

Invasive Plant Risk Assessment
CalPeco 625 and 650 Electrical Line Upgrade Project
Lake Tahoe Basin Management Unit
and Tahoe National Forest
USDA Forest Service

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1 INTRODUCTION

In 2003, the United States Forest Service identified invasive species as one of four critical threats to the nation's ecosystems (Bosworth 2003). Invasive plants pose a significant threat to ecological function due to their ability to displace native species, alter nutrient and fire cycles, decrease the availability of forage for wildlife, and degrade soil structure (Bossard et al. 2000). Infestations can also reduce the recreational or aesthetic value of native habitats.

Forest management activities can contribute to the introduction and spread of invasive plants by creating suitable environmental conditions for establishment and by acting as vectors for spread. The following risk assessment has been prepared to evaluate the risk associated with invasive plant introduction and spread as a result of the proposed project.

1.1 ANALYSIS FRAMEWORK: PERTINENT LAWS, POLICIES, AND DIRECTION

A comprehensive summary of principal statutes governing the management of invasive plants on the National Forest System is available in FSM 2900. A brief summary of the pertinent laws, policies, and direction is provided below.

1.1.1 Federal Laws and Executive Orders

Executive Order 13112 (1999)—directs federal agencies to prevent the introduction of invasive species; detect and respond rapidly to control such species; and to minimize the economic, ecological, and human health impacts from invasive species on public lands.

1.1.2 Forest Service Policies and Direction

Forest Service Manual 2080 (USDA Forest Service 1995)—Was replaced by FSM 2900 in 2011. FSM 2080 revised USFS national policy on noxious weed management to emphasize integrated weed management, which includes prevention and control measures, cooperation, and information collection and reporting.

Forest Service Manual 2900 (USDA Forest Service 2011)—directs the Forest Service to manage invasive species with an emphasis on integrated pest management and collaboration with stakeholders, to prioritize prevention and early detection and rapid response actions, and ensure that all Forest Service management activities are designed to minimize or eliminate the possibility of establishment or spread of invasive species on the NFS or to adjacent areas.

Forest Service Manual 2070 (USDA Forest Service 2008)—provides guidelines for the use of native material on National Forest System lands. It restricts the use of persistent, non-native, non-invasive plant materials and prohibits the use noxious weeds for revegetation, rehabilitation and restoration projects. It also requires that all revegetation projects be reviewed by a trained or certified plant material specialist for consistency with national, regional, and forest policies for the use of native plant materials.

USFS National Strategy and Implementation Plan for Invasive Species Management (USDA Forest Service 2004a)—identifies for all Forest Service programs the most significant strategic actions for addressing invasive species. It emphasizes prevention, early detection and rapid response, prioritization in control and management, and restoration or rehabilitation of degraded areas.

Region 5 Noxious Weed Management Strategy (USDA Forest Service 2000)—guides regional Forest Service goals and objectives for invasive plant management, emphasizing actions necessary to: promote the overall management of noxious weeds; to prevent the spread of weeds; control existing stands of weed infestations; promote the integration of weed issues into all forest service activities.

1.1.3 Forest Plan Direction

LTBMU Land and Resource Plan & Tahoe National Forest Land And Resource Management Plan (USDA Forest Service 1988, 1990)—Does not specifically address invasive plants (except the removal of noxious plants in grazing allotments), though it does provide for the protection and enhancement of threatened and sensitive plant habitat. It is amended by the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) to address invasive plant management.

Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004b)—Establishes goals, standards, and guidelines for invasive plant (noxious weed) management for the Sierra Nevada forests. It emphasizes prevention and integrated weed management. It establishes the following invasive plant management prioritization: 1) prevent the introduction of new invaders; 2) conduct early treatment of new infestations; 3) contain and control established infestations. It also requires forests to conduct an invasive plant risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities and develop mitigation measures for high and moderate risk activities with reference to the weed prevention practices in the Regional Noxious Weed Management Strategy.

2 PROJECT DESCRIPTION

2.1 PROPOSED ACTIVITIES

The proposed action consists primarily of an upgrade of the 625 and 650 electrical lines and associated substations from 60 kilovolt (kV) operations to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. The electrical lines and associated infrastructure are owned by the California Pacific Electric Company (CalPeco), the project proponent. The primary project components that would occur at least partially on NFS lands are: 1) removal of the existing 625 Line that extends between Tahoe City and Kings Beach and construction of a new, rerouted 625 Line, and 2) rebuild of the existing 650 Line that extends from Kings Beach to the Town of Truckee. In addition to the electric line improvements, a number of access ways would be improved (e.g., grading, widening, removal of encroaching vegetation) or created and existing NFS roads would be used for construction and operational access. The proposed system improvements would increase the ability to maintain the current maximum system loads while experiencing an outage on any one of the four legs of the system, and decrease reliance on the Kings Beach Diesel Generation Station for back-up power generation. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, felled trees, snow loading, and forest fires and improve access to the lines for inspection, maintenance, and repair activities.

Four action alternatives are being evaluated at an equal level of detail (see Exhibit 1, Appendix B). The PEA Alternative (Alternative 1) is the alternative described in the Proponent's Environmental Assessment (PEA) submitted by Sierra Pacific Power Company as part of the original permit application provided to the California Public Utilities Commission (CPUC) in 2010. The Modified Alternative (Alternative 2) is similar to the PEA Alternative, but includes rerouting of some segments of the alignment based on various factors, such as resource constraints, public and agency input received during scoping, additional information gathered during detailed field reviews, and further progress on project engineering and design. Under Alternative 2, the 650 Line in Segments 650-1 and 650-2 would be double circuited with the 625 Line in Segments 625-9 and 625-10. The double circuit in Segments 625-9 and 625-10 would closely follow the existing 625 Line, deviating slightly to create a straighter line. The Road Focused Alternative (Alternative 3) re-routes the 625 Line to more closely follow the Fiberboard Freeway and other area roadways and places more of the 650 Line along State Route (SR) 267, including through Martis Valley. Alternative 3 would also place the 625 Line into a double circuit in Segments 650-1 and 650-2. The Road Focused Alternative with Double Circuit Option (Alternative 3A) is the same as Alternative 3, except that Alternative 3A would employ a double circuit line along SR 267 from the Kings Beach Substation, whereas Alternative 3 follows the existing alignment out of Kings Beach through LTBMU land and a residential neighborhood. Under Alternative 4 (Proposed Alternative), the alignment would be the same as under Alternative 3, including placement of Segments 625-9 and 625-10 into a double circuit with 650-1 and 650-2, except through Martis Valley where the 650 Line would be the same as under the PEA Alternative (Alternative 1).

The following paragraphs describe components of the action alternatives that would occur on NFS lands. For the purposes of analysis, the lines are divided into segments; there are 10 segments in the 625 Line and seven segments in the 650 Line (refer to Exhibit 1, Appendix B). All of the 625 Line segments are located on NFS lands. On the 650 Line, only Segments 650-1, 650-2, 650-4 (Alternatives 1 and 4 only), and 650-6 are on NFS lands.

2.1.1 Removal and Reconstruction of the Existing 625 Line

As part of the upgrade to 120 kV for the North Lake Tahoe Transmission System, CalPeco is proposing to reconductor and reroute the 625 Line with the objective that the new conductor can accommodate 120 kV and to align the line more closely with the existing roadways in the area. The removal of the existing 625 Line would involve approximately 15 miles of conductor and 341 wooden poles.

The existing 625 Line and the proposed action alternatives all generally run in a northeast-southwest direction between the communities of Kings Beach and Tahoe City and are located primarily on NFS lands managed by the LTBMU. Each of the action alternatives would generally parallel the Fiberboard Freeway, but the Alternatives 3, 3A, and 4 would follow the Fiberboard Freeway more precisely, whereas Alternative 1 would deviate more from the roadway alignment to provide a straighter line with fewer angle points. Alternative 2 would follow the same alignment as Alternative 1, except in Segments 625-1A, 4A, 6A, and 8A, where the alignment would be relocated to avoid or minimize effects to specific resources.

ALTERNATIVE 1 (PEA ALTERNATIVE)

Segment 625-1

From the Tahoe City Substation, this route would follow the alignment of the existing 625 Line, heading southwest to parallel the south side of the Truckee River before turning northwest and spanning the river and SR 89. In this area, implementation of applicant proposed measure (APM) SCE-8 would set the new power line further back from the Truckee River than originally identified, locating the line behind an existing line of trees on the south bank of the river, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge. (APMs are project elements identified by the project applicant for the purpose of reducing or eliminating environmental effects. They are incorporated into the project description. Implementation will be monitored in the same manner as mitigation measures identified in the EIS/EIS/EIR.) The resulting setback is described in detail in the description of Segment 625-1 for the Proposed Alternative, below.

Segment 625-2

The new 625 Line would turn to the north and continue through NFS lands managed by the USFS LTBMU for over 1 mile. The alignment would then turn west for approximately 0.5 mile and run adjacent to the southern border of Burton Creek State Park (with a portion of the 40-foot wide operations/maintenance/ access easement crossing over the park boundary).

Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8

The new alignment would generally follow the route of the Fiberboard Freeway across lands managed by the USFS LTBMU and Tahoe National Forest for approximately 10 miles.

Segment 625-9

The line would turn east for approximately 2.25 miles and span SR 267 to connect to Lake Vista Road.

Segment 625-10

The line would then turn south for approximately 1 mile, spanning an unpaved portion of Lake Vista Road. It would then turn southeast and span over 1,000 feet to connect to the Kings Beach Substation.

ALTERNATIVE 2 (MODIFIED ALTERNATIVE)

Segment 625-1A

This segment would originate at the Tahoe City Substation and head southwest along the southern bank of the Truckee River. Unlike the existing alignment, this segment would be setback from the river roughly 100 feet, to the southern side of existing vegetation, and onto the 64-Acre Recreation Site. The setback would permit a straighter alignment and would minimize visibility from SR 89 and the Truckee River.

Segments 625-2 and 625-3

These segments follow the same alignment as Alternative 1 (PEA Alternative), above.

Segment 625-4

This segment alignment would be moved upslope of the Fiberboard Freeway as compared to Alternative 1 (PEA Alternative) to reduce visibility of the line from panoramic views seen by recreational users along the road.

Segment 625-5

This segment would follow the same alignment as Alternative 1 (PEA Alternative), described above.

Segment 625-6A

This segment would be oriented farther east than the Alternative 1 (PEA Alternative) alignment. The segment would follow Mt. Watson Road along the outer edge of an existing Goshawk PAC to avoid this sensitive biological resources area.

Segment 625-7

This segment would follow the same alignment as Alternative 1 (PEA Alternative), described above.

Segment 625-8A

This segment would deviate from the Alternative 1 (PEA Alternative) alignment, following the existing 625 Line route more closely in order to utilize some portion of the existing line where it could be at a distance from the Fiberboard Freeway (a recreational use road where no utility lines are currently located) and to place the line outside the boundary of the Lake Tahoe Basin.

Segment 625-9 D-C OH-4

This segment would follow the same alignment as Alternative 1 (PEA Alternative) for Segment 625-9. However, under this alternative, this segment would be built as a double circuit with the 650 Line, eliminating Segment 650-2 from this alternative. (Note: The use of “D-C” in this and other segment titles indicates a “double circuit” option and the “OH” stands for an “overhead” line.)

Segment 625-10 D-C OH-3

This segment follows the same alignment as Alternative 1 (PEA Alternative) for Segment 625-10. However, under this alternative, this segment would be built as a double circuit with the 650 Line, eliminating Segment 650-1 from this alternative.

ALTERNATIVE 3 (ROAD FOCUSED ALTERNATIVE)

Segment 625-1

This segment follows the same alignment as under Alternative 1 (PEA Alternative), above. Also, like for Alternative 1 (PEA Alternative), implementation of APM SCE-8 in this segment would set the new power line further back from the Truckee River than originally identified, locating the line behind an existing line of trees on the south bank of the river, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge. The resulting setback is described in detail in the description of Segment 625-1 for the Proposed Alternative, below.

Segment 625-2

This segment follows the same alignment as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8

These segments would deviate from the alignments for Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) to follow the Fiberboard Freeway along the entire route.

Segment 625-9 Replaced by Segment 650-2 D-C OH-2

Segment 625-9 is not included in this alternative because this segment would be built as a double circuit with the 650 Line along the new alignment of the 650 Line.

Segment 625-10 Replaced by Segment 650-1 D-C OH-1/1A

Segment 625-10 is not included in this alternative because this segment would be built as a double circuit with the 650 Line along the new alignment of the 650 Line.

ALTERNATIVE 4 (PROPOSED ALTERNATIVE)

Segment 625-1

This segment follows the same alignment as Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative), above. However, as discussed above for these other alternatives, implementation of APM SCE-8 in this segment would set the new power line further back from the Truckee River corridor than originally considered (roughly 100 feet). The setback would place the line further into a recreation area identified as the 64-Acre Recreation Site and is intended to shield views of the power line from SR 89 and the Truckee River. APM SCE-8 has been incorporated into the project and is considered part of Alternative 4 (Proposed Alternative). APM SCE-8 reads:

In cases where replacement poles for the 625 Line are adjacent to the Truckee River and will be visible in unobstructed foreground public views along the river or adjacent trails, poles will be carefully sited to minimize their visibility. The westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. The remaining poles along the south bank of the river will be located southward, outside the river corridor and behind the trees that line the riverbank such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.

Implementation of APM SCE-8 would locate the new power line behind the existing line of trees on the south bank of the Truckee River, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge.

Segment 625-2

This segment follows the same alignment as Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative), and Alternative 3 (Road Focused Alternative).

Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8

These segments would follow the Fiberboard Freeway along the entire route, as described above for Alternative 3 (Road Focused Alternative).

Segment 625-9 Replaced by Segment 650-2 D-C OH-2

Segment 625-9 is not included in this alternative because this segment would be built as a double circuit with the 650 Line.

Segment 625-10 Replaced by Segment 650-1 D-C OH-1/1A

Segment 625-10 is not included in this alternative because this segment would be built as a double circuit with the 650 Line.

2.1.2 Rebuild of the Existing 650 Line

Approximately 10 miles of the existing 650 Line would be rebuilt. Various segments would either be rebuilt in the existing right-of-way (ROW) and alignment, or constructed along a new alignment, depending on the alternative being considered. Where the existing alignment is followed, new poles would generally be placed 10 feet from the existing poles (which would be removed as part of the project, except in cases where there is underbuild [existing electrical distribution or communication lines] that cannot be moved to the new poles), but in some areas, new poles could be further from existing poles to best support the system design (i.e., to remove existing angle points in the line).

Segments 650-1 and 650-2 are partially located on NFS lands managed by LTBMU, primarily along SR 267 northwest of Kings Beach. With Alternative 2, Segments 650-1 and 650-2 would be eliminated and the 650 Line would be constructed as a double-circuit configuration with the 625 Line in Segments 625-9 and 625-10; these segments are also located primarily within NFS lands managed by LTBMU. Under the Alternatives 1 and 4, Segment 650-4 would cross TNF land for approximately 0.25 mile in Martis Valley adjacent to the Northstar Golf Course, but this segment would be realigned outside of NFS lands under Alternatives 2 and 3. The portion of Segment 650-6 that traverses TNF land along Glenshire Road in the town of Truckee would be the same under each alternative.

ALTERNATIVE 1 (PEA ALTERNATIVE)

Segment 650-1

From the Kings Beach Substation, Segment 650-1 of Alternative 1 (PEA Alternative) would run north, generally to the east of the residences off of Commonwealth Drive. The alignment would span over 0.5 mile to north of the Commonwealth Drive/Cantebury Lane intersection before turning west for just over 0.5 mile to SR 267. The line would then parallel the east side of SR 267.

The portion of Segment 650-1 between the existing Kings Beach Substation and Brockway Substation would be removed. From the Kings Beach Substation, the segment trends in a generally southeast direction for approximately 0.2 mile, crosses Speckled Street, crosses Deer Street, and terminates at the Brockway Substation. This segment is configured with a distribution line underbuild, which would remain in place upon completion of the project.

Segment 650-2

The 650 Line would continue northwest for approximately 2 miles to cross the 625 Line near Brockway Summit. In this area, implementation of APM SCE-7 would result in the power line alignment being set back up to 200-feet farther from SR 267 than originally identified. The resulting setback is described in detail in the description of Segment D-C OH-2 for the Proposed Alternative.

Segment 650-4

The line would turn south for approximately 0.25 mile and cross SR 267. Segment 650-4 would then trend west across the Martis Creek Lake, crossing an approximately 40-acre NFS parcel managed by the TNF, and continuing west through the Martis Creek Lake for approximately 0.5 mile to intersect with the previously upgraded portion of the 650 Line.

ALTERNATIVE 2 (MODIFIED ALTERNATIVE)

Segment 650-1 Replaced by Segment 625-10 D-C OH-3

Segment 650-1 would not be included in this alternative because this segment would be built as a double circuit with the 625 Line along the new alignment of the 625 Line.

Segment 650-2 Replaced by Segment 625-9 D-C OH-4

Segment 650-2 would not be included in this alternative because this segment would be constructed as a double circuit with the 625 Line along the new alignment of the 625 Line.

Segment 650-6

This segment would follow the same alignment as Alternative 1 (PEA Alternative), discussed above.

ALTERNATIVE 3 (ROAD FOCUSED ALTERNATIVE)

Segment 650-1 D-C OH-1

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-1. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-10 from this alternative.

Segment 650-1 D-C OH-1A (Alternative 3A)

Under Alternative 3A (Road Focused Alternative with Double Circuit Option), Segment 650-1 would deviate from the alignment of Alternative 1 (PEA Alternative) to instead follow along SR 267. The double-circuit option would realign the power line along SR 267 to Speckled Street and then along Speckled Street. With this subalternative, the existing, unrelated distribution and communication lines that run along SR 267 in Kings Beach, between Commonwealth Drive and Speckled Street and between Speckled Street and Deer Street, would be transferred to the double circuit poles to the extent feasible. It is expected that most, if not all, of these poles could be removed. Some poles may be associated with service drops or communication taps, in which case specific poles may need to remain in place. Similarly, with this option existing underbuild on the stretch of the 650 Line leading away from SR 267 and to the Kings Beach Substation would remain and the poles would be topped to a height of about 40 feet above ground surface.

Segment 650-2 D-C OH-2

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-2. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-9 from this alternative. In this area, implementation of APM SCE-7 would result in the power line alignment being set back up to 200 feet farther from SR 267 than originally identified. The resulting setback is described in detail in the description of Segment 650-2 D-C OH-2 for the Proposed Alternative.

Segment 650-6

This segment would follow the same alignment and would have the same characteristics as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

ALTERNATIVE 4 (PROPOSED ALTERNATIVE)

Segment 650-1 D-C OH-1

This segment follows the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-1. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-10 from this alternative.

The portion of Segment 650-1 between the existing Kings Beach Substation and Brockway Substation would be removed. From the Kings Beach Substation, the segment trends in a generally southeast direction for approximately 0.2 mile, crosses Speckled Street, crosses Deer Street, and terminates at the Brockway Substation. This segment is configured with a distribution line underbuild that would remain in place upon completion of the project.

Segment 650-2 D-C OH-2

This segment, as initially considered, follows the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-2. Under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-9 from this alternative. To minimize the scenic effects of new double-circuit poles along SR 267 in this area, APM SCE-7 has been incorporated into the project and is considered part of Alternative 4 (Proposed Alternative). APM SCE-7 reads:

In cases where replacement poles for the 650 Line are adjacent to SR 267 and will be visible in unobstructed foreground public views from the roadway, poles will be carefully sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin as compared to the existing 650 Line without causing new visual impacts from tree removal or construction of access ways that will be required to erect and maintain the line. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.

With APM SCE-7, replacement poles for the 650 Line would be sited further from SR 267 to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line.

Segment 650-4

The line would turn south for approximately 0.25 mile and cross SR 267. The Proposed Alternative would then trend west across the Martis Creek Lake area, crossing an approximately 40-acre NFS parcel managed by the USFS Tahoe National Forest, and continue west through Martis Creek Lake for approximately 0.5 mile to intersect with the previously upgraded portion of the 650 Line (Segment 650-5).

2.1.3 Substations

There are no substations on NFS lands; however, construction at the Tahoe City Substation would require a temporary work area outside of the existing fence line on an adjacent NFS land parcel managed by the Lake Tahoe Basin Management Unit (LTBMU). In order to upgrade the substation

while maintaining distribution capabilities, portable (temporary) transformers would be required during construction and would be connected to the 625 Line or 629 Line (a separate line in the looped system extending from Tahoe City to Squaw Valley that has already been upgraded to 120 kV capacity under a separate project) using temporary poles. These transformers would be located on the NFS parcel (i.e., the 64-Acre Recreation Site) immediately to the south of the Tahoe City Substation. The portable transformers would be mounted on two trailers, measuring 8 feet wide by 40 feet long. The temporary poles would be similar to the existing 60 kV poles. Upon completion of the Tahoe City Substation upgrade, these temporary poles and transformers would be removed and the 625 and 629 Lines would be connected to the permanent, new transformers.

2.1.4 Permanent Right-of-Way Requirements

CalPeco currently holds easements from the USFS, the U.S. Army Corps of Engineers (USACE), Placer County, and various other public and private landowners that own properties crossed by the existing 625 and 650 Lines. The widths of the existing easements on these lands vary, but on average are approximately 30 feet wide. These easements would be improved for the 625 and 650 Electrical Line Upgrade Project. CalPeco would negotiate with the existing landowners to obtain a permanent easement of 40 feet for the new 625 Line and rebuilt 650 Line for operation and maintenance purposes.

For segments of Alternatives 2, 3, 3A, and 4 where a double-circuit option is being considered (i.e., both the 625 Line and 650 Line placed on the same poles) (Exhibit 1, Appendix B) a permanent easement of 65 feet would be pursued. The wider easement is desired for double-circuit options because equipment damage from tree fall, wildfire, or other events could cause failure in two lines simultaneously and significantly affect service in the whole North Lake Tahoe Transmission System. Allowing vegetation management in a wider easement would better protect the double-circuit lines from damage and help maintain system reliability and continuity of service.

2.1.5 Temporary Right-of-Way Requirements

To accommodate construction, 65-foot-wide temporary easements would be established for the new 625 Line and 650 Line rebuild. All disturbances created outside of the permanent 40-foot-wide easement described above would be temporary and the land would be restored to its original conditions following construction, unless otherwise requested by the landowner or land management agency. For double-circuit options, all construction activity would occur within the desired 65-foot permanent easement.

POLE WORK AREAS

To accommodate construction equipment and activities, work areas surrounding each pole location would be cleared of vegetation and graded as necessary to provide a safe work area. Each angle pole (where there is a turn in the line) would require an approximately 0.5-acre work area measuring approximately 65 feet by 335 feet; each tangent pole (where the line continues in a straight path) would require an approximately 0.25-acre work area measuring approximately 65 feet by 170 feet. Pole work areas would typically be accessed by truck using existing access roads or new spur roads and the power line ROW. In areas where the terrain is too rugged for truck access, crews would use all-terrain vehicles or hike in by foot to access the pole sites.

An additional temporary work area may be required in instances where anchors would be installed outside of the temporary ROW. In these instances, a work area up to 15 feet wide and 50 feet long, extending from the ROW to the anchor location, would be established to provide access for the construction equipment and crew.

STRINGING SITES

Multiple stringing sites would be required during the removal and installation of the conductors. In general, stringing sites would be approximately 300 feet in diameter and would be spaced at a distance between approximately 500 feet and approximately 8,000 feet apart. Stringing sites require a relatively flat surface; therefore, they would need to be cleared and may need to be graded to allow for safe equipment operation. Site preparation would require heavy equipment for removing obstacles (e.g., large rocks, trees, brush). Vegetation would be removed, as necessary, to provide safe and efficient work areas. Mowing or grubbing would be the preferred method for clearing vegetation.

STAGING AREAS

Three staging areas proposed for use during construction are located on LTBMU land (Kings Beach, Former Batch Plant, and Fiberboard Freeway). There are no staging areas proposed on TNF land.

The Kings Beach Staging Area is located just north of the Kings Beach Substation and is accessed using an existing dirt access road located at the end of Canterbury Drive. Activity at this location would be restricted to the previously disturbed area. The vegetation within the planned staging area mainly consists of bunch grasses and scattered Jeffrey pines under 10 feet in height, and has a light infestation of cheatgrass and a moderate woolly mullein infestation. The Kings Beach Staging Area would be used for material storage and equipment staging. In order to prepare this staging area, minor improvements to the existing access road—including the removal of approximately 10 trees—would be required and a temporary fence would be installed around its perimeter.

The Former Batch Plant Staging Area is located approximately 300 feet north of the new 625 Line (near Segment 625-4) and is accessed from Mount Watson Road. This approximately 120-foot by 80-foot (0.2 acre) area is disturbed and has little natural vegetation. The surrounding area's primary vegetation type is red fir (*Abies magnifica*) forest. The Former Batch Plant Staging Area would be used to store and stage material and equipment, and may also be used for logging activities related to the project. Vegetation and brush present would be cleared and approximately 30 trees would be removed to prepare this staging area for use.

The Fiberboard Freeway Staging Area is located approximately 200 feet east of the new 625 Line (near Segment 625-3) and is accessed from Mount Watson Road. This approximately 200-foot by 100-foot (0.5 acre) area is disturbed, but has some vegetative cover. The vegetation on site is dominated by mountain whitethorn (*Ceanothus cordulatus*) with scattered pines. The Fiberboard Freeway Staging Area would be used to store and stage material and equipment, and for logging operations related to the project. Vegetation and brush would be cleared and approximately five trees would be removed to prepare this staging area for use.

2.1.6 Access and Spur Roads

The electrical line ROWs would primarily be accessed through the use of existing, paved municipal roadways and paved and dirt USFS system roads. Existing paved and dirt access roads vary in width

from approximately 8 to 10 feet. Additional access ways would need to be developed to facilitate access from existing roads to the power line ROWs for construction and later inspections, maintenance, and repairs. For the purpose of this assessment, all roads used to access the site are termed “access ways.”¹ Access ways include existing paved roads, existing dirt roads, and new dirt roads and “two-track” pathways that would be developed for the project. Where access ways would be on slopes greater than 20 percent, a wider access way would require grading, as discussed below.

Some existing dirt roads would require some modification to support their use during project construction. In most instances, the improvement or modification would consist of removing rocks and logs that may have fallen onto the road and trimming brush, branches, and other vegetation encroaching on the roadway to provide sufficient width and clearance to allow construction vehicles (e.g., cable trucks, tensioning trucks) to pass. In some instances, water bars (an interceptor dyke that is used to prevent erosion on sloping roads) and other features that might obstruct use by construction vehicles would be removed and then replaced after the construction process is complete. After completion of construction, no further work on these existing dirt roads is proposed. Roads damaged during construction (e.g., if deep ruts or potholes were created), would be repaired to pre-project conditions prior to project completion.

A majority of the mileage of new access ways would be within the power line ROWs providing “centerline access routes.” The centerline access routes would be approximately 10-foot wide, and although “centerline” is in the category title, in reality the route would move back and forth within the power line ROW, going on either side of power poles, avoiding boulders and other barriers, and responding to topography. In addition, turnouts (30-foot wide) would be needed approximately every 1,000 feet for vehicle passing. The power line ROWs would initially be cleared of trees and shrubs as part of project construction. Mowing or grubbing would be the preferred method for removal of low growing vegetation. Larger trees would be cut. In areas of very rough terrain, vegetation removal would be limited to brush clearing to allow for safe access by all-terrain vehicles. After completion of construction, the centerline access routes would be maintained in low growing vegetation for erosion control while allowing over-land vehicle travel by line trucks and inspection trucks (i.e., pickup trucks).

New access ways outside the power line ROW would be similar to centerline access routes in all respects except for location. They would first be developed during project construction to support construction vehicle access to the ROW. Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW. In instances where existing topography and vegetation allow vehicle access to the ROW without development of a spur

¹ The criterion for defining a road varies by the agency with jurisdiction. Each land manager or owner may have different requirements for design, construction, maintenance, and use. TRPA Code defines “road” as a smooth or paved surface designed for travel by motor vehicles. In general, the impacts are assessed based on the coverage of the road surface. The project does not include the construction of any new paved roads. Roads on NFS lands described for this project are either temporary or permanent. Temporary Roads are built to facilitate the construction of the project. They are completely restored at the conclusion of construction and no longer used or open to vehicles. Permanent Roads would be included as part of the National Forest road system. They are classified in five levels from Maintenance Level 1 (basic custodial care, closed to vehicles) to Maintenance Level 5 (high comfort; passenger car). This project includes the use of roads that are already included in the NF (e.g., Fiberboard Freeway) and construction of new roads. New roads may be both completely new construction or may utilize portions of old legacy roadways. For this project, new roads, which include any road not previously part of the National Forest road system, are assumed for analysis to be Maintenance Level 2, to facilitate the long term operational and maintenance needs of the project. Given the different uses and definitions of the term “road,” the term “access way” is used in this document to encompass the various types of facilities that may provide vehicle access. The term “access way” is not specifically defined by any of the lead agencies, but is used herein to describe a route within the project area (that may or may not require widening or clearing), which is required for construction and /or operation of the project. For the purpose of this document, access ways include several categories of routes, including existing dirt roads, NFS roads, existing roads and trails that are not part of a formal designated travel system, new dirt roads constructed as part of the project, and existing and new “two-track” pathways intended for power line operations and maintenance access. Calculations of required access way mileage for each alternative are estimates based on preliminary engineering.

road/new access way, no travel way would be developed and inspection and maintenance vehicles would drive over the existing ground surface. Trees and shrubs would be removed during construction to create an approximately 10-foot wide access way. After completion of construction, the new access way would be maintained in low growing vegetation to allow over-land vehicle travel for inspection and maintenance (Road Maintenance Level 2 per the Forest Service Handbook 7709.58, 10, 12.3). Proposed new and improved access ways and roads located on NFS lands are summarized by Forest in Tables 1 and 2.

Table 1 New and Improved Access Ways and Roads within the LTBMU

Access	Alternative 1 PEA Alternative (miles)		Alternative 2 Modified Alternative (miles)		Alternative 3 Road Focused Alternative (miles)		Alternative 3A Road Focused Alternative with Double Circuit Option (miles)		Alternative 4 Proposed Alternative (miles)	
	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW
New Access Way	14.8	6.4	12.2	5.6	4.4	1.3	3.9	1.2	4.4	1.3
Improved Road	0.5	0.5	0.5	0.5	-	-	-	-	-	-
Total	15.3	6.9	12.7	6.1	4.4	1.3	3.9	1.2	4.4	1.3

Source: Ascent Environmental

Table 2 New and Improved Access Ways and Roads within the TNF

Access	Alternative 1 PEA Alternative (miles)		Alternative 2 Modified Alternative (miles)		Alternative 3 Road Focused Alternative (miles)		Alternative 3A Road Focused Alternative with Double Circuit Option (miles)		Alternative 4 Proposed Alternative (miles)	
	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW
New Access Way	0.8	0.7	1.1	0.4	0.2	-	0.2	-	0.2	-
Improved Road	-	-	-	-	-	-	-	-	-	-
Total	0.8	0.7	1.1	0.4	0.2	0	0.2	0	0.2	0

Source: Ascent Environmental

In locations where the slope is estimated to be greater than 20 percent and it is assumed that some grading would be necessary to create a suitable access way (either within or outside the power line ROW) that can be traveled by maintenance and inspection vehicles. In particularly steep areas, the new access way would likely require switch back roadways to provide moderate grades and generally level cross-slopes, and would result in a noticeable change in the topography. New access ways requiring grading/earth moving due to terrain would be approximately 10 feet wide for straight sections and up to 25 feet wide at curves to safely allow the movement of construction equipment and vehicles to each site. Cut and fill slopes would disturb a wider area.

Typically, each access way requiring grading/earth moving would first be cleared of vegetation and graded by a bulldozer. A motor grader would then level the access way in accordance with the

engineered specification. Erosion control best management practices (BMPs) (e.g., water bars) would also be installed to address erosion control and water quality protection concerns. Gravel would not typically be placed on these roadways. However, it may be applied where a dirt access way intersects a paved public road to minimize the potential for dirt and mud being tracked onto public roadway. Gravel may also be applied as an erosion control BMP, if appropriate. The new access way would then be revegetated with low growing vegetation and maintained as described above for other access ways, except where BMPs would not allow for revegetation.

The new access ways would not be intended for public access. Where new access ways connect to, or cross, existing roads or trails, barriers to access, such as boulders or gates would be placed at the entrance to the access way. During maintenance and inspection activities any evidence of public use would be noted, and public access barriers would be adjusted, if needed.

2.2 CLEAN-UP AND POST-CONSTRUCTION RESTORATION

Surplus material, equipment, and construction debris would be removed at the completion of construction activities. All man-made construction debris would be removed and recycled or disposed of at permitted landfill sites, as appropriate. Cleared vegetation would either be chipped and stored on the ROW for later use during reclamation or disposed of off-site, depending on agency agreements.

All areas that are temporarily disturbed around each pole, as well as areas used for conductor stringing, staging, and temporary vehicle access would be restored to preconstruction conditions, to the extent practicable, following construction. This would include returning areas to their original contours and reseeding in accordance with USFS guidelines. Unless otherwise requested by the USFS, existing access roads on NFS land that have been widened would be returned to their preconstruction widths and USFS approved seed mixes would be applied to disturbed areas. CalPeco would attempt to close or restrict vehicle access to areas that would not remain open to the public or that have been seeded until the reclamation success criteria have been achieved. Rocks removed during access way grading and foundation excavation would be redistributed over the ROW to resemble adjacent site conditions.

2.3 OPERATIONS AND MAINTENANCE

Current operations and maintenance activities would continue with implementation of the action alternatives. These activities include annual patrol of electrical lines and patrols of the lines in the event of unexplained outages or significant natural incidents (such as fire, flood, or electrical storms), to inspect and repair damage on an as-needed basis. Separately from these patrols, CalPeco's vegetation management staff conducts an annual hazard tree inspection, in conjunction with a California Registered Forester. Inspections are conducted using helicopters, all-terrain vehicles, and/or line trucks.

The inspections involve a visual review of the line along a path that is roughly parallel to the centerline and along existing access roads. Vegetation management activities include tree and vegetation trimming or removal to maintain the 40-foot-wide easement, and 65-foot-wide easement in the case of the double-circuit options, in accordance with CPUC General Order 95, Rule 35 and California Public Resources Code Section 4293. Hazard trees (dead, dying, diseased, decaying, or bug-infested trees that could damage system facilities if they were to fall) are also to be removed as part of these vegetation management activities.

2.4 LOCATION AND EXTENT

The proposed CalPeco 625 and 650 Electrical Line Upgrade Project is located in northeastern Placer County and southeastern Nevada County, California (Exhibit 1, Appendix B). The project components are predominantly located on lands managed by the Forest Service; these lands are located in the TNF and in the LTBMU. The project also spans the Town of Truckee and the communities of Kings Beach and Tahoe City, as well as the Martis Creek Lake Recreation Area managed by the U.S. Army Corps of Engineers (USACE). Land use in the project area is predominantly forested, with segments of residential, industrial, and tourism-related uses where the project components enter more developed communities. A project overview map showing the location of each project component and alternative is provided in Exhibit 1, Appendix B. This map also shows the extent of NFS lands traversed by the project, and identifies how each line has been divided into numbered segments.

2.4.1 Legal Land Description

Segments of the project on NFS lands are located in Township 15N Range 16E Sections 1 and 12, Township 15N Range 17E Section 7, Township 16N Range 16E Sections 13, 23, 24, 26, and 35; Township 16N Range 17E Sections 1-3, 8-10, 12, and 16-18; Township 16N Range 18E Section 18; Township 17N Range 16E Section 11; and Township 17N Range 17E Section 30 of the Mt. Diablo Meridian (21).

3 NON-PROJECT DEPENDENT FACTORS

3.1 INVENTORY

3.1.1 Surveys and existing data

Reconnaissance-level surveys for invasive plants were completed for the CalPeco 625 and 650 Electrical Line Upgrade Project on June 19 and 20, 2012 and July 11, 12, and 13, 2012 by Ascent biologists Tammie Beyerl, Heather Valentine, and Steve Henderson and on July 11 through July 14, 2012 by POWER Engineering biologists Ken McDonald and Tom Herzog. The IPRA project area primarily covered a 200-foot-wide corridor centered on the proposed alignments (i.e., the area within 100 feet of the centerline of the power line alignment), new access roads, and improved access roads; however, for project access roads that would not need improvement, the project area encompassed the area within 50 feet of the road centerline. The project area defined for this report is the same as the project area defined in the EIS/EIS/EIR prepared for the project. Invasive plant species encountered in the project area were mapped on 1 inch = 400 feet scale aerial base maps or digitally recorded with a global positioning system (GPS) and are depicted in Appendix B and C. Weed polygons mapped in the field were subsequently digitized into a geographic information system (GIS) data layer. As this was a reconnaissance-level survey, weeds were mapped in polygons representing general areas of infestation and, therefore, weed polygon boundaries are not precise. Each weed infestation mapped was assigned a percent relative cover class as follows:

- ▲ < 10% relative cover (small scattered occurrences)
- ▲ 10 to 50% relative cover (moderate infestation)
- ▲ > 50% relative cover (heavy infestation)

Surveys identified the location of plants included on the LTBMU Invasive Plants of Management Concern list and the TNF Eastside Non-native Invasive Plants of Concern list (Appendix A). Additionally, staff from the TNF and LTBMU provided Ascent with GIS shapefiles showing locations of known invasive plants on NFS lands in the project vicinity. An analysis area consisting of a 1 mile buffer from the centerline of IPRA project area components located on National Forest System (NFS) land was used to identify known infestations that could be affected by project activities. Infestations within the analysis have the potential to be spread onto NFS lands. Conversely, infestations on NFS lands could be spread to the analysis area.

3.1.2 Assessment summary

The 200 foot wide corridor used for the field surveys assessed both the area disturbed by the proposed project (typically a 65 foot wide temporary disturbance area) as well as the general forest for over 65 feet on either side. This survey, combined with the data for known populations of invasive plants within the analysis area is adequate to complete this IPRA.

3.2 KNOWN INVASIVE PLANTS IN ANALYSIS AREA

Seven previously documented invasive plant species were found on NFS lands managed by the LTBMU within the IPRA project area or analysis area. These species are bull thistle (*Cirsium vulgare*), Klamath weed (*Hypericum perforatum*), Dyer's woad (*Isatis tinctoria*), broadleaved pepperweed (*Lepidium latifolium*), oxeye daisy (*Leucanthemum vulgare*), butter and eggs (*Linaria vulgaris*), and Eurasian water milfoil (*Myriophyllum spicatum*). An additional four invasive plant species were identified in the IPRA project area either on or in very close proximity to NFS lands during reconnaissance surveys; these species are: cheatgrass (*Bromus tectorum*), poison hemlock (*Conium maculatum*), Dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*), and woolly mullein (*Verbascum thapsus*). Two other invasive plant species, Scotch broom (*Cytisus scoparius*) and Scotch thistle (*Onopordum acanthium* ssp. *acanthium*), were identified in the IPRA project area during surveys; however, these infestations were not located on NFS lands or immediately adjacent to these lands. The locations of known populations of invasive plant species on or in close proximity to NFS lands, including those previously recorded by the USFS and those identified during project reconnaissance surveys, are shown Appendix C. These maps also indicate the percent relative cover class of each infestation. Appendix B provides an overview of all documented invasive plant infestations in the project area and surrounding areas.

Summary of known infestations in analysis area

Table 3 Invasive Plant Species within the Project Area (Botany Analysis Area)						
Species	Common Name	CDFA Rating ¹	Cal-IPC Rating ²	Number of sites within:		
				Project Area (FS)	Project Area (Non-FS)	Botany Analysis Area
<i>Bromus tectorum</i>	cheatgrass	B	Moderate	4	22	
<i>Carduus nutans</i>	Nodding plumeless thistle	A	Moderate			1
<i>Cirsium vulgare</i>	Bull thistle	-	Moderate	8	—	6
<i>Conium maculatum</i>	Poison hemlock	-	Moderate	—	1	—
<i>Cytisus scoparius</i>	Scotch broom	C	—	—	1	1

Table 3 Invasive Plant Species within the Project Area (Botany Analysis Area)

Species	Common Name	CDFA Rating ¹	Cal-IPC Rating ²	Number of sites within:		
				Project Area (FS)	Project Area (Non-FS)	Botany Analysis Area
<i>Hypericum perforatum</i>	Klamath weed	C	Moderate	—	2	3
<i>Isatis tinctoria</i>	dyer's woad	B	Moderate	—	1	—
<i>Lepidium latifolium</i>	broadleaved pepperweed	B	High	2	—	—
<i>Leucanthemum vulgare</i>	oxeye daisy	-	Moderate	2	—	2
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	Dalmatian toadflax	A	Moderate	—	1	1
<i>Linaria vulgaris</i>	butter and eggs		—	3	1	5
<i>Myriophyllum spicatum</i>	Eurasian water milfoil	C	High	1	—	—
<i>Onopordum acanthium</i> ssp. <i>acanthium</i>	Scotch thistle	A	High	—	1	1
<i>Verbascum thapsus</i>	wooly mullein		—	1	3	—
TOTAL				21	35	19

Notes:

¹ CDFA ratings - A-listed weeds: eradication or containment is required at the state or county level; B-listed weeds: eradication or containment is at the discretion of the County Agricultural Commissioner; C-listed weeds: eradication or containment required only when found in a nursery or at the discretion of the County Agricultural Commissioner. (California Department of Food and Agriculture 2009)

² Cal-IPC ratings- High: attributes conducive to moderate to high rates of dispersal and establishment; usually widely distributed among and within ecosystems. Moderate: impacts substantial and apparent, but not severe; attributes conducive to moderate to high rates of dispersal; distribution may range from limited to widespread. Limited: ecological impacts are minor or information is insufficient to justify a higher rating, although they may cause significant problems in specific regions or habitats; attributes result in low to moderate rates of invasion; distribution generally limited, but may be locally persistent and problematic. (California Invasive Plant Council 2010)

Source: Ascent 2012, TNF 2012, LTBMU 2012

3.2.1 Cheatgrass (*Bromus tectorum*)

SPECIES DESCRIPTION AND SUMMARY OF MANAGEMENT OPTIONS

Cheatgrass is a weedy annual grass that is widespread across the Great Basin and has begun to invade the Lake Tahoe Basin. It is common on lower mountain slopes but can occur as high as 9,000 feet. Cheatgrass can be found in disturbed roadside habitats such as cut banks and road medians and is spread by attaching to fur, clothing, or equipment; by wind; or by livestock and wildlife. Cheatgrass may displace native vegetation (especially during the seedling stage), and can affect the frequency, extent, and timing of wildfires (USFS 2010).

Cheatgrass has a Cal-IPC threat rating of “High” but is rated as a low priority (control) for the LTBMU. Within the LTBMU, the primary focus for this species is to prevent further spread where possible through management practices including a combination of chemical control, cultural control, seeding perennial grasses, and proper land management (USFS 2010). On the TNF, this species is too common to map or treat.

3.2.2 Assessment summary

There are four infestations of Cheatgrass within the NFS portion of the project area. All of these infestations are light (>10% total cover of cheatgrass). Refer to Exhibits C.1 through C.3 in Appendix C for infestation locations. There are 22 infestations of cheatgrass within the project area outside of NFS lands.

Infestations in disturbance areas will be treated prior to ground disturbance. The goal of this treatment is to prevent the spread of cheatgrass. For infestations outside of NFS lands, the treatment strategy will be developed in coordination with the appropriate landowner. Weed cleaning stations will be established to remove weed seeds and materials from construction equipment upon exiting infested areas.

3.2.3 Nodding plumeless thistle (*Carduus nutans*)

Nodding plumeless thistle (also commonly known as musk thistle) is a biennial or winter annual found in disturbed open areas and roadsides. It can grow to over six feet tall, has a long taproot, and is a prolific seed producer (USFS 2010).

Nodding plumeless thistle has a Cal-IPC threat rating of “Moderate” but is rated as a high priority for both the LTBMU and the TNF with a goal of eradication.

ASSESSMENT SUMMARY

There is one infestation of nodding plumeless thistle located outside of the project area but within the analysis area. This is a known infestation that is actively managed by the LTBMU. No treatment is planned as a part of this project.

3.2.4 Bull thistle (*Cirsium vulgare*)

Bull thistle is a coarse biennial, reproducing only by seed, and dying following seed set. Manual eradication is possible for small populations. It is very common throughout the LTBMU and can colonize relatively undisturbed grasslands and meadows as well as more disturbed areas (USFS 2010).

The Cal-IPC threat rating for bull thistle is “moderate.” On LTBMU, bull thistle is a moderate priority weed, with a goal of control; treatment methods may include manual or mechanical treatment. On TNF, this weed is too common to map and treat.

ASSESSMENT SUMMARY

There are eight infestations of bull thistle within the NFS portions of the project area. Six other infestations have been documented within the analysis area. Refer to Exhibits C.2 through C.5 in Appendix C for infestation locations. The majority of the infestations are located along segment 625-1, along the Truckee River.

Infestations in disturbance areas will be treated prior to ground disturbance in accordance with current USFS treatment guidelines. The goal of this treatment is to prevent the spread of bull thistle

and to eradicate small infestations where possible. For infestations outside of NFS lands, the treatment strategy will be developed in coordination with the appropriate landowner. A weed cleaning station will be established to remove weed seeds and materials from construction equipment upon exiting the segment 625-1 area.

3.2.5 Scotch Broom (*Cytisus scoparius*)

Scotch broom is a perennial shrub which prefers dry sandy soils, and sunny sites. This weed crowds out native species, has a seedbank that can remain dormant for 80 years, and increases the risk of wildland fires (Cal-IPC 2014).

The Cal-IPC threat rating for Scotch broom is “high” and it is a moderate priority weed on the LTBMU with a goal of eradication (USFS 2010). On the TNF, Scotch broom is a low priority species but is actively treated where practical. All methods of control can be used with this species.

ASSESSMENT SUMMARY

There is one infestation of Scotch broom segment 650-1 (see Exhibit C.3 in Appendix C) and another infestation on NFS lands within the analysis area near segment 625-1 (see Exhibit C.5 in Appendix C). If possible, the infestation along segment 650-1 will be treated for control in coordination with the landowner. If treatment is not possible, the site will be flagged and avoided.

3.2.6 Klamathweed (*Hypericum perforatum*)

Klamathweed was introduced from Europe in the 1700s and had infested nearly two million acres of rangelands in California. Biological control was later used to eliminate most populations below 4900 feet elevation. Klamathweed is a perennial, with thick taproots and many branched, lateral roots up to five feet deep. This plant reproduces from both seeds and rhizomes.

Klamathweed has a Cal-IPC threat rating of “moderate.” Within the LTBMU the priority is generally low with a goal of control. On the TNF, Klamathweed is a low priority (“C”) but is actively hand treated when practical. All methods of control can be used with this species.

ASSESSMENT SUMMARY

There are two infestations of Klamathweed in non-NFS portions of the project area (refer to Exhibits C.1 and C.2 in Appendix C). Both are small, roadside infestations and will be treated for control with the approval of the appropriate landowner.

3.2.7 Dyer’s woad (*Isatis tinctoria*)

The aggressive dyer’s woad is a member of the mustard family and is native to southeastern Russia. Dyer’s woad is a winter biennial or short lived annual herb. Plants are highly competitive and often grow in dense colonies (Cal-IPC 2014). It invades both disturbed and undisturbed areas, but is most common in dry, rocky areas (USFS 2010).

Dyer's woad has a Cal-IPC threat rating of "Moderate." In the LTBMU this is a high priority weed with a goal of eradication. On the TNF, dyer's woad is a moderate priority ("B") and should be treated if practical. All methods of control are appropriate for this species.

ASSESSMENT SUMMARY

There is one infestation of Dyer's woad along SR 267 and segment 650-2 (Exhibit C.2, Appendix C). This infestation will be treated with an approved herbicide or manually prior to the start of construction in coordination with the appropriate landowner. The goal of this treatment is to prevent the spread of Dyer's woad.

3.2.8 Broadleaved pepperweed (*Lepidium latifolium*)

Broadleaved pepperweed is an aggressive perennial which forms dense colonies. It spreads by seeds as well as by rhizomes and adventitious shoots. This species can grow at altitudes of 4000 to 8,000 feet and invades moist to wet ecosystems (USFS 2010).

Broadleaved pepperweed has a Cal-IPC threat rating of "High" and is also a high priority with a goal of eradication within the LTBMU. On the TNF, this species is a moderate priority and should be actively treated if practical. Mechanical removal is ineffective with this species because new plants continue to sprout from deep roots and fragments (USFS 2010).

ASSESSMENT SUMMARY

There are two infestations of broadleaved pepperweed within the NFS portion of the project area (Exhibits C.2 and C.5 in Appendix C). These infestations are outside of the disturbance area, are along existing paved roads and are known and actively managed by the LTBMU. Prior to construction, these infestations will be treated for control in accordance with the current USFS guidance.

3.2.9 Oxeye daisy (*Leucanthemum vulgare*)

Oxeye daisy was introduced to the U.S. as an ornamental and is still widely planted. This perennial herb produces up to 26,000 seeds per plant and can germinate within 10 days (USFS 2010). Meadow infestations impact forage for wildlife since the plant irritates the nose and mouth of grazing animals.

Oxeye daisy has a Cal-IPC threat rating of "moderate." Within the LTBMU the priority is generally low with a goal of eradication. On the TNF, oxeye daisy is uncommon and is not rated but is treated when practical. All methods of control can be used with this species.

ASSESSMENT SUMMARY

There are two infestations of oxeye daisy within the NFS portion of the project area. The smaller infestation is located adjacent to an access road and outside of the disturbance area (see Exhibit C.4 in Appendix C). The larger of the two infestations is a known infestation along the Truckee River which is actively managed by the LTBMU. Both infestations would be treated prior to construction in accordance with current USFS guidance. A weed cleaning station will be established to remove weed seeds and materials from construction equipment upon exiting the segment 625-1 area.

3.2.10 Dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*)

Dalmatian toadflax is an escaped ornamental which reproduces aggressively both by seeds and vegetatively (USFS 2010). This species prefers disturbed areas can form large colonies which displace desirable vegetation (Cal-IPC 2014). The deep root system and waxy leaves can make this species difficult to control.

The Cal-IPC threat rating for Dalmatian toadflax is “Moderate.” Within the LTBMU and TNF this species is a High priority with a goal of eradication. All methods of control are appropriate for this species.

ASSESSMENT SUMMARY

There is one light infestation of Dalmatian toadflax within the non-NFS portion of the project area (see Exhibit C.4, Appendix C). This infestation will be hand pulled or treated with an approved herbicide prior to the start of construction in coordination with the appropriate landowner. An additional infestation is located in the analysis area near Tahoe City. This infestation is outside of the project area and no treatment is planned.

3.2.11 Butter and eggs (*Linaria vulgaris*)

Butter and eggs (also known as yellow toadflax) is an herbaceous perennial plant. The plant reproduces by seed and rhizomes. While most new infestations are started by seeds, spread of established infestations is mostly vegetative (USFS 2010). The ability to quickly re-grow from soil protected roots enables this species to expand rapidly in post-fire plant communities.

The Cal-IPC threat rating for butter and eggs is “Moderate.” Within the LTBMU this species is a High priority with a goal of eradication. Butter and eggs is uncommon on the TNF but is treated if practical. Clipping and Hand pulling of this species has proven to be ineffective as the plant quickly re-sprouts and sets seed at short heights (USFS 2010).

ASSESSMENT SUMMARY

There are three infestations of butter and eggs within the NFS portion of the project area near segment 625-1 in Tahoe City. One of these infestations extends onto adjacent non-NFS lands (see Exhibit C.5, Appendix C). These are known infestations and are actively managed by the LTBMU. The portions of the infestations that are within the project area would be treated for control prior to construction in accordance with current USFS guidance. A weed cleaning station will be established to remove weed seeds and materials from construction equipment upon exiting the segment 625-1 area.

3.2.12 Eurasian water milfoil (*Myriophyllum spicatum*)

Eurasian water milfoil is a common submersed aquatic perennial. It grows stems and branches that can be up to 20 feet long, with an average size of six to eight feet. It can be found in freshwater lakes, ponds, and canals with slow moving water. It grows and spreads rapidly, creating dense mats on the water surface which out-compete native aquatic plants (Cal-IPC 2014).

Eurasian water milfoil has a Cal-IPC threat rating is “high.” This species is targeted by the Aquatic Invasive Weed program within the LTBMU. On the TNF Eurasian water milfoil is uncommon but is treated when practical. Mechanical removal and mowing can spread infestations, however physical removal of the root system is effective and herbicides are available.

ASSESSMENT SUMMARY

An infestation of Eurasian water milfoil occurs in the portion of the Truckee River crossed by the project area. Project activities in this area would span the river. No treatment is planned.

3.2.13 Scotch thistle (*Onopordum acanthium*)

Scotch thistle is an annual, biennial, or short lived perennial which reproduces only by seed. It has the ability to invade most habitats and can germinate year round. Scotch thistles produce 20,000 to 40,000 seeds per plant and plants can reach eight feet in height (USFS 2010). Infestations can reduce forage and impeded movement of wildlife

The Cal-IPC threat rating for this species is “high.” In both the LTBMU and the TNF Scotch thistle is a high priority species with a goal of eradication. All methods of control can for used with this species.

ASSESSMENT SUMMARY

One infestation of Scotch thistle is located along segment 625-2 on non-NFS lands. Assess the extent of the existing weediness of the project area. This infestation will be hand pulled or treated with an approved herbicide prior to the start of construction in coordination with the appropriate landowner. The goal of this treatment is to prevent the spread of Scotch thistle.

3.3 HABITAT VULNERABILITY

3.3.1 625 Line

The 625 Line alternatives are located primarily within the following native forest communities: red fir forest, red fir-white fir forest, Jeffrey pine forest, Jeffrey pine-white fir forest, and Sierran mixed conifer forest. The 625 Line alternatives also cross through montane riparian, montane chaparral, and meadow habitats. In general, native plant communities in the 625 Line study area are healthy and intact with very little existing disturbance and moderate to dense vegetative cover. Therefore, habitat vulnerability along the 625 Line is low, except in areas immediately adjacent to existing development in Kings Beach and Tahoe City, and along the shoulders of the Fiberboard Freeway. In these areas, habitat vulnerability is moderate due to the existing disturbance and resulting vegetation gaps. Weed infestations along the 625 Line are primarily located within Tahoe City where bull thistle, broadleaved pepperweed, oxeye daisy, butter and eggs, and water milfoil have all been documented.

The staging areas proposed for the 625 Line are moderately to highly disturbed, and habitat vulnerability is therefore moderate to high because past or ongoing disturbance has removed native vegetation and left bare soil and sunny openings in the tree canopy that provide suitable conditions for invasive plants. Staging areas proposed for the 625 Line comprise approximately 2.6 acres on

NFS lands managed by LTBMU. The Kings Beach Staging Area, which would be used for both the 625 Line and the 650 Line, is currently infested with cheatgrass and woolly mullein.

3.3.2 650 Line

The 650 Line would be constructed primarily outside of NFS lands; however, Segments 650-1, 650-2, 650-4, and 650-6 are located, at least partially, on NFS lands. Segments 650-1 and 650-2 are predominantly characterized by native forest communities; however, these communities are moderately disturbed, as they are located within the community of Kings Beach and along SR 267, these areas are generally subject to relatively high levels of human visitation and interference, as well as fuels management activities and road and utility line maintenance. Therefore, habitat vulnerability in these areas is moderate. Infestations of cheatgrass, Dyer's woad, Klamath weed, broad-leaved pepperweed, and bull thistle have all been documented along Segment 650-2 on NFS lands adjacent to SR 267 (Exhibit C.2, Appendix C).

Where Segment 650-4 traverses TNF land, the habitat is characterized by dry meadow, sagebrush scrub, and Jeffrey pine communities. Vegetation appears to be relatively undisturbed but vegetative cover is naturally low to moderate for these community types. No invasive plants were observed in this area, although cheatgrass is present nearby. Habitat vulnerability here is considered moderate because vegetative cover is low to moderate, there is an existing, heavily used footpath traversing the site, and the site is adjacent to a golf course and a residential neighborhood. Due to the trail and adjacent land uses, the area is subjected to low levels of disturbance on an ongoing basis.

The portion of Segment 650-6 that traverses TNF land is along a heavily disturbed roadway (Glenshire Drive). The predominant surrounding plant community is Jeffrey pine forest, but native cover is relatively low adjacent to the road and it is apparent that native vegetation was cleared in the past and the area was seeded with a wildflower mix. Cheatgrass is present in this area at a density of 10 to 50 percent relative cover and a patch of poison hemlock is present on the south side of Glenshire Road just outside of TNF land (Exhibit C.1, Appendix C). Habitat vulnerability is high due to the low vegetative cover, high level of disturbance, and existing invasive plant infestations.

3.3.3 Assessment Summary

The majority of the 625 line has low existing disturbance and low habitat vulnerability, however the 650 line has greater disturbance and moderate habitat vulnerability. In addition there are some pockets of highly vulnerable habitat along both lines. For these reasons, the overall habitat vulnerability of the project is moderate.

3.4 NON-PROJECT DEPENDENT VECTORS

The primary existing weed vectors within and around the project area, both for the 625 Line and the 650 Line, are the major roads the electric line alternatives follow, such as SR 267 and Glenshire Road; recreational use of the roads and trails in the project area, including the Fiberboard Freeway, Mount Watson Road, Martis Peak Road, and the Tahoe Rim Trail; and residential development. Recreationists and their dogs use the system of authorized and unauthorized trails and adjacent habitats for hiking, biking, cycling, and other activities. Attachment of weed seeds or propagules to vehicles, humans, pets, and wildlife is a primary means of weed dispersal through the project area. Residents adjacent to NFS lands sometimes plant invasive species, such as oxeye daisy and Scotch

broom, in their yards and also accidentally transfer weeds or seeds to their property in seed mixes, mulch, topsoil, and other landscaping materials, or attached to their clothes, pets, or vehicles. Weeds that become established on residential lots are easily spread to adjacent lands via wind, water, animals, or humans.

3.4.1 Assessment Summary

The non-project dependent vectors are considered moderate to high due to recreational use of the analysis area, including the Tahoe Rim Trail, Martis Valley trails, etc, as well as the existence of current utility corridors.

4 PROJECT-DEPENDENT FACTORS

4.1 HABITAT ALTERATION EXPECTED AS A RESULT OF THE PROJECT

Implementing the project would result in a 65-foot-wide disturbance corridor during construction and a 40-foot wide permanent electric line easement, or a 65-foot-wide permanent easement for double circuit options. Because the project would require extensive vegetation removal for new roads, road improvements, and construction of the new electric lines; overall habitat alteration as a result of the project is expected to be high. Topsoil would be salvaged and respread following construction, preconstruction contours would be approximated, and construction sites would be revegetated to help minimize habitat alteration.

Implementing Alternative 1 would result in removal or disturbance of approximately 143 acres of native vegetation cover from NFS lands. Alternative 2 would result in removal or disturbance of approximately 140 acres, while Alternatives 3, 3A, and 4 would result in removal or disturbance of approximately 91, 90, and 93 acres respectively. Implementation of Alternative 4 (Proposed Alternative) would result in removal or disturbance of 50 fewer acres of native vegetation from NFS lands than Alternative 1 (PEA Alternative) and 47 fewer acres than Alternative 2 (Modified Alternative), but would remove approximately 2 acres more than Alternative 3 (Road Focused Alternative), and 3 more acres than Alternative 3A (Road Focused Alternative with Double Circuit Option).

The risk of spreading invasive plants is greater under Alternative 1 (PEA Alternative) than under any of the other action alternatives because the other action alternatives would result in less ground disturbance and fewer acres of native vegetation removal. Alternative 2 would follow a straighter alignment in some segments, thereby reducing impact acreage compared to Alternative 1. Alternative 2 would also implement a double circuit option in Segments 625-9 and 625-10 rather than constructing the 625 and 650 Lines in two separate alignments. However, the double circuit option proposed under Alternative 2 would be constructed primarily on NFS lands (whereas Alternatives 3, 3A, and 4 would employ double circuit options that would be constructed primarily in developed areas along SR 267 and within residential areas).

The amount of native vegetation removed would be very similar under Alternative 3 (91 acres), Alternative 3A (90 acres), and Alternative 4 (93 acres), but substantially lower than under Alternative 1 or Alternative 2. Native vegetation removal would be slightly greater under Alternative 4 than under Alternatives 3 or 3A because Alternative 4 would cross through a TNF parcel in Martis Valley that would be avoided under Alternatives 3 and 3A by constructing Segment 650-4B along SR 267. In all

other respects, the disturbance footprint and weed risk impact would be the same under Alternative 4 as under Alternative 3.

Although implementing Alternative 3, 3A, and 4 would still involve substantial ground disturbance, with less ground disturbance and less loss of native vegetation cover, the potential for invasive plant species to become established is reduced. Therefore, potential impacts from invasive species are less under Alternative 3A than the other action alternatives because implementing Alternative 3A would result in the least amount of ground disturbance and native vegetation removal.

4.1.1 625 Line

Habitat alteration would be highest for Alternatives 1 and 2 because forest vegetation would be removed to construct new roads and improve existing roads in addition to creating a new 40-foot-wide permanent power line ROW within a 65-foot-wide construction corridor. Extensive vegetation clearing, tree removal, grading, and excavation would occur within the construction corridor for pole installation. Under Alternatives 1 and 2, new accessways would be created through relatively undisturbed forest in segments 625-9 and 635-10.

Habitat alteration would be high under Alternatives 3, 3A, and 4 as well, but would be less than under Alternatives 1 and 2. Because they would rely more heavily on existing roads, less acreage of vegetation removal for new and improved access roads would be required.

4.1.2 650 Line

Habitat alteration would be moderate because the new line would be constructed within the footprint of existing lines or along existing roadways and would rely primarily on existing roads for access. Rebuilding the 650 Line would still involve vegetation removal at new pole sites within a 65-foot construction corridor, but because the line would be installed primarily within the existing maintained ROW, the amount of vegetation removal and grading needed would be reduced as the existing ROW is already kept clear of trees and tall shrubs.

4.1.3 Assessment Summary

Because the project would require extensive vegetation removal for new roads, road improvements, and construction of the new electric lines; overall habitat alteration as a result of the project is expected to be high. Topsoil would be salvaged and respread following construction, preconstruction contours would be approximated, and construction sites would be revegetated to help minimize habitat alteration. The amount of habitat alteration would be the highest under Alternative 1, followed closely by Alternative 2. While Alternatives 3, 3a, and 4 would also result in substantial habitat alteration, it would be much less than the disturbance anticipated under Alternatives 1 and 2.

4.2 INCREASED VECTORS AS A RESULT OF PROJECT IMPLEMENTATION

Traffic on project access roads would be dramatically increased during construction and there is a high risk of invasive plants being introduced or spread to currently un-infested areas via construction equipment and personnel. Temporary increases in vectors during construction are common to both

lines and every alternative. Potential vector increases beyond the construction phase are discussed for each electric line below. Refer to tables 1 and 2 for the length of new and improved access ways and roads by alternative.

Although weed infestations would be treated prior to ground disturbance and cleaning stations would be established to removed weed seed and materials from equipment, disturbance of infestations could spread weed seeds to nearby areas. The acreage of weed infestations that would be directly intersected by ground disturbance is 7.85 acres for Alternatives 1, 3, 3a, and 4. For Alternative 2 (Modified Alternative) this amount would be reduced to 2.99 acres because the disturbance footprint would avoid the cheatgrass infestations along SR 267.

4.2.1 625 Line

Implementing Alternatives 1 or 2 would result in creation of new access ways and widening of some existing roads, which would provide new and expanded dispersal corridors. Sections 625-9 and 625-10 would be constructed in habitats that are relatively undisturbed and have few existing vectors for weed spread other than natural vectors (e.g., wildlife, wind, water flow). The new electric line would provide a new dispersal corridor in these areas and increase the risk of invasive plants being introduced; however, the risk would be reduced over time as revegetation becomes established. Due to the very high recreation use on LTBMU, there is a moderate to high probability that these access ways may not fully revegetate due to continued use. Increased recreational use of new access ways is expected to be substantial in some areas—particularly near existing trails or new potential long-distance trails—but low on new access ways that are primarily relatively short spur roads that do not lead to particular points of interest. Roads widened for construction access would be restored to their pre-project width and condition following construction and access ways would be permitted to revegetate over time. All construction and revegetation materials used for the project would be weed free. The invasive plant introduction and spread risk should decrease after construction is complete, but will remain moderate due to the use of accessways for inspections, maintenance, and repair work.

The Road Focused Alternative and Proposed Alternative would be constructed along existing roadways and would maximize the use of existing roads for access. These alternatives have a lower risk of providing vectors for invasive plant spread and introduction.

4.2.2 650 Line

The 650 Line would be rebuilt primarily within the existing electric line easement, which lies mostly along existing roadways and within or adjacent to existing development. Construction and maintenance of the 650 Line would rely primarily on existing roads for access and no new roads are expected to be developed. Improvements to existing roads would be limited to an approximately 1-mile stretch of dirt access adjacent to SR 267 southeast of Brockway Summit. The invasive plant introduction and spread risk should decrease after construction is complete, but will remain moderate due to the use of accessways for inspections, maintenance, and repair work.

4.2.3 Assessment summary

The highest risk of spread would remain for cheatgrass in segments 650-1, 650-2 and 650-6, Dyer's woad in segment 650-2, and butter and eggs in segment 625-1. The highest risk of introduction

would be in segments 625-9 and 625-10 where Alternatives 1 and 2 would create new access ways through relatively undisturbed forest land.

4.3 MANAGEMENT MEASURES

4.3.1 Standard management measures for invasive plants

The following measures are consistent with Forest Service policy and manual direction and the LTBMU Land Resource Management Plan as amended by the SNFPA. In combination with the project-specific APMs described in Section 4.3.2 of this document, these measures would be implemented to minimize the risk of new weed introductions, and to minimize the spread of weeds within and between management units.

- ▲ CalPeco will utilize locally collected native seed sources for revegetation when possible. Plant and seed material will be collected from or near the project area, from within the same watershed, and at a similar elevation when possible and with approval of the Forest Service botanist. Persistent non-natives, such as timothy (*Phleum pretense*), orchardgrass (*Dactylis glomerata*), ryegrass (*Lolium* spp.), or crested wheatgrass (*Agropyron cristatum*) will not be used in revegetation.
- ▲ After the project is completed, the noxious weed coordinator will be notified so that the project area can be monitored for three years (as funding allows) for additional nonnative invasive species establishment or spread of existing nonnative invasive species populations in the areas affected by the project.

4.3.2 Project-Specific Management Measures

The following APMs, which are a part of the project under analysis, would be implemented to minimize the risk of introducing or spreading invasive plants.

- ▲ **APM BIO-1:** Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training from a qualified resource specialist regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures, impact minimization procedures, the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction. Additionally, CalPeco and designated environmental monitors for project construction will coordinate with the applicable public land owners/managers on communication, documentation and reporting, and data submittal protocols.
- ▲ **APM BIO-2:** CalPeco will conduct a complete floristic survey, including surveys for all special-status botanical species and invasive plants, during a time that coincides with the greatest number of blooming periods for target species. This survey will be conducted no more than one year prior to the start of construction. Occurrences of special-status botanical species and weed-infested areas will be flagged or fenced no more than 30 days prior to the start of construction. Flagging and fencing will be refreshed and maintained throughout construction. Implementation of this measure will occur in coordination with USFS.

- ▲ **APM BIO-3:** CalPeco will complete an invasive plant risk assessment for all ground-disturbing activities.
- ▲ **APM BIO-4:** Before construction activities begin, CalPeco will treat invasive plant infestations where feasible. Treatments will be selected based on each species ecology and phenology. All treatment methods—including the use of herbicides—will be conducted in accordance with the law, regulations, and policies governing the land owner (e.g., TRPA in the Lake Tahoe Basin; LTBMU Forest Supervisor and Tahoe National Forest Supervisor on NFS lands). Land owners will be notified prior to the use of herbicides. In areas where treatment is not feasible, CalPeco will clearly flag or fence infested areas in order to clearly delineate work exclusion. Appropriate treatments will also be incorporated into tree removal and construction activities, such as a requirement that all cut live conifer stumps greater than 6 inches in diameter be treated with Sporax or an EPA-registered borate compound to prevent the spread of Annosus root disease.
- ▲ **APM BIO-5:** Vehicles and equipment will arrive at the project area clean and weed-free and will be inspected by the on-site environmental monitor for mud or other signs that weed seeds or propagules could be present prior to use in the project area. If the vehicles and equipment are not clean, the monitor will deny entry to the ROW and other work areas.
- ▲ **APM BIO-6:** Vehicles and equipment will be cleaned using high-pressure water or air at designated weed-cleaning stations after exiting an infested area. Cleaning stations will be designated by a botanist or invasive plant specialist and located away from aquatic resources.
- ▲ **APM BIO-7:** Only certified weed-free construction materials, such as sand, straw, gravel, seed, and fill, will be used throughout the project.
- ▲ **APM BIO-8:** If invasive plant-infested areas are unavoidable, invasive plants will be cut, if feasible, and disposed of in a landfill in sealed bags or disposed of or destroyed in another manner acceptable to the USFS, TRPA, USACE, or other agency as appropriate. If cutting is not feasible, layers of mulch, degradable geotextiles, or similar materials will be placed over the infestation area to minimize the spread of propagules by equipment and vehicles during construction. These materials will be secured so they are not blown or washed away.
- ▲ **APM BIO-21:** Qualified environmental monitors will be present with each crew during all vegetation-removal activities to help ensure that impacts to biological resources are minimized to the extent possible. For all other construction activities, monitors will be allowed to cover up to 5 miles of the project area at once to allow multiple crews to work in close proximity to each other at the same time. Environmental monitors will have the authority to stop work or direct work in order to help ensure the protection of resources and compliance with all permits.
- ▲ **APM BIO-23:** Topsoil, where present, will be salvaged in areas that will be graded or excavated. Topsoil will be segregated, stockpiled separately from subsoil, and covered. These soil stockpiles, as well as any others created by the proposed project, shall have the proper erosion control measures applied until they are removed. The topsoil will then be replaced to the approximate location of its removal after project construction has been completed to facilitate revegetation of disturbed areas. Top soil will not be salvaged from areas infested with invasive plants.
- ▲ **APM BIO-24:** If invasive plant infestations are later identified throughout the course of construction in staging areas, parking areas, or access routes, they will be treated according to APM BIO-4 & BIO-8.

- ▲ **APM BIO-26:** Work areas will be clearly marked with fencing, staking, flagging, or another appropriate material. All project personnel and equipment will be confined to delineated work areas. In the event that work must occur outside of the work area, approval from lead and other agencies with jurisdiction over the property will be obtained prior to the commencement of activities.
- ▲ **APM BIO-28:** CalPeco will minimize vegetation and tree removal to only the areas necessary for construction, with particular attention given to minimizing effects on riparian areas and preserving trees greater than 30 inches diameter at breast height (dbh).
- ▲ **APM BIO-30:** Prior to commencing construction in any area containing aquatic resources or potential wetlands, a qualified biologist will conduct a delineation of waters of the United States according to methods established in the USACE wetlands delineation manual (Environmental Laboratories 1987) and Western Mountains, Valleys, and Coast Region Supplement (Environmental Laboratories 2010). The delineation will map and quantify the acreage of all aquatic habitats on the project site and will be submitted to USACE for verification. CalPeco will determine, based on the verified wetland delineation and the project design plan, the acreage of impacts on waters of the United States and waters of the state that will result from project implementation. Impacts will be avoided to the extent practicable through the siting of poles and other facilities outside of delineated waters of the United States and waters of the state. Work in wetlands or wet meadow habitats with saturated soil conditions will be scheduled when soils are dry to the extent possible. If soils become saturated, timber mats will be installed along all vehicle and equipment access routes to minimize rutting. Prior to disturbance of waters of the United States or waters of the state, an environmental monitor will record via photographs and field notes the pre-disturbance condition of the water. Disturbed waters will be restored to preconstruction conditions and seeded with a native species, consistent with the vegetation community present prior to disturbance, to stabilize the soils and minimize the introduction of invasive plants, as specified by the USACE and RWQCB. In accordance with the USACE “no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction).

APM BIO-36: Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseeded. If existing unpaved roads require modification to temporarily allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will be re-graded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most

feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during project operation, an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will result in “coverage” per TRPA standards.

4.3.3 Assessment summary

Implementing the measures listed above, as part of the proposed project, would substantially reduce the risk of introducing or spreading invasive plants in the project area. Although some weed species are already present in areas near existing roads and development, the measures incorporated into the project would remove or avoid existing infestations, revegetate disturbed areas, and ensure equipment and personnel do not transport weed seed and propagules into the work area. These efforts would greatly reduce the risk of spread or introduction, but cannot eliminate it entirely.

5 ANTICIPATED WEED RESPONSE TO THE PROPOSED PROJECT

Alternative 1 (PEA) would have a high risk of spreading invasive plants due to the presence of known weed infestations, the high amount of habitat alteration that would result from this alternative, and the creation of new access way which would act as vectors for the spread of weeds.

Alternative 2 (Modified) is similar to Alternative 1 in the amount of habitat alteration and the increase in vectors that would be created, and therefore would have a high risk of spreading invasive plants.

Alternatives 3 (Road Focused) would have greatly reduced habitat alteration and increased vectors when compared to Alternatives 1 and 2, and would have a moderate risk of spreading invasive plants.

Alternative 3A (Road Focused, Double Circuit) is similar to Alternative 3, although slightly less, in the amount of habitat alteration and the increase in vectors that would be created, and therefore would have a moderate risk of spreading invasive plants.

Alternative 4 (Proposed) is similar to Alternative 3, although slightly more, in the amount of habitat alteration and the increase in vectors that would be created, and therefore would have a moderate risk of spreading invasive plants.

Table 4, below, provides a comparison of the risk of introducing or spreading invasive plants by alternative.

Table 4 Summary of Overall Risk by Alternative

Indicator Measures	Rankings of Alternatives for Each Indicator ¹				
	Alternative 1	Alternative 2	Alternative 3	Alternative 3a	Alternative 4
Acres of native vegetation removal	143	140	91	90	93
Miles of new or improved access ways on NFS lands	16.1	13.8	4.4	4.1	4.6
Acres of infestation directly intersected by disturbance	7.85	2.99	7.85	7.85	7.85
Overall Risk Ranking¹	5	4	2	1	3

Source: Ascent Environmental

¹A score of 1 indicates the alternative has the lowest overall risk of invasive plant introduction and spread; a score of 5 indicates that the alternative has the highest overall risk.

The risk of spreading invasive plants is slightly lower under Alternative 2 than under Alternative 1, but greater than under any of the other action alternatives because the other action alternatives would rely more heavily on existing roadways for access and would be constructed along existing roadways. Alternatives 3, 3A, and 4 would also employ a double circuit line through the King's Beach area rather than constructing two separate lines, as would occur under Alternative 1, and the double circuit line would be constructed outside of NFS lands as opposed to within NFS lands, as would occur under Alternative 2.

Overall, the project has a moderate to high risk of introduction or spread of invasive plants, as summarized in Table 5.

Table 5 Summary of Risk Factors for Overall Project

	Factor	Risk	Assessment summary
Non-Project Dependent Factors	Inventory	N/A	Adequate
	Known invasive plants	Moderate	There are 9 known infestations of high management priority species present in the NFS land portion of the project area.
	Habitat vulnerability	Moderate	Generally low to moderate levels of existing disturbance habitat vulnerability. Some pockets of highly vulnerable habitat along both lines.
	Non-project dependent vectors	Moderate	Moderate to high due to recreational use and existing utility corridors.
Project-Dependent Factors	Habitat alteration expected as a result of project	High	Moderate to high due to native vegetation removal.
	Increased vectors as a result of project implementation	High	Construction of temporary and permanent accessways, maintenance of utilities and accessways, and construction related short-term traffic increase
	Management measures	Greatly reduced risk	Standard management measures implemented in all alternatives. Treatments are similar across all alternatives.
Anticipated Weed Response		Moderate-high	High risk of introduction and spread under Alternatives 1 and 2. Moderate risk under Alternatives 3, 3a, and 4.

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Appendix A

**Invasive Species of Management
Concern on the Lake Tahoe Basin
Management Unit**

**Tahoe National Forest Eastside
Non-native Invasive Plants of Concern**

Table A-1 Invasive Plants of Management Concern on the Lake Tahoe Basin Management Unit

Scientific Name	Common Name	LBTMU Priority	NDA	CDFA	Cal-IPC	LTB WCG	Known in project
<i>Acroptilon repens</i>	Russian knapweed	Medium	B	B	Moderate	Group 1	
<i>Ailanthus altissima</i>	tree of heaven	N/A		C	Moderate	Group 1	
<i>Bromus tectorum</i>	cheat grass	Low			High		
<i>Cardaria draba</i>	heart-podded hoary cress; whitetop	Medium	C	B	Moderate	Group 1	
<i>Cardaria pubescens</i>	globe-podded hoary cress; hairy whitetop	Medium		B	Limited	Group 1	
<i>Carduus nutans</i>	musk thistle	High	B	A	Moderate	Group 1	
<i>Centaurea calcitrapa</i>	purple starthistle; red starthistle	N/A	A	B	Moderate	Group 1	
<i>Centaurea diffusa</i>	diffuse knapweed	Medium	B	A	Moderate	Group 1	
<i>Centaurea maculosa</i>	spotted knapweed	Medium	A	A	High	Group 2	
<i>Centaurea solstitialis</i>	yellow starthistle	Medium	A	C	High	Group 1	
<i>Centaurea virgata</i> ssp. <i>squarrosa</i>	squarrose knapweed	Medium	A	A	Moderate		
<i>Chondrilla juncea</i>	rush skeletonweed	High	A	A	Moderate	Group 1	
<i>Cirsium arvense</i>	Canada thistle	Medium	C	B	Moderate	Group 1	
<i>Cirsium vulgare</i>	bull thistle	High		C	Moderate	Group 2	
<i>Conium maculatum</i>	poison hemlock	Medium	C		Moderate		
<i>Cytisus scoparius</i>	Scotch broom	Medium		C	High	Group 2	
<i>Dipsacus fullonum</i>	teasel; Fuller's teasel	N/A			Moderate	Group 1	
<i>Dittrichia graveolens</i>	stinkwort	N/A			Moderate	Group 1	
<i>Elytrigia repense</i>	quackgrass	N/A		B			
<i>Hydrilla verticillata</i>	hydrilla; waterthyme	N/A	A	A	High; Alert		
<i>Hypericum perforatum</i>	St. Johnswort; Klamathweed	Medium	A	C	Moderate	Group 2	
<i>Isatis tinctoria</i>	Dyer's woad	Medium	A	B	Moderate	Group 1	
<i>Lepidium latifolium</i>	tall whitetop; perennial pepperweed	Medium	C	B	High	Group 2	
<i>Leucanthemum vulgare</i>	oxeye daisy	Medium			Moderate	Group 2	
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	Dalmatian toadflax	High	A	A	Moderate	Group 2	
<i>Linaria vulgaris</i>	yellow toadflax; butter & eggs	Medium	A		Moderate	Group 2	
<i>Lythrum salicaria</i>	purple loosestrife	Medium	A	B	High	Group 1	
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	N/A	A		High		
<i>Onopordum acanthium</i> ssp. <i>acanthium</i>	Scotch thistle	High	B	A	High	Group 1	
<i>Potamogeton crispus</i>	curlyleaf pondweed	N/A			Moderate		
<i>Potentilla recta</i>	sulfur cinquefoil	Low	A	A		Group 1	

Table A-1 Invasive Plants of Management Concern on the Lake Tahoe Basin Management Unit

Scientific Name	Common Name	LTCMU Priority	NDA	CDFA	Cal-IPC	LTB WCG	Known in project
<i>Rubus armeniacus</i>	Himalaya blackberry	Low			High		
<i>Elymus caput-medusae</i>	medusahead	High	B	C	High	Group 1	
<i>Tamarix chinensis</i> , <i>T. ramosissima</i> , & <i>T. parvifolia</i>	tamarisk; saltcedar	High	C	B	High	Group 1	
<i>Verbascum thapsus</i>	woolly mullein; common mullein	N/A			Limited		

LTCMU: High—Species that have a large ecological impact or invasive potential; species that are easily controlled. Medium—Species that have a moderate ecological impact or invasive potential; species that may be difficult to control. Low—Species that have a low ecological impact or invasive potential; species that require substantial effort to control. N/A—species not evaluated.

NDA: Nevada Department of Agriculture Noxious Weed List (http://agri.nv.gov/nwac/PLANT_NoxiousWeedList.htm) Category A—Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations. Category B—Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur. Category C—Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer.

CDFA: California Department of Food and Agriculture Noxious Weed List (<http://www.cdafa.ca.gov/phpps/ipc/>). A--Eradication or containment is required at the state or county level. B--Eradication or containment is at the discretion of the County Agricultural Commissioner. C--Require eradication or containment only when found in a nursery or at the discretion of the County Agricultural Commissioner. Q--Require temporary "A" action pending determination of a permanent rating.

Cal-IPC: California Invasive Plant Council Online Invasive Plant Inventory (2006) (<http://www.cal-ipc.org/ip/inventory/weedlist.php>). High—Species having severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Moderate—Species having substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Limited—Species that are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Alert—Species with significant potential for invading new ecosystems.

LTBWCG: Lake Tahoe Basin Weed Coordinating Group Weed Priority List (2010). Group 1--Watch for, report, and eradicate immediately. Group 2--Manage infestations with the goal of eradication.

Table A-2 Tahoe National Forest Eastside Non-native Plants of Concern

Scientific Name	Common Name	Report, Map, Treat	Concern Level on eastside of TNF
<i>Acroptilon repens</i>	Russian knapweed	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Bromus tectorum</i>	Cheatgrass/downy chess	Do not report, map or treat. Prevent spread through mitigations such as revegetation of disturbed areas.	Too common to map and treat.
<i>Carduus nutans</i>	Musk thistle/nodding thistle	Report, map, treat and actively control	A-rated and actively hand treated yearly.
<i>Carthamus lanatus</i>	Woolly distaff thistle	Report, map, treat and actively control	Not known to be present in 2013
<i>Centaurea diffusa</i>	Diffuse knapweed	Report, map, treat and actively control	A-rated and actively treated.
<i>Centaurea solstitialis</i>	Yellow star thistle	Report, map, treat and actively control	C-rated but actively hand treated yearly. Few known occurrences
<i>Centaurea stoebe</i>	Spotted knapweed	Report, map, treat and actively control	A-rated and actively treated.
<i>Chondrilla juncea</i>	Skeleton weed	Report, map, treat and actively control	A-rated and actively treated.
<i>Cirsium arvense</i>	Canada thistle	Report, map, treat and actively control	B-rated and actively treated if practical.
<i>Cirsium vulgare</i>	Bull thistle	Do not report, map or treat. Prevent spread through mitigations such as revegetation of disturbed areas.	Too common to map and treat.
<i>Conium maculatum</i>	Poison hemlock	Report, map and prevent spread through mitigations.	Usually occurs in wet areas where herbicides may be inappropriate or special herbicides may be used (but not on the Tahoe NF).
<i>Cytisus scoparius</i>	Scotch broom	Report, map, treat and actively control	C-rated but actively hand treated yearly. Few known occurrences
<i>Euphorbia oblongata</i>	Oblong spurge	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Genista monspessulana</i>	French broom	Report, map, treat and actively control	Primarily westside of Sierra.
<i>Halogeton glomeratus</i>	Halogeton	Report, map, treat and actively control	Has not been seen but, known to be common in Nevada.
<i>Hydrilla verticillata</i>	Hydrilla	Report, map, treat and actively control	A-rated and actively treated.
<i>Hypericum perforatum</i>	Klamath weed	Report, map, treat and actively control	C-rated but actively hand treated when practical.
<i>Isatis tinctoria</i>	Dyer's woad	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Lepidium appelianum</i>	Globe podded hoary cress	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Lepidium draba</i>	Heart podded hoary cress	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Lepidium latifolium</i>	Perennial peppergrass /tall whitetop	Report, map, treat and actively control	B-rated and actively treated if practical
<i>Leucanthemum vulgare</i>	Oxeye daisy	Report, map, treat and actively control	Not rated, but uncommon, so we treat if practical. Avoid planting in landscapes.
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	Dalmatian toadflax	Report, map, treat and actively control	A-rated and actively treated.
<i>Linaria vulgaris</i>	Yellow toadflax	Report, map, treat and actively control	Not rated, but uncommon, so we treat if practical.
<i>Lythrum salicaria</i>	Purple loosestrife	Report, map, treat and actively control	B-rated and actively treated if practical

Table A-2 Tahoe National Forest Eastside Non-native Plants of Concern

Scientific Name	Common Name	Report, Map, Treat	Concern Level on eastside of TNF
<i>Melilotus albus</i> and <i>Melilotus officinalis</i>	White sweetclover Yellow sweetclover	Do not report, map or treat. Prevent spread through mitigations such as using clean gravel or revegetation of disturbed areas.	Not rated and too common to treat.
<i>Myriophyllum spicatum</i>	Eurasian water milfoil	Report, map, treat and actively control	Not rated, but uncommon, so we treat if practical.
<i>Onopordum acanthium</i> ssp. <i>acanthium</i>	Scotch thistle	Report, map, treat and actively control	A-rated and actively treated.
<i>Rubus armeniacus</i>	Himalayan blackberry	Report, map, treat and actively control	Not rated, but recently found at new construction sites in Truckee, so we treat if practical.
<i>Salsola tragus</i> <i>Salsola paulsenii</i>	Russian thistle, tumbleweed, barbwire Russian thistle	Do not report, map or treat. Prevent spread through mitigations such as using clean gravel or revegetation of disturbed areas.	Not rated and too common to treat. These species have been coming in on gravel. So far, they do not seem very robust in this climate, but that may change.
<i>Spartium junceum</i>	Spanish broom	Report, map, treat and actively control	C- rated, but uncommon, so we would treat if practical.
<i>Taeniatherum caput-medusae</i>	Medusahead	Report, map, treat and actively control	C- rated, but uncommon, so we would treat if practical.
<i>Ulex europaeus</i>	Gorse	Report, map, treat and actively control	B-rated and actively treated if practical

Appendix B

Project Overview Map

Appendix C

Invasive Plant Infestation Locations

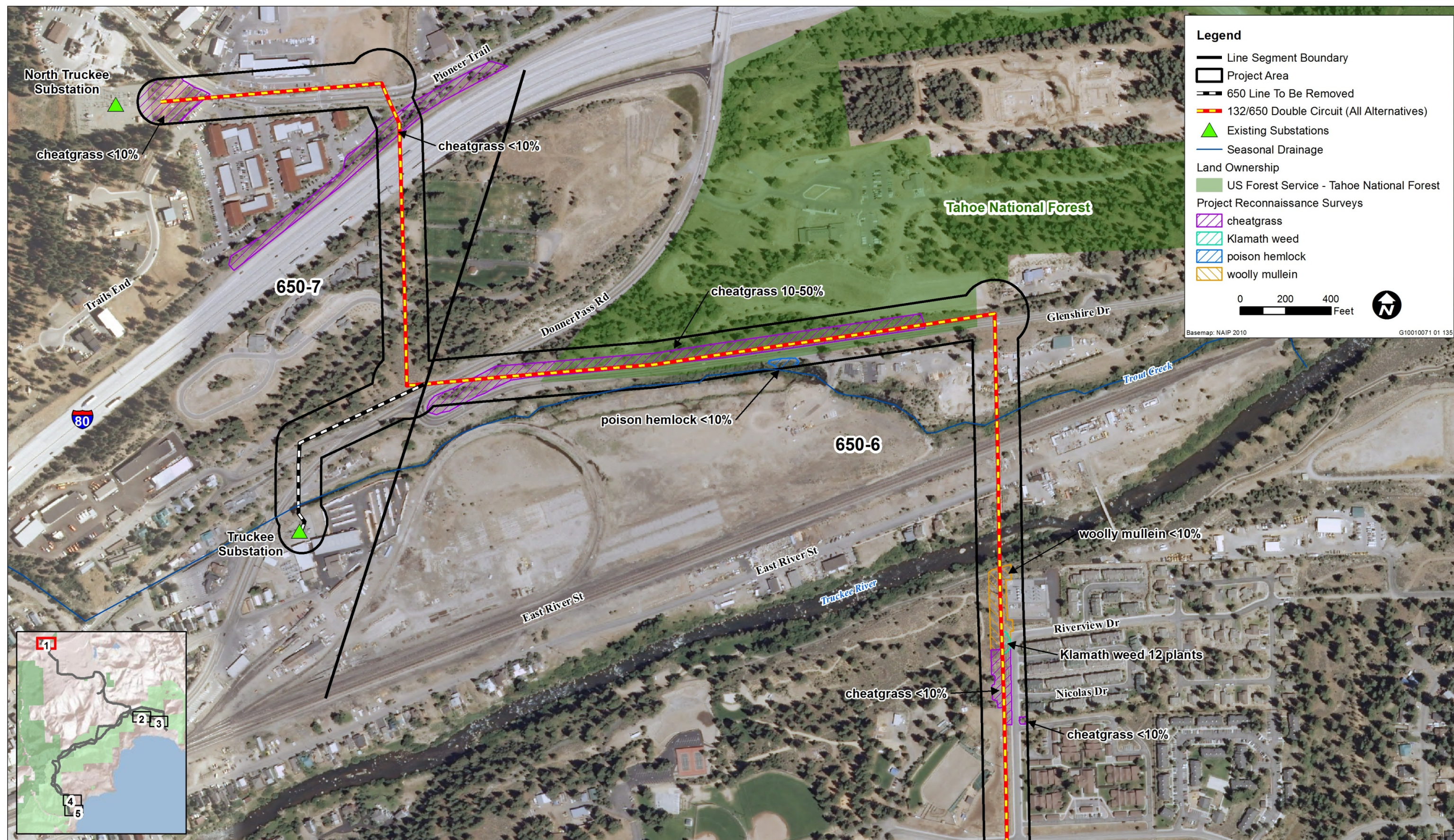


Exhibit C.1

Invasive Plant Infestations – Map 1

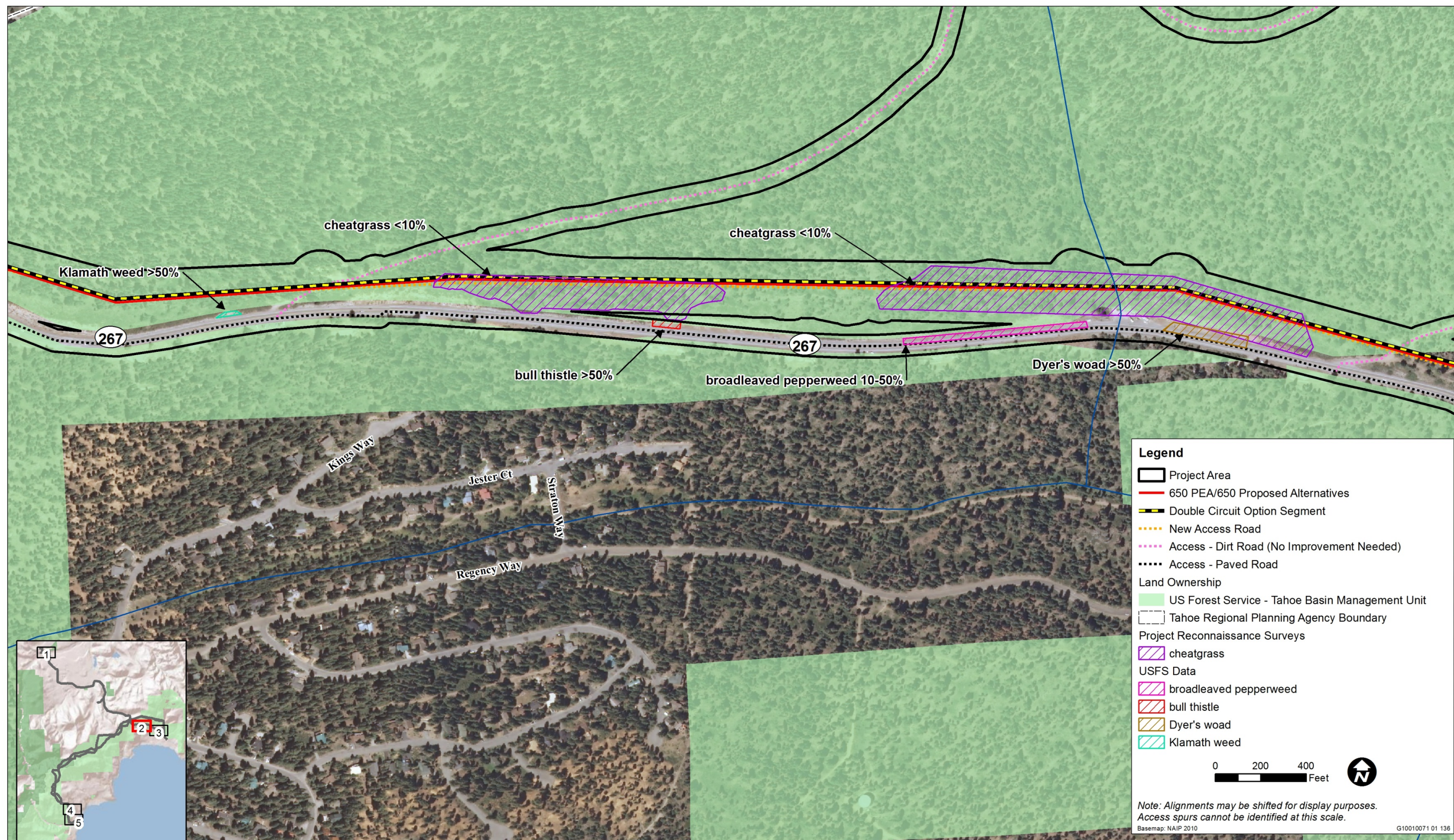


Exhibit C.2

Invasive Plant Infestations - Map 2

