



East Zone Connectivity and Restoration Project Environmental Assessment

Truckee Ranger District, Tahoe National Forest, and Carson Ranger District, Humboldt-Toiyabe National Forest

Placer, Nevada, and Sierra Counties, California

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Cover photo: Stampede Reservoir seen from Verdi Ridge. Credit: John Brokaw, 2019.

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Chapter 1 Need for the Proposal

Introduction

The Forest Service is proposing management actions to improve recreation opportunities for wheeled motorized vehicle users and restore watersheds on Tahoe National Forest (TNF) and Humboldt-Toiyabe National Forest (HTNF) System lands in and around Truckee, CA under the East Zone Connectivity and Restoration Project. These actions would: 1) Replace fixed wet weather seasonal closures in the Verdi Ridge area with a wet weather operating plan; 2) Construction of 71 miles of motorized single-track trail; 3) Re-route 1.7 miles of existing system roads and trails on the Tahoe National Forest and 0.3 miles of existing system road on the Humboldt-Toiyabe National Forest; 4) Make changes to the National Forest Transportation System (NFTS) including removal of 5.3 miles of roads, changes to 3 miles of road maintenance level designations, addition to the NFTS of 1.1 miles on the Tahoe National Forest and 0.1 mile on the Humboldt-Toiyabe National Forest of existing non-system roads. It also includes addition to the Tahoe National Forest NFTS of 0.5 miles of existing non-system trail, conversion of 0.7 miles existing system road to trail, and designation of 35.5 miles of existing trail from non-motorized to motorized, open to Class 1 E-bikes only; 5) Decommission 41 miles of existing user created roads and trails; 6) Develop and or improve managed recreation staging areas; 7) Barrier placement to delineate and manage routes and staging areas; 8) Construct one bridge; and 9) Treat three priority invasive plant species.

The Forest Service prepared this environmental assessment (EA) to determine whether implementation of the East Zone Connectivity and Restoration Project may significantly affect the quality of the human environment and thereby require the preparation of an environmental impact statement. By preparing this EA, agency policy and direction are being fulfilled to comply with the National Environmental Policy Act (NEPA). For more details of the proposed action, refer to the Proposed Action and Alternatives section of this document.

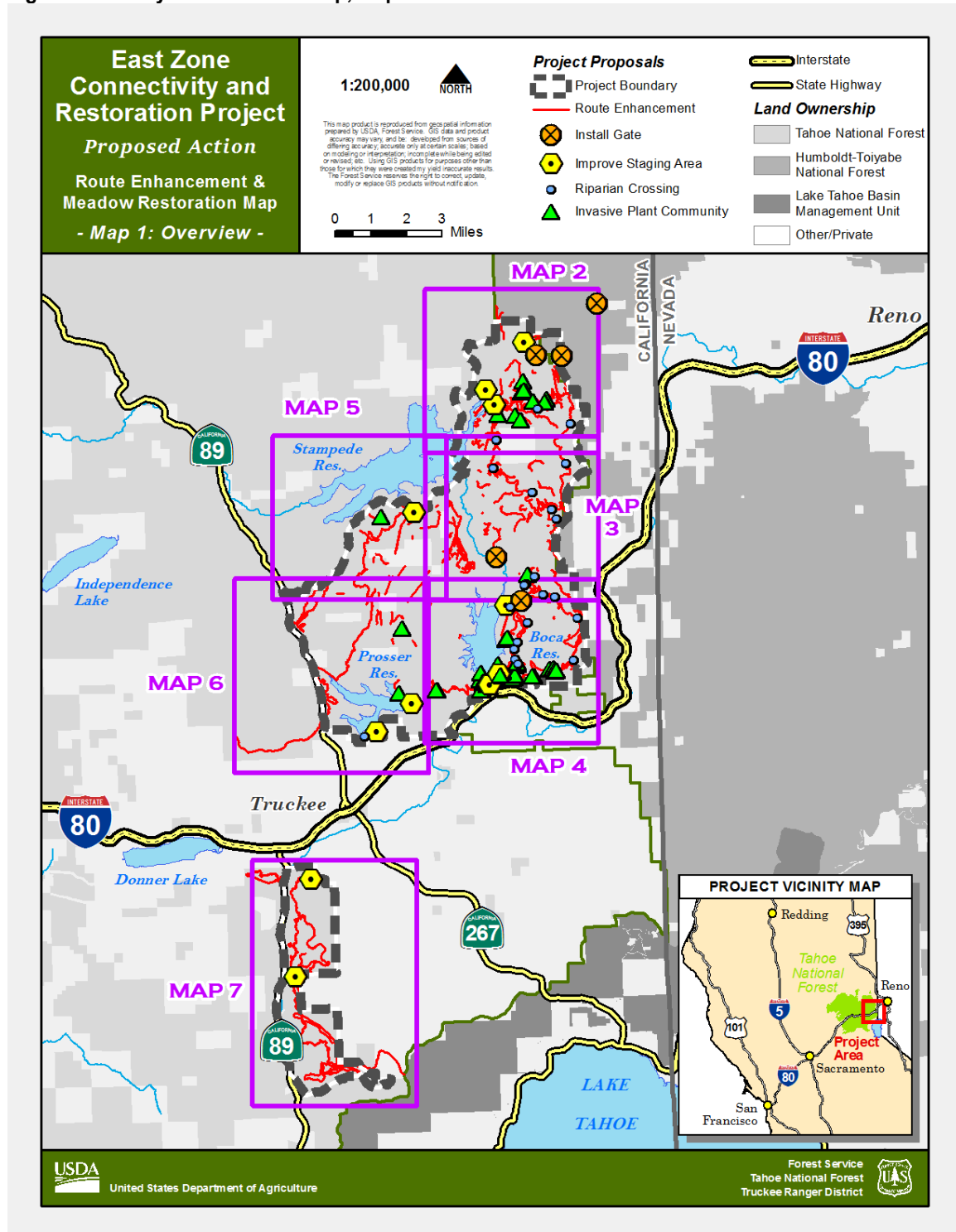
Proposed Project Location

These actions are proposed to be implemented on Tahoe National Forest System lands within three areas which have been determined to exhibit high levels of motorized recreation use on the Truckee Ranger District: Verdi Ridge, Boca Hill and Prosser Reservoir, and the Hwy 89 south / 06 Road / Big Chief area connecting Truckee and Tahoe City. Actions are also proposed to be implemented on adjacent connected locations on Humboldt-Toiyabe National Forest System lands at the north end of the Verdi Ridge. An overview map of the East Zone Connectivity and Restoration Project is displayed in Figure 1. (Map 1)

Need for the Proposal

The purpose of the East Zone Connectivity and Restoration Project is to reduce impacts to natural and cultural resources, to maintain or enhance the quantity, quality, and diversity of recreation opportunities on motorized trails, to better manage and reduce road and trail maintenance needs, and to improve overall access to, connectivity on, and public enjoyment of the National Forest Recreational Trails System in the project areas. Actions are needed due to increased demand for trail riding opportunities, erosion and sedimentation, impacts to natural and cultural resources, ongoing trail maintenance requirements, poor trail drainage, fragmented trails, and public safety concerns. Actions are needed to implement a long-term approach to the successful management of National Forest Trail systems while simultaneously meeting our responsibilities to protect and preserve public resources as well as promote safe and sustainable recreational opportunities on public lands.

Figure 1. Vicinity and Overview Map, Map 1



The Verdi Ridge project area, located on the east side of the Boca and Stampede reservoirs, attracts large numbers of motorized vehicle users originating on the TNF as well as crossing over from connected routes on the HTNF. There is a network of OHV legal road segments and OHV designated trail routes however there is no opportunity for designated motorized single-track recreation. Increased demand has led to the creation of unauthorized, user created road and trail segments with designs and alignments which threaten the integrity of the watershed and its many riparian corridors, including wetland / meadow complexes, as well as TNF's ability to protect natural and cultural resources. Evaluation and analysis of existing routes in the area has determined many of these road and trail segments to be unsustainable.

The Boca Hill and Prosser Reservoir project area contains popular designated motorcycle trails and OHV use areas including Lloyds trail (17E19), Russell Valley trail (17E20), and the Prosser Pits open riding area. Inadequate trail connectivity however, limits loop riding while current available trail access is failing to meet a growing demand for Class 1 E-bike riding opportunities. Additionally, some poorly aligned existing designated OHV routes, in particular the 16E11 on the south side of Prosser Reservoir, negatively impact meadow habitat by contributing to accelerated drainage, soil erosion, sedimentation, and damage to vegetation.

The Hwy 89 south / 06 road / Big Chief project area is one of the most heavily used recreation locations on the district owing to its proximity to the center of town. An inventory of existing trails in this area found over 20 miles of unauthorized user created single track motorcycle trail in use. Evaluation showed much of this illegal system to adversely impact natural and cultural resources including California spotted owl habitat, Northern goshawk habitat, hydrologic integrity, and known archaeological sites. A decision [Big Chief Trail Project, 12/19/2017] to obliterate these trail segments has been signed to mitigate these negative impacts but will result in a need to address the considerable demand for motorized single-track trail riding opportunity in the area. Tracking of recent use has also shown a steady increase in demand for Class 1 E-bike riding opportunities on single track routes in the area.

Action is needed to mitigate negative impacts to natural and cultural resource concerns due to the effects of poorly aligned authorized routes and unsustainable, unauthorized user created roads and trails.

Field assessments of current road and trail conditions in all three of the defined project areas have identified many poorly aligned route segments, while a lack in the availability of properly aligned and managed system routes has led to a significant increase in the number and length of unauthorized user created trails. Surveys were conducted by the Truckee Ranger District using the Soil and Water Roads Condition Inventory (SWRCI) protocol which rates road segments as functional, at-risk, or impaired and aids in identifying problem areas (USDA 2008). The segments proposed for decommissioning or re-route in Alternative I were identified as at-risk or impaired through SWRCI surveys. Both authorized and unauthorized roads and trails are causing resource damage. Routes were often created by adopting old roads, logging skid trails, historic fire lines, or other existing landscape features. Many of these alignments were not designed for heavy, long-term recreational use. Resource damage and hazardous conditions occur when motorized vehicles travel on these routes and are exacerbated when users ride or drive around rocks, ruts, puddles, and other obstacles creating new trails. Adverse environmental impacts, such as accelerated soil erosion, soil compaction, sediment in stream channels, damage to vegetation, disturbance to sensitive wildlife species, and degradation of cultural resource concerns are occurring.

Four invasive plant species are present within the project area. Invasive plants pose a serious threat to ecosystem function because of their ability to displace native species, reduce habitat suitability, alter nutrient and fire cycles, decrease the availability of forage for wildlife, degrade soil structure, and reduce overall biodiversity. These infestations represent a high spread risk of

spread along travel routes, especially in vulnerable highly disturbed areas and open community types, due to heavy recreation and dispersal mechanisms using clothing or mud on shoes, animals, vehicles and tire tread. Large infestations around Boca of spotted knapweed and Canada thistle cannot be feasibly treated using manual treatment methods. Rapid response is needed to contain and control known invasive plant species occurrences and prevent them from spreading further (USDA Forest Service, 2004, pp. 36 and 54-55).

Decommissioning of unauthorized routes is needed where they are redundant or causing extensive resource damage. Repair, maintenance, re-alignment, or decommissioning of existing system routes is needed to reduce future resource damage. Decommissioning and realignment activities are designed to promote natural recovery of the road surface by restoring the natural hydrologic function of the soil and reducing runoff and erosion. Action objectives seek consistency with desired conditions as defined by management direction laid out in the Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA ROD 2004) and the Tahoe National Forest Land and Resource Management Plan (LRMP 1990). These include Goals and Strategies (ROD pp. 32-33), Standards and Guidelines (ROD p. 59 and LRMP pp. V40-V41), and Management Area direction specific to the proposed project zones (LRMP pp. 164, 233, and 287).

Action is needed in order to provide a well-defined, sustainable trail system allowing for effective recreation management of use areas after vegetation management treatments.

The Verdi Ridge and 06 road / Big Chief project areas are currently in the process of planning and or implementation of significant vegetation management projects. Expected condition post management actions is forest habitat that is more open, healthy, and resilient to fire. These conditions have the potential to lead to an increase in unauthorized route creation. Heavy demand for motorized recreation opportunity is evidenced by the existing inventory of non-system user created trails. Many commenters on the Big Jack East vegetation management project (06 road area) expressed concern about the significant potential for additional unauthorized OHV use after the completion of the project. There is a need for a well-defined, sustainably designed, and adequately signed motorized trail system to both serve users as well as prevent future resource damage. A proactive planning approach is vital to creating a managed and sustainable recreation system in these two proposed project areas. Action objectives seek consistency with desired conditions as defined by management direction laid out in the Tahoe National Forest Land and Resource Management Plan (LRMP 1990). In particular, Management Area direction specific to proposed project zones (LRMP pp. 164, 210, and 366).

Action is needed to increase the number, length, and diversity of motorized recreation opportunities, mitigate potential negative impacts associated to motorized recreation, and to define a sustainable National Forest Transportation System (NFTS).

Public demand for motorized trails on the Truckee Ranger District (TKRD) has been steadily increasing. Nearly a decade ago, during planning for Tahoe National Forest's Motorized Travel Management (MTM) Project (USDA 2010), the public expressed interest in having more motorized single-track trail riding opportunities on Tahoe National Forest (TNF, MTM, FEIS, Appendix N). Similar interests were expressed during travel management planning for the Humboldt-Toiyabe National Forest in 2012 [Dog Valley Route Adjustment Project, 2012]. More recently, the Truckee area has seen a marked increase of interest in and demand for Class 1 E-bike riding opportunities. Currently there are only approximately 26 miles of designated single-track motorized trail on the TKRD. Tahoe National Forest holds annual Green Sticker open house workshops and public meetings to communicate with the motorized vehicle user community and to hear their requests for motorized trail riding recreation. TNF trails staff attend gatherings with local riding clubs to hear concerns, garner support, and enlist cooperation on volunteer

opportunities associated to motorized vehicle route maintenance, trail improvements, and motorized vehicle user education.

Recreation Opportunity Spectrum (ROS) framework guides land managers to provide a variety of opportunities for public use and enjoyment. Within the motorized spectrum, where feasible, managers strive to provide a range of legitimate motorized vehicle riding opportunities that are sustainable and resilient to degradation over time. Protecting resources (Cultural sites, TES species, water quality, and the potential spread of invasive plant communities) and providing for public safety are considered when designing and constructing a motorized trail system accessible to a variety of users. Increasing the variety of motorized trails rated as Beginner to Most Difficult are needed to promote a constantly learning and challenging experience while also fostering opportunities for families to recreate as a group. Action objectives seek consistency with desired conditions as defined by management direction laid out in the Tahoe National Forest Land and Resource Management Plan (LRMP 1990). These include Standards and Guidelines (LRMP P.19) and Management Area direction specific to proposed project zones (LRMP p. 164). All three of the designated project zones have a long history of motorized recreation use.

Action is needed to increase loop riding opportunities, improve trail connectivity, and create sustainable developed recreation staging areas.

Each of the project areas contain designated motorized vehicle routes and or trails which do not connect to other motorized trails, thereby limiting loop riding opportunities and trail connectivity. Developing well aligned routes to connect these existing fragmented motorized trails will provide longer, motorized trail rides and increase motorized loop opportunities. Under existing conditions, OHV enthusiasts, especially those on non-highway-legal vehicles, are required to frequently return to their staging location, load their vehicles, travel to the next staging location, and unload their vehicles again before returning to the trail. The lack of a sufficient number of well managed staging areas also creates barriers to public enjoyment of the TNF recreational roads and trails system. Action objectives seek consistency with desired conditions as defined by management direction laid out in the Tahoe National Forest Land and Resource Management Plan (LRMP 1990). These include Standards and Guidelines (LRMP P.19) and Management Area direction specific to proposed project zones (LRMP p. 210).

Proposed Action

The Proposed Action, as described in the Preliminary Environmental Assessment, has been updated with corrections based on input from resource specialists and comments received during the 30 day comment period. The final Environmental assessment has been revised with updated data and map information. These corrections and refinements provide additional resource protections, address concerns raised by commenters, and have resulted in a more accurate and informed proposed action. Table 1 displays and compares the Proposed Action from the Preliminary EA with the updates identified for Alternative 1 (Proposed Action) in this final EA. Chapter 2 includes a detailed description of the proposal under Alternative 1 (Proposed Action).

The proposed actions described in Chapter 2 are consistent with management direction in the *Tahoe National Forest Land and Resource Management Plan* (LRMP) (USDA FS 1990) as amended by the *Sierra Nevada Forest Plan Amendment Record of Decision* (SNFPA ROD) (USDA FS 2004) as well as the 1986 *Toiyabe National Forest Land and Resource Management Plan* (As Amended).

The proposed actions will meet the Lahontan Regional Water Quality Board Basin Plan Objectives and will also be consistent with the TMDL Management Agency Agreement (MAA) between the State Water Board and Forest Service (USFS). The USFS continues to identify, implement, maintain, and monitor best management practices (BMPs) to protect water quality.

Table 1. Updates to the Proposed Action, Trail Construction Standards, and Management Requirements

Proposed Action Preliminary EA	Alternative 1 (Proposed Action) Final EA
Action 4 (5): Add approximately 115 acres of open riding area to the NFTS. Consideration of comments, LRWQCB, Commenter Index #114	Action 4 (5) has been removed from the proposed action.
Action 6: Staging Area Creation . Part B: Area Attributes. Consideration of comments, Truckee Donner Horsemen, Commenter Index #032	Action 6 (B) Staging locations will offer enough space for adequate parking and maneuvering, and the loading and unloading of people, recreational equipment, and horses
Action 8: Watershed Protection. Consideration of comments, LRWQCB, Commenter Index #114	Action 8: Additional Language - Construct bridges or undertake stream crossing protection and sediment reduction measures, such as rolling dips or decompaction (dependent on individual site evaluation), to restore natural hydrologic function and reduce erosion from existing, altered stream crossings, riparian zones, and or meadow corridors in the Verdi Ridge project area and in the Prosser Reservoir project area.
Action 9: Invasive Plant Treatment. Updated acreage supplied by TKRD Botanist.	Action 9: Treat approximately 40 acres for three priority invasive plant species.
Trail Construction Standards Preliminary EA	Trail Construction Standards Final EA
Creek or Ephemeral Drainage Crossings: Approach to crossings. Consideration of comments, LRWQCB, Commenter Index #114	Harden the approach to crossings with appropriately sized material and rolling dips, if applicable, to reduce sedimentation potential and minimize creek disturbance.
Creek or Ephemeral Drainage Crossings: Safety. Consideration of comments, Backcountry Horsemen of California, Commenter Index #035	If bridge is used, construct with design standards to allow for safe and sustainable equestrian access.
Switchbacks and Rolling Turns: Safety. Consideration of comments, Backcountry Horsemen of America, Commenter Index #103	Identify line of site issues and remove small diameter trees and or trim vegetation to limit blind turns and reduce the potential of surprise encounters
Management Requirements Preliminary EA	Management Requirements Final EA
Revisions made in consideration of comments and with input from resource specialists	Revisions to management requirements AW3, BR1, IP8, HT4, WSA3, and WSA5
Additions made in consideration of comments and with input from resource specialists.	Additions to management requirements for watershed, soils, and aquatic resources include WSA6 – WSA9

Mileages and acreages are approximate

Public Involvement and Tribal Consultation

Public participation is important at numerous points during the analysis. The Forest Service seeks information, comments and assistance from federal, state and local agencies and individuals or organizations that may be interested in or affected by the proposed action.

Proposal Development

Prior to scoping, the Forest Service met with motorized and non-motorized trail groups to identify core concerns and design parameters. The Forest Service first listed the East Zone Connectivity and Restoration Project in the published quarterly Tahoe National Forest Schedule of Proposed Actions (SOPA) in April 2020. The Forest distributes a hardcopy of the quarterly SOPA to about 80 individuals and entities. The quarterly SOPA is available online at www.fs.fed.us/sopa or on the TNF website at <http://www.fs.fed.us/r5/tahoe>. The Project was first published in the Humboldt-Toiyabe National Forest SOPA in October 2020.

The Forest Service conducts scoping according to the Council on Environmental Quality (CEQ) regulations (40 CFR 1501.7). In addition to other public involvement, scoping initiates an early

and open process for determining the scope of issues to be addressed in the EA and for identifying the issues related to a proposed action.

A 30-day scoping period for the East Zone Connectivity and Restoration Project, held from April 3, 2020, through May 3, 2020, was initiated when the Forest Service published a legal notice in Grass Valley's *The Union* newspaper and Truckee's *Sierra Sun* newspaper and distributed a scoping letter and map to more than 120 individuals, groups and Tribes disclosing information and seeking public comment on the Project. An additional 30-day scoping period for the East Zone Connectivity and Restoration Project, held from May 8, 2020, through June 7, 2020, was initiated when the Forest Service published a legal notice in Grass Valley's *The Union* newspaper and again distributed a scoping letter and map to more than 120 individuals, groups and Tribes disclosing information and seeking public comment on the project.

As a result of scoping, written timely comments were received from 54 individuals, organizations and Tribes. 43 of the 54 commenters were supportive of the proposed project. The comment letters were used to consider issues and refine the proposal described in scoping.

A 30-day comment period for the East Zone Connectivity and Restoration Project, held from September 4, 2020, through October 4, 2020, was initiated when the Forest Service published a legal notice in Grass Valley's *The Union* newspaper and distributed a notice of comment period letter and map to more than 120 individuals, groups and Tribes disclosing the Preliminary Environmental Assessment and seeking public comment on the project.

As a result, written timely comments were received from 114 individuals, organizations and Tribes. The comment letters were used to consider issues and refine the proposal described in the Preliminary Environmental Assessment.

The Forest Service consulted with the following individuals, federal, State, tribal, and local agencies during the development of this final EA:

- Consultation with the Washoe tribe of Nevada and California began on March 9, 2019 and has been ongoing through the planning process.
- The Lahontan Regional Water Quality Control Board.
- Multiple meetings, attended by the Forest Service, the Nevada County Woods Riders, The American Motorcycle Association (District 36), The Truckee Dirt Riders, the Reno Area Dirt Riders, The Truckee Trails Foundation, and many other motorized and non-motorized trail users have taken place before, during and after scoping to discuss potential routes, the proposed action, and project design elements.

The Forest reviewed the purpose and need, proposed action and comments in order to identify issues to be considered during the analysis. The scoping and comment period summaries in the project file helped to focus the resource analysis in the EA.

Alternatives considered, but not fully developed

The Forest Service did not identify any issues in public comments that would lead to the development of additional alternatives. When there are no unresolved conflicts concerning alternative uses of available resources, the EA need only analyze the proposed action and proceed without consideration of additional alternatives. (36 CFR 220.7(b)(2)(i)). All comments received during the period of public comment were considered, as summarized in the Draft Decision Notice / Finding of no Significant Impact (DN / FONSI) Appendix A: Response to Comments.

Chapter 2 Proposed Action and Alternatives

The proposed action and following alternatives were considered: Alternative 1, the proposed action and Alternative 2, no action.

Alternative 1 – Proposed Action

To respond to the purpose and need described in Chapter 1, the Forest Service proposes:

1. **Seasonal Closure Change** - Remove fixed seasonal closure dates in order to manage for sustainable use on approximately 64 miles of authorized National Forest Travel System (NFTS) motorized vehicle routes accessed via the Boca Stampede road, Dog Valley road, and the 72 (Verdi Peak) road. Open and close these roads and trails to public wheeled motor vehicle travel based on monitored conditions of soil moisture and use suitability to be defined in a motorized trail system seasonal operating plan. The operating plan will be developed based on the methodology developed in the “Wet Weather Management of OHV Trails on National Forests in California” which was prepared for the USFS Pacific Southwest Region by Roger Poff. Criteria for suitability will be defined by conducting a study of local conditions at multiple points along each affected route. Data collection, including soil strength, soil moisture, and route conditions, will occur during the spring months when soils are generally saturated from snowmelt or rainfall. The operating plan will contain a decision tree where field data developed thresholds, existing soil conditions, and rainfall will be utilized to assist in determinations about road closures or opening. On affected routes, install 3 gates in addition to existing gates in order to manage route access based on developed soil moisture thresholds. (Maps 1, 2, 3 and 4)
2. **Route Construction** - Construct approximately 71 miles of new designated motorized single-track trail to be added to the National Forest Transportation System (NFTS) across the three proposed project areas. Approximately 49 miles of new trail would offer opportunity for motorized recreation and loop riding in the Verdi Ridge area. This includes approximately 1.5 miles of trail that crosses from the TNF onto the HTNF in five small segments (Maps 1-3). Approximately 3 miles of new trail would offer a motorized single-track route connection between the existing Lloyds (17E19) trail and the new proposed Verdi Ridge trail. Approximately 11 miles of new trail would meet demand for designated single-track motorized recreation opportunity in the 06 road / Big Chief area. Approximately 8 miles of new trail would offer increased loop riding opportunities, and connectivity between Russell Valley, Boca Hill, and the new proposed Verdi Ridge trail. (Maps 1-7)
3. **Route Realignment** - Reroute approximately 1.4 miles of existing system road and trail on the TNF in the Verdi Ridge project area along sections of the 72, 72-1, 72-2-5, and 270-8 roads, and in the Prosser Reservoir project area on the 16E11 trail (Maps 1, 2, 3 and 6). Reroute approximately .6 miles on the TNF 860-2 road where it connects with the HTNF 31074 road (Maps 1 and 2). Each of these road and trail segments currently sit on hydrologically unsustainable alignments.
4. **Changes to the National Forest Transportation System (NFTS)** –
 1. Remove from the NFTS by decommissioning approximately 5.3 miles of road on the 72-9, 72-1-6, 72-12-1, 860-1, 894-3, 270-6, 72-25-10, 270-6-8, and 270-8 roads. Some of these segments are currently shown on the MVUM as open for public wheeled motorized vehicle use. Under the proposed action, these decommissioned road segments would no longer be displayed on the MVUM (Refer to Maps 1-4).
 2. Change the maintenance level from ML 2 to ML 1 for approximately 3 miles of route segments on the 72-12, 72-22, 270-4, 270-6-4, 270-8-6, 270-8-5, and 860-5-5 roads

- (Maps 1-3). These roads are currently shown on the MVUM as open for public wheeled motorized vehicle use. Under the proposed action, they would no longer be displayed on the MVUM.
3. Add on the TNF, by adoption of currently unauthorized routes into the National Forest Transportation System (NFTS), approximately 1.1 miles of designated Maintenance Level ML 2 road (Maps 1-4). On the HTNF add, by adoption of a currently unauthorized route into the NFTS, approximately .1 miles of designated ML 2 road (Maps 1 and 2). These roads are currently not shown on the MVUM. Under the proposed action they would be displayed on the MVUM as open for public wheeled motorized vehicle use.
 4. Add, by adoption of a currently unauthorized route into the National Forest Transportation System (NFTS), approximately 0.5 miles of designated motorcycle trail (Maps 1 and 2). This route is currently not shown on the MVUM. Under the proposed action the route would be displayed on the MVUM as a class 3 motorized vehicle trail open to motorcycles only.
 5. Convert from current Maintenance Level ML 2 road to designated OHV trail approximately 0.7 miles on the 72-18 road (Maps 1 and 3). This road segment is currently shown on the MVUM as open for public wheeled motorized vehicle use. Under the proposed action the road segment would be displayed as a class 2 motorized vehicle trail open to ATV's and Motorcycles.
 6. Designate approximately 35.5 miles of existing non-motorized trails (16E05, 16E09, 16E30, 16E85, and 16E86 shown on maps 1 and 4-7) as open for Class 1 E-bike motorized vehicle use, adding them to the National Forest Transportation System (NFTS). Under the proposed action, these trails would be displayed on the MVUM as designated wheeled motorized vehicle trails open only to Class 1 E-bikes. These trails would remain open to existing non-motorized use. Potential environmental impacts and user conflicts were carefully considered in selecting existing trails to propose for Class 1 E-bike use. The proposed trails are currently managed for heavy mountain bike use; are not experiencing known significant recreation user group conflicts; and have no substantial existing resource impacts.
5. **Route Decommission** - Obliterate and restore approximately 41 miles of unsustainable, unauthorized, user created road and trail segments on the TNF located across the proposed project areas. (Maps 1-6) On the HTNF, obliterate and restore approximately .7 miles of user created road which connects onto the TNF. (Maps 1 and 2)
 6. **Staging Area Creation** - Develop or improve 11 managed recreation area staging locations within the three proposed project areas including 2 for the 06 road / Big Chief project area (Maps 1 and 7), 2 for the Boca Hill / Prosser Reservoir project area (Maps 1 and 6), and 7 for the Verdi Ridge project area. (Maps 1-5). These shall be defined as:
 - A - Strategically located to afford access to designated recreation Trails.
 - B – Offering enough space for adequate parking and maneuvering, and the loading and unloading of people, recreational equipment, and horses.
 - C - Containing bathroom Facilities.
 - D – Adequately signed with maps, information on available routes and other recreational activities, and interpretive information designed to mitigate against potential conflicts between multiple user groups.
 7. **Route and Staging Location Management** - Install boulders, signage, and additional barrier structures if necessary at locations around Prosser Reservoir, on the 06 Rd., and along sections of the proposed Verdi Ridge trail in order to direct travel, restrict trail widening, and prevent resource damage in sensitive areas. Install boulders at proposed managed recreation staging areas to delineate parking area boundaries and prevent resource damage. On the

Humboldt-Toiyabe, install one new gate at the 31074B road (Maps 1 and 2), and improve one existing gated road closure on the south side of the 31002 road (Maps 1 and 2).

8. **Watershed Protection** Construct bridges or undertake stream crossing protection and sediment reduction measures, such as rolling dips or decompaction (dependent on individual site evaluation), to restore natural hydrologic function and reduce erosion from existing, altered stream crossings, riparian zones, and or meadow corridors in the Verdi Ridge project area and in the Prosser Reservoir project area (Maps 1-5).
9. **Invasive Plant Treatment** – Treat approximately 40 acres for three priority invasive plant species (Musk thistle - *Carduus nutans*, Spotted knapweed – *Centaurea stoebe ssp. micranthos*, and Canada thistle - *Cirsium arvense*) (Maps 1-4) using a combination of chemical (Aminopyralid) and mechanical methods. Herbicide will be spot sprayed using a backpack spray. Maximum of one initial and one follow-up herbicide treatment will be allowed annually. Herbicides application will be conducted by a licensed applicator and will be in accordance with all label instructions, state and federal regulations and FS direction. Herbicide is limited to aminopyralid at annual max rate of 0.11 lb a.e./ac annually. Adjuvants may be added, but only non-NPE surfactants would be used. Aminopyralid is a selective herbicide (i.e. only controls a certain type of plant, while leaving other plants unaffected). It is primarily used to control broadleaf weeds, certain annual grasses, and certain woody plants and vines, particularly plant species of the aster family. It provides both pre-emergent and post emergent control (i.e. prevents seeds from germination as well as kills plants after they emerge from soil). Additional infestations may be discovered and prioritized for treatment. For chemical use reference information refer to Pesticide Fact Sheet: Aminopyralid (EPA 2005) and Aminopyralid Human Health and Ecological Risk Assessment (SERA 2007).

Implementation Strategy

The proposal includes staging area creation or improvement, invasive plant treatments, route decommission, new trail construction as well as realignment of existing route segments to provide for a sustainable use, addressing erosion and hydrologic connectivity concerns, and improving user experience and safety. The routes proposals involve four steps: (1) constructing new trail (2) constructing new alignments (3) obliteration and (4) diverting riders to the newly aligned route segments and discouraging use of the replaced segments by de-compacting soil, installing drainage features, reconnecting altered hydrology, and placing native material on the old segments. Construction will involve cutting vegetation and using barriers and signing to encourage use of new or re-routed segments and discourage use of the old, unsustainable segments. A small trail dozer, excavator, or mini-excavator would be used to conduct the work described here. In addition, Forest Service trail staff and volunteer hand crews would assist with the construction work. In less accessible areas, supplies could be brought in with ATV's. Project implementation could begin as early as the spring of 2021.

The specific locations would be refined with ground verification of existing conditions. Additions and changes to motorized trails and roads would be displayed on the Motor Vehicle Use Map (MVUM), the legal document displaying designated motorized trails and roads. Project implementation could begin after the decision using a combination of the Forest Service trails crews, contractors and volunteers. Implementation of the project includes the following Construction Standards and Management Requirements.

Trail Construction Standards

General Standards

Best Management Practices (BMP's) for trail construction as identified in the Forest Service

Trails Handbook (FSH 2309.18) and Specifications for Construction and Maintenance of Trails (EM-7720-103) as well as management requirements to protect public resources would be incorporated into trail design and construction.

Road and 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 TKRD Trails Officer or roads manager prior to commencement. As much as possible, mechanized trail equipment is planned (a small trail dozer/excavator/mini-excavator with a 4 to 6 foot disturbance for ATV and 4X4 designated roads and trails and a trail dozer/micro excavator with a 2-3 foot disturbance for motorcycle designated trails, trees would be avoided where possible and cutting would be kept to a minimum.) New trails would be given time to settle during the winter season prior to being used. Reroutes would be constructed over a period of years and then, after construction is completed, the reroutes would be opened and the unsustainable alignments would be closed and restored concurrently.

- Average Grade Pitch: 5 percent (within approximately 100 feet or overall segment) grade reversal every 100 to 200 feet
- Moderate duration pitches (less than 100 feet): 8 percent max, include grade reversal or out-slope feature
- Moderate duration pitches (less than 50 feet): 12 percent 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 to 36 inches
- Clearance from trail center: 30 inches for general obstructions
- Brush removal from trail center: 5 feet
- Height clearance: 10 feet

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 or more inches lower than approach from either side
- Harden the approach to crossings with appropriately sized material, and rolling dips, if applicable, to reduce sedimentation potential and minimize creek disturbance
- If a bridge is used, construct so freeboard is above 100 year mark
- If a bridge is used, construct with design standards to allow for safe and sustainable equestrian access
- If bridge footings are within 100 year mark, embed into embankment 2 feet or more to avoid high water scouring

Switchbacks and Rolling Turns

- Provide grade reversals within 50 feet of both sides of turn and stage so that lower grade reversals catch upper drainage runoff
- Rolling turns have radiuses in excess of 4 feet trail center and occur on slopes which are less than 30 percent
- Switchbacks have radiuses of less than 4 feet trail center and occur on slopes greater than 30 percent
- Anticipate approaches to turns and design speed reduction to eliminate skid bumps
- Identify line of site issues and remove small diameter trees and or trim vegetation to limit blind turns and reduce the potential of surprise encounters
- Keep overall switchback radius bench at 5 to 10 percent 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 to 12 inches above low point
- Features should be 10 to 20 feet in length for smooth transitions
- Place at all ephemeral (rarely active) or seasonal drainages

Bermed Turns

- Confirm all turns drain by splitting or tilting the turn on the slope
- Leave un-cambered inside space for hiking or uphill riding
- Evaluate safety and confirm berm is free of encroaching hazards like trees or rocks

Management Requirements

Aquatic Wildlife

AW1: Barriers. Ensure that materials used at stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species.

AW2: Riparian. Where possible retain as much riparian vegetation canopy so that activities will not adversely affect water temperatures required for local species.

AW3: Hazardous spills. Any hazardous spill event into the water shall be immediately contained and reported to the Forest Service dispatch, Forest Service Hydrologist, and Lahontan Regional Water Quality Control Board.

AW4: Survey

- Survey any proposed water drafting locations for sensitive aquatic species within one week prior to potential use. Use drafting devices with 2-mm or less screening and place hose intake into bucket in the deepest part of the pool. Use a low velocity water pump and do not pump ponds to low levels beyond which they cannot recover quickly (approximately one hour).
- Survey for sensitive aquatic species, any areas where equipment may travel through stream habitat for OHV trail work (such as re-route, drainage crossing, or bridge construction) within one week prior to potential disturbance.

AW5: Sightings. If a sensitive or listed aquatic species is sighted within the project area, all work within 100 feet of aquatic habitat will cease immediately. Inform a Forest Service aquatic biologist of the sighting so that an appropriate course of action can be determined.

AW6: Tightly woven fiber netting or similar material shall not be used for erosion control or other purposes within aquatic habitats to ensure aquatic wildlife do not get trapped, injured or killed. Plastic mono-filament netting or similar material shall not be used at any of these projects.

AW7: Drafting in fish-bearing streams. The water drafting rate should not exceed 350 gallons per minute (gpm) for streamflow greater than or equal to 4 cubic feet per second (cfs) nor exceed 20 percent of surface flows for streamflow less than 4 cfs. For non-fish-bearing streams, the drafting rate should not exceed 350 gpm for streamflow greater than or equal to 2 cfs, nor exceed 50 percent of surface flows. Water drafting should cease when bypass surface flows drop below 1.5 cfs on fish-bearing streams and 10 gpm on non-fish-bearing streams (USFS Region Five BMP 2.5).

AW8: Herbicide Use. Use of herbicide to treat invasive plants will be excluded from any areas where infestations overlap with potentially suitable SNYLF habitat.

Botanical Resources

BR1: Plumas ivesia (*Ivesia sericoleuca*). There are eight sub-occurrences of Plumas ivesia that intersect the proposed action (IVSETNF05A, IVSETNF05B, IVSETNF08, IVSETNF13, IVSETNF15A, IVSETNF15B, IVSETNF32A, IVSETNF32B). These areas will be identified on project maps, flagged in the field, and provided to contractors/staff.

- a) Avoid ground disturbing activities including but not limited to route construction, route decommission, temporary and permanent staging areas.
- b) Herbicide applications will not occur within 100ft of occurrences
- c) Use boulders or additional barrier construction where decommissioned routes intersect occurrences (IVSETNF07, IVSETNF15A, and IVSETNF15B) in order to minimize ground disturbance. Coordinate with Forest Service Botanist two weeks prior to implementation.

BR2: Prior to implementation, conduct surveys for TEPCS and Watch list botanical species in areas of proposed ground disturbance.

BR3: Undetected botanical resources. Any additional TES or TNF Watch list botanical species or other botanical resources discovered prior to or during implementation should be flagged and avoided completely until it can be assessed for impacts by District Botanist.

Cultural Resources

CR1: Additional Survey. Additional surveys for cultural resources may be required for areas outside of the current area of potential effect (i.e., staging areas, or trail route adjustments).

CR2: Non-System Road or Trail Work within Sites. Obliteration of non-system roads or trails within cultural resource sites may be conducted only with approval from a cultural resource specialist.

CR3: Additional Survey. Prior to implementation, additional surveys for cultural resources may be required for areas of proposed ground disturbance outside of the current area of potential effect (such as route decommissioning).

Fire and Fuels

FF1: Leave access for fire suppression resources along roads and trails.

FF2: Excess cut woody material. Scatter, chip, or remove

Herbicide Treatment

HT1: Spray Application

- a) Only ground-based equipment will be used to apply herbicides.
- b) All application of herbicides will cease when weather conditions exceed those on the label.
- c) Application of herbicides will not be performed when the National Weather Service forecasts a greater than 70 percent probability of measurable precipitation (i.e., precipitation greater than 0.1 inch) within the next 24-hour period.
- d) Application of herbicide will cease when wind speed exceeds 10 miles per hour.
- e) Spray nozzles will produce a relatively large droplet size (e.g., 500 to 800 microns) which are less prone to drift.
- f) Application of herbicide will be sprayed until targeted plants are wet and not dripping to help prevent leaching.

HT2: Herbicides will be applied and mixed by trained and/or certified applicators in accordance with label instructions and applicable federal and state pesticide laws.

HT3: Personal protective equipment will be used in accordance with the product label and California Department of Pesticide Regulation requirements.

HT4: Application of herbicides within 20 feet of riparian vegetation or surface water must be approved by the hydrologist/natural resource specialist. Herbicide may not be applied directly to any surface water.

HT5: Chemicals will be stored in designated storage facilities consistent with the Forest Service Manual (FSM) 2109.14, Chapter 40. Unused herbicides will be disposed of in accordance with the product label and FSM 2109.14, Chapter 40. If the product label and FSM differ, the more restrictive storage and disposal guidelines will be followed.

HT6: Herbicide mixing will not occur within 150 feet of surface waters, except at existing facilities.

HT7: A spill kit will be onsite at all times during herbicide application consistent with FSM 2109.14, Chapter 60.

HT8: Adjuvants may be added, but only non-NPE surfactants will be used.

Invasive Plants

IP1: Avoidance areas.

- a) Invasive plant infestations that have not been treated prior to implementation will be avoided with a 50ft buffer.
- b) Avoidance areas will be flagged in the field, identified on project maps, and provided to contractors/staff.
- c) Coordination with the natural resource specialist will occur at least 60 days before implementation of planned treatments.

IP2: 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 treatment units.

IP3: 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.

IP4: Project-related disturbance. Minimize the amount of ground and vegetation disturbance. As necessary, reestablish vegetation on disturbed bare ground to reduce invasive species establishment; revegetation is especially important in staging areas.

IP5: Revegetation. Seed and plant mixes must be approved the District Botanist. Neither invasive species nor persistent non-natives will be used in revegetation. Seed lots will be tested for weed seed and test results will be provided to District Botanist. Seed and plant material should be collected from as close to the project area as possible, preferably from within the same watershed or at similar elevation.

IP6: Early Detection. Any additional infestations discovered prior to or during project implementation should be flagged and avoided. Report new infestations to District Botanist.

IP7: Post Project Monitoring. For projects involving ground disturbance or use of imported materials, notify the District Botanist after the project is completed, so that the project area can be monitored for invasive plants subsequent to project implementation (as funding allows).

IP8: Survey. Prior to implementation, conduct surveys for invasive plants in areas proposed for ground disturbance. Additional surveys for invasive plants are needed if trail adjustments are outside of a 50-foot buffer from the originally proposed route.

Recreation and Visual Resources

R1: Construct trail tread by hand, or with small mechanized trail equipment, or a combination of the two. Construct trail tread at a width no greater than 36 inches, most commonly ranging from 18 to 24 inches.

R2: Incorporate rolling dips and/or reverse grades into the construction of the trail segments averaging around 100-foot spacing to ensure long-term drainage control.

R3: At drainage crossings, move the spoils from trail construction away from the drainage to prevent entry into the waterway.

R4: Minimize cut and fill slopes and cover with slash and forest duff to hide contrast of exposed soil.

R5: At trailheads and near narrow precipitous segments, increase monitoring of use and install safety signage to educate and inform users.

R6: Utilize native timber and rock materials when additional trail building materials are needed or use materials that match the color and texture of native materials.

Terrestrial Wildlife

TW1: California spotted owl. To protect nesting California spotted owl, no mechanized trail construction or chainsaw use will occur between March 1 and August 15 in the following general areas containing Protected Activity Centers (PACs): Big Chief, unless surveys determine they are not nesting. Construction of new trail will remain outside a ½ mile buffer to be placed around all known current and historic nest locations.

TW2: Northern goshawk. To protect nesting northern goshawk, no mechanized trail construction or chainsaw use will occur between February 15 and September 15 in the following general areas containing Protected Activity Centers (PACs): Wornmill Canyon, Canyon 4, Big Chief, and Hoke Valley, unless surveys determine they are not nesting. Construction of new trail

will remain outside a ½ mile buffer to be placed around all known current and historic nest locations.

TW3: Bats. Report any bat roosts identified during project layout or trail construction to a wildlife biologist. Limit trail construction within 500 feet of identified roosts whenever possible.

TW4: Large trees and logs. Locate trails to avoid cutting large trees, trees with evidence of wildlife use (e.g., cavities, nests, etc.), large snags, and large downed logs.

TW5: TES Species. If any TES species (Federally threatened, endangered, proposed, or Forest Service sensitive species) previously unknown in the project area are detected or found nesting/roosting within 0.25 miles of project activities, appropriate mitigation measures would be implemented based on input from the aquatics biologist, botanist, and/or wildlife biologist. Measures can include, but are not limited to, flagging and avoiding a plant site, implementing a species specific LOP, or designating a protected activity center.

TW6: Raptor Nests. If any active Raptor nest is identified within the boundaries of, or directly adjacent to the project area (within 100 meters) during implementation, a buffer would be placed around the active nest and at the discretion of the District Biologist a species specific LOP may be put into place for the buffer zone.

TW7: Carnivore Nests and Denning Structures. If any large stick nests or signs of active denning are observed or detected within or adjacent to the project area (within 100 meters), work will cease in the immediate area and the occurrence will be reported to the wildlife biologist to determine any potential need for further review and/or mitigation measures.

Watershed, Soils and Aquatic Resources

WSA1: 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 water is not 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 native rock or medium sized gravel that provides solid footing. The objective is to even out the water flow through the ford so the gravel-sized material is not washed away, leaving only cobble or boulders.

WSA2: 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 water breaks) at crossings to prevent water and sediment from being channeled directly into watercourses.
- Locate cut-off water breaks 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.

WSA3: Road / Trail decommissioning. Administratively close decommissioned trail sections to continued use.

- Block access to and obscure the first 100 to 300 feet of the old trail at intersections with the new reroutes and place woody debris (no greater than 12 inches in height) on them to discourage any further use. Utilize regrading, bouldering, and covering regraded area with slash and forest duff as necessary.
- Install drainage structures so water does not concentrate on decommissioned routes. Mulch and or re-vegetate denuded areas with native materials and plants.

- Scarify top 2 to 4 inches of soil to promote water infiltration and return of vegetation. Maintain at least 70 percent effective soil cover prior to winter precipitation. If soil cover cannot be recruited on site, use biodegradable geotextile netting or a thick cover of weed free straw.

WSA4: Trail drainage. Look for small draws to locate grade reversals. The trail should climb gently for a few feet on each side of the draw. Construct a trail grade that is less than half of the side-slope grade. For example, on a hill with 6-percent side-slope, trail grade should be no more than 3 percent.

WSA5: Region 5 Best Management Practices and Trail Construction, Reconstruction and Maintenance standards. Follow the Trail Construction Standards described in the Tahoe NF Trail Design Standards document and BMPs listed in the Region 5 Soil and Water Conservation Handbook, chapter 10, sections 4.7.1 to 4.7.8. Follow BMP 2.13 to effectively limit and mitigate erosion and sedimentation from any ground-disturbing activities. Develop an erosion control plan to include mitigation measures, requirements to meet BMPs, specifications and any federal or state permit requirements.

WSA6: Stream Channel Crossings. The proposed crossings will be designed to slightly modify the existing channel without significantly changing capacity or channel form, without adding fill or excavating (dredge). The proposed design will be constructed to maintain flow capacity and only minor changes, rearranging in channel rock for ingress and egress are proposed.

WSA7: Storm Precipitation Action Plan. Stop operations during periods of inclement weather (runoff producing rainfall or wet soil conditions) that create erosion or soil deformation (rutting) and implement temporary erosion control measures as needed until the site is dry enough to resume work. Provide erosion control measures on completed sections of trail or decommissioned sections of trail.

WSA8: Construction Dry Periods. Dry period construction leads to increased pulverization of soils and an associated increase in the potential for air or water transport, as soils tend to be less cohesive when overly dry. Adequate water must be both made available for, and applied to, dry at risk soils during construction to increase cohesion thereby minimizing these potential impacts.

WSA9: Refueling and Maintenance of Equipment. Refueling and maintenance of equipment should be carried out in areas removed from drainages and riparian vegetation and outside of SEZ/WBBZ.

Alternative 2 – No Action

Maintenance would occur on existing roads and trails. Wet weather seasonal closure dates would remain for public wheeled motor vehicle travel on NFS roads and trails on the Truckee Ranger District. The following activities would not occur as proposed in Alternative 1: wet weather closures, new trail construction, staging area creation / improvement, trail / road reroutes, decommissioning, bridge construction, barrier fencing, gate and boulder placement, road closure, and proposals related to e-bike use. The result would be a continued lack of opportunity for motorcycle riding and other OHV use experiences. Trail opportunities would also be lost for non-motorized users and unlicensed vehicle users, who would have to re-load and off-load their vehicles. The effects of taking no action would continue.

Chapter 3 Environmental Impacts of the Proposed Action and Alternatives

Introduction

This section summarizes the physical, biological, social and economic environments of the affected project areas and the potential changes to those environments due to implementation of the alternatives. It presents the scientific and analytical basis for comparison of alternatives presented in Chapter 2. It also describes the factors of significance as described in Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Parts 1500-1508, section 1508.27, July 1, 1986).

The TNF's Proposed Action would change decisions on roads to meet the intent of what was analyzed in the MTM FEIS, and decided upon in the MTM ROD (USDA FS 2010) and the Humboldt-Toiyabe National Forest Dog Valley Route Adjustment Project (USDA FS 2012). The Forest considered the criteria listed below in the original analysis. Seasons of use, established to protect Forest resources, remain unchanged. As noted in Chapter 1.05, Title 36 CFR 212.55 of the Travel Management Rule requires that designation (in this case re-designating seasonal closures and re-designating road segments by closing them to public wheeled motor vehicle travel) to NFTS roads and trails consider the following:

- natural and cultural resources
- public safety
- provision of recreational opportunities
- access needs
- the need for maintenance and administration of roads and trails that would arise if the uses under consideration are designated
- the availability of resources for that maintenance and administration

When designating trails also include:

- minimizing damage to soil, watershed, vegetation and other forest resources
- minimizing harassment of wildlife and significant disruption of wildlife habitats

The following criteria were considered in the determination to include the road, trail or area into the NFTS and are not affected by the proposed removal of fixed season closures and closure of road segments to public wheeled motor vehicle travel as there will be no change in vehicle class allowable on a road, trail or area (minimization criteria is in Appendices B - G):

- conflicts among uses of NFS lands
- minimizing conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands or neighboring federal lands
- minimizing conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands
- compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions and other factors
- speed, volume, composition and distribution of traffic on roads
- compatibility of vehicle class with road geometry and road surfacing

Effects Relative to the Finding of No Significance (FONSI) Elements

This section summarizes the potential impacts of the proposed action and alternatives for each impacted resource. Resources that were not impacted and therefore not further analyzed include: air quality, fire and fuels, and vegetation.

In 1978, the Council on Environmental Quality published regulations for implementing the National Environmental Policy Act (NEPA). These regulations (40 CFR 1500-1508) include a definition of “significant” as used in NEPA. The ten 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 consideration of the following ten intensity factors in the appropriate context (or reference area) for that factor.

Management requirements designed to reduce the potential for adverse impacts were incorporated into the proposed action and alternatives, including standards and guidelines outlined in the *Tahoe Land and Resources Management Plan* (USDA FS 1990), as amended by the *Sierra Nevada Forest Plan Amendment* (USDA FS 2004) as well as the 1986 *Toiyabe National Forest Land and Resource Management Plan* (As Amended), Best Management Practices, and project specific design criteria based on resource specialist knowledge and experience. The management requirements would minimize or eliminate the potential for adverse impacts caused by the proposed project.

A discussion of potential effects is summarized below from specialist reports prepared for this project and incorporated by reference. These reports are listed below.

Incorporation by Reference

Cook Fisher, Jonathan. 2020. Recreation Trails Report (Commemorative Overland Emigrant Trail) for the East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Cook Fisher, Jonathan. 2020. Recreation Trails Report (Sawtooth Trail) for the East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Hutchinson, Rachel and Sharon Falvey. 2020. Assessment of Soils and Hydrology Resources for the East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Patterson, Mary. 2020a. Biological Assessment and Biological Evaluation of Botanical Species, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. December 2020.

Patterson, Mary. 2020b. Invasive Plant Risk Assessment, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Patterson, Mary. 2020c. Other Botanical Resources Assessment, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Patterson, Mary. 2020d. Human Health Risk Assessment, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

- Rawlinson, Todd and John Brokaw. 2020. Biological Evaluation for Terrestrial Wildlife, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.
- Rawlinson, Todd and John Brokaw. 2020. Biological Assessment and Biological Evaluation for Aquatic Wildlife, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.
- Rawlinson, Todd and John Brokaw. 2020. Project Management Indicator Species Report, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.
- Rawlinson, Todd and John Brokaw. 2020. Migratory Landbird Conservation Report, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.
- Smith, Carrie. 2020. Cultural Resources Report, East Zone Connectivity and Restoration Project, Truckee Ranger District, Tahoe National Forest. 2020.

Context

For the proposed action and alternatives the context of the environmental effects is based on the environmental analysis in this EA. The footprint of ground disturbing activities associated to the proposed project represents a fraction of the area covered by the watershed boundaries in which they will occur. Further, the watershed boundary areas covering just over 41,000 acres represent less than 5% of Tahoe National Forest Overall. Many of the proposed actions have the potential to result in significant social, economic, and ecological benefits locally though they may appear to be relatively insignificant when viewed from a regional or national scale. For the purpose of this analysis, the significance of effects associated to proposed site specific actions, is most adequately interpreted in terms of the long and short term effects in the locale as opposed to the entire Tahoe National Forest or the region.

Intensity

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis in this EA and the references in the project record. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the public. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. Finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

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

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. None of the potential adverse effects of the proposed action or alternatives would be significant, even when considered separately from the beneficial effects that occur in conjunction with those adverse effects.

Aquatic Wildlife

Effects to aquatic wildlife are summarized below and addressed in detail in the Biological Assessment and Biological Evaluation for Aquatic Wildlife (Rawlinson and Brokaw 2020) and the Project Management Indicator Species Report (Rawlinson and Brokaw 2020). The East Zone

Connectivity and Restoration Project would not affect United States Department of the Interior Fish and Wildlife Service (USFWS) listed threatened or endangered species that do not occur or have no suitable habitat within the analysis area. This includes: California red-legged frog, Foothill yellow-legged frog, Yosemite toad, winter run chinook, Sacramento River, Central Valley spring-run chinook, Central Valley steelhead, and Delta smelt. The Lahontan cutthroat trout (LCT) is a listed threatened species with potentially suitable habitat within the overall analysis area. Based on historical data as well as recent surveys, LCT is not known to occur in any of the proposed project areas expected to be impacted by proposed ground disturbing activities. The Sierra Nevada yellow-legged frog (SNYLF) is a listed endangered species with potentially suitable habitat within the overall analysis area. SNYLF are not known to occur in any of the proposed project areas based on historical data as well as recent surveys. There is no designated critical habitat in the project area. Lahontan Lake tui chub (LLTC) is on the USFS R5 Sensitive Species List for TNF and has potentially suitable habitat within the overall analysis area. LLTC will not be affected due to any of the proposed actions.

No suitable habitat exists at locations proposed for action on the Humboldt-Toiyabe National Forest for any Region 4 aquatic threatened, endangered, or sensitive species (TES).

Sierra Nevada yellow legged frog

In order to determine a relative measure of the direct and indirect effects to Sierra Nevada yellow legged frog (SNYLF) and their habitats, the amount of suitable habitat potentially affected by project activities was quantified. The risk of direct and indirect impacts to individuals and their habitats are greatest when operations occur in close proximity to occupied or suitable habitat. For this reason, the amount and type of actions proposed within suitable habitat, the habitat type affected, and whether or not occupancy has been detected, were used as indicators of risk and in formulating the effects determinations for SNYLF.

Potential impacts to the streams, including sedimentation, would be short-term and negligible due to application of standards and guidelines, management requirements and BMPs. Lakes or ponds would not be impacted by proposed activities. The scope and magnitude of effects to aquatic habitat from proposed activities are low. Implementation of this project is expected to improve hydrologic function and trail sustainability as new trail construction and road / trail re-route and restoration would facilitate improved water drainage and reduce potential for future erosion.

In general, the risks to SNYLF increase as the amount of activity within suitable habitat increases. Similarly, where no project activities are proposed to occur within SNYLF suitable habitat, there is little to no risk that project activities would result in any direct or indirect effects.

The amount of SNYLF suitable habitat that may be impacted by the proposed project activities are summarized in Table 2 below. These acreages of suitable SNYLF habitat that may be affected were calculated through a GIS analysis by:

1. buffering 25 feet on both sides of the proposed sections of OHV routes
2. overlaying the suitable SNYLF habitat occurring within 82 feet of perennial and intermittent stream channels and
3. calculating where 1 and 2 overlap

The potential effects the proposed project activities may cause to SNYLF and their habitat are described below.

Proposed road/trail decommission, reroute, new designation, and new road/trail construction

The overall areas around the Prosser, Stampede, and Boca reservoirs and the 06 Rd. encompassing the project cover a total of approximately 41,885 acres within the Truckee River

and Little Truckee River watersheds. There are within this, a total of 2,013 acres of potentially suitable SNYLF habitat (5% of this broad area). As displayed in Table 3, 71 miles of proposed new trail buffered by 25 feet for the purpose of analysis amounts to approximately 419 acres. 47.8 miles of routes proposed for decommission buffered by 25 feet for the purpose of analysis covers approximately 296 acres. 35.6 miles of existing trail proposed for new designation to allow for e-bike use, buffered by 25 feet for the purpose of analysis, totals 214 acres. 2 miles of existing routes proposed for realignment buffered by 25 feet for the purpose of analysis represents an additional 12 acres. 727 acres are expected to be impacted by ground disturbing activities including new trail construction, road/trail decommission, and route realignments. In total the proposed action applies to 155.5 miles of proposed new and or existing road and trail segments and has been analyzed for potential impacts to approximately 941 acres of potential disturbance (the project analysis area).

Overlap of proposed new trail construction, including a buffer of 25 feet, with suitable SNYLF habitat, as depicted on the TNF's suitable habitat map for the species, equals 1.9 acres, approximately .4 percent of the project area analyzed for potential impacts to SNYLF due to new trail construction. Onsite inspection of the four locations identified as areas of potential overlap show none as being legitimately suitable habitat. Two are crossings of small ephemeral drainages on the southwest side of Boca Reservoir. One is an overlap of buffer zones along the spillway below the Boca Dam where concrete wall and fencing separates all aquatic habitat from the proposed trail alignment. The last is a slight overlap of buffer zones along approximately 30 meters of trail in the 06 road area where the proposed alignment is in a powerline corridor characterized by dry, brushy upland habitat. This short section of the proposed trail is not itself within any potentially suitable habitat on upper Martis Creek. The drainage, though categorized as perennial, often runs dry in the mid to late summer.

Site visits have not resulted in any detections, no record of historical detections exists, and each of the areas of overlap between potentially suitable SNYLF habitat and zones of potential disturbance lack primary constituent elements of suitable habitat quality. They are unlikely to support individuals or populations of the species. No impacts are expected to SNYLF due to activities associated to the construction of new trail.

Overlap of route segments proposed for decommission, including a 25-foot buffer, with suitable SNYLF habitat equals 2.9 acres, approximately .9 percent of the project area analyzed for potential impacts to SNYLF due to route decommission. SNYLF is not thought to be present in any of the habitat intersected. These two locations represent areas where users access reservoir shoreline when the waterline recedes. Implementation will not include any ground disturbing activity at these locations. Decommission will be accomplished through signage and enforcement of existing travel rules. A large portion of the decommissioning work associated to removal or rerouting, not including areas identified as exhibiting hydrologically problematic conditions, will be completed by obliterating the first 100 feet of the old route at intersections and placing large amounts of woody debris on them to discourage any further use. Under existing conditions there are high rates of tread wear (e.g., trail rutting and puddling of water) and accelerated erosion is occurring on many of these roads/trails because gradients are steep and in alignment with the natural flow of runoff. There would be an overall benefit to soil and aquatic habitat by removal of routes or their replacement with a more sustainable trail system. Following management requirements and BMP 4.7.8 would benefit the soil and water resources by covering bare soil on decommissioned routes to decrease storm water runoff and reducing the potential for erosion and sediment. Proposed decommissioning would promote favorable conditions for the return of vegetation, and soil compaction would be expected to decrease over the long term as roots of new vegetation loosen the soil.

Overlap of route segments proposed for realignment, including a 25-foot buffer, with suitable SNYLF habitat equals .3 acres, approximately 2.5 percent of the project area analyzed for potential impacts to SNYLF due to route realignment. SNYLF is not thought to be present in any of the habitat intersected nor is there a record of historical detection. Protocol survey efforts have not detected presence of SNYLF in any of the proposed project areas. The one realigned route which intersects potentially suitable habitat on the south side of Prosser reservoir will travel in upland, non-suitable habitat. Decommission of the existing route will be implemented by leaving it to revegetate naturally with no plan for ground disturbing activities. Proposed stream crossing for this realignment will be monitored before, during, and after construction. No effect to SNYLF is expected. Similar to decommissioning, the action of route realignment work may cause a temporary increase in sedimentation to suitable aquatic habitat as a result of ground disturbing activities. However, realignments would be designed to limit steep slopes and provide for natural drainage. Therefore, accelerated erosion is expected to be minimal. Furthermore, once completed, the realignments are expected to reduce future sediment delivery and improve the stream water quality of potentially suitable habitat thereby indirectly benefitting aquatic species. A measurable improvement in stream water quality would be expected within one year (season) post-implementation.

The majority of overlap between areas expected to be impacted by proposed actions and suitable SNYLF habitat is associated to the new designation of existing trail to allow for Class 1 E-bike use accounting for 15.6 of the total 21.1 acres of intersection (73%). The vast majority of this lies along Alder Creek on the Emigrant Trail (TNF trail 16E30). The area of overlap represents approximately 7.2 percent of the project area associated to alignments analyzed for potential impacts to SNYLF due to the new designation of existing routes and .05 percent of the entire analysis area. Locations along the 16E30 where route / SNYLF habitat intersections exist have been surveyed and SNYLF has not been found to be present. No effects to SNYLF are expected as a result of Class 1 E-bike use. The Emigrant Trail is currently managed for traditional mountain bike use. Components of mountain biking including noise, riding characteristics, movement, and downhill speeds are considered similar between the two bicycle classes. TNF observations and review of potential effects associated to Class 1 E-bike use during 2019, when they were allowed on all non-motorized trails on the forest, determined that impacts such as tread wear, soil movement, and erosion were commensurate with those associated to traditional mountain bike use. These findings are consistent with a study done by the International Mountain Bicycling Association (IMBA 2015).

Table 2: Acres of overlap between proposed project activities and suitable SNYLF habitat.

New Trail Acres	Decommission Acres	Reroute Acres	E-Bike Acres	Grand Total
1.9	2.9	.3	15.6	20.7 acres

Table 3: Proposed ground disturbing project activities miles and acres expected to be affected.

New Trail Miles / Acres	Decommission Miles / Acres	Reroute Miles / Acres	E-Bike Miles / Acres	Grand Total
70.1mi/419ac	47.8mi/296ac	2mi/12ac	0 mi/0 ac	119.9mi/727ac

Proposed trail construction and future trail erosion could result in minor amounts of sediment entering drainages. 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 likely to result in minor or insignificant impacts to riparian areas however, since SNYLF have not been documented in any proposed project areas, direct effects to SNYLF from construction activities related to these proposed actions are not expected.

Additional changes to the NFTS including changes in maintenance level, existing route closure, and changes to existing use designations are proposed to occur outside any suitable SNYLF

habitat and would result in no direct affects to the species or its habitat. The proposed changes are designed to improve or remediate existing road/trail issues associated to hydrology and sedimentation and would indirectly result in improvements to hydrologically connected potentially suitable habitat.

In summary, the proposed actions are not expected to significantly affect SNYLF by increasing risk of injury, harassment, and mortality; or by decreasing the quality or quantity of suitable habitat in the area.

Staging Area Creation, Barrier construction and boulder placement

Areas proposed for staging area development, barrier creation, and boulder placement are outside suitable SNYLF habitat so there would be no direct effects to the stream courses, perennial breeding habitat, SNYLF, or their suitable habitat. However, these actions would greatly improve or remediate the existing off trail travel and road runoff issues by decreasing sedimentation into hydrologically connected stream channels. Therefore, these features would indirectly improve SNYLF habitat through sediment reduction and improved water quality. If no action were taken, the sedimentation into suitable SNYLF habitat would continue to occur and could increase over time as impacted areas continue to degrade.

The proposed action to construct or improve staging areas would benefit aquatic species, soil and hydrology resources by decreasing user created overflow parking. Currently, there is a high amount of off-trail use and subsequent resource damage caused by recreational users that stage at popular areas near Prosser dam, along the Boca Stampede Rd., on Hobart Mills Rd, and along the 06 Rd. developed staging areas would help to control use, increase awareness and information availability, and decrease the amount of off-trail travel and resulting illegal route creation. Construction of barricades, barrier fencing, and boulder placement would limit illegal OHV traffic in sensitive areas and better define designated sustainable routes.

Bridge construction and stream crossings

Stream crossing improvements are proposed as part of the East Zone Connectivity and Restoration Project. The majority of crossings impact only ephemeral drainages, will not alter existing stream channels, and do not occur in suitable SNYLF habitat thus will not impact SNYLF. Proposed bridge construction will take place at 1 stream crossings inside the East Zone Connectivity and Restoration Project area on a small drainage which feeds Prosser reservoir. This location lies in suitable SNYLF habitat. Aquatic surveys have not detected any presence there and there are no known historic detections in the immediate area. The closest historic detection is from 1961 and is over 2 miles away on Prosser creek. Pre-implementation surveys will be done prior to construction, as well as during and after. No effect to SNYLF is expected.

Expected long term effects include bank stabilization which should result in subsequently less sedimentation and prevent future erosion into the stream directly improving water quality and watershed condition inside the project area.

In summary, during implementation of corrective actions to the stream crossings, there is little, if any, potential for disturbance to SNYLF. Additionally, there may be some localized short-term sedimentation affecting portions of connected aquatic habitats soon after implementation, but this proposed activity is expected to improve potential aquatic habitat in the long-term. If no action were taken, potential direct impacts to habitat and connected habitat would habitat would continue to occur and could increase over time as OHV use continues to grow.

Removal of fixed wet weather season closure dates, gate installation

The proposed action to remove fixed wet weather seasonal closure dates within the Truckee Ranger District project area would follow Region 5 BMP 4.7.7 by developing a wet weather operating plan.

Currently, trails and roads are closed for a core period when soil moisture is expected to be high based on precipitation. This has been ineffective as a management tool due to the annual variability of wet or dry weather, resulting in closed roads during dry periods and open roads during wet periods. It has been observed that OHV users tend to ignore the closure period and use trails when they perceive it to be dry. Conversely, trails have been opened in extremely wet years allowing motor vehicle use during periods use results in the creation of ruts and other impacts that can result in sediment discharge to streams. Therefore, trail damage occurs impacting resources and requiring excessive maintenance. The proposed action would decrease wet season trail damage by closing trails based on actual soil strength and moisture data and installing gates to manage trails based on the wet weather operating plan.

The vast majority of the proposed project area does not intersect with potentially suitable SNYLF habitat, and this proposed action is not expected to impact the species. Project Design Features will minimize potential effects. Potential localized short-term effects to SNYLF or their habitat are considered either insignificant or discountable.

The removal of the fixed wet weather seasonal closure dates is expected to reduce future sediment delivery and improve water quality thereby indirectly benefitting aquatic species and achieving compliance with the Middle Truckee River TMDL and the Lahontan Basin Plan. A measurable improvement in stream water quality would be expected within one year (season) post-implementation.

If the East Zone Connectivity and Restoration Project were not proposed (i.e., no action taken), the beneficial effects of decreased sedimentation and improved overall water quality would not occur.

Treatment for invasive plant species

No effects are expected to SNYLF due to the application of herbicides to treat invasive plant infestations. There are approximately 40 acres of invasive plant infestation proposed for treatment. No Suitable habitat for SNYLF will be impacted. The vast majority of acreage associated to invasive plant infestation (8.2 acres or 93% of the total) within the project area lies on the flat below the Boca dam. Surveys have not detected SNYLF in any of the potentially affected areas and the species is not thought to be present within any of the proposed project aquatic analysis area. Treatment protocols call for targeted application methods and both direct and indirect impacts will be limited in scope both temporally and spatially. Furthermore, use of herbicide will be excluded from any area of overlap with potentially suitable SNYLF habitat.

Summary

The total area surrounding the East Zone Connectivity and Restoration Project is 41,885 acres. Potentially suitable SNYLF habitat present within the surrounding area is 2,013 acres or approximately 5% of the total. Inside the East Zone Connectivity and Restoration analysis area there are a total of 727 acres proposed for ground disturbing activities of which only 5 acres (.75%) represent potentially suitable SNYLF habitat. Site visits have shown these locations to lack primary constituent elements of suitable habitat, or unlikely to be impacted by proposed project activities. No breeding habitat will be affected by proposed ground disturbing project activities. There are an additional 214 acres associated to existing trail which could be affected by a change in designation to allow for use by Class 1 E-bikes. 15.6 (7%) of these acres represent

overlap with potentially suitable SNYLF habitat. The overlap represents overlap of buffer zones and not actual intersections of trail and suitable habitat. This trail already exists and is currently managed for use by traditional mountain bikes, no additional impacts are expected, and suitable SNYLF habitat in the area will not be affected in any substantive additional way.

Implementation of proposed actions will be beneficial in the long-term for SNYLF habitat. No perennial SNYLF breeding habitat will be affected.

Therefore, “*No Effect to Sierra Nevada yellow-legged frog*” is expected due proposed actions in the East Zone Connectivity and Restoration Project. The degree to which the proposed actions may adversely affect potentially suitable SNYLF habitat is minor and small in scale, affecting only approximately .27% of the suitable habitat within the aquatic analysis area. The actions proposed for this project are 1) routine in practice, 2) have been implemented in the past under similar conditions, 3) would directly overlap with a very small portion of suitable SNYLF habitat, 4) would employ standard practices (standards and guidelines and BMPs) and protection measures and 5) have known possible effects.

Lahontan cutthroat trout and Lahontan lake tui chub

Proposed road/trail decommission, reroute, new designation, and new road/trail construction

Proposed activities are not expected to significantly affect Lahontan cutthroat trout (LCT) and Lahontan lake tui chub (LLCT) by increasing risk of injury, harassment, and mortality; and decreasing the quality of suitable habitat in the area. No presence exists for either species at any of the proposed action locations. Impacts such as temporary increased sedimentation are expected to be short term and limited. Suitable habitat connected to the project area may be directly and/or indirectly affected by any increase in sedimentation that would occur as a result of newly rerouted and constructed trail use, however these effects are expected to be insignificant.

Staging Area Creation, Barrier construction and boulder placement

Staging area creation, barrier construction, and boulder placement would take place outside suitable LCT and LLCT habitat so there would be no direct effects to the stream courses, LCT, and LLCT, or their suitable habitat. However, the proposed action would greatly improve or remediate the existing off-trail travel and road runoff issues by decreasing sedimentation into hydrologically connected stream channels. Therefore, installation of these features would indirectly improve LCT and LLCT habitat through sediment reduction and improved water quality. If no action were taken, the sedimentation into suitable LCT and LLCT habitat would continue to occur and could increase over time if the routes continued to degrade. The proposed action would benefit aquatic species, soil and hydrology resources by decreasing off-trail travel and indirect impacts of exposed soil and sediment movement.

Bridge construction and stream crossings

No direct effects to LCT, LLCT, or their habitat is expected as a result of hardening at stream crossings or bridge construction. Neither species is present in any of the proposed crossing locations. Proposed activity is expected to improve connected LCT and LLCT habitat in the long-term.

Removal of fixed wet weather season closure dates, gate installation

The proposed action to remove fixed wet weather seasonal closure dates would follow Region 5 BMP 4.7.7 by developing a wet weather operating plan. No studies have been conducted on the effects of implementing a wet weather operating plan on the LCT and LLCT or their habitat. Because no presence of either species is known to exist within the project area expected to be

directly impacted by proposed ground disturbing activities, potential localized short-term effects to LCT and LLCT or their habitat are assumed to be either insignificant or discountable.

The removal of the fixed wet weather seasonal closure dates is expected to reduce future sediment delivery and improve water quality in connected suitable habitat, thereby indirectly benefitting LCT and LLCT. Installing the gates may cause a temporary increase in sedimentation to connected suitable LCT and LLCT habitat as a result of ground disturbing activities. These risks, however, would not only be short-term, occurring only during the actual implementation period, they would also be highly localized because the overlap between the actions associated with the project area and suitable habitat is exceptionally low. A measurable improvement in stream water quality would be expected within one year (season) post-implementation.

If the East Zone Connectivity and Restoration Project were not implemented (i.e., no action taken), the beneficial effects of decreased sedimentation would not occur.

Treatment for invasive plant species

No effects are expected to LCT, LLCT, or their habitat as a result of herbicide treatments for invasive plant infestations.

Conclusions

Lahontan cutthroat

LCT are not present within the project analysis area, therefore, the Project will not affect the Lahontan cutthroat trout, *Oncorhynchus clarki henshawi*. No critical habitat has been proposed or designated for LCT; therefore, none will be destroyed or adversely modified.

Lahontan lake tui chub

Lahontan Lake tui chub do not occur within the project analysis area. Previous fish surveys have not captured Lahontan Lake tui chub; therefore, the Project will not affect the Lahontan Lake tui chub.

Botanical Resources

Information in this section is based on the *Biological Evaluation – Biological Assessment of Botanical Species* (Patterson 2020a) prepared for the proposed action. Forty-one FSS botanical species potentially occur within the Tahoe National Forest. Twenty-six of these species were excluded from detailed analysis as either the project area falls outside the species known and/or historic range, there is lack of suitable habitat within the project area, or there would be no direct or indirect effect to the species or its habitat. Fifty-four FSS botanical species potentially occur within the Toiyabe National Forest. Forty-five of these species were excluded from detailed analysis as either the project area falls outside the species known and/or historic range, there is lack of suitable habitat within the project area, or there would be no direct or indirect effect to the species or its habitat.

Twenty-one FSS botanical species have potentially suitable habitat within or near the implementation area as displayed in Table 4. This includes Plumas ivesia (*Ivesia sericoleuca*), Lemmon's milkvetch (*Astragalus lemmonii*), Galena Creek rock cress (*Boechera rigidissima*), Washoe Tall Rockcress (*Boechera rectissima* var. *simulans*), upswept moonwort (*Botrychium ascendens*), scalloped moonwort (*Botrychium crenulatum*), slender moonwort (*Botrychium lineare*), common moonwort (*Botrychium lunaria*), Mingan's moonwort (*Botrychium minganense*), western goblin (*Botrychium montanum*), moosewort (*Botrychium tunex*), slide mountain buckwheat (*Eriogonum obalifolium* var. *eximium*), altered andesite buckwheat (*Eriogonum robustum*), Donner Pass buckwheat (*Eriogonum umbellatum* var. *torreyanum*), Sierra Valley ivesia (*Ivesia aperta* var. *aperta*), Dog Valley ivesia (*Ivesia aperta* var. *canina*), Santa

Lucia dwarf-rush (*Juncus luciensis*), Hutchinson's lewisia (*Lewisia kelloggii* ssp. *hutchisonii*), Kellogg's lewisia (*Lewisia kelloggii* ssp. *kelloggii*), sticky pyrrocoma (*Pyrrocoma lucida*), and Howell's tauschia (*Tauschia howellii*).

One FSS botanical species (Plumas ivesia) is known to occur within the implementation area.

Table 4: Species known to exist in, or that have suitable habitat within the project area

Species	Common Name	Forest	Determination	Rational
<i>Ivesia sericoleuca</i>	Plumas ivesia	TNF ¹ , HTNF ²	MANL ³	Direct and indirect impacts to eight sub-occurrences
<i>Astragalus lemmonii</i>	Lemmon's milkvetch	TNF	WN ⁴	Lack of known occurrences in the project area and negligible impacts to suitable habitat
<i>Boechea rigidissima</i> (Arabis rigidissima var. demota)	Galena Creek rock cress	TNF, HTNF	WN	Same as above
<i>Boechea rectissima</i> var. <i>simulans</i>	Washoe Tall Rockcress	HTNF	WN	Same as above
<i>Botrychium ascendens</i>	upswept moonwort	TNF, HTNF	WN	Same as above
<i>Botrychium crenulatum</i>	scalloped moonwort	TNF, HTNF	WN	Same as above
<i>Botrychium lineare</i>	Slender moonwort	HTNF	WN	Same as above
<i>Botrychium lunaria</i>	common moonwort	TNF	WN	Same as above
<i>Botrychium minganense</i>	Mingan's moonwort	TNF	WN	Same as above
<i>Botrychium montanum</i>	western goblin	TNF	WN	Same as above
<i>Botrychium tunex</i>	moosewort	HTNF	WN	Same as above
<i>Eriogonum ovalifolium</i> var. <i>eximium</i>	Slide mountain buckwheat	HTNF	WN	Same as above
<i>Eriogonum robustum</i>	Altered andesite buckwheat	HTNF	WN	Same as above
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	Donner Pass buckwheat	TNF	WN	Same as above
<i>Ivesia aperta</i> var. <i>aperta</i>	Sierra Valley ivesia	TNF, HTNF	WN	Same as above
<i>Ivesia aperta</i> var. <i>canina</i>	Dog Valley ivesia	TNF, HTNF	WN	Same as above
<i>Juncus luciensis</i>	Santa Lucia dwarf-rush	TNF	WN	Same as above
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i>	Hutchinson's lewisia	TNF	WN	Same as above
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	Kellogg's lewisia	TNF	WN	Same as above
<i>Pyrrocoma lucida</i>	sticky pyrrocoma	TNF	WN	Same as above
<i>Tauschia howellii</i>	Howell's tauschia	TNF	WN	Same as above

¹TNF – Tahoe National Forest; ²HTNF – Humboldt-Toiyabe National Forest. ³MANL— may affect individuals but is not likely to result in a trend toward federal listing; ⁴WN—will not affect TES species outside of the analysis area are not anticipated to be impacted by the proposed project either directly, indirectly, or cumulatively.

Suitable habitat for FSS botanical species with potential to occur within the project area has been approximated using three broad habitat types (i.e., barren, wet, low sage/vernal). Table 5 provides approximate total acreage of each habitat type as well as approximate total acreage that intersects treatment areas.

Table 5: Summary of acreage of suitable habitat types in project area

Habitat Type	Species	Acres in activity areas	Acres in analysis area
Barrens, granitic/volcanic outcrops	Galena Creek rock cress (<i>Boechera rigidissima</i> var. <i>demota</i>) Washoe tall rockcress (<i>Boechera rectissima</i> var. <i>simulans</i>) Slide mountain buckwheat (<i>Eriogonum ovalifolium</i> var. <i>eximium</i>) altered andesite buckwheat (<i>Eriogonum robustum</i>) Donner Pass buckwheat (<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>) Hutchinson's lewisia (<i>Lewisia kelloggii</i> ssp. <i>Hutchisonii</i>) Kellogg's lewisia (<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>) Howell's tauschia (<i>Tauschia howellii</i>)	8.85 ac (0.5%)	16.39 ac (0.5%)
Riparian areas, streams, seeps, fens, wet meadows	Lemmon's milkvetch (<i>Astragalus lemmonii</i>) upswept moonwort (<i>Botrychium ascendens</i>) scalloped moonwort (<i>Botrychium crenulatum</i>) common moonwort (<i>Botrychium lunaria</i>) Mingan moonwort (<i>Botrychium minganense</i>) western goblin (<i>Botrychium montanum</i>) moosewort (<i>Botrychium tunex</i>)	41.77 ac (2.9%)	102.0 (3.1%)
Meadow edge, vernal pool, low sagebrush	Sierra Valley ivesia (<i>Ivesia aperta</i> var. <i>aperta</i>) Dog Valley ivesia (<i>Ivesia aperta</i> var. <i>canina</i>) Plumas ivesia (<i>Ivesia sericoleuca</i>) Santa Lucia dwarf-rush (<i>Juncus luciensis</i>) sticky pyrrocoma (<i>Pyrrocoma lucida</i>)	107.47 ac (31.9%)	270.67 (29.2%)
Barrens, granitic/volcanic outcrops	Galena Creek rock cress (<i>Boechera rigidissima</i> var. <i>demota</i>) Donner Pass buckwheat (<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>) Hutchinson's lewisia (<i>Lewisia kelloggii</i> ssp. <i>Hutchisonii</i>) Kellogg's lewisia (<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>)	13.5 ac (0.5%)	16.4 ac (0.5%)
Riparian areas, streams, seeps, fens, wet meadows	Lemmon's milkvetch (<i>Astragalus lemmonii</i>) upswept moonwort (<i>Botrychium ascendens</i>) scalloped moonwort (<i>Botrychium crenulatum</i>) common moonwort (<i>Botrychium lunaria</i>) Mingan moonwort (<i>Botrychium minganense</i>) western goblin (<i>Botrychium montanum</i>)	77.1 ac (2.9%)	102.0 (3.1%)
Meadow edge, vernal pool, low sagebrush	Sierra Valley ivesia (<i>Ivesia aperta</i> var. <i>aperta</i>) Dog Valley ivesia (<i>Ivesia aperta</i> var. <i>canina</i>) Plumas ivesia (<i>Ivesia sericoleuca</i>) Santa Lucia dwarf-rush (<i>Juncus luciensis</i>) sticky pyrrocoma (<i>Pyrrocoma lucida</i>)	853.4 ac (31.9%)	954.0 (29.2%)

Plumas ivesia (*Ivesia sericoleuca*)

The proposed action has potential for direct and indirect negative effects on ten sub-occurrences of Plumas ivesia. Ground disturbing activities, including trail construction and decommissioning, have the potential to trample, uproot, and application of aminopyralid has the potential to kill individual plants. Management requirements have been incorporated into the project that buffer all occurrences of Plumas ivesia by 100 feet ensuring they are completely avoided. Alterations to Plumas ivesia's suitable habitat by increasing its vulnerability to invasive species (i.e. cheatgrass) such that it would not support individuals. The proposed action *May affect, Not Likely to Adversely Affect* Plumas ivesia.

Barren Habitat

Barren habitat is characterized by the lack of vegetation. This habitat type typically has less than two percent total vegetative cover by herbaceous species or less than ten percent total vegetative cover by shrub or tree species (California Department of Fish and Game 1988).

There may be slight to moderate negative effects to barren habitat in the short-term and long-term from ground disturbance associated with the construction and decommissioning of trails across this habitat type. Decommissioning user created or unsustainable trails through barren habitat is

expected to have a negative short-term impact and a beneficial long-term impact, as the existing disturbance will not continue to degrade this habitat type. Long-term permanent negative impacts are also expected where new trails will be routed through this habitat type. Ground disturbance from trail construction and deconstruction has the potential to degrade barren habitat by impacting soil structure and vegetation composition such that this habitat may not support FSS botanical species. Soil and vegetation recovery periods are generally slower in barren habitats than other habitat types. This typically results in longer-lasting impacts from temporary ground disturbance. There may be limited, but permanent, negative impacts to barren habitat from trail construction due to associated ground disturbance and a change in use that renders these areas not suitable as habitat. This habitat type is relatively uncommon across TNF, representing (54,000 acres), representing ~3% (USDA Forest Service 2015). There are 8.85 acres of barren habitat within areas with proposed disturbance (Table 5). The scale of barren habitat in the project area is small, in the context of all potential habitat on the TNF.

Wet Habitats

Wet habitat is characterized by the presence of moisture or water. This habitat type includes areas such as wet meadows, springs, seeps, streams, lakes, and ponds.

There may be slight to moderate negative effects to wet habitat in the short-term and long-term from ground disturbance associated with the construction and decommissioning of trails across water crossings. Decommissioning user created or unsustainable trails through wet habitat is expected to have a negative short-term impact and a beneficial long-term impact, as the existing disturbance will not continue to degrade this habitat type. Long-term permanent negative impacts are also expected where new trails will be routed through this habitat type. Ground disturbance from trail construction has the potential to alter the hydrology of wet habitats. This has the potential to degrade wet habitat such that it would not support FSS botanical species. However, potential impacts to wet habitats are expected to be minimal as water crossings have been intentionally selected to minimize impacts. There are approximately 41.77 acres of wet habitat within areas with proposed disturbance (Table 5). There is approximately 27,000 acres (~2%) of wet habitat across the TNF (USDA Forest Service 2015). The scale of wet habitat in the project area is small, in the context of all potential wet habitat on TNF.

Low Sagebrush

Low sagebrush habitat is generally dominated by broad-leaved, evergreen shrubs (i.e. *Artemisia arbuscula*) ranging in height from about 4 to 19 in, typically averaging about 15 percent cover. A ground cover of grasses and forbs is typically sparse 5 to 15 percent coverage (California Department of Fish and Game 1988; Kuchler 1977).

There may be slight to moderate negative effects to meadow edge, low sagebrush habitat in the short-term and long-term from ground disturbance associated with the construction and decommissioning of trails across this habitat type. Decommissioning user created or unsustainable trails through this habitat type is expected to have a negative short-term impact and a beneficial long-term impact, as the existing disturbance will not continue to degrade this habitat type. Long-term permanent negative impacts are also expected where new trails will be routed through this habitat type and staging areas will be expanded. There are approximately 107.47 acres of meadow edge sagebrush and vernal wet habitat within areas with proposed disturbance (Table 5). Invasion of non-native annual grasses (i.e. *Bromus tectorum*, *Elymus caput-medusae*, *Ventenata dubia*) are of particular concern in these habitats after disturbance activities. Annual grasses cause more frequent fires regimes in these landscapes, which prevent sagebrush species to reach maturity.

Cultural Resources

Refer to FONSI element three below.

Human Health

Affected Environment

Information in this section is based on the Human Health Risk Assessment Summary prepared for the proposed action. Aminopyralid is proposed for use in invasive plant management on approximately 38.7 acres within the project area.

Aminopyralid is a selective herbicide (i.e., only controls a certain type of plant, while leaving other plants unaffected). It is primarily used to control broadleaf weeds, certain annual grasses, and certain woody plants and vines, particularly plant species of the aster family. It provides both pre-emergent and post emergent control (i.e., prevents seeds from germination as well as kills plants after they emerge from soil) (EPA, 2005; USDA Forest Service, 2007).

The EPA has registered (e.g., licensed) this herbicide for sale, distribution, and use in compliance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Before the EPA registers a pesticide under FIFRA, it requires the applicant to show that using the pesticide according to specifications, “will not generally cause unreasonable adverse effects on the environment”. FIFRA defines the term “unreasonable adverse effects on the environment” to mean the following:

- Any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.
- Any human dietary risk from residues that result from use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act (EPA, 2020).

In addition, the USFS has conducted its own Risk Assessments for herbicides that are commonly proposed for use on National Forest System lands. Risk Assessments for all herbicides proposed for use within the project area can be found on file, or at online at <https://www.fs.fed.us/foresthealth/protecting-forest/integrated-pest-management/pesticide-management/pesticide-risk-assessments.shtml>.

Alternative 1 – Proposed Action

Herbicide would be applied in accordance with product label instructions, state and federal regulations, and USFS direction. Any potential worker or public exposure to herbicides would be greatly reduced if not eliminated through implementation of management requirements. As such, the proposed action is not anticipated to result in impacts to human health. Possible, although unlikely, routes of worker and public herbicide exposure are summarized below.

Workers

Workers have the potential to be exposed to herbicides if they fail to adhere to established product label instructions and/or state and federal regulations. For example, if workers do not wear proper personal protective equipment or continue to wear equipment after it has been contaminated (i.e., contaminated gloves) there is potential for exposure. This is highly unlikely as personal protective equipment would be used in accordance with product labels, California Department of Pesticide Regulation requirements, and USFS direction. In addition, all herbicides would be applied by trained and/or certified applicators. Furthermore, all human health exposure scenarios related to workers a concerning aminopyralid resulted in a risk level below the level of no observable adverse effect (NOAEL).

Public

There exists a very limited potential of public exposure to herbicide from application as proposed in this project. All human health exposure scenarios related to the general public concerning aminopyralid resulted in a risk level below the level of NOAEL.

Alternative 2 – No Action

The no action alternative would not result in effects to human health risks associated with herbicides related to invasive plant management since herbicide application is not currently occurring on the Tahoe National Forest. Manual and mechanical treatments would continue as analyzed in the East Zone Invasive Plant Treatment Project (USDA Forest Service, 2012). These treatments would still involve hazards such as heat exhaustion, dehydration, steep terrain, muscle strain, and injury from hand tools. In addition, manual roadside treatments increase the risk of worker exposure to vehicle accidents as workers would be in close proximity to vehicle traffic for extended periods of time.

Invasive Plants

Information in this section is based on the *Invasive Plant Risk Assessment* (Patterson 2020b) prepared for the proposed action. In 2003, the USFS identified invasive species, including terrestrial invasive plants, as one of four critical threats to the National Forest System (Bosworth 2003). Invasive plants pose a serious threat to ecosystem function because of their ability to displace native species, alter nutrient and fire cycles, decrease the availability of forage for wildlife, and degrade soil structure (Bossard and others 2000). Invasive plant infestations are considered the second leading cause of native species decline and extinction in North America (Wilcove and others 1998), and can greatly reduce the recreational and aesthetic values of forestlands.

Invasive species are considered the second leading cause of native species decline and extinction in North America, behind habitat loss (Wilcove and others 1998). Invasive plants can directly compete with FSS botanical species for nutrients, light, and water or indirectly affect the species through alteration of habitat characteristics, such as nutrient cycling or fire regimes (Bossard and others 2000). Ground disturbance associated with mechanical vegetation and fuels treatments can increase the risk of invasive plant invasion (Brooks 2007; Hobbs and Huenneke 1992; Lonsdale 1999). Disturbed habitats often have a higher susceptibility to invasive plant introductions than those with long periods in late successional phases (Radosevich 2002).

An assessment of the risks of invasive plant infestation and spread is outlined in the Invasive Plant Risk Assessment section of the EA. Overall, the proposed action is expected to have a moderate risk of invasive plant introduction and spread. However, invasive plant management has been included in the proposed action to address highly invasive species that otherwise could not be feasibly treated. This would improve or conserve FSS botanical species habitat where it intersects or is adjacent to invasive plant infestations.

Many of the activities managed by the USFS have the potential to introduce or spread invasive plants. Therefore, the USFS management direction prioritizes prevention of invasive plant introduction and spread on National Forest System lands by considering invasion risks during project planning and, to the extent feasible, incorporating invasive plant prevention measures into all activities (Executive Order No. 13112; (USDA Forest Service 2000, 2011). Potential effects from invasive plants are presented in the context of risk of introduction and spread associated with the proposed action rather than effects to specific resources. Resource specific effects are addressed in the applicable resource section of the EA.

Four invasive plant species (musk thistle, spotted knapweed, Canada thistle, and cheatgrass) covering approximately 37.8 acres are present within the project area. Table 6 provides a

summary of known invasive plant infestations, including the number of infestations and associated acres that intersect vegetation and fuel treatment areas.

Table 6: Summary of Known Invasive Plant Infestations within the Project Area

Species	California Invasive Plant Council Rating*	Project Area		Intersection with Activity Areas	
		Infestations	Acres	Infestations	Acres
Musk thistle	Moderate	48	40.4	35	31
Spotted knapweed	High	1	0.1	1	0.1
Canada thistle	Moderate	1	0.1	1	0.1
Cheatgrass**	High	N/A	N/A	N/A	N/A
Total		50	40.6	37	31.2

Note: *California Invasive Plant Council ratings- High: attributes conducive to moderate to high rates of dispersal and establishment; usually widely distributed among and within ecosystems. Moderate: impacts substantial and apparent, but not severe; attributes conducive to moderate to high rates of dispersal; distribution may range from limited to widespread (California Invasive Plant Council 2019).

**Cheatgrass is not actively mapped, monitored, or treated on the TNF

Infestations of musk thistle are concentrated around Boca Reservoir. These infestations represent a high spread risk due to heavy recreation.

Existing Habitat Vulnerability

Most of the project area (60%) is dominated by conifer forests. Jeffery pine and bitter brush forest types dominates the project area. Canopy cover varies from open canopy and sparse ground cover to areas of dense canopy. Barren, grassland and forested areas with relatively open canopy are generally more susceptible to invasion than closed-canopy forested areas (M. Brooks 2007; Hobbs and Huenneke 1992). Approximately 30% of the project area includes barrens, urban, sage brush, bitter brush, and perennial grass land community types (USDA Forest Service 2015). Approximately 42% of the project area has a moderate to dense forested canopy, which is relatively less vulnerable to invasion. The majority of the project area (55%) has a sparse canopy, open canopy, or unclassified density.

Past activities in the project area, livestock grazing, timber harvest, fire exclusion, wildfires, utility corridors, road and trail construction and recreational activities such as camping, hiking, biking, and off-highway vehicle use have resulted in disturbed areas throughout the project area. Disturbed habitats often have a higher susceptibility to invasions than those with long periods in late successional phases (Radosovich 2002). Invasive plant establishment in disturbed areas may be the direct result of destruction of vegetation, or it may indirectly result from changes in resource levels, such as light or moisture, or other conditions (Kowarik and Von der Lippe 2007; Parendes and Jones 2000).

There are some highly disturbed areas and open community types in the project area. Approximately 55% of the project area has a sparse to open forested canopy that is relatively more vulnerable to invasive. The overall habitat vulnerability is high.

Existing Vectors

Known and expected weed vectors for OHV trails include: off-highway vehicles (OHV) such as motorcycles and four-wheel drive vehicles; road maintenance equipment; recreationists; private cars and trucks; Forest Service vehicles and workers; logging equipment on private land and FS; cattle and wildlife. Natural dispersal from wind may also spread the seeds of some invasive species into the proposed project area. Wildlife, sheep, and cattle may also disperse certain noxious weeds that can become attached to fur, or when viable seeds pass through digestive systems. There are two active grazing allotments within the analysis area (Boca and Payen). Vehicles traveling routes and roads may pick up seeds from existing infestations and spread them

to other locations on the forest. For some species, seeds can become affixed to clothing and gear (e.g. non-native annual grasses). Other species do not have dispersal mechanisms for attaching and would most like travel in mud on vehicle and tire tread (e.g. spotted knapweed). Past OHV use of designated and non-designated routes have already spread many of the prevalent non-native species, including non-native annual grasses, to areas vulnerable to invasion. The continued use of established trails for OHV recreation would likely continue to vector these common non-native species throughout the trail system. Many of OHV recreationists visit from other areas of California and Nevada, increasing the risk of introducing new noxious weeds along trails on the Forest. The Boca OHV area is the one of the most popular OHV recreational areas on the Forest.

Due to the vectors associated with OHV, there is a high risk of non-project dependent vectors.

Alternative 1

Habitat alteration expected as a result of the project

Overall habitat alteration is expected to be localized to the trail prism in the 70 miles of new trail construction, 41 miles of decommission trail, and 2 miles of re-routed trail. There will be habitat alteration on a total of 113 miles.

Due to the habitat alteration associated with new trail construction, rerouted trail construction, decommissioning trail, there is a moderate risk of habitat alteration.

Increased vectors as a result of project implementation

The proposed project would temporarily increase potential weed vectors due to the increase in project related vehicle and equipment use. Potential introduction of invasive species may also occur when equipment is first brought into the project area or if equipment travels or is used within existing infestations in the project area. On the Tahoe National Forest, heavy equipment is often imported from lower elevations (e.g., Sacramento Valley, Nevada) where invasive plant species richness is generally greater (Dark 2004; Randall and others 1998). Therefore, use of imported heavy equipment presents a high risk of invasive species introduction. Imported materials such as gravel or rock, erosion control products (e.g., coir logs, large wood, hydromulch, wood chips, and straw), and revegetation materials (e.g., willow stakes, wetland species sod plugs, seed, and nursery stock) that originate in infested areas may contain invasive plant material that has the potential to be dispersed when the materials are used (Kowarik and Von der Lippe 2007).

Project activities will create 71 miles of new permanent invasive plant vectors. Project activities will reduce 41 miles of invasive plant vectors through the decommissioning of trail. The 38.7 acres of invasive plant treatments will help reduce the potential for the spread of existing invasive plant infestations. Construction of new trails and temporary roads are often the primary conduit for introduction and establishment of invasive plant species. Access routes contribute to dispersal of invasive plants by altering environmental conditions, making invasion more likely by stressing or removing native species, and allowing for easier movement by wild or human vectors (e.g., on clothes, shoes, hooves, and tires) (Trombulak and Frissell 2000). Trails are of particular concern because they provide a route for invasive plant dispersal into wildlands by linking the front country to the backcountry. Areas next to trails often include more non-native species and higher non-native cover than surrounding vegetation (Dickens and others 2005; Potito and Beatty 2005; Wells and others 2012), and visitation rates have been positively correlated with the presence of non-native plants (Lonsdale 1999).

Management requirements have been incorporated into the project to reduce or eliminate the likelihood of most vector opportunities related to the project implementation.

Due to management requirements to reduce invasive plant vectors during project implementation, the addition of 70 miles of new vectors, the reduction of 41 miles of vectors, there is a moderate risk of vectors.

Invasive Plant Management Associated with the Proposed Action

The proposed action includes a proposal to treat and monitor all known and newly discovered invasive plant infestations within the project area. Proposed invasive plant management is expected to control, and for small infestations eradicate.

Due to the proposed invasive plant management, there is a low risk of new introductions and spread of invasive plant species as all known invasive plant infestations would be effectively controlled. This would not wholly eliminate risk. Without the proposed invasive plant management new trail construction and decommissioning would represent an extremely high risk of invasive plant spread.

Overall, the risks of invasive plant introduction and spread associated with the East Zone Connectivity Project are considered moderate. There is a moderate level of infestations in the project area. OHV use creates a substantial risk for invasive plant vectors. Because treatment and avoidance of all known infestations within the project is feasible and required through the project's management measures, the risk of spread is greatly reduced.

Alternative 2- No Action

Under the no action alternative, the majority of infestations would not be able to be effectively treated. Given the need to prioritize limited staff time and resources, invasive plant management would be limited to only the highest priority infestations (i.e., small outlier infestations) for which feasible treatment options exist. The following infestation types could not be feasibly treated due to a lack of effective treatment types or concerns for worker safety: large infestations around Boca, and spotted knapweed or Canada thistle.

Not implementing invasive plant management on these priority infestations would likely result in the persistence of known infestations and potential spread to adjacent lands. Most of these species are high priorities for treatment by California's invasive plant experts (e.g., California Invasive Plant Council, Weed Management Areas, and California Department of Food and Agriculture) due to their devastating ecological impacts. If effective treatment is delayed, future treatment of the same infestations would be more costly and require more effort to control. Not implementing invasive plant management would result in long-term-negative impacts to natural and cultural resources.

In addition, the inability to effectively control invasive plant infestations would restrict the scope and scale of the purpose and need of the project. If invasive plant infestations cannot be treated, they must be avoided during implementation of all project activities.

Recreation

There are a number of factors which have led to a significant increase in the demand for motorized recreation opportunities on Tahoe National Forest and in the east zone in particular. Proximity to large urban areas including Reno, Carson City, Sacramento, and even the bay area has always made the TNF a popular getaway destination. Increased state grant funding under the green sticker program has helped to create public land management programs designed to attract motorized recreation enthusiasts. In recent decades, technological advances in engine design, and suspension has significantly increased the versatility of motorized recreational vehicles across the spectrum. Through the 1990's and 2000's Recreational Vehicle (RV) travel has exploded in popularity for individual and family outings. The increase in demand for recreational opportunities has outpaced the number and diversity of OHV routes available for public use.

Additionally, improvements in vehicle capabilities has led to users to open up old skid roads, haul routes, and other landscape features that were never intended for sustained recreational use.

Increased motorized recreational use on the limited designated OHV system that exists on the Truckee Ranger District has required increasing maintenance frequencies using specialized trail equipment. Use has been accommodated through drainage work repair and wet weather closure periods.

Increased demand for recreational opportunity on public land includes the new and increasingly popular use of E-bikes. Since the development of E-bike technology, the sport has seen massive growth around the world. In 2019, Tahoe National Forest decided to allow Class 1 E-bikes on all non-motorized trails. Class 1 E-bikes are defined as pedal assisted only, with a top assisted speed of 20 MPH. Local demand was considered in the decision, but the provision of additional recreational opportunity was also heavily weighed. E-bikes give people who may not otherwise be able to bike (due to physical limitations or proximity to locations) the ability to overcome these challenges (MacArthur, Dill, and Person 2014). There was considerable public support for this policy both from user groups as well as local businesses. In 2020 the TNF reversed this decision in favor of pursuing a travel management decision associated to Class 1 E-bike use. The TNF carefully considered current patterns of use and travel management objectives in proposing four trails designed and managed for heavy mountain biking to be designated as open to Class 1 E-bikes. Each of these trails exhibit design parameters consistent with safe, sustainable, and enjoyable bike use. Standards include lines of site, gradient, turn radius, and challenge. The TNF recognizes that multiple user organizations including International Mountain Bicycling Association and the American Hiking Society have called for proactive approaches to management of trails for E-bike use (AHS 2017, IMBA 2015).

Sustainability: Maintenance, administration and availability of resources

A sustainable trail has constant flow and roll. Tangents are minimized and grade reversals force water off the trail at regular intervals as well as control and dictate safe and sustainable speeds. Flow is the rhythm of the trail, which is usually created by a very curvilinear horizontal alignment. Roll is the vertical rise and fall of the trail grade. Roll also contributes to the rhythm of the trail, but its key role is providing natural drainage points through grade reversals, which significantly reduce the potential for soil movement (Dufourd 2015).

The concept behind the East Zone Connectivity and Restoration project was developed in reaction to increases in public demand for motorized recreation, and in recognition of the documented impacts to natural and cultural resources that demand was causing. By developing a detailed inventory of resource concerns, the TNF has attempted to design an improved OHV route system in order to meet a growing demand for motorized recreation opportunities while mitigating both current and potential future impacts to public resources.

A large portion of the costs associated to construction and maintenance of the TNF forest road and trails system has been paid for through utilizing State of California Green Sticker grant program funds. Motorized trails would continue to be maintained through this grant program by funding Forest Service personnel, contractors and non-profit organizations. Volunteer and partner organizations would also be relied upon to monitor ground conditions and assist with construction and maintenance needs.

The proposed new construction, new designations, obliteration, route, and reroute design parameters would reduce resource impacts and intensive annual maintenance intervals. The new and rerouted approaches to stream channels would be more gradual to reduce potential sedimentation into stream channels. Stream crossings would also have a more gradual trail alignment with grade reversals incorporated into construction to reduce the potential that sediment could enter stream channels. Obliteration and reroute activities would restore the natural

100-year floodplain and, as such, work within the stream environment zone (SEZ) is necessary to restore hydrologic function and reduce ongoing sedimentation issues.

The proposed designation of four currently non-motorized trails to allow for use by Class 1 E-bikes will not significantly hamper Tahoe National Forest's ability to sustainably administer management guidelines or enforce applicable laws associated to the use of these trails. U.S. Forest Service Law Enforcement and Investigations (LEI) personnel are responsible for protecting the public, employees, natural resources, and other property under the agency's jurisdiction. Additionally, LEI investigates and enforces applicable laws and regulations that affect the National Forest System (NFS) lands, and prevents criminal violations (MTM FEIS USDA F.S. 2010). The Tahoe National Forest has a law enforcement plan that is updated annually. All Forest Service employees have a duty to know and understand their authorities and responsibilities, and to properly enforce laws and regulations relating to the Forest within their authority and capability. LEI and agency personnel provide a regular and recurring presence on vast amounts of public land, roads, trails, and areas, and take appropriate action if illegal activity is discovered violations (MTM FEIS USDA F.S. 2010).

The changes in seasonal closure designation for the Verdi Ridge area, along with the gates and barriers (including boulders and fences) would allow better administration of the motorized trail system. Instead of physically constructed rolling grade dips, the proposed resource friendly trail construction methodology would reduce soil erosion due to milder trail grades and undulating trails with grade reversals constructed into the trail design. By implementing a soil saturation-based model (instead of hard closure period) to open and close designated trail Systems, Forest Service managers would be able to more effectively respond to ground conditions and reduce sedimentation to the Truckee River and its tributaries. The soil saturation model, as opposed to the hard closure period, would potentially lead to more opportunities to open the trails for public use and enjoyment during dry winter seasons, therefore providing for increased recreation opportunities. Soil saturation closure thresholds will be developed by collecting soil moisture data along each route where the closure plan is proposed and comparing that to route conditions at the time of data collection.

Alternative 1 benefits the Truckee Ranger District OHV road and trails network due to reduced soil erosion, maintenance costs and frequency. Alternative 1 also benefits multiple recreational user groups by increasing opportunity for motorized, non-motorized, and e-bike enthusiasts.

Public Safety

Refer to FONSI element two below.

Provision of recreational opportunities

Trails that are straight lack a connection to landscapes and topography. A sustainable trail would flow between trees and use control points or vistas where the public can enjoy the stunning landscapes of public lands. A straight trail that abruptly ascends a hill just to go back down lacks sinuosity and a connection to nature. A trail that flows and undulates through the forest is more desirable than a rocky eroded hill climb that requires maintenance every year. Flow trails use less steep design parameters and topography that result in more trail miles. Newer design in trail construction theory has shown that an undulating trail with curvilinear design has less tire spin and less throttle wear as the speed of the OHV is slower.

As more miles of sustainable trail are constructed, riders are distributed more across the district. Doing so spreads out OHV use on the trails and increases visitor opportunities for whomever may be seeking challenge and solitude on their rides. New designated trails would foster trail use disbursement over the available motorized trail network. This would result in reduced congestion and improved trail safety system-wide, especially at the ingress/egress points near staging areas.

OHV enthusiasts (especially motorcyclists) value the narrow, rough, and technical nature some motorized trails offer. They also value the scenic beauty, remote character, and the rareness of these combined qualities and opportunities. The Verdi Ridge in particular has the potential to provide for both.

Proposed new designations to allow for use by Class 1 E-bikes on four specified trails, holds a particular relevance with respect to the provision of recreational opportunity. E-bikes give people who may not otherwise be able to bike (due to physical limitations or proximity to locations) the ability to overcome these challenges (MacArthur, Dill, and Person 2014). Tahoe National Forest also recognizes that the growing demand for Class 1 E-biking opportunities requires carefully considered management decision making in order to meet our responsibility to provide opportunities for recreation on multiple use public lands.

The project management requirements include monitoring use before and after implementation to better understand frequency and concentration of motorized and non-motorized use within the different proposed project areas. Increased signage and education by the Forest Service and event holders would also be planned for project implementation.

Changing existing trail alignments and creating more sustainable, user friendly alignments, can help other user groups enjoy the same trail used by OHV riders. For example, mountain biking, E-biking, hiking, or equestrian use on many motorcycle trails is currently too difficult or undesirable based upon the existing steepness of the trail grades, trail conditions, and or patterns of use. By promoting sustainable grades with drainage features incorporated into the design, allowing for reduced soil erosion and reduced trail maintenance frequencies, a more enjoyable trail experience for motorized and non-motorized trail users is provided.

Implementation of Alternative 1 (proposed action) would provide more satisfactory riding experiences for more motorcyclists as well as non-motorized users. The improved trail conditions would also provide motorcyclists, equestrians, mountain bikers, Class 1 E-bikers, and hikers safer, less confusing trail conditions when compared to No Action. There would be improved safety and enjoyability. Enhanced trail experiences from the development of additional trail loop options and additional single-track trail mileage would be available to all user groups.

Economics, tourism and community development

OHV riding on system routes is a rapidly expanding legitimate recreational pursuit on NFS lands. Successful planning for seasonality of use and classification of use on trails allows for resilient trails that have minimal resource impacts while at the same time challenging the OHV user to further their abilities.

Proposed new motorized single-track trail will attract multiple user groups as new trail design parameters with lower gradients and flowing alignments invite higher percentages of mixed use. An indirect benefit of the proposed action is a potential increase of non-motorized use on motorized system routes allowing more of the public to enjoy connections to the land. The proposed trail project would not only benefit OHV users, but also the local communities and economy. Trails of varying difficulty draw local and out-of-town visitors and their families. Recreation users spend money at local businesses such as gas stations, equipment shops, restaurants, lodges and campgrounds.

During scoping, positive comments from both motorized and non-motorized users, groups, businesses, and organizations were expressed. This green-sticker-funded opportunity would provide for increased trail connectivity across the district for all user groups.

Conflicts among uses of NFS lands and quiet recreation

The Truckee Ranger District has 181 miles of non-motorized trail networks that provide opportunities for quiet recreation. The Granite Chief and Desolation Wilderness areas, as well as the Pacific Crest Trail, provide over 75 miles of outstanding non-motorized recreation opportunities open only to equestrian and pedestrian use. Areas proposed for new single-track motorcycle trail were carefully considered in terms of the potential for conflict and chosen based on suitability of terrain and existence of current motor vehicle use. The proposed change in route designations to allow for Class 1 E-bike use was analyzed based on current patterns of use. The four trails proposed for this new use designation were all found to be currently managed for heavy mountain bike use. Based on a review of findings, Tahoe National Forest determined that mountain biking represents a majority of the current use on each of these trails. Furthermore, our analysis of current scientific literature in conjunction with data collected on the district and specific to the four proposed trails, found that Class 1 E-bikes are similar to traditional mountain bikes with respect to a number of key characteristics. These include components (Trail Reportsss, incorporated by reference), comparative speeds (Langford et al. 2015) (Trail Reportsss, incorporated by reference), relative health benefits (Hall et al. 2019), impacts to trail (Wilson and Seney 1994) (IMBA 2015), and comparative appearance is not expected to increase conflicts among uses. Tahoe National Forest, in 2019, allowed Class 1 E-bikes on all non-motorized trails. During this period, the forest did not observe any significant increases in user conflicts, complaints, or reported safety concerns. No significantly different impacts to individual trails were recorded. While there was a general increase in the use of Class 1 E-bikes on forest trails, the TNF witnessed an overall increase in bike use on all trails, across all classes. This increase in use however, when observed at landscape scale, did not significantly alter patterns of use, nor increase impacts to public resources as a result. The differences with respect to impacts were not discernible at a local site-specific scale.

Motorcycles create noise that is unpleasant to some recreationists. The creation of a motorized trail in a new location, as proposed in Alternative 1, could negatively impact non-motorized recreationists in proximity to new trail locations. However, because new trails are proposed along or near existing motorized trails and roads, the increase in noise disturbance to recreationists from the proposed action is expected to be minor.

Tahoe National Forest recognizes that many users prefer not to recreate where bicycles are present. The four trails proposed for new designations to allow for use by Class 1 E-bikes, representing 35.5 miles (approximately 10% of managed trails on the Truckee ranger District), have all been open to bicycle use since their creation. Tahoe National Forest has observed that on each of these four trails, a significant to majority percentage of current use comes from mountain bike riders. Tahoe National Forest has also determined, based on data collected locally (Trail Reportsss, incorporated by reference), reviews of relevant, peer reviewed, scientific literature (Langford et al. 2015)(Wilson and Seney 1994)(Weaver and Dale 1978), and research conducted by industry and user groups (IMBA 2015) (SBTS, Public Comment Letter 2020) that Class 1 E-bikes do not represent a significantly different use than traditional mountain bikes which currently utilize these four trails. Based on a careful review of our findings, Tahoe National Forest has determined that the proposal to designate four select, currently non-motorized trails, as open to Class 1 E-bike use will not result in any new or additional displacement of users from the trail system.

Signage and increased educational outreach for new trails and newly proposed use designations, would minimize potential trail user conflicts. Improved direction in terms of sustainable trail use and responsible trail use etiquette will improve safety and enjoyment for all user groups. Construction parameters undulating the trail frequently and grade reversals coupled with strategic placement of barrier structures, will assist to keep speeds down, lowering throttle use on

motorcycles and promoting safer speeds among Class 1 E-bike and traditional mountain bike users. The District is planning on continuing to work closely with local partner groups on motorized trails to better inform and educate all user groups on multiple use trails in order to mitigate conflicts.

Soils and Hydrology

The analysis of impacts in the soils and hydrology resources report (Hutchinson and Falvey 2020) presents direct, indirect, and cumulative effects on resources in the project area for proposed Off Highway Vehicle (OHV) and watershed improvement management actions commensurate with the scope of the action. This report addresses mechanisms from the project alternatives that increase the risk for an effect on hydrologic characteristics that could potentially affect the beneficial uses. Mitigations are shown to be successful through monitoring; therefore, this analysis assumes mitigations are to be implemented.

Existing Condition

The northern project area is located on variable terrain, ranging from flat ground to steep hillsides, and includes several areas where there are drainage issues. In the northern portion of the Project Area, numerous springs and dry grass or meadow systems are found within the drainages mostly associated with fault and fracture systems in an otherwise arid landscape. Throughout the Project Area some existing and abandoned linear features now serve as conduits for concentrated runoff and experience vertical incision. The southern project area associated to the 06 road is characterized by mixed conifer and east side pine forest habitat. Perennial stream systems include Deer Creek and upper Martis Creek. Neither drainage will be impacted by proposed project activities, though improvements to water quality are expected in Deer Creek due to plans for decommissioning of existing user created trails under a previous decision [Big Chief Trail Project, 12/19/2017]. There is a high demand in the area for recreational opportunity across multiple user groups. Improved conditions are expected long term with sustainable trail design and increased maintenance and use compliance enforcement.

Within the overall project area, heavy local residence use, high recreation use and historic uses have resulted in degraded trails and routes. Rutted roads and compacted soils commonly occur along these trails, roads, and historical terraces, which also serve as conduits for intercepting subsurface flows and concentrating surface runoff. Much of the historic logging practices have affected meadow function and stream stability. Numerous pipeline and powerline roads and other linear infrastructure features disrupt natural overland flow. The existing county roads bisect meadows and concentrate flows that contribute to degradation of meadow systems and stream channels. Sheep grazing patterns have resulted in areas of compacted stringer meadows, and in combination with areas where OHV users travel channel pathways and where concentrated county road drainage discharges contributes to erosion of soils in the hydrologic system.

Reservoirs were added to the natural system. In 1937 Boca Dam was constructed and Stampede Dam was constructed in 1970 (in 2018 Stampede Dam was raised 11 feet and in 2019 Boca Dam was fortified). The climate and management driven changes in water elevations can be observed to tend to incise drainages entering the reservoirs particularly where the slope to the reservoir is steeper. In wet years when the reservoirs are elevated, some benefits to the meadow systems can be observed from increased water table elevations.

Hydrologically, the East Zone Connectivity and Restoration Project activities, expected to alter current conditions, lie within several HUC 12 sub watersheds as displayed in Table 7. Relatively inconsequential changes include short route segment alterations in the Stampede Reservoir and Trout Creek-Truckee River sub watersheds. More significant changes are proposed within the Davies Creek, Prosser Creek, Boca Reservoir, Greys Creek, Squaw Creek, and Martis Creek sub watersheds, all of which drain into the Middle Truckee River. The Humboldt-Toiyabe National

Forest has minor linear and non-linear modifications proposed within the Bull Ranch Creek, Dog Creek, and Bronco Creek HUC 12 sub watersheds. The most recent NHD watershed delineations based on Hydrologic Unit Code (HUC) delineation methods was completed for HUC 14 and this level is designated “Drainage”.

Table 7: Project Area Sub Watersheds and Drainages (HUC 12 and HUC 14)

Watershed Name (Huc 12/Huc 14)	Acres	Relative Project Map
Boca Reservoir-Little Truckee River	23,196	Maps 1, 3, and 4
<i>Lower Little Truckee River</i>	8,469	Map 3
<i>Boca Reservoir</i>	7,440	Maps 4 and 6
<i>Dry Creek</i>	7,304	Maps 3, 4, 5, and 6
Greys Creek-Truckee River	22,552	
Davies Creek	21,081	
<i>Hoke Valley</i>	4,154	Map 2
<i>Merril Creek</i>	3,598	Map 2
<i>Lower Davies Creek</i>	3,647	Map 3
Martis Creek	26,756	
<i>Upper Martis Creek</i>	5,929	Map 7
Prosser Creek	20,792	
<i>Alder Creek</i>	8,325	Map 6
<i>Middle Prosser Creek</i>	5,365	Map 6
<i>Lower Prosser Creek</i>	7,115	Map 6
Squaw Creek-Truckee River	31,263	
<i>Middle Truckee River-Pole Creek</i>	6,081	Map 7
<i>Middle Truckee River-Silver Creek</i>	5,077	Map 7
<i>Middle Truckee River-Cabin Creek</i>	6,069	Map 7
Stampede Reservoir-Little Truckee River	14,824	
<i>Stampede Reservoir</i>	9,258	Maps 2 and 3
Trout Creek-Truckee River	12,432	
<i>Lower Middle Truckee River</i>	9,351	
Humboldt-Toiyabe National Forest		
<i>Bronco Creek</i>	25,721	Maps 3 and 4
<i>Dog Creek</i>	13,789	Map 2
<i>Bull Ranch Creek-Truckee River</i>	16,890	Map 2

Indicators, Methods and Metrics

The method used to predict the direct and indirect effects is based on quantitative and qualitative assessment based on review of literature, professional opinion for the activities and metrics described in the following table. These indicators are obtained from various sources of Regional Forest Direction and other state and federal laws and regulations.

Indicator and Method Associated with Cumulative Disturbance Effects

Cumulative watershed effects (CWEs) are the combined effects of past, present, and future land management activities within a watershed that may affect beneficial use of water that occurs away from the locations of actual land use and that are transmitted through the fluvial system (USDA FS, 1988). The locations within this project area have legacy impacts that are currently showing signs of modest recovery in some locations. This project is designed to minimize future potential risk to water quality and sensitive habitats by removing unauthorized routes, improving existing routes, constructing sustainable routes, creating and improving staging areas, and restoring and hardening stream crossings, riparian zones, and meadows.

Direct, Indirect and Cumulative Effects Analysis

This report addresses mechanisms from the project alternatives that increase the risk for an effect on hydrologic characteristics that could potentially affect the beneficial uses. Mitigations are shown to be successful through monitoring; therefore, this analysis assumes mitigations are to be implemented. Even with implementation and monitoring there is a risk that measures may not be

fully implemented or may not be effective. Appropriate design, monitoring and maintenance with adaptive design changes can be successful in minimizing impacts to resources. An early educational element and forest presence can improve successful adherence to practices that allow sustainability of long-term recreational use.

Under the Proposed Action, routes and trails will be constructed, realigned, and decommissioned. Reconstruction of existing roads would provide better drainage and in the long-term reduce sediment production by maintaining drainages. Construction of new roads or realignment of road segments will be completed using BMP standards to provide proper drainage within the road prism. Decommissioning of routes will result in drainage reconnection. Seasonal closures to avoid wet periods will also maintain proposed drainage infrastructure and protect hydrologic features from future degradation. Monitoring of our National BMP's allow us to identify areas where additional measures may be needed during and after this project is completed.

The Tahoe National Forest continually conducts surveys to identify maintenance needs using the Soil and Water Roads Condition Inventory (SWRCI) protocol which rates road segments as functional, at-risk, or impaired and aids in identifying problem areas (USDA 2008). The segments identified for decommissioning or re-route in Alternative I were identified as at-risk or impaired through SWRCI surveys. These steps aid in the long-term maintenance of roads and trail improvements.

Cumulative Watershed Effects

As discussed in existing conditions analysis, the project area has numerous legacy impacts that disrupt natural hydrologic processes. With this proposed action, the scale of impact will improve existing hydrologic conditions by implementing watershed improvement actions, such as rerouting and decommissioning routes that are considered impaired or reconnecting hydrology along routes and trails where currently drainage and sedimentation issues exist. New trail building activities will have impacts to existing hydrologic connectivity and features but were designed to avoid areas where impacts could not be fully mitigated via management requirements that reduce the potential impact of construction and ongoing use. Ongoing and future management of roads, trails, and routes adjacent to waterways and wet features will reduce future impacts on soil erosion, water quality, and hydrologic connectivity.

Conclusions

This proposed action incorporates measures that meet requirements of Riparian Conservation Objectives 1, 2, 5, and 6 (SNFPA, ROD pg. 32-34) and includes specific measures needed to reduce the potential for cumulative watershed effects and provides measures to assure compliance with applicable water quality control plans.

The project proposes sustainable tread designs specific to the proposed designated uses. Actions are included that will aid in reducing soil transport and sediment delivery to waters of the state and will improve the hydrologic integrity of stream crossings on existing routes and through meadow areas. It incorporates needed measures to maintain beneficial use and to attain applicable water quality objectives. During and following implementation, monitoring and maintenance will ensure the measures taken will be adequate to meet water quality objectives. It is therefore concluded that there would be no irreversible or irretrievable water quality impacts from the proposed treatments and the requirements for the maintenance of water quality as established by the Lahontan Regional Water Quality Control Board (LRWQCB) and the Federal Clean Water Act would be met.

Resource conditions considered in this document includes determining whether there is an extraordinary circumstances related to a proposed action for Floodplains, wetlands, or municipal watersheds:

The Resource Protection Measures, Best Management Practices, and other measures included in the design of the project will maintain the streamside zone, riparian areas, and water quality, including those associated with flood plains, wetlands, and municipal watersheds, and will reduce the potential for sediment increases above the existing levels over the mid-term for areas associated with this proposed action. The Proposed Action is designed to meet the Riparian Conservation Objectives (RCOs) as summarized in the SNFPA ROD (2004). Project design and mitigations are tailored to the site to maintain water quality, aquatic habitat, and riparian habitat. The Proposed Action will meet the Lahontan Regional Water Quality Board Basin Plan Objectives and Middle Truckee River TMDL. No risks of extraordinary circumstances related to cumulative adverse effects were identified associated with the proposed action.

Finally, this project is also consistent with the TMDL Management Agency Agreement (MAA) between the State Water Board and Forest Service (USFS), as we were able to leverage the identification of issues that exist in the project area and incorporate them into a landscape planning area (Middle Truckee River – Boca Reservoir Sub-watershed and Highway 89 Corridor) where the USFS continues to identify, implement, maintain, and monitor best management practices (BMPs) to protect water quality. This project has identified problem areas (related to sedimentation and erosion) on the Tahoe National Forest (TNF) lands and provides steps to promote healthy vegetative stands resilient to wild fires in order to recover and maintain vegetative sustainability of the treated stands and to reduce impacts to the hydrologic system that can result if untreated vegetative conditions lead to high burn severity wildfire.

Visual Resources

The proposed activities are all located within various Management Areas (MAs) with various forest management emphasis. None of the Proposed Action areas will affect the quality of visual resources associated with the Granite Chief or Desolation Wilderness areas.

Visual effects and intensity of visual effects will vary with this project since project actions would occur in many various locations on the Truckee and Sierraville Ranger Districts as well as on the Humboldt-Toiyabe National Forest across various landscape character types with different Visual Quality Objectives (VQOs). Although visual effects will vary, none of the visual effects would be significant, and all of the visual effects would be compliant with the Forest Plan VQOs. Proposed actions would be minimally evident (since they consist of trail building or existing road / trail improvements), would be very small, and would be lightly and sustainably placed upon the landscape. Views of proposed actions would primarily be in the immediate foreground by users recreating on existing trails or the trail features being proposed. Some of the proposed actions could be visible for very short periods of time from highly used travelways in immediate foreground views but would be minimally evident to nonexistent in middleground and background views.

Trail building materials would be utilized from on site or would be chosen to blend into the natural surroundings and the trail alignment would be placed to take advantage of the natural terrain. Although the effects of these trail improvements would be evident to users, the recreational experience and scenic values of the area would be enhanced.

The most negative visual effects would occur when trail building or improvements take place. Small trail building equipment, dozers and excavators, construction signage, and increased dust and noise would be evident in the immediate foreground but only for short periods of time (days to weeks at a time.) Evidence of trail grading, cut and fill slopes, rock placing, and decommissioned old roads and trails may be visible in the short term (less than 5 years) and would sufficiently blend into natural surroundings in a few years. Any short term negative impacts would be reduced by implementing recommended Visual Resource BMPs.

Overall the actions of this project would result in minimal negative visual impacts and some positive visual impacts. Small amounts of visual contrast impacts result in evidence of project activities but reduced evidence of those impacts over the short term (less than 5 years) and implementing recommended project BMPs would result in reduced negative visual impacts and the project would result in compliance with all affected Forest Plan VQOs.

Terrestrial Wildlife

Effects to terrestrial wildlife are summarized below and addressed in detail in the Biological Assessment and Biological Evaluation for Terrestrial Wildlife (Rawlinson and Brokaw 2020) and the Project Management Indicator Species Report (Rawlinson and Brokaw 2020). The East Zone Connectivity and Restoration Project would not affect any United States Department of the Interior Fish and Wildlife Service (USFWS) listed threatened or endangered species. Species addressed below are on the USFS R5 Sensitive Species List for TNF and have suitable habitat within the analysis area (Refer to Table 8).

Terrestrial species represented on the R4 Threatened, Endangered, and Sensitive (TES) Species list for the Humboldt-Toiyabe National Forest and which may occur in the areas proposed for action on the HTNF include Spotted bat, Townsend's Western Big-eared bat, Bald eagle, Mountain quail, White-headed woodpecker, and Northern Goshawk. Effects to these species will be discussed in combination with the analysis of effects for R4 TES species on the TNF.

Table 8. Tahoe National Forest Threatened, Endangered, and Sensitive Species

Species	Species Status ¹	Occurs or Has Suitable Habitat Within the Project Area	Effects Determination ²	Reason for No Effect, if Applicable
Western bumblebee	S	Yes	May Affect NLRT	
Bald eagle	S	Yes	May Affect NLRT	
California spotted owl	S	Yes	May Affect NLRT	
Great gray owl	S	No	No Effect	No Suitable Habitat
Northern goshawk	S	Yes	May Affect NLRT	
Willow flycatcher	S	No	No Effect	No Suitable Habitat
Greater Sandhill crane	S	No	No Effect	No Suitable Habitat
Pacific marten	S	No	No Effect	No Suitable Habitat
North American wolverine	S	No	No Effect	No Suitable Habitat
Pallid bat	S	Yes	May Affect NLRT	
Townsend's big-eared bat	S	Yes	May Affect NLRT	
Fringed myotis	S	Yes	May Affect NLRT	

¹Key: E = USFWS Endangered, T = USFWS Threatened, PE = USFWS Proposed Endangered (pending final rule), PT = USFWS Proposed Threatened (pending final rule), C = USFWS Candidate (warranted but precluded), S = USFS R5 Sensitive.

²Effects determinations for sensitive species of "may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability" is shown as NLRT; "may affect not likely to adversely affect" for proposed or Federally-listed threatened or endangered species is shown as NLAA.

Western bumble bee

Direct effects to western bumble bees may occur and could include disturbance to foraging bumble bees or damage to nest colonies due to the removal of flowering shrubs and wildflowers during project implementation and long-term recreational use. Disturbance-type effects are expected to be short term and limited as preferred habitat (meadows and riparian areas) would not be affected under the proposed action. Disturbance would also be limited due to the narrow trail corridor and timing of project implementation being spread over several years, which would reduce the amount of disturbance on any given year. Preferred habitat that contains a concentration of flowering plants, such as riparian areas, would be limited to short crossings.

Bald eagle

During the breeding season, bald eagles are sensitive to a variety of human activities (USFWS 2007). The proposed action has the potential to cause direct, disturbance-type effects (e.g., flushing a perched individual) if bald eagles are passing through, or foraging in the vicinity of known nest locations around Stampede, Boca, and Prosser reservoirs. Disturbance would be extremely limited as none of the proposed actions are planned near nests. Disturbance-type effects, if they occur, are expected to be brief and slight. If bald eagles are discovered nesting during project implementation, project activities would be limited during the breeding season at a distance determined by a wildlife biologist necessary to minimize disturbance. Proposed new trail alignments were designed to incorporate nest buffers as recommended by USFWS National Bald Eagle Management Guidelines (USFWS 2007). A half mile buffer was used to mitigate potential disturbance to known nest locations.

The proposed action is not expected to affect the availability of large trees for bald eagles within the project area. Although some large snags may occasionally need to be removed due to hazard concerns, this need will be rare and affect very few trees that are suitable for bald eagles. The potential effect of the loss of large trees or snags is very low and no change to existing habitat characteristics for bald eagles is expected. Potential effects to bald eagles or their habitat on the HTNF are expected to be even less than the TNF due to increased distance from large water bodies where bald eagles are known to nest.

California spotted owl

Proposed road/trail decommission, reroute, new designation, and new road/trail construction

The only California spotted owl habitat within the proposed project boundary where there is the potential for impacts due to ground disturbing activities is in the 06 Rd, area where there is one protected activity center (PAC) (PLA0070). Because the East Zone Connectivity and Restoration Project would affect a very small, linear area with very little effect on over story vegetation, the effects to habitat structure are generally discountable. Furthermore, a component of the purpose and need for the proposed action is associated to meeting existing demand for motorized recreation opportunity. Popular user created motorized trails in the area which represent a long time historical use are currently slated for obliteration and restoration under a previously signed decision [Big Chief Trail Project, 12/19/2017]. Some of these trails intersected an existing PAC (PLA0070) and represented a significant potential for disturbance to California spotted owls. New proposed motorized trail in the area does not intersect with the existing PAC. The new proposed alignment utilizes existing disturbed areas within a powerline corridor and along the 06 and 06-16 Rd.'s. Construction of new trail represents a temporary disturbance of limited scope and time and there will be no change to existing habitat characteristics. Current patterns of motorized use are expected to continue; if a large event such as an enduro race or a large group occurred, their permit may require more specific analysis and management requirements.

The PLA0070 California spotted owl PAC has been monitored extensively over the last 15 years and there is detailed record of preferred use areas, roosting stands, and nest locations. By removing use within the existing PAC boundary there is an expectation that the potential for negative impacts from disturbance related to motorized vehicle recreation will be decreased.

Suitable California spotted owl habitat in the 01 and 06 road areas, as well as one existing PAC (PLA0070) may be affected by the change in designation for identified, currently non-motorized trails, to allow for use by Class 1 E-bikes however, these effects are expected to be insignificant. As these trails already exist, no ground disturbing activities are planned under the proposal. Furthermore, existing habitat characteristics will remain unchanged, volume of use is not expected to significantly increase, and the comparative difference in impacts between Class 1 E-

bikes and traditional mountain bikes (for which each of the identified trails is currently managed) are thought to be minor.

None of the other proposed actions including; removal of fixed seasonal closure dates; route realignment; changes to the NFTS; route decommissioning; staging area creation; installation of gates, boulders, or other barrier structures; hardening of stream crossings; and invasive plant treatments are not likely to have any effect on California spotted owl either because none are proposed in areas where suitable habitat exists or because their potential impacts are negligible.

Northern goshawk

Several actions proposed in the East Zone Connectivity and Restoration Project occur within designated PACs for northern goshawks; Table 9, below describes what components of the project occur in which territory. Consistent monitoring and protocol survey visits have shown five of the six PACs to have been unoccupied for more than 15 years. The only PAC with recent occupancy is Big Chief which has shown presence in each of the past 5 years.

Table 9. Proposed Action Components and Miles of Overlap with Northern Goshawk PACs

PAC ID	New Trail	Decom	E-Bike Designation	Realignment	Total
Big Chief	1.1	0	1.4	0	2.5
Wornmill	1.5	0.4	0	0.06	1.96
Canyon 4	0.2	0.6	0	0	0.8
Woodchopper Springs	0	0.4	0.9	0	1.3
Hobart Mills	0	0	1.2	0	1.2
Russell Valley	0	0.7	0	0	0.7
Total	2.17	0.74	1.43	0	8.46

Suitable Northern goshawk habitat is defined as old growth forest stands, and stands exhibiting old growth characteristics. Using metrics developed by California Wildlife Habitat Relationship models (CWHR types), these are stands containing larger average size tree classes with a higher percentage of canopy cover. Human disturbances along roads and trails may affect adjacent habitats by causing human / vehicle disturbance, introducing non-native vegetation, and fragmenting habitat. The new trail proposal was analyzed for the potential to fragment adjacent habitats by buffering them on either side for 0.25-mile and is shown in Table 10.

Table 10. Acres of California Wildlife Habitat Relationship¹ types larger than 4M, 4D, 5M, 5D, and 6 within 0.25-mile of proposed new trail actions.

Habitat Type	Acres (within 0.25-mile)
Sierran mixed conifer 4M	4,115
Sierran mixed conifer 4D	669
Sierran mixed conifer 5M	154
Sierran mixed conifer 5D, 6	97
Total Mid- to late-successional, closed-canopy forests (> 4M)	5,035
Total Analysis Area	12,905
Total Project Area	41,885

¹ Definitions of Timber Strata and CWHR Types:

- Size Class 4=12-24" dbh, 5=24-40" dbh, Class 6 is defined as size class 5 trees over a distinct layer of size class 4 or 3 trees; total tree canopy exceeds 60% closure.
- Canopy Cover Class M= 40-69%, D=70% or more

The highest quality old-growth forest habitat in these areas exist in the designated Protected Activity Centers. The vast majority of suitable habitat within the project analysis area is representative of the 4M CWHR category which, while it is categorized as suitable habitat, is not considered high value as nesting or roosting habitat.

The habitat affected by new trail would not be measurably fragmented by the small footprint within the much larger analysis and project areas, so effects to habitat are largely discountable. The project as a whole would increase the number of miles of trail in the network, but would

retain important habitat characteristics such as over story, large trees, and complex, mature forest ecosystems. Because trails are narrow and do not remove over story, they do not substantially fragment suitable forested habitat, allowing for contiguous forest stands and movement of birds between forested areas.

The proposed continued management of existing and additional trails is expected to create long-term disturbance that would reduce habitat quality. While these areas would still contain habitat values such as over story canopy, logs, and large trees, snags may be somewhat reduced for rider safety. Project designs limit new trail incursion into PACS, and proposed trail alignments were created with a ½ mile buffer from historic nest site locations.

Proposed new trail in the 06 road area is the only location where intersection with a recently occupied Northern goshawk PAC occurs. Impacts are not expected to be significant however because where the proposed alignment passes through PAC boundaries, it is utilizing an existing disturbed area within a powerline corridor and is directly adjacent to the 06 and 06-16 roads which already support motorized vehicle traffic.

No new trail construction is proposed on the HTNF and thus no effects are expected as a result of actions associated to the construction of new trail.

Soil moisture based opening and closing of trails

Proposed monitoring would reduce the amount of time these roads and trails are used during wet weather as compared to the current fixed season of use, especially during wet winters, late spring snowfalls, or fall rainstorms. The flexibility of trail use based on soil moisture would also increase trail use during extended dry periods between fall and spring; this would result in increased potential for disturbance to sensitive terrestrial species in the winter. The actual risk of disturbance varies with habitat and proximity to occupied areas.

The Verdi Ridge area, where a soil moisture based management strategy is proposed contains mostly small pockets of suitable habitat and two PACs. Consistent monitoring in the area has shown these PACs to be unoccupied for more than 15 years.

Designating existing trails as open to Class 1 E-bikes

Impacts to Northern goshawk from changes in trail use designation to allow Class 1 E-bikes is not expected to have any significant effects. The proposed action impacts only one occupied PAC (Big Chief), will not have any measurable impact to existing habitat characteristics, and is not expected to significantly change existing use patterns on those trails. The potential for disturbance due to increased use is considered very small.

Actions proposed on the Humboldt-Toiyabe National Forest

Actions including gate placement, addition of a small spur to the NFTS, gated road closure improvement, and decommission of a user created road segment are expected to be limited in terms of potential disturbance both spatially and temporally. The decommissioned route should result in overall habitat improvement but will not measurably affect suitable Northern goshawk habitat. Gate installation and or improvement may cause a limited disturbance for a short period of time during implementation but will have no lasting impact to the species or its habitat. The addition of a short spur into the NFTS will not significantly increase impacts to potentially suitable habitat that already exist at that location.

Pacific marten

Preferred forest types in the Sierra Nevada include mature mesic forests of red fir, red fir/white fir mix, lodgepole pine, subalpine conifer, and Sierran mixed conifer (Freel 1991). Preferred habitat is generally characterized by dense canopy, multi-storied, multi-species late seral coniferous

forests with a high number of large (> 24 inch dbh) snags and downed logs (Freel 1991). Late- and old-structure forests (with larger diameter trees and snags, denser canopy and more canopy layers, and plentiful coarse woody material) are thought to provide ample rest and den sites, protection from avian and mammalian predators, and foraging sites (Bull et al. 2005).

No suitable habitat exists throughout most of the project area. There are small pockets of potentially suitable habitat which may be affected by new trail construction in the 06 road area and by the re-designation of existing trail to allow for use by Class 1 E-bikes.

Noise during trail construction could directly disturb individual martens, and temporarily displace them from the vicinity of trails. Human use along new trail segments in the 06 road area would occur seasonally, approximately from June through November, when snow is absent.

The majority of studies conducted on road-related effects to marten concluded that roads do not appear to affect marten presence or abundance. In particular, two study sites in California (Lake Tahoe Basin Management Unit and Sierra National Forest), Zielinski et al. 2008 found that off-highway vehicle use (at least up to 1 vehicle per 2-hour time period) had no effect to marten occurrence, circadian activity, or sex ratio. Therefore, although the proposed action may affect marten behavior and activity level immediately adjacent to roads/trails, it is likely that the proposed action would result in only minor adverse effects to marten presence or abundance.

The new designation of existing trails to allow for use by Class 1 E-bikes is not expected to have any significant affects to Pacific marten. The new designation will not change existing habitat characteristics and is not expected to significantly alter current use patterns.

Pallid bat, Townsends western big-eared bat, Fringed myotis, and Spotted bat

There is some potential for the proposed actions to affect bat species on the sensitive species lists for both the TNF and the HTNF however the extent of potential impacts is expected to be extremely small. Implementation of ground disturbing activities would take place during the day when bats are roosting. Future expected use would also be almost entirely during daylight hours. The foot print of new proposed trail relative to the entire project area is minimal and there is not expected to be any significant change to habitat characteristics. Actions associated to decommissioning and or realignment of routes are expected to result in improved habitat conditions.

There may be a limited loss of snags, which hold value as roosting sites for bats, due to future management for user safety concerns. The loss of some potential roosting sites is not expected to negatively impact the viability of any bat species within the planning areas for the TNF or the HTNF, nor is it likely to lead to a trend toward federal listing for any of the four species.

Mountain quail and White headed woodpecker

Mountain quail and White headed woodpecker are terrestrial avian species on the Humboldt-Toiyabe National Forest sensitive species list. Both may be present in locations proposed for actions on the HTNF.

Mountain quail are generally associated to mid and late seral open canopy coniferous forests. Actions proposed on the HTNF (gate placement, decommission of user created routes, and the addition of a .05 mile spur into the NFTS) as well as connected actions on the TNF (realignment and restoration of an existing road and decommission of a user created route) are expected to cause limited, temporary impacts to habitat types associated with Mountain quail. Some individuals could be disturbed during implementation activities but these disturbances would be very limited in time and would not result in any change to existing habitat characteristics. Furthermore, actions associated to decommission and or restoration may include short term disturbances but would result in overall habitat improvements in the long term. None of the

actions are expected to significantly impact Mountain quail, its species' viability within the planning area of the HTNF, nor are the actions likely to lead to a trend toward federal listing.

White headed woodpeckers are common in mid and late seral coniferous forests across the region. As no change to forest habitat characteristics is expected as a result of the proposed actions, impacts to White headed woodpecker are expected to be minor. Some individuals may be affected temporarily during ground disturbing activities however, these disturbances will be short lived. No significant impacts to the species or its habitat are expected.

Transportation

The effects of the proposed action are addressed in terms of changes in public safety and affordability.

Action 1 would base the season of use for the existing, and proposed new, motorized road and trail System in the Verdi Ridge area on monitored soil moisture thresholds, timing, and forecasted imminent precipitation. This would open the system when soil moisture data is within tested and acceptable ranges that reduce damage to the road and trail surface. Soil moisture will be tested and confirmed in the field to be at an acceptable range to prevent road damage. The result could reduce or lengthen the season of use on the OHV system. Opening trails and roads only when moisture levels are within a tested and acceptable range will reduce hazards to the public by restricting use when soil moisture levels drastically reduce the strength of the trail and road prisms causing slipping and skidding.

Action 1 would restrict use based on soil moisture levels rather than a fixed season of use. This action would help keep traffic off the roads and trails when they are too wet and help prevent damage to the road and trail surface. This action would not affect the cost of road repairs.

Action 2 would add 71 miles to the existing designated motorized single-track trail system would have some effect on public safety by offering safe and sustainably designed new motorized trail opportunities while removing / replacing existing non-designated user created routes.

Action 3 would reduce the need for frequent maintenance currently occurring on poorly aligned routes and allowing maintenance to occur on other motorized roads and trails during the most effective time. Removal of hazards such as fallen trees and rocks will continue to take place on these routes. The actions should have a positive effect on affordability and the cost of repairs by decommissioning segments that need frequent maintenance and using sustainable design standards for the reroutes.

Changes to the NFTS outlined in action 4 are all designed to improve the transportation system by managing existing user demand, evaluating public needs, and mitigating resource impacts.

Action 7 designating some system trails as open to Class 1 E-bike use is expected to improve management of a new and increasingly popular user class by directing use to routes and trails designed for their sustainable use. Additionally, observations on Tahoe National Forest indicate that providing Class 1 E-bike users authorized locations to ride on trails managed for heavy bike use will help to restrict unauthorized use in other areas and contribute to improved management of Truckee Ranger District trail systems for all user groups.

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

Analysis of effects associated to human health, as it relates to the chemical treatment of invasive plant infestations, can be found in the Human Health Risk Assessment prepared for this EA and which is displayed under FONSI Intensity Factor 1, Human Health.

The East Zone Connectivity and Restoration Project is designed to reduce risks to public health and safety by rerouting and improving roads and trails, promoting safer and more sustainably

designed trails, dispersing current use across more area decreasing user density, and improving current watershed conditions. Advanced motorized dirt bikes coexist with mountain bikers, Class 1 E-bikers, equestrians and hikers. Existing signage advises recreationists about trail difficulty and multiple trail uses to reduce the risk of accidents. Increased and improved signage, designed to promote responsible trail use and user etiquette, will improve safety for all user groups. Tahoe National Forest expects all uses to increase over time however, public safety for trail users will improve due to increased opportunity which disperses multiple users across more of the district and reduces relative density of users, and use impacts, area by area. Trail guidelines used for building sustainable trails and preventing resource damage limit steep grades and fall-line alignments. New alignments and site-specific trail maintenance objectives would increase sight distances so that users would be able to see other groups from further away. Sustainable alignments use turns and switchbacks, slow user speeds, and reduce the likelihood of collisions, while providing a technical, challenging trail. Treatments that improve trail conditions will improve safety for the public.

The addition of allowable, designated use by Class 1 E-bikes on four currently non-motorized trails on the Truckee Ranger District will not significantly or adversely affect public health and safety. A review of current scientific literature determined that Class 1 E-bikes represent a similar recreational use to current use by traditional mountain bikes in terms of their structure, components, versatility, health benefits (Hall et al. 2019), speeds (Langford et al. 2015), impacts to trails (Wilson and Seney 1994) (IMBA 2015), and even the way they look. Tahoe National Forest collected comparative speed data on these trails in order to measure differences in average and top speeds between traditional mountain bikes and Class 1 E-bikes (Trail Reportss, incorporated by reference). Speeds were recorded for male and female riders of intermediate to advanced ability, on Class 1 E-bikes and traditional mountain bikes, across terrain that included uphill, downhill, and flat. Results showed similar average speeds between Class 1 E-bikes and traditional mountain bikes on downhill and flat sections of trail. Top speeds measuring 16-19 mph were recorded for both Class 1 E-bikes and traditional mountain bikes on flat open terrain. Top speeds on downhill sections, where riders generally do not pedal, were marginally slower, but again similar between Class 1 E-bikes and traditional mountain bikes. Class 1 E-bikes were able to achieve higher speeds on uphill trail segments ranging from 8 mph to 13 mph while traditional mountain bikes averaged 5 to 8 mph over the same uphill sections. While this difference is statistically significant, our analysis indicates it to be well within the range of differences in speed that can be observed between novice and expert riders. The slightly higher speeds recorded by Class 1 E-bikes on uphill sections of trail, based on a review of our findings, does not represent a significantly increased safety risk to other user groups relative to the current level of use by traditional mountain bikes. Stopping distances were also found to be similar between the two bicycle classes on all terrain types (Trail Reportss, incorporated by reference).

The proposed action would provide for increased public safety throughout the East Zone Motorized road and trail system due to new updated design parameters (Refer to TNF trail construction designs). Trail construction design parameters would provide a slower traffic type through undulation, incorporation of drainage features, and realignment. There would be fewer straight alignments where users could pick up speed. Reduction of user speed (down to 10 to 15 mph), would result in the improvement of safety within the OHV and non-motorized system by replacing relatively straight segments with new ones that continually meander. Sight distances would be increased strategically so other riders can witness oncoming traffic. Obliterated road and trail segments would be restored to natural conditions. The existing unsustainable alignments would remain under the no action alternative. Where these segments also have sections of brush that limit sight distance, the potential for serious head-on collisions between multiple trail user groups is increased.

In existing narrow and or precipitous segments increased signage would be installed, and monitoring of use implemented. Staging areas would contain information relative to etiquette on the trails and responsible trail use, patterns of use, and expectations for respecting other users. District OHV program staff would actively monitor for conflicting use and look for ways mitigate issues with education, safety signage and barrier protection measures.

Under the Proposed Action, additional periods of time would be available for motor vehicle opportunities when resource conditions allow. Safety is one of the considered criteria in determining if a trail or road should be closed within the season of use. By allowing motorized use during a potentially extended time period, additional conflicts beyond those accepted under the MTM ROD (USDA FS 2010) would not occur. Public safety would not be affected by closing trail or road segments. Public safety is also addressed under the recreation and transportation effects in this chapter.

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

No parklands, prime farmlands, research natural areas, special interest areas, or other ecologically critical areas are within or nearby the East Zone Connectivity and Restoration Project.

Cultural

The Section 106 of the National Historic Preservation Act cultural resource analysis for the East Zone Connectivity and Restoration proposed action has been completed for actions on the TNF and has been initiated for actions on the HTNF and will be completed prior to a decision for this project. The inventory and management analysis meet provisions of *Amendment #1 of the Programmatic Agreement Among The USDA Forest Service Pacific Southwest Region (Region 5), The California State Historic Preservation Officer, The Nevada State Historic Preservation Officer, and The Advisory Council For Historic Preservation, regarding the process for compliance with Section 106 of the National Historic Preservation Act, for Management of Historic Properties by the National Forests Of The Pacific Southwest Region* (Regional PA 2018). Unless the nature or scope of the undertaking changes, no additional archaeological inventory is required for the area of potential effects (APE). The Tahoe National Forest cultural resource file designation for this proposed undertaking is R2018051700080.

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

Scoping did not reveal scientific controversy regarding the magnitude or nature of effects of this project's 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 action is similar in type and scope to other motorized trail and road projects on the Tahoe National Forest and the Truckee Ranger District. Effects of the proposed activities are predictable, based on experience with similar past practices and scientific research. Professional expertise in implementation of these types of projects minimizes the chance of highly uncertain effects, which involve unique or unknown risks. Proposed activities are routine in nature, employing standard practices and design criteria rooted in policy and professional knowledge, and their risks and effects are generally well known. The project proposes use of NFS motorized trails and roads under similar circumstances of use during other times of the year and under circumstances where motorized vehicle use has been successfully allowed for many years.

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

Although it is acknowledged that the project area would not remain static, and may need future trail maintenance, this decision would not set a precedent for future actions with significant effects, nor does Alternative 1 influence any decision in principle about any future considerations. Any future decisions would require an environmental analysis and public involvement to consider relevant scientific and site-specific information available at that time.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

As this Proposed Action is an alternative mechanism of achieving the same effect as was analyzed in the MTM FEIS (USDA FS 2010) that document is adopted by reference and the effects of that document are summarized below for key resources. This factor contains specific information about the cumulative effects of resources that may potentially be affected by the Proposed Action. Past, on-going and foreseeable future events in the project area include forest stand thinning, fuel reduction projects, fire suppression, watershed restoration, and recreational uses such as camping, hiking, mountain biking, and OHV use among others.

Aquatic Wildlife

Sierra Nevada yellow-legged frog

Over time, direct and indirect human activities combine to collectively impact the environment. These effects may differ from the original, individual activities. The cumulative effects analysis area for Sierra Nevada yellow-legged frog is defined spatially as the suitable habitat area (2,013 acres) within the overall project area as well as within the historical range for this species.

Past, present, and reasonably foreseeable future actions occurring within the Project Area include several wildfires (Crystal Fire, Donner Fire, and Bald Mountain Fire) in the last 50 years that affected the current conditions including: the landscape, canopy cover reduction and shade to streams, increased sediment and fragmentation of forested habitat, and increased human-related disturbance associated with fire suppression, emergency rehabilitation, and subsequent restoration activities. While OHV use contributes to the effects of these fires, the larger effect of habitat conversion dwarfs this use in comparison. The proposed action is expected to contribute positively to ongoing vegetation projects (Big Jack East and Ladybug) because this project involves proactive recreational use management strategies in areas which would be typically at risk of excessive user created route creation in areas recently opened up through tree and brush removal.

The future state, private and federal actions identified that are reasonably certain to occur within the aquatic analysis area of the East Zone Connectivity and Restoration project include: continued recreational use, watershed restoration, and limited sheep grazing.

The OHV trail improvements proposed, long term, would be expected to reduce erosion and sediment delivery, and improve habitat conditions for SNYLF from what currently exist. Therefore, in the long term the project is expected to reduce the adverse cumulative effects that are currently occurring from combined private and public land management impacts, current OHV trail conditions, and impacts from other user groups.

Lahontan cutthroat trout and Lahontan lake tui chub

Past actions have affected most, if not all, fish species native to the greater Truckee river watershed. These include the introduction of non- native species for fishing and other invasive

species of plants and mollusks. Dams creating the Stampede, Boca, and Prosser reservoirs have also affected the natural hydrologic processes. Current actions are not expected to affect potentially suitable LCT and LLTC habitat. Reasonably foreseeable future actions are not expected to affect or are expected to result in effects similar to the proposed action.

Botanical Resources

Past, present, and future actions have and would continue to alter botanical species population and their habitats to various degrees.

Threatened and Endangered plants

This project is anticipated to have no direct or negligible indirect impacts to federally threatened or endangered botanical species. As such, it is not anticipated to contribute cumulatively to impacts to the species.

Sensitive plants

The analysis area includes 10 out of 32 (27%) of known sub-occurrences of *Plumas ivesia* on the Tahoe National Forest (USDA Forest Service 2020). The analysis area includes 7 out of 80 (8.75%) of known occurrences of *Plumas ivesia* across its range (California Department of Fish and Wildlife 2020).

When considered in the context of the effects of other past, present, and reasonably foreseeable future actions, the project is not expected to contribute significantly to a loss of species viability for the ten sub-occurrences of sensitive species listed here.

Cultural Resources

Past events, both natural and human caused, have had varying levels of cumulative effects on the archaeological resources in the project area. These effects, ranging from moderate to extensive, have resulted from logging, road construction, wildfires, erosion, and exposure to the elements. No predicted future management activities will affect heritage resources.

Human Health

The proposed action is not anticipated to result in impacts to human health and, therefore, no cumulative effects would occur.

Invasive Plants

Overall, the risks of invasive plant introduction and spread associated with the East Zone Connectivity Project are considered moderate. There is a moderate level of infestations in the project area. OHV use creates a substantial risk for invasive plant vectors. Because treatment and avoidance of all known infestations within the project is feasible and required through the project's management measures, the risk of spread is greatly reduced.

Recreation

Overall, the proposed action would improve trail safety and enhance recreational experiences. In the vicinity of the East Zone Connectivity and Restoration Project, Forest interdisciplinary staff would be coordinating vegetation projects and activities including trail construction, prescribed fire and vegetation management to minimize effects to the recreating public.

Proposed new motorized single-track trail is expected to attract multiple user groups as new trail design parameters with lower gradients and flowing alignments invite higher percentages of mixed use. Non-motorized use on motorized system routes will allow more of the public to enjoy connections to the land. The proposed trail project would not only benefit OHV users, but also the local communities and economy. Recreation users spend money at local businesses such as gas stations, equipment shops, restaurants, lodges and campgrounds. The benefits are expected to

affect communities in the Truckee Tahoe area, adjacent communities like Sierraville and Loyalton, as well as locations in Nevada. The Reno Area Dirt Riders (RAD), a Nevada non-profit, has already begun communicating with the HTNF on proposals to build additional motorized trail in order to further connect OHV routes between the HTNF and the TNF.

A cumulative effect of the proposed action would be an increase in use in the Boca and Stampede reservoirs region. Due to project management requirements in place to protect resources and public safety, no adverse cumulative effects are anticipated. The expected users are not only motorcyclists, but also mountain bikers looking for long distance trails, E-bikers, hikers, and equestrians looking for new opportunities.

The additional trail mileage of the proposed action is expected to have very little effect on air quality. The amount of emissions from motorized trail vehicles in the open air environment of the project area is insignificant when compared to the amount of pollutants produced by motorized vehicles in the Sacramento Valley, the Reno / Sparks area, Carson City and the Carson Valley, and other areas that can affect the project areas depending in prevailing wind conditions. Placer County for example, is known to be in non-attainment for several pollutants that are by-products of motorized use in lower elevations. Because greenhouse gases from vehicle emissions mix readily into the global pool of greenhouse gases, it is not currently possible to discern the effects of this project from the effects of all other greenhouse gas sources worldwide, nor is it expected that attempting to do so would provide a practical or meaningful analysis of project effects. Potential regional and local variability in climate change effects add to the uncertainty regarding the actual intensity of this project's effects on global climate change.

Soils and Hydrology

As discussed in existing conditions analysis, the project area has numerous legacy impacts that disrupt natural hydrologic processes. With this proposed action, the scale of impact will improve existing hydrologic conditions by implementing watershed improvement actions along routes and trails where currently drainage issues exist. Ongoing and future management of roads, trails, and routes adjacent to waterways will reduce future impacts on water resources.

Ongoing trail tread wear and soil erosion from recreational use or sheep grazing could occur. It is expected these would be minor, localized cumulative impacts. Ongoing trail monitoring would identify any major soil issues so that maintenance can repair future trail problem areas. Additionally, potential restoration efforts planned for Hoke Valley, East Boca Spring Canyon, and along the reroute of the 860-2 road are expected to improve current hydrologic conditions.

This proposed action incorporates measures that meet requirements of Riparian Conservation Objectives 1, 2, 5, and 6 (SNFPA, ROD pg. 32-34) and includes specific measures needed to reduce the potential for cumulative watershed effects and provides measures to assure compliance with applicable water quality control plans.

This project proposes actions that will aid in reducing soil transport and sediment delivery to waters of the state and will improve the hydrologic integrity of stream crossings on routes and through meadow areas. It incorporates needed measures to maintain beneficial use and to attain applicable water quality objectives. During and following implementation, monitoring will ensure the measures taken will be adequate to meet water quality objectives. It is therefore concluded that there would be no irreversible or irretrievable water quality impacts from the proposed treatments and the requirements for the maintenance of water quality as established by the Lahontan Regional Water Quality Control Board (LRWQCB) and the Federal Clean Water Act would be met.

Resource conditions considered in this document includes determining whether there is an extraordinary circumstance related to a proposed action for Floodplains, wetlands, or municipal watersheds:

The Resource Protection Measures, Best Management Practices, and other measures included in the design of the project will maintain the streamside zone, riparian areas, and water quality, including those associated with flood plains, wetlands, and municipal watersheds, and will reduce the potential for sediment increases above the existing levels over the mid-term for areas associated with this proposed action. The Proposed Action is designed to meet the Riparian Conservation Objectives (RCOs) as summarized in the SNFPA ROD (2004). Project design and mitigations are tailored to the site to maintain water quality, aquatic habitat, and riparian habitat. The Proposed Action will meet the Lahontan Regional Water Quality Board Basin Plan Objectives. No risks of extraordinary circumstances related to cumulative adverse effects were identified associated with the proposed action.

Finally, this project is also consistent with the TMDL Management Agency Agreement (MAA) between the State Water Board and Forest Service (USFS), as we were able to leverage identification of issues within this smaller sub-area into a larger future landscape planning area (Middle Truckee River – Boca Reservoir Sub-watershed and Highway 89 Corridor) where the USFS continues to identify, implement, maintain, and monitor best management practices (BMPs) to protect water quality. This project has identified problem areas (related to sedimentation and erosion) on the Tahoe National Forest (TNF) lands and provides steps to reduce impacts to the hydrologic system.

Visual Resources

Past and present actions have only contributed favorably to a scenic visual character and a quality recreational experience. The actions of this project and any other project like it in the future, although evident, would not be significant and would result in continued maintenance of high quality visual character and recreational experience. No reasonably foreseeable action would add to the visual impacts of this project or would cause noncompliance with the assigned VQO.

Terrestrial Wildlife

Western bumble bee

When combined with the effects resulting from ongoing and reasonably foreseeable actions on lands within the area of analysis, Alternative 1 would have a negligible risk for additional, incremental negative disturbance effects to western bumble bees and their habitat.

Bald eagle

To assess how the effects of the proposed action could incrementally add to the effects of past, present, and future actions, bald eagle habitat was assessed within 0.5-mile of the proposed action areas. Recent activities have mainly retained large trees that provide preferred nesting and roosting sites. There is a possibility that an increase in opportunities for OHV travel may also lead to related increases in illegal user created routes which could affect known nesting locations. Management strategies include increased compliance patrolling and interpretive education along with additional signage and barrier placement to control travel in sensitive areas. These mitigations are expected to reduce concerns of negative impacts. Foreseeable future projects including vegetation management, and watershed restoration would have beneficial effects to local habitat areas including healthier forest habitat, conservation of snags, reduced erosion and sedimentation, improved habitat for fish and thus improved foraging opportunities for Bald eagles, and allowances for nesting eagles. The Est Zone Connectivity and Restoration Project,

when considered cumulatively with other projects and ongoing management, is not expected to reduce habitat quality for bald eagles.

California spotted owl

Planned projects attempt to balance uses and, under the Forest Plan, retain important characteristics of mature forest that are important to spotted owls. Wildfires vary in their severity, but often result in the conversion of mature forest to snags and dense shrubs. Wildfires greatly fragment suitable habitat and may have rendered some territories unsuitable. Because the East Zone Connectivity and Restoration project involves a relatively small footprint on a large landscape, is not expected to measurably alter current habitat characteristics, and is not expected to substantially increase recreational disturbance in occupied habitats, it is not expected to substantially contribute to cumulative effects.

Northern goshawk

Planned projects attempt to balance uses and, under the Forest Plan, retain important characteristics of mature forest that are important to goshawks. Because the East Zone Connectivity and Restoration project involves a relatively small footprint on a large landscape, is not expected to measurably alter current habitat characteristics, and is not expected to substantially increase recreational disturbance in occupied habitats, it is not expected to substantially contribute to cumulative effects.

Pacific marten

The East Zone Connectivity and Restoration project would contribute to cumulative adverse effects of human activities in suitable habitats, such as existing roads and OHV use along trails in areas of potentially suitable habitat. Overall these effects are considered to be minor. The majority of the project area does not represent high value marten habitat. Projects like the Big Jack East and Ladybug, which are undertaking, or plan to undertake vegetation management actions in northern sections of the Verdi Ridge and in the 06 road area are expected to provide suitable habitat for marten, and would be managed for continued growth and resilience to stressors, including wildfire, while maintaining important habitat components such as over story canopy, large trees, snags, and logs. The work in these two areas is expected to offset adverse effects of new trail construction. Project plans will mitigate the potential for new unauthorized user created trails by offering new opportunities for motorized recreation in these areas and taking steps to both control future use, and monitor areas for compliance with a long term travel management strategy.

Pallid bat, Townsends western big-eared bat, Fringed myotis, and Spotted bat

Bats that may be utilizing the forested stands within the project areas may be negatively affected through noise and/or presence of workers and equipment during project implementation. The effects would be short in duration and would be spread out spatially and temporally which would allow for disturbed bats to vacate areas, moving to adjacent stands during project activities. Vegetation management actions associated to the Big Jack East and Ladybug projects would result in the retention of existing large snags and the creation of new ones, and retention of larger trees while reducing tree density and canopy cover in the near term, would provide a greater abundance of habitat features that bats can utilize during periods of disturbance as well as in the future. Additionally, future meadow treatments and related watershed restoration actions should result in an increase in prey availability in the long-term and would be beneficial to bats. The increase in desirable habitat features for bats would help to mitigate any short term negative effects of the proposed project during implementation. Long term effects associated to increases in recreational use are not expected to be significant. Increased trail use would primarily be a daytime endeavor, when bats are roosting. Because the project areas are already popular OHV use

areas, the potential for increased disturbance are considered negligible in terms of effects to existing bat populations.

Mountain quail and White-headed woodpecker

When combined with the effects resulting from ongoing and reasonably foreseeable actions on lands within the area of analysis, Alternative 1 would have a negligible risk for additional, incremental negative disturbance effects to Mountain quail and White-headed woodpecker or their habitats.

Transportation

Since the actions proposed in this EA would maintain and improve public safety there are no cumulative effects to public safety. This includes the new proposed designation of four local trails to allow for use by Class 1 E-bikes. Analysis of findings based on a review of current scientific literature and data collection on the Truckee Ranger District has determined that Class 1 E-bikes and traditional mountain bikes represent similar recreational uses and will not result in a significant change to current patterns of use, density of users, or increased impacts to trails and the safety of multiple user groups.

Because actions would not increase maintenance requirements or costs on these roads for the removing the fixed seasonal closures and because costs would be minimal with the other proposed actions, there are no cumulative effects on affordability.

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.

A record search, intensive resource inventory and cultural resource report (Smith 2020) have been completed for the proposed East Zone Connectivity and Restoration Project under provisions of the Regional Programmatic Agreement (Regional PA 2018) with the Advisory Council on Historic Preservation and the California State Historic Preservation Office (SHPO), which complies with Section 106 of the National Historic Preservation Act. The inventory documents all archaeological sites within the project area. Each component of the proposed action was carefully planned in consultation with the forest archaeologist and altered when necessary in order to avoid impacts to cultural sites. Assessment of historical and cultural resources within the project area indicates implementation of the proposed action would not adversely affect any cultural resources eligible for listing in the National Register of Historic Places, nor would it cause loss or destruction of any cultural resources. Potential effects on heritage resources would be avoided by implementation of the cultural resource management requirements and by following standard procedure as outlined in the RPA (Regional PA 2018). In the event that historic properties are discovered during project implementation, operations will cease in the area until the district archaeologist and/or heritage program manager have visited the area and determined an appropriate course of action following Stipulation 7.10 of the RPA.

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.

This section is summarized in the project's Biological Assessment for Aquatic Wildlife, Biological Evaluation and Assessment for Terrestrial and Aquatic Wildlife, and Biological Assessment/Evaluation for botanical species. No federally listed species, or habitat determined to be critical under the Endangered Species Act of 1973 will be affected.

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

The project does not threaten to violate any federal, State or local laws or requirements for the protection of the environment (e.g., Clean Water Act, Clean Air Act, National Historic Preservation Act, National Forest Management Act (NFMA), and the Endangered Species Act).

The actions proposed under Alternative 1 are consistent with the *Tahoe National Forest Land and Resource Management Plan* (LRMP) (USDA FS 1990) as amended by the *Sierra Nevada Forest Plan Amendment Record of Decision* (SNFPA ROD) (USDA FS 2004). Actions are also consistent with the 1986 *Toiyabe National Forest Land and Resource Management Plan* (As Amended). The project maintains consistency with management direction as defined for the TNF in Management Areas 21 (Sardine-Worn), 32 (Stampede-Boca), 38 (Billy), 50 (Prosser Reservoir), and 68 (Sawtooth), as well as for the HTNF in Management Area 9 (Dog Valley).

The TNF's Proposed Action would change decisions on roads to meet the intent of what was analyzed in the MTM FEIS, and decided upon in the MTM ROD (USDA FS 2010) and the Humboldt-Toiyabe National Forest Dog Valley Route Adjustment Project (USDA FS 2012). Seasons of use, established to protect Forest resources, remain unchanged. As noted in Chapter 1.05, Title 36 CFR 212.55 of the Travel Management Rule requires that decisions of designation (in this case re-designating seasonal closures, and re-designating road segments by closing them to public wheeled motor vehicle travel) to NFTS roads and trails must consider pertinent and required indicators. (Refer to Appendices B - G: Travel Regulation Minimization Criteria)

The Forest Plans provide direction for maintaining water quality and quantity; protecting streams, lakes, wetlands, and riparian conservation areas; and to prevent excessive, cumulative watershed impacts. The proposed action follows Riparian Conservation Objectives and is consistent with the Aquatic Management Strategy for the Sierra Forests, as required by the *Sierra Nevada Forest Plan Amendment* (SNFPA 2004) Record of Decision. In addition, based on the conclusion that the sub watersheds would not contribute to adverse cumulative watershed effects and the conclusion that the riparian objectives would be met, the proposed action is consistent with the Clean Water Act.

Activities associated with the alternatives will comply with the National Historic Preservation Act (NHPA) of 1966, as amended and it's implementing regulations 36 CFR 800. As previously described, a records search and cultural resource inventory have been completed for the proposed East Zone Connectivity and Restoration Project under provisions of *Amendment 1 to the Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding The Process for Compliance With Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region* (Regional PA 2018).

In addition, reports documenting compliance with the following laws and direction have been incorporated by reference and are available for review as part of the project record:

In compliance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act of 1940, as amended, the Biological Evaluation for Terrestrial and Aquatic Wildlife (Rawlinson and Brokaw 2020) documents that project activities may affect individuals, but are not likely to result in a trend toward federal listing or loss of viability for the bald eagle.

Several reports were prepared in compliance with the NFMA of 1976. A Management Indicator Species (MIS) Report (Rawlinson and Brokaw 2020) was prepared which evaluates the direct, indirect, and cumulative effects of proposed project activities upon selected MIS habitat types, and associated wildlife species, and assesses the potential impact of anticipated changes upon

bioregional trends in population numbers and habitat. The report concluded that implementation of Alternative 1 activities would not alter current trends in these MIS habitat types, nor lead to a change in the distribution of MIS species across the Sierra Nevada bioregion.

In addition, a Migratory Landbird Conservation Report (Rawlinson and Brokaw 2020) was prepared in accordance with NFMA and the Memorandum of Understanding between the USDA Forest Service and the US Fish and Wildlife Service to Promote the Conservation of Migratory Birds to disclose the possible effects of the action alternatives on migratory landbirds. The report concluded the effects to migratory landbird habitats are minor. The proposed action is not expected to substantially contribute to existing cumulative effects to migratory landbirds associated with ongoing recreation, habitat management, mining, and other activities. The largest cumulative impacts currently are associated with wildfire, which rapidly changes habitat types, shifting from generally forested stands to habitats more associated with snags, herbaceous, and brush habitats.

Also as part of NFMA compliance, separate biological evaluations / biological assessments were completed to assess the effects of the proposed action on aquatic and terrestrial wildlife species, and botanical species (Rawlinson and Brokaw 2020 and Patterson 2020) currently identified as Region 4 and 5 Forest Service Sensitive species. Direct, indirect, and cumulative effects on these species are discussed previously. Cumulatively, these evaluations determined the following:

- On the TNF and the HTNF, Alternative 1 would either have no effect, or be unlikely to adversely affect, any Threatened, Endangered or Sensitive (TES) species as a result of proposed project activities.

Chapter 4 Agencies and Persons Consulted

The Forest Service consulted with federal, State and local agencies, Tribes, Non-Forest Service Organizations during the development of this environmental assessment as listed below. Additional individuals are listed in the planning file.

Individuals

- Andrew Bavetta
- Bob Belden
- Scott Bower
- A. Buckley
- Brad Chishdin
- Ed and Jaimie Collins
- Brent Collinson
- Steve Davis
- Michael Dunsford
- Bruce Euzent
- Vivian Euzent
- Michael Finney
- Marcus Fisher
- Leigh Fong
- Cory Giese
- Jim and Kathy Goldsmith
- Jerusha (JC) Hall
- Kent Hoopingarner
- Bob Horvath
- Maureen (Mo) Horvath
- Tom Hudecek
- Dottie Hudecek
- Ellie Hyatt
- Doug and Gerne Jones
- Gaylan Larson
- Larry Larson
- Jen Mader
- Dave McDermott
- Allison McEnany
- Ed and Kendra McGargill
- David Mercer
- Ron Mills
- Carlos Montana
- Garry Morgan
- Steve Morris
- Kathy Murphy
- Al Muth
- Violet Nakayama
- Dave Osti
- Amye Osti
- Sean O'Toole
- Allison Pedley
- Jim Riley
- Doug Rinella
- Roger Rintala
- Dawn Rintala
- Mike Salmon
- Al Shubert
- Carrie Smith
- Kevin Starr
- Tim Stringari
- Laura and Scott Summer
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- Lisa Trainor
- Dan Warren
- Jennifer Wanslow
- Paul Wilford
- Donna and Eric Yamasaki
- Linda Zaleon
- Bob Lynn
- Paul Lammerding
- Jason Kuntz
- Alexis Ollar
- Julie Bartolini
- Peggy Towns
- Richard Anderson
- Andy Fisher
- Kansas McGahan
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- Megan Streeter
- Linda Russon
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- Jerry Bloom
- Matt Millar
- Alison Lehman
- Phebe Bell
- Lee Tarnay
- Justin Andresen
- Tim Beals
- Connie Blair
- Ruth Cross
- Sharon Falvey
- Linda Ferguson
- Joe Flannery

- Jon George
- Kelly and Mathew Houshmand
- Maggie and Tim Robinson
- Bill Scihorni
- Holly Taylor

Tribes

- Serrell Smokey, Tribal Chairperson, Washoe Tribe of Nevada and CA

Agencies and organizations

- American Forest Resource Council
- American Motorcyclist Association
- CA Association of 4 Wheel Drive Clubs
- Cal Fire
- California Department Of Highway Patrol
- Forest Issues Group
- Granite Peak Management
- Humboldt-Toiyabe National Forest
- Lahontan Regional Water Quality Control Board
- Mountain Area Preservation
- National Forest Foundation
- Nevada County
- Nevada County Woods Riders
- OHV Grant Administrator
- Placer County Parks Administrator
- Placer County Roads
- Placer County Sheriff's Office
- Placer County Water Agency
- Placer County, Department Of Public Works
- Reno Area Dirt Riders
- Sierra Buttes Trail Stewardship
- Sierra Club
- Sierra County Board of Supervisors
- Sierra Pacific Industries
- Tahoe Donner Four Wheelers
- The Nature Conservancy
- Town of Truckee
- Truckee Dirt Riders
- Truckee River Watershed Council
- USDI, Bureau of Reclamation
- Western States Trail Foundation
- Motorcycle Racing Assn. Northern NV

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Appendices

Appendix A: Maps of Alternative 1 (6 Maps)

Map 1: Overview map is in Chapter 1

Map 2: Verdi Ridge North

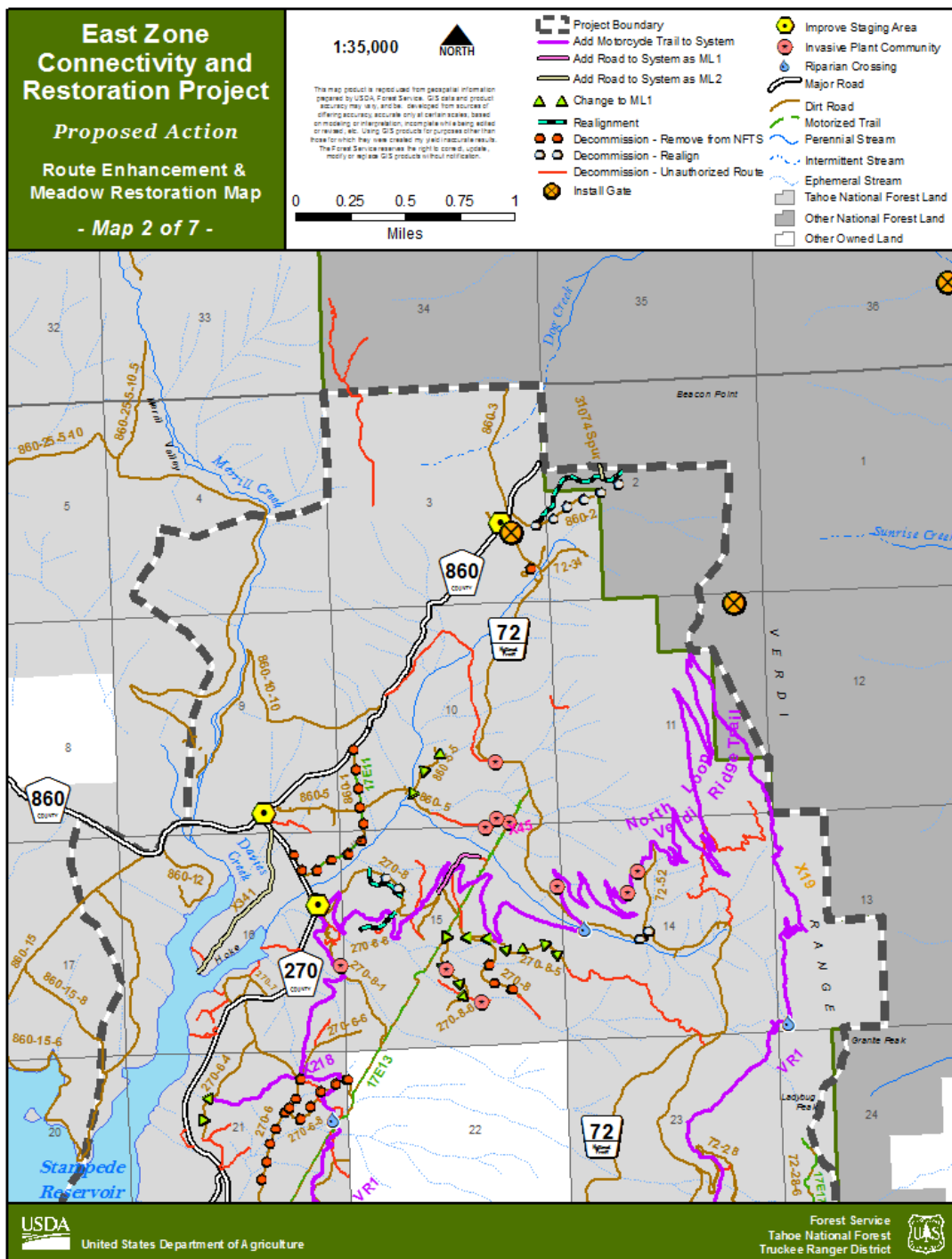
Map 3: Verdi Ridge Central

Map 4: Verdi Ridge South

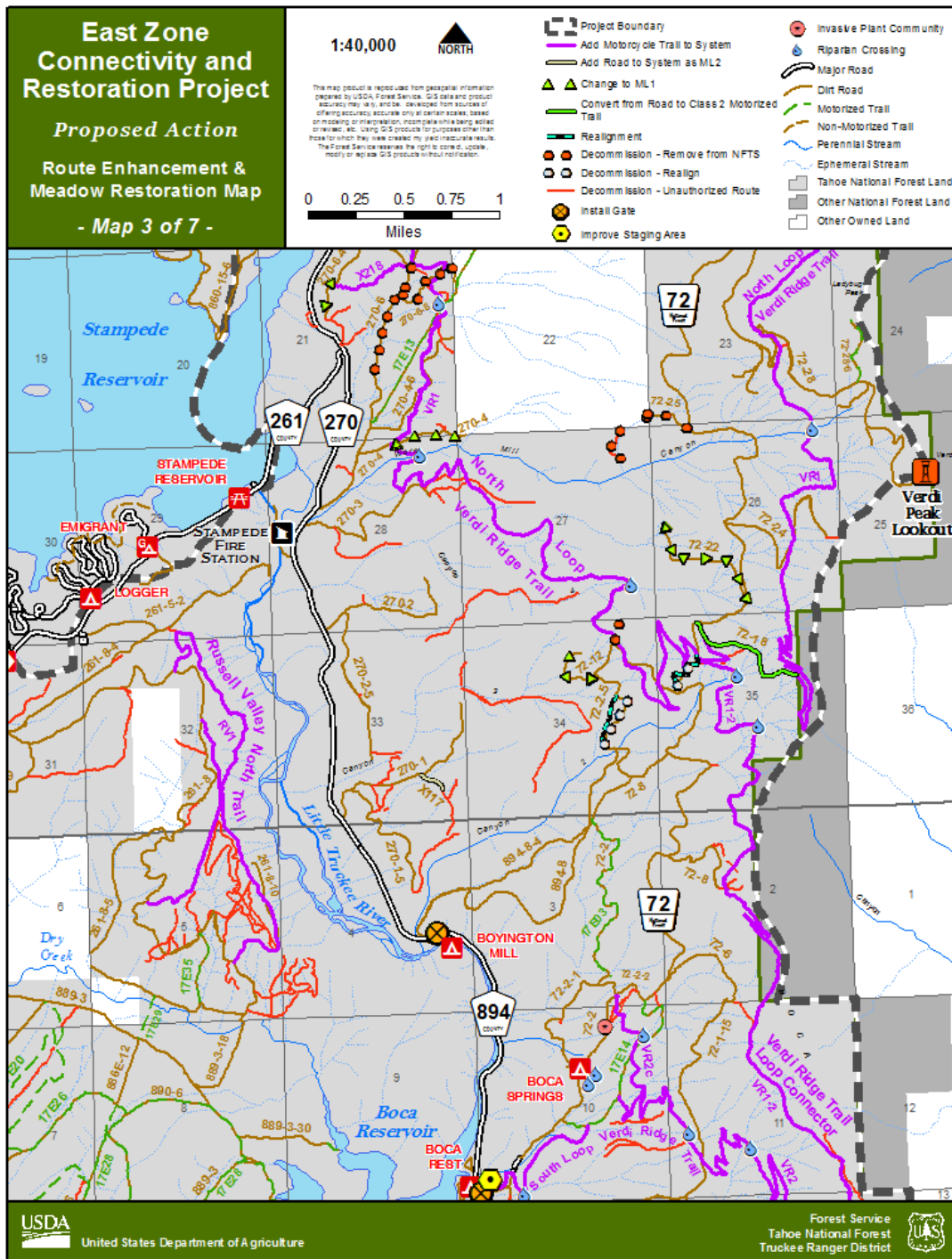
Map 5: Stampede Reservoir South

Map 6: Prosser Creek Reservoir

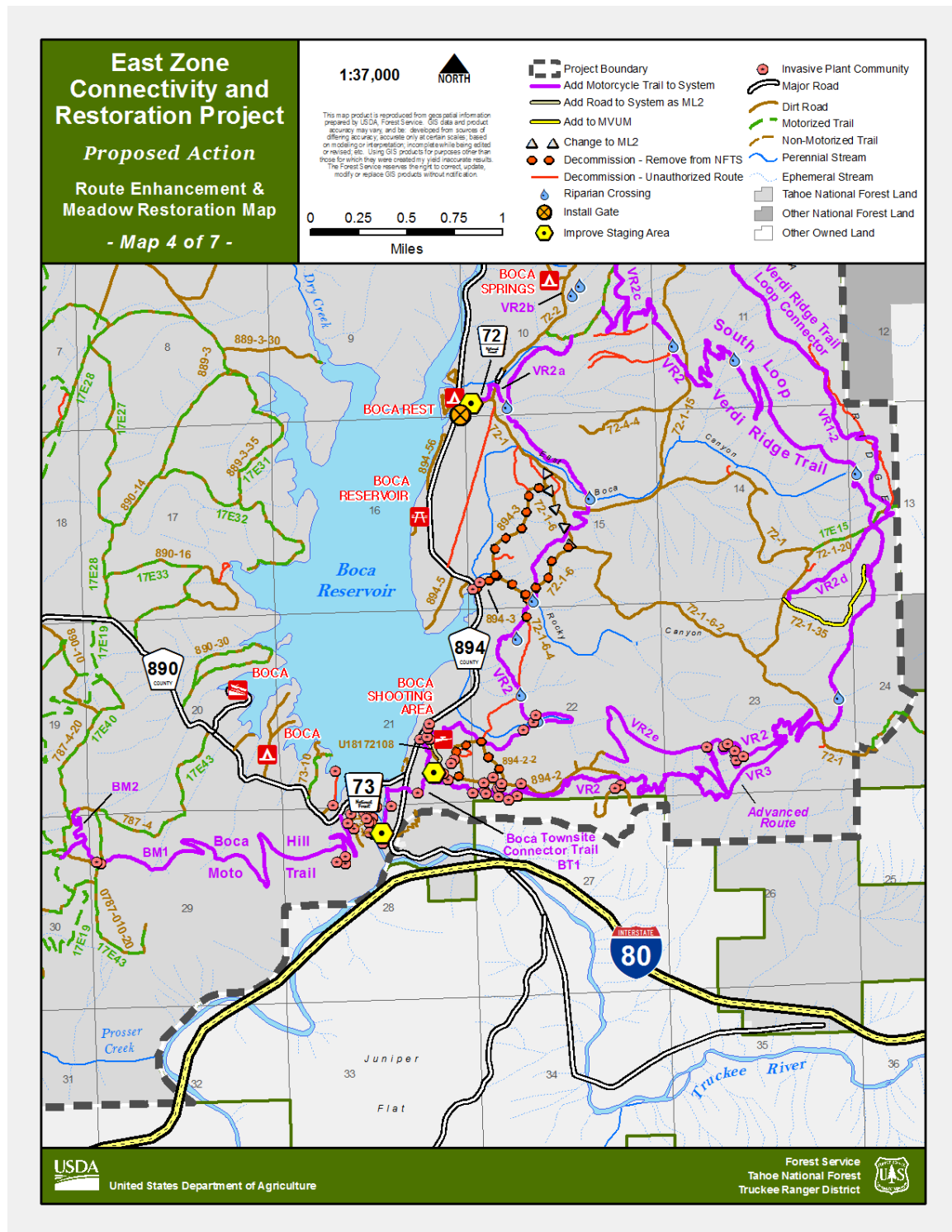
Map 7: 06 Road Area



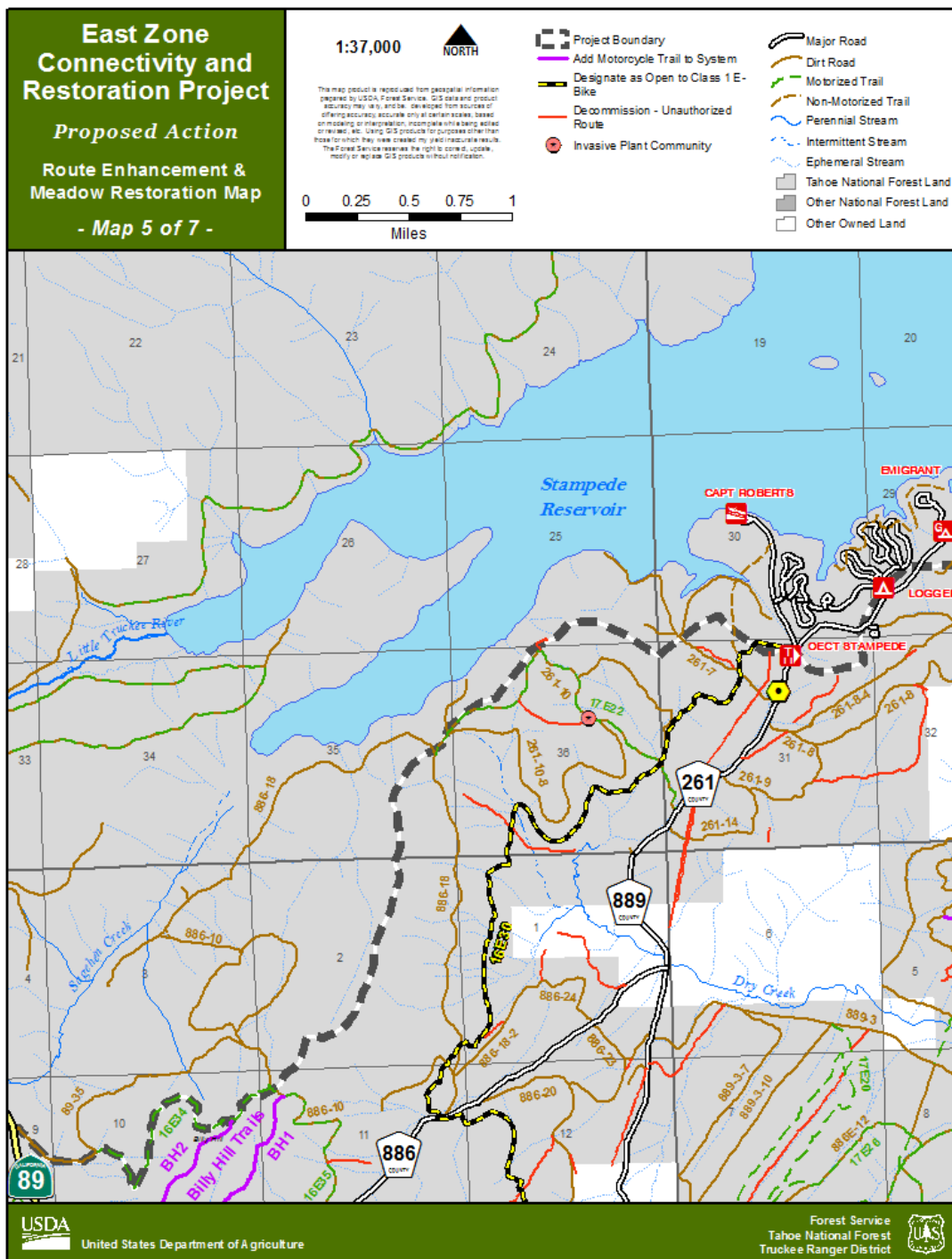
Map 2: Verdi Ridge North



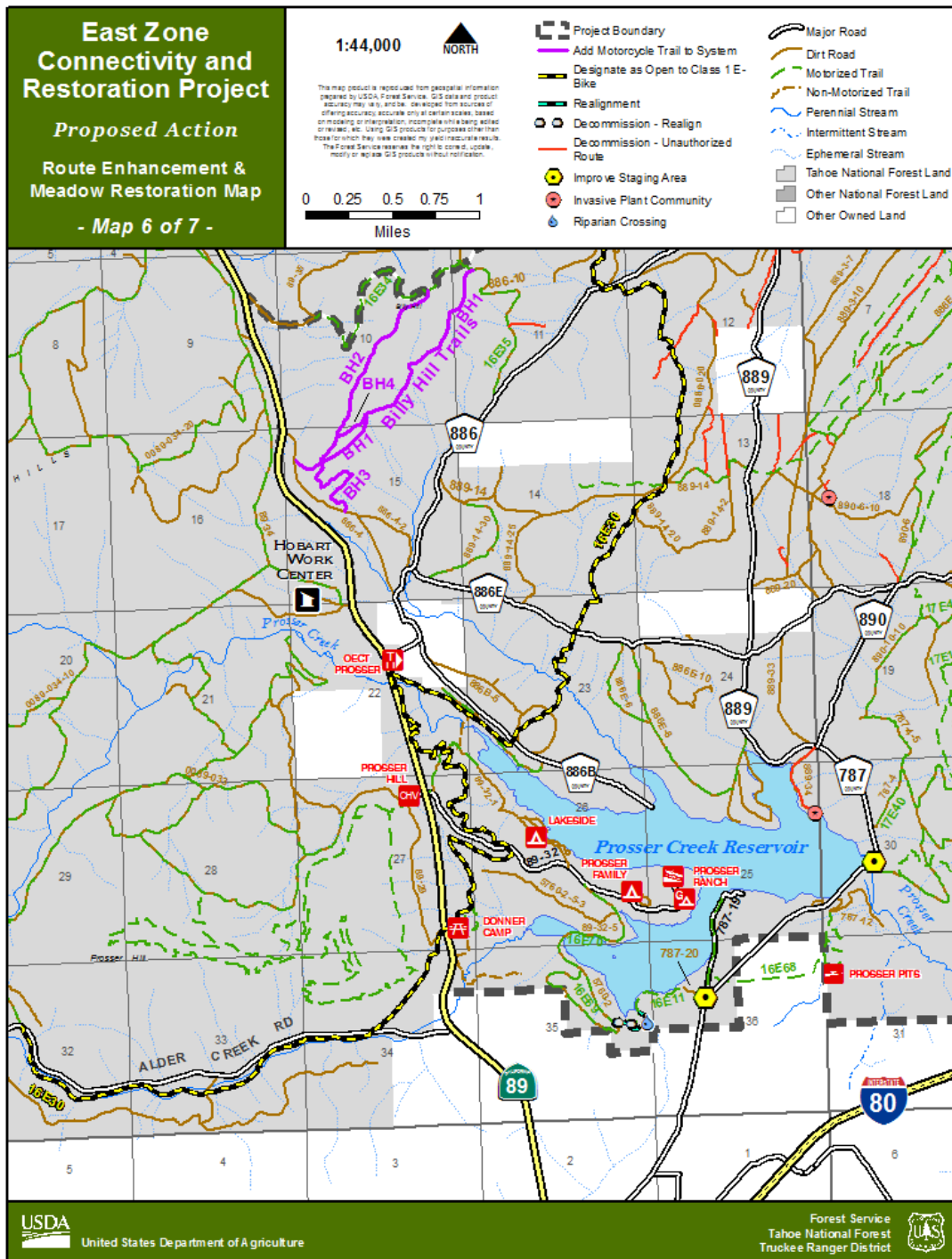
Map 3: Verdi Ridge Central



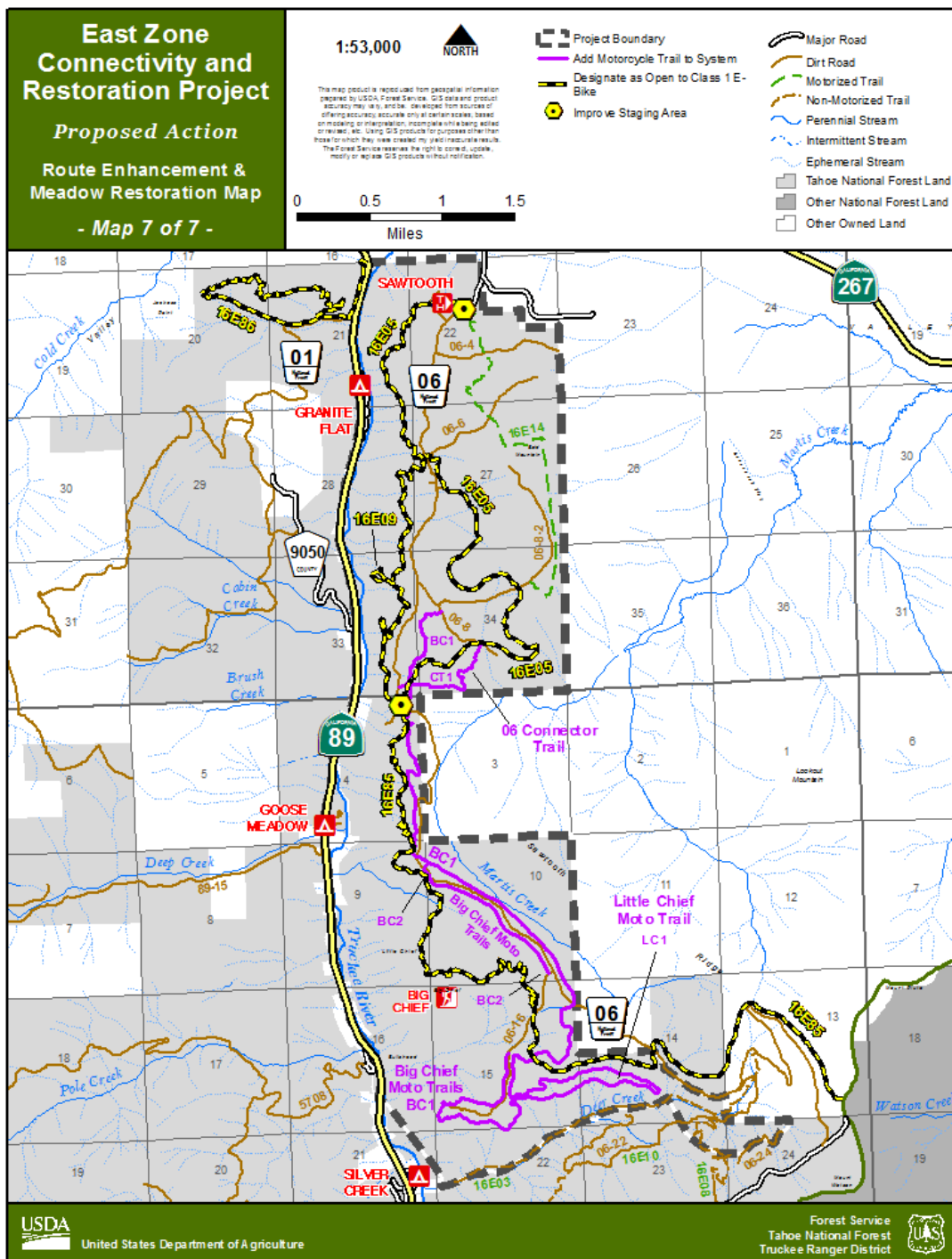
Map 4: Verdi Ridge South



Map 5: Stampede Reservoir South



Map 6: Prosser Creek Reservoir



Map 7: 06 Road Area

Appendix B: Travel Regulation Minimization Criteria Addressing Trail Designated for Motorcycle Use

Approximately 71 miles of new designated single track motorcycle trail is being proposed along the Verdi Ridge, on Billy Hill, on Boca Hill, and in the 06 Road area.

Specific Criteria for Designation of Trails and Areas (36 CFR 212.55(b))

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b) Specific criteria for designation of trails: Proposed new Motorcycle Trails			
(b)(1) Minimize damage to soil, watershed, vegetation, and other forest resources.			
Minimize damage to soil and water quality.	Are there potential impacts to soil and water from motorcycle use? Is there potential for soil disturbance associated with motorcycle use?	Yes. Soil moisture can vary considerably, especially in the spring and fall. Motorcycle use can cause rutting on the trail and tread wear on climbing turns. Soil disturbance could occur to streambanks at crossings. Approximately 2 crossing locations could require bridge construction which could result in minor, short term impacts to water quality.	Soil and water resources will be protected by following region BMPs 4.7.1 to 4.7.9 and Management Requirements in this EA.
Minimize damage to soil and water quality.	Does the trail or area contain sensitive riparian areas, for example wet meadows, fens, etc.?	No. There are no mapped meadows or wetlands designated by the U.S. Fish and Wildlife Service National Wetlands Inventory which will be impacted by new trail construction or use.	N/A
Minimize damage to soil and water quality.	Does the trail or area drain into a 303(d)-listed waterbody?	Yes. The project areas drain into the Truckee River which is listed due to sediment loading. Trail design and management requirements will limit increases in sediment delivery	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to sediment delivery. Overall result is expected to improve water quality in the Truckee River with respect to sediment.
Minimize damage to soil and water quality.	Does the area have a hydraulic mine site or sites?	No	N/A
Minimize damage to soil and water quality.	Could motorcycle use affect a municipal water system comprised of a small reservoir that goes directly into a local community water supply?	Yes. The Stampede, Boca, and Prosser reservoirs are all sources of local community water supply. Trail design and management requirements will limit impacts to the reservoirs	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to a number of water quality issues. Overall result is expected to improve water quality associated to municipal water resources.

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Minimize damage to vegetation and other forest resources.	Are TES plants known to occur in or around the trail that could potentially be affected by motorcycle use?	Yes. Trail construct intersects known occurrences. Lethal and sub-lethal impacts could occur. Impacts may effect but are not likely to trend towards listing.	Project design and management requirements are in place to minimize impacts.
Minimize damage to vegetation and other forest resources.	Does the trail or area include designated botanical areas (SIA, RNA)?	No	N/A
(b)(2) Minimize harassment of wildlife and significant disruption of wildlife habitats.			
Minimize harassment of wildlife.	Does the trail or area encompass California spotted owl, and/or goshawk nest sites?	Yes. New trail would pass near 1 spotted owl PAC and intersect 3 goshawk PACs. Only one of goshawk PACS has been shown to be occupied in the last 15 years.	<p>SNFPA ROD S&G 82 (pg. 61): Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off-highway vehicle route, trail and road uses (including road maintenance). Evaluate developments for their potential to disturb nest site.</p> <p>Areas near the trail system were surveyed during planning and no activity centers were near the proposed trail alignment; disturbance to foraging birds is expected to be temporary.</p> <p>To protect nesting northern goshawk and California spotted owl, no mechanized trail construction or chainsaw use will occur between February 15 and September 15th in the following general areas containing PACs: 06 Rd, Verdi Ridge North, and Verdi Ridge Central, unless surveys determine they are not nesting. Surveys will be implemented at all PAC locations prior to ground disturbing activities. Trail alignment will avoid cutting large trees, trees with evidence of wildlife use (e.g., cavities, nests), large snags, and large downed logs.</p>
Minimize harassment of wildlife.	Does the trail or area encompass known bald eagle nest sites?	No.	N/A
Minimize harassment of wildlife.	Does the trail or area contain key deer winter range?	No.	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain habitat for marten, wolverine, or other sensitive forest carnivores?	No.	N/A

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Minimize significant disruption of wildlife habitats.	Does the trail or area contain TES aquatic habitat and/or designated critical habitat?	Yes. There are very small pockets of aquatic habitat intersected by new trail alignments but potential for impacts is considered negligible. No designated critical habitat will be affected.	Management requirements contained in this EA will be implemented.
(b)(3) Minimize conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands.			
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a wilderness area or National Park managed by other agencies?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would motorcycle use of this trail cause conflicts with non-motorized visitors' desire for solitude and quiet recreation?	No. All proposed new motorized trail alignments are in areas currently frequented by motorized recreational user groups.	Barriers, signing, patrolling and education would be used to mitigate motorcycle incursions into adjacent sensitive areas as well as nearby non-motorized trails.
(b)(4) Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.			
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this trail allow wheeled motor vehicle use for other than single track riders? If so, does this affect safety and management of this area?	No	N/A
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this area cross or contain roads allowing vehicle use? Are road crossings allowed by dirt bike riders?	Yes. Connectivity between trails will in some cases be accomplished through the use of existing forest roads open to motor vehicle use.	Adequate way finding, junction, and road / trail crossing signage will be placed to mitigate potential user conflicts, better inform users, and promote public safety.
Minimize conflicts among different classes of motor vehicle uses of other neighboring federal lands.	Does this trail receive use by motorcycle or street legal vehicles? Is this potentially creating conflicts?	This trail would be for motorcycles only. No conflicts are expected between motorcycles and OHVs or street legal vehicles.	N/A
(b)(5) Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.			
Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.	Is the area adjacent to neighborhoods and communities?	Yes. Proposed new trails are somewhat near populated areas adjacent to the 06 road. Trail alignments avoid and or will be rerouted to minimize noise to residents.	Federal and State laws regulating noise and emission standards for OHV use will be strictly enforced.

Appendix C: Travel Regulation Minimization Criteria Addressing Trail Designated for E-Bike use

Consideration of Criteria for proposed designation of A1 Trail to allow for Use by Class 1 E-bikes.

Specific Criteria for Designation of Trails and Areas (36 CFR 212.55(b))

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b) Specific criteria for designation of trails: A1 Trail			
(b)(1) Minimize damage to soil, watershed, vegetation, and other forest resources.			
Minimize damage to soil and water quality.	Are there potential impacts to soil and water from e-bike use? Is there potential for soil disturbance associated with Class 1 E-bike use?	Yes. All trail users affect the trail surface and surrounding environment, especially when trails are poorly constructed. (IMBA 2015) Class 1 E-bikes will not significantly alter current impacts (Wilson and Seney 1994) (Weaver and dale 1978) (IMBA 2015) (TNF unpublished 2020)	Current trail design standards were used to create trail features specific to reducing erosion and sedimentation including low gradients, grade reversals, and rolling dips. Soil and water resources will be protected by following region 5 BMPs 4.7.1 to 4.7.9 and Management Requirements in this EA.
Minimize damage to soil and water quality.	Does the trail or area contain sensitive riparian areas, for example wet meadows, fens, etc.?	No. There are no mapped meadows or wetlands designated by the U.S. Fish and Wildlife Service National Wetlands Inventory which will be additionally impacted by Class 1 E-bike use.	N/A
Minimize damage to soil and water quality.	Does the trail or area drain into a 303(d)-listed waterbody?	Yes. The A1 Trail area drains into the Truckee River which is listed due to sediment loading. Trail design and management requirements will continue to limit increases in sediment delivery.	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to sediment delivery to this waterbody. Overall result of project objectives is expected to improve water quality in the Truckee River with respect to sedimentation and erosion.
Minimize damage to soil and water quality.	Does the area have a hydraulic mine site or sites?	No	N/A
Minimize damage to vegetation and other forest resources.	Are TES plants known to occur in or around the trail that could potentially be affected by Class 1 E-bike use?	No. Existing trails do not intersect known occurrences.	N/A
Minimize damage to vegetation and other forest resources.	Does the trail or area include designated botanical areas (SIA, RNA)?	No	N/A
(b)(2) Minimize harassment of wildlife and significant disruption of wildlife habitats.			
Minimize harassment of wildlife.	Does the trail or area encompass California spotted owl, and/or Northern goshawk nest sites?	No.	BMPs / RPMs for possible future Owl or Goshawk nesting sites currently apply to all managed facilities and will be applied to any future trail maintenance activities.

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Minimize harassment of wildlife.	Does the trail or area encompass known bald eagle nest sites?	No.	N/A
Minimize harassment of wildlife.	Does the trail or area contain key deer winter range?	No.	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain habitat for marten, wolverine, or other sensitive forest carnivores?	No	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain TES aquatic habitat and/or designated critical habitat?	No.	Management requirements contained in this EA will be Applied during annual maintenance activities.
(b)(3) Minimize conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands.			
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a wilderness area or National Park managed by other agencies?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a non-motorized area or a developed recreation site on adjacent National Forest or other federal lands?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause new conflicts with equestrian users.	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes relative to trail impacts (Wilson and Seney 1994) (Weaver and Dale 1978) (IMBA 2015), speeds (Langford et al. 2015) (TNF unpublished 2020), and user behavior (Langford et al. 2015).	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette. Lines of sight would be improved.
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause conflicts with non-motorized visitors' desire for solitude and quiet recreation?	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes which represent a significant percentage of use on the trail.	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette.

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b)(4) Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.			
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this trail allow wheeled motor vehicle use, for other than single track riders? If so, does this affect safety and management of this area?	No	N/A
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this area cross or contain roads allowing vehicle use? Are road crossings allowed by dirt bike riders?	Yes. There is motorcycle use in the area.	Adequate way finding, junction, and road / trail crossing signage will be placed to mitigate potential user conflicts, better inform users, and promote public safety. Additional information on rules, regulations, and standards of responsible trail use etiquette will also be placed at staging areas and trailheads.
Minimize conflicts among different classes of motor vehicle uses of other neighboring federal lands.	Does this trail receive use by motorcycle or street legal vehicles? Is this potentially creating conflicts?	No	N/A
(b)(5) Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.			
Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.	Is the area adjacent to neighborhoods and communities?	Yes. Proposed trails are somewhat near populated areas adjacent to the 89 south corridor and the town of Truckee. Class 1 E-bikes would not have any additional impacts relative to noise and or emissions	Standards for trail use are, and would continue to be, explicitly posted and enforced.

Appendix D: Travel Regulation Minimization Criteria Addressing Trail Designated for E-Bike use

Consideration of Criteria for proposed designation of Big Chief Trail to allow for Use by Class 1 E-bikes.

Specific Criteria for Designation of Trails and Areas (36 CFR 212.55(b))

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b) Specific criteria for designation of trails: Big Chief Trail			
(b)(1) Minimize damage to soil, watershed, vegetation, and other forest resources.			
Minimize damage to soil and water quality.	Are there potential impacts to soil and water from Class 1 E-bike use? Is there potential for soil disturbance associated with Class 1 E-bike use?	Yes. All trail users affect the trail surface and surrounding environment, especially when trails are poorly constructed. (IMBA 2015) Class 1 E-bikes will not significantly alter current impacts (Wilson and Seney 1994) (Weaver and dale 1978) (IMBA 2015) (TNF unpublished 2020)	Current trail design standards were used to create trail features specific to reducing erosion and sedimentation including low gradients, grade reversals, and rolling dips. Soil and water resources will be protected by following region 5 BMPs 4.7.1 to 4.7.9 and Management Requirements in this EA.
Minimize damage to soil and water quality.	Does the trail or area contain sensitive riparian areas, for example wet meadows, fens, etc.?	No. There are no mapped meadows or wetlands designated by the U.S. Fish and Wildlife Service National Wetlands Inventory which will be additionally impacted by Class 1 E-bike use.	N/A
Minimize damage to soil and water quality.	Does the trail or area drain into a 303(d)-listed waterbody?	Yes. The Big Chief trail area drains into the Truckee River which is listed due to sediment loading. Trail design and management requirements will continue to limit increases in sediment delivery	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to sediment delivery to this waterbody. Overall result of project objectives is expected to improve water quality in the Truckee River with respect to sedimentation and erosion.
Minimize damage to soil and water quality.	Does the area have a hydraulic mine site(s)?	No	N/A
Minimize damage to vegetation and other forest resources.	Are TES plants known to occur in or around the trail that could potentially be affected by Class 1 E-bike use?	No. Existing trails do not intersect known occurrences.	N/A
Minimize damage to vegetation and other forest resources.	Does the trail or area include designated botanical areas (SIA, RNA)?	No	N/A

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b)(2) Minimize harassment of wildlife and significant disruption of wildlife habitats.			
Minimize harassment of wildlife.	Does the trail or area encompass California spotted owl, and/or Northern goshawk nest sites?	Yes. New designation affects trail that passes through 1 Spotted Owl PAC and 1 Goshawk PAC. There will be no change to current habitat characteristics	SNFPA ROD S&G 82 (pg. 61): Mitigate impacts where there is documented evidence of disturbance to nest sites from existing recreation, off-highway vehicle routes, or trail and road uses (including road maintenance). Evaluate developments for their potential to disturb nest sites. Area has been, and will continue to be, consistently monitored. No adverse impacts to PACs have been recorded based on current existing use.
Minimize harassment of wildlife.	Does the trail or area encompass known bald eagle nest sites?	No.	N/A
Minimize harassment of wildlife.	Does the trail or area contain key deer winter range?	No.	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain habitat for marten, wolverine, or other sensitive forest carnivores?	Yes. Some suitable habitat exists. Addition of Class 1 E-bike use will not additionally impact suitable habitat.	No increased noise or human presence resulting in a loss of breeding and or feeding habitat is expected. BMP's / RPM's for possible future carnivore denning sites currently apply to all managed facilities and will be applied to any detections associated to all future trail maintenance activities. (SNFPA ROD - S&G 32 Wolverine and S&G 89 Marten)
Minimize significant disruption of wildlife habitats.	Does the trail or area contain TES aquatic habitat and/or designated critical habitat?	No.	Management requirements contained in this EA will be applied during all annual maintenance activities.
(b)(3) Minimize conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands.			
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a wilderness area or National Park managed by other agencies?	No	N/A

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause conflicts with non-motorized visitors' desire for solitude and quiet recreation?	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes which represent a significant percentage of use on the trail.	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette.
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause new conflicts with equestrian users.	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes relative to trail impacts (Wilson and Seney 1994) (Weaver and Dale 1978) (IMBA 2015), speeds (Langford et al. 2015) (TNF unpublished 2020), and user behavior (Langford et al. 2015).	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette. Lines of sight would be improved
(b)(4) Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.			
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this trail allow wheeled motor vehicle use, for other than single track riders? If so, does this affect safety and management of the area?	No	N/A
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this area cross or contain roads allowing vehicle use? Are road crossings allowed by dirt bike riders?	Yes. There is motorcycle use in the area.	Adequate way finding, junction and road/trail crossing signage will be placed to mitigate potential user conflicts, better inform users, and promote public safety. Additional information on rules, regulations, and standards of responsible trail etiquette will also be placed at staging areas and trailheads.
Minimize conflicts among different classes of motor vehicle uses of other neighboring federal lands.	Does this trail receive use by motorcycle or street legal vehicles? Is this potentially creating conflicts?	No	N/A
(b)(5) Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.			
Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.	Is the area adjacent to neighborhoods and communities?	Yes. Proposed trails are somewhat near populated areas adjacent to the 06 road. Class 1 E-bikes would not have any additional impacts relative to noise and or emissions	Standards for trail use are, and would continue to be, explicitly posted and enforced.

Appendix E: Travel Regulation Minimization Criteria Addressing Trail Designated for E-Bike use

Consideration of Criteria for proposed designation of Commemorative Overland Emigrant Trail to allow for Use by Class 1 E-bikes.

Specific Criteria for Designation of Trails and Areas (36 CFR 212.55(b))

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b) Specific criteria for designation of trails: Emigrant Trail			
(b)(1) Minimize damage to soil, watershed, vegetation, and other forest resources.			
Minimize damage to soil and water quality.	Are there potential impacts to soil and water from Class 1 E-bike use? Is there potential for soil disturbance associated with Class 1 E-bike use?	Yes. All trail users affect the trail surface and surrounding environment, especially when trails are poorly constructed. (IMBA 2015) Class 1 E-bikes will not significantly alter current impacts (Wilson and Seney 1994) (Weaver and Dale 1978) (IMBA 2015) (TNF unpublished 2020)	Current trail design standards were used to create trail features specific to reducing erosion and sedimentation including low gradients, grade reversals, and rolling dips. Soil and water resources will be protected by following region 5 BMPs 4.7.1 to 4.7.9 and Management Requirements in this EA.
Minimize damage to soil and water quality.	Does the trail or area contain sensitive riparian areas, for example wet meadows, fens, etc.?	Yes. There are mapped meadows or wetlands designated by the U.S. Fish and Wildlife Service National Wetlands Inventory but none which will be additionally impacted by Class 1 E-bike use.	There are alternate alignments used during seasonally wet periods. RPM's (Overland Trail Commemorative Route 1996) which currently apply to the existing trail will remain in place.
Minimize damage to soil and water quality.	Does the trail or area drain into a 303(d)-listed waterbody?	Yes. The Emigrant Trail has stream corridors that drain into the Little Truckee River system which is listed due to sediment loading. Trail design and management requirements will continue limit increases in sediment delivery due to addition of allowable Class 1 E-bike use.	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to sediment delivery to this waterbody. Overall result is expected to improve water quality in the Little Truckee River system with respect to sediment.
Minimize damage to soil and water quality.	Does the area have a hydraulic mine site or sites?	No	N/A
Minimize damage to vegetation and other forest resources.	Are TES plants known to occur in or around the trail that could potentially be affected by e-bike use?	No. Existing trails do not intersect known occurrences.	N/A
Minimize damage to vegetation and other forest resources.	Does the trail or area include designated botanical areas (SIA, RNA)?	No	N/A

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b)(2) Minimize harassment of wildlife and significant disruption of wildlife habitats.			
Minimize harassment of wildlife.	Does the trail or area encompass California spotted owl, and/or goshawk nest sites?	No.	BMPs / RPMs for possible future Owl or Goshawk nesting sites currently apply to all managed facilities and will be applied to any future trail maintenance activities.
Minimize harassment of wildlife.	Does the trail or area encompass known bald eagle nest sites?	No.	N/A
Minimize harassment of wildlife.	Does the trail or area contain key deer winter range?	No.	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain habitat for marten, wolverine, or other sensitive forest carnivores?	No	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain TES aquatic habitat and/or designated critical habitat?	No.	Management requirements contained in this EA will be Applied.
(b)(3) Minimize conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands.			
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a wilderness area or National Park managed by other agencies?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a non-motorized area or a developed recreation site on adjacent national forest or other federal lands?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause new conflicts with equestrian users.	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes relative to trail impacts (Wilson and Seney 1994) (Weaver and dale 1978) (IMBA 2015), speeds (Langford et al. 2015) (TNF unpublished 2020), and user behavior (Langford et al. 2015).	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette. Lines of sight would be improved

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause conflicts with non-motorized visitors' desire for solitude and quiet recreation?	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes which represent a significant percentage of use on the trail.	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette.
(b)(4) Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.			
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this trail allow wheeled motor vehicle use, for other than single track riders? If so, does this affect safety and management of this area?	No	N/A
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this area cross or contain roads allowing vehicle use? Are road crossings allowed by dirt bike riders?	Yes. There is motorcycle use in the area.	Adequate way finding, junction, and road / trail crossing signage will be placed to mitigate potential user conflicts, better inform users, and promote public safety. Additional information on rules, regulations, and standards of responsible trail etiquette will also be placed at staging areas and trailheads.
Minimize conflicts among different classes of motor vehicle uses of other neighboring federal lands.	Does this trail receive use by motorcycle or street legal vehicles? Is this potentially creating conflicts?	No	N/A
(b)(5) Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.			
Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.	Is the area adjacent to neighborhoods and communities?	Yes. Proposed new trails are somewhat near populated areas adjacent to south Prosser reservoir and in Russell Valley. Class 1 E-bikes would not have any additional impacts relative to noise and or emissions	Standards for trail use are, and would continue to be explicitly posted and enforced.

Appendix F: Travel Regulation Minimization Criteria Addressing Trail Designated for E-Bike use

Consideration of Criteria for proposed designation of Sawtooth Trail to allow for Use by Class 1 E-bikes.

Specific Criteria for Designation of Trails and Areas (36 CFR 212.55(b))

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b) Specific criteria for designation of trails: Sawtooth Trail			
(b)(1) Minimize damage to soil, watershed, vegetation, and other forest resources.			
Minimize damage to soil and water quality.	Are there potential impacts to soil and water from e-bike use? Is there potential for soil disturbance associated with Class 1 E-bike use?	Yes. All trail users affect the trail surface and surrounding environment, especially when trails are poorly constructed. (IMBA 2015) Class 1 E-bikes will not significantly alter current impacts (Wilson and Seney 1994) (Weaver and dale 1978) (IMBA 2015) (TNF unpublished 2020)	Current trail design standards were used to create trail features specific to reducing erosion and sedimentation including low gradients, grade reversals, and rolling dips. Soil and water resources will be protected by following region 5 BMPs 4.7.1 to 4.7.9 and Management Requirements in this EA.
Minimize damage to soil and water quality.	Does the trail or area contain sensitive riparian areas, for example wet meadows, fens, etc.?	No. There are no mapped meadows or wetlands designated by the U.S. Fish and Wildlife Service National Wetlands Inventory which will be additionally impacted by Class 1 E-bike use.	N/A
Minimize damage to soil and water quality.	Does the trail or area drain into a 303(d)-listed waterbody?	Yes. The Sawtooth Trail area drains into the Truckee River which is listed due to sediment loading. Trail design and management requirements will continue to limit increases in sediment delivery.	Project also proposes decommission and restoration of existing poorly aligned routes currently contributing to sediment delivery. Overall result is expected to improve water quality in the Truckee River with respect to sediment.
Minimize damage to soil and water quality.	Does the area have a hydraulic mine site or sites?	No	N/A
Minimize damage to vegetation and other forest resources.	Are TES plants known to occur in or around the trail that could potentially be affected by Class 1 E-bike use?	No. Existing trails do not intersect known occurrences.	N/A
Minimize damage to vegetation and other forest resources.	Does the trail or area include designated botanical areas (SIA, RNA)?	No	N/A

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
(b)(2) Minimize harassment of wildlife and significant disruption of wildlife habitats.			
Minimize harassment of wildlife.	Does the trail or area encompass California spotted owl, and/or Northern goshawk nest sites?	No.	BMPs / RPMs for possible future Owl or Goshawk nesting sites currently apply to all managed facilities and will be applied to any future trail maintenance activities.
Minimize harassment of wildlife.	Does the trail or area encompass known bald eagle nest sites?	No.	N/A
Minimize harassment of wildlife.	Does the trail or area contain key deer winter range?	No.	N/A
Minimize significant disruption of wildlife habitats.	Does the trail or area contain habitat for marten, wolverine, or other sensitive forest carnivores?	Yes. Some suitable habitat exists. Addition of Class 1 E-bike use will not additionally impact suitable habitat.	No increased noise or human presence resulting in a loss of breeding and or feeding habitat is expected. BMP's / RPM's for possible future carnivore denning sites currently apply to all managed facilities and will be applied to any detections associated to all future trail maintenance activities. (SNFPA ROD - S&G 32 Wolverine and S&G 89 Marten)
Minimize significant disruption of wildlife habitats.	Does the trail or area contain TES aquatic habitat and/or designated critical habitat?	No.	Management requirements contained in this EA will be Applied.
(b)(3) Minimize conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands.			
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a wilderness area or National Park managed by other agencies?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring federal lands.	Does the trail abut a non-motorized area or a developed recreation site on adjacent national forest or other federal lands?	No	N/A
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause new conflicts with equestrian users.	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes relative to trail impacts (Wilson and Seney 1994) (Weaver and dale 1978) (IMBA 2015), speeds (Langford et al. 2015) (TNF unpublished 2020), and user behavior (Langford et al. 2015).	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette. In particular, lines of sight on this trail are very open as a result of recent vegetation management activities making surprise encounters unlikely.

Criteria	Potential Effect Indicators	If yes, would use of the trail cause adverse effects? If so, how?	If the trail is designated, what measures will be taken to manage use to minimize these effects?
Conflicts between motor vehicle use and existing or proposed recreational uses of NFS lands	Would Class 1 E-bike use of this trail cause conflicts with non-motorized visitors' desire for solitude and quiet recreation?	No. Effects of Class 1 E-bike use are consistent with those of, currently allowed, traditional mountain bikes which represent a significant percentage of use on the trail.	Barriers, signing, improved lines of sight, patrolling, and education would be used to mitigate potential user conflicts, incursions into adjacent sensitive areas, cutting off of speed controlling features, and poor user etiquette.
(b)(4) Minimize conflicts among different classes of motor vehicle uses of NFS lands or neighboring federal lands.			
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this trail allow wheeled motor vehicle use, for other than single track riders? If so, does this affect safety and management of this area?	No	N/A
Minimize conflicts among different classes of motor vehicle uses of NFS lands or other neighboring federal lands.	Does this area cross or contain roads allowing vehicle use? Are road crossings allowed by dirt bike riders?	Yes. There is motorcycle use in the area.	Adequate way finding, junction, and road / trail crossing signage will be placed to mitigate potential user conflicts, better inform users, and promote public safety. Additional information on rules, regulations, and standards of responsible trail use etiquette will also be placed at staging areas and trailheads.
Minimize conflicts among different classes of motor vehicle uses of other neighboring federal lands.	Does this trail receive use by motorcycle or street legal vehicles? Is this potentially creating conflicts?	No	N/A
(b)(5) Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.			
Consider compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.	Is the area adjacent to neighborhoods and communities?	Yes. Proposed new trails are somewhat near populated areas adjacent to the 06 road. Class 1 E-bikes would not have any impacts relative to noise and or emissions	Standards for trail use are, and would continue to be explicitly posted and enforced.

Appendix G: Travel Regulation Minimization Criteria Addressing Designation of Roads

Four short user created spurs totaling approximately 1.2 miles are being proposed for inclusion into the National Forest Transportation System (NFTS)

Minimization Criteria is being applied, as required by Travel Management Rule 212.55(c), to provide record of the Responsible Official's consideration of:

- 1 – Speed, Volume, Composition, and Distribution of Traffic
- 2 – Compatibility of Vehicle Class with Road Geometry and Road Surfacing

Each of the four roads represent existing routes currently utilized for the purpose of day use recreation and or access to dispersed camping in areas open to this legal use.

Non-System Road U18172108 – Approximately .14 miles in length and approached via Forest Road 894-2, this short segment offers access to an area frequented by users for the purpose of target shooting. Surface is native material and is flat, affording very low speeds. Volume of use is generally low, and traffic is distributed through access at either end, both of which connect to the 894-2 road. Road geometry is straight, and surfacing is compatible with two and four wheel drive vehicles.

Non-System Road X341 – Approximately .7 miles in length and approached via the north end of the Boca Stampede Road, this spur offers access for Day Use recreation on Stampede Reservoir along the Hoke Valley / Davies Creek arm. Surface is native material and generally flat affording very low speeds. Volume of use is low and traffic is distributed by short sections of widening where vehicles going in opposite directions can pass. Road geometry and surfacing is consistent with compatibility for all vehicles which typically utilize Forest Roads for the purpose of recreation in this area.

Non-System Road X117 – Approximately .15 miles in length and approached via Forest Road 270-2, this short spur is utilized to access two established dispersed campsites. Surface is native material and flat affording low speeds. Volume of use is very low and traffic is distributed due to the limited availability of camping the access leads to, visible from the main road. Road geometry and surfacing are consistent with compatibility for all vehicles which typically utilize Forest Road 270-2.

Non-System Road 31074 spur – Approximately .1 mile in length and approached via TNF Road 860-2 / HTNF Road 31074, this short spur is utilized to access two established dispersed campsites. Surface is native material and flat affording low speeds. Volume of use is very low and traffic is distributed due to the limited availability of camping the access leads to, visible from the main road. Road geometry and surfacing are consistent with compatibility for all vehicles which typically utilize TNF Road 860-2 / HTNF Road 31074.

All four roads were visited and analyzed by Truckee Ranger District resource specialists in determining no adverse impacts as a result of the proposed action and in compliance with consideration of minimization criteria required by Travel Management Rule 212.55 (a) and (c).