FINAL

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

For

ANGORA 3 EROSION CONTROL PROJECT

and

FISHERIES ENHANCEMENT PROJECT

EL DORADO COUNTY

DEPARTMENT OF TRANSPORTATION

State Clearinghouse #2005122039

January 2006

Page

LIST OF TABLES

Page

1.0 INTRODUCTION

El Dorado County Department of Transportation – Tahoe Engineering Division (EDOT) prepared this Initial Study (IS) based on a conceptual project design to comply with the requirements of the California Environmental Quality Act and (CEQA) and to qualify for California Tahoe Conservancy (CTC) grant funding for the Angora Phase 3 Erosion Control Project and Fisheries Enhancement Project (Project). El Dorado County intends to seek a Mitigated Negative Declaration (MND) for the Project. This document evaluates environmental impacts based on conceptual Project design and is supported by a completed environmental checklist (Appendix A). This document was originally released for public review between December 8, 2005 and January 6, 2006. However, based on comments received from partner agencies, EDOT agreed to recirculate the document to provide for additional review by the public. The recirculation period will begin on February 2, 2006 and end on March 3, 2006. Comments received after 5:00 PM on March 3, 2006 will not be considered.

The Project intends to address erosion, storm runoff, and water quality problems that have been identified in the Project boundaries. Addressing identified water quality problems is anticipated to have a direct benefit to the quality of nearby waterways and ultimately Lake Tahoe. In addition to the erosion control component, the Project includes a component to restore two stream environment zone (SEZ) areas and a component (Fisheries enhancement Project) to replace two existing degrading culverts in Angora Creek, which will improve fish passage and access to habitat.

This Project is identified in the Tahoe Regional Planning Agency's (TRPA) Environmental Improvement Program (EIP) project list. Last updated in 2001, the EIP includes a master list of projects for each threshold which are necessary to achieve and maintain environmental thresholds for the Lake Tahoe Basin. The TRPA has established thresholds for the air quality, water quality, soil conservation, vegetation, noise, scenic resources, recreation, fisheries, and wildlife to address public health and safety of residents and visitors as well as the scenic, recreational, educational, scientific, and natural values of the Lake Tahoe Basin. Elements of proposed Project are listed under the EIP list of projects and will contribute to achieving TRPA environmental thresholds.

2.0 PROJECT LOCATION

The Project is located within the Lake Tahoe Basin in eastern El Dorado County. It occupies portions of Sections 18 and 19, Township 12 north, Range 18 east, Mount Diablo Base, and Meridian. It is located in Mountain View Estates Unit #'s 1, 2, 3, 4, and 5. The Project area is shown on the Echo Lake U.S. Geologic Survey (USGS) 7.5-minute quadrangle. The elevation of the Project area ranges from 6,290 feet at Angora Creek near Mountain Meadow Drive to 6,475 feet near Pyramid Circle.

The Project area is located within an existing residential development bounded to the north by Lake Tahoe Boulevard and portions of View Circle, to the northwest by the parcels west of Mt. Rainier Drive and Pyramid Circle, to the south by North Upper Truckee Road, and to the east by parcels east of Mountain Meadow Drive (Figure A). Other streets in the Project area include Dixie Mountain Drive, the southern portion of Lake Tahoe Boulevard, Mt. Shasta Circle, Mt.

Diablo Circle, Mt. Olympia Circle, Snow Mountain Drive, and Pyramid Court.

2.1 ENVIRONMENTAL SETTING AND SITE CHARACTERISTICS

The Project area includes private residential parcels, undeveloped parcels owned by the CTC and U.S. Forest Service – Lake Tahoe Basin Management Unit (LTBMU), as well as, El Dorado County Right-of-Way (ROW). Proposed actions for this Project include improvements on publicly owned parcels, private easements, and County ROW. Existing subdivision improvements include 25 to 30-foot wide paved roads, County ROW, overhead and underground utilities, and limited drainage improvements.

Slopes: Drainage patterns of the area are defined by a ridgeline starting at Pyramid Court and extending north to the northern portion of Mt. Olympia Circle. This ridgeline divides the Project area into three sub-areas draining to the west, north, and east. The road system largely follows the contours around the ridgeline, bisecting the drainage paths. The average slope of these basins ranges from 3 to 10 percent.

Angora Creek: All surface flows exiting the Project area eventually reach the SEZ adjacent to Angora Creek. Angora Creek is a tributary to the Upper Truckee River, which is the largest watershed contributing to Lake Tahoe. A reduction in pollutants exiting the Project area is intended to improve the health of Angora Creek and ultimately that of Lake Tahoe.

Hydrology: The Project area is located within two Upper Truckee River subwatersheds, USGS Numbers 457 and 471, which encompass 742 acres and 854 acres, respectively. Both USGS subwatersheds drain to portions of Angora Creek, with the northwestern subwatershed (USGS 457) draining to Angora Creek upstream of its confluence with the drainage from Sawmill Pond and the southeastern subwatershed (USGS 471) draining to Angora Creek downstream of the same confluence. The Project area comprises a total of 121 acres in subwatersheds 457 and 471. The 121-acre Project area was divided into ten drainage basins ranging from 3 acres to nearly 40 acres. These ten basins were further divided into a total of thirty subbasins with an average gradient of 3 to 10 percent.

Groundwater: For most of the year groundwater is present close to the ground surface in the lower elevations of the Project area. In the summer, groundwater provides baseflow in several of the culverts along Mt. Rainier Drive and supplies water to the meadow. The presence of perennial baseflow helps maintain vegetation in the existing drainage channels and the meadow.

Soils/Geology: Soil material found in the Project area ranges from silt and sand to cobbles and boulders. There are five main soil groups in the project area: Jabu, Meeks, Celio, loamy alluvium, and marsh. Loam and marsh groups are generally located within the floodplain of Angora Creek in the north and northeastern portions of the project area. Jabu coarse sandy loam is found in most of the higher elevations of the project area such as the vicinity of Snow Mountain Road and Pyramid Circle. Meeks and Celio soil types are found in the lower watershed, near North Upper Truckee Road and Lake Tahoe Boulevard.

Basement rocks within the Project area include Triassic and Jurassic metamorphic and metasedimentary rocks exposed in small pendants within Jurassic to Cretaceous granitic rocks. With the exception of some Middle Jurassic plutons southwest of Mount Tallac, the granitic

rocks are all believed to be part of the Late Jurassic-Cretaceous Sierra Nevada batholith, which extends from northwestern Nevada to southern California (Schweickert et al. 2000). The Project site is in close proximity to exposures of Triassic-Jurassic metamorphic and metasedimentary rocks. These include miscellaneous metasedimentary rocks composing Tahoe Mountain to the north, and thin-bedded sandstones and siltstones, pyritic, graphitic mudstones, and metavolcanic rocks along the southwestern shoreline of Fallen Leaf Lake. The Project area is also in close proximity to exposures of Late Jurassic-Cretaceous granitic rocks of the Sierra Nevada batholith, including Echo Lake granodiorite composing Twin Peaks to the east and the mountain ridge to the southwest, and Keiths Dome quartz monzonite and Bryan Meadow granodiorite farther to the south and west. The northern portion of the Project site is underlain by stream sediments associated with Angora Creek. These sediments are likely composed primarily of sand and gravel, with possible silt and clay primarily associated with flood plain deposits.

Vegetation: A literature review was conducted to evaluate the available botanical information for the Project area. The review included the following resources: 1) California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) (CNDDB 2005); 2) California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants (CNPS 2001); 3) U.S. Forest Service's (USFS) Regional Forester's Sensitive Species List, Region 5 (USFS 1998); 4) U.S. Fish and Wildlife Service's species list of federally endangered, threatened, and candidate species (USFWS 2005); and 5) Tahoe Regional Planning Agency's Study Report for the Establishment of Environmental Threshold Carrying Capacities for the Lake Tahoe Region (TRPA 1982).

Vegetation communities in the Project area are typical of those found in the Lake Tahoe Basin. They include forest, meadows, and riparian communities. A plant community verification and reconnaissance field visit was conducted in August 2004 during late blooming periods. The study area consisted of right-of-way areas adjacent to roads within the Project area. Thirty-one (31) special-status plant species were identified as potentially occurring in the Project vicinity based on literature review. Based on distribution, elevation, and habitat requirements, fourteen of these species were determined to unlikely to occur within the Project area. Four invasive plant/noxious weed species were identified including: bull thistle (*Cirsium vulgare*), Klamath weed or St. Johnswort (*Hypericum perforatum*), ox-eye daisy (*Leucanthemum vulgare*), and woolly mullein or common mullein (*Verbascum thapsus*). In July and August of 2005, a special-status plant survey was conducted. During Project botanical surveys, a specialized wetland habitat (fen) that supports one special status plant specie, three-ranked hump moss (*Meesia triquetra*), was encountered on an undeveloped CTC owned parcels near the intersection of Mt. Rainier Drive and North Upper Truckee Road in the Project area.

Land Use: The Project area is located within the TRPA Plan Area 132-Mountain View. This Plan Area has a land use classification of "Residential" (Single Family Dwelling) with a density of one unit per parcel. The Project area is rural residential with impervious surfaces associated with roads, driveways and homes. There are no industrial facilities or parking lots present in the Project area. Approximately one-half of the parcels within the Project area are publicly owned (Figures D-1 through D-4).

Cultural Resources: Heritage studies previously conducted by Lindström and Rucks (2001) assembled and analyzed baseline information on the paleoenvironment and prehistoric/Native

American and historic/Euroamerican land uses in the Angora Creek area. Findings based upon in-depth archival, ethnographic, oral history, and paleoenvironmental research provided a comprehensive understanding of the archeological context of the area. A pedestrian survey of the Project site was completed in August 2005 by an ENTRIX archeologist. The 2005 survey report states:

> *"No newly discovered heritage resources were located within the Project Area of Potential Effect (APE). All visible ground surfaces were examined for the presence of historic or prehistoric archaeological site indicators. Two previously recorded sites adjacent to the Project APE were re-located. Site CA-ELD-530, the remains of a log structure within the meadow west of Angora Creek, appears to be in relatively the same condition as the 1985 site form indicated. The structure is not within the Project APE and no impacts are expected. The second site adjacent to the APE, temporarily assigned the designation AC-1 by Lindström in 2001, appears to have been completely dismantled and removed. A single pipe, likely one of the recorded water pipes associated with the feature, remains at the site."*

Biological Resources: The study area contains five wildlife habitats (Mayer and Laudenslayer 1988) typically found in the Lake Tahoe Basin. They are lodgepole pine, Jeffrey pine, montane riparian, sagebrush, and wet meadow. These habitats are suitable for many of the common smaller mammals including several species of squirrels, chipmunks, and a variety of smaller rodents, along with larger mammals, such as coyote, bobcat, mountain lion, black bear, and mule deer. Resident and migratory birds can also be found within the study area.

The TRPA and the LTBMU performed a joint survey of avian species within the entire Lake Tahoe Basin in 1999 and 2000. The results indicated that in 1999 the most widely distributed avian species were mallard (*Anas platyrhynchos*) and American robin (*Turdus migratorius*). In 2000, the most widely distributed species were mallard, northern flicker (*Colaptes auratus*), Stellar's jay (*Cyanocitta stelleri*), mountain chickadee (*Poecile gambeli*), and American robin (TRPA 2002).

Two protocol surveys were conducted in June and July of 2005. ENTRIX biologists surveyed for potential northern goshawk (*Accipiter gentiles*) (FSC (nesting), CSC (nesting), MIS, FSS and TRPA) nesting habitat, as well as willow flycatcher (*Empidonax traillii*) (FSC (nesting), CE, MIS, FSS) nesting habitat and activity. The Project area does not contain sufficient appropriate nesting habitat for northern goshawk. They are not expected to nest within the Project boundaries, although they may forage there. No willow flycatchers were detected at potential nesting areas surveyed in the Project area and vicinity.

Seven native fish species and at least three introduced species are found in the nearby Upper Truckee River system, hence there is potential that they may be found in Angora Creek. No known special status fish species are in Angora Creek. Native fish species include Lahontan redsides (*Richardsonius egregius*), Lahontan speckled dace (*Rhinichthys osculus robustus*), Lahontan stream tui chub (*Gila bicolor pectinifer*), Tahoe suckers (*Catostomus tahoensis*), mountain sucker (*Catostomus platyrhynchus*), Paiute sculpin (*Cottus beldingi*), and mountain whitefish (*Prosopium williamsoni*). Introduced species include rainbow trout (*Oncorhynchus*

mykiss), brown trout (*Salmo trutta*), and Eastern brook trout (*Salvelinus fontinalis*). In Angora Creek, the two species of primary management focus have typically been rainbow and brown trout for their value as sport fish. No previous surveys or studies of fisheries in Angora Creek have been conducted.

Road crossings and associated hydraulic infrastructure are one of many impediments to fish movement within the streams of the Lake Tahoe Basin. A properly sized and constructed road crossing should not impair movement of fish to or from spawning areas or at other times of the year when fish may need to disperse. On August 25, 2005, an ENTRIX engineer and fishery biologist inspected Angora Creek in the vicinity of the Lake Tahoe Boulevard crossing. Following the site visit, the culvert was analyzed using a program developed to aid in the analysis of fish migration through culverts (EDOT 2005a). It was determined that at low flow the culvert appears to be a complete barrier to the upstream passage of any low-flow fall spawning brown trout or mountain whitefish. The culvert is probably not a barrier to adult rainbow trout in the spring but may be a barrier to upstream passage of juvenile rainbow and brown trout at flows up to 3.5cfs. (EDOT 2005a).

2.2 PUBLIC INPUT AND PROJECT DEVELOPMENT TEAM COORDINATION

The Project public involvement process included the noticing of a public meeting held on July 13, 2005. The goal of the meeting was to provide information on the formulating alternatives process and provide the public with an opportunity for input on Project environmental concerns. EDOT presented concept alternatives to the community in order to gather comments on the alternatives and on potential environmental impacts. The public was also invited to identify problems in the Project area, which included visual documentation from area residents. Public notices for the meeting were published in the Tahoe Daily Tribune on July 1, 8, and 13, 2005. Invitations to the public meeting were also mailed to all property owners within the Project area on July 5, 2005. A second meeting on the Project was held with the public on December 8, 2005 to discuss the preferred alternative.

EDOT met with the Project Development Team (PDT), during the Project development process to identify problems and to develop and refine Project alternatives. The PDT consists of various resource agencies in the Lake Tahoe Basin, which include but are not limited to the TRPA, LTBMU, CTC, Tahoe Resource Conservation District, Bureau of Reclamation and the Lahontan Regional Water Quality Control Board (Lahontan Regional Board). The initial PDT meeting was held on July 22, 2005. That meeting agenda included a review of the Project work plan and schedule, a review of existing conditions and the Formulating and Evaluating Alternative (FEA) process, a site visit, and discussion of the PDT Draft Formulating Alternatives Memo (FAM) and Concept Alternatives Report. Subsequently, EDOT met with the PDT again on October 7, 2005 to discuss the preferred alternative; October 14, 2005 to present the geomorphology and fish passage report; and on November 21, 2005 to discuss the preferred alternative.

3.0 PROPOSED PROJECT

3.1 RECLAIM SEZ PURPOSE AND NEED

Two SEZ locations within the Project area are currently covered by fill material. Both areas are

located along Mt. Rainier Drive. The first is north of Mt. Rainier Drive and Lake Tahoe Blvd. The need to reclaim/restore SEZ in El Dorado County was identified in EIP #650 and is located north of the intersection of Lake Tahoe Blvd. and Mt. Rainier Drive (Figure A). This area is currently covered by fill material that matches the elevation of the road and slopes down to natural ground elevation to the north. The second is near the intersection of Mt. Rainier Drive and North Upper Truckee Road. Existing functioning SEZ surrounds these fill areas. The removal of fill identified at these two locations in the Project area would allow better filtration of runoff, stabilization of soils, and improved water quality.

Reclamation of the first fill area (Mt. Rainier Drive and Lake Tahoe Blvd) will be conducted along with the Fisheries Enhancement Project to be designed on a separate design schedule from the erosion control Project. The second fill area described above will be reclaimed as part of the erosion control Project.

3.2 RECLAIM SEZ PROPOSED IMPROVEMENTS

The SEZ restoration component of the Project proposes to remove fill material that is covering areas that could be restored as functioning SEZ. The fill area north of the intersection of Mt. Rainier Drive and Lake Tahoe Blvd. is approximately ten feet deep and the slope toe of the fill mound extends approximately 135 feet from the road shoulder. At this location potential wetlands have been identified adjacent to the fill area. In order to minimize impact to the potential wetlands mechanized equipment for fill removal would only be used on the fill mound. Protective silt fencing, coir logs, coir fabric, and other appropriate temporary erosion control devices would be placed at the toe of the fill slope to prevent construction activity from affecting the potential wetland adjacent to the fill material. The fill would be removed from the terminus of the mound back towards the road. Hand tools would be used near the slope toe to remove the remaining fill material. The second fill area is located on Mt. Rainier Drive near its intersection with North Upper Truckee Road. The fill mound is approximately ten feet deep and nearly at the same grade as Mt. Rainier Drive. The natural floodplain surface is below this mound. Potential wetland has been identified adjacent to this mound. The proposed method of fill removal at this location would be the same as the previous.

The identified fill material is most likely derived from locally excavated material during the construction of the subdivision and therefore maybe used in other areas of the erosion control Project, where fill is needed or used as part of the Angora SEZ project adjacent to this Project area. Should the Project produce excess fill material, that material would taken to an approved site and properly disposed of consistent with Lahontan Regional Board and TRPA regulations.

3.3 EROSION CONTROL PROJECT PURPOSE AND NEED

Pursuant to the requirements of Section 208 of the Clean Water Act, the TRPA prepared a Water Quality Management Plan (208 Plan) for the Lake Tahoe Basin. This plan identified erosion, runoff, and disturbance resulting from developments such as subdivision roads within the Project area as primary causes of the decline of Lake Tahoe's water quality. The 208 Plan also mandates that capital improvement projects such as the Angora 3 Project be implemented to bring all El Dorado County roads into compliance with Best Management Practices (BMPs) by the year 2008 to assist in achieving water quality objectives.

This Project is one of three capital improvement projects designated as Project 193 "Mountain View" in the TRPA EIP list. The three capital improvement projects that comprise Project 193 are as follows: 1) View, 2) Mt. Rainier, and 3) Cochise. This Project is the Mt. Rainier portion of EIP Project 193.

The purpose of the Project is to improve the water quality of runoff to Angora Creek and ultimately to Lake Tahoe by reducing erosion and sediment originating in the Project area. The methods available to improve water quality include source control, hydrologic design, and treatment. Various methods of improving water quality were assessed as part of the planning process, specifically the Formulating and Evaluating Alternatives Memorandum and the Preferred Alternative Report in which a preferred alternative was identified. As part of the planning process, the following problems were identified in the Project area:

- Eroding cut slopes;
- Eroding roadside ditches;
- Reduced infiltration;
- Road sand/cinder accumulation along roads; and
- Improper hydraulic conveyance in unlined ditches, leading to scour.

Typical drainage and water quality issues identified within the Project area fall into general categories shown in Table 1:

Table 1. Typical Drainage and Water Quality Issues within the Project Area

Problem	Type[1]	Description
Sediment production from soil instability	SC	Soil erodes from sparsely vegetated and sloped areas.
Sediment production from exposed shoulder	SC	Soil erodes from compacted shoulder and roadside parking.
Sediment production from sanding operations	SC	Cinders wash off road surface with high concentrations at intersections.
Inadequate conveyance under roads	HD	Culverts are undersized and damaged.
Inadequate conveyance along roads	HD	Undersized or nonexistent roadside ditch; inadequate placement of culverts.
Ponded water along roads	HD	Insufficient slope, channel or berms.
Iron seepage from groundwater	T	Natural source problem.
Lack of infiltration and treatment	T	Compacted and poorly vegetated open areas and drainages unable to provide infiltration and treatment.

[1] Problem Type: SC – Source Control; HD – Hydrologic Design; and T – Treatment.

3.4 EROSION CONTROL CONCEPT ALTERNATIVES

The process of formulating alternative solutions to address water quality issues in the Project area conforms to the Stormwater Quality Improvement Committee (SWQIC) 2004 Guidelines for Water Quality Projects. The two main steps implemented to develop alternatives are: (1) describe baseline (existing) conditions and (2) formulate and evaluate alternatives. Baseline data for the Project area has been collected and presented in the Existing Conditions Report (EDOT 2004). The Formulating Alternatives Memorandum was prepared and released in September 2005. All previous documents are available through the EDOT.

EDOT and the CTC met in early June 2005 to discuss a broad range of draft concept alternatives for erosion control. As a result of the meeting, the draft concept alternatives were reduced to four modified concept alternatives. During the June site visit, additional opportunities for SEZ and water quality improvement were identified outside of the erosion control Project area.

The PDT selected a preferred alternative at a meeting on November 21, 2005. The preferred alternative consists mostly of Alternative 4, described below, and includes some proposed biospreaders in Alternatives 2.

General items in the preferred alternative include:

- All Project area culverts not abandoned or removed will be assessed during alternative analysis and will be redesigned if size or positions are inadequate for conveyance and water quality protection.
- All regraded channels with sufficient water to support vegetation will be restored with either a combination of seeding and blanketing, willow cutting installations or placement of salvaged sod or willows.

3.4.1 CONCEPT ALTERNATIVE #1 – URBAN (MODIFIED)

This alternative was initially designed to strictly follow an urban (reliance on hardscapes) strategy to address identified problems such as curb and gutter, drop inlets, and piping. Following the June meeting with EDOT-TED and the CTC, Alternative #1 was modified by incorporating additional organic opportunities, which can be characterized as utilizing the natural environment with little modification to maximize water quality and wildlife benefit.

Source Control: Curb and gutter is proposed along all roadway drainages where the existing ditches are earthen and eroding and have insufficient groundwater (e.g., Pyramid Circle, Mt. Olympia, etc.) to support vegetation. Curb and gutter installations in these areas would prevent erosion along the roadway drainage and reduce shoulder disturbance. A combination of rock-lined ditches with vegetation or a series of biospreaders to absorb the water's energy and prevent erosion are proposed in areas where existing vegetated ditches are currently showing signs of erosion or where eroded dirt ditches flow perpendicular to the roadways. Along sparsely vegetated and eroded slopes, a combination of vegetation and rock slope protection is proposed to stabilize the area and prevent additional erosion.

Hydrologic Design: A storm drain system installed within the ROW to avoid impacting existing SEZ is proposed along the length of North Upper Truckee Road in the Project area. The storm

drain is used to adequately collect and convey roadway runoff and treat it through a series of pretreatment vaults. The storm drain system would initiate at the intersection of North Upper Truckee Road and Mt. Rainier Drive and terminate at a vegetated swale in the State owned parkland below. Additional culverts are proposed in areas where nuisance ponding and flooding has been identified. For example, a new culvert is proposed at the corner of Mt. Rainier Drive and Mt. Olympia to prevent flow and potential flooding across the roadway and eliminate erosion in the swale located between Mt. Olympia and Mt. Diablo. Rock bowls are proposed at currently ponding or overflowing culvert inlets to slow flow and improve conveyance. The rock bowls will also improve source control by preventing erosion at the culvert intake. Regrading and revegetating all roadway drainages where there is ponding or flooding due to inadequately sized or sloped channels is also proposed.

Treatment: Sediment traps or pretreatment vaults are proposed upstream of culvert inlets that carry flow from rock-lined or earthen ditches. They are also proposed upstream of culverts and storm drains alongside the major roadway sections where winter road sanding operations are concentrated. Sediment traps and pretreatment vaults will allow for deposition and removal of coarse sediments. A combination of sediment traps and detention basin at the northeast corner of the intersection of Lake Tahoe Boulevard and Mt. Rainier Drive is suggested to provide treatment of flows exiting sections of Lake Tahoe Boulevard and Mt. Rainier Drive.

3.4.2 CONCEPT ALTERNATIVE #2 – ORGANIC (MODIFIED)

This alternative was initially designed to follow an organic strategy for solutions to address identified problems and proposed no additional hardscape improvements. It allowed for replacement of the same number of culverts that currently exist. After the June meeting, Alternative #2 was modified by the introduction of some urban options. For example, additional culverts were added where runoff floods the roadway and sediment traps were installed at culvert inlets to capture road sand and cinders.

Source Control: Soil restoration, revegetation and coir log (biospreader) installation are proposed for all sparsely vegetated and eroded areas to minimize rilling, sloughing, and resulting sediment production. Revegetation and blanketing is designated for all regraded channel sections to stabilize the channel and prevent erosion. Biospreaders are designated at slopes downstream from culvert outlets to slow flow and reduce erosion.

Hydrologic Design: A constructed, vegetated and blanketed v-ditch on Pyramid Circle is proposed to provide conveyance and reduce erosion. Constructed vegetated swales are provided at Culverts 21, 20 and 19 to improve conveyance to the existing meadow and reduce ponding immediately downstream. In areas where there is an existing channel with poor conveyance, regrading the channel's size and slope is proposed to improve conveyance. To alleviate ponding behind Culvert 18 and provide more water to the meadow, removal of a 200-foot section of pavement on Mountain Meadow Drive and construction of a meandering vegetated swale is proposed to carry the flow north to the meadow. Constructed step pool channels are provided at two culvert outlet locations (Culverts 2 and 9) on steep slopes to slow the flow and promote overbanking and infiltration at key locations.

Treatment: A constructed wetland basin is proposed at the outlets of Culverts 28 and 32 to treat

runoff. All drainage conveyance is via vegetated swales to provide increased infiltration and treatment. Sediment traps have been added at locations with high concentrations of road sand and cinders.

3.4.3 CONCEPT ALTERNATIVE #3 – BLENDED

This alternative focuses on dividing, spreading, and infiltrating flows using a combination of urban and organic options and taking advantage of publicly owned lands for BMP placement. Incorporating comments from the June meeting, a large portion of the proposed curb and gutter was removed and existing drainages are relied on instead of routing flow to dispersion areas on public parcels.

Source Control: Vegetating and restoring soils, where appropriate, is proposed to stabilize the area and prevent erosion on all sparsely vegetated and eroded areas greater than 100 square feet and located on publicly owned parcels. Biospreaders, sometimes combined with vegetated swales, are proposed to slow water flow and prevent erosion on sloped areas downstream of new culvert outlets. Curb and gutter sections provide a source control benefit by reducing erosion along roadway drainages and reducing shoulder disturbance caused by plowing operations and roadside parking.

Hydrologic Design: Curb and gutter is proposed on Lake Tahoe Boulevard, North Upper Truckee Road and sections of Pyramid Circle, Mt. Olympia, Mt. Diablo and Dixie Mountain Drive to improve conveyance and direct flow to additional culverts for dispersion onto public lands. In other areas the existing drainages are used to carry the flow to additional culverts to spread and infiltrate the flow onto public lands.

Treatment: Sediment traps will be used to provide coarse sediment removal proposed at culvert inlets on North Upper Truckee Road and Lake Tahoe Boulevard and culvert inlets leading to detention basins located in areas of concentrated road sanding applications. Detention and wetland basins are proposed at numerous culvert outlet locations to provide treatment through sedimentation and infiltration.

3.4.4 CONCEPT ALTERNATIVE #4 – BLENDED-

This alternative builds upon Alternative 2 using field recommendations made during the June 2005 meeting and associated site visit.

Source Control: A combination of rock slope protection and revegetation is proposed for many sparsely vegetated and eroded areas to minimize rilling, sloughing and resulting sediment production. Laying back the slope and mulching is proposed for eroding slopes that would be difficult to revegetate due to soil and moisture conditions. Revegetation and blanketing is designated for all regraded channel sections to stabilize the channel and prevent erosion. Rock bowls are proposed at culvert outlets where rilling is occurring at the outlet and biospreaders are designated at slopes downstream from culvert outlets to slow flow and reduce erosion. Porous pavement or boulders combined with revegetation are proposed in areas with heavily compacted and eroding shoulders to provide source control and facilitate infiltration.

Hydrologic Design: Curb and gutter is proposed in very specific areas where there is a

combination of either steep slopes, evidence of snow plow disruption and eroding ditches. Constructed vegetated swales are provided at Culverts 20 and 19 to improve conveyance to the existing meadow and reduce ponding immediately downstream. A section of the dead end street on North Upper Truckee Road is removed to eliminate unnecessary impervious coverage and to allow for construction of a vegetated swale or wetland basin to collect runoff from Culvert 21. In areas where there is an existing channel with poor conveyance, regrading the channel's size and slope followed by revegetation is proposed to improve conveyance.

Treatment: Double sediment traps are proposed at Culvert 28 inlet and a single sediment trap at Culverts 1, 9, 11, 24, 27 and 32 to treat runoff in areas of road sanding operations. All drainage conveyance is via vegetated swales to provide increased infiltration and treatment.

3.5 SEZ RESTORATION AND EROSION CONTROL PREFERRED ALTERNATIVE - BLENDED

In reviewing and analyzing the alternatives detailed above, EDOT, in cooperation with the funding agencies and the PDT concluded that an alternative similar to that of Alternative 4 is the preferred alternative. The preferred alternative improvements will also include biospreaders as described in Alternative 2.

3.6 ANGORA CREEK FISHERIES PROJECT PURPOSE AND NEED

Lake Tahoe Boulevard currently crosses Angora Creek at the north west corner of the erosion control Project area through two arch corrugated metal pipes. Each pipe is 72" X 44" in size and positioned side-by-side with a headwall on the upstream and downstream ends. One culvert is partially plugged with sediment and the other one has settled to the point that the floor has an upward bulge and is dividing flow to either side of the culvert. Both culverts have detached from both headwalls. The up and downstream headwalls are cracked, deteriorating, and have begun to lean. These conditions are impeding fish passage to spawning habitat further upstream on Angora Creek.

Angora Creek upstream of Lake Tahoe Boulevard contains valuable spawning and rearing habitat for fish using the Upper Truckee River system. Two previous channel improvements and SEZ projects implemented downstream from the Project have resulted in improving fish passage and habitat on Angora Creek. EDOT and the LTBMU initiated construction of the Angora Creek SEZ project in 2005 on the segment of Angora Creek north and east of the current erosion control Project. The purpose of the Angora Creek SEZ project is to relocate the stream channel back into the original floodplain of Angora Creek between its crossing at Lake Tahoe Boulevard and the Washoe Meadows State Park property line. As part of this project, failing culverts under View Circle were removed and new bridge was constructed to improve fish passage. As a result of the rehabilitation efforts taking place in this stretch of Angora Creek, the Angora 3 Project will continue the fish passage improvement effort into the upper watershed area.

California Department of Parks and Recreation (SPR) implemented the Angora Creek and Washoe Meadows Wildlife Enhancement Project within Washoe Meadows State Park in 1995. The primary purpose of the project was to restore the Angora Creek channel and its connection to the meadow and improve wildlife and fish habitat, as well as water quality. The project was completed in 1999 and has restored the channel and improved fish passage in that segment of

Angora Creek. The fisheries enhancement work proposed in the Angora Project herein also builds upon the fish passage improvement efforts from of this SPR project.

The current twin culverts that carry Lake Tahoe Boulevard across Angora Creek create passage impediments for fish and obstruct sediment transport downstream on Angora Creek. Fish passage through the culverts is currently impaired during high flow periods from excessive water velocities and during low flow periods from inadequate depth of flow. Passage conditions at the culverts were assessed in an EDOT (2005a) study of the geomorphic stability and fish passage.

Fish passage condition is generally based on a function of the species present, the size of passing fish, and the hydraulic conditions (velocity and depth of flow) at the site during the period passage occur. Passage for Angora Creek at the Project area is most critical during spawning season, when fish are trying to reach spawning habitat upstream of Lake Tahoe Boulevard. Passage is important for spring spawning fish during high flows and for fall spawning fish during low flows.

There are six native fish species and three introduced trout species in the Upper Truckee River. There are no known special status fish species in Angora Creek. Native fish species include Lahontan redsides (*Richardsonius egregius*), Lahontan speckled dace (*Rhinichthys osculus robustus*), Lahontan stream tui chub (*Gila bicolor pectinifer*), Tahoe suckers (*Catostomus tahoensis*), mountain sucker (*Catostomus platyrhynchus*), Paiute sculpin (*Cottus beldingi*), and mountain whitefish I *Prosopium williamsoni*). Introduced species include rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and Eastern brook trout (*Salvelinus fontinalis*). Also, larger lake-run trout are known to move from Lake Tahoe into tributary streams for spawning. Most of the native fish and the rainbow trout are spring spawning fish whereas brown trout, the native mountain whitefish, and brook trout are fall spawning fish. Most of the native fish are primarily small-size fish reaching maximum lengths of 2-4 inches. The native Tahoe sucker and native mountain whitefish can reach lengths of 8-20 inches. Rainbow and brown trout can reach lengths of 18-24 inches. Brook trout usually grow to about 8-14 inches in length.

In the spring, high flow velocities of greater than 2 to 3 feet per second would preclude small native fish from passing upstream through the 40-foot long culverts, while large rainbow trout and suckers would likely be able to pass through the existing culverts during spring flows. In the fall, low depth of flow rather than velocity would prevent large brown trout and mountain whitefish from passing through the existing culverts. Minimum depth of flow for passage should be approximately 0.5 feet. Brook trout are less likely to move very far upstream on Angora Creek to find suitable spawning habitat. Detailed discussion on fish passage on Angora Creek is provided in the Angora 3 Erosion Control Project – Assessment of Geomorphic Stability and Fish Passage at Angora Creek (EDOT 2005a) and is available through EDOT.

Replacement of the existing culverts and fill crossing with a single span concrete culvert would restore normal fish passage conditions within the Project area.

3.7 ANGORA CREEK FISHERIES ENHANCEMENT PROPOSED IMPROVEMENTS

The Angora Creek Fisheries Enhancement Project proposes to demolish and remove the two

existing corrugated metal culverts under Lake Tahoe Boulevard and replace them with a single concrete culvert span within the same footprint as the existing span. Angora Creek in the area of the culvert replacement would be dewatered and isolated with block nets. All fish in the dewatered reach would be removed and relocated in other flowing reaches of Angora Creek. A small cofferdam would be installed upstream of the construction area. Inflow would be diverted at the cofferdam into a bypass pipe that would carry flow around the construction site and discharge flow back into Angora Creek downstream of the site. Best Management Practices (BMPs) recommended and approved by federal, regional, state, and local regulatory agencies would be deployed to mitigate construction activity next to the stream channel. Mechanized equipment would be used to remove the road surface and fill over the culverts. A crane would be placed on existing pavement at the dead-end portion of Angora Creek Road west of the creek to lift and remove the culverts. The channel bottom below the culverts would be shaped with a low flow channel. Two new concrete headwalls would be installed to anchor a new pre-formed concrete span. Space above the span would be backfilled with soil, compacted, and a new road surface would be added on top. The culvert replacement construction duration is anticipated to take approximately two months.

Final design of Angora Fisheries preferred alternative is planned for winter 2005/2006 on a separate design schedule from that of the erosion control Project. The fill/SEZ reclamation area north of the intersection of Mt. Rainier and Lake Tahoe Blvd. will be designed with the Angora Fisheries Enhancement Project.

3.7.1 ANGORA CREEK FISHERIES ALTERNATIVES

Angora Fisheries Alternative #1

This alternative would line the existing culverts and place baffles inside for fish passage. The placement of the culverts would not be modified, however, the headwalls at the inlet and outlets will be repaired to remedy failing.

Angora Fisheries Alternative #2

This alternative would replace the two existing culverts with a single culvert that would convey a 100-year event for Angora Creek. The culvert would be a three-sided box culvert with a low flow channel in the center. The culvert would be designed to minimize the total width and therefore, only pass the 100-year event under a head.

Angora Fisheries Alternative #3

This alternative would replace the two existing culverts with a single culvert that would convey a 100-year event for Angora Creek. The culvert would be multiple three-sided box culverts or a bridge with a low flow channel in the center. The three-sided box culverts would be designed to accommodate the 100-year event, while maintaining the typical depth found immediately upstream.

3.7.2 ANGORA CREEK FISHERIES CONCEPT ALTERNATIVES EVALUATION

This section provides a summary description of the three concept alternatives. Background data

are presented in the Geomorphology report (ENTRIX September 2005).

All three Angora Creek Fisheries alternatives developed for EIP #406 provide solutions that address the passage of fish on Angora Creek at Lake Tahoe Boulevard.

Evaluation Criteria

The three alternatives were evaluated based on two criteria: the anticipated flow and velocity through the culverts and the culvert condition. A hydraulic analysis was used to assess the depth and velocity of flow through the culverts. Culvert condition is based on changes to the existing culvert conditions, and the configuration of the new culverts, such as access for cleaning, compatibility with roadway, and floodplain influence. During the design phase of this Project component, a more detailed hydraulic analysis will be performed for the alternatives.

The evaluation criteria are based on an alpha-numeric scale of poor, good, and best. As described below.

Velocity/depth Criteria

"Poor"- No fish passage during certain flow conditions because of shallow depth or high velocity.

"Good" – Although fish can pass during all spawning periods, fish may be delayed under certain high flows.

"Best" – No constraints or passage delays because of hydraulics. Hydraulic conditions of the culvert mimic the natural channel up to the design flood.

Condition Criteria

"Poor"- The culvert, headwall, or fill material will easily loose function because of the design or condition.

"Good" – The culvert will function but could be impaired because of debris, beaver dams, vegetation growth.

"Best" – The culvert can accommodate debris or other natural occurrences, and maintain function.

Evaluation of Goals

The velocity/depth and condition criteria were evaluated using alpha-numeric criteria supported by hydraulic calculations and professional judgement, as described below.

The velocity/depth criteria were based on a hydraulic analysis of the alternatives. The hydraulic analysis yielded depth and velocity data for a range of flows. For a given flow, the higher the depth and velocity, the lower the ranking. If a culvert operates under a head that exceeded the culvert height for flows up the design flow then the culvert ranked "Poor". If the culvert

operated under a head but the velocity over a range of flows is less than 3 ft/sec, then the alternative ranked "Good". If the depth and velocity were similar from downstream, through the culvert, to upstream, then the alternative was ranked "Best". The cutoff of 3 ft/sec represents the upper limit of the sustained swimming speed of many fish species.

The condition criteria were evaluated by comparing the depths previously computed with the freeboard in the culvert for the typical range of flow. A lack of freeboard may indicate a tendency to become blocked with debris carried in flood flows.

Results of Opportunities and Constraints Ranking

Using the hydraulic analysis of the alternatives, the three alternatives were ranked. The results are shown in Table 2.

Table 2. Ranking of the Angora Fisheries (EIP # 406) Alternatives

Alternative	Criteria	
	Velocity/Depth	Condition
Alternative 1	Poor	Poor
Alternative 2	Good	Good
Alternative 3	Best	Best

3.7.3 ANGORA FISHERIES PREFERRED ALTERNATIVE

Alternative 1 ranked poor because it does little to change the current culvert condition. The hydraulic conditions could be improved for fish passage, but only at the expense of a reduction in flood capacity because of the lining and the baffles. The failing condition of the culvert would only be partially corrected by repairing the headwall, but the existing culvert is bent in the center, creating a barrier.

Alternative 2 improves the hydraulic conditions and puts a new culvert and headwall in place. However, Alternative 2 will also operate under a head for higher flows, which means a potential fish passage barrier or delayed passage during those flows. Also, changing the channel hydraulics at the culverts may induce headcutting downstream of the culvert similar to what is present at the current culvert and others nearby. Because Alternative 2 is still a constriction in the floodplain, debris may become trapped at the culvert. The alternative therefore ranks "Good" for the improvements.

Alternative 3 attempts to mimic the natural channel and floodplain up to the design flow. The final configuration of this culvert (or bridge) will have to be designed through detailed hydraulic and structural analyses. However, this alternative is ranked "Best" because it maintains the channel/floodplain conditions and therefore is not an encroachment into the floodplain.

Based on this evaluation, a design that mimics the natural floodplain characteristics, as in Alternative 3 is the preferred alternative. This alternative will be refined further with detailed hydraulic analyses and cost estimates.

4.0 RIGHT-OF-WAY ACQUISITION REQUIREMENTS

Every effort has been made to locate proposed improvements within the County right-of-way (ROW) or on publicly owned parcels. Figures D-1 through D-4 show all public parcels where proposed improvements maybe located. These publicly owned parcels are identified by their assessor's parcel number and agency owner. For USFS parcels, either a Special Use Permit or direct transfer of USFS parcels to the County will be the mechanism that will allow the County to use these parcels. For the CTC parcels, The CTC will grant license agreements allowing these improvements to be constructed on their property.

While no private parcel acquisition is proposed for the Project, permanent easements will be required on private parcels for Project construction. The list of public parcels and private easements necessary for Project construction and implementation are identified in Table 3.

Table 3. Proposed Permanent Easement Locations and Owners

APN #	OWNER
33-462-02	Delariva
33-462-03	Laporte, Pette
33-453-13	Hallam
33-442-21	Machado
33-442-26	Brown
33-466-12	Bobo
33-451-04	Gainor

5.0 MITIGATION MONITORING

Mitigation measures are described in the attached CEQA Environmental Checklist (Attachment A). EDOT staff and/or contractor will conduct on-site monitoring to ensure that mitigation measures are implemented as proposed.

A full time construction inspector provided by the County and/or contractor will monitor proposed mitigation measures for potential temporary impacts associated with construction. The inspector will ensure that all-temporary erosion control requirements and other environmental protection requirements are strictly adhered to by the Contractor. In addition to County

inspections, regulatory agencies will review Project plans and specifications to ensure compliance with all applicable local, state, and federal requirements. Any additional mitigation measures required by regulatory agencies as a condition of approval will be monitored in the same manner. Throughout the construction of the Project, the agencies will be invited to weekly "tailgate" meetings and conduct periodic visits to the Project sites to enforce the implementation of BMPs and ensure compliance with all other mitigation measures.

The maintenance and monitoring of the Project improvements will continue well after construction completion. Revegetation monitoring and establishment will continue for a minimum of two years following construction. Plant establishment will include irrigation and replanting, if necessary. The County will inspect all Project improvements during the spring and fall of each year during the twenty-year maintenance period as required by CTC erosion control grant guidelines. County engineering staff will direct maintenance staff to provide maintenance of new facilities based on results of the inspections. Photographs will be taken before and after construction for a period of two years, and following significant storm events to monitor Project performance.

6.0 COVERAGE AND PERMIT ISSUES

After construction is complete and revegetation established, the areas of SEZ to receive sediment traps/basins would be considered restored SEZ. Areas of SEZ where flow-spreading devices would be installed would also be considered enhanced.

Project final design is in progress at this time and it is anticipated that no new coverage would result from Project construction. It is estimated that the Project would disturb approximately 100,000 square feet of SEZ as part of the installation of erosion control improvements such as curb and gutter, sediment basins, and rock lined and vegetated channels. Project Land Capability/SEZ verification has been submitted to the TRPA for review. At this time, TRPA has not completed the land capability/SEZ verification for the Project, hence this estimate is based on professional judgement and experience on similar projects and information gathered as part of the Project. During final design and once the land capability/SEZ verification have been completed, coverage/disturbance acreage required for completion of TRPA and Lahontan permits would be calculated.

After construction and revegetation is complete, SEZ areas that receive the installation of sediments basins will be considered restored SEZ, as well as SEZ areas where flow spreading devices will be installed. Should EDOT determine that greater than five acres of overall SEZ disturbance will result from Project construction, EDOT will apply for a NPDES Waste Discharge Permit from the Lahontan Board. Since the Project will exceed 2,000 square feet of new disturbance and more than 100 cubic yards of fill or excavation within SEZs to construct proposed sediment basins and remove fill, EDOT will request from the Lahontan Regional Board exceptions to the Basin Plan prohibitions against disturbances to SEZs.

Wetland delineation fieldwork in the Project area is ninety-eight percent complete as of the first snowfall of 2005. The remaining areas of potential wetland have been identified for additional fieldwork. In addition, every effort is being made to completely avoid direct and indirect impacts on these potential wetlands during final design. If it is determine during final design that

avoidance is not possible, delineation work will be completed in the spring before designs at those locations would be finalized. Currently, plant identification and delineation documentation is being prepared for the erosion control Project. A Clean Water Act Section 404 permit application would be prepared and submitted to the U.S. Army Corps of Engineers based on the final erosion control Project design and its impact on wetlands and jurisdictional waters (i.e. Waters of the U.S.).

EDOT would apply for a Section 1602 Streambed Alternation Agreement with the CA Department of Fish and Games for the culvert replacement as part of the fisheries enhancement work.

7.0 REFERENCES

El Dorado County (EDOT). 2004. Angora 3 Erosion Control Project – Existing Conditions Report. Prepared by ENTRIX, Inc. for El Dorado County Department of Transportation – Tahoe Engineering Division.

El Dorado County. 2005a. Angora 3 Erosion Control Project – Assessment of Geomorphic Stability and Fish Passage at Angora Creek. Prepared by ENTRIX, Inc. for El Dorado County Department of Transportation – Tahoe Engineering Division.

El Dorado County (EDOT). 2005b. Angora 3 Erosion Control Project – Formulating Alternatives Memo. Prepared by ENTRIX, Inc. for El Dorado County Department of Transportation – Tahoe Engineering Division.

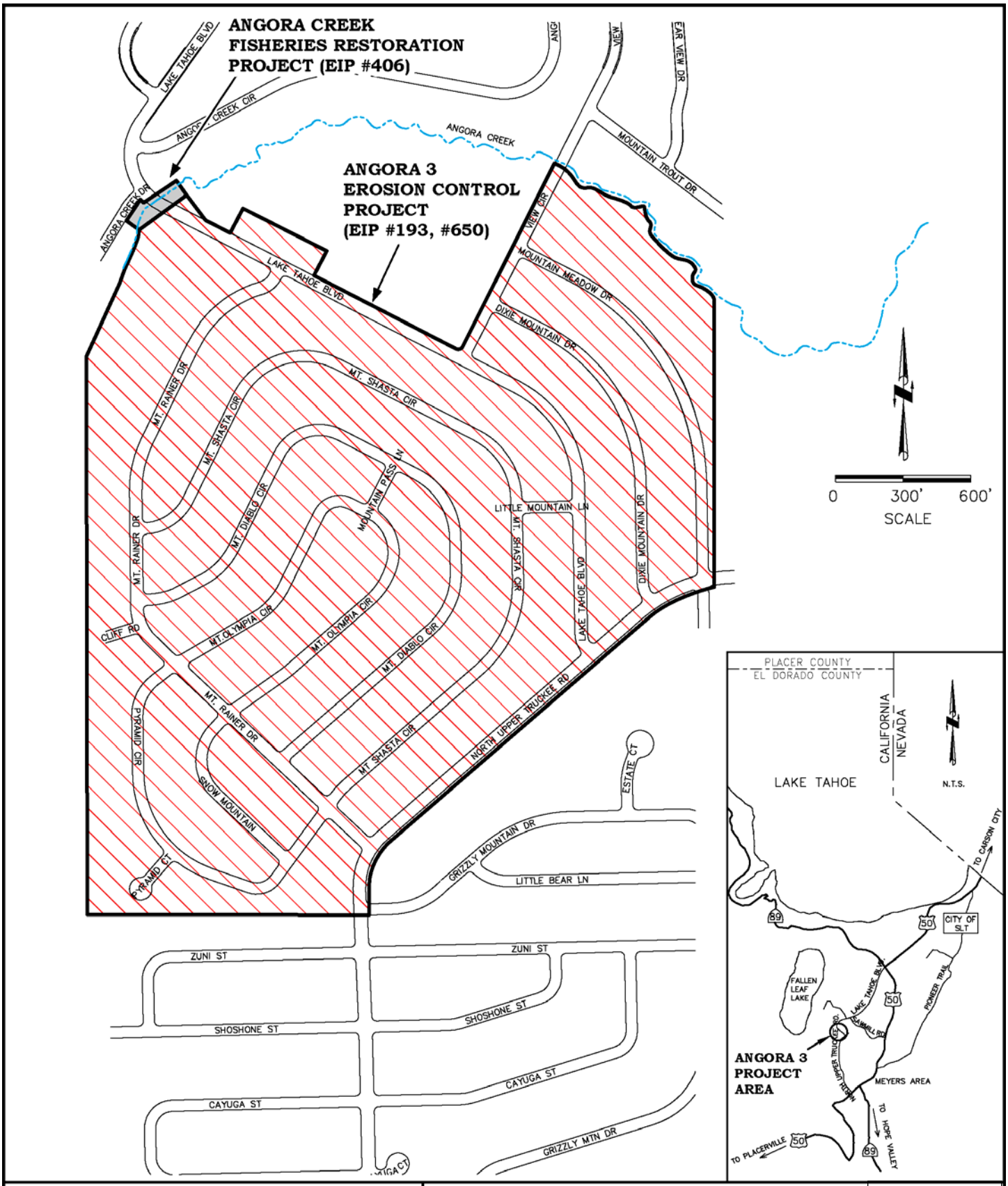
El Dorado County (EDOT). 2005c. Angora 3 Erosion Control Project – Project Development Team Draft Preferred Alternative Report. Prepared by ENTRIX, Inc. for El Dorado County Department of Transportation – Tahoe Engineering Division.

Mayer, K. E., Laudenslayer Jr. W. F. 1998. A guide to wildlife habitats of California.

Schweickert, R.A., M. M. Lahren, R. Karlin, J. Howle, and K. Smith. 2000. Lake Tahoe Active Faults, Landslides, and Tsunamis. In D. R. Lageson, S. G. Peters, and M. M. Lahren. Great Basin and Sierra Nevada: Boulder, Colorado. Geological Society of America Field Guide 2, P. 1-22.

APPENDIX A

FIGURES



EL DORADO COUNTY
SOUTH LAKE TAHOE OFFICE

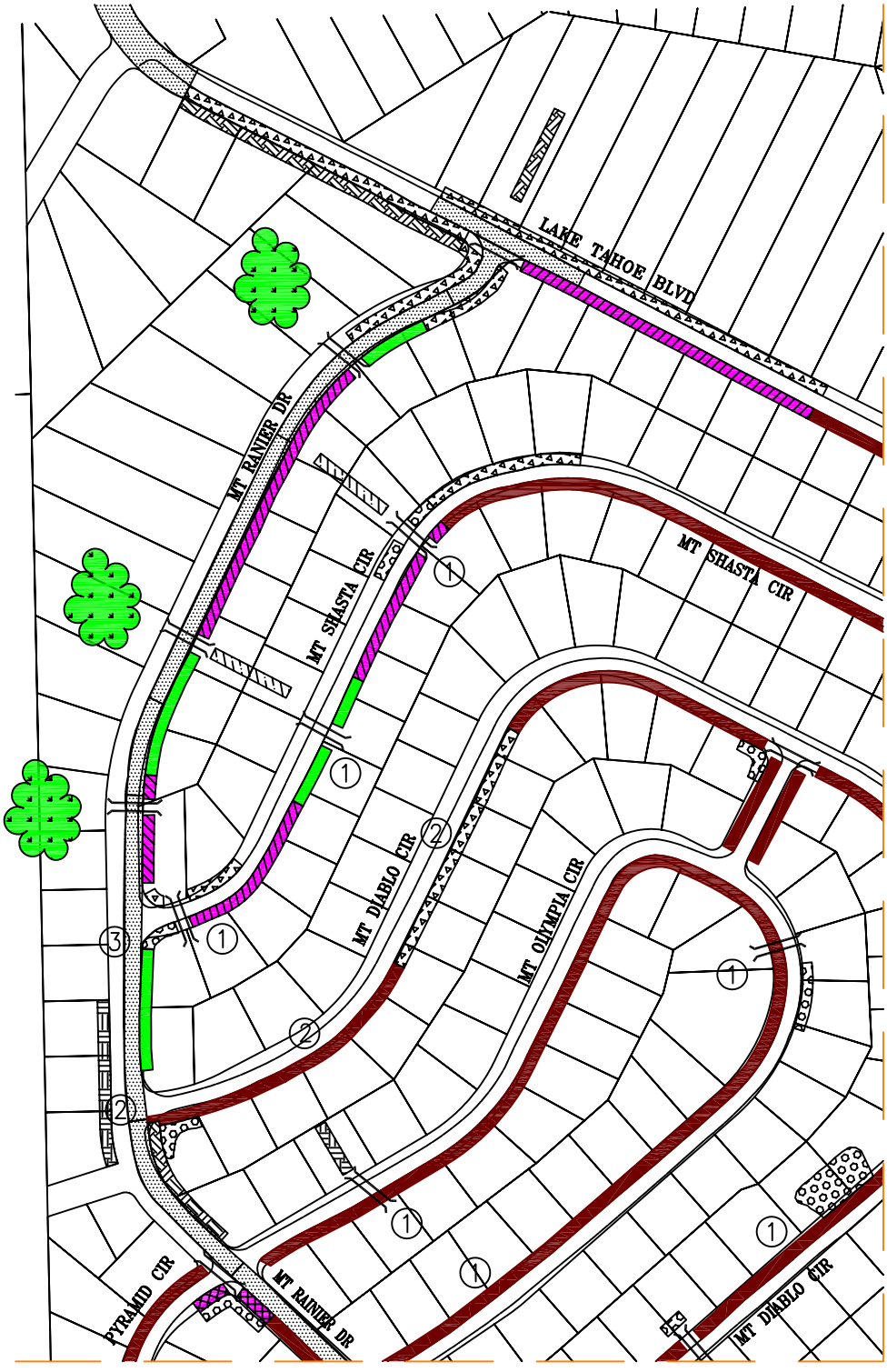
ANGORA 3 EROSION CONTROL PROJECT

Location Map

FIGURE

A

DATE:	PROJECT NO.:	BY:
11/05	95160	RAW



LEGEND

- LOCATION OF SANDING OPERATION
- CULVERTS
- DIRT DITCH
- GRASS LINED SWALE
- GRASS AND WILLOW LINED SWALE
- GRASS, WILLOW AND ALDER LINED SWALE
- LODGEPOLE LINED SWALE
- ERODED GULLY
- EXPOSED ROAD SHOULDER
- SPARSELY VEGETATED ERODED SOILS
- WELL VEGETATED OUTLET

NOTES:

1. INADEQUATE CONVEYANCE RESULTING IN PONDING
2. INADEQUATE CONVEYANCE RESULTING IN FLOODING
3. GROUNDWATER SEEP

SCALE: 1"=300'

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

Erosion Control Problems
EL DORADO COUNTY, CALIFORNIA

DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE
B-1

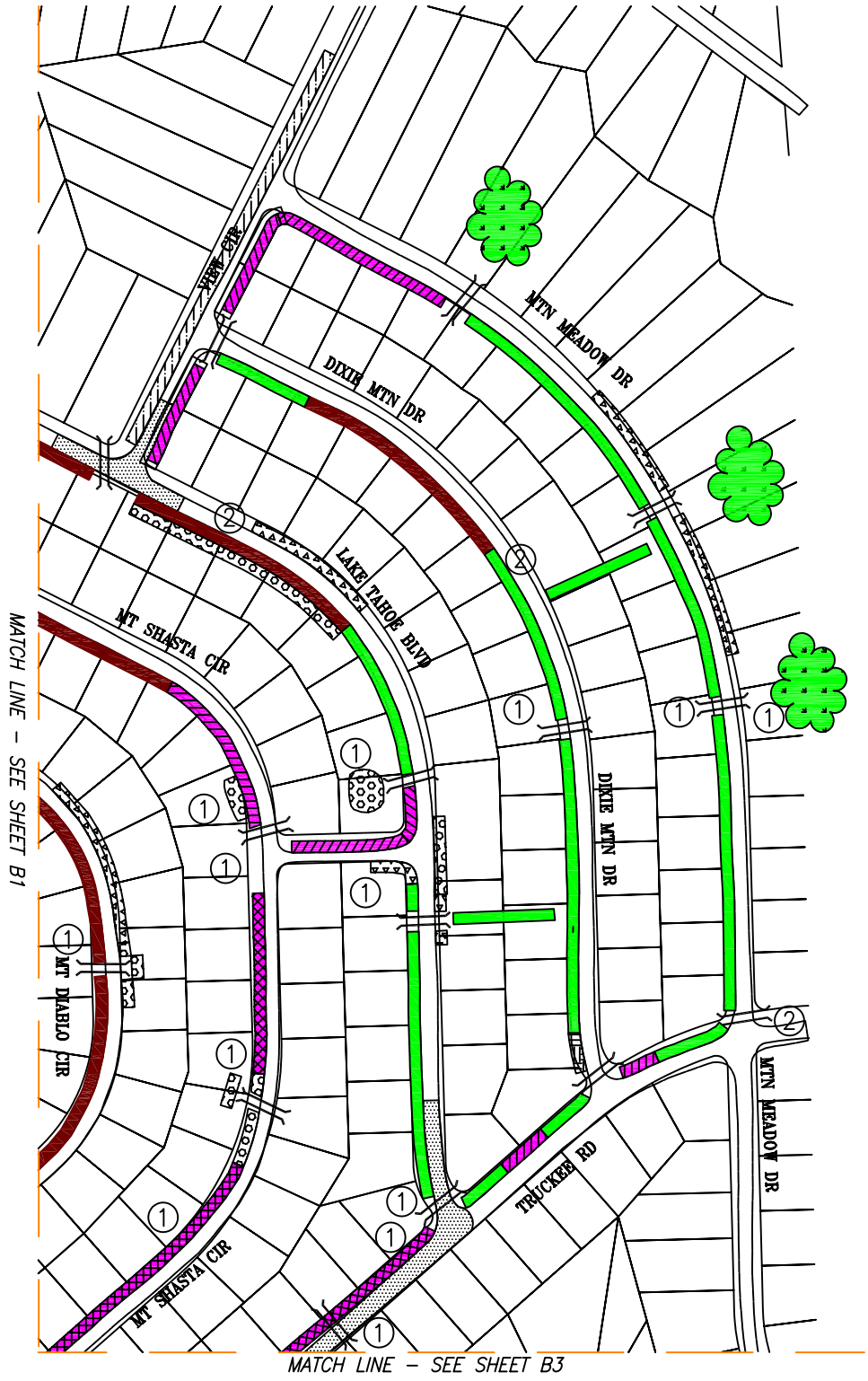
LEGEND

- LOCATION OF SANDING OPERATION
- CULVERTS
- DIRT DITCH
- GRASS LINED SWALE
- GRASS AND WILLOW LINED SWALE
- GRASS, WILLOW AND ALDER LINED SWALE
- LODGEPOLE LINED SWALE
- ERODED GULLY
- EXPOSED ROAD SHOULDER
- SPARSELY VEGETATED ERODED SOILS
- WELL VEGETATED OUTLET

NOTES:

1. INADEQUATE CONVEYANCE RESULTING IN PONDING
2. INADEQUATE CONVEYANCE RESULTING IN FLOODING

SCALE: 1"=300'

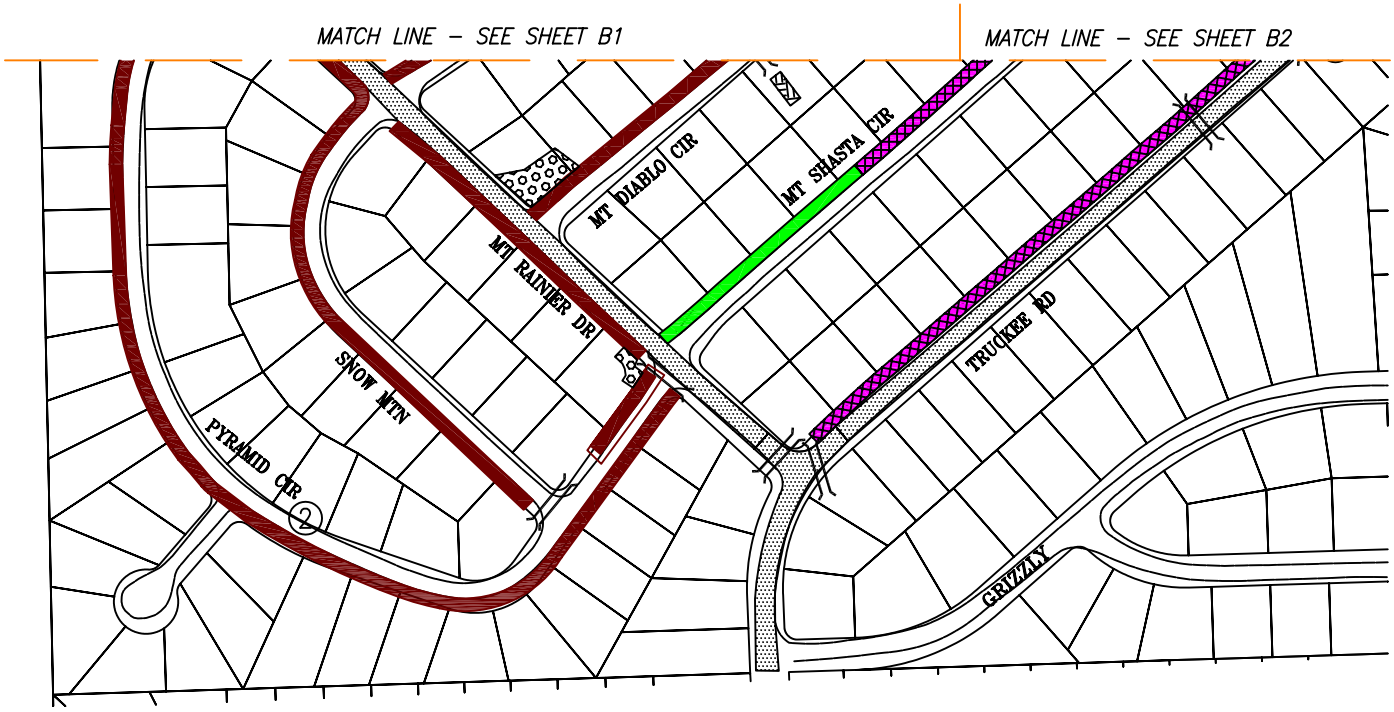


EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT
Erosion Control Problems
EL DORADO COUNTY, CALIFORNIA

DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE
B-2



LEGEND

- LOCATION OF SANDING OPERATION
- CULVERTS
- DIRT DITCH
- GRASS LINED SWALE
- GRASS AND WILLOW LINED SWALE
- GRASS, WILLOW AND ALDER LINED SWALE
- LODGEPOLE LINED SWALE
- ERODED GULLY
- EXPOSED ROAD SHOULDER
- SPARSELY VEGETATED ERODED SOILS
- WELL VEGETATED OUTLET

NOTES:

1. INADEQUATE CONVEYANCE RESULTING IN PONDING
2. INADEQUATE CONVEYANCE RESULTING IN FLOODING

SCALE: 1"=300'

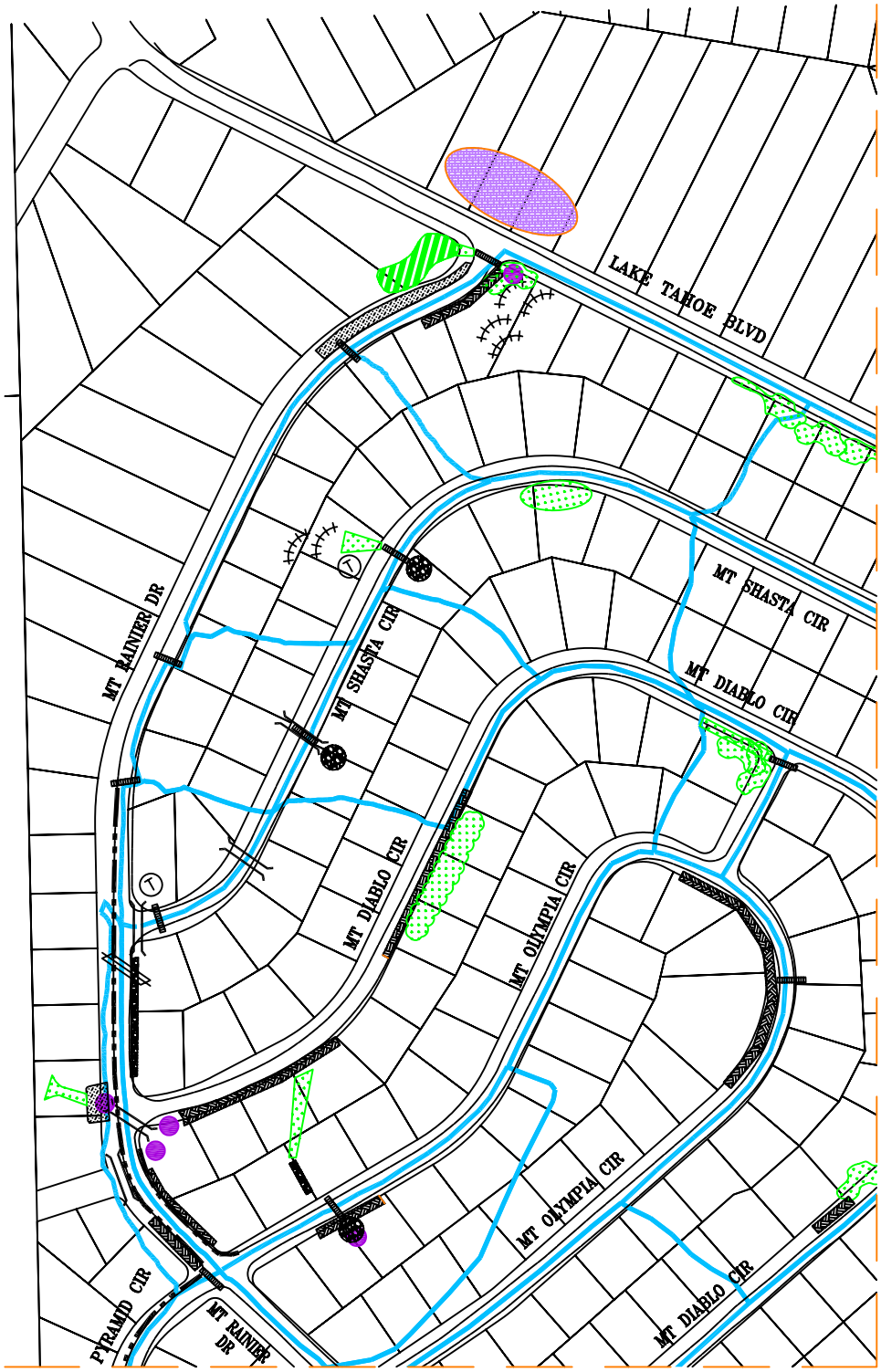
EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

Erosion Control Problems
EL DORADO COUNTY, CALIFORNIA

DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE
B-3



LEGEND

- PROPOSED BIOSPREADER
- PROPOSED ROCK SLOPE PROTECTION
- PROPOSED RETAINING WALL
- PROPOSED SEDIMENT BASIN
- PROPOSED ROCK LINED CHANNEL
- PROPOSED CURB & GUTTER
- PHASE 2 SEZ RESTORATION BOUNDARY
- PROPOSED SLOPE REVEGETATION
- PROPOSED BOULDER
- PROPOSED REMOVE FILL
- PROPOSED SEDIMENT TRAP
- PROPOSED DRAINAGE INLET
- PROPOSED POROUS PAVEMENT
- PROPOSED ROCK BOWL
- PROPOSED AC REMOVAL REVEGETATION
- PROPOSED REGRADE AND REVEGETATE CHANNEL
- PROPOSED VEGETATED CHANNEL
- PROPOSED RISER
- PROPOSED CULVERT
- DRAINAGE BASIN
- TRIM TREES ON CTC PARCEL

SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

EL DORADO COUNTY, CALIFORNIA

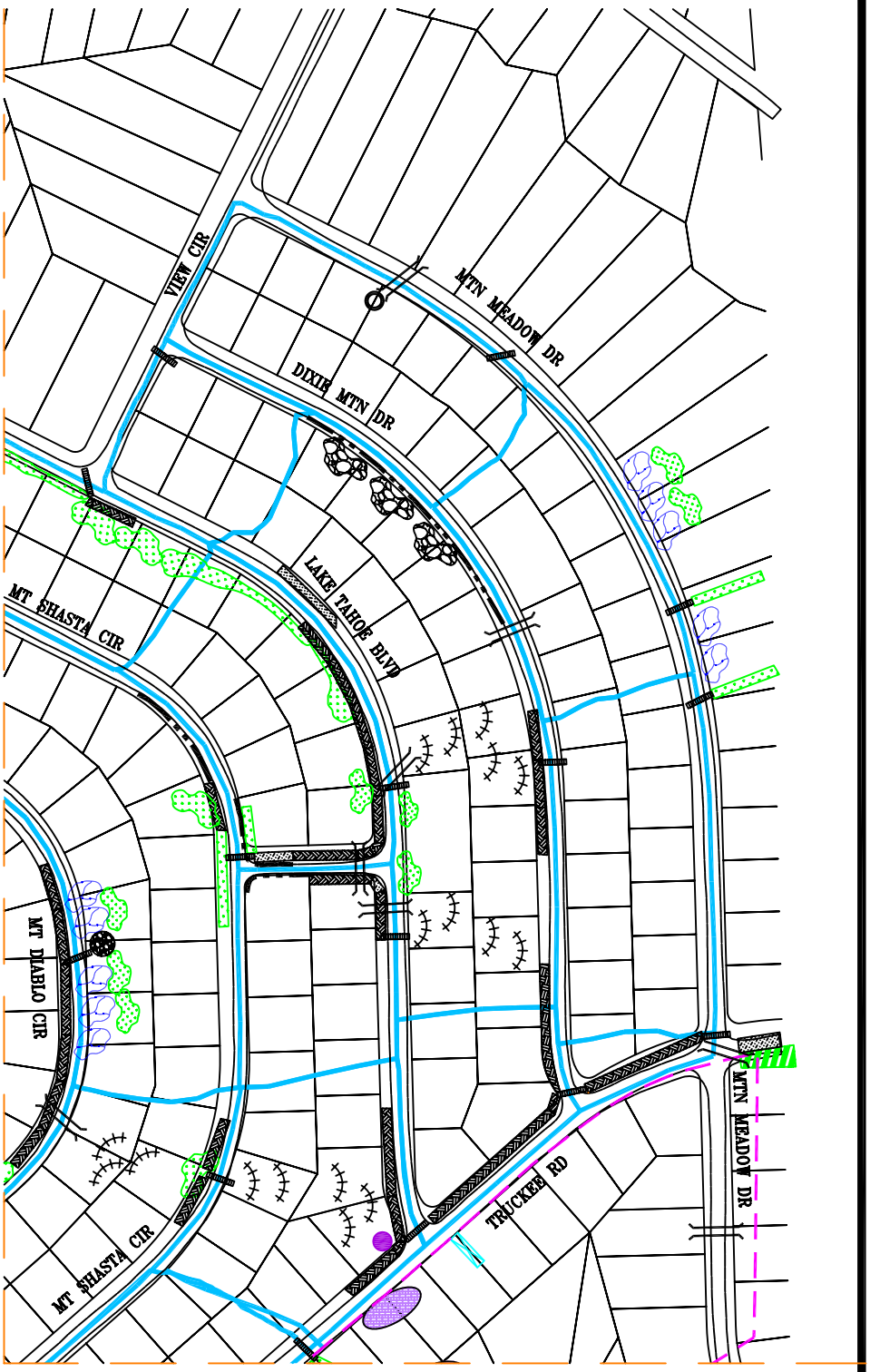
DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE

C-1

LEGEND

- PROPOSED BIOSPREADER
- PROPOSED ROCK SLOPE PROTECTION
- PROPOSED RETAINING WALL
- PROPOSED SEDIMENT BASIN
- PROPOSED ROCK LINED CHANNEL
- PROPOSED CURB & GUTTER
- PHASE 2 SEZ RESTORATION BOUNDARY
- PROPOSED SLOPE REVEGETATION
- PROPOSED BOULDER
- PROPOSED REMOVE FILL
- PROPOSED SEDIMENT TRAP
- PROPOSED DRAINAGE INLET
- PROPOSED POROUS PAVEMENT
- PROPOSED ROCK BOWL
- PROPOSED AC REMOVAL REVEGETATION
- PROPOSED REGRADE AND REVEGETATE CHANNEL
- PROPOSED VEGETATED CHANNEL
- PROPOSED RISER
- PROPOSED CULVERT
- DRAINAGE BASIN
- TRIM TREES ON CTC PARCEL



SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

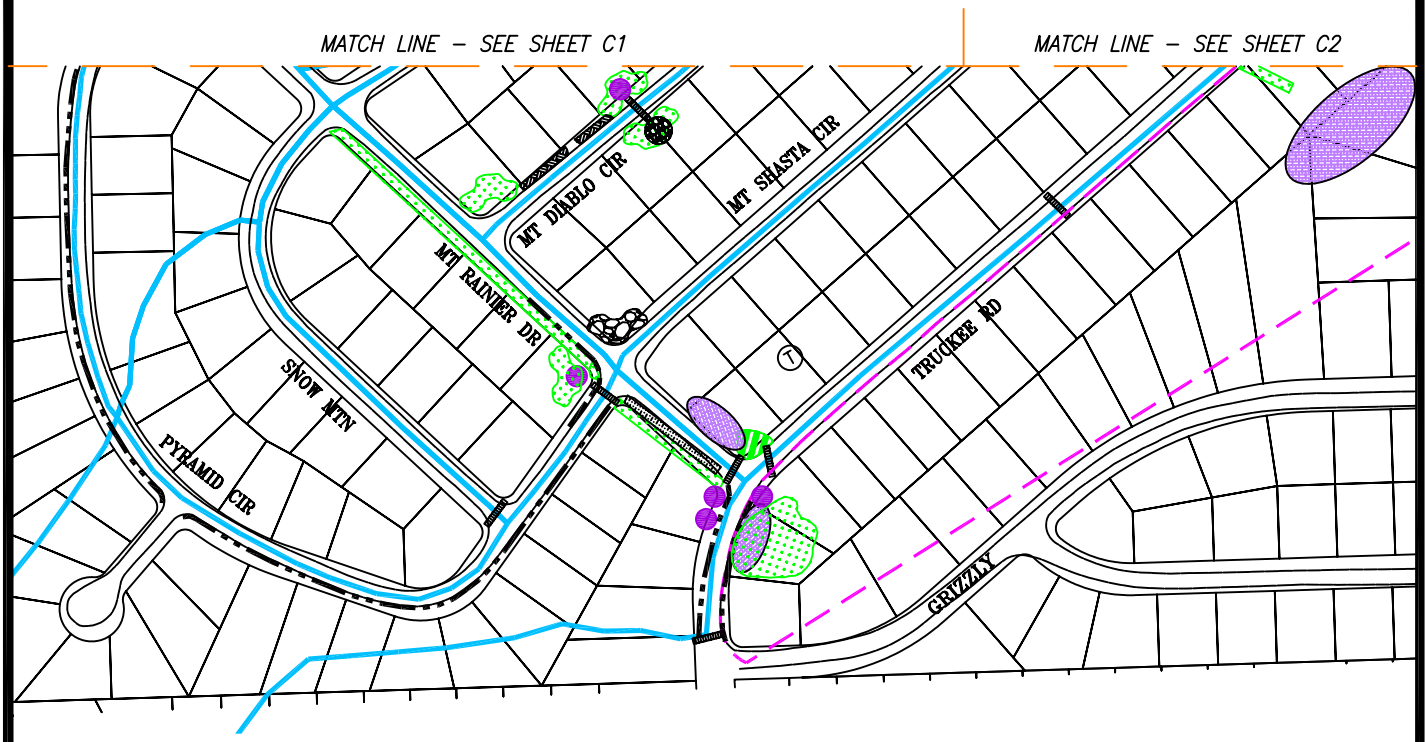
ANGORA 3 EROSION CONTROL PROJECT

EL DORADO COUNTY, CALIFORNIA

DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE

C-2



LEGEND

- PROPOSED BIOSPREADER
- PROPOSED ROCK SLOPE PROTECTION
- PROPOSED RETAINING WALL
- PROPOSED SEDIMENT BASIN
- PROPOSED ROCK LINED CHANNEL
- PROPOSED CURB & GUTTER
- PHASE 2 SEZ RESTORATION BOUNDARY
- PROPOSED SLOPE REVEGETATION
- PROPOSED BOULDER
- PROPOSED REMOVE FILL
- PROPOSED SEDIMENT TRAP
- PROPOSED DRAINAGE INLET
- PROPOSED POROUS PAVEMENT
- PROPOSED ROCK BOWL
- PROPOSED AC REMOVAL REVEGETATION
- PROPOSED REGRADE AND REVEGETATE CHANNEL
- PROPOSED VEGETATED CHANNEL
- PROPOSED RISER
- PROPOSED CULVERT
- DRAINAGE BASIN
- TRIM TREES ON CTC PARCEL

SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

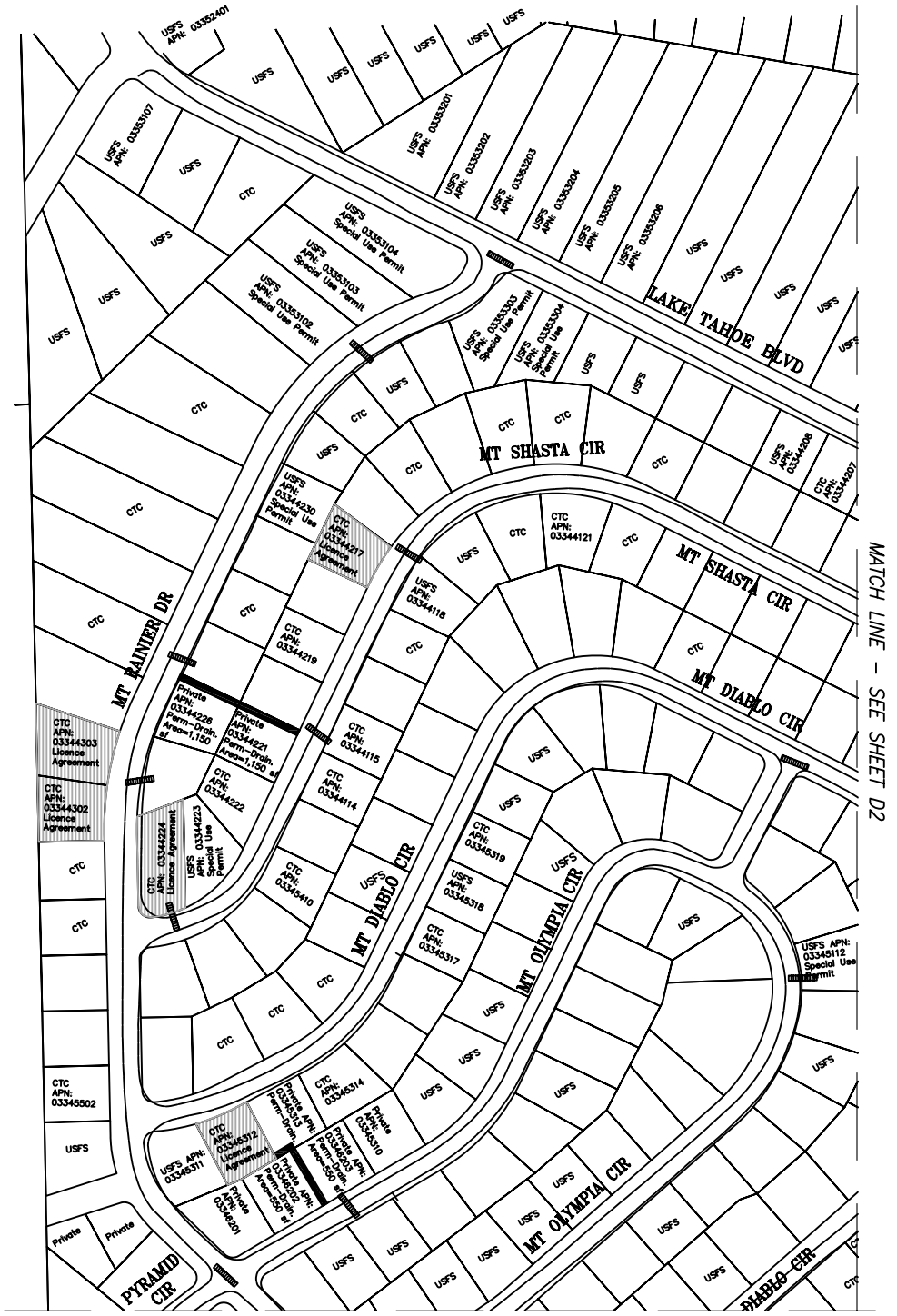
ANGORA 3 EROSION CONTROL PROJECT

EL DORADO COUNTY, CALIFORNIA

DATE:	PROJECT NO.:	BY:
09/05	95160	KBK

FIGURE

C-3



LEGEND

EASEMENT

SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

EL DORADO COUNTY, CALIFORNIA

DATE: 1/06	PROJECT NO.: 95160	BY: SHP

FIGURE

D-1

NOTE: EXISTING CONDITIONS HAVE BEEN OMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

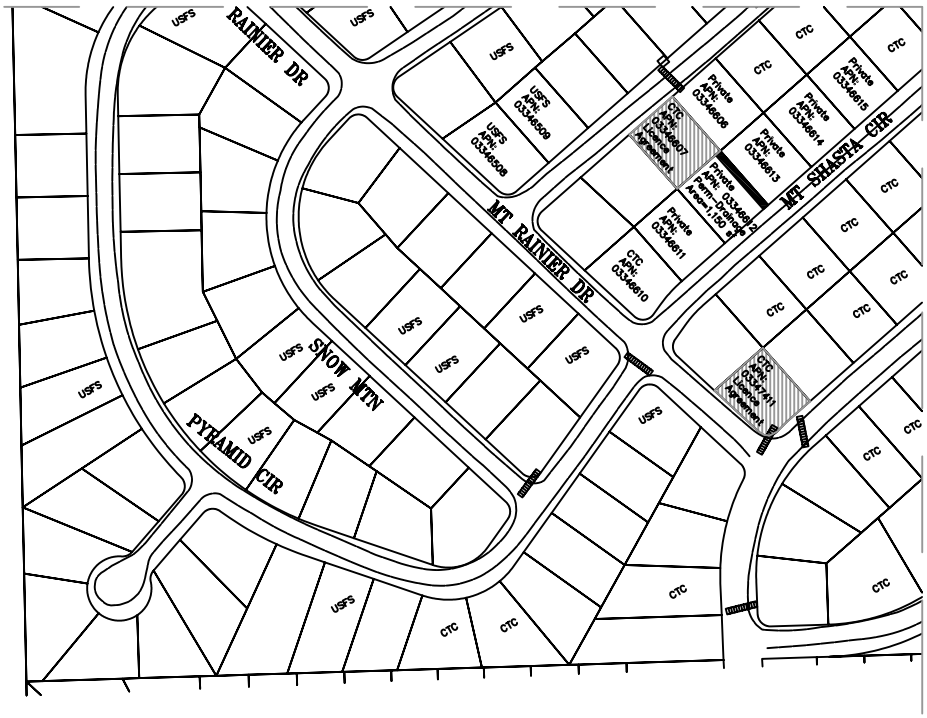
EL DORADO COUNTY, CALIFORNIA

DATE: 1/06	PROJECT NO.: 95160	BY: SHP

FIGURE

D-2

MATCH LINE – SEE SHEET D1



MATCH LINE – SEE SHEET D4

LEGEND

EASEMENT

SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

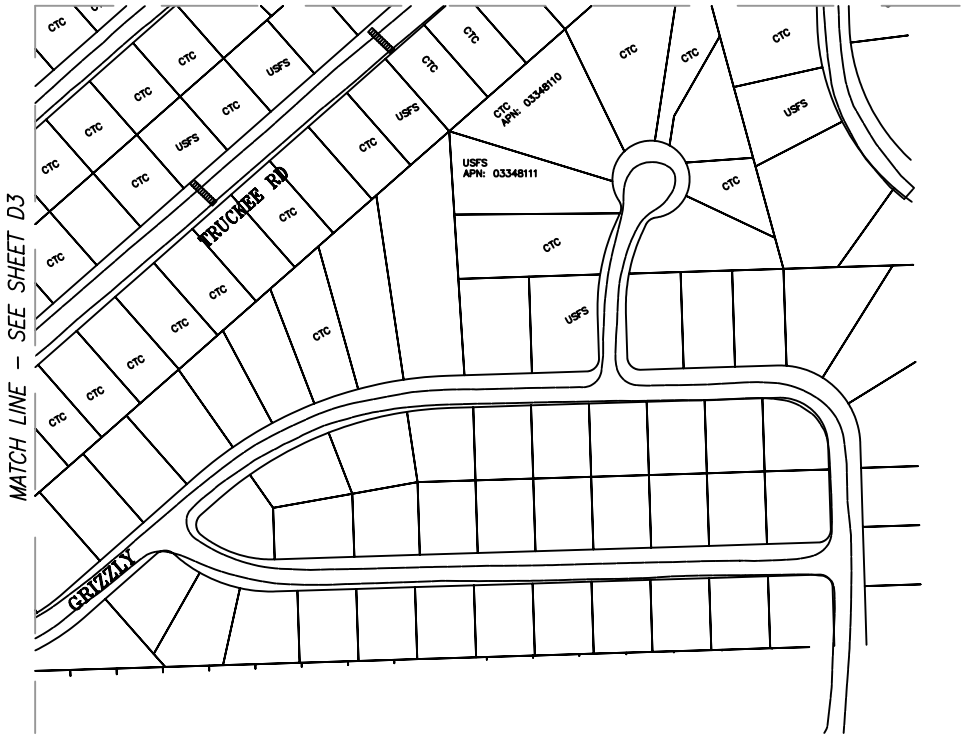
EL DORADO COUNTY, CALIFORNIA

DATE: 1/06	PROJECT NO.: 95160	BY: SHP

FIGURE

D-3

MATCH LINE – SEE SHEET D2



MATCH LINE – SEE SHEET D3

LEGEND

EASEMENT

SCALE: 1"=300'

NOTE: EXISTING CONDITIONS HAVE BEEN OMITTED FOR CLARITY

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

ANGORA 3 EROSION CONTROL PROJECT

EL DORADO COUNTY, CALIFORNIA

DATE: 1/06	PROJECT NO.: 95160	BY: SHP

FIGURE

D-4

APPENDIX B

CEQA Checklist

El Dorado County Department of Transportation

Environmental Checklist Form

1. Project title: Angora 3 Erosion Control Project and Fisheries Enhancement Project JN 95160

2. Lead agency name and address:

El Dorado County Department of Transportation

924B Emerald Bay Road

South Lake Tahoe, CA 96150

3. Contact person and phone number: Alfred Knotts 530-573-7921

4. Project location: El Dorado County, South Lake Tahoe,

5. Project sponsors name and address:

El Dorado County Department of Transportation

924B Emerald Bay Road

South Lake Tahoe, CA 96150

6. General plan designation: NA

7. Zoning: NA

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the Project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets, if necessary.)

See attached mitigated negative declaration for detailed Project description.

9. Surrounding land uses and setting: Briefly describe the Project surroundings:

See attached mitigated negative declaration for description of Project surroundings.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

Tahoe Regional Planning Agency, California Tahoe Conservancy, California Department of Fish and Game, California Regional Water Quality Control Board - Lahontan Region, U.S. Forest Service Lake Tahoe Basin Management Unit

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a Potentially Significant Impact as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/ Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities / Service Systems	☐ Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a potentially significant impact or potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

12/07/05

Signature/Date

Alfred Knotts, El Dorado County

Printed name

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except No Impact answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A No Impact answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A No Impact answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. Potentially Significant Impact is appropriate if there is substantial evidence that an effect may be significant. If there are one or more Potentially Significant Impact entries when the determination is made, an EIR is required.

4) Negative Declaration: Less Than Significant With Mitigation Incorporated applies where the incorporation of mitigation measures has reduced an effect from Potentially Significant Impact to a Less Than Significant Impact. The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, Earlier Analyses, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c) (3) (D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are Less than Significant with Mitigation Measures Incorporated, describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) The significance criteria or threshold, if any, used to evaluate each question; and

   b) The mitigation measure identified, if any, to reduce the impact to less than significance

I. AESTHETICS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Ia) None of the proposed improvements will impact scenic viewsheds/vistas in or around the project area.

b) No designated scenic resources or state scenic highway is located within the Project area.

c) The construction of proposed erosion control improvements such as sediment basins or inlet/outlet structures would not substantially degrade the existing visual character or quality of the Project area and surroundings.

d) None of the proposed improvements would create new sources of substantial light or glare that would adversely affect views in the area.

II. AGRICULTURE RESOURCES: In determining Whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

IIa) Land within the Project area is located in TRPA Plan Area Statement (PAS) 132 and has a land use classification of Residential under the TRPA Regional Plan for the Lake Tahoe Basin. The following permissible uses identified in this PAS are as follows: residential, public service, recreation, and resource management. No land within the Project area is currently used for agriculture nor is it listed as a permissible use within this PAS.

b) No land in the Project area is currently under a Williamson Act contract.

c) See response II a).

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

III a) Compliance with El Dorado County Air Quality Management District (EDCAQMD) and TRPA regulations will ensure that the project will not conflict with or obstruct implementation of the air quality improvement plans for this area.

b) Emissions from the project site, subsequent to application of required mitigation measures as imposed by the EDCAQMD and TRPA during the permitting process, will ensure that the construction will not cause or significantly contribute to violations of existing air quality standards. The project is expected to have a less than significant impact on air quality.

c) The proposed project will not result in a cumulatively significant increase in any criteria pollutant. Air quality impacts from the proposed project are expected to be well below established significance levels because construction takes place over a short time and no increase in emissions is expected from the site after construction.

d, and e) The Project would not have any long term impacts to air quality in the Project area. Construction equipment may emit odors and fumes for the short term during construction This short-term activity would not result in a cumulative increase of criteria pollutant for which the Project region is in non-attainment nor would it expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors affecting a substantial number of people. Compliance with EDCAQMD and TRPA regulations will maintain the levels at a less than significant level.

Based on the information gathered as part the CEQA Initial Study, it is determined that the Project would have a less than significant impact on air quality with the following mitigation measures:

Impact AQ-1: *Construction related activities can create short term impacts to air quality through dust generation and equipment exhaust, which without mitigation, could cause air quality standards to be violated.*

Mitigation Measure AQ-1a: *The construction contractor shall implement Best Management Practices as they related to air quality from the TRPA Code of Ordinances and Handbook of Best Management Practices.*

Mitigation Measures AQ-1b*: The construction contractor shall water exposed soil twice daily, or as needed, to control wind borne dust. All haul/dump truckloads shall be covered securely.*

Mitigation Measure AQ-1c: *At a minimum of three times per week, remove from all adjacent streets, all dirt and mud which has been generated from or deposited by construction equipment going to and from the construction site.*

Mitigation Measure AQ-1d: *On-site vehicle speed shall be limited to 15 miles per hour on unpaved surfaces.*

Mitigation Measure AQ-1e: *Construction activities shall comply with EDCAQMD Rule 223-Fugitive Dust, so that emissions do not exceed hourly levels.*

Mitigation Measure AQ-1f: *Construction equipment idling shall be kept to a minimum when it is not in use.*

Mitigation Measure AQ-1g: *The construction contractor shall post a publicly visible sign on the project site during construction operations that specify the telephone number and person/agency to contact for complaints and/or inquiries on dust generation and other air quality problems resulting from project construction.*

IV. BIOLOGICAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

IV a) and d)
Special Status Wildlife

The Project area is a developed residential area interspersed with open undeveloped lots and surrounded by undeveloped lands. Permissible uses include resource management, public service, and recreation. Results from searches of the California Natural Diversity Database (Appendix E) for candidate, sensitive, or special status wildlife species in local or regional plans, policies, and regulations were completed. Victor Lyon, wildlife biologist for U.S. Forest Service-Lake Tahoe Basin Management Unit (LTBMU), was consulted for additional local information and records on the following species in and adjacent to the Project area: California wolverine (*Gulo gulo*, bald eagle (*Haliaeetus leucocephalus*), Sierra Nevada snowshoe hare (*Lepus americanus tahoensis)*, American pine marten (*Martes americana*), Pacific fisher (*Martes pennanti pacifica*), great gray owl (*Strix nebulosa)*, Yosemite toad (*Bufo canorus)*, Sierra Nevada red fox (*Vulpes vulpes necator)*, osprey (*Pandion haliaetus*), bank swallow (*Riparia riparia*), golden eagle (*Aquila chrysaetos*), Mt. Lyell salamander (*Hydromantes platycephalus*), and American badger (*Taxidia taxus*). Information from Mr. Lyons has been incorporated into Appendix E. No established native resident, migratory wildlife corridors, or native wildlife nursery sites are located in the Project area.

Surveys for four special status wildlife species (willow flycatcher, *Empidonax traillii*; northern goshawk, *Accipiter gentilis;* mountain yellow-legged frog, *Rana mucosa*; and leopard frog, *Rana pipiens*) were conducted in 2005 for the Project.

Willow flycatcher – Protocol surveys of willow flycatcher potential habitat and willow flycatcher activity was conducted in June/July 2005. No willow flycatcher was found at potential habitat in or near the Project area. Survey results and summary form are provided in Appendix G.

Northern goshawk – Known nest locations in the Project vicinity for northern goshawk were identified through a search of the California Natural Diversity Database and consultation with LTBMU wildlife biologist. A survey was conducted in 2005. No northern goshawk activity was found near the Project area. Survey results are provided in Appendix H.

Mountain yellow-legged frog and leopard frog -- Surveys for mountain yellow-legged frog and leopard frog were conducted along reaches of Angora Creek in the Project area. No mountain yellow-legged frog or leopard frog or tadpoles of either were found. Survey results are provided in Appendix I.

Based on the information gathered as part the CEQA Initial Study, it is determined that the erosion control Project would have a less than significant impact on wildlife in the Project area with the following mitigation measures.

Impact B-1: *Appropriate northern goshawk protocol surveys were conducted in the Project area with negative results, Project construction activities can potentially impact northern goshawks should new nests establish in the Project vicinity prior to construction initiation.*

Mitigation Measure B-1: *EDOT will contact the USFS LTBMU raptor biologist two weeks prior to the commencement of construction activities to verify that no new northern goshawk nests have been identified in the Project vicinity. If any active nests are identified within the area, consultation with USFS would be undertaken regarding regulation and timing of construction activities. Any active nests will be avoided through implementation of a one-quarter mile buffer during the breeding season (March 1 through August 15) or until the young have fledged. Waterfowl shall be removed and relocated to suitable habitats.*

Fisheries Enhancement

There are six native fish species and three introduced trout species in the Upper Truckee River. There are no known special status fish species in Angora Creek. Native fish species include Lahontan redsides (*Richardsonius egregius*), Lahontan speckled dace (*Rhinichthys osculus robustus*), Lahontan stream tui chub (*Gila bicolor pectinifer*), Tahoe suckers (*Catostomus tahoensis*), mountain sucker (*Catostomus platyrhynchus*), Paiute sculpin (*Cottus beldingi*), and mountain whitefish I *Prosopium williamsoni*). Introduced species include rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and Eastern brook trout (*Salvelinus fontinalis*). Also, larger lake-run trout are known to move from Lake Tahoe into tributary streams for spawning. Most of the native fish and the rainbow trout are spring spawning fish whereas brown trout, the native mountain whitefish, and brook trout are fall spawning fish. Most of the native fish are primarily small-size fish reaching maximum lengths of 2-4 inches. The native Tahoe sucker and native mountain whitefish can reach lengths of 8-20 inches. Rainbow and brown trout can reach lengths of 18-24 inches. Brook trout usually grow to about 8-14 inches in length.

The construction area of the Angora Fisheries component should be dewatered and isolated with block nets. All fish in the dewatered reach would be removed and relocated in other flowing reaches of Angora Creek down stream from the Project. A small cofferdam would be installed upstream of the construction area. Inflow would be diverted at the cofferdam into a bypass pipe that would carry flow around the construction site and discharge flow back into Angora Creek downstream of the site. Approved Best Management Practices (BMPs) would be employed to contain construction activity next to the stream channel. Upon containment, mechanized equipment would be used to remove the road surface and fill over the culverts. Low impact hand equipment would also be utilized where appropriate.

Impact B-2: *During construction related dewatering of the affected reach, native fish may become stranded.*

Mitigation Measure B-2: *All fish in the dewatered reach would be removed and relocated to other flowing reaches of Angora Creek down stream from the Project area. Personnel conducting the relocation will obtain and possess a scientific collecting permit from the California Department of Fish and Game during fish removal and relocation.*

Special Status Plants

A special status plant species survey and concurrent noxious weed survey was conducted in July and August 2005, to determine whether any of the species exist on county, state or federally-owned land within the Project area. Vegetation communities in the Project area identified before the surveys include jeffrey pine (altered), willow-alder/willow-aspen, wet meadow, perennial grass, and ruderal. Results from searches of the California Natural Diversity Database (Appendix F) for candidate, sensitive, or special status species in local or regional plans, policies, and regulations were completed. During the survey, a specialized wetland habitat (fen) that supports special status plant species was encountered in one location in the Project area.

A special status plant, three-ranked hump moss, *Meesia triquetra*, was encountered in a fen north of the intersection of Mt. Rainier Drive and North Upper Truckee Road. A California Natural Community Field Survey form and map depicting the location of the fen is included in Appendix J.

Impact B-3: *One special status plant* three-ranked hump moss, (*Meesia triquetra), was identified in a newly recorded sensitive natural community (fen) in the Project area.*

Mitigation Measure B-3: *Each concept alternative proposes to install erosion control facilities at or near the vicinity of the fen. The preferred alternative will be redesigned and relocated to avoid impact to this natural community and the special status plant within it. The extent of the fen has been mapped during wetland delineation fieldwork to precisely identify it on Project plan drawings for protection.*

Mitigation Measure B-3*: The County is in the process of hiring a fen specialist to ensure this special status plant species and habitat are not impacted.*

c) Wetland delineation fieldwork in the Project area is ninety-eight percent complete as of the first snowfall of 2005. The remaining areas of potential wetland have been identified for additional fieldwork. In addition, every effort is being made to avoid direct and indirect impact on these

potential wetlands during final design. If it were determine during final design that avoidance is not possible, delineation work will be completed in the spring before designs at those locations would be finalized. Currently, plant identification and delineation documentation is being prepared for the erosion control Project. A Clean Water Act Section 404 permit application would be prepared based on the final erosion control Project design and its impact on wetlands and Waters of the U.S. and submitted to the U.S. Army Corps of Engineers (USACOE). The intent of the erosion control Project is to reduce erosion, improve water quality, and increase stormwater infiltration for sediment removal.

Impact B-4: *Wetland delineation is not complete at this time. Project design and construction may potentially impact wetlands and/or Waters of the U.S. (WOUS).*

Mitigation Measure B-4a: *Upon completion of wetland delineation, Project design will be modified, as needed, to avoid impacts to the fen and avoid or minimize impacts to other wetlands and/or WOUS. Should direct or indirect impacts to wetlands or WOUS be identified during final design, a Section 404 permit application would be completed and submitted to the USACOE and appropriate mitigation measures implemented. This will include hand or low impact equipment, temporary BMP's such as filter fence, coir logs, and orange construction limit fencing to denote protected areas where work is not intended to be performed.*

Mitigation Measure B-4b: *Should any construction work be required in or adjacent to wetlands, it shall be conducted from existing pavement and/or confined to the smallest area possible to complete the work.*

Mitigation Measure B-4c: *All excavated material not required to complete the work shall be removed from the wetland areas and contained by appropriate BMP measures.*

For the Angora Fisheries Enhancement component at Lake Tahoe Blvd. over Angora Creek, EDOT would apply for a separate 404 permit for the culvert removal and bridge installation. EDOT would also submit a notification package to the California Department of Fish and Game for Section 1602 Streambed Alternation Agreement.

f) No adopted habitat conservation plan, natural community conservation plan or other approved local, regional, or state habitat conservation plan covers the Project area.

Both Projects are considered environmental improvements and are identified in the Lake Tahoe Environmental Improvement Program.

e) The TRPA Code of Ordinances (Chapter 71.2A) prohibits cutting of any live, dead or dying tree greater than or equal to 30 inches diameter at breast height (dbh) in westside forest types on lands classified by TRPA as conservation, recreation, or Stream Environment Zone. Both recreation and Stream Environment Zone lands apply to the Project area. In these areas, removal of trees equal or greater than 30 inches dbh would be avoided.

V. CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

V a and b) For the Project, an archaeological records search and an archaeological survey of the Project area were conducted in August 2005. Neither previously identified cultural resources nor newly identified cultural resources are located in the Project boundary. A CONFIDENTIAL Cultural/Heritage Resource Inventory Report has been prepared. This document is for EDOT planning use only and is not for general distribution. EDOT would consider requests for copies of the report from reviewing agencies.

Based on the information gathered as part the CEQA Initial Study, it is determined that the proposed Project would have no impact on cultural/archaeological resources.

For the Angora Fisheries component, the Project area north and west of Angora Creek has not been surveyed for cultural resources.

Impact C-1: The *Angora Fisheries Enhancement Project component may potentially impact cultural resources in the Project area.*

Mitigation Measure C-1: *Prior to construction, a cultural resource survey of the Angora Fisheries component north of Angora Creek must be conducted. Should any cultural resource is identified during the survey; it will be evaluated for significance to determine Project impacts. If the resource is determined significant, then impacts should be avoided. If impacts to a significance impact cannot be avoided, then additional mitigation measures to reduce impacts to less than significant must be developed in consultation with the lead agency.*

Impact C-2: *Project construction related earth-moving activities have the potential to encounter unexpected subsurface artifacts.*

Mitigation Measure C-2: *Should any archaeological materials be uncovered during construction activities, EDOT contracting documents have standard language that requires contractors to inform the EDOT lead engineer in writing. Also all work shall stop in the immediate area of the cultural or archaeological resource and EDOT will contact a qualified archaeologist, at EDOT's expense, to inspect the finds and determine appropriate measures to take.*

c) The Project area does not have any unique paleontological resource, site, or unique geologic feature.

d) No known human remains are located in the Project area.

Impact C-3: *Project construction related earth-moving activities have the potential to encounter unexpected human remains.*

Mitigation Measure C-3: *Should any human remains is uncovered during construction activities, EDOT contracting documents has standard language that requires contractors to inform the EDOT lead engineer in writing. Also all work shall stop in the immediate area of the remains. As required by California law, EDOT will contact the County Coroner, at the County's expense, to inspect the findings and determine appropriate measures to take.*

VI. GEOLOGY AND SOILS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

V a)i) – iv) The Project areas are not located within a seismic hazard zone or in an area subject to landslides.

b) Construction of the proposed improvements is intended to stabilize and arrest soil erosion and would not result in a substantial loss in topsoil.

Impact G-1: *Project construction related earth-moving activities have the potential to cause temporary soil erosion in the Project area.*

Mitigation Measure G-1: *EDOT will prepare a Storm Water Pollution Prevention Plan (SWPPP) as required by TRPA and Lahontan Regional Board. The SWPPP will include appropriate measures to minimize soil erosion during construction.*

Mitigation Measure G-1a*: EDOT will also conduct daily inspections of BMP measures to ensure they are properly maintained and properly placed for maximum benefit. As part of this process, DOT and/or contractor will complete formal inspection forms for submittal to regulatory agencies to demonstrate deficiencies and that corrective action has been taken.*

c) Project related improvements would not be located on a geologic or soil that is unstable. The nature of the erosion control improvements and fisheries restoration would not potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d) The Projects would not be located on expansive soils and would not create substantial risk to life or property.

e) No septic tanks or wastewater disposal system is proposed in the Projects.

VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

VII a) and b) The Contractor will be required to prepare and submit a Spill Contingency Plan subject to review and approval by El Dorado County.

Impact H-1: *During Project construction, there exists a risk of accidental fuel spills from construction equipment.*

Mitigation Measure H-1a: *The construction contractor will be required to prepare and submit a Spill Contingency Plan subject to review and approval by El Dorado County. Upon approval, the Spill Contingency Plan will be formally amended into the Storm Water Pollution Prevention Plan (SWPPP) and submitted to TRPA and the Lahontan Regional Board. In addition, cleaning of vehicles or construction equipment shall not be permitted to occur on site* unless conducted in a pre-approved concrete washout location.

Mitigation Measure H-1b: *Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., in crew trucks and other logical locations).*

Mitigation Measure H-1c: *No fueling shall be done in or near Angora Creek, wetlands, or immediate floodplains. For stationary equipment that must be fueled on site near these areas, containment shall be provided in such a manner that accidental spill of fuel shall not enter water, contaminate sediments that may come in contact with water, affect wetland vegetation.*

c) The Project areas are not located with one-quarter mile of an existing or proposed school.

d) The Project areas are not located on a site that is on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5

e) and f) The Project areas are located within two miles of a public airport. However, the Project would not result in a safety hazard for people residing or working in the Project area.

g) Construction of the proposed improvements would not prohibit access of resident or emergency vehicles through the Project area even where traffic controls are implemented.

h) The Project areas are located in residential areas near forest lands; however, the proposed improvements would not affect the risk to wildland fires.

VIII. HYDROLOGY AND WATER QUALITY -- Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

VIII a) The purpose of proposed improvements for the Project is intended to improve the quality of stormwater and snowmelt runoff from County roads through the use of infiltration, detention, and settling basins.

Impact WQ-1: *Project construction related activities may cause short-term water quality impacts during storm events or accidental fuel spills from construction equipment.*

Mitigation Measure WQ-1a: *EDOT will prepare a temporary erosion control plan for construction BMP's and drainage plans for the project in accordance with TRPA and Lahontan Regional Board requirements for storm water pollution prevention. The plan will include a Storm Water Pollution Prevention Plan, Dust Suppression Plan, and Dewatering Plan to be submitted to Lahontan Regional Board and TRPA for review and approval.*

Mitigation Measure WQ-1b: *Daily inspections will be conducted on all existing BMP's in the project area. Should any deficiencies be noted, remedial action by DOT staff and/or Contractor will be initiated immediately. In addition, mitigation measures H-1a through H-1c would address accidental fuel spills from construction equipment.*

Mitigation Measure WQ-1c: *EDOT staff will monitor weather reports on a daily basis and notified the contractor of any forecasted adverse weather conditions*.

Mitigation Measure WQ-1d: *At a minimum of three times per week, remove from all adjacent streets, all dirt and mud which has been generated from or deposited by construction equipment going to and from the construction site. In addition, mitigation measures H-1a through H-1c would address accidental fuel spills from construction equipment.*

Mitigation Measure WQ-1e: *EDOT will prepare a Sampling and Analysis Plan (SAP) to be included as part of the Storm Water Pollution Prevention Plan. The SAP will identify sampling locations and procedures to measure storm run-off and nearby by surface waters during storm events to identify threats to water quality.*

b) Proposed improvements will not effect or interfere with groundwater recharge or cause a net deficit in aquifer volume or a lowering of the local groundwater table level. Some of the proposed improvements will spread flow to increase infiltration.

c) and d) The proposed Project improvements would alter the drainage pattern of road and some surface runoff in the Project area through the following: flow previously conveyed in roadside ditches will be conveyed in concrete curb and gutter; flows that were discharged in a concentrated fashion to undeveloped SEZs will be dispersed in multiple locations at lower velocity and spread with flow spreading devices. Use of sediment traps would reduce siltation in natural drainages on and off site. The purpose of new drainages would be to stabilize flow conveyance with considerations to flow, slope, and velocities. Replacement of roadside ditches with concrete curb and gutter would alter the amount of surface runoff infiltration. However, infiltration would be increased through the proposed installation of sediment basins, rock bowls, and flow spreaders. Changes to the drainage pattern would not result in on- or off-site flooding.

Construction of the Fisheries Enhancement Project would require temporary diversion of Angora Creek to dewater, remove the existing culverts, and install new headwalls and concrete span. The replacement of existing culverts with a single concrete span within the same footprint would not permanently alter the course of Angora Creek. A small cofferdam would be installed upstream of the construction area. Inflow would be diverted at the cofferdam into a bypass pipe that would carry flow around the construction site and discharge flow back into Angora Creek downstream of the site. Best Management Practices (BMPs) recommended and approved by federal, regional, state, and local regulatory agencies would be deployed to mitigate construction activity next to the stream channel. Mechanized equipment would be used to remove the road surface and fill over the culverts. A crane would be placed on dead-end portion of Angora Creek Road west of the creek to lift and remove the culverts. The channel bottom below the culverts would be shaped with a low flow

channel. Two new concrete headwalls would be installed to anchor a new pre-formed concrete span.

EDOT would apply for a Section 1602 Streambed Alternation Agreement with the CA Department of Fish and Games for the culvert replacement as part of the fisheries enhancement work.

Impact WQ-2: *Construction related activities for the fisheries enhancement project including diverting Angora Creek, installing the bypass pipe, and removal of the old and installation of the new culvert could potentially cause erosion and impact water quality.*

Mitigation Measure WQ-2a: *EDOT will require the construction contractor to implement BMP's that specifically addresses threats to water quality and temporary erosion control measures based on TRPA BMP's consistent with Mitigation Measures WQ 1, 1a, 1c and 1e.*

Mitigation Measure WQ 2b*: EDOT staff and/or contractor will have access to a Hach meter at all times to conduct turbidity readings to ensure compliance with water quality standards for turbidity. Should turbidity data indicated non-compliance, DOT staff and/or contractor will initiate remedial action to address the threat to water quality.*

Mitigation Measure WQ-2c*: Stream flows will be monitored and diversion activity will take place when stream flows low.*

e) Project goals are to upgrade conveyance facility capacities up to County drainage standards, remedy existing drainage problems, and improve fish passage.

f) Hazardous materials used during Project construction could accidentally spill and become a pollution source. Implementation of mitigation measures above are expected to reduce any Project related water quality impacts to less than significant.

g), h), i) and j) The Projects does not propose any housing or structures.

IX. LAND USE AND PLANNING - Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

IX a) The proposed Project improvements would not physically divide an established community.

b) The proposed Project would not conflict with current plans, policies, or regulations of El Dorado County, the Tahoe Regional Planning Agency, the State of California, or the U.S. Forest Service – Lake Tahoe Basin Management Unit.

c) There is no applicable habitat conservation plan or natural community conservation plan for the Project area.

X. MINERAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

X a) and b) There are no known minerals resource of value locally, to the region, or residents of the state in the Project area.

XI. NOISE -- Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XI a), b) and d) Construction related activities would generate a short-term increase in ambient noise levels. The Noise section of the TRPA Code of Regulations regulates construction-related noises. Community Noise Equivalent Levels (CNEL) for this Plan Area is 50 CNEL. However, according to Chapter 23.8, construction noise is exempt from the quantitative limits contained in the Noise ordinance if construction takes place between the hours of 8:00 a.m. and 6:30 p.m.

Impact N-1: *Construction related activities could generate short-term noise levels excess of standards established in the local general plan or noise ordinance.*

Mitigation Measure N-1a: *Per TRPA Code and permit conditions, the construction contractor would be limited to maximum workday hours between 8:00 a.m. and 6:30 p.m. Use of cracking agents will be specified in the construction contract.*

Mitigation Measure N-1b*: All power equipment and vehicles used for Project construction will have proper muffler devices. EDOT will advise potentially affected residents of the proposed construction activities including duration, schedule of activities, and contacts for filing noise complaints. EDOT staff and/or contractor will attempt to respond to all noise complains received within one working day and resolve the issue as soon as possible.*

c), e), and f) The Projects would not result in the permanent increase in ambient noise levels. The Project would not subject residents in the Project area to excessive noise.

XII. POPULATION AND HOUSING -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XII a), b), and c) The proposed erosion control improvements and fisheries restoration would not directly or indirectly induce or displace existing or future housing.

XIII. PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XIII a) The proposed Project improvements would have no long term impact on fire protection, police protection, schools, or parks. The Project will positively improve existing storm runoff facilities in the Project area.

XIV. RECREATION --	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XIV a) and b) The proposed Project would not increase the use of existing parks or other recreational facilities nor require the expansion of such facilities.

XV. TRANSPORTATION/TRAFFIC -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

XV a), e) and f) Construction of the Angora Fisheries component (replace culvert on Lake Tahoe Blvd. over Angora Creek) would require the temporary closure of Lake Tahoe Blvd. between Angora Creek Circle and Mt. Rainier Drive for up to eight weeks. During the construction period, traffic would be rerouted to View Circle.

The current average daily traffic (ADT) and peak traffic hour on Lake Tahoe Blvd (100 feet north of N. Upper Truckee Road) and Angora Creek Drive are 2286 (EDOT, 2004) and 198, respectively. The most recent ADT and peak hour traffic on View Circle are 334 and 25 (EDOT, 2002), respectively. During the construction period traffic would be detoured to View Circle and drivers would experience greater than usual congestion during peak hours.

Impact T-1: *Construction related road closure would cause a short-term increase in traffic congestion on other nearby intersections on the existing street system.*

Mitigation Measure T-1a: *The contractor will be required to prepare a traffic management/control plan for TRPA and El Dorado County review and approval. Elements of the plan will include appropriate use of signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, EDOT would advise local residents regarding schedules for construction traffic detours through press releases and distribution of flyers in area neighborhoods well in advance of construction initiation.*

At no time would access for emergency vehicles or local residents and school buses with no alternate means to access homes or bus stops be prohibited. Traffic controls would be implemented during work hours and only when it is necessary to perform work. Parking in driveways may be restricted for a 24-hour period after proposed curbs and gutters are installed. During construction street parking in the Project area would be limited.

Mitigation Measure T-1b: *Construction related workforce would be encouraged to carpool to the work site to reduce traffic to and with in the Project area.*

b) The Projects would not cause a long-term increase in vehicle trips or volume to capacity ratios that would exceed the current level of service.

c) The proposed Projects would not affect air traffic patterns.

d) The proposed Projects would not change road geometry.

g) The proposed Projects would not conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVI a), b), d), e), and f) The proposed Projects would not have short or long impacts on waster water treatment facilities, water supplies, or landfill disposal capacities.

c) The proposed Project does include the installation of new storm water drainage facilities to supplement existing facilities and to improve water quality treatment features. The design of the new facilities proposes to convey storm water through vegetated channels, rock-lined channels, and detention basins. This Project is identified in the Lake Tahoe Environmental Improvement program and is intended to improve the environment by address existing storm water deficiencies and erosion.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE --	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

XVII a) Overall the Project intends to result in beneficial impact to water quality in Angora Creek and indirectly the Upper Truckee River and Lake Tahoe and beneficial effects for fish passage on Angora Creek.

b) The Projects do not have impacts that are cumulatively considerable.

c) The Projects do not have substantial adverse environmental effects on humans either directly or indirectly.

APPENDIX C

Impact and Mitigation Summary

Appendix C Summary of Impacts and Mitigation Measures

Impacts	Mitigation Measures
Impact AQ-1: *Construction related activities can create short term impacts to air quality through dust generation and equipment exhaust, which without mitigation, could cause air quality standards to be violated.*	**Mitigation Measure AQ-1a**: *The construction contractor shall implement Best Management Practices as they related to air quality from the TRPA Code of Ordinances and Handbook of Best Management Practices.* **Mitigation Measures AQ-1b**: *The construction contractor shall water exposed soil twice daily, or as needed, to control wind borne dust. All haul/dump truckloads shall be covered securely.* **Mitigation Measure AQ-1c**: *At a minimum of three times per week, remove from all adjacent streets, all dirt and mud which has been generated from or deposited by construction equipment going to and from the construction site.* **Mitigation Measure AQ-1d:** *On-site vehicle speed shall be limited to 15 miles per hour on unpaved surfaces.* **Mitigation Measure AQ-1e:** *Construction activities shall comply with EDCAQMD Rule 223-Fugitive Dust, so that emissions do not exceed hourly levels.* **Mitigation Measure AQ-1f:** *Construction equipment idling shall be kept to a minimum when it is not in use.* **Mitigation Measure AQ-1g:** *The construction contractor shall post a publicly visible sign on the project site during construction operations that specify the telephone number and person/agency to contact for complaints and/or inquiries on dust generation and other air quality problems resulting from project construction.*
Impact B-1: *Appropriate northern goshawk protocol surveys were conducted in the Project area with negative results, Project construction activities can potentially impact northern goshawks should new nests establish in the Project vicinity prior to construction initiation.*	**Mitigation Measure B-1:** *EDOT will contact the USFS LTBMU raptor biologist two weeks prior to the commencement of construction activities to verify that no new northern goshawk nests have been identified in the Project vicinity. If any active nests are identified within the area, consultation with USFS would be undertaken regarding regulation and timing of construction activities. Any active nests will be avoided through implementation of a one-quarter mile buffer during the breeding season (March 1 through August 15) or until the young have fledged. Waterfowl shall be removed and relocated to suitable habitats.*

Impacts	Mitigation Measures
Impact B-2: *During construction related dewatering of the affected reach, native fish may become stranded.*	**Mitigation Measure B-2**: *All fish in the dewatered reach would be removed and relocated in other flowing reaches of Angora Creek down stream from the Project area. Personnel conducting the relocation will obtain and possess a scientific collecting permit from the California Department of Fish and Game during fish removal and relocation.*
Impact B-3: *One special status plant* three-ranked hump moss, (*Meesia triquetra), was identified in a newly recorded sensitive natural community (fen) in the Project area.*	**Mitigation Measure B-3a:** *Each concept alternative proposes to install erosion control facilities at or near the vicinity of the fen. The preferred alternative will be redesigned and relocated to avoid impact to this natural community and the special status plant within it. The extent of the fen has been mapped during wetland delineation fieldwork to precisely identify it on Project plan drawings for protection.* **Mitigation Measure B-3b***: The County is in the process of hiring a fen specialist to ensure this special status plant specie and habitat are not impacted.*
Impact B-4: *Wetland delineation is not complete at this time. Project design and construction may potentially impact wetlands and/or Waters of the U.S. (WOUS).*	**Mitigation Measure B-4a**: *Upon completion of wetland delineation, Project design will be modified, as needed, to avoid impacts to the fen and avoid or minimize impacts to other wetlands and/or WOUS. Should direct or indirect impacts to wetlands or WOUS be identified during final design, a Section 404 permit application would be completed and submitted to the USACOE and appropriate mitigation measures implemented. This will include hand or low impact equipment, temporary BMP's such as filter fence, coir logs, and orange construction limit fencing to denote protected areas where work is not intended to be performed.* **Mitigation Measure B-4b**: *Should any construction work be required in or adjacent to wetlands, it shall be conducted from existing pavement and/or confined to the smallest area possible to complete the work.* **Mitigation Measure B-4c**: *All excavated material not required to complete the work shall be removed from the wetland areas and contained by appropriate BMP measures.*

Impacts	Mitigation Measures
Impact C-1: The *Angora Creek fisheries restoration Project may affect cultural resources in its Project area.*	**Mitigation Measure C-1:** *Prior to construction, a cultural resource survey of the Angora Fisheries component north of Angora Creek must be conducted. Should any cultural resource is identified during the survey; it will be evaluated for significance to determine Project impacts.* *If the resource is determined significant, then impacts should be avoided. If impacts to a significance impact cannot be avoided, then additional mitigation measures to reduce impacts to less than significant must be developed in consultation with the lead agency.*
Impact C-2: *Project construction related earth-moving activities has the potential to encounter unexpected subsurface artifacts.*	**Mitigation Measure C-2**: *Should any archaeological materials is uncovered during construction activities, EDOT contracting documents has standard language that requires contractors to inform the EDOT lead engineer in writing. Also all work shall stop in the immediate area of the cultural or archaeological resource and EDOT will contact a qualified archaeologist, at EDOT's expense, to inspect the finds and determine appropriate measures to take.*
Impact C-3: *Project construction related earth-moving activities has the potential to encounter unexpected human remains.*	**Mitigation Measure C-3**: *Should any human remains is uncovered during construction activities, EDOT contracting documents has standard language that requires contractors to inform the EDOT lead engineer in writing. Also all work shall stop in the immediate area of the remains. As required by California law, EDOT will contact the County Coroner, at the County's expense, to inspect the findings and determine appropriate measures to take.*
Impact G-1: *Project construction related earth-moving activities have the potential to cause soil erosion in the Project area.*	**Mitigation Measure G-1a**: *EDOT will prepare a Storm Water Pollution Prevention Plan (SWPPP) as required by TRPA and Lahontan Regional Board. The SWPPP will include appropriate measures to minimize soil erosion during construction.* **Mitigation Measure G-1b***: EDOT will also conduct daily inspections of BMP measure to ensure they are properly maintained and properly placed for maximum benefit. As part of this process, DOT and/or contractor will complete formal inspection forms for submittal to regulatory agencies to demonstrate deficiencies and that corrective action has been taken.*

Impacts	Mitigation Measures
Impact H-1: *During Project construction, there exists a risk of accidental fuel spills from construction equipment.*	**Mitigation Measure H-1a**: *The construction contractor will be required to prepare and submit a Spill Contingency Plan subject to review and approval by El Dorado County. Upon approval, the Spill Contingency Plan will be formally amended into the Storm Water Pollution Prevention Plan (SWPPP) and submitted to TRPA and the Lahontan Regional Board. In addition, cleaning of vehicles or construction equipment shall not be permitted to occur on site* unless conducted in a pre-approved concrete washout location. **Mitigation Measure H-1b**: *Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., in crew trucks and other logical locations).* **Mitigation Measure H-1c**: *No fueling shall be done in or near Angora Creek, wetlands, or immediate floodplains. For stationary equipment that must be fueled on site near these areas, containment shall be provided in such a manner that accidental spill of fuel shall not enter water, contaminate sediments that may come in contact with water, affect wetland vegetation.*
Impact WQ-1: *Project construction related activities may cause short-term water quality impacts during storm events or accidental fuel spills from construction equipment.*	**Mitigation Measure WQ-1a**: *EDOT will prepare a temporary erosion control plan for construction BMP's and drainage plans for the project in accordance with TRPA and Lahontan Regional Board requirements for storm water pollution prevention. The plan will include a Storm Water Pollution Prevention Plan, Dust Suppression Plan, and Dewatering Plan to be submitted to Lahontan Regional Board and TRPA for review and approval.* **Mitigation Measure WQ-1b**: *Daily inspections will be conducted on all existing BMP's in the project area. Should any deficiencies be noted, remedial action by DOT staff and/or Contractor will be initiated immediately. In addition, mitigation measures H-1a through H-1c would address accidental fuel spills from construction equipment.* **Mitigation Measure WQ-1c**: *EDOT staff will monitor weather reports on a daily basis and notified the contractor or any forecasted adverse weather conditions*. **Mitigation Measure WQ-1d**: *At a minimum of three times per week, remove from all adjacent streets, all dirt and mud which has been generated from or deposited by construction equipment going to and from the construction site. In addition, mitigation measures H-1a through H-1c would address accidental fuel spills from construction equipment.*

Impacts	Mitigation Measures
	Mitigation Measure WQ-1e: *EDOT will prepare a Sampling and Analysis Plan (SAP) to be included as part of the Storm Water Pollution Prevention Plan. The SAP will identify sampling locations and procedures to measure storm run-off and nearby by surface waters during storm events to identify threats to water quality.*
Impact WQ-2: *Construction related activities for the fisheries enhancement project including diverting Angora Creek, installing the bypass pipe, and removal of the old and installation of the new culvert could potentially cause erosion and impact water quality.*	**Mitigation Measure WQ-2a**: *EDOT will require the construction contractor to implement BMP's that specifically addresses threats to water quality and temporary erosion control measures based on TRPA BMP's consistent with Mitigation Measures WQ 1, 1a, and 1c.* **Mitigation Measure WQ 2b**: *EDOT staff and/or contractor will have access to a Hach meter at all times to conduct turbidity readings to ensure compliance to water quality standards for turbidity. Should turbidity data indicated non-compliance, DOT staff and/or contractor will initiate remedial action to address the threat to water quality.* **Mitigation Measure WQ-2c**: *Stream flows will be monitored and diversion activity will take place when stream flows low.*
Impact N-1: *Construction related activities could generate short-term noise levels excess of standards established in the local general plan or noise ordinance.*	**Mitigation Measure N-1a**: *Per TRPA Code and permit conditions, the construction contractor would be limited to maximum workday hours between 8:00 a.m. and 6:30 p.m. Use of cracking agents will be specified in the construction contract.* **Mitigation Measure N-1b**: All power equipment and vehicles used for Project construction will have proper muffler devices. EDOT will advise potentially affected residents of the proposed construction activities including duration, schedule of activities, and contacts for filing noise complaints. EDOT staff and/or contractor will attempt to respond to all noise complains received within one working day and resolve the issue as soon as possible.

Impacts	Mitigation Measures
Impact T-1: *Construction related road closure would cause a short-term increase in traffic congestion on other nearby intersections on the existing street system.*	**Mitigation Measure T-1a:** *The contractor will be required to prepare a traffic management/control plan for TRPA and El Dorado County review and approval. Elements of the plan will include appropriate use of signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, EDOT would advise local residents regarding schedules for construction traffic detours through press releases and distribution of flyers in area neighborhoods well in advance of construction initiation.* *At no time would access for emergency vehicles or local residents and school buses with no alternate means to access homes or bus stops be prohibited. Traffic controls would be implemented during work hours and only when it is necessary to perform work. Parking in driveways may be restricted for a 24-hour period after proposed curbs and gutters are installed. During construction street parking in the Project area would be limited.* **Mitigation Measure T-1b:** *Construction related workforce would be encouraged to carpool to the work site to reduce traffic in the Project area.*

APPENDIX D

Response to Comments from
12/08/05 through 1/06/06 Public Comment Period

Appendix D Angora Erosion Control Project and Fisheries Enhancement Project – Summary of Comments and Responses

COMMENTS	EDOT RESPONSE TO COMMENTS
Kent Smith, CA Department of Fish and Game (December 22, 2005) 1. Consider potential impacts from work undertaken in or near a river, stream, or lake that flows intermittently through a bed or channel including ephemeral streams and water courses. 2. Assessment of fees under Public Resources Code Section 21089 and as defined by Fish and Game Code Section 711.4 is necessary and payable by the project applicant upon filing of the Notice of Determination by the lead agency. 3. Pursuant to Public Resources Code Sections 21092 and 21092.2, the DFG requests written notification of proposed actions and pending decisions regarding this project. Written notifications should be directed to this office.	EDOT has noted and considered the potential impact of the proposed project and will make every effort to avoid or minimize impact in project design. To address these concerns, EODT has incorporated additional mitigation measures into the CEQA Initial Study/Mitigated Negative Declaration and associated checklist. EDOT will notify DFG and submit required fees.
Cynthia Walck, CA State Parks and Recreation (January 4, 2006) 1. The project has the potential to adversely affect the CDPR meadow along Angora Creek off Mountain Meadow Drive by increasing concentrated runoff. The water needs to be dispersed at the outlets, spreading the water as much as possible to reduce erosive energy.	EDOT has noted and considered this potential impact in project design.
Robert Erlich, California Regional Water Quality Control Board, Lahontan Region (January 11, 2006) 1. Acknowledge that impacts in the sections listed (biological resources, geology and soils, hazardous materials, hydrology and water quality) may be significant unless mitigation measures are incorporated. For potentially significant impacts, clearly identify avoidance, minimization, and mitigation measures, and the required monitoring to demonstrate mitigation success. The Summary of Mitigation Measures should include mitigation measures related to water quality. 2. Provide additional information on the quantities and types of jurisdictional wetlands and SEZ which may be impacted. Describe whether impacts are temporary or permanent and discuss the need for on-site or off-site compensatory mitigation.	1. EDOT incorporated mitigation measures as part of the project to either avoid, minimize, and mitigate potential impacts of the proposed project. 2. As detailed in the IS/MND and checklist, project design will either avoid or minimize impact to delineated wetlands and Waters of U.S. as much as possible. TRPA will conduct a SEZ/ Land capability verification. The project has the potential to disturb approximately 100,000 square feet of SEZ in the project area. However, many of the proposed improvements will result in restored or enhanced SEZ after construction. Jurisdictional wetlands will be quantified once USACE makes a determination of jurisdictional wetlands.

Appendix D Angora Erosion Control Project and Fisheries Enhancement Project – Summary of Comments and Responses

COMMENTS	EDOT RESPONSE TO COMMENTS
3. Acknowledge that the project may violate water quality standards or waste discharge requirements. Provide more information on the avoidance, minimization, and mitigation measures that would be used to comply with requirements in the Tahoe Construction Permit and the Water Quality Certification. Also provide information on measures to be used to minimize the duration and extent of discharge or threatened discharge of waste in violation of standards and requirements. The summary of mitigation measures should include mitigation measures related to water quality. Discuss the need for dewatering and describe BMPs and permits that would be required for dewatering wastes. 4. Develop an appropriate mitigation monitoring program and incorporate this into the final environmental document. The summary of mitigation measures should include mitigation measures related to water quality.	3. EDOT acknowledges that temporary construction impacts related to the erosion control and fisheries project have the potential to temporarily violate water quality standards or waste discharge requirements. Measures to avoid, minimize, and mitigate these potential impacts has been clarified in the CEQA Initial Study/Mitigated Negative Declaration and associated checklist. 4. EDOT will utilize the summary of mitigation measures as the basis of a mitigation monitoring program for the project. All mitigation measures will be incorporated into the bid process.

APPENDIX E

Special Status Wildlife

Appendix E Special Status Wildlife Species Recorded in the General Angora 3 Project Area*

Scientific Name	Common Name	Federal Status	State Status	Other	Habitat Requirements	Sensitive Period	Potential for occurrence in Project area	Results of Survey
Federally Listed and Federal Candidate Species								
Haliaeetus leucocephalus	bald eagle	FT	CE		Migratory. Nesting and wintering ocean shore, lake margins and rivers. Most nests within 1 mi of water in large old growth or dominant live tree with open branches, especially Ponderosa pine. Roots communally in winter.	N/A	Very Unlikely. Known nests are on the shore of Lake Tahoe. Little or no appropriate habitat in project area.	No survey conducted
Martes pennanti pacifica	Pacific fisher	FC	CSC	FS	Large areas of Intermediate to large-tree stages of coniferous forests and deciduous riparian areas with high degree of closure Cavities in snags, logs and rocks necessary for cover and denning.	N/A	Very unlikely. No fisher reported in basin in more than ten years. Potential habitat adjacent to project area but has high human density.	No survey conducted
Oncorhynchus clarki henshawi	Lahontan cutthroat trout	FT			Historically, accessible cold waters of the Lahonton Basin and in a wide variety of water temps and conditions, Requires gravel riffles in streams for spawning	March-June	Potential habitat present with reintroduction but encountering the species is very unlikely.	No survey conducted
Rana mucosa	mountain yellow-legged frog	FE			Populations in San Gabriel, San Jacinto & San Bernardino Mtns only endangered populations. Always within a few feet of water	spring/summer	Unlikely. Very rare in Lake Tahoe Basin. The nearest record to the Project area is at Fallen Leaf Lake.	Surveyed in 2004 and 2005 with no frogs or tadpoles found.
Rana pipiens	northern leopard frog		CSC		Native range is east of the Sierra crest only, near permanent or semi-permanent water. Submerged and emergent aquatic vegetation important.	spring/summer	Very unlikely. Historical records showed populations near Fallen Leaf Lake.	Surveyed in 2004 and 2005 with no frogs or tadpoles found.
California Listed Species								
Empidonax traillii	willow flycatcher		CE		Nests in thickets of low dense willows on edge of wet meadows, ponds or backwater 2000-8000 ft elevation	May - Aug	Potential habitat present.	Protocol survey conducted 2005. No evidence of willow flycatcher.
Gulo gulo	California wolverine		CT, CFP	FS	Wide variety of high elevation habitats near water. Uses caves, logs, burrows for den. Hunts in open areas. Can travel far.	N/A	Unlikely to be near project area due to high human density and lack of preferred habitat type.	No survey conducted
Riparia riparia	bank swallow		CT		Colonial nester in vertical banks or cliffs with fine-textured sandy soils near streams, rivers, lakes, ocean to dig nest hole	Feb -May	Very unlikely. No appropriate nesting habitat in project area.	No survey conducted
Other Special Status Species								
Accipiter gentilis	northern goshawk		CSC	FS	Uses old nests in conifer forests on north slopes near water in red fir, lodgepole pine, Jeffrey pine communities. Preys on birds	Mar - Aug	Appropriate habitat present adjacent to project area. May forage but not expected to nest in project area due to high human density.	Not encountered, no nests detected. Nearest known nest sites are over 0.5 mi away to the northwest and to the southeast.
Aquila chrysaetos	golden eagle		CSC		rolling foothill mtn areas, sage-juniper flats, deserts. Usually nests in cliff-walled canyons or large trees in open areas	Feb - Aug	Unlikely to be present. Habitat of project area very marginal for this species. Nearest known nest sites more than 2 miles away.	No survey conducted
Capnia lacustra	Lake Tahoe benthic stone fly		CSC		Endemic to Lake Tahoe at depths of 95-400 ft	summer	Not present. Project not in the Lake	No survey conducted

Appendix E Special Status Wildlife Species Recorded in the General Angora 3 Project Area*

Scientific Name	Common Name	Federal Status	State Status	Other	Habitat Requirements	Sensitive Period	Potential for occurrence in Project area	Results of Survey
Cypseloides niger	black swift		CSC		Nests in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea bluffs, forages widely	May - Sept	Very unlikely to nest in project area, no appropriate nesting habitat	No survey conducted
Helisoma newberryi	Great Basin rams-horn			FS	Larger lakes and slow rivers, large spring sources and spring-fed creeks. Typically burried in mud.	spring/summer	Very unlikely. Habitat present is bedrock, no mud present.	No survey conducted
Hydromantes platycephalus	Mount Lyell salamander		CSC		massive rock areas in mixed conifer, red fir, lodgepole pine, and subalpine habitats. Surface active only when free water available in form of seeps, drips, or sprays.	winter/spring	Very unlikely. No appropriate habitat in the project area.	No survey conducted
Lepus americanus tahoensis	Sierra Nevada snowshoe hare		CSC		Boreal riparian areas and young conifer thickets of Sierra Nevada	N/A	Appropriate habitat present adjacent to project area but not expected due to high human density and presence of large dogs.	No survey conducted
Martes americana	American pine marten			FS	Mixed conifer forest / old growth with over 40% crown closure and snag cavities for dens	N/A	Appropriate habitat present adjacent to project area but not expected due to high human density.	No survey conducted
Pandion haliaetus	osprey		CSC		nests on shores, bays, freshwater lakes, and large streams in treetop or snag within 15 miles of good fish producing body of water	N/A	Very unlikely to nest near project area. Known to forage along Truckee River. Nearest known nest sites more than a mile away.	No survey conducted
Taxidia taxus	American badger		CSC		Dry open areas in shrubland, forest, and herbaceous habitat with friable soils for den. Preys on burrowing rodents.	N/A	Unlikely. Incidental sightings upstream of Christmas Valley	No survey conducted

Status Legend

Federal Status
FE = Federally listed Endangered
FT = Federally listed Threatened
FC = Candidate for federal listing

California Status
CT = California Threatened
CE = California Endangered
CSC = California Species of Special Concern
CFP = California Fully Protected

Other Status
FS = Forest Service Sensitive

*A "9-quad search" of CNDDB records was conducted for the USGS project quad, Emerald Bay. CNDDB records were for Homewood, Rockbound Valley, Pyramid Peak, Meeks Bay, Emerald Bay, Echo Lake, South Lake Tahoe, and Freel Peak. The quad to the northeast is in Nevada and not tracked by CNDDB

APPENDIX F

Special Status Plants

Appendix F South Lake Tahoe Area Known Special Status Plant Species

Scientific Name	Common Name	Federal Status	State Status	CNPS	Other	Habitat Requirements	Blooming or vulnerable period	Potential for occurrence in project area and results of special status plant survey
Federally Listed Species *(none)*								
California Listed Species								
Rorippa subumbellata	Tahoe yellow cress	FC	CE	1B	S, SI	endemic to shores of Lake Tahoe; lower montane coniferous forest, granitic beaches, meadows, coarse to medium grain sand, 1895 - 1900 m (6217 - 6234 ft)	May - Sept	Unlikely. Not encountered.
Other Special Status Species								
Arabis rigidissima var. demota	Carson Range rock cress (AKA Galena Creek Rock cress)			1B	S	sandy or rocky soils or outcrops derived from granitic or volcanic material, steep northerly aspects, in drainage ways near meadow edges.upper montane coniferous, broadleafed upland forest, 2255 - 3560m (7398 -11 680 ft).	August bloomer	Unlikely. Project elevation too low. Known in CA from only two occurrences near Martis Pk., and in NV from eleven occurrences in the Carson Range. Threatened by logging. Not encountered.
Botrychium ascendens	upswept moonwort			2	SI	grassy fields, coniferous streams near woods. Southern High Cascade Range, 1500-1800 m (4921-5901 ft)	fronds mature July-Aug	Unlikely. Project elevation may be too high. Has been documented in the Basin. Not encountered.
Botrychium crenulatum	scalloped moonwort			2	S	montane aquatic and wetland habitats; meadows, seeps, freshwater marshes	fronds mature June - Sept	has been documented in the Basin. Potential habitat present Not encountered.
Botrichium lineare	slender moonwort	FC		2	S	various high elevation habitats - grassy meadows, beneath trees, north facing limestone cliff shelves, streamside edges. Sea level to 3243 m (10,640 ft)	fronds mature June - Sept	Potential habitat present. Not encountered
Botrychium minganesnse	Mingan moonwort			2	S	upper and lower montane coniferous forest 1500 -2055 m (4921 - 6742 ft)	fronds mature June - Sept	Potential habitat present. Not encountered
Botrychium montanum	western goblin, AKA mountain moonwort				S	montane coniferous habitats associated with riparian buffer zone or wet microhabitats such as seeps, rivulets and swales.	fronds mature July-Aug	has been documented in the Basin. Potential habitat present. Not encountered.
Draba asterophora var. asterophora	Tahoe draba			1B	S, SI	Nw or NE aspect, granite substrate, boulder and rock field, talus scree, on 20 % slope, subalpine conifer zone with sparse understory min elevation 2652 m (8,700 ft)	July - Aug	Unlikely. Project elevation too low. Not encountered
Draba asterophora var. macrocarpa	Cup Lake draba			1B	S, SI	subalpine coniferous forests, rock crevices at elevation above 2500 m (8202 ft), north facing decomposed granite	July - Aug	Unlikely. Project elevation too low. Not encountered.
Epilobium howellii	subalpine fireweed			1B	S	meadows and seeps, subalpine coniferous forests in mesisc environments.	July - Aug	has been documented in the Basin. Not encountered.

Appendix F South Lake Tahoe Area Known Special Status Plant Species

Scientific Name	Common Name	Federal Status	State Status	CNPS	Other	Habitat Requirements	Blooming or vulnerable period	Potential for occurrence in project area and results of special status plant survey
Erigeron miser	starved daisy			1B	S	montane coniferous forests on rocky soils	Jun - Oct	has been documented in the Basin. Not encountered.
Eriogonun umbellatum var. torreyanum	Torrey's buckwheat			1B	S	upper montane coniferous, volcanic and rocky meadows and outcrops, 1855 - 2620 m (6086 - 8596 ft)	Jul - Sept	Potential habitat present. Not encountered.
Lewisia longipetala	longe petaled lewisisa			1B	S, SI	alpine boulder and rock fields, subalpine coniferous forest, granitic, 2500 -2925 m (6742 - 9597 ft)	Jul - Aug	No appropriate habitat in the surveyed areas. Not encountered.
Bruchia bolanderi	Bolander's candle moss			2	S	meadows in mixed conifer and subalpine communities. Ephemeral habitats such as erosional ditches, or streams in wet meadows, 1700 - 2800 m (5577 - 9186 ft)		Documented in the Basin. Not encountered.
Hydrothryria venosa	veined water lichen				S	upper montane coniferous forest, bogs, fens, wet meadows and seeps		Documented in the Basin. Not encountered.
Meesia triquetra	three-ranked hump-moss			2	S	upper montane coniferous forest, bogs, fens, meadows and seeps, 1300 - 2500 m (4265 - 9186 ft).		Present in fen NW of intersection of Mt. Ranier and N. Upper Truckee.
Meesia ugiginosa	broad-nerved hump-moss			2	S	upper montane coniferous forest, bogs, fens, meadows and seeps, 1300 - 2500 m (4265 - 9186 ft).		Documented in the Basin. Not encountered.

Status Legend

Federal Status
FC - = Candidate for federal listing

California Status
CE = California Endangered

CNPS Status
1B = plants threatened or endangered throughout their range
2 = plants rare, threatened, or endangered in California, but more common elsewhere

Other Status
S = USFS LTBMU Sensitive Sp
SI = TRPA Special Interest Species

Sources:
California Native Plant Society (CNPS). 2005; Inventory of Rare and Endangered Plants (online edition, v6-05c); California Native Plant Society. Sacramento, CA. Accessed on Jul. 9, 11:55:11 from http://www.cnps.org/inventory.

APPENDIX G

Willow Flycatcher Survey Report

Angora 3 Erosion Control Project
Willow flycatcher Survey Report

Willow flycatcher (*Empidonax traillii*) is a California listed Threatened species, and is also on the U.S. Forest Service Region 5 Sensitive list in California. The subspecies present in the Tahoe Basin is *E.t. brewsteri*, "little willow flycatcher." In June of 2005, four locations were identified in the Angora Creek Project area as potential willow flycatcher (nesting) habitat. A survey for willow flycatcher was conducted by ENTRIX biologists in June and July of 2005, following protocol from Bombay, et al (2000).

Methods

The survey protocol requires a minimum of two surveys at each site, during specific times. Because of the late winter in 2005, the survey periods chosen to be most appropriate for the Angora 3 Project area were Survey Period 2 (between June 15-25) and Survey Period 3 (June 26 – July 25).

ENTRIX biologists identified four areas of potential habitat in the Angora 3 Project area. These were named according to the nearest street/road

1. Ang-1-Mountain Meadow
2. Ang-2-North Upper Truckee
3. Ang-3-Mt. Rainier Drive
4. Ang-4-Little Mountain Lane

At each of the potential habitat areas (sites), survey points were established and mapped on an aerial at an average distance of 50 meters (m) apart, depending on height of vegetation, etc. The number of survey points corresponds to the amount of potential habitat in or adjacent to the project boundaries. GPS coordinates were taken and the point flagged on nearby (non-willow) vegetation. The same survey points were used for both visits.

All survey activity took place between 5 and 10 a.m. Taped willow flycatcher songs were broadcast at specific intervals, alternating with listening for responses, with 6 minutes spent at each survey point, per protocol.

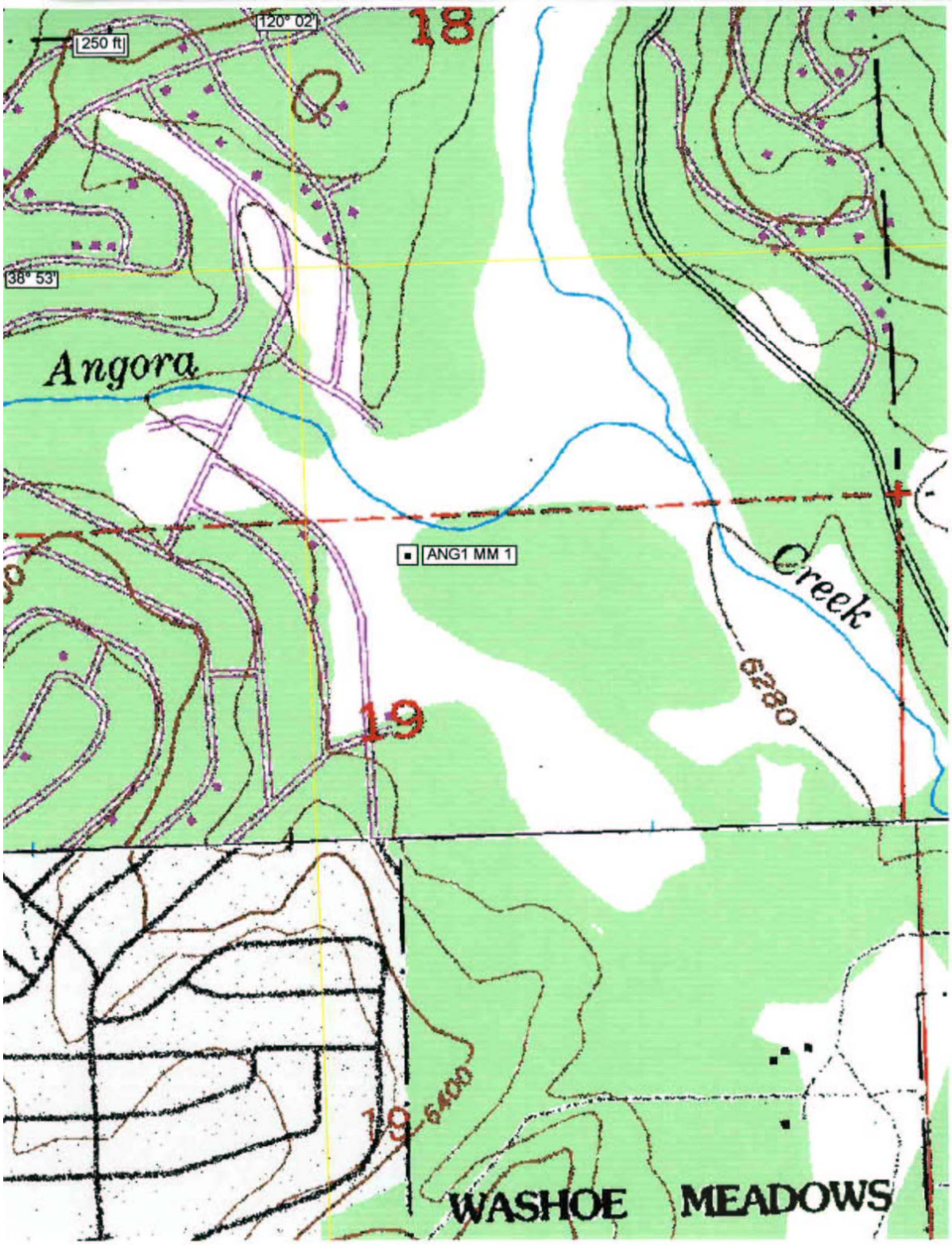
Results

No willow flycatchers were detected in any of the four areas surveyed for the Angora 3 Project area. Unfortunately, brown-headed cowbirds were detected at all four locations.

Data forms from the protocol are attached including map of each survey location and Form 3 – Results Summary for each habitat location.

Reference

Bombay, Ritter, and Valentine. 2000. A Willow Flycatcher Survey Protocol for California.



El Dorado County Department of Transportation Angora Erosion Control Project Phase 3 **Willow Flycatcher Potential Habitat and Survey Locations** **Site Ang-1-Mountain Meadow**	Survey Location ANG 1 MM

Form 3 **Willow Flycatcher Survey Summary- Results Summary**

Site Name Angl MM Observer(s) Martin / Ebrahim

Name of Manager / Owner CTC County El Dorado

USGS Quad Name Emerald Bay :UTMs: 38° 52.7′ north; 120° 1.88′ east

Location T 12N, R 18E, Sec 19, 1/4 NE 1/16 N/W

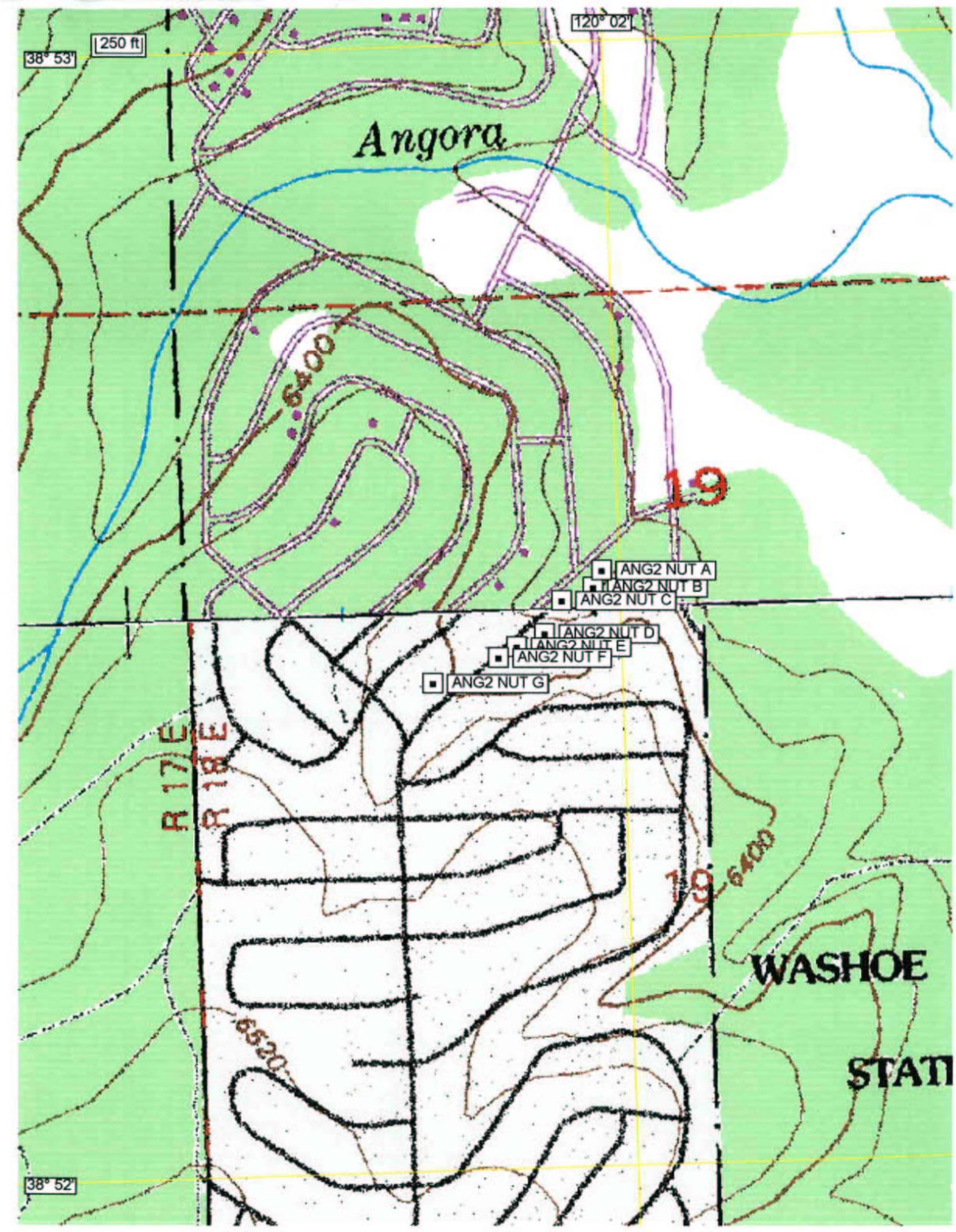
survey visit #	Date (mm/dd/yy)	survey time	WIFL (present/absent/unconf.)	# singing WIFLs	cowbirds present?
survey: 1 followup:	6/21/05	Start: 0700 Stop: 0720	absent	—	yes
survey: 2 followup:	7/12/05	Start: 0818 Stop: 0830	absent	—	yes
survey: followup:		Start: Stop:			
survey: followup:		Start: Stop:			

Total # of presumed breeding territories after all visits completed (no migrants)

Ø

willow flycatcher locations

dates present	WIFL #	WIFL location	detection types*
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	



El Dorado County Department of Transportation Angora Erosion Control Project Phase 3 **Willow Flycatcher Potential Habitat and Survey Locations** **Site Ang-2-North Upper Truckee**	Survey Location ANG 2 NUT

Form 3 Willow Flycatcher Survey Summary- Results Summary

Site Name ANG2 NUT Observer(s) Martin, Ebrahem

Name of Manager / Owner USFS/El Dorado Co County El Dorado

USGS Quad Name Emerald Bay, Echo Lake :UTMs: _____ north;

_____ east

Location T 12N, R 18E, Sec 19, 1/4 NW 1/16

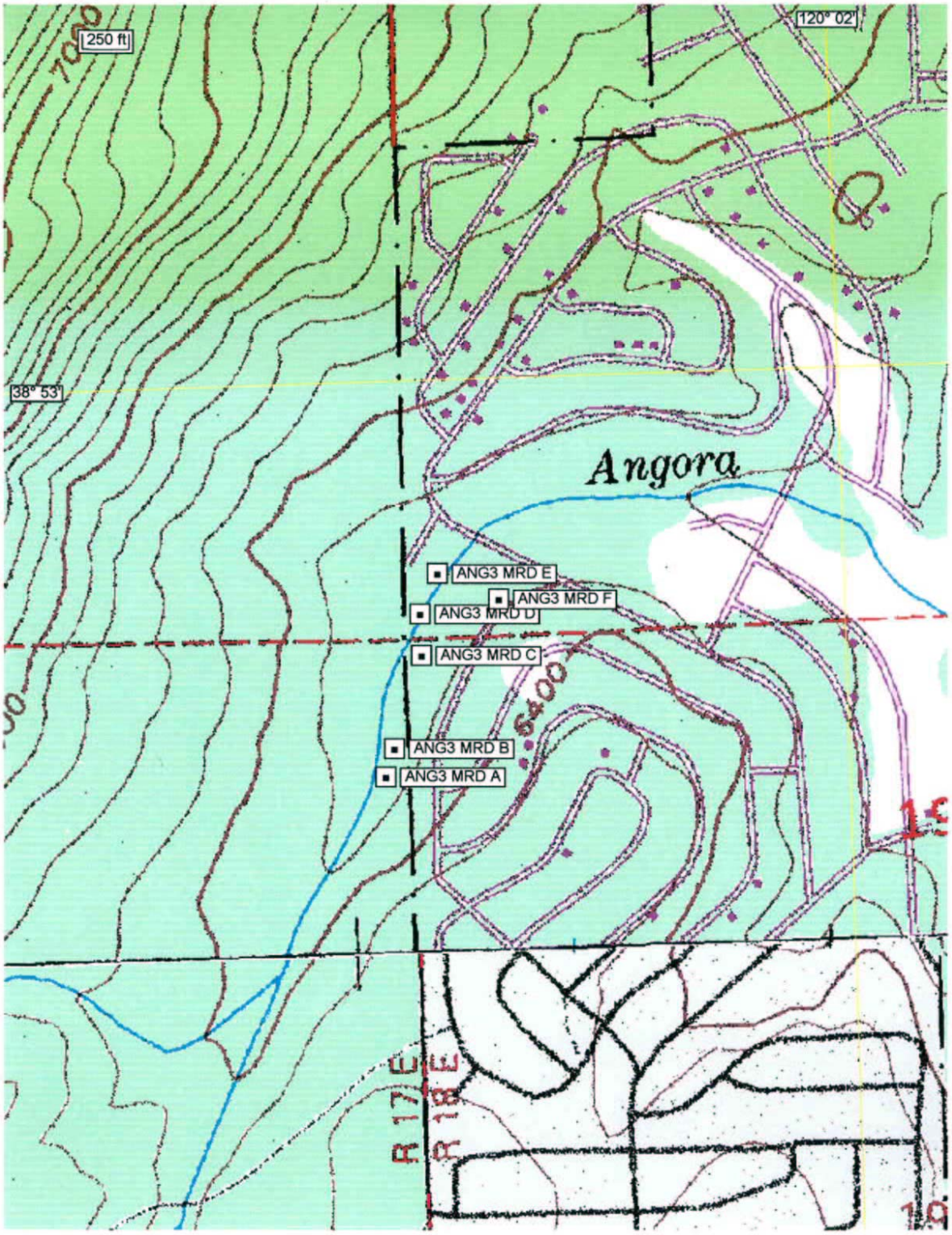
survey visit #	Date (mm/dd/yy)	survey time	WIFL (present/absent/unconf.)	# singing WIFLs	cowbirds present?
survey: 1 followup:	06/23/05	Start: 0556 Stop: 0730	absent	—	yes
survey: 2 followup:	07/12/05	Start: 0625 Stop: 0755	absent	—	yes
survey: followup:		Start: Stop:			
survey: followup:		Start: Stop:			

Total # of presumed breeding territories after all visits completed (no migrants)

0

willow flycatcher locations

dates present	WIFL #	WIFL location	detection types*
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM.	



El Dorado County Department of Transportation Angora Erosion Control Project Phase 3 **Willow Flycatcher Potential Habitat and Survey Locations** **Site Ang 3-Mr. Ranier Dr.**	Survey Location ANG 3 MRD

Form 3 **Willow Flycatcher Survey Summary- Results Summary**

Site Name ANG 3 MRD Observer(s) Martin, Ehrahim

Name of Manager / Owner USFS County El Dorado

USGS Quad Name Emerald Bay :UTMs: _____ north;

_____ east

Location T 12N, R 18E, Sec _____, 1/4. _____ 1/16 SW1/4 S18, NW1/4 S19, NE1/4 S24

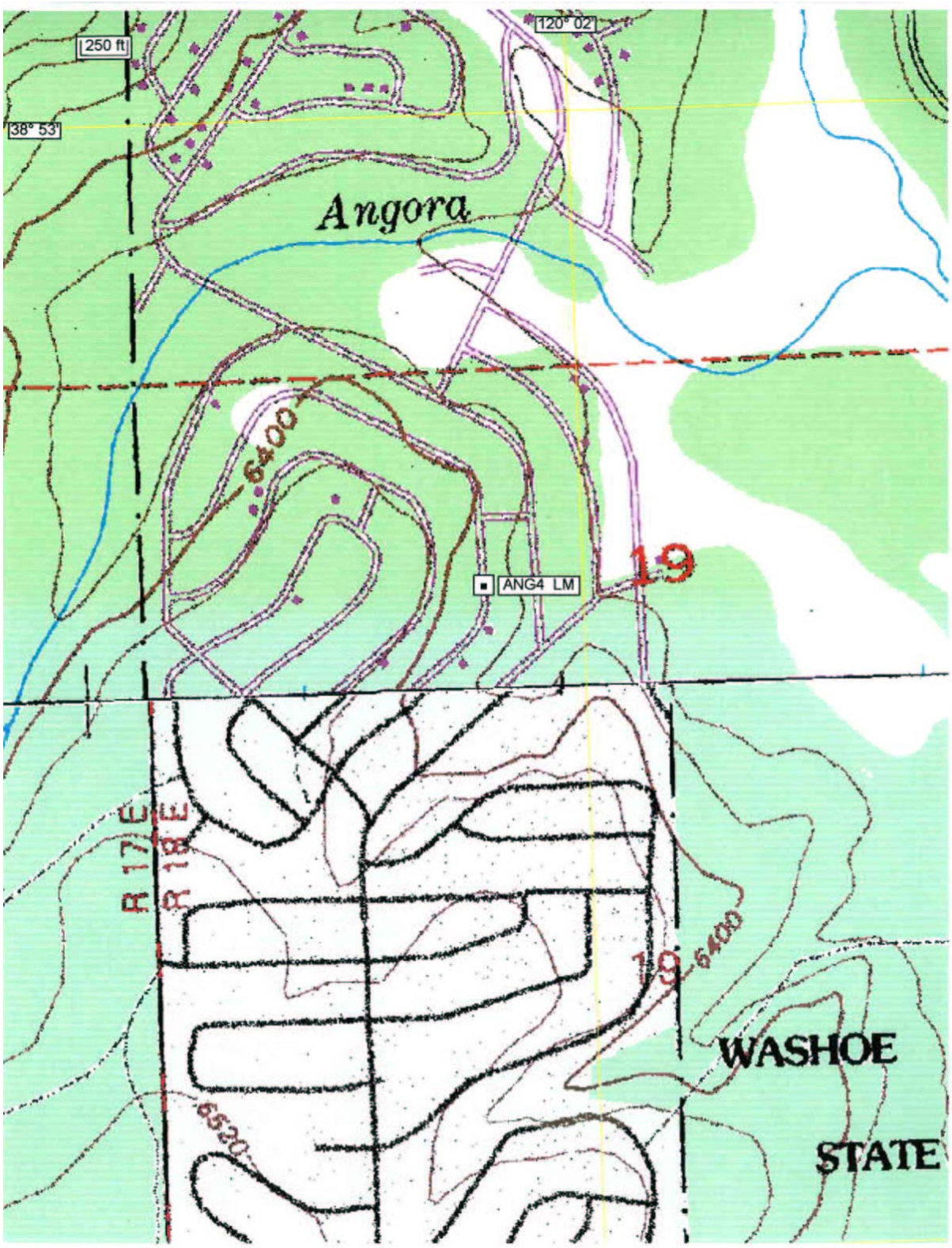
survey visit #	Date (mm/dd/yy)	survey time	WIFL (present/absent/unconf.)	# singing WIFLs	cowbirds present?
survey: 1 followup:	06/21/05	Start: 0736 Stop: 0847	absent	—	yes
survey: 2 followup:	07/12/05	Start: 0624 Stop: 0718	absent	—	yes
survey: followup:		Start: Stop:			
survey: followup:		Start: Stop:			

Total # of presumed breeding territories after all visits completed (no migrants)

Ø

willow flycatcher locations

dates present	WIFL #	WIFL location	detection types*
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	



El Dorado County Department of Transportation Angora Erosion Control Project Phase 3 **Willow Flycatcher Potential Habitat and Survey Locations** **Site Ang-4-Little Mountain**	Survey Location ANG 4 LM

Form 3 **Willow Flycatcher Survey Summary- Results Summary**

Site Name ANG4 LM Observer(s) Martin, Ebrahim

Name of Manager / Owner CTC County El Dorado

USGS Quad Name Emerald Bay :UTMs: 38°52.589' north; 120° 2.112' east

Location T 12N, R 18E, Sec 19, 1/4. NW 1/16 SE

survey visit #	Date (mm/dd/yy)	survey time	WIFL (present/absent/unconf.)	# singing WIFLs	cowbirds present?
survey: 1 followup:	06/21/05	Start: 0633 Stop: 0645	absent	—	yes
survey: 2 followup:	07/11/05	Start: 0755 Stop: 0820	absent	—	yes
survey: followup:		Start: Stop:			
survey: followup:		Start: Stop:			

Total # of presumed breeding territories after all visits completed (no migrants)

0

willow flycatcher locations

dates present	WIFL #	WIFL location	detection types*
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	
		☐ T,R,sec,1/4,1/16 ☐ lat/long ☐ UTM	

APPENDIX H

Northern Goshawk Survey Report

Angora 3 Erosion Control Project
Northern goshawk Survey Report

Northern goshawk (*Accipiter gentiles*)
FSC (nesting), USFS-SS, CSC (nesting), and TRPA

Northern goshawk is a raptor of mid to high elevation mature coniferous forest throughout the Sierra Nevada, and is a year-round resident species in the Lake Tahoe Basin. Goshawks also occur in the foothills during winter, in northern deserts with piñon-juniper woodland, and in lower elevation riparian habitats. Optimal nesting habitat for goshawk is dense forest with a closed canopy (>50%) for protection and thermal cover, and open spaces to allow maneuverability in flight. Nesting territories are often characterized by dense stands of large diameter trees with interconnected canopies, along drainages. Nests trees are usually in the densest part of stands, on north slopes near water. Goshawk reproductive season begins by mid-February in northern California. They prey mostly on birds, using snags and dead treetops as observation platforms. Northern goshawks are susceptible to human disturbance such as recreational activities and urbanization.

TRPA has designated twelve areas as northern goshawk population sites within the Lake Tahoe Basin. The TRPA prohibits operating activities within 0.5 miles of active goshawk nests between March 1 and August 31. There are no TRPA active sites within 0.5 miles of the project area.

The LTBMU regulates activities within 0.25 – 0.5 miles of known active nests, depending on nature of activity, from February 15 – September 15. The USFS designated 300 acres as Protected Activity Centers (PACs) around all known northern goshawk nesting areas. The study area is not located within a PAC.

There are three CNDDB records of northern goshawk nests within a ten mile radius of the study area, occurrence numbers 125, 126, and 127. Only one occurrence, Occurrence 125 is near the Angora 3 Project area. The other two are near the Apalachee Project area. The last update of these occurrences in the CNDDB was 1995, with last known activity at the nests in 1981.

Occurrence 125 is along Angora Creek, about 0.28 miles west of Angora 3 project boundary, and two young were fledged there in 1981 (see attached figure).

Occurrence, 127, is approximately 500 feet northwest of the Lake Tahoe Airport, about a mile northwest of Apalachee projects. That nest fledged three young in 1981.

The third record, occurrence number 126, is about ¾ mile southeast of the Apalachee projects, along Trout Creek. Per CNDDB, this nest was active in 1981 but was abandoned because of a land use change.

In June and August of 2005 ENTRIX biologists consulted with USFS avian biologist Victor Lyon, about goshawks in the project area. The following information is from Mr. Lyon.

Several known goshawk nest sites are in the riparian corridor of Angora Creek, west of the project area. One, or maybe two, known territories are within a one-mile radius of the project boundaries. In 2005, an active northern goshawk nest was less than half a mile northwest of the Angora project area, near Mule Deer Circle. However, no project activities are planned within 0.5 miles of that area. The next nearest recently active nest location was 0.57 miles west of Pyramid Circle, active in 2004.

Other nearby active goshawk nests in 2005 were on Tahoe Mountain, two miles to the north, and on Angora Ridge about a mile southwest.

Results

In June and July of 2005, ENTRIX biologists assessed the project area for potential goshawk nesting habitat. Although there is marginal potential habitat in the form of forested parcels or limited strips within the project boundaries, they are not dense, canopy cover is not closed, and human activity in the area is high. The Angora 3 Project area does not contain sufficient appropriate nesting habitat for northern goshawk and they are not expected to nest within the project boundaries, although they may forage there.

No northern goshawk was detected during the biological surveys in June – August of 2005. The activities of the erosion control project are not expected to affect northern goshawk, as no known nests are within 0.5 miles of the project activities.

Two weeks in advance of Project construction activity scheduled between the dates of February 15 and September 15, EDOT should contact the USFS LTBMU raptor biologist regarding any newly active northern goshawk nest sites within 0.5 mile of the Project area. If any active nests are known within the area, consultation with USFS should be undertaken regarding regulation and timing of construction activities.

CNDDB Occurrence 125 for northern goshawk is 0.28 miles west of Angora 3 Project boundary.

APPENDIX I

Mountain Yellow-legged Frog and Northern Leopard Frog Surveys Report

Angora 3 Erosion Control Project
Mountain yellow-legged frog and northern leopard frog surveys

This report summarizes focused surveys along Angora Creek within the Angora 3 Erosion Control Project (Project) area in the Lake Tahoe Basin (Basin) to detect populations of two special status frog species. Surveys were conducted for the mountain yellow-legged frogs (*Rana muscosa*), a federal candidate for listing under the Endangered Species Act, and the northern leopard frog (*Rana pipiens*), a California Species of Concern within its natural California distribution, although it is widely believed to have been introduced into the Basin (Jennings and Hayes 1994).

The mountain yellow-legged frog is widespread at high elevations in the Sierra Nevada (Zweifel 1955), but it is apparently very rare in the Basin. This species has been recorded historically from only five localities in the El Dorado County portion of the Basin, even though potential stream and lake habitat for these highly aquatic frogs is abundant in the basin. The nearest mountain yellow-legged frog record within the Basin to Angora Creek in the Project area is at Fallen Leaf (Table 1), from which the species has apparently disappeared (Jennings and Hayes 1994). Jennings and Hayes (1994) considered this frog to be completely extirpated from the Tahoe Basin, but Manley and Schlesinger (2001) discovered populations of this frog at Skinny Whale Pond in the southeastern Desolation Wilderness near the Sierra Nevada crest along the west side of the Basin and at Hell Hole Pond, a boggy meadow near the headwaters of Trout Creek.

The northern leopard frog was apparently common at Fallen Leaf, but other validated records for this species in the Basin are scarce (Table 1). This species may have vanished from the Basin (Jennings and Hayes 1994). Within its natural range east of California this frog is considerably more terrestrial than is the mountain yellow-legged frog, but paradoxically, the northern leopard frog has been recorded from some of the same highly aquatic Basin habitats as the mountain yellow-legged frog (Table 1). These sites are unusual habitat for this species, which is normally associated with low elevation meadows, often far from water and this habitat anomaly may indicate that the northern leopard frog is an introduced species in the Basin.

Previous surveys

ENTRIX, Inc. biologists surveyed the middle portion of the Angora Creek reach (between Lake Tahoe Boulevard and View Circle) during the summer of 2004 as part of the pre-construction activities for El Dorado County's Angora Stream Environment Zone Restoration Project (ENTRIX, Inc. 2004). Results from that survey determined that the upstream portion of this reach was composed of terraced beaver (*Castor canadensis*) ponds and lacked habitat features for either frog species. Below the beaver pond segment of the reach the biologists determined that the available stream habitat was generally too narrow and shallow to support either frog species. The biologists found no frogs or tadpoles of either species anywhere along the reach of Angora Creek between Lake Tahoe Boulevard and View Circle. Otherwise, the most recent documented surveys in the Basin for either frog species were apparently those of Zweifel (1955), which also

included most of the Sierra Nevada. The most recent records for the northern leopard frog from the Tahoe Basin originated in 1971 (Table 1).

Methods

The 2005 Angora Creek survey in the Project area covered only those reaches of the creek that are bordered by public land, including the reach upstream of Lake Tahoe Boulevard approximately one half mile to the first confluence, the beaver pond reach downstream of Lake Tahoe Boulevard, and an approximately ¾ mile reach from View Circle downstream. Angora Creek upstream of Lake Tahoe Boulevard and downstream of View Circle were surveyed on August 17, 2005 and the beaver pond reach of Angora Creek was surveyed on August 18, 2005. ENTRIX herpetologist Sean Barry conducted the surveys, accompanied by Nancy Carter.

All surveys were conducted during daylight hours, when both frog species are most active (Zweifel 1955; Jennings and Hayes 1994). The survey team walked along the edge of the waterway and used binoculars to try to find frogs at the base of cover further along the reach. Tadpoles were a particular focus of these surveys – mountain yellow-legged frog tadpoles tend to congregate (sometimes in large numbers) in shallow, fully exposed pools, and in those situations they are considerably easier to find than adult mountain yellow-legged frogs (S. Barry, pers. obs). The habitat of Tahoe Basin leopard frog tadpoles is unknown but is presumed to be warm, quiet water in the same waterways where adults would be encountered.

Results

Angora Creek. The reach of Angora Creek upstream of Lake Tahoe Boulevard is narrow (<1m for most of its length), shallow (<20cm for most of its length), and covered with brushy willows and other dense riparian vegetation. No habitat capable of supporting either frog species was found along this reach. Limited recent beaver activity was found about midway between Lake Tahoe Boulevard and the upstream end of the surveyed reach, but no dams or ponds had yet appeared. Frogs and tadpoles were absent from the entire reach. The reach of Angora Creek from its crossing at Lake Tahoe Boulevard to the downstream limit of the beaver pond area included several types of shallow stream habitat that was covered with dense grass and sparse riparian vegetation. No wide shallow pools were found, and no frogs or tadpoles of either species were found. The beavers appear to have departed from this reach of the creek—evidence of recent activity was absent. The reach of Angora Creek from its crossing at View Circle to the downstream end of the survey includes the most diverse stream habitat of any surveyed for this report. Several pools were found, but no frogs or tadpoles of either species were found. No beaver activity was noted anywhere along this reach.

Summary

Surveys of Angora Creek in the Angora 3 Project area in El Dorado County, for mountain yellow-legged frogs and northern leopard frogs failed to yield frogs or tadpoles of either

species. The habitat along the surveyed reaches of Angora Creek lacked most of the features usually considered necessary to support mountain yellow-legged frogs, but the reach downstream of View Circle includes some seemingly suitable spawning and foraging habitat. Northern leopard frogs were not found along Angora Creek or in meadows associated with the stream. The absence of frog observations may not indicate the absence of frogs, but the absence of tadpoles at the time in the season, when they tend to be most abundant very likely indicates that these frog species are absent from the reaches associated with this Project.

References

ENTRIX Inc. 2004. Angora Creek Amphibian Survey, July 2004. ENTRIX, Inc., Sacramento, California.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Sacramento, California.

Manley, P. N., and M. D. Schlesinger. 2001. Riparian Biological Diversity in the Lake Tahoe Basin: A Final Report for the California Tahoe Conservancy and the U.S. Forest Service, Riparian Grant #CTA-3024.

Wright, A. H., and A. A. Wright. 1949. Handbook of Frogs and Toads of the United States and Canada. Third Edition. Comstock, Ithaca, New York.

Zweifel, R. G. 1955. Ecology, distribution, and systematics of frogs of the *Rana boylei* group. University of California Publications in Zoology **54**:207-292.

Table 1. El Dorado County Tahoe Basin Mountain yellow legged frog and northern leopard frog Museum and literature records.

Locality	Collectors	Date	Source[1]
Mountain yellow-legged frog			
Fallen Leaf	Joseph Slevin	September, 1913	CAS 36454-36711
Near Fallen Leaf	C. V. Burke	unknown	SU 1545-6, 1548
1 mi E Phillips	Alden H. Miller	July 19, 1945	MVZ 41182-3
Upper Truckee River, 3.5 mi ESE Phillips	Richard G. Zweifel, William J. Riemer	June 1, 1952	MVZ 58086
Vicinity of Tallac	J.O. Snyder, C. H. Richardson	June, 1911	SU 3529-34
Skinny Whale Pond	N/A	late 1990's	Manley and Schlesinger, 2001
Hell Hole Pond	N/A	late 1990's	Manley and Schlesinger, 2001
Northern leopard frog			
Fallen Leaf	Joseph Slevin	July 1909	CAS 14517-14519
Fallen Leaf	Joseph Slevin	September, 1913	CAS 36326-36453
Fallen Leaf	Joseph Slevin	July, 1915	CAS 39659-60
near Fallen Leaf Lake	Harold C. Bryant		MVZ 7205
"Near Fallen Hat Lake"	Unknown	May 2, 1905	SU 11228
Lake Tahoe, below Hwy. 89 Bridge at Taylor Creek	D. H. Evans , J. D. Hopkirk	June 25, 1965	MVZ 79570
junction of Trout and Cold Creeks, 2.4 mi S Bijou	Alexander K. Johnson (#716)	August 23, 1970	MVZ 100316-17
Vicinity of Tallac	J.O. Snyder, C. H. Richardson	June, 1911	SU 3489, 3502-3528

[1] - CAS: California Academy of Sciences, San Francisco; MVZ: Museum of Vertebrate Zoology, UC Berkeley;

SU: Stanford University Natural History Museum, now housed at CAS

APPENDIX J

California Natural Communities Survey Forms

California Natural Community Field Survey Form

Mail to:
Natural Diversity Database
California Dept. of Fish and Game
1416 Ninth Street
Sacramento, CA 95914
(916) 324-6857

For office use only
Source Code_____ Quad Code_____
Community Code _____ Occ #_____
Map Index #_____ Update Y _____ N _____

Please provide as much of the following information as you can. Please attach a map (if possible, based on the USGS 7.5 minute series) showing the site's location and boundaries. Use the back if needed.

Community name: Fen
Reporter: Debby Martin E-mail Address: biota@comcast.net Phone (916) 487-3588
Affiliation and Address biota biological 5505 Oak River Ct., Sacramento CA 95841
Date of field work: 7/14/05 County: El Dorado
Location **(Please attach/submit map):**

Quad name: Echo Lake T 12N R 18E SE ¼ of NW ¼ sec 19 Meridian_____
UTM Zone __ __ Northing 3 8 . 5 2 4 8 Easting 1 2 0 . 0 2
Landowner/Manager: California Tahoe Conservancy Photographs: Slide☐ Print☑
Elevation: 6405.2' Aspect: SE Slope (indicate % or °)_____ Drainage:_____
Site acreage: _____
Evidence of disturbance or threats:
Area may be slated for upcoming erosion control work by El Dorado County. Just NE of intersection of North Upper Truckee Rd. and Mt. Ranier Drive - noxious weeds on roadside including Dipsacus fullonum, Cirsium vulgare, and Verbascum thapsus.
Current land use:
Substrate/Soils:
Peaty, acidic

General description of community:
Mostly undisturbed, open fen in lodge-pole pine community. On developed lot in Angora Creek community, between homes and roads on slight slope. High plant diversity.
Any Special Plants or Animals present:
Meesia triquetra; 3-ranked hump moss, and Drosera rotundifolia; sun dew.

Successional status/Evidence of regeneration of dominant taxa:

Overall site quality: Excellent ☐ Good ☑ Fair ☐ Poor ☐ Comments (below):

Basis for report: Remote image ☐ Binocular/Telescopic survey ☐ Windshield survey ☐ Brief walk-thru ☑
Detailed survey ☐ Other ☐ _____
Relevé: In the space below, indicate each species cover % within the following growth form categories:

Trees	Shrubs	Herbs/Graminoids
15% Alnus, Salix, Pinus contorta, Abies concolor	20% - Salix, Lonicera	65% species included Carex sp,, Lilium sp, Habenaria sparsifora, Polygonum sp, Veratrum californicum, Pyrola asarifolia, Mimulus sp., Delphinium sp., Gentiana sp., Equisetem sp., Geranium californicum, Veronica sp., Oxypolis occidentalis, and Pedicularis attollens

Continue on back if needed. Thank you for your contribution.

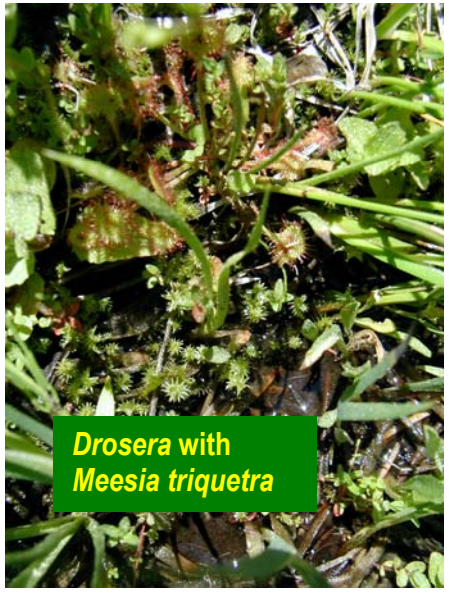
38° 52.438' W 120° 02.205

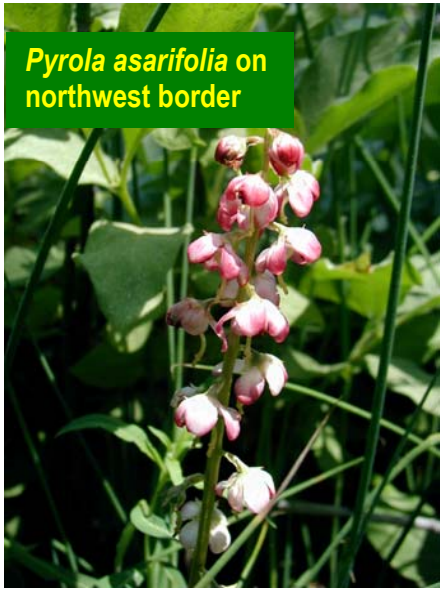
T12N R18E SE ¼ of NW ¼ S19 Echo Lake quad

Submitted by Debby Martin 9/05

biota

Fen looking southeast





Submitted by Debby Martin 9/8/05

biota

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814
Fax: (916) 324-0475 email: WHDAB@dfg.ca.gov

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work mm/dd/yyyy: 07/14/05

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: Meesia triquetra

Common Name: Three-ranked hump moss

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals _____ Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☒ no ☐ unk.

Collection? If yes: — Number — Museum / Herbarium

Reporter: Debbey Martin
Address: 5505 Oak River Court
Sacramento, CA 95841
E-mail Address: hrota@comcast.net
Phone: (916) 487-3588

Plant Information

Phenology: 100 % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description **(please attach map AND/OR fill out your choice of coordinates, below)**

County: El Dorado Landowner / Mgr.: California Tahoe Conservancy
Quad Name: Echo Lake Elevation: 6405 ft
T 12N R 18E Sec 19 , SE ¼ of NW ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): _____
T___ R __ Sec ___ , ___ ¼ of ___ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model Garmin Vista
Datum: NAD27☐ NAD83☐ WGS84☐ Horizontal Accuracy 24 meters/feet
Coordinate System: UTM Zone 10☐ UTM Zone 11☐ *OR* Geographic (Latitude & Longitude)☐
Coordinates: Easting/Longitude 120° 02.205' Northing/Latitude 38° 52.438'

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*
Fen. Drosera also present. Slopes to SE. Lodgepole pine opening with willow, alder on edges

Other rare taxa seen at THIS site on THIS date: —

Site Information Overall site quality: ☐ Excellent ☒ Good ☐ Fair ☐ Poor
Current / surrounding land use: Residential, road
Visible disturbances:
Threats: Weeds on SE boundary encroaching - teasel, bull thistle
Comments: El Dorado County considering erosion control project in vicinity

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☒ By another person (name): Shana Gross - USFS
☐ Other: _____

Photographs: *(check one or more)* Slide Print Digital
Plant / animal ☐ ☐ ☒
Habitat ☐ ☐ ☐
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? ☒ yes ☐ no

FG/WHDAB/1747 Rev.10/20/03

Page