merits to determine a course of action. Future projects would require additional site-specific analysis and separate decisions as required under NEPA.

There are no future activities (other than routine trail maintenance) planned within this project.

While this project neither proposes, nor schedules, future actions in any of these areas, this document does not prevent the opportunity for future management actions.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions and risks, while ignoring the important residual effects of past natural events, may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions."

The cumulative effects analysis in this EA is also consistent with Forest Service National Environmental Policy Act (NEPA) Regulations (36 CFR 220.4(f)) (July 24, 2008), which state, in part:

> "CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives would add to, modify, or mitigate those effects. The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonable foreseeable future actions) on the affected environment. With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ

regulations, however, do not require agencies to catalogue or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to informed decision-making. (40 CFR 1508.7)"

For these reasons, the analysis of past actions in this section is based on current environmental conditions.

Design features included in the proposed action would avoid, minimize, or reverse adverse cumulative watershed effects and minimize impacts to rare plants, wildlife, aquatic species, and other sensitive resources to the extent that any residual effects would not be cumulatively significant. Biological Evaluations and a Watershed Effects Report that disclose cumulative effects, as well as direct and indirect effects, are in the project file and available from the Yuba River District office.

Evaluation of Cumulative Effects:

A cumulative effect is the consequence on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the actions occur.

i) Cumulative effects on recreation.

Alternative A – Under the Proposed Action, it is expected that the proposed trail construction would attract additional OHV's, hikers, mountain bicyclists and equestrians. Use is expected to increase somewhat due to this proposed new motorized single-track trail opportunity and can be based on general population increases through time. This is because the draw to the area for these user groups is predominately based on the overall single-track trail network experiences (mileage and challenges) available, not just the new enhanced trail opportunities being proposed in this project.

Alternative B – No Action – Under the No Action Alternative, the Cal-Ida Trail would not be constructed. There would be no additional impacts to recreation.

ii) Cumulative effects on soil.

Alternative A - The cumulative effects assessment area for the soil resource is bounded in space with the proposed activity area, where disturbance to soil would take place. The analysis is further bounded in time by the foreseeable future period during which effects of this project could persist as detectable effects and may be short- term or long-term in nature. Past effects are accounted for based on the existing conditions or present time, and discussed in the direct and indirect effects analysis. Reasonably foreseeable future actions are limited to the use of the trail, including tread wear and tread loss due to erosion.

Future tread wear and accelerated erosion are two potential future impacts. These would vary by both climate, season of use, and amount of use. Wet season use can result in tread wear on sections with insufficient drainage where soils remain saturated for extended periods of time. Dry season use

can result in stutterbumps, and tread loss due to mechanical dusting, especially when trail use is high. Loosened tread is also lost during winter precipitation and runoff. Both wet and dry season tread wear can result in trail widening as riders avoid the rough or muddy sections. Based on personal observations, these are usually minor, short term impacts unless deterioration of tread causes tread widening when riders avoid rough sections. By monitoring the trail, these cumulative impacts can be dealt with before resulting in major impacts. Constructing gradually sloped trail minimizes tread wear caused by braking. Furthermore, trail monitoring would help to identify problematic sections so that they can be repaired.

Alternative B – No Action – Under the No Action Alternative, the Cal Ida Trail would not be constructed. There would be no impacts to soil, water quality, or riparian condition.

iii) Cumulative watershed effects.

Ground-disturbing activities can cause both direct and indirect effects that persist through time. The cumulative result of all these effects is the potential to adversely affect downstream beneficial uses of the water. Cumulative watershed effects (CWE) analysis may reveal that even though the proposed activities themselves may not be sufficient to substantially impact the watershed, when analyzed in connection with past and future activities on all ownerships, they may become a cause for concern.

The Pacific Southwest Region (R-5) of the Forest Service has developed a standardized cumulative watershed effects (CWE) analysis (FSH 2509.22) that serves as a surrogate method for determining the risk of delivering excess sediment to streams. This cumulative watershed effects analysis compares: (a) the existing level of land disturbance across all ownerships within a watershed, with (b) an estimate of the upper limit of watershed tolerance to disturbance, referred to as the Threshold of Concern (TOC). The level of land disturbance is measured using Equivalent Roaded Acres (ERAs), whereby all disturbances are equated to an acre of road. The cumulative watershed effects analysis then recovers these disturbances over some period of time following a specified recovery curve. Using this analysis, the calculated ERA of a watershed is compared to the TOC to provide an assessment of the potential for cumulative watershed effects. The TOC is not an exact point at which effects will occur. It is an indicator that a watershed is more susceptible to impacts. As ERA approaches or exceeds the TOC, additional measures are employed to protect and monitor watershed conditions.

The Tahoe National Forest has developed a standard method for determining watershed TOC values. Each watershed is assessed for its ability to withstand erosional processes and handle sediment delivery to stream channels. The assessment is based on climatological, geologic and soils information, on-the-ground surveys of the stream channels and upland areas, and the experience and knowledge of current and previous TNF hydrologists.

ERA coefficients and recovery rates have been developed based on soil monitoring results, literature reviews, and consultation with other hydrologists.

Alternative A (Proposed Action) – An abbreviated Cumulative Watershed Effects analysis was conducted to provide an approximation of cumulative effects for the four HUC7 subwatersheds

within the activity area. Recently completed projects in these subwatersheds include mainly the Red Ant Thinning and Fuels Reduction Project and the Canyon Fuels Health Project. The sum of road and trail ERAs, and past forest management equates to less than 5 percent of subwatersheds area. At these levels, adverse cumulative watershed effects are unlikely. Because of the low ERAs a complete assessment was not conducted.

Alternative B (No Action) - Under the No Action Alternative, the Cal Ida Trail would not be constructed. There would be no impacts to soil, water quality, or riparian condition.

iv) *Cumulative effects on wildlife, aquatic species, and threatened, endangered, or sensitive plant/fungi species.*

Cumulative effects to wildlife consider the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects to fish, wildlife, and rare plants are discussed in detail in the following project documents, which are incorporated by reference: (1) Biological Evaluation for Birds, Mammals, Amphibians, Reptiles, Fish, and Invertebrates, (2) Biological Evaluation for Plants and Fungi, and (3) Management Indicator Species (MIS) Assessment. These documents are located in the project file and are available upon request from the Yuba River Ranger District office. The analyses in these documents consider past, present and reasonably foreseeable effects within the analysis area. In general, the cumulative effects analysis area for wildlife varies by species, but in some cases, assessment areas used to analyze effects expands to include sixth-field watersheds or beyond, to include the home ranges of wide-ranging animals such as forest carnivores, raptors like the California spotted owl and northern goshawk, and deer that may use the project area as a regular part of their home range, or for movement, migration and dispersal.

Wildlife/Aquatic species: The following additional factors in this assessment area were considered in the cumulative effects analysis to wildlife:

Disturbances Related to Road Density— Existing road densities presently range from 3.2 to 5.6 miles of road per square mile (by Legal Section) where the motorized trail proposals from this Project occur. This project would raise road densities so that they range from 3.7 to 6.1 miles of road per square mile. The new trails do not occur within any late successional forests (CWHR 5 or 6 tree size classes), and will not disturb interior habitats used by late-successional associated species. There are no additional road projects that would add cumulative effects to wildlife.

Timber harvest and Vegetation Management on Public and Private Lands— Using a buffer that extends one mile surrounding the proposed trail, vegetation management within National Forest System Lands has not removed or changed the overall vegetation classification types of wildlife habitats within the past 10 years. There are no timber harvest plans or land development projects on private land that would remove or change the current vegetation types.

This project would add cumulative effects to wildlife by increasing motorized route densities in the project area, and subsequently increasing human disturbances and edge effects within wildlife habitats that are adjacent to the new routes. However, the effects from the new trail additions are comparatively small, because they are located in close proximity to existing motorized roads where

road densities are already high. Additionally, the new trail proposals are either located away from important core habitat areas (i.e. spotted owl or goshawk nests, Protected Activity Centers) or they affect a relatively small amount of habitat that is present within the Project Area (This project would not cause a downward trend for any MIS species, and implementing BMPs would minimize potential effects to riparian and downstream habitats.

There are no direct or indirect effects to any federally endangered, threatened, or proposed wildlife species, so there are no cumulative effects from this project to federally protected species. As disclosed in the Project Biological Evaluation, none of the action alternatives would lead to a trend toward listing for any Region 5 Forest Service Sensitive species—California spotted owl, northern goshawk, Townsend's big-eared bat, fringed myotis, and the western bumblebee. As disclosed in the Project MIS Report, none of the action alternatives would alter existing forest-wide trends of the selected MIS species—deer and mountain quail.

TES Plant/Fungi species: In general, the cumulative effects analysis area for rare plants (TES plant species) includes the project area (the area where project operations will occur) and the analysis area (the known distribution of each rare plant/fungus species on TNF system lands).

During field surveys, suitable habitat was found for the following 16 TES botanical species: upswept moonwort (*Botrychium ascendens*); scalloped moonwort (*Botrychium crenulatum*); common moonwort (*Botrychium lunaria*); Mingan's moonwort (*Botrychium minganense*); western goblin (*Botrychium montanum*); large cudonia (*Cudonia monticola*); clustered lady's slipper (*Cypripedium fasciculatum*); mountain lady's slipper (*Cypripedium montanum*); branched collybia (*Dendrocollybia racemosa*); Butte County fritillary (*Fritillaria eastwoodiae*); Hutchinson's lewisia (*Lewisia kelloggii* ssp. *hutchinsonii*); closed-throated beard-tongue (*Penstemon personatus*); olive phaeocollybia (*Phaeocollybia olivacea*); Sierra bluegrass *Poa sierrae*); stalked orange peel-fungus (*Sowerbyella rhenana*);and Howell's tauschia (*Tauschia howellii*). No suitable habitat was found for any other TES botanical species.

It is my determination that the proposed action will not affect crenulated moonwort (*Botrychium crenulatum*). My determination is based on the realignment of the trail that avoids all known occurrences and suitable habitat within the project area as well as the project's management requirements which avoid staging in known occurrences.

It is my determination that the proposed action will not affect upswept moonwort (*Botrychium ascendens*); common moonwort (*Botrychium lunaria*); Mingan's moonwort (*Botrychium minganense*); western goblin (*Botrychium montanum*); large cudonia (*Cudonia monticola*); clustered lady's slipper (*Cypripedium fasciculatum*); mountain lady's slipper (*Cypripedium montanum*); branched collybia (*Dendrocollybia racemosa*); Butte County fritillary (*Fritillaria eastwoodiae*); Hutchinson's lewisia (*Lewisia kelloggii* ssp. *hutchinsonii*); closed-throated beard-tongue (*Penstemon personatus*); olive phaeocollybia (*Phaeocollybia olivacea*); Sierra bluegrass *Poa sierrae*); stalked orange peel-fungus (*Sowerbyella rhenana*);and Howell's tauschia (*Tauschia howellii*). My determination is based on the lack of occurrences in the project area and negligible effects to suitable habitat.

It is my determination that the Cal-Ida Trail project will not affect any federally threatened, endangered, or proposed or any other Forest Service Sensitive botanical species. My determination is based on the lack of occurrences and the absence of suitable habitat known within the project area.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources.

The Cal Ida Trail Project area has been inventoried for cultural resources. The file number for the cultural resource report is R2016051700009 (Smith). The inventory documents the presence of prehistoric and historic archaeological sites and several isolated features. Cultural resources would be managed according to provisions of the National Historic Preservation Act (NHPA) and implementing programmatic agreements (PAs). Adverse effects to cultural resources would be avoided by project design and site avoidance following standard forest practices that have been developed to implement the applicable NHPA provisions.

This action does not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Biological Evaluations have been completed that include analyses of potential effects to federally listed (endangered, threatened) or proposed species. These reports determine that there are no effects from any of the alternatives to any federally threatened, proposed species, or their designated Critical Habitat.

10. Whether the action threatens a violation of Federal, State, or local law or other requirements imposed for the protection of the environment.

The action alternative (Alternative A) would not threaten a violation of Federal law or requirements imposed for the protection of the environment. This alternative is fully consistent with the Endangered Species Act (see No. 9 above). Alternatives A is fully consistent with the with the Tahoe LRMP (1990) as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (2004); and complies with the National Forest Management Act (NFMA) of 1976. NFMA requires all projects to be consistent with the following elements: (a) resource protection, (b) vegetation manipulation, (c) silvicultural practices, (d) even-aged management, (e) riparian areas, (f) soil and water, and (g) diversity.

(a) Resource Protection – The integrated design of Alternative A, including the Management Requirements listed in Chapter II of this EA and detailed in the attached appendices, provide for protection of forest resources, including riparian resources, terrestrial wildlife, aquatic and plant species and their habitat, cultural resources, air quality, soil productivity, and recreational and visual quality resources.

(b) Vegetation manipulation – There would be no vegetation manipulation in completion of this project.

(c) Silvicultural practices – No timber harvesting would occur on this project.

(d) Even-aged management – No group selection harvest or other forms of even-aged management are proposed by the alternatives (Alternatives A (proposed action) and B (no action)).

(e) Riparian areas – Sierra Nevada Forest Plan Amendment (SNFPA) guidelines would be applied to any activities within Riparian Habitat Conservation Areas (RCAs) to protect riparian resources. Any proposed activities in RCAs are designed to minimize disturbance of riparian vegetation, soils, and other aquatic habitat elements.

(f) Soil and water – Working cooperatively with the California State Water Quality Control Board, the Forest Service developed pollution control measures, referred to as Best Management Practices (BMPs) that are applicable to National Forest System lands. The BMPs were evaluated by State Water Quality Control personnel as they were applied on site during management activities. After assessment of the monitoring data and completion of public workshops and hearings, the Forest Service's BMPs were certified by the State and approved by the Environmental Protection Agency (EPA) as the most effective means to control non-point source pollution.

The land treatment measures incorporated into Forest Service BMPs evolved through research and development measures, and have been monitored and modified over several decades with the expressed purpose of improving the measures and making them more effective. On site evaluations of the control measures by State regulatory agencies found the practices were effective in protecting beneficial uses and were certifiable for Forest Service application as their means to protect water quality. The Clean Water Act provided the initial test of effectiveness of the Forest Service non-point pollution control measures by requiring evaluation of the practices by regulatory agencies (State Board and EPA) and the certification and approval of the practices as the "BEST" measures for control.

BMPs are designed to accommodate site-specific conditions. They are tailor-made to account for the complexity and physical and biological variability of the natural environment. In the 1981 Management Agency Agreement between the State Water Resources Control Board and the Forest Service the State agreed that "The practices and procedures set forth in the Forest Service document constitute sound water quality management and, as such, are the best management practices to be implemented for water quality protection and improvement on NFS lands." Further the Water Quality Control Plan for the Central Valley Regional Water Quality Control Board states: "Implementation of the BMPs, in conjunction with monitoring and performance review requirements approved by the State and Regional Boards, is the primary method of meeting the Basin Plan's water quality objectives for the activities to which the BMPs apply."

(g) Diversity – Many of the management requirements and/or BMPs are designed to protect soil and water resources and therefore plant and animal habitats. Standard management requirements also contribute to maintaining diversity in the project area by reducing impacts to species and their

habitats. These are accomplished by minimizing disturbances at nests during the breeding season, protecting riparian vegetation, and maintaining snags, and down woody debris where opportunities occur. The action alternative would not change the seral stage or reduce habitat quality to a degree that would lead to a trend toward listing for any Forest Service Sensitive species, nor would it alter existing forest-wide trends in habitat for Management Indicator Species. Implementing Forest Plan Standard and Guidelines and Management Requirements (see Chapter II of this EA) for this project would protect Forest Service Region 5 Sensitive species, Watchlist Plants, and limit the spread of noxious weeds and invasive species. All of these protect diversity within the project area.

R5 Forest Service Sensitive Species:

Direct, indirect, and cumulative effects on fish, wildlife, and rare plants are discussed in detail in the following project documents, hereby incorporated by reference: (1) Biological Evaluation for Birds, Mammals, Amphibians, Reptiles, Fish, and Invertebrates, (2) Biological Evaluation for Plants and Fungi. These documents are located in the project file and available upon request from the Yuba River Ranger District office.

The Biological Evaluations describe in detail these effects by species. The Biological Evaluation contains the following determination statements from implementing Alternative A:

- No effect to the following sensitive wildlife: bald eagle, willow flycatcher, greater sandhill crane, pallid bat, Sierra Nevada red fox, Pacific fisher, American marten, California wolverine, western pond turtle, foothill yellow-legged frog, Great Basin ramshorn snail, black Juga snail, Lahontan Lake tui chub, hardhead, or California floater.

- The Cal-Ida Trail project will not affect any federally threatened, endangered, or proposed or any other Forest Service Sensitive botanical species. Determination is based on the lack of occurrences and the absence of suitable habitat known within the project area.

- May affect, but is not likely to result in a trend toward federal listing or loss of viability for the following sensitive wildlife: California spotted owl, northern goshawk, Townsend's big-eared bat, fringed myotis and the western bumblebee.

Invasive Plant Risk Assessment:

Other than cheatgrass, there are no invasive plant occurrences within the project area or even within 300 ft. of the proposed trail alignments; as such, the risk from known infestations is very low. The overall habitat vulnerability is low, as the area is dominated by open, mature forest and chaparral which are have a relatively resistant to invasion. Approximately 21.3 ac of ground disturbance is anticipated to result from the trail construction. Invasive plants often colonized disturbed habitat, resulting in a low risk of introduction in newly disturbed areas. The proposed action will result in 20 miles of new trail, but No imported equipment or imported materials (e.g. gravel, seed, erosion control materials) are prescribed in the project design. Nonetheless, management requirements to clean equipment and use weed-free materials have been included to minimize risk from imported equipment and materials. Because vehicles have the potential to carry invasive plant propagules—

especially in the lugged tires of motorcycles and mountain bikes, new permanent trails are a vector for the spread of invasive plants. However, there are no other project-related vectors, so the risk from new vectors is moderate.

Management Indicator Species:

A Management Indicator Species (MIS) Assessment has been completed for this project. This report is incorporated by reference and available from the Yuba River District office upon request. The following MIS were selected for analysis for this project from the list of MIS identified in the Tahoe National Forest Land and Management Plan: mule deer, mountain quail. The MIS analysis concluded that the effects of the alternatives would not alter existing bioregional-scale trends of these MIS.

Watchlist Plants:

There are no watchlist occurrences or other botanical resources within the project area. There are two Coleman's piperia occurrences within 300 ft. of the proposed alignment (PICO8TNF03W & PICO8TNF04W). No impacts are anticipated beyond 100ft of the proposed alignment. Nonetheless, they were flagged during survey and maps were provided to project leader so they can be avoided during construction per the project's management requirements. No impacts to other botanical resources are anticipated to result from the proposed trail construction or use.

Agencies and Others Consulted

The Scoping letter was mailed on 4/1/2016 to the following:

JOHN ALIANO

LOUISE ALIANO

AMADOR CAPITAL LLC

CHU WIN CHEN

CHU YI CHEN

WILLIAM CORBETT JR

MICHAEL COURSON

JEANINE DEJESUS

LARRY DOWER

DIANA EVANS

BARBARA FEARNLEY

WILLIAM GRIFFITHS

CHARLES HARPER

GAIL HART

MARK HART

ERIC HICE

KELLIE JUDEEN

LESTER KELLEY

PATRICIA LACHANCE

LAZARUS MINING LLC

COOPER MCELROY

LISA ANN OILAR MCELROY

GEORGE MILLER

VICTORIA NILSEN

CHRISTINA POWERS

DOUGLAS STRATTON

DIANA TITUS

MARTIN TROTTER

JOE WATERS

ROBERT YOUNG

David C. Wood

Martin J. Ward
Friends of Tahoe Forest Access

Jacquelyne 'Bebe' Theisen
Friends of Greenhorn

Gold Country Trails Council

Forest Trails Alliance

BONC

YBONC Foundation
c/o Jet Lowe

Frank Brown
Nevada County Woods Riders

Sierra Buttes Trail Stewardship

John Gilmore
Friends of Foresthill OHV Trails

Wade Tuna
High Sierra Motorcycle Club

Mike Demaso
Merced Dirt Riders

Dan Amador
BlueRibbon Coalition, Inc.

Charlie Hirst
Cal Enduro Riders Assoc

Gazaban Off-Road Racing

Ghost Riders MC

North Bay Motorcycle Club

NorCal Motorcycle Club

Redding Dirt Riders

Salinas Ramblers
Motorcycle Club

Nick Harris

Dave Pickett

Bob Terwilliger

Steven Davis

Dave Kostelny

Scott Link

Scott Rabeneau

George MacDougall

Adam Batchelder

LEE ADAMS

TIM H BEALS, DIR TRANS, SIERRA CO

BRANDON PANGMAN

Scoping responses/requests were received from:

GAIL HART

TOM HALLIS

GEORGE MILLER

LESTER & JANET KELLEY

JOHN ALIANO

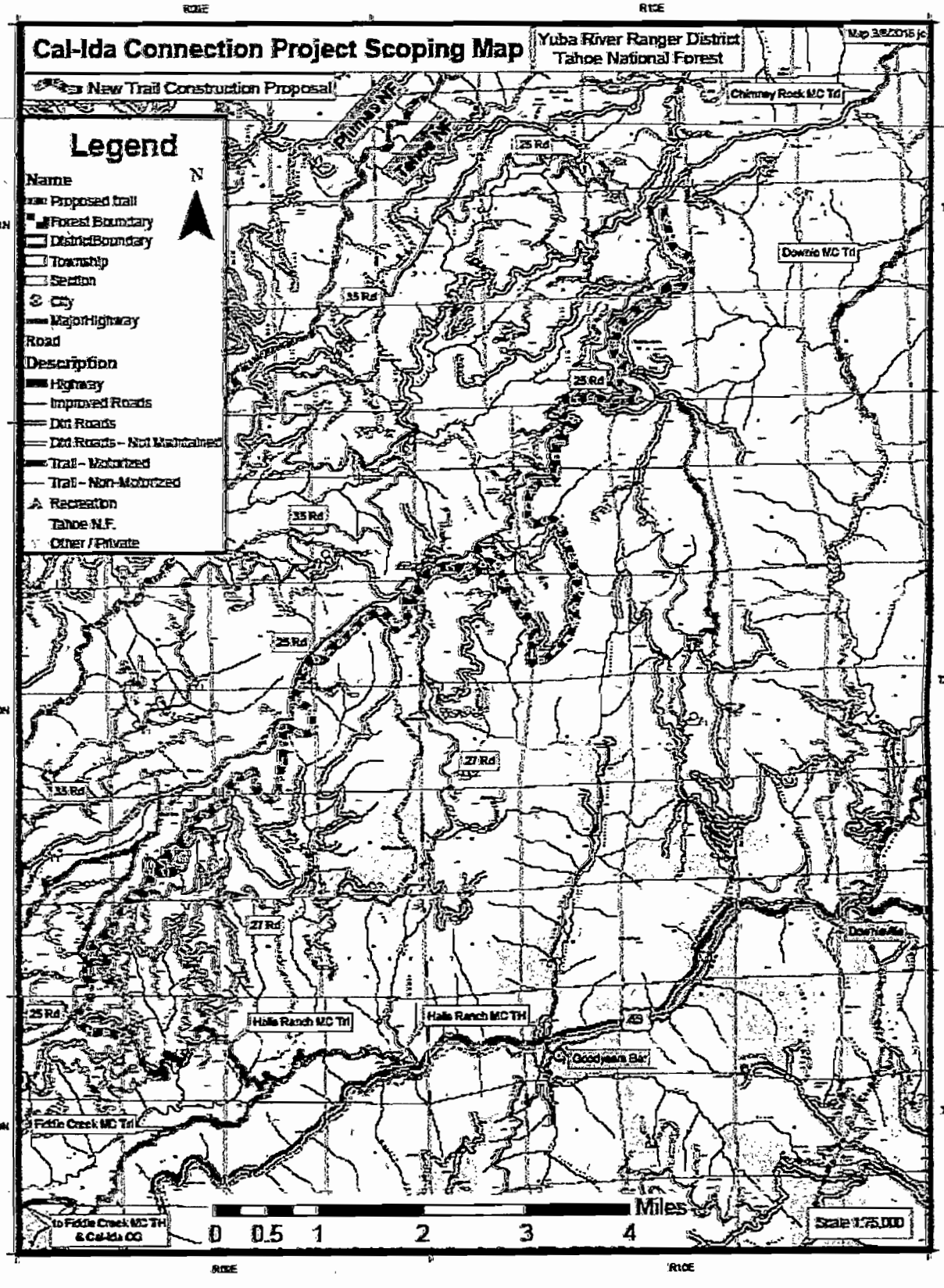
Additional Comments

Documents Incorporated By Reference, and/or Available Upon Request, or Attached as Appendices

Project Maps (*Appendix A*)
Responses to Public Scoping Comments (*Appendix B*)
Cumulative Watershed Effects Analysis *(incorporated in Hydro/Soils Report)*
Riparian Conservation Area Guidelines *(incorporated in Hydro/Soils Report)*
Trail Construction BMPs (*Appendix C*)
Cultural Resources Report *(Administratively confidential)*
Management Indicator Species (MIS) Assessment *(in Project File)*
Plant and Animal Biological Evaluations *(in Project File)*
Other References/Citations *(in Project File)*
Tahoe National Forest Sensitive Plant Standards and Guidelines *(Incorporated by Reference)*
Hydrology/Soils Report *(in Project File)*
Watchlist Plant and Plant Community Report *(in Project File)*
Weed Risk Assessment *(in Project File)*

Appendix A

Maps


Cal-Ida Connection Project Scoping Map
Yuba River Ranger District
Tahoe National Forest
Map 3/8/2015 jc
New Trail Construction Proposal
Legend
Name
Proposed trail
Forest Boundary
District Boundary
Township
Section
City
Major Highway
Road
Description
Highway
Improved Roads
Dirt Roads
Dirt Roads - Not Maintained
Trail - Motorized
Trail - Non-Motorized
Recreation
Tahoe N.F.
Other / Private
N
Plumas NF
Tahoe NF
Chimney Rock MC Trl
Downie MC Trl
25 Rd
35 Rd
27 Rd
Halls Ranch MC Trl
Halls Ranch MC TH
Goodyears Bar
Fiddle Creek MC Trl
to Fiddle Creek MC TH & Cal-Ida CG
Miles
0 0.5 1 2 3 4
Scale 1:75,000
T21N
T20N
T19N
R10E

Appendix B

Responses to Scoping Comments

Cal-Ida Trail Project
Scoping Comments (and Issues)

An issue is a point of debate, dispute, or disagreement regarding anticipated effects of the proposed action. Issues have a cause-effect relationship to the actions under consideration. An issue statement describes a specific action and the environmental effect(s) expected to result from that action. Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand. Issues are identified during scoping early in the process to help set the scope of the actions, alternatives, and effects to consider.

Typically, public scoping comments include many non-issue comments and questions. Any non-issues are identified as such, here, and are not mentioned in the EA. Important issues, if identified as such here, are addressed in the EA. Other issues have an explanation of why they are not specifically addressed in the EA.

Three letters of comment were received.

For ease of responding to these comments or issues, each respondent has been issued a number for ease of identification: 1– Gail Ann Hart; 2- Tom Hallis; and 3 – Lester & Janet Kelley. Issues within the letters are sequentially numbered (i.e. 1-1, 1-2, 2-1, etc.).

Additionally, two letters of interest were received, asking to be kept informed, or showing support for the project, but without specific comments.

Comment 1-1: "I wish to meet with you concerning this project and its impact on my Eureka Diggings, & Little Canyon Claims, and my private property known as the Herkimer Mine."

Response: See the response at the end of this document. Additionally, the trail is not near your Little Canyon Claims, or the Herkimer mine.

Comment 2-1: "I wish to meet with you concerning this project and its impact on my Craigs Flat & Morris Town Claims and my private property known as the Herkimer Mine."

Response: See the response at the end of this document. Additionally, the trail is not near your Craigs Flat & Morris Town Claims, or the Herkimer mine.

Comment 3-1: Please include us in ANY planning sessions. We have questions and would like to provide input."

Response: See the response at the end of this document.

Overall Response to the above 3 comments: On June 13, 2016, Paul Hart talked with Gail Hart about the Eureka Diggings Claim site and discussed trail placement, as well as the project in general.

On July 15, 2016, we received a letter from Gail Hart stating, "As per our conversation a couple of weeks ago I am in agreement with you in regards to your placement of the trail you are working on. You may remember that we agreed that this trail will not pass thru our claims located at Eureka Diggings. So it will not be necessary for myself, Janet and Lester Kelly, and Diana and Wiley Evans to meet with you on this matter at this time. It has been agreed that I can represent all the Eureka Diggings claim owners on this matter. Thank you, (signed) Gail A. Hart."

We believe your concerns have been mitigated. Thank You for your interest in this project.

Appendix C

Trail Construction Manual Directions, Processes, and Construction Standards

SUPPORTING NARRATIVE FOR NEW TRAIL CONSTRUCTION

FSM Direction for OHV Trails, Roads and Soil &Water Conservation
The following information is from the Forest Service Manual (FSM) that gives the appropriate direction for roads, OHV trails, and soil & conservation management.

FSM 2300—Recreation, Wilderness, and Related Resource Management

2353.12 - Trail Management Objectives (TMOs)

Manage each trail to meet the TMOs identified for that trail, based on applicable land management plan direction, travel management decisions, trail-specific decisions, and other related direction, as well as management priorities and available resources. For each NFS trail or NFS trail segment, identify and document its TMOs, including the five Trail Fundamentals, Recreation Opportunity Spectrum classifications, design criteria, travel management strategies, and maintenance criteria.

2353.25 - Development, Reconstruction, Maintenance, and Decommissioning

1. Follow the direction in FSH 2309.18, Trails Management Handbook, chapters 10 and 20, when developing, reconstructing, or maintaining trails.

2. Consider available resources and maintenance costs when deciding to construct new trails, reconstruct existing trails, or convert other types of routes to NFS trails.

3. Consider decommissioning trails when alternative routes are available.

2353.28 - Management of Motor Vehicle Use

1. Direction on travel planning and analysis, including designation of NFS trails and areas on NFS lands for motor vehicle use, is contained in FSM 7700 and 7710 and
FSH 7709.55. Trails open to motor vehicles must be designated through the process established in 36 CFR Part 212, Subpart B, and FSM 7710.

2. Motor vehicle use on National Scenic and National Historic Trails must be consistent with the National Trails System Act (16 U.S.C. 1244 and 1246(c)).

3. Consider linking routes into a cohesive motorized trail system.

4. In areas where use conflicts occur, attempt to minimize conflicts by providing information to the public about appropriate ethics and where to find desired recreation opportunities. Where trails are scarce and conflicts are likely, consider physical or temporal separation of uses.

23.2 – Standard Terra Trails – Motorized

23.21 – Motorcycle Design Parameters

Application considerations for Motorcycle Design Parameters:

1. NFS trails that allow motorcycle use must be designated for that vehicle class pursuant to 36 CFR 212.51 and displayed on a motor vehicle use map (FSM 7703.1).

2. For NFS trails that have been designated for motorcycle use and that have a Designed Use of Motorcycle, apply the Motorcycle Design Parameters and the following guidance.

   a. A variety of distances and recreation experiences may be provided by designing cutoffs for less experienced riders within a system of loop trails. An experienced rider can ride approximately 50 miles in an average day. Some riders can cover over 100 miles in a day.

   b. Trail alignment should exhibit decreasing randomness between Trail Class 2 and Trail Class 4.

   c. Favor drainage dips over water bars.

   d. On trails in Trail Class 4, the alignment is generally moderate, with no sharp curves combined with steep grades. Novice riders may be subjected to sharp curves, but generally not in combination with rough surfaces or steep grades.

   e. Favor climbing turns over switchbacks, within the applicable Design Parameter grade tolerances, as deemed appropriate, considering the use and direction of travel. Modify the level of challenge of a curve by increasing or decreasing its turning radius.

   f. For trails in Trail Class 4, locate turns on level ground or on slopes of less than 6 percent. On trails designed for novice and intermediate riders, consider providing a 4-to-6-foot barrier on the downhill side of a switchback.

   g. The speed of a motorcycle entering a turn varies depending on the radius of the turn. A trail designer can slow the speed of a motorcycle entering a turn by decreasing its turning radius. A trail designer may increase the length of a trail in a limited area by increasing the number of turns.

   h. Hardening of switchbacks and climbing turns in sensitive soils is recommended. Suggested hardening materials include concrete blocks, soil, and cement.

   i. For minimum bridge widths and railing heights, refer to FSH 7709.56b, section 7.69, exhibit 01, Trail Bridge Design Criteria. Bridges should have a

straight approach and should not change directions. Special decking may be necessary to accommodate wheeled vehicles.

j. To minimize confusion, consider locating trail junctions so that no more than two trails intersect at one point.

R5 FSH 2509-22 Soil and Water Conservation Handbook- Planning

Objective: To use the travel management planning processes, including travel analysis, to develop measures to avoid, minimize, and mitigate adverse impacts to water, aquatic, and riparian resources during OHV management activities, and to identify restoration for OHV-damaged areas and trails not designated for use.

Explanation: The amount, type, and location of OHV trails are determined through various planning processes. OHV trail planning includes travel analysis as well as trail management at the project level. Planning occurs at scales that can range from forestwide assessments and plans, to watershed-scale analyses, to project-level trail activities. During planning, potential effects on water, and on aquatic and riparian resources are identified, and protection and mitigation measures are proposed.

Trail management objectives are developed to define the type of recreation experience each trail is designed to provide, and to provide direction on management of the trail. In addition to guiding trail management at the site-specific scale, TMOs also document Forest-wide trail maintenance needs and identify the potential for environmental effects and conflicts with other resources.

The risk from OHV trail management activities can be reduced by using the appropriate techniques from the following list, adapted as needed to local site conditions.

Trail Construction Process

Project Assessment

When a trail is proposed, the project is reviewed for a wide range of considerations, including but not limited to environmental, cost, and access. This project has a high level of support and will provide an important link between existing trail corridors, and is near a major population area.

Corridor Reconnaissance

Extensive "recon" of the available area will occur to record desirable features or hazards that will assist in the final selection of a trail corridor.

Corridor Proposal

Assessment of data collected during recon are applied and utilized to flag a proposed trail corridor. The corridor represents an area of study for environmental consideration. Usually a corridor may span 100-300ft of width which the final alignment may use.

Corridor Preparation

Minimal brushing and clearing is done to facilitate travel of staff working on the environmental review. No groundwork is done at this time committing the corridor for use.

Trail Prescription prepared

The proposed alignment is measured and staked at 100ft intervals. This is used to create a profile of the trail to detail placement of prescriptions like culverts, vista points, benches, signs, rockwork or other special details. Special features are individually detailed and listed to support planning for material and labor.

Rough Construction

Clear the rough bench for the trail. Chainsaw, (small) excavator and skid steers are utilized during this part of the project.

Finish Construction

USFS and project volunteers begin finish grading and pruning of the trail. Debris and brush are cleared from trail vicinity.

Feature development

Prescription elements, like rockwork, bridges, culverts, benches etc. are facilitated by trail leaders and volunteers.

Trail Construction Standards

General

Trail work will occur through the use of hand work or by qualified machine operators approved by USFS. Any trail work other than standard maintenance will be approved by the recreation officer prior to commencement. The following standards are consistent the FSM direction for trails and the Trail Construction Handbook.

Standards

- Average Grade Pitch: 5% (within aprox. 100ft or overall segment) grade reversal every 100-200ft
- Moderate duration pitches (50ft): 15% max, include grade reversal or out-slope feature
- Short steep slopes (25ft): 25% max, include grade reversal or out-slope feature
- The intent on pitch limiters is to create sustainable trail, volume of usage, soil or surface type, hydrology and user types may affect design standards. Steeper segments may be approved with hardened bench elements.
- Bench Width: 24" - 36"
- Clearance from trail center: 30" for general obstructions
- Brush removal from trail center: 5ft
- Height clearance: 7ft

Guidelines for preventing Resource Damage

- Build on side slopes
- Avoid ridge-top or fall line alignments
- Stay out of meadows or flatlands where drainage is poor
- Favor the upslope of trees to prevent root damage
- Build mild, undulating trail alignment that utilizes frequent grade reversals
- Out-slope bench when possible
- Camber outside of turns to minimize lateral wear
- Avoid over-pitch alignments
- Create good sight lines
- Design intuitive trail alignments

Creek or ephemeral drainage crossings

- Locate crossings at stable locations
- Trail at crossing should always be at least 12+ inches lower than approach from either side
- Harden active crossings with cobbled rock to minimize creek disturbance
- If a bridge is used, construct so freeboard is above 100 year mark
- If bridge footings are within 100 year mark, embed into embankment 2ft or more to avoid high water scouring

Difficulty classifications

- All trails will be multi-use, motorized trails unless otherwise identified
- Trails are described as easy or moderate depending on elevation gain or length.
- Short, difficult trails will be limited to provide a maximum of trail opportunities.
- Short duration difficult trails that have excess pitch will be hardened to avoid erosion.
- All trails may include technical side-sections called B routes.

Switchbacks and Rolling Turns

- Provide grade reversals within 50ft of both sides of turn and stage so that lower grade reversals catch upper drainage runoff.
- Rolling turns have radius's in excess of 4ft tc (trail center) and occur on slopes which are less than 30%.
- Switchbacks have radius's of less than 4ft tc and occur on slopes greater than 30%.
- Anticipate approaches to turns and design speed reduction to eliminate skid bumps
- Keep overall switchback radius bench at 5-10% max to minimize wear
- If cambering turn, leave flat climbing radius towards center
- Locate turn in spot that limits short cutting
- Separate trails from each other as early as possible

Rolling dips, Grade Reversals or Drain Dips

- Downhill rise should be 6-12" above low point
- Features should be 10-20 ft in length for smooth transitions
- Place at all ephemeral (rarely active) or seasonal drainages

Berned Turns

- Confirm all turns drain by splitting or tilting the turn on the slope
- Leave un-cambered inside space for hiking or uphill riding

Appendix D

Executive Summaries for Plant and Wildlife Reports

Wildlife EXECUTIVE SUMMARY: Cal Ida Trail Project

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The most recent list was obtained from the U. S. Fish and Wildlife Service on April 4, 2016.

Table 1. Executive summary of species analyzed in this Biological Evaluation / Biological Assessment.

SPECIES	SPECIES STATUS[1]	PRESENT IN PROJECT Area: Habitat &/or detections	MANAGEMENT REQUIREMENTS, STANDARDS, GUIDELINES, SPECIES SPECIFIC PROJECT DESIGN STANDARDS	EFFECTS DETERMINATION
Valley elderberry longhorn beetle	T	No		No effect
Bald eagle	S	No		No effect
California spotted owl	S	Yes		May affect, no trend toward listing
Great gray owl	S	No		No effect
Northern goshawk	S	Habitat	Limited Operation Season—February 15 through September 15	May affect, no trend toward listing
Willow flycatcher	S	No		No effect
Greater sandhill crane	S	No		No effect
Pacific fisher	S, C	Habitat		No effect
American Marten	S	No		No effect
Sierra Nevada red fox	S	No		No effect
California wolverine	S, C	No		No effect
Pallid bat	S	Habitat		No effect
Townsend's big-eared bat	S	Habitat		May affect, no trend toward listing
Fringed myotis	S	Habitat		May affect, no trend toward listing
Western bumblebee	S	Habitat		May affect, no trend toward listing
California red-legged frog	T	No, project is outside of habitat/ above elevational range	RCA Guidelines and BMPs	No effect
Lahontan cutthroat trout	T	No		No effect
Northwestern pond turtle	S	No	Wet Season LOP, RCA Standards and BMPs	No effect
Foothill yellow-legged frog	S	Yes	Implement RCA Standards and BMPs	No effect
Sierra Nevada yellow-legged frog	T	No, No habitat	RCA Guidelines and BMPs	No effect
Lahontan Lake tui chub	S	No		No effect
Hardhead	S	No	RCA Guidelines and BMPs	No effect
California floater	S	No		No effect
Great Basin rams-horn snail	S	No		No effect
Black juga snail	S	No		No effect

[1]Key: E = USFWS Endangered, T = USFWS Threatened, C = USFWS Candidate, S = USFS R5 Sensitive

Species	Common name	Legal Status	Suitable habitat characteristics	Known on TNF	Known in project area	Suitable habitat in project area	Why habitat not suitable
Bresia webberi	Webber's bresia	FT	4,500-7,500ft; east of Sierra crest; Lassen – Sierra counties; flats, benches, meadows or dry meadows; shallow, clayey soils derived from andesitic rock	Nearest occurrence is Sierra Valley, Sierra County			Outside spp. range
Packera layneae	Layne's butterweed	FT	650-3,600ft; Tuolumne – Nevada counties; ultramafic soils (gabbro & serpentine); chaparral, conifer forest or woodland edges/openings	X			Outside spp. range
Astragalus lemmonii	Lemmon's milkvetch	FSS	4,000-7,000ft in CA; east of Sierra crest; lakeshores, meadows & seeps among Great Basin scrub	Historic record near Loyalton, Sierra County			Outside spp. range
Astragalus pulsiferae var. *coronensis*	Modoc Plateau milkvetch	FSS	4,400-6,200ft; east of Sierra crest; Modoc – Plumas counties; Sandy or gravelly soils, often with juniper, pine or sagebrush	Nearest occurrence in Genesee Valley, Plumas County			Outside spp. range
Astragalus webberi	Webber's milkvetch	FSS	2,400-4,100ft; east of Sierra crest; known only from Plumas County; dry forest openings/edges & semi-disturbed areas	Historic record in Sierra Valley, Sierra County			Outside spp. range
Boechera rigidissima (*Arabis rigidissima* var. *demota*)	Galena Creek rock cress	FSS	Above 7,500ft; east of Sierra crest; known only in Nevada & Douglas counties; mesic areas (sometimes rocky) at forest to aspen/meadow transitions	Nearest occurrence is Martis Peak, Nevada County			Outside spp. range
Botrychium ascendens	upswept moonwort	FSS	Above 4,000ft (gen 5,000-7,500ft on TNF); wet habitats (riparian, seeps, meadows, etc.)	X		X	
Botrychium crenulatum	scalloped moonwort	FSS	Above 4,000ft (gen 5,000-7,500ft on TNF); wet habitats (riparian, seeps, meadows, etc.)	X	X	X	
Botrychium lunaria	common moonwort	FSS	Above 6,000ft in CA; wet habitats (riparian, seeps, meadows, etc.)	Historic record at Sagehen Creek, Nevada County		X	
Botrychium minganense	Mingan's moonwort	FSS	Above 4,000ft (gen 5,000-7,500ft on TNF); wet habitats (riparian, seeps, meadows, etc.)	X		X	
Botrychium montanum	western goblin	FSS	Above 4,000ft in CA; wet habitats (riparian, seeps, meadows, etc.)	Nearest occurrence is Randolph Hill, Sierra County		X	
Brachia bolanderi	Bolander's brachia	FSS	Above 5,000ft in CA; montane meadows, stream banks, drying lake beds, on bare, semi-disturbed wet soils where competition is minimal	X			Bare, semi-disturbed wet soils
Cadonia monticola	Large cadonia	FSS	No elevation restriction; in duff, usually within old-growth conifer forests	X		X	
Cypripedium fasciculatum	clustered lady's slipper	FSS	Below 6,000ft on TNF; mesic, mid- to late- succession conifer or conifer-hardwood forests; north aspects; sometimes found with yew	X		X	
Cypripedium montanum	mountain lady's slipper	FSS	1,500-5,500ft in CA; mesic to wet, mid- to late- succession conifer or conifer-hardwood forests; north aspects; often found under montane dogwood	Nearest occurrence is Quincy, Plumas County		X	
Dendrocollybia racemosa	branched collybia	FSS	No elevation restriction; on decayed fungi or occasionally in duff; usually within old growth conifer or conifer-hardwood forests	X		X	
Erigeron miser	starved	FSS	6,200-8,500ft; known only from Placer &	X			Outside spp.

	daisy		Nevada counties; gravelly soils in crevices of near-vertical granite cliffs/faces				range
Eriogonum umbellatum var. *torreyanum*	Donner Pass buckwheat	FSS	Above 6,800ft on TNF; dry, unstable, gravelly or stony soils; often on harsh exposures (e.g. ridge tops, steep slopes)	X			Below elevation range
Fritillaria eastwoodiae	Butte County fritillary	FSS	Below 4,900ft; full to partial sun; chaparral, woodland & conifer forest	X		X	
Helodium blandowii	Blandow's bog-moss	FSS	Above 6,100ft in CA; usually found in bogs & fens, but sometimes seeps, wet meadows & under willows in riparian	Nearest occurrence is Tahoe Meadows, Washoe County			Outside spp. range
Ivesia aperta var. *aperta*	Sierra Valley ivesia	FSS	5,000-7,500ft on TNF; east of Sierra crest; known only from Sierra & Dog Valleys; meadow edges, ephemeral stream channels, vernally wet flats & gentle, rocky slopes near springs	X			Outside spp. range
Ivesia aperta var. *canina*	Dog Valley ivesia	FSS	5,000-7,500ft; east of Sierra crest; known only from Dog Valley; meadow edges, ephemeral stream channels, vernally wet flats & gentle, rocky slopes near springs	Nearest occurrence is Dog Valley, Sierra County			Outside spp. range
Ivesia sericoleuca	Plumas ivesia	FSS	5,000-7,500ft on TNF; east of Sierra Crest; Plumas – Placer counties; vernally wet meadows & alkali flats	X			Outside spp. range
Juncus luciensis	Santa Lucia dwarf-rush	FSS	(975-)4,500-6,300ft (occurrences below 4,500ft only on south CA coast); known only from south CA coast, Modoc Plateau & east Nevada County; wet, sandy soils of seeps, meadows, vernal pools, streams, & roadsides	Nearest occurrence is Martis Valley, Nevada County			Outside spp. range
Lewisia cantelovii	Cantelow's lewisia	FSS	1,000-4,500ft; known only from Yuba River drainage; wet rock cliffs & outcrops; usually with moss or club moss	X			Outside spp. range
Lewisia kelloggii ssp. *hutchisonii*	Hutchinson's lewisia	FSS	4300-7,000ft on TNF; ridgetops or relatively flat open areas; generally full sun; gravelly soils	X	(within 300ft)	X	
Lewisia kelloggii ssp. *kelloggii*	Kellogg's lewisia	FSS	Above 6,500ft on TNF; ridgetops or relatively flat open areas; generally full sun; gravelly or sandy soils	X			Below elevation range
Lewisia longipetala	long-petaled lewisia	FSS	Above 8,300ft on TNF; El Dorado – Nevada counties; north-facing slopes and ridge tops often found in wet soils near margins of persistent snow banks	X			Outside spp. range
Lewisia serrata	saw-toothed lewisia	FSS	3,000-5,000ft; known only from American River drainage; wet rock cliffs & outcrops; usually with moss	X			Outside spp. range
Meesia aligīnosa	broad-nerved hump-moss	FSS	Above 6,000ft on TNF; usually found in bogs or fens, but also very wet meadows	X			Below elevation range
Mielichhoferia elongata	elongate copper-moss	FSS	Below 3,500ft; soils with copper or heavy metals; moist to wet rock cliffs/outcrops	Nearest occurrence is Shady Creek, Nevada County			No heavy metal cliffs/outcrops
Monardella follettii	Follett's monardella	FSS	2,500-5,600ft; known only from Plumas County; serpentine soils; partial to full sun; conifer forest edges/openings	Nearest occurrence is Meadow Valley, Plumas County			No serpentine soils
Peltigera gowardii	Goward's waterfan	FSS	1,150-7,000ft in CA; cold, clear, unpolluted streams; often found on rocks in cascades	Nearest occurrence is Bushy Creek, Yuba County			No stream crossings
Penstemon personatus	closed-throated beard-tongue	FSS	4,500-6,500ft; Plumas – north Nevada County; partial sun; north aspects; conifer forest edges/openings	X		X	
Phacelia stebbinsii	Stebbins phacelia	FSS	2,000-6,700ft; known only in Rubicon & American River drainages partial to full	X			Outside spp range

			sun; generally in rocky openings/outcrops, but also woodland or conifer forest edges/openings				
Phaeocollybia olivacea	olive phaeocollybia	FSS	No elevation restriction; Yuba County & north; on roots of Pinaceae & Fagaceae; usually within old growth conifer or conifer-hardwood forests	X		X	
Pinus albicaulis	whitebark pine	C	Above 6,500ft on TNF; subalpine & at timberline on rocky, well-drained soils	X			Below elevation range
Poa sierrae	Sierra bluegrass	FSS	4,600-5,500ft, shady moist slopes; conifer forest edges/openings	X		X	
Pyrrocoma lucida	sticky pyrrocoma	FSS	4,500-6,600ft on TNF; east of Sierra crest; known only from Plumas & Sierra Counties; vernally wet meadows & alkali flats	X			Outside spp. range
Sowerbyella rhenana	stalked orange peel-fungus	FSS	No elevation restriction; in duff; wet mossy areas; usually within old growth conifer forests	X		X	
Tauschia howellii	Howell's tauschia	FSS	5,500-8,500ft in CA; crest ridge summits & slopes; decomposed granite gravel or sand; red fir & subalpine forest edges/openings	X		X	