Appendix I. SEZ, Sensitive Plant Species and Noxious Weeds Survey

SEZ, SENSITIVE PLANT SPECIES AND NOXIOUS WEEDS SURVEY

Proposed California Tahoe Conservancy Bike Trail

El DORADO COUNTY, CA

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1.0 INTRODUCTION

Sensitive plant species and Stream Environment Zone (SEZ) surveys were conducted in late July and August 2005, beginning from behind the Road Runner gas station in Meyers, California to Pioneer Trail near Ski Run Boulevard, for the proposed CTC bike path. These surveys augmented those conducted in 2002 and 2003 and were along proposed new bike path alternatives. Surveys were not conducted where the proposed bike path followed hard surfaces (asphalt). Surveys also included noxious weeds. The survey findings will be utilized to assess pre-development conditions and constraints to future land use.

The survey included approximately 9 miles, crossing properties owned by the California Tahoe Conservancy (CTC), U.S. Forest Service (LTBMU), the State of California, and the City of South Lake Tahoe. Private property was not surveyed. The proposed bike path alignment is located on the South Lake Tahoe, and Freel Peak USGS 7.5-minute quadrangle maps, within an approximate elevation range of 6,300 to 6,400 feet above mean sea level (msl).

SEZs are defined by the Tahoe Regional Planning Agency "…if any one of the following key indicators is present or, on the absence of a key indicator, if any three of the following secondary indicators are present" (TRPA 1988). 'Primary riparian vegetation' is listed as a key indicator, and was the primary factor use in defining SEZs for this survey. SEZs were located and numbered where they occurred adjacent to the proposed bike path. Not all SEZs located are actually crossed by the proposed bike path and in most cases careful location of the path can avoid their interception. Suitable habitat for sensitive species was only surveyed where the bike path is proposed and not in adjacent areas that will be un-affected by construction. Evaluation of secondary impacts to habitat were not within the scope of this work. Many of the bryophytes listed by the LTBMU occur in wetter environments than occur in most of the SEZs encountered along the proposed bike path.

Wetland delineations were not conducted as part of this survey.

2.0 VEGETATION

Vegetation community structure in the project area is dominated by a mixed conifer overstory of Jeffrey pine *(Pinus jeffreyi)* forest and white fir *(Abies concolor)* and lodgepole pine (*Pinus contorta* ssp. *murryana*) with a Sierra montane chapparal in the understory. In some areas the vegetation is shrub-dominated by Mtn. sagebrush (*Artemisia tridentata ssp. vaseyana*) and bitterbrush (*Purshia tridentata*). Other shrub species included mountain whitethorn *(Ceanothus cordulatus)*, greenleaf manzanita (*Arctostaphylos patula*), white squaw currant *(Ribes cereum.)*, squaw carpet (*Ceanothus prostratus*), and tobacco brush *(Ceanothus velutinus)*.Some montane riparian habitat was encountered, along with SEZs .

3.0 METHODOLOGY

3.1 Pre-field Research

Prior to the field survey, a literature search was conducted to obtain information on occurrence of sensitive plant species and potential habitats within the proposed project alignment. The literature search included the California Department of Fish and Game Natural Diversity Data Base (South Lake Tahoe and Freel Peak overlays), the U.S. Forest Service Lake Tahoe Basin Management Unit (LTBMU), the California Department of Fish and Game (CDFG), US Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS), and the Nevada Natural Heritage Program (NNHP).

Table 1. LTBMU, CDFG, USFWS, TRPA, and CNPS candidate and sensitive species known or suspected to occur on the LTBMU

Species	Status *	Known to occur in project area	Potential habitat in project area	No habitat	Habitat unsuitable based on the following:
Arabis rigidissima var. *demota*	S	N		X	Rocky habitat associated with this species did not occur along the proposed trail.
Arabis tiehmii	S	N		X	Habitat includes steep outcrops, talus and scree, which do not occur along the proposed trail.
Berberis sonnei				X	This plant typically occurs with Douglas fir Engelmann spruce, and Sub-alpine fir, species that don't occur on the proposed trail.
Botrychium ascendens	S	N	X		
Botrychium crenulatum	S	N	X		
Botrychium lineare	C, S	N	X		
Botrychium lunaria	S	N	X		
Botrychium minganense	S	N	X		
Botrychium montanum	S	N	X		
Bruchia bolanderi	S	N	X		
Draba asterophora var. *asterophora*	S, SI	Y		X	Habitat included rock crevices and talus slopes at high elevations. The proposed trail does not pass though this type of habitat.
Draba asterophora var. *macrocarpa*	S, SI	N		X	This plant occurs in rocky outcrops at high elevations. The proposed trail does not pass though this type of habitat.
Epilobium howellii	S	N	X		
Erigeron miser	S	N	X	X	Habitat for this species is rocky outcrops. The proposed trail follows existing trails and does not pass through this type of habitat.
Eriogonum umbellatum var. *torreyanum*	S	N		X	Habitat for this species is rocky volcanic meadows and outcrops. The proposed trail follows existing trails and does not pass through this type of habitat.
Hulsea brevifolia				X	Habitat consists of gravely soils in montane forests, which do not occur along the proposed trail.
Lewisia longipetala	S, SI	N		X	This species occurs on the north/northeast/northwest

					sides of ridge tops at high elevations where snow banks persist throughout the summer. The plants are often found near the margins of the snow banks in wet soils. The proposed trail does not pass through this type of habitat.
Meesia triquetra	S	N		X	This moss prefers bogs and fen habitats, but is also found in very wet meadows. SEZs along the proposed trail ROW with this type of habitat are located at a considerable distance from the trail. This species within the project area.
Meesia uliginosa	S	N		X	This moss prefers bogs and fen habitats, but is also found in very wet meadows. There are no areas with appropriate hydrologic conditions necessary to support this species within the project area.
Peltigera hydrothyria	S	N		X	This species is found in cold unpolluted streams in mixed conifer forests. There are no functional streams along the proposed trail with the exception of the Upper Truckee River.
Rorippa subumbellata	C, S, SI, 1B	N		X	This species is an endemic to the shores of Lake Tahoe and is usually found in moist backshore beach areas, but has also been observed in dry micro-sites. There is no beach habitat found in the project area.

KEY:

- LTBMU List revised June 2005
- The LTBMU does not currently support any plant species listed as threatened or endangered by USFWS under ESA.

C = USFWS candidate species for listing as threatened or endangered under ESA
S = USFS LTBMU Sensitive Species, Regional Forester's Sensitive Species List
SI = TRPA Special Interest Species, Regional Plan for the LTBMU: Goals and Policies (1986) and Code of Ordinances (1987)
E = USFWS Endangered Species
1B = CNPS Rare, Threatened or Endangered

Table 2. LTBMU Species of Interest

Species	Status	Known occ. in project	Potential habitat	No habitat	Habitat unsuitable based on following:

Arabis rectissima var. *simulans*	LSI		X		
Helodium blandowii	LSI*			X	This species occurs in fens and bogs. This type of habitat does not occur in the project area.
Lewisia kelloggii ssp. *hutchisonii*	LSI*		X		
Meesia longiseta	LSI		X		
Myurella julacea	LSI			X	This plant occurs on shaded, damp limestone outcrops in crevices and cracks. This type of habitat does not occur along the proposed trail.
Orthotrichum praemorsum	LSI				
Orthotrichum shevockii	LSI			X	This plant occurs in Joshua tree woodlands and pinyon woodlands, which do not occur along the proposed trail.
Orthotrichum spjutii	LSI		X		
Pohlia tundrae	LSI			X	Tundra pohlia moss occurs at higher elevations than found along the proposed trail.
Sphagnum spp.	LSI			X	These bryophytes occur on wet soils, humus or rock, which did not occur along the proposed trail.

[a]Status explanations
- List revised June 2005
- No species in LTBMU are currently listed as "Endangered" by USFWS under ESA.

LSI = LTBMU Species of Interest
LSI*=LTBMU Species of Interest that will probably be added to sensitive plant list during next list revision

3.2 Field Surveys

Surveys took place in late July and early August 2005 and included approximately 9 miles along properties owned primarily by the CTC and by other public agencies. The surveys began at the intersection Most of the route followed existing trails. GPS way points were taken for noxious weed locations and for SEZ #4. Plant species were identified, documented and compiled into a species list (Appendix A).

4.0 FIELD SURVEY RESULTS

4.1 SEZs.

Fourteen SEZs were located along the proposed alignment or adjacent to it. All SEZs were mapped on aerial maps and submitted to Design Workshop. The SEZs were located as follows:

1. This is located on the east side of Pioneer Trail between Pioneer Trail and Atroaria, off of Mandan. This is a small swale with wetland vegetation. The exact location of the proposed alignment in this area is unclear but this site should be avoided.

2. This large system is located on the west side of the Forest Service dump site and is down slope from the existing road and trail and probably includes jurisdictional wetlands. The existing road and trail does not cross this system.

3. SEZ #3 occurs down slope and to the east of the existing trail system. The trail does not cross this SEZ.

4. This is a small seep with wetland vegetation, on the west side of the existing trail (11S 0241719, UTM 4308185).

5. This is a small drainage to the west of Pioneer near the Forest Service gate. The proposed bike path could avoid this site.

6. SEZ #5 begins about 1,000 feet to the west of the Forest Service with scattered willows and lodgepole pines along the existing trail. The trail crosses the SEZ since SEZ species occur on both sides of the trail. The SEZ in this area does not have the hydrology to support most of the bryophytes of LTBMU concern. Farther to the west along the trail, a large SEZ system, which eventually crosses the STPUD, occurs to the south and west side of the existing trail. A wider bike path would need to hug the north and east side of the existing trail.

7. SEZ #7 begins north of the Upper Truckee River bridge that crosses Highway 50 north of Elks Club. A new bike path could avid this SEZ if located on the east side of the system. This SEZ does not have the hydrology to support most of the bryophytes of LTBMU concern.

8. This system occurs to the west of the airport parking lot. The current proposed bike path is located to the east of this system.

9. SEZ #9 occurs to the west of the airport and was accessed via Kyburz Avenue. This system most likely included jurisdictional wetlands and was the wettest system encountered adjacent to the proposed bike path.

10. SEZ #10 occurs to the west and north of the airport and was accessed via Melba Drive. The existing trail crosses the SEZ. No standing water was located in this area. A small stand of upland vegetation separates this SEZ from SEZ #11.

11. SEZ #11 occurs just north of SEZ #10.

12. This system occurs on private land and was not surveyed. The proposed bike path crosses this property, which is entirely SEZ until it crosses the bridge over the Upper Truckee River.

13. SEZ #13 occurs in the Bijou meadow and continues behind the old drive-in movie theatre. The existing trail and proposed bike path crosses this SEZ.

14. SEZ #14 is occurs to the south and east of Tamarack Avenue. The existing trail is for the most part in an upland plant community.

4.2 Sensitive Species

No sensitive species were located within the survey corridors.

4.3 Noxious Weeds

Noxious weeds were located in two places along the survey corridor.

1. A stand of Klamath weed (*Hypericum perforatum*) was located near the north and west side of the airport, at the airport exit (11S 0240041, UTM 4309192).

2. Tall whitetop (*Lepidium latifolium*) was located off Tamarack Avenue in SEZ # 14. This stand encompasses about 100 sq. ft. in the middle of the SEZ.

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APPENDIX 1

Project Area Species List

Botanical Name	Common Name	Plant Community
Abies concolor	White fir	MCF, SEZ
Achillea millefolium	Yarrow	ALL
Achnatherum occidentalis ssp. *californicum*	Needlegrass	MCF
Achnatherum lettermanii	Letterman's needlegrass	MCF, MDW
Aconitum columbianum	Columbia monkshood	SEZ, MDW
Agoseris glauca	Mountain dandelion	MCF
Agrostis scabra	Tickelgrass	SEZ, MDW
Agrostis stolonifera	Creeping bentgrass	SEZ, MDW
Allium validum.	Swamp onion	MDW
Allophylum gilioides	False blue gilia	ALL
Alnus incana ssp. *Tenuifolia*	Mountain alder	SEZ
Amelanchier utahensis	Utah serviceberry	MCF
Anaphalis margaritacea	Pearly everlasting	
Angelica breweri	Angelica	MCF
Apocynum androsaemifolium	Spreading dogbane	MCF, SEZ
Arabis holboellii	Holboel's rockcress	MCF
Arctostaphylos patula	Greenleaf manzanita	MCF
Arnica chamissonis ssp. *foliosa*	Meadow arnica	MDW, SEZ
Artemisia tridentata ssp. *vaseyana*	Mountain sagebrush	MCF
Aster integrifolius.	Wavy-leaved aster	MCF,SEZ, MDW
Aster occidentalis	Western aster	SEZ, MDW
Astragalus cicer	Cicer milkvetch	MCF, SEZ
Balsamorhiza sagitatta	Arrow-leaf balsamroot	MCF
Bromus carinatus	California brome	MCF
Bromus inermus	Smooth brome	MCF, SEZ
Bromus tectorum	Cheatgrass	ALL
Calocedrus decurrens	Incense cedar	MCF
Calyptridium umbellatum	Pussy paws	MCF
Carex aquatilis		SEZ
Carex athrostachya	Slender beak sedge	SEZ, MDW
Carex douglasii	Douglas sedge	SEZ, MDW
Carex exerata	Short hair sedge	MDW
Carex nebrascensis	Nebraska sedge	SEZ
Carex praegracilis	Slender sedge	SEZ, MDW
Carex spp.	Sedge	MCF
Carex subfusca	Rusty sedge	SEZ, MDW
Carex utriculata	Beaked sedge	SEZ, MDW
Castilleja applegateii	Applegate's paintbrush	MCF, SEZ
Ceanothus cordulatus	White thorn	MDF
Ceanothus prostratus	Squaw carpet	MCF
Ceanothus velutinus	Tobacco brush	MCF
Chaenactis douglasii	Douglas pincushion	MCF
Chamomilla suaveolens	Chamomile	SEZ
Chenopodium album	Lamb's quarters	SEZ, MDW
Cicorium intybus	Chickory	
Chrysothamnus nauseosus	Rubber rabbitbrush	MCF
Cirsium andersonii	Anderson's thistle	MCF
Claytonia perfoliata	Miner's lettuce	MCF
Collinsia parviflora	Blue-eyed Marys	ALL

Species List (continued)

Collomia grandiflora	Large-flower collomia	MCF, SEZ
Comandra umbellata ssp. Californica	Bastard toad flax	MCF
Crepis acuminate	Hawksbeard	MCF
Cryptantha intermedia	Common cryptantha	MCF
Cynoglossum sp.	Houndstongue	MCF, MDW
Dactylus glomerata	Orchard Grass	MCF, SEZ
Deschampsia cespitosa	Hairgrass	MDW
Descurainia pinnata	Tansy mustard	MCF, MDW
Elymus elymoides	Squirreltail grass	MCF
Elymus glaucus	Blue wildrye	SEZ
Elytrigia intermedia	Pubescent wheatgrass	MCF, SEZ
Elytrigia trachycaulus	Slender wheatgrass	SEZ, MDW
Epilobium angustifolium ssp. *circumvagum*	Fireweed	SEZ, MCF
Epilobium brachycarpum	Willowherb	ALL
Epilobium ciliatum	Ciliate willowherb	SEZ, MDW
Equisetum arvense	Common horsetail	SEZ, MDW
Erigeron breweri	Brewer's aster	MCF
Erigeron peregrinus	Wandering daisy	MCF
Eriogonum nudum var. nudum	Naked buckwheat	MCF
Eriogonum umbellatum var. *furcosum*	Sulfur buckwheat	MCF
Festuca rubra	Red Fescue	MDW, SEZ
Festuca trachyphylla	Hard fescue	MCF, SEZ
Fragaria virginiana	Wild strawberry	SEZ, MCF
Galium trifidum	Bedstraw	MCF
Gayophytum diffusum	Diffuse gayophytum	ALL
Geum macrophyllum	Large leaf avens	SEZ, MDW
Gilia capillaries	Smooth leaf gilia	MCF, SEZ
Gnaphalium palustre	Marsh everlasting	SEZ, MDW
Grindelia squarrossa	Gumweed	MCF
Hieracium albiflorum	White flower hawkweed	MCF
Hordeum brachyantherum	Meadow barley	MDW, SEZ
Hordeum jubatum	Foxtail barley	MDW
Horkelia fusca	Dusky horkelia	MCF
*Hypericum perforatum**	Klamath weed	SEZ, MCF
Ipomopsis aggregata	Scarlet gilia	MDC
Juncus balticus	Baltic rush	SEZ, MDW
Juncus ensifolius	Iris-leaf rush	SEZ, MDW
Juncus nevadensis	Nevada rush	SEZ, MDW
Kelloggia galioides	Kellogia	MCF
Lactuca serriola		DIST
Lepidium densiflorum	Dense-flower peppergrass	MCF
*Lepidium latifolium**	Tall white top	SEZ
Lepidium perfoliatum	Perfoliate-leaf peppergrass	MCF
Lingusticum grayii	Osha	MCF, SEZ
Linum lewisii	Lewis' blue flax	MCF
Lonicera conjugalis	??	MDW. SEZ
Lotus corniculatus	Birdsfoot trefoil	SEZ, MCF
Lotus nevadensis var. *nevadensis*	Sierra Nevada lotus	MCF
Lotus purshianus	Spanish clover	SEZ, MDW

Lupinus andersonii	Anderson's lupine	MCF, SEZ
Lupinus breweri	Brewer's lupine	MCF
Lupinus grayii	Gray's lupine	MCF
Lupinus lepidus var. *confertus*	Dwarf lupine	ALL
Machaeranthera canescens	Hoary aster	MCF
Luzula spicata	Spike woods rush	MCF
Madia glomerata	Tarweed	ALL
Melilotus alba	White sweet clover	ALL
Mimulus guttatus	Yellow monkeyflower	SEZ
Mimulus primuloides	Primrose monkeyflower	SEZ, MDW
Monardella odoratissima	Coyote mint	MCF
Montia perfoliata	Miner's lettuce	MCF, SEZ
Muhlenbergia richardsonis	Mat muhly	SEZ, MDW
Navarretia intertexta ssp. *propinqua*	Navarretia	SEZ, MDW
Osmorhiza chilensis	Mountain sweet cicely	MCF
Pedicularis semibarbata	Pine lousewort	MCF
Penstemon rydbergii	Whorled penstemon	SEZ, MDW
Penstemon speciosus	Royal beardtongue	MCF
Penstemon strictus	Rocky Mtn. penstemon	MCF
Paeonia brownii	Browns peony	MCF
Perideridia bolanderi	Bolander's yampah	MDW, SEZ
Phacelia hastate	Silver leaf phacelia	MCF
Phleum pretense	Timothy	MDW, SEZ
Phlox diffusa	Spreading phlox	MCF
Phlox gracilis	False phlox	MCF
Pinus contorta ssp. *murryana*	Lodgepole pine	ALL
Pinus jeffreyi	Jeffrey pine	MCF
Pinus ponderosa	Ponderosa pine	MCF
Plantago lanceolata	English plantain	SEZ, MDW
Plantago major	Common plantain	SEZ, MDW
Poa ampla	Alpine bluegrass	SEZ
Poa bulbosa	Bulbous bluegrass	ALL
Poa pratensis	Kentucky bluegrass	SEZ, MDW
Poa palutstris	Fowl bluegrass	SEZ
Populus tremuloides	Quaking aspen	All
Potentilla glandulosa	Sticky cinquefoil	SEZ, MDW
Potentilla gracilis	Slender cinquefoil	SEZ, MDW
Pteridium aquilinum	Braken fern	MCF
Pterospora andromedea	Pine drops	MCF
Purshia tridentate	Bitterbrush	MCF
Pyrola picta	White-veined wintergreen	MCF
Ranunculus occidentalis	Western buttercup	MCF
Ribes cereum	White squaw currant	MCF
Ribes sp.	Currant	MCF
Rorippa curvisiliqua	Curve pod yellowcress	SEZ, MDW
Rosa woodsii	Woods rose	SEZ, MDW
Rumex acetosella	Sheep sorrel	SEZ, MDW
Rumex crispus	Curly-leaf dock	SEZ, MDW
Salix geyeriana	Geyer's willow	SEZ, MDW
Salix lemmonii	Lemmon willow	SEZ, MDW
Salix lucida ssp. *lasiandra*	Shining willow	SEZ

Species List (continued)

Salix scouleriana	Scouler's willow	ALL
Senecio integerrimus	Butterweed	MCF
Sidalcea oregana ssp. *spicata*	Meadow sidalcea	SEZ, MDW
Smilacina stellata	Starry solomon's seal	SEZ, MDW
Solidago canadensis	Canada goldenrod	MCF
Sphenosciadium capitellatum	Ranger's buttons	SEZ, MDW
Stephanomeria virgata	Skeletonweed	MCF
Symphoricarpos mollis	Creeping snowberry	MCF
Taraxacum officionale	Dandelion	MDW
Thalictrum fendleri	Fendler meadow rue	MCF, SEZ
Tragapogon dubius	Goat's beard	ALL
Trifolium longipes	Long-leaf clover	SEZ, MDW
Trifolium microcephalum	Maiden clover	SEZ
Trifolium pratense	Red clover	MDW
Urtica dioica	Stinging nettle	MDW, DIST
Valeriana californica	Valerian	SEZ, MCF
Veratrum californicum	Corn lily	SEZ, MDW
Verbascum thapsis	Mullein	ALL
Vicia Americana	Vetch	MDW, SEZ
Wyethia mollis	Mule's ears	MCF

Key:
* State listed Noxious Weeds
MCF = Mixed Conifer Forest
SEZ = Stream Environment Zone
MDW = Meadow
DIST = Disturbed