Draft Environmental Assessment
Eagle Lake Sewage Ponds Project

Eagle Lake Ranger District, Lassen National Forest
Lassen County, California

Legal Description: T31N, R10E, NE¼NE¼ Section 21, Mount Diablo Meridian (MDM)

Introduction

The Eagle Lake Ranger District of the Lassen National Forest (NF) is proposing the Eagle Lake Sewer Ponds (EL Facility) Project. The proposed action is designed to implement and be consistent with the 1992 *Lassen National Forest Land and Resource Management Plan* (LRMP) and 1993 *Record of Decision* (ROD) as amended by the *Herger-Feinstein Quincy Library Group Forest Recovery Act* (HFQLG), Final Environment Impact Statement (FEIS), Final Supplemental Environment Impact Statement (FSEIS) and RODs (1999, 2003), the *Sierra Nevada Forest Plan Amendment* (SNFPA) FSEIS and ROD (2004), and the *Sierra Nevada Forests Management Indicator Species* (SNF MIS) Amendment (2007).

The LRMP as amended gives specific direction on how to manage Lassen NF lands. The EL Facility lies entirely within Management Prescription (MP) B (Range/Wildlife Prescription) of Eagle Management Area 14 (Chapter 4, pp 4-42 to 4-43 and pp 4-136 to 4-140). Within the parcel there are Little Merrill Flat wetlands (Merrill wetlands). Therefore, MP F (Riparian/Fish) also applies to how the area is managed (Chapter 4, 4-50 to 4-53). Both MPs emphasize fuels management and permit facility construction/reconstruction. MP F emphasizes limited timber management and MP B permits limited timber management. Additional documentation, including more detailed analyses of project-area resources and all cited references referred to in this EA, may be found in the project planning record located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130.

Note: Since the original scoping in June 2009, several clarifications have been made to the Proposed Action and Purpose and Need. Those changes to the original language are noted in italics; Genus and species names are also italicized.

Background

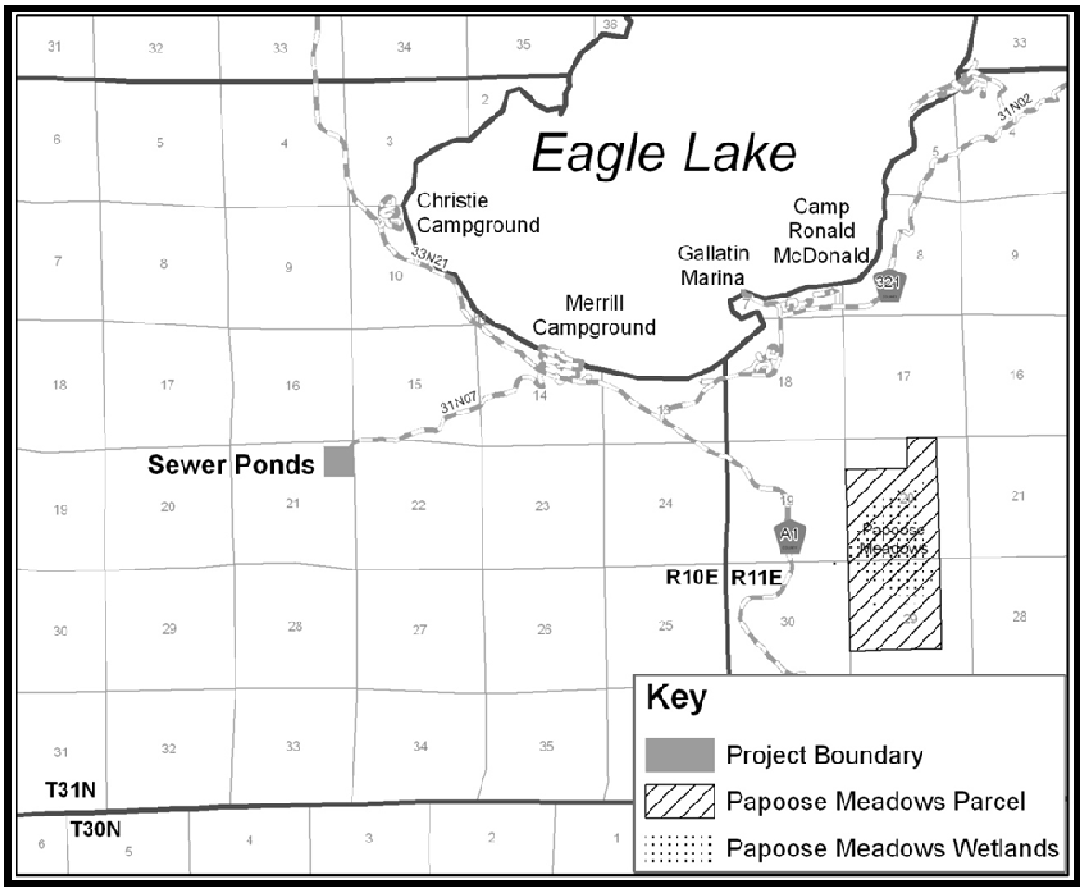
General Description of the Project Area

The 40-acre parcel is located approximately 20 miles northwest of Susanville, California and approximately two miles southwest of Eagle Lake on the Eagle Lake Ranger District of the Lassen NF. The project area is accessed via National Forest System Road (NFSR) 31N07 and located in T31N, R10E, Sec. 21 of Lassen County (Figure 2. EL Facility Project Location Map).

The EL Facility Project involves a 40-acre National Forest System parcel that is completely surrounded by private land. (The site is located on the geomorphic province of the Modoc Plateau that is

an undulating plateau. Most of the area consists of basalt lava flows and volcanic ash deposits. Average annual precipitation is about 30 inches, most of which occurs as snow in the fall, winter, and spring months. The EL Facility is located on an alluvial terrace, Little Merrill Flat, underlain by fractured volcanic rock. Soils of the alluvial terrace are silty clay, with permeabilities between 1 x 10-05 and 1 x 10-07 cm/sec.

Figure 1. EL Facility Project Vicinity Map



The natural environment of the EL Facility Projects consists of slopes that are generally less than 20 percent, with elevations ranging from approximately 5,393 feet to 5,420 feet. Uplands are covered by an eastside pine forest with very little understory. The uplands lead down to an altered seasonal wetland (Little Merrill Flats wetlands) and meadow, at the edge of which the existing EL Facility is located. The altered seasonal wetland and adjacent meadow occupies a basin nearly closed, except in it southeastern corner where it is drained by Merrill Creek flowing northeast into Eagle Lake. Common wildlife species such as mule deer (*Odecoileus hemionus*), black bear (*Ursus americnus*), common raven (*Corvus corax*) and coyote (*Canis latrans*) inhabit the area. Water resources in this area consist of seasonal streams, seasonally saturated wetlands, and small depressional seasonal wetlands areas that are closely associated with seasonal runoff and that supports hydric soils and plant species of moist to wet, open flats, such a

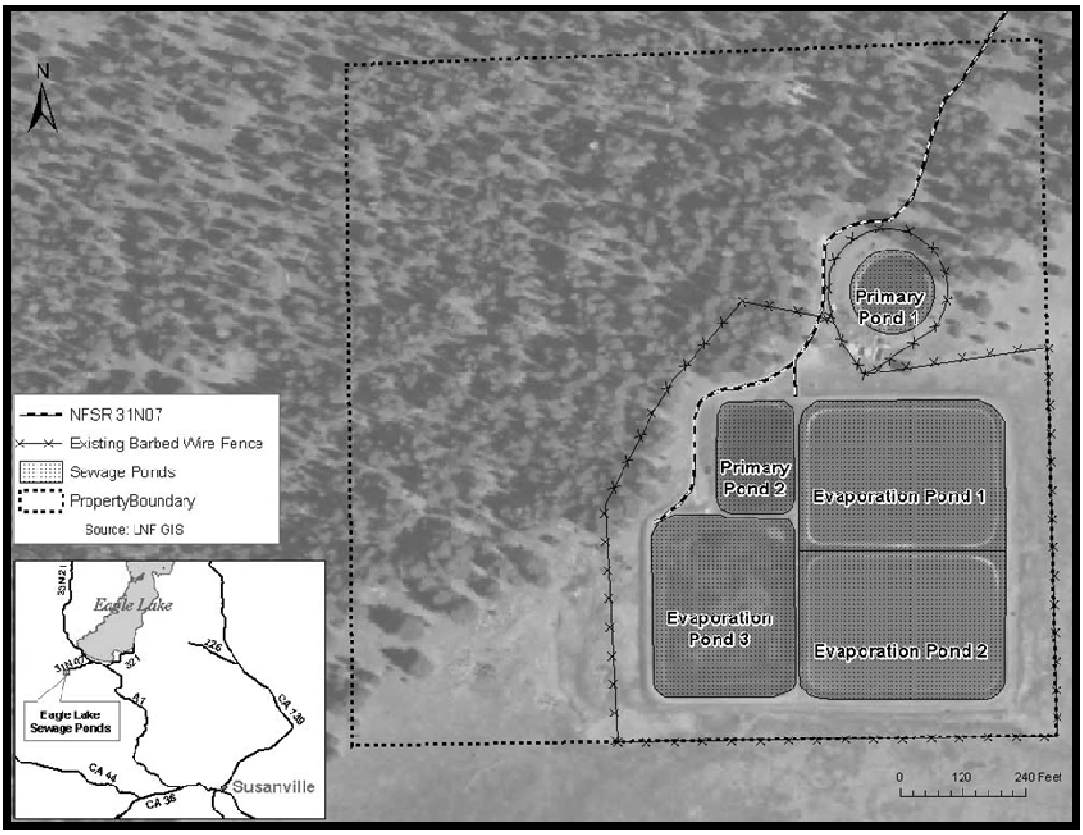
Ranunculus alismifolius, *Castelleja lacera*, *Polygonum polygaloides* ssp. *confertiflorum*, and *Juncus hemiendytus* var. *hemiendytus*. Additionally, water resources in the project area support common aquatic species adapted to seasonal waters such as chironomids, damselfly larvae, may fly larvae, and Pacific tree frogs, *Pseudacris regilla*.

The Papoose Meadows Wetlands Restoration Project (PMWR) was identified as a mitigation site for the altered Merrill wetlands that would be lost by the EL Facility Project under the Alternative 1, Proposed Action. Papoose Meadows is a large seasonal wetland and marsh within the same 5th field watershed as the Merrill wetlands. The Papoose Meadows wetland is drained by Papoose Creek flowing north into Eagle Lake. Papoose Meadows was once fed by four springs, three of which were perennial even in drought years. The eastern and northern portions of the papoose wetland are ponded with the extent of ponding depending on the water year. Water from three of the four springs is currently intercepted by multiple ditches leading to Papoose Creek, which were created to drain the meadow when it was homesteaded in the 1800"s. The Papoose Restoration includes using barriers and fill to redirect water from the ditches into the main wetland, potentially increasing the size and duration and inundation within the wetland.

History of the Facility

In the 1970's the EL Facility was constructed with a pond (Primary Pond 1) that covered approximately one acre and spray fields under an operating permit with was is today known as the State of California's Lahontan Region Water Quality Control Board (Lahontan). A spray field for onsite wastewater treatment is similar to a lawn sprinkler system. Over the years, Lassen NF's method of operating the facility has changed. The wastewater is sprinkled over the surface of the field. In the 1980's Lassen NF stopped using the spray fields and created a no discharge facility as directed by the Lahontan. To create the facility, two Evaporation Ponds (existing Ponds 1 & 2) were constructed that covered approximately five acres. In the early 1990's, the storage capacity of the facility increased so that the facility could withstand a 100-year storm event without overtopping the banks of the ponds. (A 100-year storm event is based on a statistical technique used to estimate the probability of the occurrence of a given precipitation event. For example, assume there is a 1/100 chance that 6.60 inches of rain would fall in a certain area in a 24-hour period during any given years. Thus, a rainfall total of 6.60 inches in a consecutive 24-hour period is said to have a 100-year recurrence interval and is also referred to as a 100-year storm event). This increase was created by constructing the existing Primary Pond 2 and Evaporation Pond 3, covering approximately 11 acres. Since that time, the footprint of the facility has not changed. However, in the late 1990's, as a result of above average snowfalls, this capacity became a concern; in response, in 2000, the Lassen NF raised the banks of Evaporation Pond 3, to match the height of Evaporation Ponds 1 and 2. See Figure 2 for the current facility.

Figure 2. EL Facility Project Location Map



Since the inception of the EL Facility the Merrill wetlands appear to have been altered. Alternations, in consultation with Lahontan included; 1) installation and removal of spray field piping in the Merrill wetlands, 2) hauling excess materials from the construction of the Evaporation Ponds across the Merrill wetlands, 3) having an excess materials area within 75 feet of the Merrill wetlands, 4) constructing berms for the Evaporation Ponds adjacent to the Merrill wetlands, 5) using the Merrill wetlands as a borrow source. In the fall of 2008 field work was begun for a wetlands delineation study of the Merrill wetlands on Lassen NF. In January 2009 the wetlands delineation study of the Merrill wetlands on Lassen NF was completed.

Currently, Lassen NF's operation permit with Lahontan allows approximately 2.6 million gallons of effluent water to be pumped into the facility yearly. For the past ten years Lassen NF has pumped approximately 1.6 million gallons of effluent water into the facility yearly. The facility's function is to service the Lassen NF's Eagle Lake Recreation Area (ELRA). The ELRA consists of five campgrounds with 318 campsites, two group campgrounds; one 100 person site and one 75 person site, two day use areas, two boat launching facilities, a marina (that includes a store, showers, laundry facilities and fish cleaning stations), Camp Ronald McDonald, a research facility and hiking and biking trails. Per data provided by the ELRA concessionaire (LCF 2009), approximately 80,000 people camped in the

campgrounds from May to October of 2009. Additionally, according to the front page of Camp Ronald McDonald's® at Eagle Lake website (on December 10, 2009) their "35 acre, fully handicap-accessible, camp welcomes nearly 1,000 disabled and disadvantaged campers" yearly.

Existing System

On April 23, 2009, the Forest Supervisor received a Notice of Violation from the Lahontan requiring a leak location survey to be performed on the non-visible portions of the liners. This survey was completed and a report of findings submitted to the Board in October 2009. On June 16, 2009, the Forest Supervisor received another Notice of Violation requiring a soil and groundwater investigation be performed to determine the hydrogeology of the area and to determine whether any contaminants are present in the surrounding soils. A contract was awarded for this investigation in September 2009. The contract was completed and a draft report of findings submitted to Lahontan on December 16, 2009. No water was found in three of the four newly drilled groundwater monitoring wells. Although water was found in the remaining well, not enough volume was produced to perform proper sample analysis nor can definitive conclusions be drawn from these tests. The draft reports further states "Since no fecal coliforms were detected in the water samples, it is likely that the wastewater ponds are not the source of water in MW-4."

The existing wastewater collection and treatment system layout provides the following path:

1. Sewage is collected from ELRA and pumped to the treatment facility.
2. Sewage is directed to either Primary Pond 1 or Primary Pond 2 by a manually operated valve.
3. Once deposited into the primary ponds, the heavier solids settle out to the bottom. When the level of material in the primary ponds reaches a set elevation, the suspended solids and fluids are allowed to gravity flow through spill pipes to the evaporation ponds. Primary Pond 1 flows directly into Evaporation Pond 1only; Primary Pond 2 flows into Evaporation Pond 2 or 3. There is no direct link between Evaporation Pond 3 and Primary Pond 1.
4. The fluids flowing into Evaporation Pond 1 are then intended to be controlled by a gate valve in the middle of the lower berm between Evaporation Pond 1 and 2. Currently this valve is frozen in the open position resulting in equalization of the pond levels in these two ponds. Fluids freely flow through the 18" corrugated steel pipe and cannot be controlled.
5. Evaporation Pond 3 is used as an emergency overflow pond in the event that levels in Evaporation Ponds 1 and 2 reach the required 2 feet of freeboard. In 4 of the past 15 years overflow fluids have flowed into Evaporation Pond 3. Additionally, even with the additional capacity added to Evaporation Pond 3 in 2000 it was within 2.5 feet of exceeding the required 2 feet freeboard limit after the heavy snowfall year of 2006.

Purpose and Need for Action

The Eagle Lake sewage ponds were lined in the 1980's and the liners are beginning to deteriorate. The number of patches required to maintain functionality of the sewage treatment facility have increased considerably the past few years due to the age of the existing lining which has reached its life expectancy. The banks on which the liners were originally placed have crusted over, which are now puncturing the liner. In addition, water fowl of various types use the ponds and are damaging the lining; hunters using the area shoot at the liner, resulting in lining punctures.

The patches are considered temporary fixes to mitigate the potential immediate safety hazard of small leaks in the lining. Complete replacement of the liners is needed to prevent widespread failure of one or more of the ponds' linings. Without the proposed expansion of the facility, draining the ponds and replacing the liners would require closure for at least one season of the Eagle Lake campgrounds, marina and Camp Ronald McDonald. Closure of these recreation facilities would have a negative impact – political and/or economic – on the public, surrounding communities, and the Lassen National Forest. Finally, the existing storage capacity of the evaporation ponds may be inadequate to handle future capacity increases to the Eagle Lake campgrounds and marina. *The possibility of inadequate storage capacity is based on three facts. First, the Lassen NF permit allows approximately 1 million gallons more than we are currently treating to be treated at the facility. Increasing the number of gallons treated at the facility may exceed the two foot freeboard limit. Second, multiple years of above average snow fall may result in Lassen NF exceeding the two foot freeboard limit at the facility. Third, in the event of a biological treatment process issue there may not be adequate capacity to operate the facility in the short term.*

Under the proposed action, impacts would occur to 0.77 acres of the 0.89 acres of wetlands on National Forest System land as a result of the existing sewage treatment facility expansion. The 0.89 acres of Merrill wetlands located on NFS lands are only a small fraction of the greater Merrill wetlands which is located on private lands. The *PMWR project would be used as a mitigation bank for the EL Facility project*. This mitigation would at a minimum, create the required one and one-half times more wetlands habitat than would be impacted by the Proposed Action.

The integrated design features pertaining to the wetlands and its *300 foot riparian conservation area* (RCA) are intended to minimize impacts to and protect the functionality of the greater Merrill wetlands on private lands, and to maximize the time in which the wetlands area on NFS lands can serve as functional habitat.

To reduce the risk of a wildfire damaging the EL Facility thinning activities are needed to initiate structural changes that would increase crown base height and remove ladder fuels throughout the stand. Thinning is also needed to maintain individual tree growth, vigorously reduce mistletoe infection, decrease the risk of tree mortality due to insects attacking overstocked stands and reduce the risk wildfire from to surrounding timber.

The site clearing activities are needed to provide an area from which the borrow site could be established on NFS lands, and to make room for the expansion of the smaller evaporation pond. The available NFS lands are limited on the parcel. The 40-acre parcel is already highly developed by the existing sewage treatment facility, and using a borrow site adjacent to this facility would therefore restrict the disturbance caused by this project to a compact, contiguous area.

Proposed Action

The Proposed Action is divided into four phases as described below. Each phase outlines the work to be completed before the next phase can begin. In summary, as shown in Figure 3, Evaporation Ponds 1 and 2 would become one pond by removing the center berm that currently divides them, while Evaporation Pond 3 would be enlarged to double its capacity. Material for construction would be removed from the borrow site and thinning would occur throughout the remaining 40-acre parcel to reduce hazardous fuels.

It should be noted that during Phases II and III, material in the existing ponds would be transferred to other ponds as necessary, to allow for removal and relining of each pond. Per the Hydrogeologic Investigation Draft Report, Cascade Earth Sciences, December 8, 2009, clay soil found at the site at a depth of 8-10 ft below the berm, which appears to be at least 10 feet thick throughout, had permeability of about 10-7 cm/sec. This clay present should greatly limit infiltration of any wastewater from the ponds, as 10-7 cm/sec is often the design specification for clay pond liners. The depth to groundwater at this location is approximately 250 ft. The clay layer and additional clays at the surface of the deep aquifer would prevent leakage from the upper soils to the ground water below.

Liner selection and design would occur during the EL Facility design process and under consultation with Lahontan. All replaced liners would be removed off National Forest System land and disposed of according to existing regulations. Federal Acquisition Regulations that would be included in the contract involving replacement of liners include standard language that contracted work is to be in conformance with all local, State and Federal requirements.

Figure 3 displays the location of the newly constructed site, the site where soil material would be used to build the new pond (borrow site), and the area where tree thinning would occur to reduce hazardous fuels to protect this site.

Heritage Site Evaluation

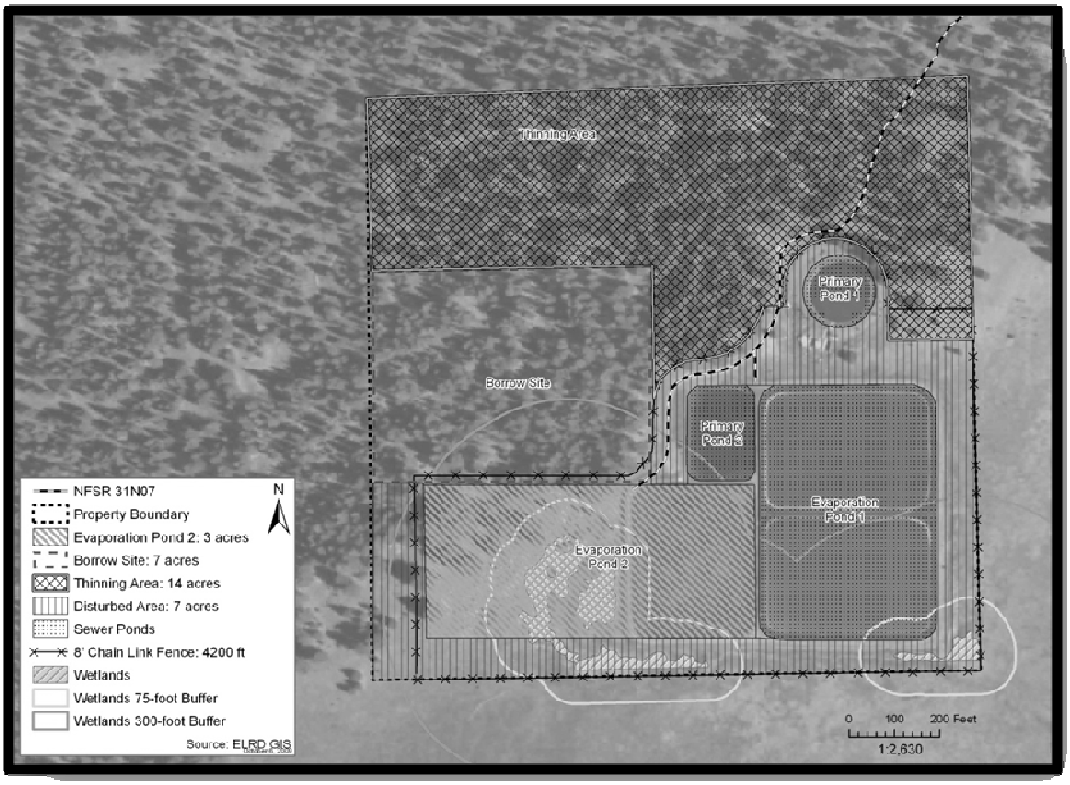
Heritage Site FS05-06-58-499, adjacent to what is currently Pond 3 cannot be avoided or protected by the application of standard protection measures. The site has not been previously evaluated for inclusion in the National Register of Historic Places (NHRP), therefore an evaluation would occur. If the site is determined to be ineligible for inclusion in the NHRP, no further management of the site would be required and the project may proceed. If the site is determined to be eligible for the inclusion in the NHRP, then additional consultation with the State Historic Preservation Office (SHPO) and Indian tribes would be needed before a National Environmental Policy Act (NEPA) decision would be made.

Phase I – Site Preparation

- Remove existing barbed wire and above ground sprinkler heads from the old spray field area.
- Remove 3,100 feet of existing barbed wire fence from the perimeter of the sewage treatment facility site, and construct a temporary fence around the entire project area. Construct a cattle guard at the entrance gate to the project area. Unused fence material would be removed off National Forest System land.

- Clear the 12-acre[1] borrow site and pond expansion areas; leave stumps in place.
- Thin from below approximately 14-acres[2] of forested land, as described in the thinning prescription.
- *Prior to commencing any thinning and or clearing operations the Lassen NF would obtain a 2009 Timber Waiver Permit for Lahontan. (Where thinning and clearing operations are mentioned in the remainder of this document this statements shall apply)*

Figure 3. Alternative 1- Relining Layout of EL Facility



Phase II – Pond Expansion

- The construction contractor would remove stumps and, if necessary, slash piles and any remaining vegetation. Stumps could be temporarily stored on site.
- Develop the 7-acre[3] borrow site by retaining and storing the topsoil to be used during Phase IV.
- The area west of Evaporation Pond 3 would be leveled to the same depth of the existing pond and an earthen berm would be created to form the new perimeter. Most of the leveling would be done by adding fill material obtained from the borrow site, although some excavation is possible. About 28,000 cubic yards of borrow material would be excavated from the borrow site. This would expand the surface area of Evaporation Pond 3 from approximately two acres to five acres, and expand its capacity to approximately *13* million gallons.

1 In the scoping document the acreage was incorrectly listed as 16 acres.
2 In the scoping document the acreage was incorrectly listed as 10 acres.
3 In the scoping document the acreage was incorrectly listed as 8 acres.

- Evaporation Pond 3 would then be expanded from approximately two acres to five acres, and relined. . *At a minimum the sub-grade preparation, compaction and final inspection prior to installing of the synthetic liner would at a minimum meet the liner's manufacturer's specifications.*
- Lysimeters would be installed *for early detection of leaks and to sample water quality in the unsaturated soils surrounding the ponds. At a minimum the lysimeters would be capable of collecting and storing enough groundwater/fluid for analysis to assure that groundwater contamination is not occurring and would support the requirements of the Monitoring and Reporting Program attached to the Lassen NF Permit from Lahontan to operate the EL Facility. Location, quantity and design of the lysimeters would be determined in the wastewater facility design.*

Phase III – Pond Reconstruction

- Remove the 12,000-cubic-yard dike between Evaporation Ponds 1 and 2, creating a single rebuilt pond to be called Evaporation Pond 1, approximately four acres in size.
- Place the 12,000 cubic yards of material from the dike in the borrow site.
- Lysimeters *would be installed for early detection of leaks and to sample water quality in the unsaturated soils surrounding the ponds.*
- Remove stumps from National Forest System lands.

Phase IV – Reclamation

- Remove cattleguard and temporary fencing from perimeter of project area.
- Construct approximately 4,250 feet of 8-foot-high chain-link fence around the sewage treatment facility perimeter.
- Re-spread retained topsoil in the borrow site.
- Revegetate approximately 16 acres, including the borrow site and any areas disturbed during construction (see CEQA Appendix 1).
- Construct a temporary fence around the borrow pit to exclude cattle from the re-vegetated area post-project, until such time as reclamation is complete and grazing can resume.

Thinning Prescriptions

Prescription 1 applies to the larger-diameter trees on 80 percent of the thinning area; Prescription 2 applies to the smaller-diameter trees on 20 percent of the thinning area. In both prescription areas, the largest, healthiest conifer trees would be designated as leave trees. All conifers that are 30 inches diameter at breast height (dbh) and greater would be marked as leave trees regardless of tree health, vigor, or species. All snags greater than 15 inches dbh would be retained regardless of species, unless they pose a safety or operational concern. All conifer stumps greater than 14 inches in diameter would be treated with SPORAX® (Sporax). Activity-generated fuels would be mechanically and/or hand piled and burned, removed, or chipped to provide organic matter.

Prescription 1 would thin from below to 100-110 square feet of basal area per acre. All pine 30 inches dbh and greater would be leave trees unless they have Hawksworth mistletoe rating greater than 3. The Hawksworth 6-Class Dwarf Mistletoe Rating System rates the severity of dwarf mistletoe infection on a scale from 0 (no visible infection) to 6 (highest possible infection).

Prescription 2 would thin from below to 50-70 square feet of basal area per acre. All pine of 14 inches dbh and greater would be leave trees unless they have a Hawksworth rating greater than 3.

Wetlands Mitigation

An area of the existing Merrill wetlands (0.77 acres of the 0.89 acres of wetlands located on National Forest System land) would be eliminated when Evaporation Pond 3 is expanded. The eliminated wetlands would be mitigated by creating at least 1.34 acres of other wetlands; the PMWR Project would be used as mitigation for this project. Papoose Meadows is located approximately 4.5 miles east of the Eagle Lake sewage ponds and is in the same 5th-field watershed. The Decision Notice and Finding of No Significant Impact for the PMWR Project were signed in 2008, under the South Eagle Lake Grazing Allotment decision.

Papoose Meadows is a large, 270-acre meadow located south of Eagle Lake in T. 31 N., R. 11 E., Sections 20 and 29, MDM. At present, approximately 160 acres are a seasonally flooded wet meadow and marsh system. Historically, this wetland complex was ditched to dry it out to improve hay production for livestock. The ditches would be filled or successively plugged. Cursory analysis indicates that between 30 and 110 acres could be restored.

Integrated Design Features (IDFs) for the Proposed Action

Integrated Design Features are elements of the project design that are applied in treatment areas and are developed to reduce or avoid adverse environmental effects of the proposed action to forest resources. The following features are generally listed in phases. For those features that overlap phases, this overlap is noted. The Riparian Conservation Area (RCA) is designated as a 300 feet buffer surrounding Merrill wetlands.

Aquatics

1. A “75 foot” no mechanical equipment” buffer would be designated around the delineated wetlands within Little Merrill Flat during Phase I timber removal [Phase I}.

The following would *apply within the RCAs for the Merrill wetlands*:

2. Landings would be located outside the seasonal wetlands and the RCA.
3. Conifers would be removed with feller-bunchers that have 24-inch or greater track widths.
4. Skid trails would be kept to a minimum *(no more than one every 100 feet)* and no water bars would be installed after treatment *on slopes that are gentle (1-2%).* Where slopes are gentle, water bars are more likely to interfere with natural flow paths than their intended purposes, which, is to disperse concentrated flows away from skid trails.
5. Ground-based equipment would be used to remove timber using one-end suspension.
6. Skid trails within the RCA of Little Merrill Flat would require 90 percent of existing ground cover4 on bare soil on the trails; slash would be spread over these open areas.

4 Using “existing cover” rather than a predefined quantity allows site-specific application of this IDF to better approximate pre-activity conditions across a heterogeneous landscape.

7. Slash piles within the RCA would be hand-piled and burned in the outer 225 feet of the RCA of Little Merrill Flat. Machine piles would be located completely outside the RCA.

Botany

8. Deleted[5]
9. New occurrences of *Threatened and Endangered Species* (TES) plant species, discovered before or during ground-disturbing activities within the *14*-acre thinning unit, would be protected through flag and avoid methods. *Avoidance buffer widths would be based on the requirements of the TES species present* [Phase I].

9a. All fence work in the south and east margins of the project area, including the installation of permanent chain-link fence around the treatment facility, would occur when soils are dry, so that plants of Mimulus pygmaeus would have completed their annual life cycle [Phases I and IV].[6]

10. All equipment would be weed-free prior to entering the Forest. Staging of equipment would occur in weed-free areas [Phase I].
11. Certified weed-free mulches or fill would be used in all phases as necessary [Phase I].

11a. If, prior to ground-disturbing activities, new noxious weed infestations are identified within thinning units or on access roads, the infestations would be evaluated, then dug up or pulled by hand and avoided by project activities [Phase I].

12. *If, prior to ground-disturbing activities, new noxious weed infestations are identified outside of thinning units or on access roads, and they cannot be eliminated through hand-pulling, tarping, or other cultural methods such as seeding with competitive native species, topsoil infested with these weeds would not be re-spread into impacted areas of the project* [Phase IV].[7]
13. Post-project monitoring for implementation and effectiveness of weed treatments, control of new infestations and borrow site re-vegetation would be conducted as soon as possible and as needed [post Phase IV].

Silviculture – Thinning Area

14. All conifer stumps greater than 14 inches in diameter would be treated with SPORAX® within the thinning area. No Sporax would be applied within 25 feet of known Sensitive and Special Interest Plants or applied within 25 feet of the RCA [Phase I].

Soils – Thinning Area

15. Deleted and addressed by a Forest Plan Amendment. (See Decision to be Made)[8.]
16. Existing landings and skid trails would be used as much as possible to minimize new disturbance [Phase I].
17. Deleted for the following reason. *Subsoiling would not be used in this area as the soil texture type is prohibitive to ripping activities – i.e. high percentage of rock fragments in soils. Furthermore, detrimental soil compaction is not anticipated to be permanent in the project area due to the presence of coarse textured soils and high amounts of rock fragments. Past timber operations in the area have not had permanent negative impacts on soil compaction (i.e. these soils recover naturally as a result of bioturbation.*
18. Outside the RCA, Lassen NF Wet Weather Operations and Wet Weather Haul Agreement, *and Lassen NF Timber Waiver permit from Lahontan* would be followed during all operations. *When*

5 Original IDF 8 deleted and replaced with IDF 11a.
6 In the original scoping document 9a was inadvertently omitted.
7 IDF 12 was modified to work in conjunction with IDF 11a.
8 The areal extent of detrimental soil disturbance would not exceed 15 percent of the area dedicated to growing vegetation [Phase I].

a conflict exists between the Wet Weather Operations and Wet Weather Haul Agreement, and the Lassen NF Timber Waiver permit the most stringent requirements would apply. [All phases].

19. Soil would be dry to a depth of 12 inches prior to mechanical work commencing in *the outer RCA boundary (75-300 ft)*, and work would occur when risk of precipitation is minimal. This period is usually between May 1 and October 15. *Work in the RCA would temporarily halt when the National Weather Service forecasts a 30 percent or more chance of precipitation, and then continue again once soils are dry to 12 inches.* (BMP 2-3 Timing of Construction Activities) [Phases I, II and III]
20. Landings constructed for timber operations supporting borrow site development would be located within the perimeter of the borrow site [Phase I].
21. Any activity-generated surface fuels would be piled *and burned on project landing areas in order to limit the distribution of the sterilizing effects of fire on soil microbiota*.[9] [All phases].
22. If trees are pushed over in the pond expansion area and borrow area to facilitate stump removal, then soil would be dislodged on site [Phase I].
23. Runoff from source areas would be diverted away from the project site, including spoil sites. Before ground-disturbing activities, site-specific erosion and sediment control devices would be installed to prevent sediment movement. These devices would include, one of the following at a minimum, silt fencing, straw bales, coir logs (i.e., straw waddles), plant cover, and mulch. (BMP 2-11 Control of Side-Cast Material During Construction and Maintenance; BMP 2-13 Control of Construction; BMP 2-19 Disposal of Right of Way and Roadside Debris; BMP 2-15 Diversion of Flows around Construction Sites; BMP 2-18 Regulation of Borrow Areas) [All Phases].
24. Provide visible delineations around construction and borrow sites. Also delineate wetlands areas that would remain free of machinery operations and materials storage. Materials would be stored on flat slopes at least 100 feet from the Merrill wetlands on private lands. (BMP 2-18 Regulation of Borrow Areas) [Phases II and III]
25. The size of the borrow site would be designed to be the minimum area necessary to complete the sewer pond construction such that soil productivity would be maximized. Excavation would not occur below the water table. *Monitoring Well #4, developed in October of 2009, would be used to verify groundwater level before excavation.* (BMP 2-18 Regulation of Borrow Areas) [Phases II and III
26. Mulch, chips, and/or organic material would be spread in the borrow site area to provide a minimum of 50 percent surface coverage, to reduce soil erosion and overland flow, and to maintain soil moisture. *Fifty percent ground cover has been demonstrated to provide adequate cover for minimizing erosion, for allowing vegetative understory recovery and for minimizing fuel accumulation in thinning operations in the eastside pine ecotype.* [Phase IV].
27. *R*etain up to three logs per acre of downed large woody material during borrow site development for surface replacement after the borrow site is no longer needed [Phase IV].

Transportation System

28. Develop and implement a dust abatement plan along the road in the project area. Logging and vegetation management activities would be dust abated where rubber-tired vehicles are operating on haul routes. Water for dust abatement would be trucked-in, or a dust palliative may be approved which may include magnesium chloride, calcium chloride, lignin sulfate, or an approved equal. Dust palliatives would not be used within 25 feet of the RCA. Dust palliatives would be stored and mixed outside of the RCA [Phases I and II].

9 The following was deleted from IDF 21. "….such that the intensity and duration of the fire minimizes soil sterilization.)

Water Quality

29. Applicable Best Management Practices (BMPs) as described in Water Quality Management for Forest System Lands in California would be implemented *All applicable BMPs are listed in the Hydro Report* [All Phases].
30. *At a minimum the contractor would have on site at all times sufficient absorption materials and tools to cleanup and properly dispose of any size oil or oil products spill. Additionally the c*ontractor would maintain storage facilities for oil or oil products in the project area and would take preventative measures to ensure that any spill would not enter the Merrill wetlands or groundwater. If the total oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, then the contractor would prepare a Spill Prevention Control and Countermeasures Plan. In addition, these BMPs would be followed: BMP 2-12 Servicing and Refueling of Equipment; BMP 7-4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure (SPCC) Plan [All Phases].
31. Berms would be constructed with slopes less than 25 percent, unless sound structure cannot be achieved*. In the event a sound structure cannot be achieved, a design would be prepared and approved during the wastewater facility contract for a slope that would have a sound structure.* (BMP 2-4 Stabilization of Slope Surfaces and Spoil Disposal Areas; BMP 2-28 Surface Erosion Control at Facility Sites) [Phases II and III]
32. To the extent practicable, use organic materials and rocks generated from the project to back fill the borrow site. (BMP 2-27 Restoration of Borrow Pits) [Phase IV]

Wildlife

33. To the extent practicable, disturbed areas would be seeded, with a variety of locally adapted native plants. These plants should provide food value to wildlife in the form of browse, fruits and seeds, possibly including but not limited to such plants as elderberry, serviceberry, chokecherry, Scouler's willow, and native grasses. *Any substitute locally-adapted plants would be similar or better than those listed plants at providing food value*. Newly constructed or reconstructed berms around the sewage ponds would be stabilized with a mix of native grasses (possibly including but not limited to *Poa secunda*, one-sided bluegrass; *Elymus glaucus*, blue wild rye; and *Bromus carinatus*, California brome) to prevent wind and soil erosion. *Any substitute locally-adapted plants would be similar or better than those listed plants at preventing wind and soil erosion* (BMP 2-4 Stabilization of Slope Surfaces and Spoil Disposal Areas; BMP 2-28 Surface Erosion Control at Facility Sites). [Phase IV]

Decision to be Made

The responsible official for this project is the Lassen NF Forest Supervisor. Given the purpose and need, the responsible official would review the proposed action, alternatives, issues, and environmental consequences analyzed in this Environmental Assessment in order to make a decision for implementing the proposed project.

The decision to be made is: 1) whether to implement the Proposed Action as described above, 2) whether to implement an alternative which better responds to the Purpose and Need for Action, as well as significant issues, or 3) whether the No Action Alternative should be implemented.

Additionally, the decision to be made would include one amendment to the management direction contained in the *LRMP*, as amended.

Non-significant Forest Plan Amendment: This is a project specific plan amendment to deviate from the following soils standard and guideline which states "*The areal extent of detrimental soil disturbance would not exceed 15 percent of the area dedicated to growing vegetation*" so that the Eagle Lake Sewer Ponds Project can be implemented, regardless of the alternative chosen. The 40-acre parcel, where the EL Facility is located, has been managed as an administrative site, since its construction. The administrative use of this 40-acre parcel for the EL Facility is consistent with the Forest Plan goals to manage the ELRA.

The Lahontan Water Board is the Lead Agency under CEQA. In cooperation with Lahontan, included as Appendix 1 to this document is the California Environmental Quality Act Eagle Lake Sewage Ponds Project Environment Checklist Form (the CEQA document). This Checklist serves as the CEQA Initial Study (CEQA IS). The CEQA IS is included to provide a single joint document to affected and interested parties and other agencies. This joint EA/IS document is being circulated to initiate both the Forest Service (NEPA) and CEQA 30 day comment periods.

Following the public comment period for the Final EA/IS, the Lahontan Water Board would consider whether sufficient mitigation measures have been provided in the EA/IS to reduce any potential significant effects (pursuant to CEQA) on the environment to a level of insignificance, and if so, adopt a Mitigated Negative Declaration (MND).

Public Involvement

The Eagle Lake Sewage Ponds Project was first published in the Lassen NF Schedule of Proposed Actions (SOPA) on October 1, 2008 and quarterly thereafter. To date no individuals or agencies have responded to the SOPA.

Forest Service Scoping

The Proposed Action and map were provided to affected and interested parties and other agencies for external comment on April 27, 2009 with a request for responses to be submitted by May 8, 2009. The scoping package was mailed to 11 individuals and organizations with interest in the EL Facility Project. Additionally, the agency sent a tribal specific letter to nine tribal representatives.

Consultation with Tribes

On April 1, 2009 a consultation meeting was held with the Pit River Tribe (PRT) at the Hat Creek Ranger Station in Fall River Mills to discuss the EL Facility Project. A formal consultation letter was sent to the PRT and Anna Barnes, Aporige Band representative, regarding the project On April 27, 2009. Preliminary findings from the excavation of sites 05-06-58-499 and 05-06-58-982 were discussed at the quarterly consultation meeting with the PRT on July 1, 2009, and Susanville Indian Rancheria Tribe on October 13, 2009. On October 30, 2009, the agency initiated consultation with the California State Historic Preservation Office (SHPO) requesting concurrence with a finding of "no historic properties affected."

Public Meetings

Three meetings and one teleconference were held to discuss the EL Facility Project. The first collaborative meeting was held on May 1, 2009 at the facility. The phone call was held on May 13, 2009 with an Engineering Geologist and a Water Resource Control Engineer both from Lahontan. The second meeting was held on October 6, 2009 at the Eagle Lake Ranger District office. The third and final collaborative meeting was held on October 7, 2009 in Reno, Nevada.

Responses to Scoping

Two letters and one phone call were received during the scoping period. Scoping comments were analyzed by Forest Service personnel. Copies of the letters received may be found at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Issues

The Forest Service identified one significant issue raised during scoping:

Issue 1: The state of California is losing wetlands at a high rate, small portions at a time. By destroying the 0.77 acres of Merrill wetlands, the EL Facility Project would contribute to this loss.

Issue Measure: Number of wetland acres destroyed.

Alternatives

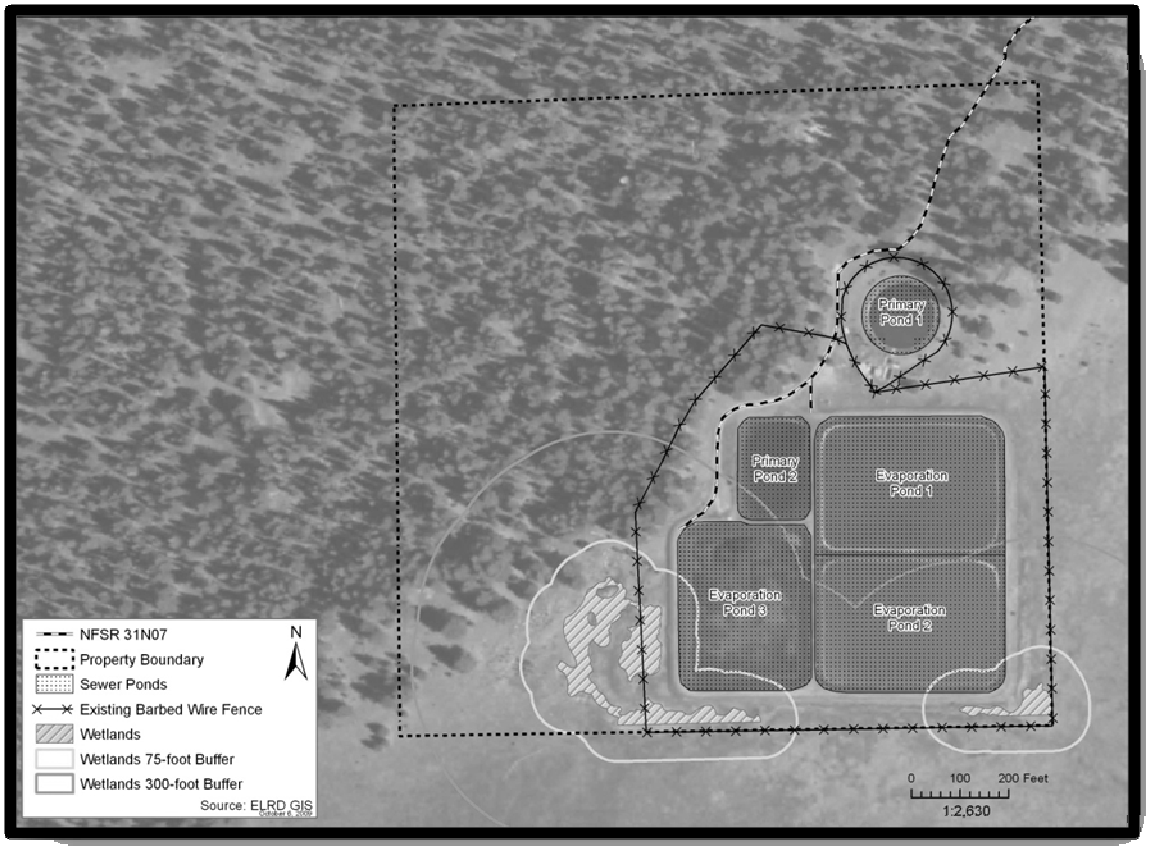
Alternative 1 -The Proposed Action

Alternative 1 is the Proposed Action, as described starting on page 7.

Alternative 2 - No Action

Under the No Action alternative no proposed replacement of the liners, associated improvements to the facility, or thinning would be implemented. Figure 4 displays the layout of the EL Facility for the No Action Alternative.

Figure 4. Alternative 2 - Sewage Ponds for Eagle Lake



Alternative 3

In this alternative existing Primary Pond 2 would be expanded and converted into Evaporation Pond 4. A new Primary Pond 2 would be relocated to the north of its existing location. The bank between Evaporation Pond 1 and 2 would be raised so that the ponds function as two separate ponds. Evaporation Ponds 1, 2 and 3 and Primary Pond 1 would be relined. A sludge drying bed would constructed north on the new Primary Pond 2. Additionally, one water well would be developed east of Primary Pond 1.

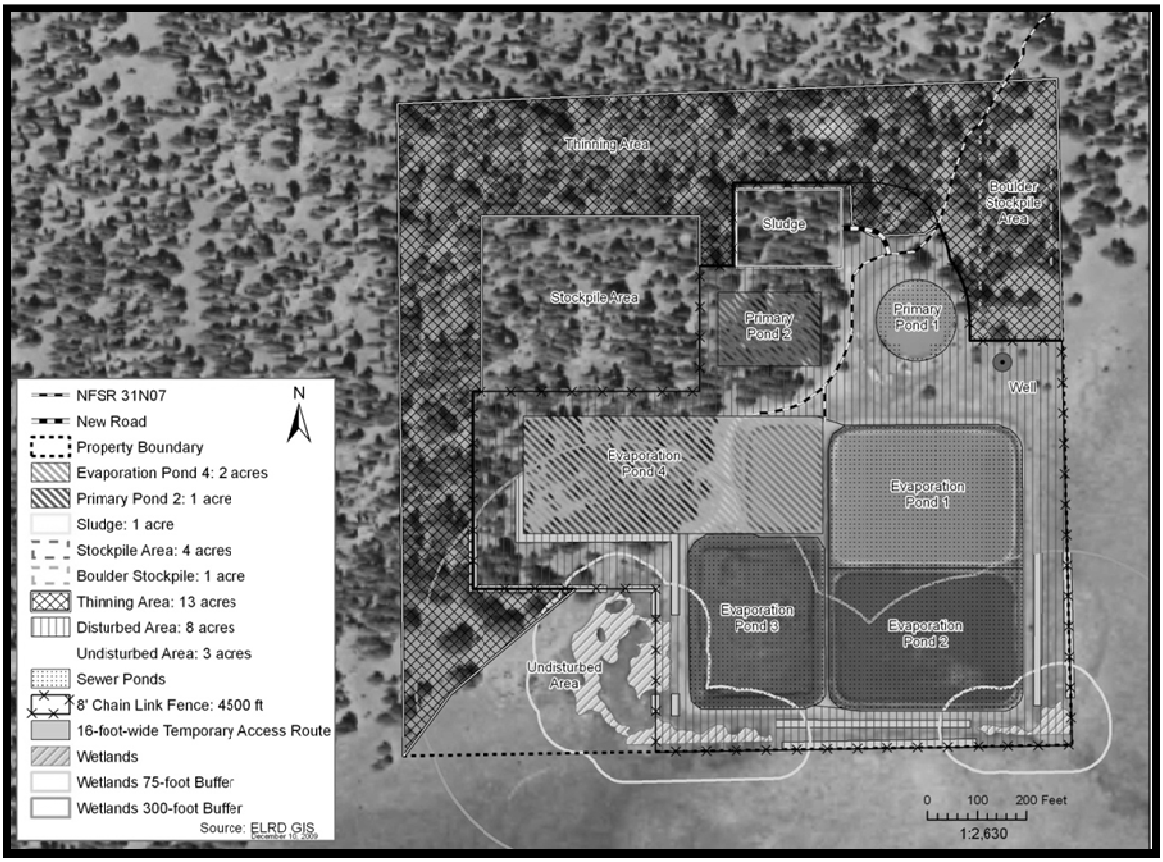
This alternative is divided into five phases as described below. Each phase outlines the work to be completed during that phase. Work from multiple phases may occur concurrently. During Phase I through IV material in the existing ponds may be transferred to other ponds as necessary, to allow for removal and relining of each pond. All replaced liners would be removed off NFS land. Figure 5 displays the location of the newly constructed sludge drying bed, primary and evaporation ponds, the site where soil material would be spread from newly constructed features, the boulder stockpile area, approximate location of the new water well and the area where tree thinning would occur.

Phase I – Site Preparation

- Remove the existing barbed wire fences on the interior of the 40 acres and the above ground sprinkler heads from the old spray field area.

- Remove 3,100 feet of existing barbed wire fence from the perimeter of the sewage treatment facility site.
- Construct approximately 4,500 feet of 8-foot-high chain-link fence around the sewage treatment facility perimeter.
- Repair and or construct a barbed wire fence around the perimeter of the property where the 8-foot chain-link fence does not exist.
- Construct a cattle guard where the access road enters the property.
- Develop a water well for dust abatement East of Primary Pond 1.
- Unused fence material would be removed off National Forest System land.
- Clear the approximately 8 acres for the stockpile area, sludge drying area, pond expansion areas and primary pond area; leave stumps in place.
- Thin approximately 13 acres of forested land.

Figure 5. Alternative 3 – Layout for the Expansion of the EL Facility to the North



Phase II – Construct Sludge Drying Bed & Reline Evaporation Pond 3

- Remove stumps and, if necessary, slash piles and any remaining vegetation.
- Remove and stockpile boulders that are suitable for other uses on the forest in random areas within the boulder stockpile area.
- Stockpile the topsoil.
- Construct the road to the sludge drying area (300 feet by 18 feet wide).

- Excavate the sludge drying bed (0.8 acres, 1,500 CY) to a depth of approximately 5 feet. . Excavated topsoil would be stockpiled for later distribution. All other excavated material would be stockpiled for possible use in future phases. Construct the walls, floor and handrail for the sludge drying bed
- Haul and Spread topsoil in disturbed area outside the sludge drying bed.
- Revegetate the disturbed area outside the sludge drying bed.
- Transfer the sludge from Evaporation Pond 3 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquids from Evaporation Pond 3 into Evaporation Ponds 1 and 2.
- Remove the existing lining from Evaporation Pond 3.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Evaporation Pond 3.
- Prepare the surface for a new lining and reline Evaporation Pond 3.

Phase III – Construct Primary Pond 2 and Evaporation Pond 4

- Excavated Evaporation Pond 4 and Primary Pond 2 to the appropriate depths and stockpile the excess material 15 feet high in the stockpile area for use on future Lassen NF projects (3.5 acres, 66,000 CY). All topsoil would be stockpiled for later distribution.
- Remove and stockpile boulders that are suitable for other uses on the forest in random areas within the boulder stockpile area.
- Transfer the sludge from existing Primary Pond 2, Evaporation Ponds 1 and 2 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquids from Primary 2 to the Evaporation Ponds.
- Remove the existing lining from Primary Pond 2.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Evaporation Pond 4 and Primary Pond 2.
- Prepare the surface for new lining and line Evaporation Pond 4 and Primary Pond 2.
- Install lysimeters
- Install aerators
- Revegetate the disturbed area outside Evaporation Pond 4 and Primary Pond 2.

Phase IV – Reline Primary Pond 1, Evaporation Ponds 1 and 2

- Transfer the sludge from Primary 1 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all water from Primary Pond 1, Evaporation Ponds 1 and 2 into Evaporation Ponds 3 and 4.
- Remove the existing lining from Primary Pond 1, Evaporation Ponds 1 and 2.
- Raise the berm between Evaporation Ponds 1 and 2 obtaining approximately 3,110 CY of material from the stockpile area.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Primary Pond 1, Evaporation Ponds 1 and 2.

- Prepare the surface for new lining and reline Primary Pond 1, Evaporation Ponds 1 and 2.
- Install lysimeters
- Install aerators

Phase V – Reclamation

- Haul and Spread topsoil in remaining disturbed area.
- Revegetate the remaining disturbed areas.
- Remove cattleguard and temporary fencing from perimeter of project area.

Alternative 4

The bank between Evaporation Pond 1 and 2 would be raise so that they ponds function as two separate ponds. Additionally, the depth of Evaporation Ponds 1, 2 and 3 would be increased by approximately two (2) feet. Evaporation Ponds 1, 2 and 3 and Primary Pond 1 and 2 would be relined. A sludge drying bed would constructed north on the Primary Pond 2. Additionally, one water well would be developed east of Primary Pond 1. This alternative is divided into six phases as described below. Each phase outlines the work to be completed during that phase. Work from multiple phases may occur concurrently. During Phase I through V material in the existing ponds may be transferred to other ponds as necessary, to allow for removal and relining of each pond. All replaced liners would be removed off NFS land and disposed of according to existing regulations. Figure 6 displays the location of the newly constructed sludge drying bed, the sites where soil materials would be removed and spread as need for the newly constructed features and the lowering of the evaporation ponds, the boulder stockpile area, approximate location of the new well and the area where tree thinning would occur to reduce hazardous fuels to protect this site.

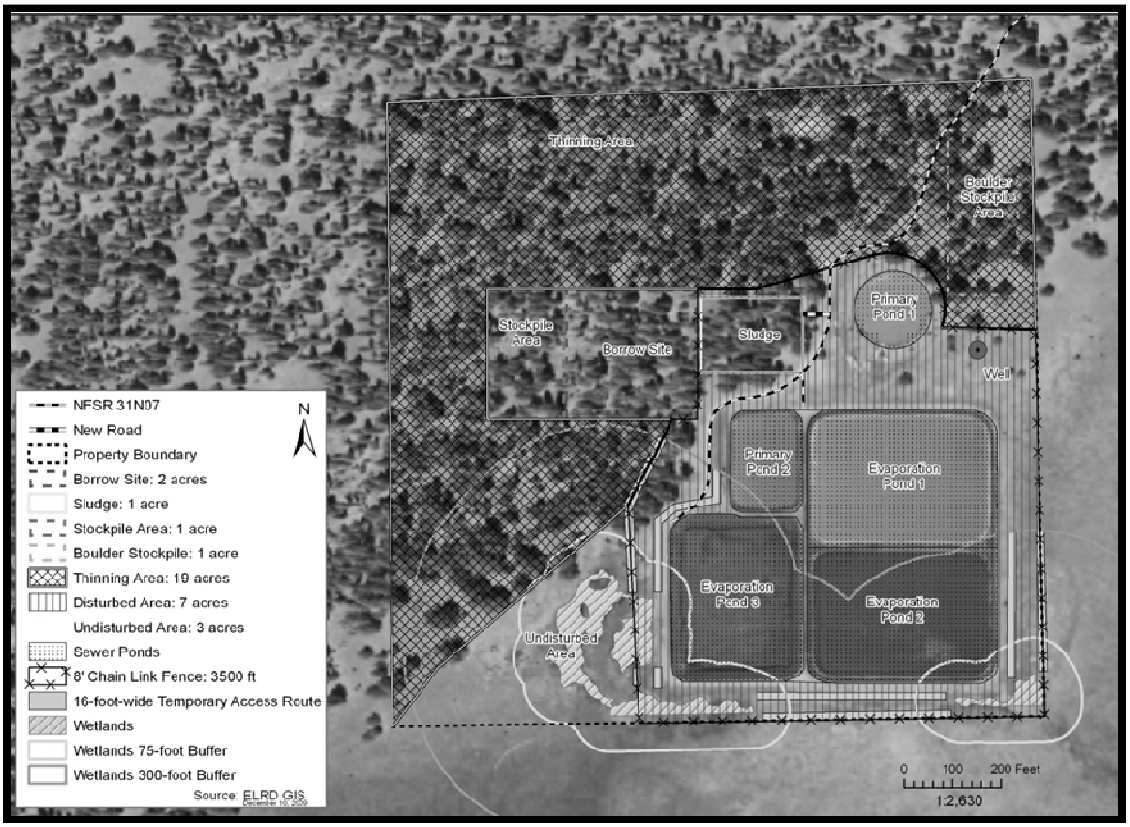
Phase I – Site Preparation

- Remove the existing barbed wire fences on the interior of the 40 acres and the above ground sprinkler heads from the old spray field area.
- Remove 3,100 feet of existing barbed wire fence from the perimeter of the sewage treatment facility site.
- Construct approximately 3,700 feet of 8-foot-high chain-link fence around the sewage treatment facility perimeter.
- Repair and or construct a barbed wire fence around the perimeter of the property where the 8-foot chain-link fence does not exist.
- Construct a cattle guard where the access road enters the property.
- Develop a water well for dust abatement east of Primary Pond 1.
- Unused fence material would be removed off National Forest System land.
- Clear the approximately 3 acres for the stockpile area borrow area and sludge drying area; leave stumps in place.
- Thin approximately 20 acres of forested land.

Phase II – Construct Sludge Drying Bed and Lower Evaporation Pond 3

- Remove stumps and, if necessary, slash piles and any remaining vegetation. Stumps could be temporarily stored on site.

Figure 6. Alternative 4 – Layout for the Deeping of Evaporation Ponds



- Remove and stockpile boulders that are suitable for other uses on the forest in random areas within the boulder stockpile area.
- Stockpile the topsoil.
- Construct the road to the sludge drying area (300 feet by 18 feet wide).
- Excavate the sludge drying bed (0.8 acres, 1,500 CY) to a depth of approximately 5 feet. . Excavated topsoil would be stockpiled for later distribution. All other excavated material would be stockpiled for possible use in future phases.
- Construct the walls, floor and handrail for the sludge drying bed.
- Haul and Spread topsoil in disturbed area outside the sludge drying bed.
- Revegetate the disturbed area outside the sludge drying bed.
- Transfer the sludge from Evaporation Pond 3 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquids form Evaporation Pond 3 into Evaporation Ponds 1 and 2.
- Remove the existing lining from Evaporation Pond 3.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Excavate and stockpile approximately 4,700 CY from the bottom of Evaporation Pond 3. The excavate material would be stockpiled for possible use in future phases.
- Install functionality features for Evaporation Pond 3.

- Prepare the surface for new lining and reline Evaporation Pond 3.
- Install aerators.

Phase III – Reline Primary Pond 2

- Transfer the sludge from Primary Pond 2 to the sludge drying bed.
- Pump all liquids from Primary Pond 2 into Evaporation Pond 3.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Remove the existing lining from Primary Pond 2.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Primary Pond 2
- Prepare the surface for new lining and reline Primary Pond 2.
- Install aerators.

Phase IV – Reline Primary Pond 1, Evaporation Ponds 1

- Transfer the sludge from Primary 1 and Evaporation Ponds 1 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump as much water as possible from Evaporation Ponds 1 and 2 into Evaporation Pond 3.
- Construct coffer dams and plug the 18 inch culvert between Evaporation ponds 1 and 2. If the Coffer dam does not work pump and haul all remaining liquids in Evaporation Ponds 1 and 2 to a sewage treatment facility (approximately 2.6 million gallons).
- Pump all liquid from Primary Pond 1 and Evaporation Pond 1 into Evaporation Ponds 2 and 3.
- Remove the existing lining from Primary Pond 1 and Evaporation Pond 1.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Primary Pond 1 and Evaporation Pond 1.
- Excavate and stockpile approximately 6,400 CY from the bottom of Evaporation Pond 1. The excavate material would be stockpiled for possible use in future phases.
- Raise the ½ of berm between Evaporation Ponds 1 and 2 obtaining approximately 1,555 CY of material from the stockpile area.
- Prepare the surface for new lining and reline Primary Pond 1 and Evaporation Pond 1.
- Install lysimeters
- Install aerators

Phase V – Reline Evaporation Pond 2

- Transfer the sludge from Evaporation Pond 2 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquid from Primary Pond 2 into Evaporation Ponds 1 and 3.
- Remove the existing lining Evaporation Pond 2.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Evaporation Pond 2.
- Excavate and stockpile approximately 6,400 CY from the bottom of Evaporation Pond 2.

- Raise the ½ of berm between Evaporation Ponds 1 and 2 obtaining approximately 1,555 CY of material from the stockpile area.
- Prepare the surface for new lining and reline Evaporation Pond 2.
- Install aerators

Phase VI – Reclamation

- Haul and Spread topsoil in remaining disturbed area.
- Revegetate the remaining disturbed areas.
- Remove cattleguard and temporary fencing from perimeter of project area.

Alternative 5

Alternative 5 was developed to address the issue to not eliminate a portion of the Merrill wetlands. The bank between Evaporation Pond 1 and 2 would be raise so that they ponds function as two separate ponds. Evaporation Ponds 1, 2 and 3 and Primary Pond 1 and 2 would be relined. A sludge drying bed would constructed north on the Primary Pond 2. Additionally, one water well would be developed east of Primary Pond 1. This alternative is divided into six phases as described below. Each phase outlines the work to be completed during that phase. Work from multiple phases may occur concurrently. During Phase I through V material in the existing ponds may be transferred to other ponds as necessary, to allow for removal and relining of each pond. All replaced liners would be removed off NFS land and disposed of according to existing regulations. Figure 7 displays the location of the newly constructed sludge drying bed, the sites where soil materials would be removed for the newly constructed features, the boulder stockpile area, approximate location of the new well and the area where tree thinning would occur to reduce hazardous fuels to protect this site. Phase I – Site Preparation

- Remove the existing barbed wire fences on the interior of the 40 acres and the above ground sprinkler heads from the old spray field area.
- Remove 3,100 feet of existing barbed wire fence from the perimeter of the sewage treatment facility site.
- Construct approximately 3,700 feet of 8-foot-high chain-link fence around the sewage treatment facility perimeter.
- Repair and or construct a barbed wire fence around the perimeter of the property where the 8-foot chain-link fence does not exist.
- Construct a cattle guard where the access road enters the property.
- Develop a water well for dust abatement east of Primary Pond 1.
- Unused fence material would be removed off National Forest System land.
- Clear the approximately 1.5 acres for a borrow area and sludge drying area; leave stumps in place.
- Thin approximately 21 acres of forested land.

Phase II – Construct Sludge Drying Bed and Reline Evaporation Pond 3

- Remove stumps and, if necessary, slash piles and any remaining vegetation. Stumps could be temporarily stored on site.
- Remove and stockpile boulders that are suitable for other uses on the forest in random areas within the boulder stockpile area.

- Stockpile the topsoil.
- Construct the road to the sludge drying area (300 feet by 18 feet wide).
- Excavate the sludge drying bed (0.8 acres, 1,500 CY) to a depth of approximately 5 feet.

Figure 7. Alternative 5 – Layout for Relining All Ponds

- Construct the walls, floor and handrail for the sludge drying bed. Excavated topsoil would be stockpiled for later distribution. All other exacted material would be stockpiled for possible use in future phases.
- Haul and Spread topsoil in disturbed area outside the sludge drying bed.
- Revegetate the disturbed area outside the sludge drying bed.
- Transfer the sludge from Evaporation Pond 3 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquids from Evaporation Pond 3 into Evaporation Ponds 1 and 2.
- Remove the existing lining from Evaporation Pond 3.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Evaporation Pond 3.
- Prepare the surface for new lining and reline Evaporation Pond 3.

Phase III – Reline Primary Pond 2

- Transfer the sludge from Primary Pond 2 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquids from Primary Pond 2 into Evaporation Pond 3.
- Remove the existing lining from Primary Pond 2.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Primary Pond 2
- Prepare the surface for new lining and reline Primary Pond 2.
- Install aerators.

Phase IV – Reline Primary Pond 1, Evaporation Pond 1

- Transfer the sludge from Primary 1 and Evaporation Pond 1 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump as much water as possible from form Evaporation Ponds 1 and 2 into Evaporation Pond 3.
- Construct coffer dams and plug the 18 inch culvert between Evaporation ponds 1 and 2. If the Coffer dam does not work pump and haul all remaining liquids in Evaporation Ponds 1 and 2 to a sewage treatment facility (approximately 2.6 million gallons).
- Pump all liquid from Primary Pond 1 and Evaporation Pond 1 into Evaporation Ponds 2 and 3.
- Remove the existing lining from Primary Pond 1 and Evaporation Pond 1.
- Haul the removed lining to a landfill in accordance with existing regulations.
- Install functionality features for Primary Pond 1 and Evaporation Pond 1.
- Raise the ½ of berm between Evaporation Ponds 1 and 2 obtaining approximately 1,555 CY of material from the stockpile area.
- Prepare the surface for new lining and reline Primary Pond 1 and Evaporation Pond 1.
- Install lysimeters
- Install aerators

Phase V – Reline Evaporation Pond 2

- Transfer the sludge from Evaporation Pond 2 to the sludge drying bed.
- Remove the dried sludge from the sludge drying bed and haul it to a landfill in accordance with existing regulations.
- Pump all liquid from Primary Pond 2 into Evaporation Ponds 1 and 3.
- Remove the existing lining Evaporation Pond 2.
- Haul the removed lining to a landfill.
- Install functionality features for Evaporation Ponds 2.
- Raise the ½ of berm between Evaporation Ponds 1 and 2 obtaining approximately 1,555 CY of material from the stockpile area.
- Prepare the surface for new lining and reline Evaporation Pond 2.
- Install lysimeters

Phase VI – Reclamation

- Haul and Spread topsoil in remaining disturbed area.

- Revegetate the remaining disturbed areas.
- Remove cattleguard and temporary fencing from perimeter of project area.

Integrated Design Features for Alternative 3, 4 and 5

This set of integrated design features is different than the one described for the Proposed Action. This set only applies to Alternative 3, 4 and 5. The need for two distinct sets of IDFs resulted from the need to address entering the Merrill wetlands in Alternative 1. Alternatives 3, 4 nor 5 enter the wetlands. Although many of the IDF's are common to all alternatives there are IDFs that are unique to Alternatives 3, 4 and 5.

Integrated Design Features Common to Alternative 3, 4 and 5

The RCA of the Merrill wetlands extends 300 ft horizontal from the edge of the wetlands. The RCA is divided into two zones. The inner RCA extends from the edge of the wetlands to 75 feet and the outer RCA extends from 75 feet to 300 feet. The RCA would be impacted by the sewer pond expansion operations in the following ways.

Description of the Sewer Pond Expansion Operations in the RCA Zones

a. An existing temporary access route up to 16 feet in width from the base of a pond berm would be utilized for work related to pond relining. An existing temporary access route up to 16 feet from the fence line would be utilized for work related to fence removal and replacement. Additionally, where berms are breached a work area up to 20 feet in width would be utilized for the installation of monitoring and or functionality features for the facilities (Figures 5, 6 and 7 show the access routes).
b. Mechanical equipment may be utilized on temporary access routes described in "a" above within the inner RCA as long as dry soil conditions are met. Dry soil conditions are met when soils within the RCA are dry to a depth of 12 inches prior to entrance. Mechanical equipment would be excluded from the inner RCA areas that are not part of the temporary access routes described in "a" above.
c. The following types of work may occur within the RCA's of the Merrill wetlands and are outside the existing access roads on the top of the pond berms.
    - Installation of pond liners
    - Installation of pond monitoring facilities
    - Installation of piping and other materials to improve the sewer system functionality.
    - Installation of fences
    - Hauling of dirt, sand and or other aggregates and or dirt for berm related work.
    - Short term storage of construction materials (not to exceed one week)
d. An erosion control plan (BMP 2.2) would be implemented to protect the wetlands and reduce sedimentation. At a minimum the erosion control plan would include anchored sediment fencing and straw waddles placed between the construction area and the wetland
e. None of the above described access areas would intrude on the actual Merrill wetlands as defined in the 2009 wetlands delineation study.

The following features are noted as timber operations (timber) or sewer pond expansion operations (ponds). For those features that overlap both operations, it is noted as (both). The descriptions of access

routes and work that may occur within the RCA's apply to all operations involving sewer pond expansion. (ponds)

Aquatics

1. A "no mechanical equipment" buffer would be designated around the inner RCA zone (within 75 feet of the delineated wetlands as described in the 2008 wetlands delineation study) within Little Merrill Flat during timber removal. (timber)
2. Landings would be located outside the seasonal wetlands and the RCA zones. (timber)
3. Conifers would be removed with feller-bunchers that have 24-inch or greater track widths. (timber)
4. Skid trails would be kept to a minimum *(no more than one every 100 feet)* and no water bars would be installed after treatment *on slopes that are gentle (1-2%).* Where slopes are gentle, water bars are more likely to interfere with natural flow paths than their intended purposes, which, is to disperse concentrated flows away from skid trails.
5. Skid trails within the RCA zones of Little Merrill Flat would require 90 percent of existing ground cover on bare soil on the trails; slash would be spread over these open areas (timber).
6. Ground-based equipment would be used to remove timber using one-end suspension outside the inner RCA zone. (timber).
7. Hand thinning and timber removal would be allowed within the inner RCA zone. Trees would be felled away from water bodies.
8. Slash piles within the RCA would be hand-piled and burned in the outer RCA zone (75 feet to 300 feet) of the RCA of Little Merrill Flat. Machine piles would be located completely outside the RCA. (timber)

Botany

9. New occurrences of Threatened and Endangered Species (TES) plant species, discovered before or during ground-disturbing activities within the thinning area, would be protected through flag and avoid methods. Avoidance buffer widths would be based on the requirements of the TES species present. (both)
10. All fence work in the south and east margins of the project area, including the installation of permanent chain-link fence around the treatment facility, would occur when soils are dry, so that plants *of Mimulus pygmaeus* would have completed their annual life cycle. (both)
11. All equipment would be weed-free prior to entering the Forest. Staging of equipment would be done in weed-free areas. (both)
12. Certified weed-free mulches or fill would be used as necessary. (both)
13. If, prior to ground-disturbing activities, new noxious weed infestations are identified within thinning units or on access roads, the infestations would be evaluated, then dug up or pulled by hand and avoided by project activities. (both)
14. If, prior to ground-disturbing activities, new noxious weed infestations are identified outside of thinning units or on access roads, and they cannot be eliminated through hand-pulling, tarping, or other cultural methods such as seeding with competitive native species, topsoil infested with these weeds would not be re-spread into impacted areas of the project. (both)
15. Post-project monitoring for implementation and effectiveness of weed treatments, control of new infestations, and borrow site revegetation would be conducted as soon as possible and as needed. (both)

Silviculture

16. All conifer stumps greater than 14 inches in diameter would be treated with SPORAX® within the thinning area. No Sporax would be applied within 25 feet of known Sensitive and Special Interest Plants or applied within 25 feet of the of the wetlands as described in the 2009 wetlands delineation study. (timber)

Soils

17. Existing landings and skid trails would be used as much as possible to minimize new disturbance. (timber)
18. Outside the RCA, Lassen NF Wet Weather Operations and Wet Weather Haul Agreement, and Lassen NF Timber Waiver permit from Lahontan would be followed during all operations. When a conflict exists between the Wet Weather Operations and Wet Weather Haul Agreement, and Lassen NF Timber Waiver permit the most stringent requirements shall apply. (both)
19. In construction zones, manual wetting of soils to enhance soil aggregation properties is permissible as is mechanical operations on soils that are manually wetted for this purpose. (ponds).
20. Any activity-generated surface fuels would be piled and burned such that the intensity and duration of the fire minimizes soil sterilization. In thinning areas, this would be achieved by limiting piling and burning to landing areas in order to minimize the areal extent of burning. In RCAs, this would be accomplished by limiting pile size to hand-piles only (i.e. no mechanical piling). (both)
21. If trees are pushed over in the pond expansion area and borrow area to facilitate stump removal, then soil would be dislodged on site. (pond)
22. Potential sedimentation to RCA zones from project areas, including from currently forested areas that are being harvested for pond expansion procedures (i.e. borrow site, sludge drying site), would be prevented by installing site-specific erosion and sediment control devices. These devices may include, but are not limited to, silt fencing, straw bales, coir logs (i.e., straw waddles), plant cover, and mulch. (BMP 1-18 Meadow Protection During Timber Harvesting; BMP 2-11 Control of Side-Cast Material During Construction and Maintenance; BMP 2-13 Control of Construction; BMP 2-19 Disposal of Right of Way and Roadside Debris; BMP 2-15 Diversion of Flows around Construction Sites; BMP 2-18 Regulation of Borrow Areas). (both)
23. Provide visible delineations around construction and borrow sites. Delineated wetland (as described in the 2009 wetlands delineation study) areas would remain free of mechanical equipment that must be driven. Examples of mechanical equipment that may be used in the wetlands are small generators, a gas power post hole digger etc. Mechanical equipment would not be left unattended on the ground in order to minimize ground contamination by fuels. Refueling of mechanical equipment would be prohibited in the RCA zones. Materials that need to be stored for more than 7 days would be stored outside the outer RCA zone. (ponds)
24. In addition to the revegetation of borrow sites, the area encompassed by the borrow area would be covered at the time of revegetation with mulch, pine needles, or rice straw so that at least 50 percent of the soil would be covered. (pond)
25. Maintain at least three logs per acre of downed large logs in all currently forested areas. (both)

Water Quality

26. All temporary access roads within the RCA zones would be evaluated for possible scarification, recontoured, seeded with native vegetation, and have 90% of the existing groundcover following completion of the sewer pond expansion operations. (ponds)

27. Mechanical equipment may be utilized in the outer RCA zone as long as dry soil conditions are met. Soil must be dry to a depth of 12 inches before mechanical equipment is allowed to enter the outer RCA zone. (both)
28. Mechanical equipment is prohibited from entering the inner RCA zone with the exception of the existing access road on the pond berm of Evaporation Ponds 2 and 3 and the evaporation ponds themselves with the exception of work allowed in the RCA's previously discussed. (Ponds)
29. Hand thinned material within the RCA may be dispersed using lop and scatter with the stipulation that fuel objectives are met following treatment. (timber)
30. Contractors would maintain storage facilities for oil or oil products in the project area and would take preventative measures to ensure that any spill would not enter the Little Merrill Flat wetlands. If the total oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, then the contractor would prepare a Spill Prevention Control and Countermeasures Plan (SPCC). In addition, these BMPs would be followed: BMP 2-12 Servicing and Refueling of Equipment; BMP 7-4 Forest and Hazardous SPCC. (both)
31. Treatment pond berms would be constructed with slopes less than 25 percent, unless sound structure cannot be achieved and or the following exists. (BMP 2-4 Stabilization of Slope Surfaces and Spoil Disposal Areas; BMP 2-28 Surface Erosion Control at Facility Sites). (ponds)
    a. The 25 percent slope does not apply to existing berms.
    b. In the event the 25 percent slopes increase the cost of the project substantially and/or there are other issues identified that make a 25 percent slopes impractical a steeper slope would be used in the design with approval.

    Additionally, berms would be seed with native vegetation.
32. Use organic materials and rocks *(not considered to be boulders)* generated from the project to back fill the borrow site. When the borrow site is not longer needed contour the site, spread topsoil and seed the site with native vegetation. (BMP 2-27 Restoration of Borrow Pits). (ponds) (BMP 2-27 Restoration of Borrow Pits). (ponds)
33. The well installed for dust abatement would be constructed according to California Standards (Bulletin 74-90). With seals and casing placed to prevent migration of soil and ground water from the soil layer to deeper bedrock formations. The site would be located in proximity to the existing road, allowing access from the road. Waste water from the well drilling would be pumped to existing ponds. Cuttings would be removed from the site by the contractor. (both))
34. Installation of fencing <u>located within the wetland</u> would occur by use of the following equipment: 1) hand auger to drill post holes approximately 18 inches deep, 2) manual placement of concrete for post footings, 3) manual tightening of fence material or use of rubber tired tractor placed outside of wetland.

Wildlife

35. To the extent practicable, disturbed areas would be seeded, with a variety of locally adapted native plants. These plants should provide food value to wildlife in the form of browse, fruits and seeds, possibly including but not limited to such plants as elderberry, serviceberry, chokecherry, *Scouler's willow*, and native grasses. Newly constructed or reconstructed berms around the sewage ponds would be stabilized with a mix of native grasses (possibly including but not limited to *Poa secunda*, one-sided bluegrass; *Elymus glaucus,* blue wild rye; and *Bromus carinatus*, *California brome*) to prevent wind and soil erosion. (BMP 2-4 Stabilization of Slope Surfaces and Spoil Disposal Areas; BMP 2-28 Surface Erosion Control at Facility Sites). (ponds)

Transportation System

36. Install appropriate safety signs per the Manual on Uniform Traffic Control Devices (MUTCD) at locations on NFSR 31N07 and at the intersection of NFSR 31N07 and County Road A-1 to inform the public of construction activity. (both)
37. Contractor would obtain all required permits from all government agencies for oversize (length and or width) and overweight loads. (both)
38. NFS road 31N07 would be used for timber haul and would receive pre, during, and post haul maintenance as per Forest Service Road Maintenance Specifications for Timber Sale Contracts. A surface replacement deposit collection would be required based on haul volume on approximately 2 miles of NFS road 31N07. (timber)

Facilities:

The following items would be included in the sewer pond expansion contract(s).

39. Implementation of an approved Storm water Pollution Prevention Plan and Erosion Control Plan. (ponds)
40. Orange construction fencing would be erected around the construction zone to provide protection of existing landscape and vegetation outside of the construction zone (ponds).
41. Upon completion of the project areas that show signs of rutting would be scarified to a depth of 6 six inches. Scarified areas would be contoured and seeded with native vegetation. (ponds)
42. Site-specific erosion and sediment control devices would be installed around stockpiled materials to prevent sediment movement. These devices at a minimum would include, silt fencing, straw bales, coir logs (i.e., straw waddles), or secured tarps. (BMP 2-11 Control of Side-Cast Material During Construction and Maintenance; BMP 2-13 Control of Construction; BMP 2-19 Disposal of Right of Way and Roadside Debris; BMP 2-15 Diversion of Flows around Construction Sites; BMP 2-18 Regulation of Borrow Areas). (both)

Air Quality:

43. Prescribed burning would only be conducted on permissive burn days as defined by the California Air Resources Board (CARB) and follow the constraints of a Smoke Management Plan (SMP) approved by the Lassen County Air Quality Management District. (both)
44. Develop and implement a dust abatement plan along the road in the project area. Logging and vegetation management activities would be dust abated where rubber-tired vehicles are operating on haul routes. Water for dust abatement would be, obtained onsite from the well, trucked-in, or a dust palliative may be approved which may include magnesium chloride, calcium chloride, lignin sulfate, or an approved equal. Dust palliatives would not be used within 25 feet of the RCA. Dust palliatives, if used, would be stored and mixed outside of the RCA. (both

Range

45. Coordinate of cattle movement and usage within the project area would be conducted. (both)
46. When need a temporary fence would be placed and maintained around the project area to keep cattle trespassing to a minimum. (both)
47. A temporary cattle guard would be place at the entrance to the project area to prevent cattle from entering the site during thinning and sewer pond expansion activities. (both)

Heritage

48. Sites FS05-06-58-499 and FS05-06-58-982 need to be evaluated for National Register eligibility. If the sites are determined to be ineligible for the inclusion into the National Register of Historic Places no further management of the sites would be required and the project may proceed. If the

sites are determined to be eligible for the inclusion into the inclusion into the National Register of Historic Places then additional consultation with the SHPO and Indian tribes would be needed before project implementation can occur. (both)

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative as they relate to Purpose and Need (P&N) and show how the alternatives address the significant issue.

Table 1. Comparison of Alternatives

Purpose & Need Statements	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Replacement of the liners to prevent immanent large scale failure of the liner	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Meets P&N*	*Meets P&N*
Expansion of the facility so that closure of the facilities is not required during the replacement	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Does Not Meet P&N*	*Does Not Meet P&N*
Prevents a negative impact – political and/or economic	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Meets P&N*	*Meets P&N*
Provide the storage capacity to handle future capacity increases	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Meets P&N*	*Does Not Meet P&N*
Minimizes the Impact and protects the greater Little Merrill Flats Wetlands	*Meets P&N*	*Meets P&N*	*Meets P&N*	*Meets P&N*	*Meets P&N*
Maintain tree growth, decrease the risk of tree mortality and reduce the risk to the EL Facility from a wildfire	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Meets P&N*	*Meets P&N*
Provide a borrow area on site and makes room for the expansion	*Meets P&N*	*Does Not Meet P&N*	*Meets P&N*	*Meets P&N*	*Does Not Meet P&N*
Issue Statement Measure	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Acres of wetlands destroyed.	*0.77*	*0*	*0*	*0*	*0*

Environmental Effects

This section summarizes the effects due to implementation of the alternatives. All cited references can be found in the individual specialist's report as noted.

Air Quality

Alternatives 1, 3, 4, and 5

Direct, Indirect and Cumulative Effects

A portion of the access to the proposed project area is on gravel surfaced roads. During the summer, when dry conditions persist, vehicle travel on these roads, especially those located along open terrain free of forested cover, can result in dust plumes that do not immediately settle. Depending on the amount of travel and the stability of the ambient airmass, these conditions can impact nearby visibility as fine dust is entrained and transported away from the roads. Dispersion of these plumes (and corresponding decrease of visible particulates in the air) increases with time and distance. Additionally, during periods of prescribed burns smoke entrainment could impact visibility in the ELRA. These effects would be mitigated through the use of the integrated design features.

In accordance with Title 17 of the California Code of Regulations, a smoke management plan would be required and would be submitted and approved by the Lassen County Air Pollution Control District (LCAPCD) prior to any prescribed fire ignitions that are part of Action Alternatives. Adherence to the smoke management plan (SMP) for prescribed burning would decrease the chance of negative impacts to communities and other smoke sensitive areas. It would also help to ensure that emissions from prescribed burning would not violate the National Ambient Air Quality (NAAQ) emission standards. In addition to these safeguards, a daily Air Quality Conference Call is conducted during the prescribed fire season. These calls are attended by representatives of the Air Quality Management Districts, the California Air Resources Board, Geographical Area Coordination Center meteorologists and agencies that are conducting prescribed fire operations. These calls help ensure that burning only occurs when atmospheric conditions are conducive to good smoke dispersion and that the cumulative effects of all prescribed burning remain at levels that are within the provisions of the Clean Air Act.

Fugitive dust from operations would be mitigated by applying watering or other dust abatement techniques. A dust palliative, for dust abatement where rubber-tired vehicles are operating on haul routes may be used. The dust palliative may include magnesium chloride, calcium chloride, lignin sulfate, or an approved equal. The dust palliative would not be used within 25 feet of live streams, wet meadows, or wetlands. Based on similar, past applications in the project area and in various locations across the District, it is not anticipated that vegetation adjacent to haul route roads would be impacted.

Alternative 2

Direct Effects

The EL Facilities Project would not be implemented under Alternative 2 and therefore there would be no direct effects.

Indirect Effects

This alternative would create no short-term impacts to the local areas from prescribed fire. However, the risk of a major air quality impact from a large wildland fire burning in the area would be increased under Alternative 2. The amount of smoke created, in the event of a large wildland fire burning in the project area, would be increased for several reasons. There would be more acres burned in a shorter period of time, the fire would burn under hotter and drier conditions, so the amount of fuel consumed would increase and fuels would burn that would have been removed under the Action Alternatives. Increased consumption of the canopy fuels, due to the more intense fire behavior, would also contribute to increased smoke production.

Additionally, smoke impacts to local communities would be more severe in the event of a wildland fire due to the normal summertime inversions. Inversions cause smoke to linger near the surface in low-lying areas and can last for extended periods, especially during summertime conditions. Summertime inversions have negatively impacted the area during years when large wildland fires burned including 1977, 1987, 1992, 1999 and 2007.

Additional information about air quality can be found in the Fuels and Silviculture Reports, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Engineering

Alternative 1 – Proposed Action

All action alternatives have differing direct and indirect effects. However, they all have similar cumulative effects which are presented at the end of this section.

Direct Effects

This alternative corrects all current operational deficiencies and complies with Lahontan requirements. The increase in capacity would allow for the movement of material from one evaporation pond to the other when inspection and maintenance of liners is required while maintaining the same level of operation. Additional capacity would provide added protection against a possible sewage spill in the event of a liner leak, damage to the plumbing system (a leak developing in a pipe, a valve in need of replacement), a large storm event or other sudden increases in volume, or a dead pond situation. Furthermore, the added capacity also increases evaporation by maximizing surface area.

Indirect Effects

Long-term effects of the project would include an increase in wastewater and lysimeter testing and sampling fees due to more collection points. Sludge in the ponds would have to be accommodated within the existing ponds and would affect future capacity of the system.

Alternative 2 – No Action

Direct Effects

If the liners are not replaced we would be in violation of our permit. A clean-up and abatement order would be issued and the sewage treatment facility would closed until such time as the repairs are made. Attempts to simply make repairs would be a short term fix and would require intensive monitoring and inspections. Lahontan would not accept this option as a long term solution since the liners have exceeded their intended life.

If the facility is shut down, all sewage and fluids would have to be immediately pumped from the ponds and the piping system and removed from NFS lands. This would be a very large volume; most likely over 2.6 million gallons. Finding one collection facility that could receive this much material is unlikely. The length of haul to multiple facilities out of the local area would be cost prohibitive. The liners would have to be rinsed and disinfected and the residual materials removed from NFS lands and alternatives for collection of human waste would have to be established.

Indirect Effects

Long-term effects of the no-action alternative would include closure and decommissioning. All improvements to the site would have to be decommissioned and eventually removed from NFS lands. This would include electrical systems, plumbing, buildings and other structures. The berms would have to be breached to prevent capture of precipitation. All sewage collection facilities located in the ELRA would have to be put out of service, disinfected and eventually removed from NFS lands. Alternative sewer collection facilities would have to be developed such as portable toilets in the short term and new vault toilets in the long term. The sanitary dump station and the fish cleaning station would have to be closed. The showers at the Marina would have to be closed. The Ronald McDonald camp would not be able to operate without kitchen and shower facilities, and could lead to overall closure. The transportation system would remain in place for private owner access; however no treatments would be performed.

Alternative 3

Direct Effects

The direct effects for Alternative 3 are the same as Alternative 1 with the following addition. Construction of drying beds to dewater sludge (biosolid) would increase overall treatment capacity of the evaporative ponds. Dried biosolid could then be taken to a landfill for ultimate disposal.

Indirect Effects

The Indirect effects for Alternative 3 are the same as Alternative 1 with the following addition. Need for development of a Sludge Management Plan for approval by the Lahontan.

Alternative 4

Direct Effects

This alternative corrects all the current operational deficiencies and complies with Lahontan requirements. Additional capacity would provide added protection from a large storm event or other sudden increases in volume. Furthermore, construction of drying beds to dewater sludge (biosolid) would increase the overall treatment capacity of the evaporative ponds.

Indirect Effects

Long-term effects of the project would include, increased personnel time for inspection, monitoring, and maintenance of the aeration devices. Increased personnel time for the removal of the aeration devices for the winter. Increased electrical usage and cost for operation of the aeration devices. Less flexibility in operations by keeping the number of ponds the same; would not reduce potential of shutdown in the event of a liner leak, damage to the plumbing system (a leak developing in a pipe, a valve in need of replacement), a large storm event or other sudden increase in volume. Potential for a "dead pond" situation if an aerator fails to function. There would be a need for development of a Sludge Management Plan for approval by the Board.

Alternative 5

Direct Effects

This alternative corrects all the current operational deficiencies and complies with Lahontan requirements. Furthermore, construction of drying beds to dewater sludge (biosolid) would increase the overall treatment capacity of the evaporative ponds.

Indirect Effects

Long-term effects of the project would include the potential for violation of freeboard and storm event requirements during movement of material between ponds during and after a heavy precipitation winter. Less flexibility in operations would be achieved by keeping the number of ponds the same; this would not reduce the potential of shutdown in the event of a liner leak, damage to the plumbing system (a leak developing in a pipe, a valve in need of replacement), a large storm event or other sudden increase in volume, or a dead pond situation. There would be a need for development of a Sludge Management Plan for approval by the Board.

Cumulative Effects for Alternatives 1, 3, 4, and 5

The temporal scale for cumulative effects analysis for this project is the next 10 years. The spatial scale is the entire 40-acre parcel encompassing the proposed and existing treatment facility and the associated ground disturbing activities (timber thinning area, borrow site, clearing area); the existing access road (1.9 miles); and the existing sewage system serving the developed recreation sites of the ELRA. The sewage system includes numerous collection points, 13 duplex grinder stations, 1 single pump grinder station, 5 duplex lift stations, 1 duplex export station and other supporting structures, sewage lines and electrical

service. The recreation sites include all Forest Service facilities from Christie Campground to the Ronald McDonald Camp.

Past actions at the facility that could have had direct/indirect effects that overlap in time and space with the proposed action include the development of the facility in the 1970's and the facility upgrades since then. Future actions that could have direct/indirect effects on the facility include the following:

- Sewage collection system repairs, replacements and maintenance (piping, valves, electrical system)
- Routine maintenance of the access road
- Routine inspection and repairs to the pond liners
- Repairs and maintenance to the electrical system at the pond site
- Replacement of 11 existing flush restroom buildings in Merrill Campground with new accessible structures built with sustainable materials.
- Construction of new shower buildings at Merrill Campground.
- Construction of a low-water boat ramp at the Eagle Lake Marina

Cumulatively, these actions have the potential to increase the amount of sewage entering the system. This in turn could jeopardize the holding capacity of the ponds, and the potential to exceed the freeboard requirements.

Additional information about Engineer can be found in the Engineering Report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Transportation System

Alternatives 1, 3, 4 and 5

Direct, Indirect and Cumulative Effects

The existing forest transportation system would be utilized to provide access to project area. The main route (expected haul direction) leading out of the project is north on NFS road 31N07 to Lassen County road A1. The majority of NFS road 31N07 is a gravel surfaced road that resides primarily on private lands for which the Forest Service has agreement to use to for activities related to the EL Facility. This road is not adjacent to a water body and does not cross any major drainage. Approximately 500 feet of 31N07 is paved starting from the intersection with County Road A1 before it changes to gravel. This paved area would allow any accumulation of dirt or mud that may have occurred from hauling on the gravel road to be dislodged before being transferred to the paved county road. No temporary roads would be needed for the harvest activities.

Temporary access routes have been identified on the project map. These routes have been mapped to delineate the operations area within the RCA. These routes would be utilized for work related to fence removal and replacement, pond relining, and installation of monitoring features for the facilities. These routes would not be part of the NF transportation system.

There are concerns about negative impacts that roads may have on watershed conditions. In order to achieve the proposed project while minimizing impacts to water quality, Best Management Practices (BMPs) would be used during road maintenance, logging operations (pre haul through post haul), and hauling of construction materials.

NFS road 31N07 would be used for haul and would receive pre, during, and post haul maintenance as per Forest Service Road Maintenance T-Specifications for Timber Sale Contracts. A dust abatement plan would be included to control wind-caused erosion from road use.

The proposed water source for Alternative 1, is the Spalding Well located off of NFS road 33N02H (T33N R10E Sec 25). This is a well pumped water source that conforms to the applicable BMPs. The water source for Alternatives 3, 4, and 5 would be drilled and used on site.

Short term there would be a direct effect of increasing traffic due to the movement of equipment, materials and personnel into and out of the project area. Increased traffic can impact the safety of the public and employees using the roads in the area. Traffic management measures would minimize these impacts. With the use of standard contract provisions for traffic control, indirect, and cumulative effects would be negligible.

Alternative 2 – No Action

Direct, Indirect Effects

The Eagle Lake Sewer Ponds project would not be implemented under Alternative 2 and therefore there would be no effects to NFS road 30N07 and the existing transportation system would remain unchanged.

Additional information about Transportation can be found in the Engineering Report located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Hydrology

This section is divided into four effects indicators: 1) hydrology, 2) effects on water quality and beneficial uses of affected surface water bodies, 3) effects on Little Merrill Flat wetlands (Merrill wetlands), and 4) Riparian Conservation Objectives (RCO) consistency (SNFPA ROD page 33, 2004). They are described as risks to the indicator. A Cumulative Watershed Effects analysis is noted at the end of this section. All applicable BMPs for the alternatives are listed in Appendix 1 of the Hydrology Report. IDFs used to mitigate and reduce risks are listed in this EA.

Common Risks to Alternatives 1, 3, 4 and 5

Indicator 1 (Alt 1, 3, 4 & 5) - Hydrology

At the watershed scale, project activities would pose a negligible risk to stream flow within the project watershed. Less than 1 percent of the project watershed area would be treated. Re-lining the primary and evaporation sewage ponds would prevent pond water seepage from entering Merrill wetlands and groundwater.

Indicator 2 (Alt 1, 3, 4 & 5) - Water Quality and Beneficial Uses

Water quality standards and control measures for surface and ground waters of the Lahontan Region are contained in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The plan designates beneficial uses for water bodies and establishes water quality objectives (WQOs) and other implementation measures to protect those beneficial uses. At the watershed scale, project activities would pose a negligible risk to water quality and beneficial uses within the project watershed. Less than one percent of the project watershed area would be treated. Re-lining the primary and evaporation sewage ponds would prevent pond water seepage from entering Merrill wetlands and ground water.

Indicator 4 (Alt 1, 3, 4 & 5) - RCO Consistency

RCO 3 would not be applicable as there are no streams within the project area; RCO 3 was not analyzed further. The supply of coarse woody debris to Merrill Creek would not be affected by this project. No coarse woody debris was observed in the wetlands during site visits in November 2008.

Site Preparation would be consistent with RCOs 1, 2, 4, 5, and 6. The wetlands would maintain a no equipment zone, consistent with RCOs 2, 4, 5, and 6. Implementation practices would follow applicable BMPs to protect water quality and beneficial uses, which would be consistent with RCO 1.

Alternative 1 – Proposed Action

Direct and Indirect Effects

Indicator 1 - Hydrology

On a local scale, restrictive dry soil conditions would reduce and mitigate the risk of rutting and compaction; however, Construction activities would result in a long-term disturbance and loss of 0.77 acres of the 0.89 acres of depressional wetlands. The restoration of Papoose Meadow would mitigate for this long-term wetland loss as previously described in Wetlands Mitigation and described in detail in the PMRP Project.

Indicator 2) - Water Quality and Beneficial Uses

On a local scale, restrictive dry soil conditions would reduce and mitigate the risk of rutting, compaction, sedimentation, and related impacts to water quality and beneficial uses (described in the Hydrology Report); however, Construction activities would result in the long-term disturbance and loss of 0.77 acres of the 0.89 acres of depressional wetlands and beneficial uses related to the depressional wetlands. 0.77 acres of depressional wetlands would be filled in and buried by the extension of Evaporation Pond 3. The long-term loss of wetlands would be mitigated through the restoration of Papoose Meadow as previously described in Wetlands Mitigation and described in detail in the PMWR Project.

Indicator 3 - Effects to Little Merrill Flat Wetlands

Although the Merrill wetlands would be protected during Site Preparation with RCA buffers, Construction activities would cause long-term disturbance and loss of 0.77 acres of the 0.89 acres of depressional wetlands and beneficial uses related to the depressional wetlands. A portion of the wetlands would be filled in and buried by the extension of Evaporation Pond 3. The restoration of Papoose

Meadow would mitigate for this long-term wetland loss as previously described in Wetlands Mitigation (this EA) and described in detail in the PMWR Project.

Indicator 4 - RCO Consistency.

Construction activities that result in a long-term disturbance and loss of 0.77 acres of wetland would be inconsistent with RCOs 1, 2, 4, 5, and 6. Reclamation activities would be consistent with 1, 2, 4, 5, and 6. (Although 0.77 acres of wetland would experience long-term loss during Construction, the remaining 117 acres of wetland would be protected during Reclamation activities).

Cumulative Effects

The proposed action would pose a negligible risk to cumulative effects because the site measures less than 1 percent of the planning watershed area. The new liners would prevent pond leakage from reaching Merrill wetlands. It is unlikely that the project would result in sedimentation of Eagle Lake or Merrill Creek. The project would not generate enough sediment to impair beneficial uses on a watershed scale; however, the beneficial uses related to the depressional wetlands would experience a long-term disturbance and loss with the long-term disturbance and loss of 0.77 acres of the 0.89 acres of depressional wetlands. The loss of wetlands would be mitigated through the restoration of Papoose Meadow (as described in Wetlands Mitigation and described in detail in the PMWR Project).

Alternative 2 – No Action

Direct and Indirect Effects

There is a low risk of some water seeping from the sewage ponds into the wetlands as pond liners continue to degrade. Currently, the sewage ponds are hydrologically disconnected from the wetlands (Foothill Associates, 2009). In the event of a leak, the amount of water would not likely have an effect on the water table of the wetlands, as any additional water would evaporate due to lack of trees in Merrill wetlands. Water quality samples taken from lysimeters and underdrains indicate nitrate levels are well below the maximum contaminant level for drinking water as defined by the EPA. Wetlands would continue to be protected with no risk of mechanical equipment entering any of the wetlands. The no action alternative would be consistent with RCOs 2, 4, 5, and 6 and inconsistent with RCO 1. RCO 3 is not applicable.

Common Risks to Alternatives 3, 4 and 5

Direct and Indirect Effects

Indicator 1 - Hydrology

On a local scale, Site Preparation, Construction, and Reclamation activities could result in a moderate to high risk of rutting and soil compaction. The use of mechanical equipment (driven) on soil outside the RCA that is not dry to a depth greater than 6 inches prior to treatment would have the potential to create ruts, expose groundwater, and compact soil. These effects could lead to a decrease in water infiltration, a decrease in groundwater recharge, an increase in overland flow, a shorter “wet season”, a decrease in

soil's water holding capacity, and a hampering of plant growth. Risks of rutting and compaction are discussed in detail in the Hydrology Report.

Construction and Reclamation activities would lack a mechanical equipment (driven) exclusion zone to buffer the wetlands that would pose a moderate risk to hydrology. The lack of a buffer would potentially allow mechanical equipment (driven) to approach the wetland as close as the wetland edge; although the delineated wetlands would not be entered by mechanical equipment (driven). The soil within the RCA of the wetlands is finer-grained and has less rock than the soil outside the RCA, increasing the risk of rutting and compaction. Rutting could potentially drain and locally dry out the wetlands. Compaction would potentially decrease soil's water holding capacity, water infiltration, groundwater recharge, and inhibit plant growth. Requiring dry soil conditions within the RCA would minimize these impacts.

Hydrology - Mitigations for Alts 3, 4, and 5: To minimize impacts and risks discussed above, surface scarification, a wet weather agreement, erosion control measures, revegetation, and possibly sub-soiling operations would be implemented. Scarification of rutted surfaces would be contoured and seeded. Erosion control measures (that may include sediment fences, straw waddles, plant material, and mulching) could trap sediment, disperse overland flow, slow delivery, and enhance the water holding capacity of the soil. Sub-soiling operations would break up compaction and increase infiltration into the soil. Additionally, within the RCA, dry soil conditions to 12 inches would be required prior to commencing Construction and Reclamation activities. Disturbed areas within the RCA would require 90 percent of existing ground cover post-project.

Indicator 2 - Water Quality and Beneficial Uses

On the watershed scale, the water well created for dust abatement would help prevent sediment production from roads and ground disturbing activities during construction. The water well would utilize 100,000 gal/day for 20-50 days and should have a negligible effect on groundwater resources or supply.

On the local scale, creation of berm slopes greater than 25% may pose a low risk to water quality and beneficial uses. Steeper slopes could be more easily eroded and could result in local sedimentation of Merrill wetlands. To minimize the erosion and sedimentation effects of steeper berm slopes, mulching, erosion control measures, and seeding of the berms would be implemented.

On a local scale, Site Preparation, Construction and Reclamation activities on soils outside the RCA that are not dry to a depth greater than 6 inches prior to treatment would increase the risk of rutting, compaction, and sedimentation. The impacts of rutting and compaction were mentioned in Indicator 1 and are discussed in detail in the Hydrology Report. Additionally, rutting and compaction could increase the rate at which overland flow would be transported to Merrill wetlands, potentially increasing overland flow's ability to transport sediment. If there is an increase in sediment production, there would be increased potential for sediment delivery to the wetlands.

On the local scale, Construction and Reclamation activities within the RCA utilizing mechanical equipment (driven) in the inner zone could pose a moderate risk to water quality and beneficial uses by increasing the risk of rutting, compaction, and sedimentation. The lack of a buffer would potentially allow mechanical equipment (driven) to approach the wetland as close as the wetland edge. The risks of rutting and compaction are described in detail in the Hydrology Report. Sedimentation would possibly result from the concentration of overland flow due to compaction and rutting. The lack of a mechanical equipment (driven) exclusion zone would increase the potential for sediment transport to Merrill wetlands. Typically the RCA, especially the inner zone, acts as a buffer to filter out activity related sediment and minimize the effects of ground-disturbing activities.

Water Quality and Beneficial Use - Mitigations for Alts 3, 4, and 5: To minimize the risks of the impacts discussed above, Construction and Reclamation activities would require dry soil conditions within the RCA to 12 inches, implementation of a wet weather agreement and an erosion control plan, surface scarification, post-project revegetation, and possibly sub-soiling operations. Dry soil conditions and the wet weather agreement would limit activities on wet soil, reducing risks of rutting and compaction. Scarification of rutted surfaces would be contoured and seeded. Erosion control measures (that may include sediment fencing, straw waddles, plant material and mulching) could trap sediment, disperse overland flow, slow delivery, reduce sedimentation, and enhance the water holding capacity of the soil. Sub-soiling operations would break up compaction and increase infiltration into the soil. Additionally, disturbed areas within the RCA would require 90 percent of existing ground cover post-project. Although Construction and Reclamation activities would lack a mechanical equipment (driven) exclusion zone to buffer the wetlands, the depressional wetlands, hydraulic function, and beneficial uses related to 0.77 acres of the depressional wetlands would still exist.

Indicator 3 - Effects on Little Merrill Flat Wetlands

Alternatives 3, 4, and 5 would not result in a net change of wetland area pre- and post-project.

During Construction and Reclamation activities, the delineated depressional Merrill wetlands described in the 2009 wetlands delineation study (Foothill Associates, 2009) would not be entered with mechanical equipment (driven); however, the lack of a buffer would potentially allow mechanical equipment (driven) to approach the wetland as close as the wetland edge. The lack of a mechanical equipment (driven) exclusion zone could pose a moderate risk to Merrill wetlands of soil compaction, rutting, and sedimentation. The lack of a buffer would increase the potential for activity-related sediment to be transported to the wetlands. Additional information may be found in the Hydrology Report. These risks to Merrill wetlands would be reduced and mitigated with dry soil requirements within the RCA, use of a wet weather agreement and an erosion control plan, and additional post project cover, revegetation, sub-soiling, and scarification.

Even with the local effects on the wetlands, activity related sedimentation and compaction would be unlikely to affect Merrill wetlands as a whole (118 acres). Additionally, all the wetlands would still exist post-project.

Indicator 4 - RCO Consistency

Construction and Reclamation would be consistent with RCOs 1, 2, 4, 5, and 6. Replacing the liners would prevent sewage water from potentially seeping into the wetlands, which would be consistent with RCO 1. Although Construction activities would pose some risk to indicators 1, 2, and 3, IDFs including the dry soil requirements within the RCA, wet weather agreement, erosion control plan, scarification of compacted and rutted soils, and increased cover would reduce those risks and be consistent with RCOs 1, 2, 4, 5, and 6.

Different Risks between Alternatives 3, 4 and 5

Alternative 3 would involve more long-term disturbance through construction of new ponds and structures that could result in a slightly higher risk to indicators 1, 2, and 3 than Alternatives 4 and 5 would potentially cause. Conversely, Alternative 5 would require the least amount of construction and ground disturbance of Alternatives 3, 4, and 5 and would pose the least amount of risk to indicators 1, 2, and 3. For a detailed chart displaying the risk differences between Alternatives 3, 4, and 5, refer to Appendix 2 of the Hydrology Report.

Alternative 3

Cumulative Effects

Alternative 3 would pose a negligible risk to cumulative effects because the site measures less than 1 percent of the planning watershed area. It is unlikely that the project would diminish beneficial uses or result in sedimentation of Eagle Lake or Merrill Creek. The new liners would prevent pond leakage from reaching Merrill wetlands. Although the pond expansion would result in a long-term disturbance by building new ponds, all the 0.89 acres of depressional Merrill wetlands would still exist. Actions that include filling in of waters of the United States including wetlands are considered more environmentally damaging than those that do not. Thus because Alternative 3 would retain the depressional wetlands, Alternative 3 would be less environmentally damaging than Alternative 1.

Alternative 4

Cumulative Effects

This alternative would pose similar risks to cumulative effects as Alternative 3; however, there would be no long-term disturbance associated with creating additional primary or evaporation ponds.

Alternative 5

Cumulative Effects

This alternative would pose similar risks to cumulative effects as Alternative 3; however, Alternative 5 would have slightly less impact than Alternatives 1, 3, and 4 because there would be less long-term disturbance and cleared acreage.

Cumulative Watershed Effects

Past, ongoing, and reasonably foreseeable future actions for the project area were summarized in the PORFFA for the Eagle Lake Sewer Ponds Project. Current environmental trends are due mainly to the combination of past activities (mainly private), roads, and natural events.

Cumulative watershed effects (CWE) analysis using the Region 5 Equivalent Roaded Acre (ERA) method was conducted for the Merrill Creek planning watershed. The methodology for calculating a watershed's ERA is contained in Chapter 20 of Forest Service Handbook (FSH) 2509.22. The ERA method uses disturbance coefficients to quantify effects of treatments to a watershed. Planning sub-watershed sizes used for ERA analyses range from 3,000 to 10,000 acres. Treatments are recovered on a linear 30 year recovery trend, being considered fully recovered after 30 years. The resulting ERA number is compared to the Threshold of Concern (TOC) assigned to the sub-watershed. The TOC is an upper disturbance limit that represents the upper limits of watershed tolerance to land use. Sensitive watersheds have lower TOC numbers.

The Merrill Creek sub-watershed measures 8,851 acres, of which only 310 acres (4%) are managed by the Forest Service. Private ownership (PO) activities contribute a large majority of disturbance to the Merrill Creek sub-watershed. The majority of PO activities include timber sales (with various prescriptions ranging from clearcuts to salvage logging) and range allotments. The current range allotment has a low density of cows, with only 134 cow/calf pairs over 6,257 acres between May and September. However, because water is limited in the area, RCAs may experience high concentration. Little Merrill Flat wetlands are part of the allotment and are subject to grazing. Currently a fence gates off part of the 0.89 acres of Little Merrill Flat wetlands on NFS lands.

Disturbance coefficients and a linear 30 year time recovery coefficient were assigned to the private ownership and NFS land activities listed in the PORFFA. The current road density within the Merrill Creek sub-watershed is 3.5 miles per square mile. Continual activities and roads are not recovered. The current ERA is 13 and is below the Threshold of Concern (TOC) of 15. Current watershed trends have resulted mainly from the combination of roads, private land activities, and natural events.

Additional information can be found in the Hydrology Report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Soils

The LRMP provides standards for assessing soil condition and for evaluating the effects of the Eagle Lake Sewage Ponds Project on soil productivity. The Sewer Pond project area has been managed as an administrative site since its construction, replacing forested land with a sewage treatment facility. A Non-Significant Forest Plan Amendment is included with the decision for this project record in order to adjust soil forest standards for this project to accommodate the existence and potential expansion of the administrative facility. Effects analysis of project Alternatives are compared by LRMP standards as

modified by the Non-Significant Forest Plan Amendment. The indicators used to assess direct, indirect and cumulative effects on the soil resource include: the areal extent of forest replacement by permanent Sewage Pond facilities; the effects of the project on levels of soil compaction in forested areas; the effect of the project on erosion hazard ratings, and; the effect of the project on soil organic matter and ground cover (including forest floor, vegetation, and large woody material).

All action alternatives have differing direct and indirect effects. However, they all have similar cumulative effects which are presented at the end of this section.

Alternative 1 – Proposed Action

Direct and Indirect Effects

The Proposed Action is compliant with LRMP soil standards as amended by the project record. However, compared to other actions, Alternative 1 would result in the highest level of soil resource damage by reducing the project area under forest production permanently by 3 acres (area covered by pond expansion). Long-term losses of soils organic matter (SOM) due to borrow pit excavation are projected under Alternative 1. Alternative 1 includes pond expansion into jurisdictional wetlands. The effects of Alternative 1 on wetland soils are discussed in the Hydrology Report.

Alternative 2 – No Action

Direct and Indirect Effects

The No Action Alternative is compliant with LRMP soil standards as amended by the project record and would have no effect on the soil resource.

Alternative 3

Direct and Indirect Effects

This Alternative is compliant with LRMP soil standards as amended by the project record. This Alternative would reduce the project area under forest production permanently by 6 acres (area covered by sludge-drying area, pond expansion area and pond creation area). Compared to other Alternatives, long-term losses of SOM due to excavation for ponds and sludge-drying areas would be highest under Alternative 3.

Alternative 4

Direct and Indirect Effects

This Alternative is compliant with LRMP soil standards as amended by the project record and offers the second highest potential resource protection compared to other action-Alternatives. Alternative 4 would reduce the project area under forest production permanently by 1 acre (area covered by sludge-drying area). Compared to other Alternatives, long-term losses of SOM due to excavation for sludge-drying area would be second-lowest by Alternative 5 (3 total acres disturbed in Alternative 4 for sludge-drying and stockpiling compared to 1 acre in Alternative 5).

Alternative 5

Direct and Indirect Effects

This Alternative is compliant with LRMP soil standards as amended by the project record and offers the greatest potential resource protection compared to other action-Alternatives. Alternative 5 would reduce the project area under forest production permanently by 1 acre (area covered by sludge-drying area). Compared to other Alternatives, long-term losses of SOM due to excavation for sludge-drying area would be lowest by Alternative 5.

Effects Common to Alternatives 1, 3, 4 and 5

The forest thinning proposed under these Alternatives has limited potential to cause soil compaction or erosion due to the presence of coarse rock fragments in the soil. Ground cover loss by temporary structures created for pond expansion and due to mechanical equipment operations would be replaced according to Integrated Design Features. All Alternatives include mechanical operations in jurisdictional wetlands. The effects of this project on wetland soils are discussed in the Hydrology Report.

Cumulative Effects Common to Alternatives 1, 3, 4, and 5

Cumulative effects to the soil resource were assessed for the 40 acre project area. This area was used as the boundary to assess cumulative effects because this area would be the only area within which proposed actions would have likelihood of contributing to soil cumulative effects. The interpretation of cumulative effects includes the effects on the soil resource of past, present and future actions within the project boundary. A detailed description of the Past, Ongoing and Reasonably Foreseeable Future Actions Summary (PORFFA), hereby incorporated by reference, are included with the project record. The current soil conditions, as outlined in the Affected Environment section of the Soils Report, are within standards established by LRMP standards and guidelines as amended by the decision for this project. The implementation of Integrated Design Features established for this project in order to protect the soil resource would ensure that all Action Alternatives would not result in significant detrimental cumulative effects to the soil resource.

Additional soils information can be found in the Soil Resource Report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Recreation

All action alternatives have differing direct and indirect effects. However, they all have similar cumulative effects which are presented at the end of this section.

Common to all Alternatives

Impacts to dispersed recreation visitors are expected to be minimal since the dispersed recreation sites in the ELRA do not have running water. Impacts to visitors using the trails would to be minimal since there are no running water facilities specifically for the trials. Visitors using the trials would use water in the

developed recreation areas. There should be no impacts to visitors enjoying winter sports since the water at the ELRA is turned off during the winter.

Common to Alternatives 1, 3, 4 & 5

Roads accessing campgrounds, the marina, Camp Ronald McDonald organization camp, Gallatin beach, sanitary dump station, 42 recreational residences and multiple biking and hiking trails would be kept open and free of debris. During project implementation, the public would be alerted to potential hazards through signing along National Forest system roads.

Common to Alternatives 1, 3

Impacts to developed recreation visitors would be minimal since the phasing of the work would not impact the amount of sewage the facility could treat.

Alternative 2 - No Action

Direct Effects

If repairs to the sewage treatment facility liners were made impacts to developed recreation visitors would be based on how much new sewage the facility could handle during repairs. The less sewage the greater the impacts to visitors, by means of supplementing loss with portable toilets. Additionally, as soon as the repairs were completed impacts to visitors would be minimal.

If part of the sewage treatment facility liners failed water usage at the campgrounds, the marina, Camp Ronald McDonald organization camp, Gallatin beach would have to be reduced. The amount of reduction would determine the impacts to visitors.

If all of the sewage treatment facility liners failed there would not be any water usage that required a sewage treatment facility at the campgrounds, the marina, Camp Ronald McDonald camp and Gallatin beach. Reduced recreation would lead to financial impacts to the surrounding area, the need to replace all bathrooms with vault toilets, closure of the laundry facility, fish washing station, full and partial Recreational hook-ups the showers at the marina and Camp Ronald McDonald.

Occupancy rates at campgrounds would drop which would result in reduced revenues

A drop in revenue/visitors would result in negative impacts to the economies of both Susanville and the Spaulding community.

Dishwater, portable shower water and hand washing water would be dumped onto the ground and bathing and cleaning activities would likely occur in the Lake which could produce some unwanted waste materials, such as dish soap. However, quantities would be low.

Roads accessing campgrounds, the marina, Camp Ronald McDonald organization camp, Gallatin beach, sanitary dump station, 42 recreational residences and multiple biking and hiking trails would not be impacted.

Additional recreation information can be found in the Recreation Report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Alternative 4 and 5

Direct Effects

During implementation of the project a reduction in the amount of sewage the sewage treatment facility could handle would impact developed recreation visitors. If implementation does not reduce the amount of sewage the facility can handle the impacts to visitors would be minimal. If implementation reduces the amount of sewage the facility can handle water usage at the campgrounds, the marina, Camp Ronald McDonald organization camp, Gallatin beach would have to be reduced. The amount of reduction would determine the impacts to visitors. The worst case scenario would be that the sewage treatment facility cannot be used for one season. In this scenario there would not be any water usage that required a sewage treatment facility at the campgrounds, the marina, Camp Ronald McDonald organization camp, Gallatin beach. Reduced recreation would lead to financial impacts to the surrounding area, the need to replace all toilets with portable toilets, closure of the laundry facility, fish washing station, full and partial Recreational hook-ups the showers at the marina and Camp Ronald McDonald.

In addition if occupancy rates at campgrounds would drop this would result in reduced revenues. A drop in revenue/visitors would also result in negative impacts to the economies of both Susanville and the Spaulding community. Bathing and cleaning activities would likely occur in the Lake; dishwater, portable shower water and hand washing water would be dumped onto the ground

Common to Alternatives 1, 3 & 4 and 5

Indirect Effects

Long-term effects of the project would be the inability to add showers (between 3 and 6) at Merrill Campground (per the 1999 Merrill Campground Redesign Decision Memo and the Design Narrative in the 2008 Merrill Capital Improvement Project). This would also impact the inability to increase peak occupancy rates (Memorial Day Weekend to Labor Day Weekend) for the current rate of approximately 60% to 90% plus at the campgrounds; in addition, the inability to handle daily increases at the day use areas.

Also affected, would be the ability to handle increases in usage at the Ronald McDonald Camp (this increase usage would occur from leasing the facility before Memorial Day and or After Labor Day for weddings, conferences etc.) and the inability to handle increased boating activity which in turn would increase usage of the Marina store, restrooms and fish cleaning stations.

Alternatives 2 No Action

Indirect Effects

Long-term effects of the project would be the inability to add showers (between 3 and 6) at Merrill Campground (per the 1999 Merrill Campground Redesign Decision Memo and the Design Narrative in

the 2008 Merrill Capital Improvement Project) Campground. The type of recreationalist would change over time from recreationalist looking for the convenience full service facilities can provide (restrooms, showers, fish washing station etc.) to recreationalist looking for a more rustic experience.

A drop in revenue/visitors would impact the economies of the surrounding communities. The campgrounds and marina are under a special use permit by the Lassen College Foundation (Foundation). The primary use of the net profits to the Foundation is to provide students with scholarships to attend Lassen Community College. Loss of revenues would result in the loss of the number of scholarships available to potential students.

Common to Alternatives 4 and 5

Indirect Effects

Short-term effects of the project would be to the campgrounds and marina that are under a special use permit to the Lassen College Foundation. The primary use of the net profits to the Foundation is to provide students with scholarships to attend Lassen Community College. Loss of revenues would result in the loss of the number of scholarships available to potential students.

Cumulative Effects Common to Alternatives 1, 3, 4, and 5

The cumulative effects area of the ELRA is approximately 830 acres and extends from Christie Campground on the West to the Osprey Overlook on the East and the from Eagle Lake on the North to the Forest Service property line on the South.

Past actions at the ELRA that could have had direct/indirect effects that overlap in time and space with the Alternatives include the development of the Eagle Lake Trail extension, the Merrill Amphitheater, the Merrill campground reconstruction and the signing of a use permit with the Lassen College Foundation.

Future actions at the ELRA that that could have direct/indirect effects that overlap in time and space with the Alternatives include the adding showers at Merrill Campground, increasing peak occupancy rates at the campgrounds and increased usage of the Camp Ronald McDonald.

Terrestrial Wildlife Species

Threatened, Endangered & Forest Service Sensitive Species

Alternatives 1, 3, 4, and 5

This section summarizes the determinations for these species.

Direct, Indirect and Cumulative Effects

Due to the project area being outside the range of the species, or due to the lack of suitable habitat or habitat components in the project area Alternatives 1, 3, 4, and 5 would have no effect on the following Federally Listed threatened or endangered species or their critical habitat: northern spotted owl, valley elderberry beetle.

Additionally, due to the project area being outside the range of the species, or due to the lack of suitable habitat or habitat components in the project area, Alternatives 1, 3, 4, and 5 would have no effect on the following Forest Service Sensitive species: Northern bald eagle, California wolverine, American marten, Pacific fisher, Sierra Nevada red fox, Townsend's big-eared bat, western red bat, greater sandhill crane, California spotted owl, Swainson's hawk, great gray owl, willow flycatcher.

Analyses of direct, indirect and cumulative effects to northern goshawk habitat concluded that Alternatives 1, 3, 4, and 5 may affect individuals northern goshawks, but are not likely to result in a trend towards federal listing or loss of species viability due to, 1) the project site is an existing sewage pond facility, and thus human disturbance in this site likely reduces its value to this species, 2) there is no nesting habitat being affected within the project boundaries, and, 3) the project affects a very small number of acres of forested habitat .

Finally, analyses of direct, indirect and cumulative effects to pallid bat habitat concluded that Alternatives 1, 3, 4, and may affect individuals pallid bats, but are not likely to result in a trend towards federal listing or loss of species viability due to, 1) low potential for effects to roost trees, 2) habitat improvement via thinning, and, 3) long-term habitat loss is restricted to approximately 4 acres of meadow habitat due to construction of a evaporation pond.

Management Indicator Species (MIS).

Alternatives 1, 3, 4, and 5

Direct, Indirect and Cumulative Effects

Aspen stands or other riparian hardwood habitat do not exist in the project area. Therefore, neither montane riparian or yellow warblers are not further discussed. Similarly, this is an eastside project, no west slope chaparral types would be affected, and these habitat types are not addressed. No oaks of any kind exist in the project area, so oak-associated hardwood and hardwood/conifer are not addressed. No late seral open- or closed-canopied coniferous habitat (size class 5s) currently exist in the project area, nor do burned forest habitats, thus this report does not address late seral conifer habitats or burned forest habitats.

Eagle Lake, the closest perennial water body, is approximately 3 miles downstream of the project area, and represents the nearest Lacustrine/Riverine Habitat to the project. Habitat factors for analysis for this habitat type are flow, sedimentation, and water surface shade. Since none of these habitat factors are affected by the project, Lacustrine/Riverine Habitat were not evaluated.

The MIS whose habitat would be either directly or indirectly affected by the project and that were analyzed were: mountain quail, hairy woodpecker, and Pacific tree frog. Results of the analysis for these species are given below or in the aquatics section.

The minor amount of acres of early- and mid-seral forested habitat that would be lost as a result of this project (12 acres in Alternative 1, 11 acres in Alternative 3, 5.0 acres in Alternative 4, and 3.0 acres in Alternative 5) represents 0.00048% or less of the 3,312,000 acres of early- and mid-seral

coniferous habitat estimated to exist at the bioregional scale. Therefore, neither Alternatives 1, 3, 4, nor Alternative 5 of the EL Facility Project would alter the existing trend in this habitat type, nor would they lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

The project would result in essentially no change in medium- or large-sized snags per acre on 14 acres (Alternative 1), 13 acres (Alternative 3), 19 acres (Alternative 4), or 20 Acres (Alternative 5) in the thinning area. All existing snags would be lost on 12 acres (Alternative 1), 11 acres (Alternative 3), 5 Acres (Alternative 4), or 3 Acres (Alternative 5) due to creation of the evaporation pond, borrow pit, stockpile, sludge drying, or storage areas. This 12, 11, 5, or 3 acre loss of snags is negligible compared to the amount of snags in green forest habitat within the bioregion. For instance, there are over 2.7 million acres of mid-seral forest alone within the bioregion. Therefore, neither Alternative 1 nor Alternatives 3, 4, or 5 of the Eagle Lake Sewage Ponds Remediation Project would alter the existing trend in this habitat type, nor would they lead to a change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

Additional information about wildlife can be found in the Terrestrial and Aquatic Project Management Indicator Species Report, and the Biological Evaluation for Terrestrial Species reports, hereby incorporated by reference, at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record. This includes the cumulative effects boundary and the rational for boundary selection.

Aquatic Wildlife

Threatened, Endangered and R5 Forest Service Sensitive Species

Alternatives 1, 3, 4, and 5

This section summarizes the determinations for threatened, endangered and R5 Forest Service Sensitive aquatic wildlife species.

Direct, Indirect and Cumulative Effects

For the Great Basin rams-horn the proposed action alternatives may affect individuals, but is not likely to cause a trend toward federal listing or a loss of viability. The reasons for this determination are the Great Basin rams-horn snails are known to occur downstream of the project area in nearshore areas of Eagle Lake. There would be no net loss of habitat resulting from this alternative. Additionally it is anticipated that there would be a beneficial effect of reducing nutrient enrichment risk to the aquatic resources of Eagle Lake, including the Great Basin rams-horn habitat.

For the montane peaclam the proposed action alternatives may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability. This is because of the following factors: Montane peaclams are known to occur downstream of the project area in nearshore areas of Eagle Lake. There would be no net loss of habitat resulting from this alternative. Implementing the project poses a very low short-term risk of negatively affecting habitat quality in the Merrill Creek vicinity. The risk would be from sedimentation; however adherence to BMPs and the installation of sediment control

devices before ground disturbing activities would minimize this risk. Cumulatively this risk is minimal. It is anticipated that there would be a beneficial effect of reducing nutrient enrichment risk to the aquatic resources of Eagle Lake, including the montane peaclam habitat.

For the Eagle Lake rainbow trout the proposed action alternatives may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability. This is because of the following factors. Eagle Lake rainbow trout are known to occur downstream of the project area in Eagle Lake. There would be no net loss of habitat resulting from this alternative. It is anticipated that there would be a beneficial effect of reducing nutrient enrichment risk to the aquatic resources of Eagle Lake, including the Eagle Lake rainbow trout and its forage base.

Alternative 2 – No Action

Direct and Indirect Effects

For the Great Basin rams-horn, alternative 2 may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability. This is because of the following factors. Great Basin rams-horn snails are known to occur downstream of the project area in nearshore areas of Eagle Lake. There would be no net loss of habitat resulting from this alternative. Continued use of the sewage treatment ponds without relining could negatively affect habitat quality. The risk to individual snails and habitat continue to be low from potential nutrient enrichment either from failing ponds or dumping of grey water at campgrounds.

For the montane peaclam, alternative 2 may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability. This is because of the following factors. Montane peaclams are known to occur downstream of the project area in nearshore areas of Eagle Lake. There would be no net loss of habitat resulting from this alternative. Continued use of the sewage treatment ponds without relining could negatively affect habitat quality. The risk to individual peaclams and habitat continue to be low to moderately low from potential nutrient enrichment either from failing liners or grey water dumping at campgrounds.

For the Eagle Lake rainbow trout, alternative 2 may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability. This is because of the following factors. Eagle Lake rainbow trout are known to occur downstream of the project area in Eagle Lake. There would be no net loss of habitat resulting from this alternative. Continued use of the sewage treatment ponds without relining could negatively affect habitat quality. The risk to individual trout and habitat continue to be low from potential nutrient enrichment and a corresponding potential reduction in forage base.

Alternatives 1, 2, 3, 4, and 5

The project would have no effect on the following threatened and endangered species or their critical habitat; Central Valley steelhead Distinct Population Segment (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*), Delta smelt (*Hypomesus transpacificus*), Winter-run chinook salmon ESU (*Oncorhynchus tshawytscha*), California red-legged frog (*Rana aurora draytonii*), Giant garter snake (*Thamnophis gigas*), Shasta

Crayfish (*Pacifastacus fortis*), Conservancy fairy shrimp (*Branchinecta conservatio*), Vernal pool fairy shrimp (*Branchinecta lynchi*), and Vernal pool tadpole shrimp (*Lepidurus packardi*).

The project would have no effect on the following Forest Service Sensitive Species; Foothill yellow-legged frog (*Rana boylii*), Mountain yellow-legged frog (*Rana muscosa*), Cascades frog (*Rana cascadae*), Northwestern pond turtle (*Clemmys marmorata marmorata*), California floater (*Anodonta californiensis*), Topaz Juga (*Juga acutifilosa*) Scalloped Juga (*Juga occata*), Nugget pebblesnail (*Fluminicola seminalis*), Northwestern pond turtle (*Clemmys marmorata marmorata*), and Central Valley fall/late-fall-run Chinook salmon ESUs (*Oncorhynchus tshawytscha*).

Management Indicator Species (MIS).

Alternative 1- Proposed Action

Direct, Indirect and Cumulative Effects

The elimination of 0.77 acres of the 0.89 acres of wetland on NFS land by the Eagle Lake Sewage Pond Project under Alternative 1 would alter the existing trend in the ecosystem component of wet meadows within the project area. However, considering the approximately 66,000 acres of wet meadow on USFS lands in the Sierra-Nevada bioregion, the expected loss of 0.77 acres of meadow wetland in the project and mitigation creation of at least 1.34 acres of wetland elsewhere would not substantially alter the existing trend in the habitat, nor would it lead to a change in the distribution of Pacific tree frogs across the Sierra Nevada bioregion.

Alternative 2 – No Action

Acres of wet meadow would not be affected by this alternative. Additionally there would be no direct effects to the other habitat elements. No indirect effects to acreage and hydrology are expected from this alternative. Herbaceous height and cover of the wet meadow might change in the future due to nutrient enhancement as the liners in the ponds adjacent to them fail.

Alternative 3, 4, and 5

Alternatives 3 through 5 are not anticipated to change acres of wetlands or change herbaceous height class or herbaceous density class within the delineated meadow wetlands. Considering the approximately 66,000 acres of wet meadow on USFS lands in the Sierra-Nevada bioregion, the risk of altering the hydrology on .89 acres of meadow wetlands would not substantially alter the existing trend in the habitat, nor would it lead to a change in the distribution of Pacific tree frogs across the Sierra Nevada bioregion.

Additional information about Aquatics can be found in the Terrestrial and Aquatic Project Management Indicator Species Report and the Aquatic Biological Evaluation reports, hereby incorporated by reference, at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record. This includes the cumulative effects boundary and the rational for boundary selection.

Botany

Environmental Consequences Threatened, Endangered, Sensitive Plant Species

There are no Threatened, Endangered, or Sensitive (TES) plant species found within the project area, therefore, there would be no affects to TES species from the implementation of the El Facility Project.

Environmental Consequences Special Interest Plant Species

Alternative 1 – Proposed Action

Direct Effects

Implementation of the Proposed Action would have no direct effect on individual plants of the species. *Mimulus pygmaeus* occurs in the seasonally wet, vegetated margins east and south of the existing ponds. These segments of the property boundary are currently marked by standard barbed wire range fences, which would be removed at the outset of the project and subsequently replaced by chain link fence around the treatment facility and barbed wire around the larger site. Installation of the permanent fence would entail more ground disturbance, but project Botany IDFs require that soils be dry during this work, so that the *Mimulus* would have completed its annual life cycle.

Indirect Effects

Vegetation structure is unlikely to change in the parts of the project area where *Mimulus pygmaeus* occurs unless the local hydrology changes or rutting and compaction during fence constriction activities are severe and extensive. However, there would be little risk of rutting or compaction under the Proposed Action because project IDFs require that soils within the RCA be dry to a depth of 12 inches before beginning any of the mechanical work during the first three phases of the project and that soils also be dry during Phase IV when fence work activities would occur. In addition, the land immediately west of the current Evaporation Pond 3 features seasonally flooded swales and open soil that are not known to have any *Mimulus pygmaeus* plants, but the population elsewhere in the meadow might expand there in a suitably wet year. Such an expansion would be forestalled when Evaporation Pond 3 is extended westward across the area. It is possible that new swales would develop; balancing the loss of swales to pond expansion, or perhaps the land would dry, resulting in less potential habitat for *Mimulus pygmaeus*. In either case, the sewage pond site occupies only a tiny portion of the entire meadow of Little Merrill Flat, and the privately owned portion of the meadow contains extensive patches of seasonally wet habitat suitable for growth of *Mimulus pygmaeus*. Plants that have been seen near the sewage ponds are very likely a small portion of a much larger population across the rest of the (privately owned) meadow.

Besides the potential for local changes to wet habitat, the most likely indirect effect for *Mimulus pygmaeus,* attendant upon increased traffic and mechanical disturbance from project activities, would be a potential increase in noxious weeds or other undesirable non-native species within the project area. While no noxious weeds are currently known in or around the project area, thinning and pond construction would create extensive soil disturbance, and thinning would reduce overall forest canopy cover. These factors could increase the risk of noxious weed introduction and subsequent spread in the project area, and those weeds could detrimentally affect the existing *Mimulus pygmaeus* occurrence or its habitat.

Project noxious weed IDFs, such as equipment cleaning and post-project monitoring and requirements that mulch and other materials be weed-free, would substantially reduce the risk of noxious weed introduction and therefore also the risk of impacts to *Mimulus pygmaeus* in the EL Facility project area.

Cumulative Effects

With the implementation of project IDFs, no direct effects on *Mimulus pygmaeus* are expected but indirect effects are possible. The project area was chosen as the cumulative effects analysis area for *Mimulus pygmaeus* because its historic range and specific habitat requirements are unknown, and it was assumed that if the EL Facility project would not affect the viability of this species within the project area, it would not affect its viability outside of the project area. The *Mimulus pygmaeus* occurrence in the project area was discovered in 1995, well after the construction of the current sewage ponds. The historic abundance of the species in the project area is unknown, and thus its condition since 1995 was used as the baseline condition for analysis.

The only developments in the project area since 1995 have been a few structural adjustments within the existing ponds. These actions would not have affected *Mimulus pygmaeus*, and there are therefore no cumulative effects from such activities. The meadow beyond the treatment facility is subject to ongoing grazing, but cattle are discouraged from entering the area of the ponds (and the known *Mimulus pygmaeus*) by fencing. After project completion, locked chain-link fence would prevent all public and livestock entry. No future Forest Service activities are planned in the project area, so no impacts are foreseen from such activities.

As noted above, individual plants of *Mimulus pygmaeus* may be affected by treatment activities, but there is very likely extensive habitat for the species elsewhere in the meadow. The plant is probably present elsewhere in the meadow and is certainly present at many other locations in the broader area, where its numbers are believed to be stable. Project activities are unlikely to have an appreciable effect on the presence of *Mimulus pygmaeus* at Little Merrill Flat, and there would be no additional effects to the species from any known past, present, or reasonably foreseeable future actions in the EL Facility project area to which the Proposed Action would add cumulatively.

Alternative 2- No Action

Direct and Indirect Effects

There would be no direct effects on *Mimulus pygmaeus* in project area from Alternative 2 because no actions would be implemented. Indirect effects can include weed spread; however, the potential for the spread or arrival of weeds exists even in the absence of proposed treatment activities, but the project area is currently free of noxious weeds and would likely remain so. If anything, *Mimulus pygmaeus* is less likely to face pressure from invading weeds under Alternative 2 than under the other alternatives.

Alternatives 3, 4, and 5

Direct and Indirect Effects

Alternatives 3, 4, and 5 are similar to the Proposed Action in being likely to have no direct effects on *Mimulus pygmaeus* in the EL Facility project area. Project IDFs are somewhat different from those for the Proposed Action but still require that soil "be dry to a depth of at least 2 inches below the soil surface prior to mechanical operations." Furthermore, project IDFs for all action alternatives require specifically that work on fences (including the *Mimulus* habitat) be done when soils are dry.

None of these alternatives involve pond expansion in the wetlands, so that there is only limited potential for indirect effects for *Mimulus pygmaeus*, other than the potential for the spread or arrival of weeds. Rutting and compaction within *Mimulus* habitat are possible but would be minimized by project IDFs for water quality requiring that 90% of existing cover remain on temporary access routes after the completion of the project. The response of local hydrology to the expansion of the pond area into forest under Alternative 3 or the pond deepening under Alternative 4 are uncertain, but the effects of construction, if they occur, are expected to be less than under the Proposed Action, according to the project "CWE and Hydrology Report."

Cumulative Effects

As with the Proposed Action, there would be no additional effects to *Mimulus pygmaeus* from any past, present, or reasonably foreseeable future actions in the EL Facility project area to which Alternatives 3, 4, or 5 would add cumulatively.

Additional information about botany can be found in the Noxious Weed Risk Assessment and the Botany Report for Special Interest Plant, hereby incorporated by reference, at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Heritage Resources

All Alternatives

Direct, Indirect and Cumulative Effects

Under these alternatives, the assumption is that the two sites in the project area were determined not eligible for the National Register of Historic Places and as such they were released from management. Historic properties would not be affected by the Eagle Lake Sewage Ponds Project. Therefore, there are not direct, indirect or cumulative effects from any of the alternatives.

Additional information about Heritage Resources can be found in the Cultural Resources Report, hereby incorporated by reference, at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Silviculture

Alternatives 1, 3, 4 & 5

Direct and Indirect Effects

Stand Composition

Thinning would result in residual stand structure of primarily open stands comprised of large trees with relatively lower stand densities. Post-treatment vegetative cover within the thinning area would remain eastside pine.

Stand Structure and Density

Under current management, trees less than 30 inches dbh are available for removal; however, based on stand modeling most trees to be removed would be 24 inches dbh or less. Thinning-from-below would reduce stand density, vertical ladder fuels, and shade tolerant species, while increasing crown base heights (Peterson et al, 2005; Graham et al, 2004).

Within the thinning unit, trees 30 inches in diameter and greater would be retained where they exist on the landscape, regardless of species or condition. They would only be removed in situations to facilitate operability. These include trees that need to be removed to create landings and skid trails or as identified as hazards per Occupational Safety and Health Act (OSHA) requirements for logging operations. Occasional larger trees could be cut to break up pockets of horizontal continuity of canopy fuels or lower densities down to prescribed levels in pockets or to selectively leave an adjacent similar-sized but smaller, healthier tree. This is consistent with the 2004 SNFPA ROD (page 68). In addition the existing snag/down log attributes are not expected to change as a result of harvest. Where existing, all snags 15 inches diameter and greater would be retained, as well as 3 of the largest downed logs 12 inches (at large end) and greater.

Under the proposed treatment, the predominant California Wildlife Habitat Relationship (CWHR) size class of forested stand would be size class 4. Canopy cover would be reduced to CWHR canopy class P (refer to Silviculture Report for CWHR class definitions).

Implementing the thinning would achieve the desirable stand densities of less than 60 percent of the limiting or maximum Stand Density Index (SDI)[10] for the stand. These represent fully stocked stands with available growing space and resources such that inter-tree competition does not immediately affect stand growth for a period of generally 10 to 20 years or more.

Harvest Operations

Harvest operations would have effects on forest stand structure. Tractor logging requires small clearings, or landings, generally less than 1/2 acre, to store logs prior to trucking. Landings utilized during operations would be evaluated post-treatment by the Forest Service on a site-specific basis to determine if

10 SDI converts a stand's current density into a density at a constant reference size of 10 inches dbh

subsoiling would be beneficial in reducing compaction that affects hydrological function of the soils. Subsoiling would lift and fracture the soil in place leaving it loose and friable to a minimum depth of 18 inches. No road construction/reconstruction would be required specifically for the thinning operations. Some roadwork may be necessary on roads outside the project boundary to accommodate logging trucks.

Forest Health

Thinning would decrease stand mortality caused by bark beetle and the moderate to heavily infected mistletoe trees. Thinned stands would generally increase in overall forest health and individual tree growth. Thinning would target the removal of damaged and diseased trees and favor retention of trees free of damage and defect.

Thinning treatments have the potential to increase populations of the pine engraver beetle, *Ips pini*. The action alternatives include slash treatments to minimize habitat for the pine engraver beetle. Additionally, the action alternatives propose to apply an Environmental Protection Agency (EPA) registered borate compound SPORAX® (Sporax) to cut stumps of all live conifer trees equal to or greater than 14 inches stump diameter to protect against the spread of annosus root disease.

Cumulative Effects on Stand Composition, Structure, and Density

The project boundary was used as the cumulative effects analysis area. This boundary was chosen since treatments to the existing vegetation would not impact other forest stands adjacent to the area. Modeling indicates that eastside pine stands would remain in a good growth stocking range where density-related tree mortality would be reduced for approximately 20 years. The understory vegetation, grass, herbs, and other native brush species could increase with thinning-from-below; if canopies are sufficiently open (McConnell and Smith, 1970).

Cumulative Effects on Forest Health

Annosus root disease is expected to remain near current levels throughout the project area, using the IDFs. The proposed treatments would improve tree vigor by reducing stand densities, however thinning is not expected to remove all annosus infection, nor would it address infections outside of treatment stands. Insect-related tree mortality would decrease within thinned stands (Oliver, 1995). With the removal of heavily infected overstory trees, new infections of the understory would decrease.

Alternative 2 – No Action

Direct and Indirect Effects

Stand Composition, Stand Structure, and Density

Treatments to address objectives and desired conditions identified in the Purpose and Need would not be employed. Alternative 2 would allow the stand to continue to develop according to succession consequently, the horizontal and vertical continuity of surface, ladder, and canopy fuels would remain intact in the absence of naturally occurring disturbance, such as mortality, and accumulation would

continue to increase in the absence of fire. Stands would remain densely stocked, increasing in susceptibility to loss from insect, disease, and stand replacing fires.

Harvest Operations

Under this alternative, there would be no harvest operations.

Forest Health

New annosus infections in ponderosa or Jeffrey pine would be rare because p-type pine-annosus infection centers almost always originate from freshly created pine stumps. Over-crowded and/or diseased trees would continue to be killed by bark beetle events, often associated with precipitation deficits.

The risk of bark beetle outbreaks causing large-scale mortality in large, remnant, overstory pines would increase over time, as stands grow increasingly dense. Of particular concern are mountain, Jeffrey, and western pine beetles because of their aggregating behavior. Stands at greatest risk in the project area are those stands with high levels of stocking (60 percent of maximum SDI or more), especially during periods of extended drought (Demars and Roettgering, 1982; Ferrel, 1986; Kegley et al, 1997; Smith, 1971).

Mistletoe would continue to persist in the stand. Pine reproduction would continue to be infected. Tree growth and form would continue to be impacted.

Additional information about Silviculture can be found in the Silviculture Report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Fire and Fuels

Alternatives 1, 3, 4 & 5

Direct and Indirect Effects

Alternatives 1, 3, 4 and 5 (Action Alternatives) would have similar effects to the fuel loading and fire behavior of the project area. Table 1 lists the number of acres of timber and or vegetation to be cleared to facilitate the pond construction and associated stockpiling/borrow pit activities. The remaining ground would be thinned to promote stand health and reduce the risk of fire.

Table 1. Acres of Activity by Alternative

	Acres by Alternative		
Alternative	*Cleared*	*Thinned*	*Re-vegetated*
1	*12*	*14*	*9*
2	*0*	*0*	*0*
3	*11*	*13*	*7*
4	*5*	*19*	*3*
5	*3*	*20*	*2*

Source: Fuels Report

The thinning and prescribed fire treatments under the Action Alternatives would have the effect of reducing the surface, ladder, and canopy fuel loadings. These reductions would result in lower flame lengths and increased Torching and Crowning indices. Combined these changes would result in reduced first order fire effects and reduced potential for a transition to a passive or active crown fire. A more detailed explanation of these indicators can be found in the project record in the Fuels Report, hereby incorporated by reference.

Table 2 summarizes the predicted flame lengths following treatment as well as the desired flame lengths within the ITS thinning treatment. The effects of the treatment would be successful in reducing flame lengths to desired levels, which would allow firefighters to use direct attack methods on fires occurring within the proposed treatment area.

Table 2. Summary of Effects under the Action Alternatives for Reducing Fire Hazard

Effects Indicators	*ITS Thinning*	*Desired*
	Modeled average	
Flame length (feet)	*3*	*<4.0*
Fire type	*Surface*	*Surface*
*Torching Index (TI)**	*81*	*>30*
*Crowning Index (CI)***	*48*	*>40*
Canopy Base Height (CBH) (feet)	*27*	*15 – 25+*

Source: Fuels Report *The Torching Index (TI) is a measure of how susceptible a stand is to the vertical movement of fire. The higher the TI the less susceptible a stand is to the vertical movement of fire. **The Crowning Index (CI) is a measure of the ability of a stand to sustain a fire that moves through the canopy (active crown fire). The higher the CI the less susceptible a stand is to an active crown fire.

The TI and CI of the treatment would be sufficient to meet desired levels and reduce the chance of torching and active crown fire, even under extreme fire weather conditions, to very low levels unlike the No Action Alternative as displayed in Table 3.

Table 3. Predicted Fire Behavior and Effects Indicators for the Eagle Lake Sewage Pond project area under 90th Percentile Weather Conditions.

Effects Indicators	*Existing Conditions*		*Desired*
Unit Type	*average*	*range*	
Flame length (feet)	*12*	*10 - 14*	*<4*
Fire type	*Passive crown*	*Passive crown*	*Surface only*
Torching Index(TI)	*3*	*1 - 5*	*>30*
Crowning Index (CI)	*37*	*33 - 41*	*>40*
Crown Base Height (CBH) (feet)	*6*	*5 - 7*	*15 - 25*

Source: Fuels Report.

Alternatives 1, 3, 4 & 5

Cumulative Effects

The Fire and Fuels cumulative effects analysis area for the Eagle Lake Sewage Ponds Project includes the area within the project boundary. Over the past 100-150 years, in part due to grazing and fire suppression, the Eagle Lake Sewer Pond project area has undergone structural changes which include an increase in the surface and ladder fuel loading and a densification of the stand. Current conditions show that the stand is outside its range of natural variability. Based on fire behavior modeling predictions, the Eagle Lake Sewage Pond project area shows that existing fuels exceed desired levels in terms of surface fuel loading, torching index and crowning index. Lives, property, and natural resources in and around the project area are at risk from wildland fires that have the potential to be both large in size and damaging to the ecosystem well beyond the scope of what occurred in this area historically. Cumulatively under the Action Alternatives, the thinning and prescribed fire treatments would have the effect of reducing the surface, ladder, and canopy fuel loadings. These reductions would result in lower flame lengths and increased Torching and Crowning indices. The reduction in flame lengths to the desired levels would allow firefighters to use direct attack methods on fires occurring within the proposed treatment area. Combined these changes would result in reduced first order fire effects, low-intensity surface fires, and reduced potential for transition to a passive or active crown fire.

Alternative 2 – No Action

Direct and Indirect Effects

Under Alternative 2, densification of stands, and surface and ladder fuel loading throughout the project area would continue to increase. Lives, property, and natural resources in and around the Eagle Lake Sewage Ponds Project area would continue to be at risk from wildland fires that have the potential to be both large in size and damaging to the ecosystem. In the future, these conditions would be more pronounced without some type of fuels reduction treatment or other disturbance (wildland fire) that reduces fire hazard in the area.

Additional information about fuels can be found in the Fuels report, hereby incorporated by reference, located at the Eagle Lake Ranger District, 477-050 Eagle Lake Road, Susanville, CA 96130 in the project record.

Forest Plan Consistency

Non-significant Forest Plan Amendment Evaluation of Significance

The National Forest Management Act (NFMA) requires evaluation of whether proposed forest plan amendments would constitute a significant change in the long-term goods, outputs and services projected for the National Forest. The following criteria are used to determine the significance of forest plan amendments (FSM 1926.51-52).

Changes to the Forest Plan that are not significant and could result from:

1) Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.

The 40-acre parcel, where the sewer ponds are located, have been managed as an administrative site, since their construction. The administrative use of this 40-acre parcel for the Eagle Lake Sewer Ponds is consistent with the Forest Plan goals to manage the Eagle Lake Recreation Area.

2) Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.

No changes to management area boundaries or management prescriptions would occur.

3) Minor changes in standards and guidelines; and

Upon completion of this project, no more than 6 acres would be encumbered by new infrastructure. This plan amendment would deviate from the use of this standard on these acres only.

4) Opportunities for additional management practices that would contribute to achievement of the management prescription.

The Eagle Lake Sewer Pond project would assist in achieving the desired condition of this management area. The desired conditions for Recreation in the Eagle Management Area are the following.

1. Develop a composite recreation plan addressing the future of the marina, provision of any new facilities, and development of bicycle and off-highway vehicle trails.
2. Develop a visitor information station at the entrance to the Eagle Lake Recreation Area (Junction of county roads 201 and A-l), when land is acquired.
3. Build a new visitor information center and amphitheater at the Merrill Creek information station.
4. Exclude livestock from developed recreation sites.
5. Develop and implement a vegetative management plan for the Eagle Lake Recreation Area.
6. Manage the undeveloped camping areas at Houseman Camp, Dow Wells, Prison Springs, and Pine Bridge as dispersed campsites.
7. Maintain the Gallatin House to resemble its appearance during the historical period, by coordinating with Eagle Lake Children's Charities as it develops and operates a camp for special needs children.
8. Make lands available on the south shore of Eagle Lake for the purpose of construction and operation of a Priority 1 Organizational Camp. This use would be authorized by special use permit.[11] Priority 1 is defined as programs for the disadvantaged or underprivileged in which, regardless of sponsorships, charges to recipients are free or token only and without such sponsorship the recipient probably could not go to camp. Generally speaking, recipients need not be members of the sponsoring organization. Examples of such programs would be those sponsored by the Salvation Army, Boy's Clubs of America and some civic clubs, programs for

11 A Priority 1 Organizational Camp is defined under Forest Service Manual 2345.1.1 as follows:

the physically challenged or infirm where the objective is rehabilitation and training, and programs to provide an outdoor experience not available except through the supervision of the sponsoring organization. Camps for physically challenged children, retarded children, diabetics, or the hearing impaired are examples.

9. Cooperate in efforts to recommend Eagle Lake as a National Recreation Area

Changes to the Land Management Plan that are significant and circumstances that may cause a significant change to the plan:

1) Changes that would significantly alter the long-term relationship between levels of multiple-use goods and services originally projected (section 219.10 (e) of the planning regulations in effect before November 9, 2000 (36 CFR parts 200 to 299, revised as of July 1, 2000).

The deviation from this soils standard for this site-specific project allows continued use of the standard for other projects. It does not alter the long-term relationships between the levels of goods and services projected in the Forest Plan.

2) Changes that may have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period.

The deviation from this soils standard is a project level, site-specific Plan Amendment that does not have implications for the entire Forest Plan.

Agencies and Persons Consulted

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

Federal, State and Local Agencies:

Lassen County Board of Supervisors, Lahontan, Lassen Fire Safe Council, Office of Congressman Tom McClintock

Native American Tribes:

Greenville Indian Rancheria, Pit River Tribe, Susanville Indian Rancheria,

Others:

Valerie Aubrey, Beatty & Associates, Camp Ronald McDonald, Lassen College Foundation, Lassen Cougar Enterprises, Fruit Growers Supply Co., Roney Land & Cattle Co.

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