INITIAL STUDY

Upper Tryon Creek Enhancement Project

August 2021

Lead Agency:
County of Del Norte
Community Development Department
981 H Street, Suite 110
Crescent City, CA 95531

Prepared by:
PLANWEST PARTNERS, INC.

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1.0 Project Information

PROJECT TITLE: **Upper Tryon Creek Stream Enhancement Project**

LEAD AGENCY: Del Norte County Community Development Department

CONTACT: Vanessa Blodgett, Senior Planner
1125 16th Street, Ste 200
Arcata, CA 95521
Phone: (707) 825-8260
Email: vanessab@planwestpartners.com

PREPARED BY: Planwest Partners, Inc.
1125 16th Street, Suite 200
Arcata, CA 95521
(707) 825-8260

PROJECT LOCATION: 6985 Lake Earl Drive, Fort Dick, Del Norte County, CA

ASSESSOR'S PARCEL NUMBER: 105-020-014, 105-042-001 and 105-042-003

GENERAL PLAN DESIGNATION: A (Prime Agriculture), RCA (Resource Conservation Area)

ZONING DESIGNATION: AE (Agricultural Exclusive), RCA-1, RCA-2

PROJECT DESCRIPTION:

Project Summary
This Enhancement Project will restore fish and wildlife habitat along 0.83 miles (4,400 feet) of Upper Tryon Creek, a Yontocket Slough and Smith River Estuary tributary. The project is resource dependent, involving actions necessary for natural channel function, fish passage and wildlife habitat restoration. The project will restore natural channel flow paths, improve fish passage, and enhance riparian habitat on private agricultural land in the Smith River Flood Plain.

The project goals are to:

1) improve salmonid migration,
2) restore natural hydrologic function,
3) restore instream habitat, and
4) enhance riparian habitat

The operation plans and construction specifics are outlined in Figure 1 Project Area Map. Specific enhancements include restoring the historic meanders in the stream channel, the removal of existing earthen berms in the floodplain, creating multiple backwater alcoves, installing large wood structures, removing one and upgrading two stream crossings, removing invasive plants, installing native plants and creating an 85-foot wide fenced riparian area along the restored channel length.

The project includes the following components:

1) Fish Passage: Removal of one crossing and upgrading two crossings that block fish passage and preclude natural stream function. Replaced crossings will fully meet fish passage criteria and landowner access needs. The new crossings include a 50' long and 14' wide prefabricated steel bridge and a standard Natural Resource Conservation Service (NRCS) low-water stream crossing for use during the dry season and emergencies (i.e. moving livestock during Smith River flood stage).
2) Natural Hydrologic Function: Removal of levees that limit Upper Tryon Creek floodplain connectivity and restoration to historic flow paths. The construction of seven new off-channel alcoves. The

project will enhance 3,300 linear feet of channel and construct 620 linear feet (0.5 acres) of additional alcove habitat.

3) Instream Habitat: Restoration of natural channel flow paths and instream habitat through grading and large wood installation. The wood loading rate will exceed National Marine Fisheries Service (NMFS) SONCC Coho Recovery Plan habitat recommendations for a stream with a connected floodplain of >65 pieces/mile by installing 167 logs, including 75 logs used as structural piles (NMFS 2014).

4) Riparian Habitat: Enhancement of riparian habitat will be accomplished through invasive plant removal and installation of 7,350 native trees, shrubs, and wetland plants. The project will create an 85' wide riparian buffer with livestock control fencing along the entire riparian corridor (an average 35' buffer on both banks beyond the 15' bankfull width).

Restoration actions will enhance instream and riparian habitat. The project reach, in its current condition, is a simplified ditch that lacks channel complexity and meanders, with sections choked with debris and invasive Himalayan blackberry. Livestock have full access to the stream and there is a lack of riparian vegetation over approximately 70% of the project length. There are three low-water livestock crossings consisting of small undersized culverts that are problematic for conveyance of flow, sediment, and debris.

Restoration of rearing habitat in the estuary remains vital for the management and protection for salmonid populations, especially for Coho Salmon that tend to thrive in this low-gradient environment (Parish and Garwood 2015, 2016, Parish Hanson 2018). Tryon Creek is low-gradient from its forested headwaters to Yontocket Slough and contains some of the highest intrinsic potential for Coho Salmon within the Smith River (NMFS, 2014). The Upper Tryon Creek Stream Enhancement Project will implement identified Coho recovery strategies including increasing channel complexity, floodplain connectivity and riparian function (NMFS 2014).

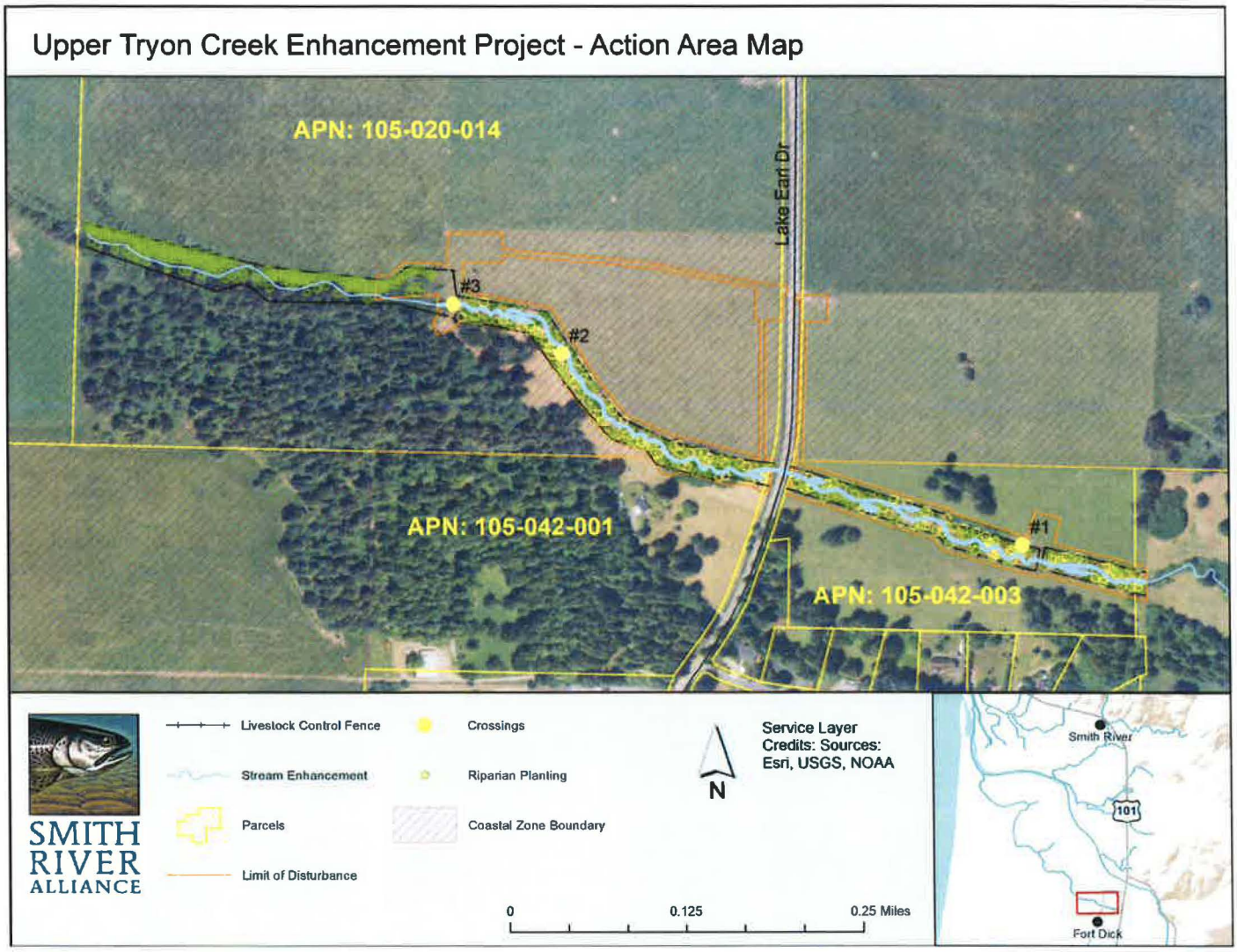
Project Setting

The project site is just north of the unincorporated town of Fort Dick, CA and the stream reach extends 0.27 miles upstream and 0.56 miles downstream of Lake Earl Drive. The project area downstream of Lake Earl Drive is within the coastal zone and jurisdiction of the Local Coastal Program.

The project site is in the Smith River watershed on private property zoned for agricultural use. Tryon Creek is a Yontocket Slough tributary , which drains into the Smith River estuary in Del Norte County, California, 2.56 miles upstream from the Pacific Ocean. The stream flows northwest across the broad Smith River Plain, following the southern edge of the apparent Smith River migration zone. The stream is low-gradient from its forested headwaters to Yontocket Slough. The land surrounding Tryon Creek, is primarily utilized for agricultural production. The Tryon Creek headwaters are zoned for rural residential and timber lands.

The project area is 4.56 miles upstream from the confluence with the Smith River.

Figure 1: Project Area



Approvals Required

The project would require the following approvals and/or discretionary actions from Del Norte County:

- Community Development Department - Use Permit
- Roads Department —Encroachment Permit
- Planning Commission - Initial Study/Mitigated Negative Declaration Adoption & Use Permit Approval

Other review and/or approvals may be required from the following agencies:

- U.S. Army Corps of Engineers — Clean Water Act Section 404 Permit, Section 7 ESA
- Regional Water Quality Control Board —Section 401 Water Quality Certification
- California Department of Fish and Game — Streambed Alteration Agreement, CESA

2.0 Statement of Findings and Determination

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
- ☐ Agricultural & Forestry Resources
- ☐ Air Quality
- ☒ Biological Resources
- ☐ Cultural Resources
- ☐ Energy
- ☐ Geology/Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards & Hazardous Materials
- ☐ Hydrology/Water Quality
- ☐ Land Use/Planning
- ☐ Mineral Resources
- ☐ Noise
- ☐ Population/Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Tribal Resources
- ☐ Transportation
- ☐ Utilities/Service Systems
- ☐ Wildfire
- ☐ Mandatory Findings of Significance

DETERMINATION

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.

Heidi Kunstal
Signature

8-19-21
Date

HEIDI KUNSTAL
Printed Name

3.0 Environmental Impacts Evaluation and Checklist

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 "Earlier Analyses," as described in (5) below, 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 citied 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 analysis of each issue should identify:

   a) the significance criteria or threshold used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

AESTHETICS	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from a publicly accessible vantage point)? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

Setting

The project site is in the Smith River watershed on private property zoned for agricultural use. Tryon Creek is a Yontocket Slough tributary , which drains into the Smith River estuary in Del Norte County, California, 2.56 miles upstream from the Pacific Ocean. The stream flows northwest across the broad Smith River Plain, following the southern edge of the apparent Smith River migration zone. The stream is low-gradient from its forested headwaters to Yontocket Slough.

Discussion

a) The land surrounding Tryon Creek is primarily utilized for agricultural production, and the project would not result in any long term adverse impact on scenic vistas. The impact would be short term and temporary while construction and restoration activities are on-going. A **less than significant** impact is expected.

b) Based on California Scenic Highway Mapping System information, no designated state scenic highways are found adjacent to or within view of the project area[1]. There is one officially designated State Scenic Highway section within Del Norte County along Highway 101 with scenic ocean views through Del Norte Redwoods state park, although Highway 101 for its entire length in Del Norte County has been identified by the State Scenic Highway Mapping System as eligible for State listing. The project site is not visible from the highway due to distance and intervening vegetation. As such, there will be **no impact** on scenic resources.

c) The Project site is located in a rural agricultural area just north of an elementary school serving the community of Fort Dick. It is accessed by both small private roads and county owned and maintained roads including Lake Earl Drive. The restoration project would be visible from surrounding parcels

[1] Caltrans, California State Scenic Highway System Map. Accessed July 17, 2021.

although it will be obscured by existing vegetation and slopes in the area. Upon project completion, the typical view will not be significantly altered from current conditions and **no impact** is expected.

d) The project will not create any lighting sources. In addition, temporary construction activities associated with the restoration project will be conducted during daylight hours and will avoid excessive light pollution from the site. **No impact** is expected.

AGRICULTURE AND FOREST RESOURCES	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?			X	

Setting

Maps prepared pursuant to California's Farmland Mapping and Monitoring Program (FMMP) include Del Norte County as an "Area Not Mapped" and, therefore do not categorize the project area as having any type of Important Farmland (California Department of Conservation 2018). The project site and surrounding areas are under agricultural production, specifically cattle grazing. According to Del Norte County's GIS Portal, the project site and adjacent parcels in the project area are zoned for agricultural uses, although no timber production is present. The project parcels are zoned Agriculture Exclusive (AE) adjacent to the elementary school and to the east of Lake Earl Drive (Figure 1). There are no parcels under Williamson Act contract within or adjacent to the project site.

a) The project site does not include Prime Farmland, Unique Farmland, or Farmland of Statewide importance as shown on maps prepared pursuant to the FMMP. The project would not convert

FMMP designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, therefore, **no impact** would occur.

b-d) There are no parcels in the project site or in the vicinity under Williamson Act contract or zoned for Timberland Production (Del Norte County Web GIS). The project would not conflict with agricultural or forest land zoning or Williamson Act contracts and would not result in the loss of forest land, therefore, **no impact** would occur.

e) The project would not involve changes in the existing environment which would result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use, although livestock movement on the grazing land would be altered. No forest land or timberland exists at the project site or adjacent parcels and the project would not result in the loss or conversion of forest land Therefore, a **less than significant** impact would occur.

AIR QUALITY	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) 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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Setting

The project site lies within the North Coast Air Basin (NCAB), under the authority of the North Coast Unified Air Quality Management District (NCAQMD) and the California Air Resources Board (CARB). The NCAB includes Humboldt County, Mendocino County, and Northern Sonoma County. In the NCAB, air quality is predominantly influenced by the climatic regimes of the Pacific. In summer, warm ground surfaces draw cool air in from the coast, creating frequent thick fogs along the coast and making northwesterly winds common. In winter, precipitation is high, surface wind directions are highly variable, and weather is more affected by oceanic storm patterns[2].

Del Norte County generally has good air quality and is in attainment for federal and state air quality standards.

The NCUAQMD has not formally adopted significance thresholds but rather recommends using the Particulate Matter Attainment Plan (1995), and the Best Available Control Technology (BACT) emission

[2] North Coast Unified Air Quality Management District (NCUAQMD). https://www.ncuaqmd.org/index.php?page=aqplanning.ceqa Accessed July 22, 2021.

rates for stationary sources as defined and listed in the NCUAQMD Rule 110, New Source Review, and Prevention of Significant Deterioration, Section 5.1 - BACT. All projects are subject to adopted NCUAQMD rules and regulations in effect at the time of construction.

Discussion

a) The project is expected to create additional vehicle trips by construction workers and delivery vehicles. It is unlikely construction trips will create a substantial increase in fugitive dust. Earth moving and other ground disturbing activity may generate fugitive dust.

In an effort to minimize the amount of fugitive dust from construction activities at the site, the contractor will employ best management practices including covering spoils and watering active construction areas as necessary. This impact will be limited to the construction phase of the project.

Additional air pollutants are expected to be generated from passenger vehicle and construction equipment exhaust. In an effort to minimize exhaust emissions, the contractor will encourage carpooling to the site when possible and utilize best management practices for construction equipment including shutting of equipment when not in use and ensuring that all equipment is fitted with required CARB exhaust systems and is in good working order.

Project equipment includes: Track and tire equipment including excavators, dump trucks, carrier crawler, bulldozers, loaders, crew trucks, low boys, water trucks, pumps, tractors, fence post augers, hand tools for plant installation including hoedads, rock bars, planting shovels, rakes, and re-seeding equipment including ripping and drill seeding attachments (only used on upland pastures).

Emissions from the project will be limited to the construction phase. The applicant has provided fuel use estimates for construction equipment. Maintaining equipment in good working order, implementing applicable BMPs and complying with state regulations for exhaust systems will result in no conflict with existing air quality plans and a **less than significant** impact.

b) Del Norte County is in attainment for all Federal and State criteria air pollutants. The attainment status for each criteria air pollutant is based on measurements collected at monitoring stations throughout the county. Monitoring results have shown that the principal pollutant in the NCAB is PM10.

As noted above under Section (a), the project will create a temporary increase of PM10 emissions from earth moving work and vehicle exhaust.

Increase in criteria pollutants, including PM10, generated by the project will be limited and temporary. As such, there will be a **less than significant** impact.

c,d) The project is located on agricultural land just north of the community of Fort Dick and Redwood Elementary School. Any air quality emissions will be limited and temporary and there are no project activities that are anticipated to create a substantial amount of odor. As such, there will be a **less than significant impact** related to sensitive receptors or other emissions such as odors.

BIOLOGICAL RESOURCES	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
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 Depart. of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
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 Depart. of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

Physical Setting

For Dick is located on the Pacific Coast and is bordered to the north and east by the Smith River. The climate is generally mild and moist due to substantial influence from the Pacific Ocean. While the area is developed with urban and residential uses, wildlife corridors exist along creeks and streams in the area including the subject of the proposed restoration project, Tryon Creek.

The project site is located on APNs 105-020-014, 105-042-001 and 105-042-003. All parcels are undeveloped and used for livestock grazing. Single-family residential uses are present to the south of the project site with small, forested areas to the east and west.

Discussion

a) No biological resources are expected to be adversely affected by the project because the project is designed to prevent impacts to any state or federally listed species.

Fish, frogs, and other aquatic life are not expected to be adversely affected due to the timing of construction. The project will address limiting factors for Coho salmon reproduction and migration (NMFS 2014). The project is designed to restore natural stream flow conditions and facilitate fish passage. More detail on botanical and wildlife species encountered within the project area is listed below.

Botanical Species

Native riparian vegetation is limited due to active grazing up to the wetted channel. Due to the disturbed nature of the site, it is unlikely that rare plant populations will be impacted by project construction. Prior to project construction, a qualified biologist will complete a rare plant survey following "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, 2018). CNDDB records will be searched and surveys will include any host plants for listed butterflies that may occur in the project area. Any special status or host plants are identified at the work site, will be protected and avoided; if necessary, temporary fencing or monitoring by a qualified biologist during construction will be used to prevent accidental disturbance of rare plants.

The riparian plant communities, including communities rare in California, will be enhanced by the project. Historically, *Picea sitchensis* and *Sequoia sempervirens* Forest Alliances comprised most of the habitat along the Smith River's floodplain tributaries. California ranks the *Picea sitchensis* Forest Alliance as imperiled in the State due to a very restricted range and very few populations, making it vulnerable to extirpation (CNPS 2021). This project will restore some of the historic range of *Picea sitchensis*.

Wildlife Species

Wildlife in the project area include seasonal and resident populations of waterfowl, shorebirds, raptors, migrating songbirds, Northern red-legged frog (*Rana aurora*), Foothill yellow-legged frog (*Rana boy/ii*), Northwestern Salamander (*Ambystoma graci/e*), North American beavers (*Castor Canadensis*), black tailed deer (*Odocoi/eus hemionus*) and Roosevelt elk (*Cervus Canadensis roosevelti*). The project site is currently a wildlife corridor for a resident herd of Roosevelt elk that uses the forest to the south of Tryon Creek for cover and protection, and the pastures to the north for forage. The riparian fencing design for the project will allow for continued migration of elk herds, and plant-installations will utilize strategies to inhibit browsing during plant establishment.

A number of bird species are also likely to utilize the riparian corridor for nesting or foraging. Yellow-billed cuckoo *(Coccyzus americanus)* and willow flycatcher *(Empidonax traillii)* have not been documented in the action area (Table 1) and have limited documented breeding, nesting or fledging in Del Norte County. Pre-construction nesting bird surveys will be conducted prior to any riparian vegetation removal.

Tidewater goby (*Eucyclogobius newberryi*), federally listed as endangered, have been documented in nearby in Lake Earl and Smith River and may be present in tidally influenced areas of the Smith River (Mizuno 1998, Schmelzle 2015). However, the project site is approximately 4 miles upstream from tidally influenced areas. Therefore, it is anticipated that goby will not be in the project area during project implementation.

State or federally listed, candidate, critical habitat, or essential fish habitat in the action area are listed in Table 1 below.

Table 1: State or federally listed, candidate, critical habitat, or essential fish habitat

Species	Status	Critical Habitat in Project Area
Coho Salmon (Oncorhynchus kisutch)	State and federally threatened	Yes
Tidewater Goby (*Eucyclogobius newberryi*)	Federally endangered	No
Yellow-billed Cuckoo *(Coccyzus americanus)*	State endangered	Yes
Willow Flycatcher *(Empidonax traillii)*	State endangered; federally threatened	Yes

With the incorporation of the above referenced design features, project impacts will be **less than significant with mitigation.**

Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP), states that all workers performing construction activities shall receive training regarding the environmental sensitivity of the site and the need to minimize impacts. Training regarding sensitive habitats, special-status species, laws and regulations, permit conditions, elk encounters, BMPs, safety, and trash removal will be covered.

b,c) Tryon Creek up to the ordinary high water mark and some of the adjacent riparian areas are considered wetland as defined under Section 404 of the Clean Water Act. The project will result in no net loss of wetland habitat and will result in the net gain of approximately 0.5 acres of seasonally inundated emergent habitat within the stream channel. If requested, a wetland delineation will be completed prior to project construction. Construction plans will be adjusted to follow all recommendations of responsible agencies. All necessary federal and state permits will be acquired prior to project construction. With the implementation of the above project design elements, any impacts to wetlands or riparian habitats will be considered **less than significant**.

d) When water is present, Tryon Creek provides important rearing habitat for Juvenile Salmonids. Juvenile salmonids, including federally and state listed Coho salmon (Oncorhynchus kisutch), were detected rearing in Tryon Creek and Yontocket Slough for five consecutive years from 2012 to 2016 (Parish and Garwood 2015, Parish and Garwood 2016). Spawning gravels are present in Tryon Creek upstream of the project reach. While no documented spawning has been observed, juvenile Chinook Salmon (Oncorhynchus tshawytscha), unidentified trout (Oncorhynchus sp.), and Coastal Cutthroat Trout (Oncorhynchus clarkii clarkii) have been documented rearing in Tryon Creek upstream of the project area during the summer months (Walkley and Garwood 2017). All of these species would benefit from the restoration actions in the project reach but will not be present during construction due to the seasonal flow pattern.

The project impacts will result in long term benefits for salmonid rearing habitats and short-term impacts will be **less than significant.**

e) The project does not conflict with any local policies or ordinances protecting biological resources, and is consistent with applicable policies related to biological resources in the Del Norte County General Plan. As such, **no impact** will occur.

f) There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved conservation plans with which the project would conflict. As such, **no impact** would occur.

CULTURAL RESOURCES	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			X	
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

Setting

The general area has a long history of human use associated with the Smith River including Native Americans and later with European settlers beginning around 1850.The project area is within the ethnographic territory of the Tolowa Dee-ni' and the general area has high potential for archaeological sites. The Tolowa Dee-ni' Nation and the Elk Valley Rancheria were consulted along with submission of the Conditional Use Permit application material, and no objections to the project were received.

A Phase 1 Cultural Resource Inventory Report was completed by a licensed archaeologist from DZC Archaeology and Cultural Resource Management Consulting. The report recommends a finding of no impacts to historical, archaeological, or Tribal Cultural Resources as defined by CEOA, and a finding of No Effects as defined by the National Environmental Policy Act (NEPA).

Regulatory Context

The Del Norte County General Plan Chapter 5: Recreational and Cultural Resources includes polices for the inadvertent discovery of artifacts or human remains.

In the event that human remains are discovered, work will cease immediately in the area of the find and comply with California State Health and Safety Code 7050.5 which states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition pursuant to California Public Resources Code, Section 5097.98. Work shall not resume in the area until proper disposition is complete as part of California Public Resources Code, Section 5097.98.

Discussion

a, b) The project site is not known to contain archaeological, historical, or tribal cultural resources and is not located on any mapped cultural sites. As mentioned above, the project area has been reviewed by local tribal groups and no archaeological sites were found. Additionally, no structures over 45 years of age will be removed as part of the project.

There is potential for subsurface excavation activities to uncover previously unknown subsurface archaeological resources. Implementation of standard cultural resource construction procedures as outlined in the Del Norte County General Plan policies noted above regarding inadvertent discovery would reduce potential impacts to a less than significant level. No significant archaeological or historic resources were observed during investigation. Based on these findings, the project's potential to cause a substantial adverse change in the significance of a historical or archaeological resource would be **less than significant**.

c) There are no known human remains on the project site. Implementation of standard cultural resource construction procedures regarding inadvertent discovery, including Del Norte County General Plan policies and California Health and Safety Code §7050.5, would reduce potential impacts to a **less than significant** level.

ENERGY	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				X
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Discussion

a,b) Construction of the project will require some energy use including grading and construction along Tryon Creek along the area indicated in Figure 1. However, as this is a restoration project with no long term energy use associated with it, it is not anticipated that construction will create a significant environmental impact due to wasteful consumption of energy resources.

Since the project will improve habitat along Tryon Creek and result in expanded salmonid rearing habitat, the project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, **no impact** on energy resources will occur.

GEOLOGY AND SOILS	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
a) Directly or indirectly cause 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.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	

GEOLOGY AND SOILS	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
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?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

Setting

The Northern California coast is located in the southern portion of the Cascadia Subduction Zone and is a seismically active area noted by numerous fault zones (Clarke and Carver 1992).
The region as a whole is subject to potentially strong seismic ground shaking with earthquakes of 8.4 magnitude or greater (Clarke and Carver 1992). Multiple earthquake sources capable of generating moderate to strong earthquakes are in close proximity to the project site (as noted above) and strong seismic shaking is a regional hazard that could cause major damage to the project area.

Due to the proximity to active seismic sources, localized areas in Del Norte County may be subject to secondary seismic effects, such as liquefaction, lateral spread, and seismically-induced land sliding. Liquefaction is the sudden loss of soil shear strength due to a rapid increase of soil pore water pressures caused by cyclic loading from a seismic event.

Discussion

a.i-iv) The project will not significantly impact geology, soils or hydrology. The Project will result in improved natural hydrologic, geologic, and sediment transport processes in Tryon Creek. Effective erosion control measures will be in place at all times during construction, worksites will be winterized each day when heavy rainfall is forecasted and an adequate supply of erosion control materials (e.g. gravel, straw bales and shovels) will be maintained onsite to facilitate a quick response to unanticipated storm events. Disturbed soils will be restored and revegetated at project completion to prevent erosion and ensure rapid establishment of native vegetation.
Based on location, geotechnical investigations, and project design elements, impacts related to rupture of faults, strong seismic ground shaking, liquefaction, and landslides will be **less than significant**.

b) Based on implementation of standard construction related erosion control measures and project design, impacts pertaining to soil erosion will be **less than significant**.

c,d) The project does not involve any construction on expansive soils and **no impact** will occur.

e) No septic or sewer systems are proposed as part of the project. As such, **no impact** will occur.

f) No unique paleontological or geological resources are known to exist at the project site. As such, there will be **no impact** on unique paleontological or geological resources.

GREENHOUSE GAS EMISSIONS	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

Setting

Global temperatures are affected by naturally occurring and anthropogenic-generated atmospheric gases such as water vapor, carbon dioxide, methane, and nitrous oxide. Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). Emissions of GHGs from human activities such as electricity production, motor vehicle use, and agriculture, are elevating the concentration of GHGs in the atmosphere and are reported to have led to a trend of unnatural warming of the earth's climate, known as global warming or global climate change, and should be lessened and/or mitigated whenever possible. Other than water vapor, the primary GHGs contributing to global climate change include the following gases:

- Carbon dioxide (CO_2), primarily a byproduct of fuel combustion;
- Nitrous oxide (N_2O), a byproduct of fuel combustion and also associated with agricultural operations such as the fertilization of crops;
- Methane (CH_4), commonly created by off-gassing from agricultural practices (e.g., livestock), wastewater treatment, and landfill operations;
- Chlorofluorocarbons (CFCs), which were used as refrigerants, propellants, and cleaning solvents, although their production has been mostly prohibited by international treaty;
- Hydrofluorocarbons (HFCs), which are now widely used as a substitute for chlorofluorocarbons in refrigeration and cooling; and
- Perfluorocarbons (PFCs) and sulfur hexafluoride (SF6) emissions, which are commonly created by industries such as aluminum production and semiconductor manufacturing.

In 2002, the California legislature declared that global climate change was a matter of increasing concern for the state's public health and environment, and enacted laws requiring the state Air Resources Board (ARB) to control GHG emissions from motor vehicles (Health & Safety Code §32018.5

et seq.). CEQA Guidelines define greenhouse gases to include carbon dioxide (CO_2), nitrous oxide (N_2O), hydrofluorocarbons, perfluorcarbons, and sulfur hexafluoride. The California Global Warming Solutions Act of 2006 (Assembly Bill 32) definitively established the state's climate change policy and set GHG reduction targets (Health & Safety Code §38500 et seq.). The State set its target at reducing greenhouse gases to 1990 levels by 2020. Executive Order B-30-15 and SB 32 extended the goals of AB 32 and set a 2030 goal of reducing emissions 40 percent from 2020 levels. This action keeps California on target to achieve the level of reductions scientists say is necessary to meet the Paris Agreement goals (CA Air Resources Board Climate Change Scoping Plan 2017).

In 2011, the CEQA Guidelines Section 15064.4 Appendix G was modified to include thresholds of significance for Greenhouse Gases. The project would have potential significant impacts if the project would: generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Discussion

a) Construction of the project would cause GHG emissions as a result of combustion of fossil fuels used in construction equipment, vehicles from workers commuting to and from the site, and the importing of construction material for the reservoir. The project would require the use of several pieces of heavy earthmoving and construction equipment in addition to other small engine-powered tools and equipment. The NCUAQMD has not adopted a threshold for construction-related GHG emissions against which to evaluate significance and has not established construction-generated criteria air pollutant screening levels above which quantitative air quality emissions would be required.
As riparian vegetation matures into wildlife habitat, carbon cycling is sequestering atmospheric carbon in the soil, forest floor, and woody biomass. The riparian zone at Tryon Creek has the potential to sequester 210.53 metric tons of CO2 equivalent over the next 50 years (USDA 2021) and provide robust habitat for native species in the face of a changing climate.

b) The project is expected to result in a temporary and minimal increase in GHG emissions with an ultimate decrease in GHG emissions on project completion. It does not conflict with an applicable plan or policy and **no impact** will occur.

HAZARDS AND HAZARDOUS MATERIALS	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or				X

HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
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 or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

Setting

The project will not create a significant hazard to the public or environment. All heavy equipment will be in good condition, inspected for leaks and washed prior to working within the action area and daily to prevent spills of hazardous materials. Spill containment, absorbent cleanup materials and emergency contact numbers will be onsite at all times during project construction and all contractors and responsible parties will be trained in the appropriate steps should a spill occur. All fueling will occur at least 100 feet from any waterway or stream to prevent impacts to water quality and contamination of hazardous materials. All pumps will be placed on absorbent mats. All machinery will be stored in designated staging areas at least 65' outside of riparian areas.

Discussion

a,b) Construction of the project would require the use and transport of hazardous materials including fuels, oils, and other chemicals used during construction activities. Improper use and transportation of hazardous materials could result in accidental releases or spills, potentially posing health risks to workers, the public, and the environment. These activities are controlled by County code provisions and state regulations (Health and Safety Code Division 20: Miscellaneous Health and Safety Provisions). Additionally, construction activities at the project site will incorporate current best management practices (BMPs) for construction, including site housekeeping practices, hazardous material storage, inspections, maintenance, worker training in pollution prevention measures, and secondary containment of releases to prevent pollutants from being carried off-site via runoff.

The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving hazardous materials release into the environment. Therefore, a **less than significant impact** would occur.

c-f) The project is located just north of Redwood Elementary School within a quarter mile of an existing school, but is not on a site designated as hazardous, or in an airport plan area or within two miles of an existing airport. The Del Norte County Regional Airport is located approximately nine miles south southwest of the project site. The restoration project is adjacent to existing access routes and will not block any existing roadways that may be used as evacuation routes. As the project will not store hazardous material onsite and is not located near airports and will not interfere with existing evacuation plans, **no impact** will occur.

g) There is a small risk of an accidental spark igniting a fire and spills of fuels or other hazardous materials, but the potential for these impacts will be reduced to a less than significant level through implementation of mitigation measures outlined in a spill prevention and response plan (available upon request). Based on the low potential of wildfire, there will be **less than significant impact.**

HYDROLOGY AND WATER QUALITY	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Thn Significant**	**No Impact**
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?				X
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
(i) result in substantial erosion or siltation on or offsite;			X	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
(iii) 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; or			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

Setting

All necessary measures will be taken to minimize erosion of unfinished excavations, grading or work surfaces. Worksites will be winterized at the end of each day when significant rains are forecasted. All areas within the limit of disturbance will be mulched, seeded and planted with native plants after project implementation. All construction areas will be weatherized and treated with best management practices (BMP's) to prevent runoff of fine sediments including erosion control seed, straw wattles and temporary livestock exclusion.

Discussion

a) The project does not involve any activities that would violate water quality standards or wastewater discharge requirements. Upon completion of the restoration project, water quality within Tryon Creek will be enhanced. **No impact** is expected.

b) The project will have **no impact** on groundwater supplies or recharge. Because the project will improve channel connectivity and flow in Tryon Creek, the ultimate effect will be positive on groundwater resources.

c.i-iii) The project is designed to improve the flow and connectivity of the restored portion of Tryon Creek. Based on project design elements, any erosion or surface water runoff impacts will be **less than significant.**

d) The project site is not located within seiche, or tsunami zones. The project is located in the Smith River flood zone, however the enhancements are not expected to increase flooding. As such, there will be **no impact** from potential inundation due to the project.

e) As noted previously, the project will have no impact on groundwater resources and will therefore have no impact related to a sustainable groundwater management plan. As such, there will be no conflict with existing water quality plans, and **no impact** will occur.

LAND USE AND PLANNING	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Setting

Del Norte County General Plan Land Use designations identify permitted development types (e.g., residential, commercial, and industrial) and the density or intensity of allowed development.

Discussion

a) The project involves restoration and habitat enhancement on Tryon Creek. No project aspect would divide an existing community; therefore, **no impact** would occur.

b) The General Plan Land Use designation for the project site is agricultural exclusive (AE) and resource conservation area (RCA). The project is consistent with the Del Norte County General Plan goals and policies for natural resources. The project will protect, restore and enhance habitats that support fish and wildlife species (Goal 1. E.) and support the continued viability of Del Norte County's agricultural economy (Goal 1.G.}. The project will restore critical habitat protections for federally listed threatened and endangered species (Policy1.E.2), maintain the continuation of existing agricultural uses of grazing within existing farmed wetlands (Policy 1.E.27 and 1.G.4.), and ensure that riparian vegetation be maintained along streams, creeks and other water courses for their qualities as wildlife habitat, stream buffer zones and bank stabilization (Policy 1.E.28.). The project will encourage the conservation of soils on agricultural lands and is compatible with the existing agricultural use of the area. As such, **no impact** would occur.

MINERAL RESOURCES	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project:				
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?				X
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

Setting

Current mineral resource production in the County is primarily limited to sand, gravel, and rock extraction. According to Del Norte County Web GIS, there are no State Surface Mining and Reclamation Act (SSMARA) parcels in the project site.

Discussion

a,b) No mineral resources and no mineral resource extraction currently occurs within the project site. No mining is proposed. The project would not affect the availability of a known mineral resource that would be of value to the region, nor would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a specific, general plan or other land use plan. Therefore, **no impact** would occur.

NOISE	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise			X	

NOISE	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				
b) Generation of excessive ground borne vibration or ground borne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or 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?				X

Setting

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound. Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions).

Increased noise levels will be temporarily present in the area during the Project. Work will be conducted between the hours of 8:00 to 18:00 each day to minimize impacts to the nearby residential housing. Additionally, the project will be conducted expeditiously to reduce the timeframe of elevated noise levels in the project area. The Project will not result in any change in noise levels after construction is completed. Operations will comply with OSHA regulations. Internal combustion engines will be equipped with a muffler of a type recommended by the manufacturer. Equipment used for restoration will utilize the best available noise control techniques (e.g. engine enclosures, acoustically attenuating shields or shrouds, ducts, etc.} whenever feasible and necessary.

Discussion

a) The construction phase of the project will include use of heavy machinery and frequent trips by construction vehicles which will increase noise levels in the local vicinity. These noise increases will be limited to permitted hours (7 a.m. – 6p.m. weekdays, 9 a.m. – 6 p.m. weekends, lower ambient noise levels within 2 hours of sunrise/sunset). Potential noise levels from construction equipment are included in the table below.

Equipment	Noise Level (dB)	Equipment	Noise Level (dB)
Drill rig truck	84	Jackhammer	85
Horizontal Boring Hydraulic Jack	80	Large Generator	82
Front-end Loader or Backhoe	80	Paver or Roller	85
Excavator	85	Dump Truck	84

Source: Federal Highway Administration, 2005.

Sound from a point source is known to attenuate, or reduce, at a rate of 6 dB for each doubling of distance. For example, a noise level of 84 dB as measured at 50 feet from the noise source would attenuate to 78 dB at 100 feet from the source and to 72 dB at 200 feet from the source to the receptor. Since noise from construction activities will be limited to permitted hours, temporary in nature, and attenuated to within acceptable levels for the current rural residential land designation, effects from the project will be **less than significant**.

b) The project is not expected to generate unusual ground borne vibration or ground borne noise levels. Construction activities typically create a small increase in ground borne vibrations, but the vibration level is rarely significant and diminishes rapidly with distance from the construction equipment unless unusual geological conditions are present. Construction equipment and construction operations for the project would be similar to construction operations at many construction sites. As there are no unusual geological conditions within the project area and residential households are located approximately 400 feet or more from the project site, there will **be less than significant** impacts from ground borne vibrations.

c) The project site is located approximately 9 miles from the Del Norte County Regional airport. As such, the project would not expose people residing or working in the project area to excessive airport-related noise levels, and **no impact** would occur.

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

Discussion

a,b) The Project will not result in any loss of housing. There will be no long term impacts to the population. **No impact** would occur.

PUBLIC SERVICES	**Potentially Significant**	**Less Than Significant With Mitigation**	**Less Than Significant**	**No Impact**
Would the project result in substantial adverse physical impacts associated with the provision of 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:				
a) Fire protection?				X

PUBLIC SERVICES	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

Discussion

a-e) As discussed in the Population and Housing section, the project would not directly or indirectly induce population growth nor create new demand for services. Therefore, the project would have no impact on the service ratios, response times, or other performance objectives of schools, parks, and other public facilities and services that are based on population growth. **No impact** would occur.

RECREATION	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
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?				X
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?				X

Discussion

a,b) The project would not directly or indirectly induce substantial population growth nor would the project expand services. Therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. The project would not include recreational facilities. Therefore, the project would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. **No impact** would occur.

TRANSPORTATION	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Would the project conflict or be				

TRANSPORTATION	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

Summary

Lake Earl Drive is a public county road. A county encroachment permit will be acquired prior to project construction. Traffic safety rules and regulations will be followed when hauling construction materials to the project site. Project equipment will primarily utilize private access roads to limit impacts to Lake Earl Drive. Excavated sediment and road fill will be maintained onsite to reduce impacts to traffic, greenhouse gas emissions, and air quality.

Discussion

a) There will be an increase of traffic on the roadways from construction vehicles and other necessary equipment for staging, grading, and restoration activities. Increased traffic from oversized vehicles and equipment may have an impact on roadway accessibility for non-motorized users. However, this impact will be intermittent and temporary with no long term effects. Additionally, equipment will be staged away from main roadways when possible in order to better facilitate access by non-motorized users during construction of the reservoir.

Impacts to traffic and safety along existing roadways and bike path networks will be minimal and temporary. The project does not propose any alterations to existing roads, trails, or other non-vehicle paths of travel. As such, the project will not conflict with any policies regarding transportation in the Fort Dick area and a **less than significant impact** will occur.

b) Construction of the new reservoir will create additional VMTs due to trips from construction workers and delivery of materials. It is unknown where construction workers would be traveling from and as such it is difficult to estimate the actual number of vehicle miles that will be generated. It is also unknown how many delivery trips will be required to bring all necessary construction materials to the site. However, these trips will only last for the duration of construction which is anticipated to take approximately nine months. After construction is completed, vehicle trips are expected to return to pre-project conditions.

The project will generate some additional VMTs during construction, however these will be limited and temporary, with VMTs impacts **less than significant**.

c,d) As the project does not propose any modifications to local roadways, it will also not create inadequate emergency access. During construction, access roads will be kept clear in the event of an emergency in order to facilitate adequate access. As such, there will be **no impact** from design features, incompatible uses, or inadequate emergency access.

TRIBAL CULTURAL RESOURCES	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k), or			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native American Tribe.			X	

Setting

The general area has a long history of human use associated with the Smith River including Native Americans and later with European settlers beginning around 1850.The project area is within the ethnographic territory of the Tolowa Dee-ni' and the general area has high potential for archaeological sites. The Tolowa Dee-ni' Nation and Elk Valley Rancheria were consulted along with submission of the Conditional Use Permit application material, and no objections to the project were received.

A Phase 1 Cultural Resource Inventory Report was completed by a licensed archaeologist from DZC Archaeology and Cultural Resource Management Consulting. The report recommends a finding of no impacts to historical, archaeological, or Tribal Cultural Resources as defined by CEOA, and a finding of No Effects as defined by the National Environmental Policy Act (NEPA).

Discussion

a, b) As discussed in the *Cultural Resources* section of this document, DZC Archaeology found no evidence of tribal or other cultural resources and determined that no impact would result from the project. By following applicable policies and codes as discussed under *Cultural Resources*, potential project impacts related to tribal cultural resources would be **less than significant**.

UTILITIES AND SERVICE SYSTEMS	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the			X	

UTILITIES AND SERVICE SYSTEMS	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
construction or relocation of which could cause significant environmental effects?				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Discussion

a) Utility service providers will be contacted prior to the Project to ensure excavation avoids al{ underground service lines. Overhead power lines near the project area will be avoided. Based on the existing infrastructure in place impacts will be **less than significant.**

b) The project does not involve any increase in potable water demand. As such, there will be **no impact.**

c) The project does not involve any development that would require additional wastewater capacity or construction of facilities that would increase demands from existing developments. As such, there will be **no impact.**

d,e) The project will create a temporary increase in solid waste during construction. However, operations will not increase the amount of solid waste above existing levels. During construction of the project, construction workers must comply with all County and State solid waste diversion, reduction, and recycling mandates. As such, impacts will be **less than significant.**

WILDFIRE	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
If located in or near state responsibility areas or lands classified as very high fire severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutants from a wildfire or the				X

WILDFIRE	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
uncontrolled spread of wildfire?				
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage change?				X

Setting

Wildland fire protection in California is the responsibility of either the State, local, or federal government. A State Responsibility Area (SRA) is a legal term defining the area where the State has financial responsibility for wildland fire protection. Incorporated cities and areas of federal ownership are not included. The prevention and suppression of fires in all areas that are not SRAs are primarily the responsibility of local or federal agencies. There are more than 31 million acres in state responsibility area with an estimated 1.7 million people and 750,000 existing homes. Local Responsibility Areas (LRAs) include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by: city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government.

The project site is within the Fort Dick Fire Protection District (FPD) and in a SRA. The Fort Dick FPD provides structural fire protection and emergency services to the Fort Dick community and surrounding areas.

Discussion

a) Construction work at the project site would be temporary and roads would still be accessible so as to not impair an adopted emergency plan or emergency evacuation plan by ensuring access in the event of an emergency or evacuation. Therefore, there would be **no impacts.**

b-d) The project does not include site-specific modifications that would expose project occupants to pollutants from a wildfire or other uncontrolled spread of wildfire. The project includes installation of an emergency water source, however, it would not exacerbate fire risk as there is an existing emergency water source or result in temporary or ongoing impacts to the environment, or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage change, As such, there would be **no impacts**.

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Does the project have the potential to substantially degrade the quality of the			X	

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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, substantially 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.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Discussion

Certain mandatory findings of significance must be made to comply with CEQA Guidelines §15065. The proposed project has been analyzed, and it has been determined that it would not:

- Substantially degrade environmental quality;
- Substantially reduce fish or wildlife habitat;
- Cause a fish or wildlife population to fall below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Reduce the numbers or range of a rare, threatened, or endangered species;
- Eliminate important examples of the major periods of California history or pre-history;
- Achieve short term goals to the disadvantage of long-term goals;
- Have environmental effects that will directly or indirectly cause substantial adverse effects on human beings; or
- Have possible environmental effects that are individually limited but cumulatively considerable when viewed in connection with past, current, and reasonably anticipated future projects.

The project has been evaluated in this initial study and determined to have no potentially significant unmitigated impacts. With implementation of the proposed mitigation measures all potentially significant impacts would be reduced to less than significant levels.

a,c) Due to the rural nature of the project site and surrounding resource conservation land uses the project as a whole does not have the potential to significantly degrade the quality of the environment, including air quality, fish or wildlife species or their habitat, plant or animal communities, important examples of the major periods of California history or prehistory, geologic resources, hazards, water

resources, land use compatibility, noise, traffic movement, or other adverse effects, directly or indirectly, on human beings. The project as presented would restore fish and other wildlife habitat and contribute to water quality enhancement.

b) The project's individual impacts would not add appreciably to any existing or foreseeable future significant cumulative impact, such as visual quality, historic resources, traffic impacts, or air quality degradation. Incremental impacts, if any, would be small and undetectable. As reported throughout this document, any impacts to which this project would contribute would be mitigated to a less than significant level.

Appendix A – References

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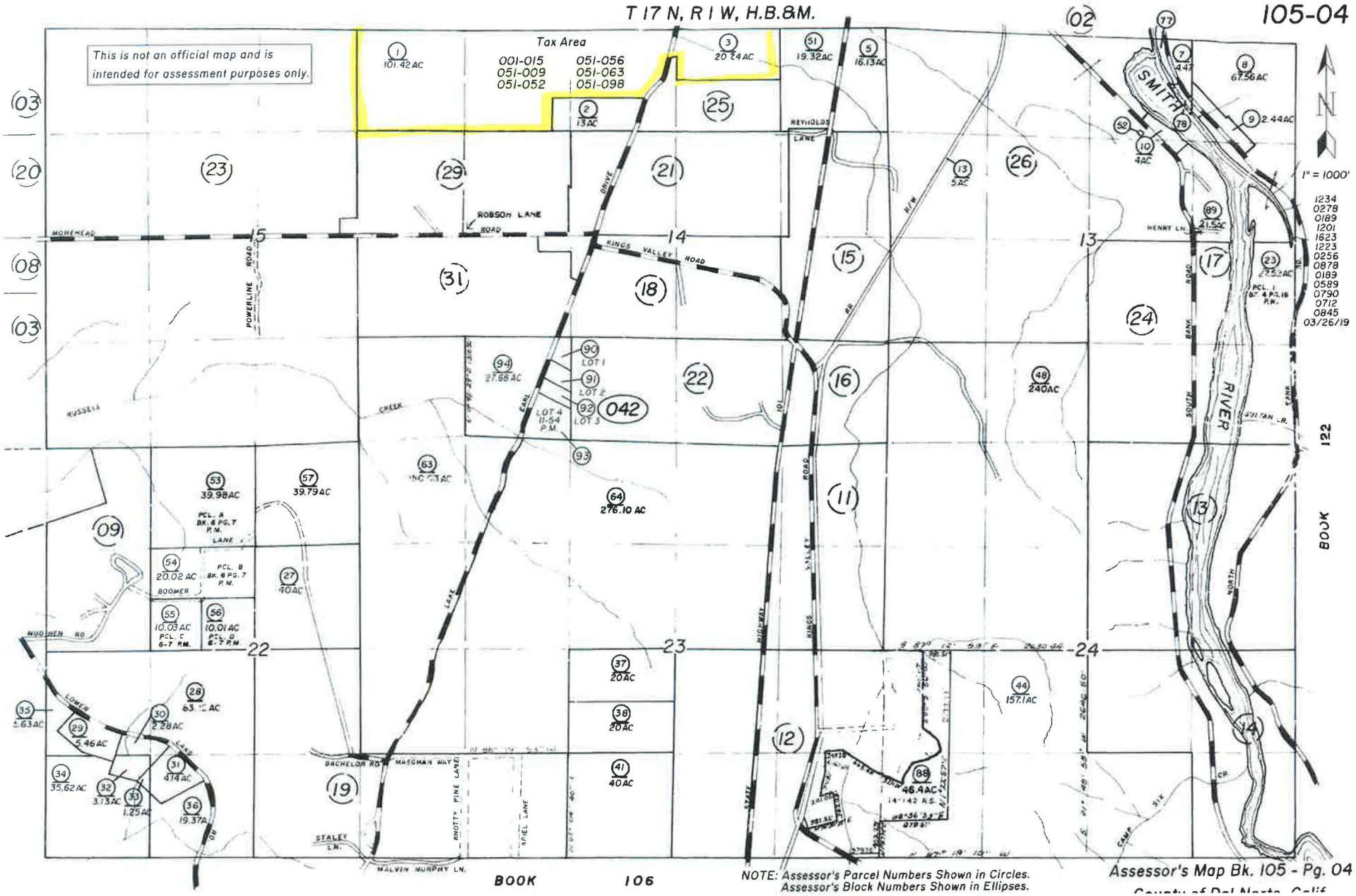
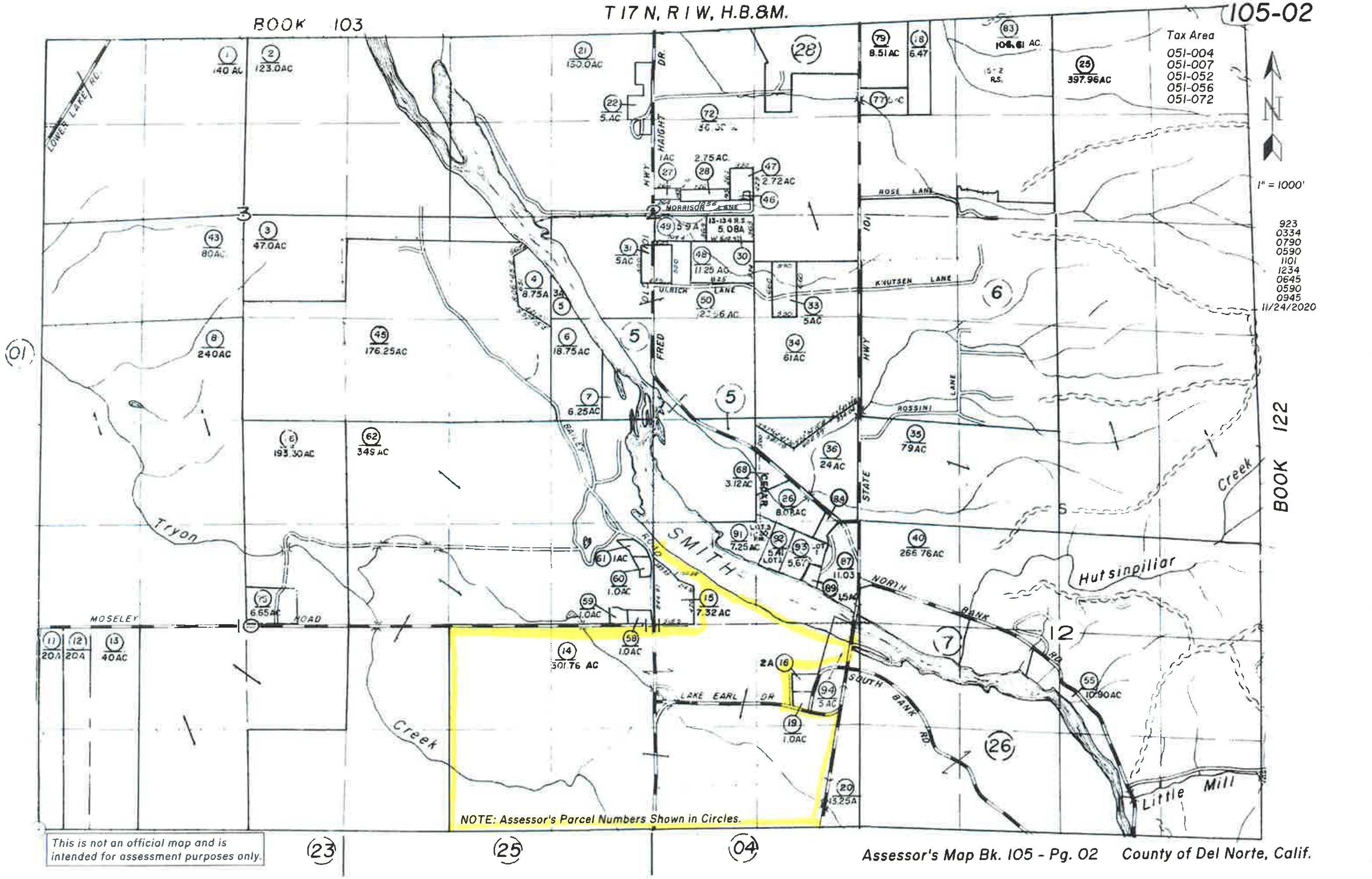
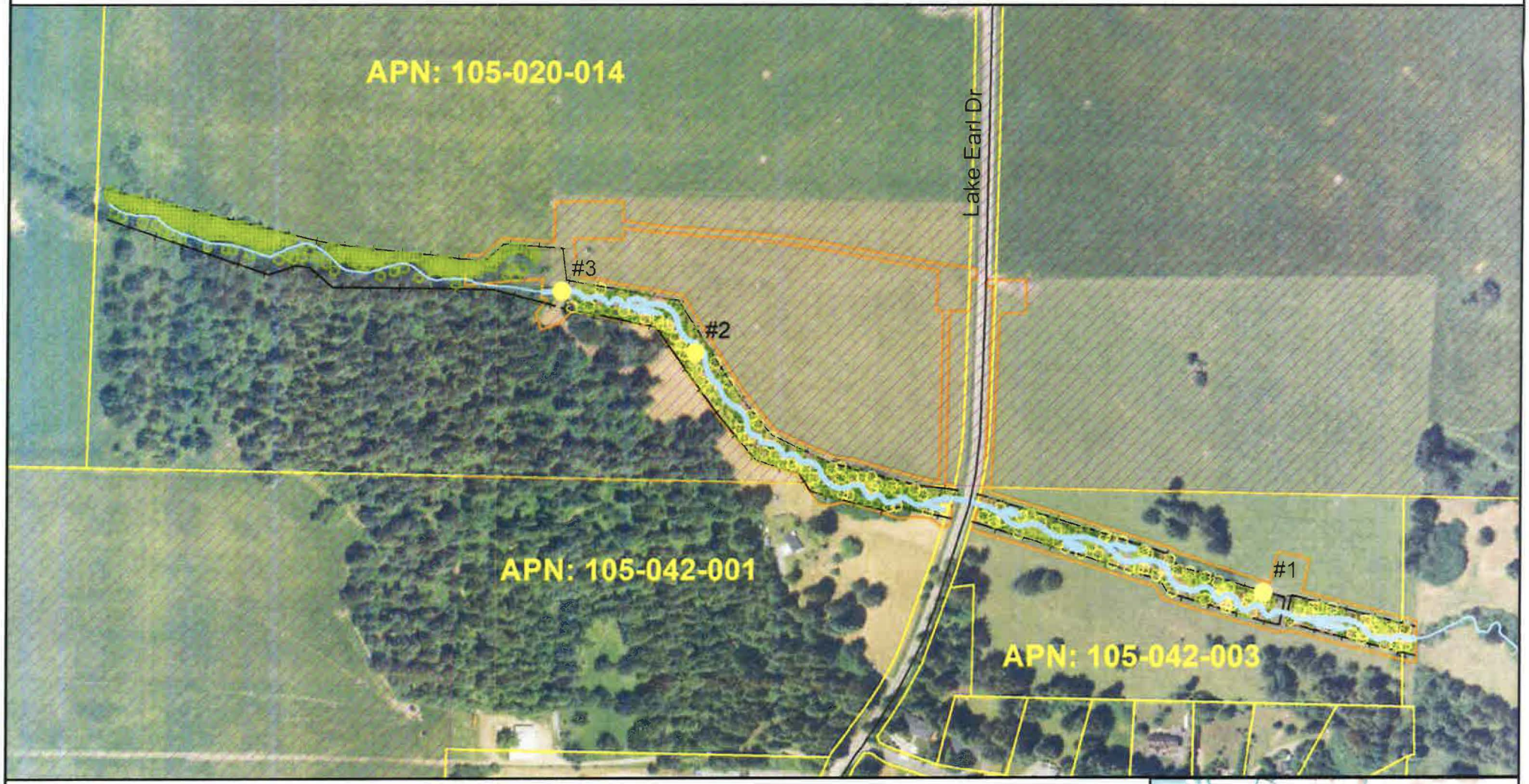

T 17 N, R 1 W, H.B.&M.
105-04
This is not an official map and is intended for assessment purposes only.
Tax Area
001-015 051-056
051-009 051-063
051-052 051-098
1" = 1000'
1234
0278
0189
1201
1623
1223
0256
0878
0189
0589
0790
0712
0845
03/26/19
BOOK 122
BOOK 106
NOTE: Assessor's Parcel Numbers Shown in Circles.
Assessor's Block Numbers Shown in Ellipses.
Assessor's Map Bk. 105 - Pg. 04


T 17 N, R 1 W, H.B.&M.
105-02
BOOK 103
BOOK 122
Tax Area
051-004
051-007
051-052
051-056
051-072
1" = 1000'
923
0334
0790
0590
1101
1234
0645
0590
0945
11/24/2020
LOWER LAKE RD.
MOSELEY ROAD
HWY HAIGHT DR.
MORRISON LANE
ULRICH LANE
OLD HWY 101
FRED HAIGHT
BAILEY
ROSE LANE
KNUTSEN LANE
ROSSINI LANE
STATE HWY 101
NORTH BANK RD
SOUTH BANK RD
LAKE EARL DR
SMITH R.
Tryon Creek
Hutsinpillar Creek
Little Mill
1
140 AC
2
123.0AC
21
130.0AC
22
5.AC
72
28
79
8.51AC
18
6.47
83
106.61 AC
25
397.96AC
77
27
1AC
28
2.75AC
47
2.72AC
46
3
47.0AC
43
80AC
49
5.08A
48
11.25 AC
30
31
5AC
4
8.75A
5
50
33
5AC
6
18.75AC
45
176.25AC
8
240AC
34
61AC
7
6.25AC
35
79AC
8
193.30AC
62
349 AC
36
24AC
68
3.12AC
26
8.08AC
84
91
7.25AC
92
93
87
11.03
89
40
266.76AC
61
1AC
60
1.0AC
59
1.0AC
15
7.32 AC
75
6.65AC
58
1.0AC
14
301.76 AC
2A
16
94
5AC
19
1.0AC
20
15.25A
55
10.90AC
11
20A
12
20A
13
40AC
01
23
25
04
12
26
NOTE: Assessor's Parcel Numbers Shown in Circles.
This is not an official map and is intended for assessment purposes only.
Assessor's Map Bk. 105 - Pg. 02
County of Del Norte, Calif.

Upper Tryon Creek Enhancement Project - Action Area Map



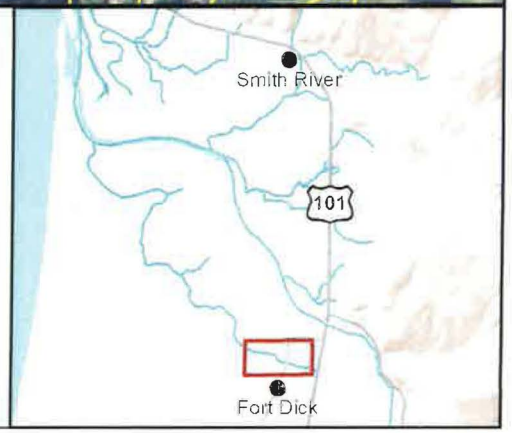
SMITH RIVER ALLIANCE

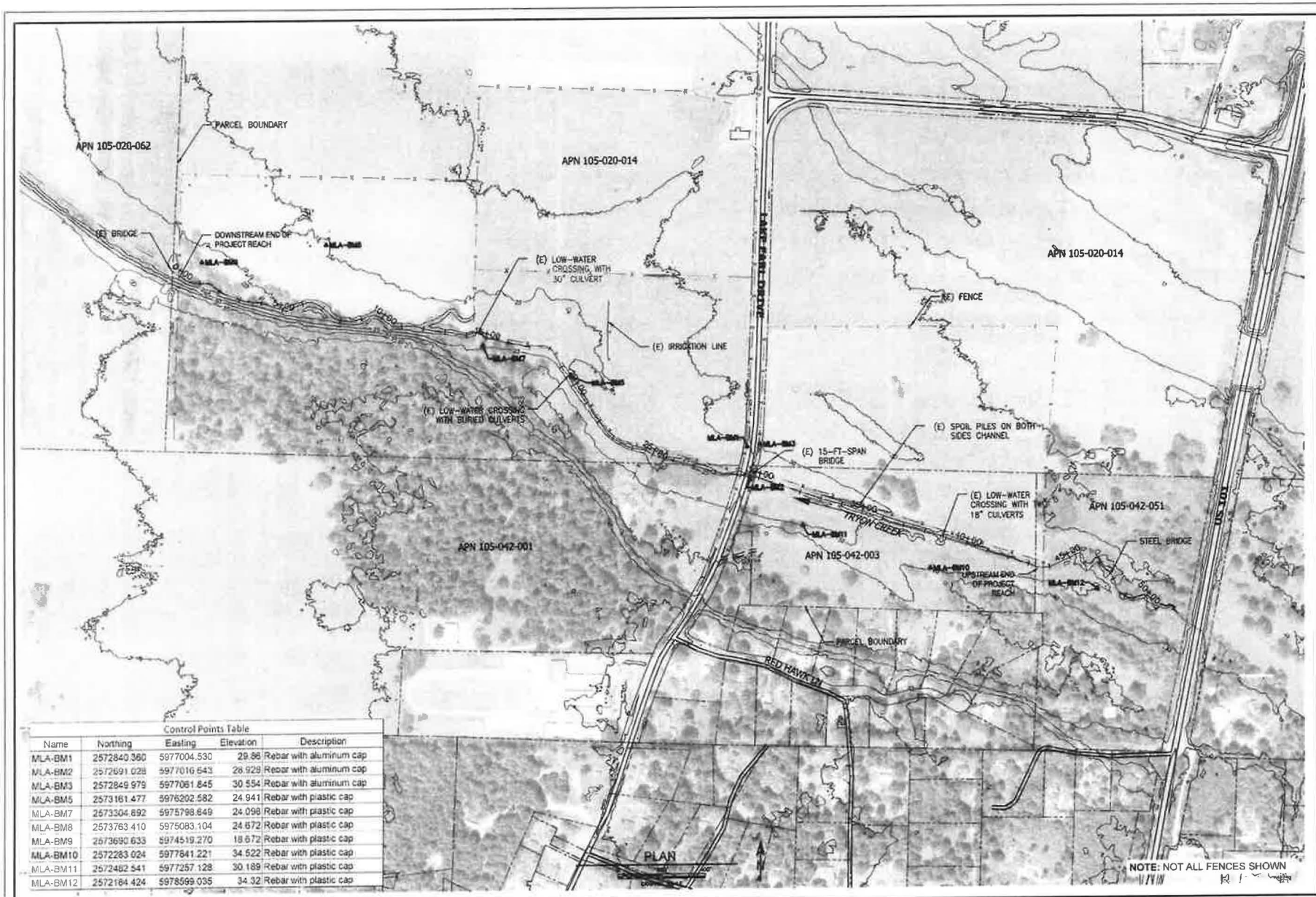
Livestock Control Fence
Stream Enhancement
Parcels
Limit of Disturbance
Crossings
Riparian Planting
Coastal Zone Boundary

N

Service Layer Credits: Sources: Esri, USGS, NOAA

0 0.125 0.25 Miles





Control Points Table

Name	Northing	Easting	Elevation	Description
MLA-BM1	2572840.360	5977004.530	29.86	Rebar with aluminum cap
MLA-BM2	2572691.028	5977016.643	28.928	Rebar with aluminum cap
MLA-BM3	2572849.979	5977061.845	30.554	Rebar with aluminum cap
MLA-BM5	2573161.477	5976202.582	24.941	Rebar with plastic cap
MLA-BM7	2573304.892	5975798.649	24.098	Rebar with plastic cap
MLA-BM8	2573763.410	5975083.104	24.672	Rebar with plastic cap
MLA-BM9	2573690.633	5974519.270	18.672	Rebar with plastic cap
MLA-BM10	2572283.024	5977841.221	34.522	Rebar with plastic cap
MLA-BM11	2572462.541	5977257.128	30.189	Rebar with plastic cap
MLA-BM12	2572184.424	5978599.035	34.32	Rebar with plastic cap

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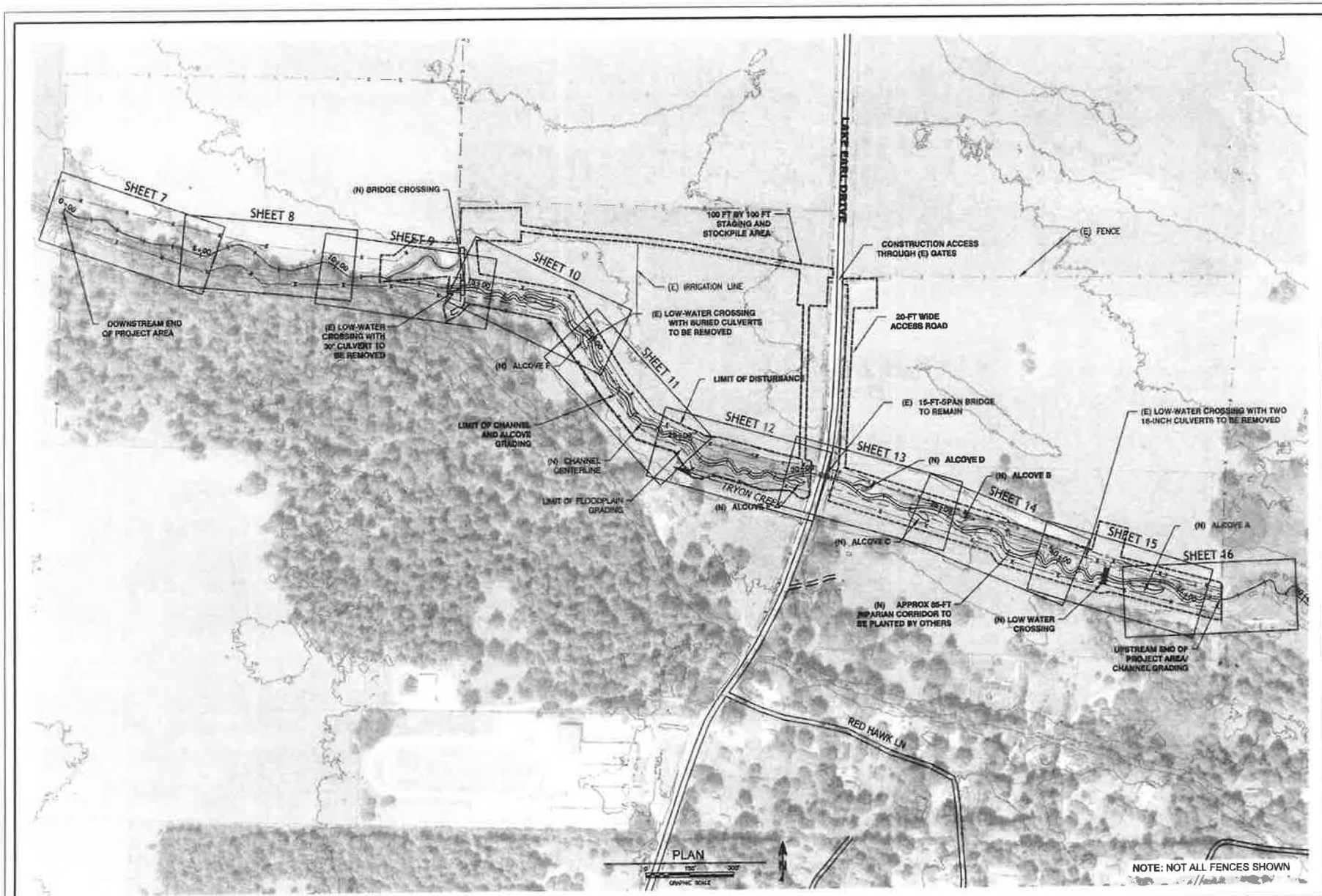
UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

EXISTING CONDITIONS AND PROJECT EXTENT OVERVIEW

DATE
AUGUST 2020
SUBMITTAL
FINAL DESIGN
DESIGN
Shea/Love
DRAWN
Tauzer
SHEET
5 of 27

8/24/20 Q:\Tryon Creek Restoration\7_CAD GIS\C-400\Sheets\1_EXISTING_CONDITIONS.dwg



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UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

CONSTRUCTION ACCESS AND DEMOLITION PLAN

DATE	AUGUST 2020
SUBMITTAL	FINAL DESIGN
DESIGN	Shea/Love
DRAWN	Tauzer
SHEET	6 of 27

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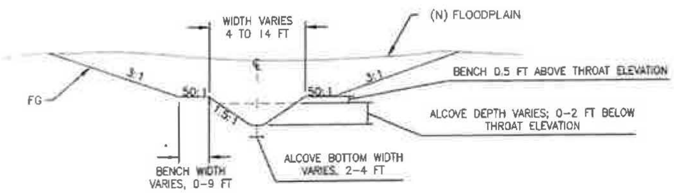
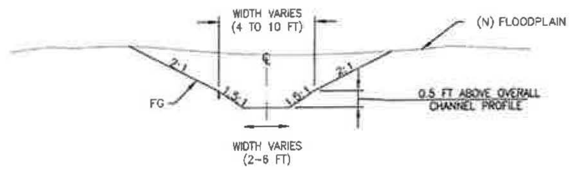
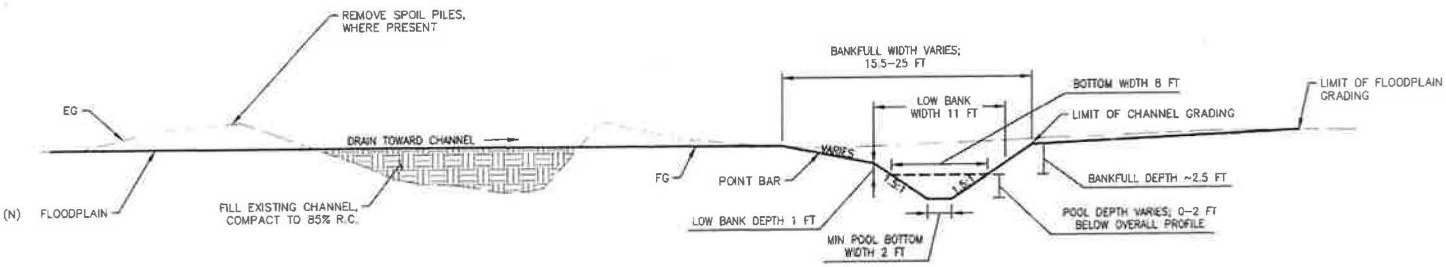


TYPICAL ALCOVE SECTION
(NTS)



TYPICAL ALCOVE THROAT SECTION
(NTS)



TYPICAL CHANNEL CROSS SECTION
NTS

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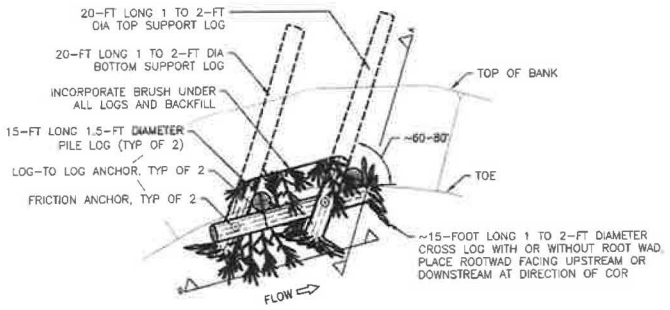
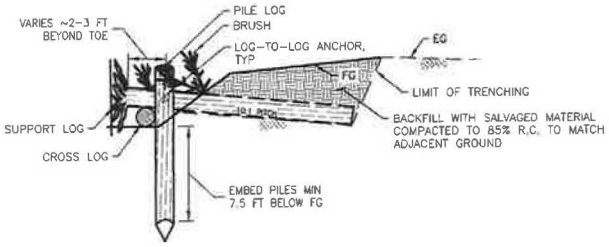
UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

TYPICAL SECTIONS

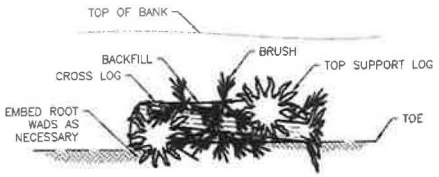
DATE	AUGUST 2020
SUBMITTAL	FINAL DESIGN
DESIGN	Shea/Love
DRAWN	Tauzer
SHEET	17 of 27



PLAN

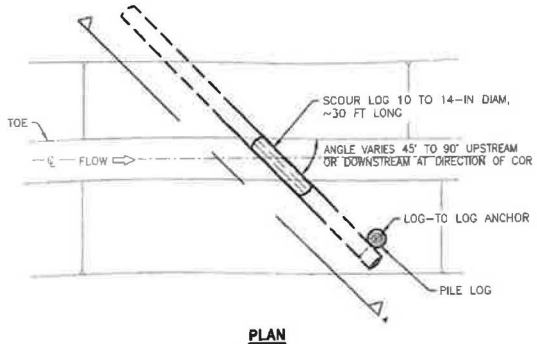


SECTION - A



ELEVATION - B

5 LOG OVERHANG STRUCTURE
TYPICALS (NTS)



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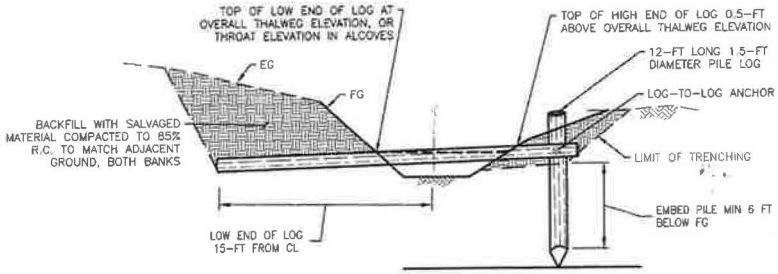

SECTION - A

6 SCOUR LOG
TYPICALS (NTS)

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UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

DETAILS (2)

DATE
AUGUST 2020
SUBMITTAL
FINAL DESIGN
DESIGN
Shea/Love
DRAWN
Tauzer
SHEET
23 of 27

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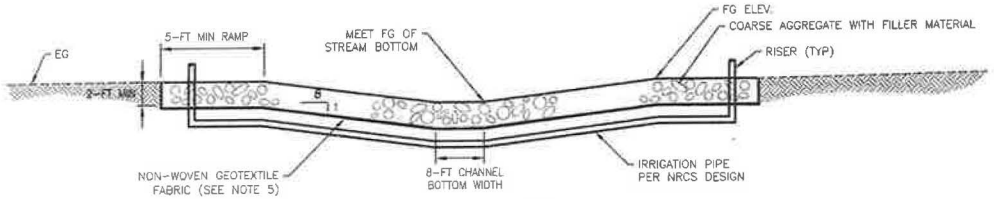
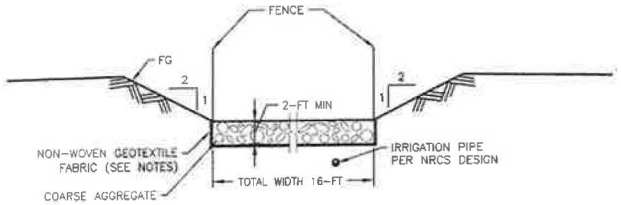


STREAM CROSSING PROFILE



STREAM CROSSING SECTION

SPECIFICATIONS FOR NRCS-765 STREAM CROSSING

MATERIAL SPECIFICATIONS

1. COARSE AGGREGATE SHALL CONSIST OF A UNIFORM MIX OF 4 TO 8 INCH ANGULAR ROCK APPROVED BY THE COR.
2. FILTER MATERIAL SHALL CONSIST OF 1" MINUS AGGREGATE.
3. IRRIGATION LINE, CONNECTORS, AND BEDDING SHALL BE IN ACCORDANCE WITH NRCS STANDARDS.
4. ALL ROCK AND AGGREGATE SHALL MEET THE FOLLOWING MATERIAL PROPERTIES (CALTRANS SECTION 72.2):

ROCK MATERIAL PROPERTIES

SELECT PROPERTY	CALIFORNIA TEST	Value
APPARENT SPECIFIC GRAVITY	206	2.5 MINIMUM
ABSORPTION	206	4.0% MAXIMUM
DURABILITY INDEX	229	52 MINIMUM

5. GEOTEXTILE FABRIC SHALL BE NON-WOVEN CALTRANS CLASS 8.

INSTALLATION SPECIFICATIONS

1. INSTALL STREAM CROSSING AS SPECIFIED ON THE CONTRACT DOCUMENTS.
2. GRADE STREAM CROSSING CROSS SECTION AND PREPARE SUBGRADE AS SPECIFIED FOR INSTALLATION OF IRRIGATION PIPE AND TO ACHIEVE FULL THICKNESS OF SPECIFIED ROCK IN STREAM CROSSING.
3. INSTALL IRRIGATION PIPE IN ACCORDANCE WITH NRCS STANDARDS.
4. PLACE AGGREGATE IN STREAM CROSSING IN 12-INCH LIFTS. EACH LIFT SHALL BE SEALED SO THAT WATER VISUALLY APPEARS TO REMAIN ON SURFACE AND WATER REMAINS FLOWING ON THE TOP WHEN FLOW SOURCE IS REMOVED. THE CONTRACTOR CAN SEAL THE SURFACE IN A METHOD THEY PREFER. IT IS RECOMMENDED THAT TAMPING, JETTING OR FLOODING AS WELL AS MECHANICAL MEANS BE USED.
5. IF WATER FAILS TO FLOW ON SURFACE, ADD FILLER MATERIAL AND CONTINUE TAMPING/FLOODING/JETTING UNTIL BED IS SEALED.
6. CONTINUE PLACING MATERIAL AND SEALING TO FINISHED GRADE.
7. NO WATER USED DURING THE SEALING PROCESS SHALL BE ALLOWED TO DISCHARGE INTO THE LIVE STREAM, BUT SHALL BE REUSED OR PUMPED TO AN APPROVED DEWATERING SYSTEM.

(7) **NRCS-765 STREAM CROSSING (ADAPTED)**
TYPICALS (NTS)

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UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California
DETAILS (3)

DATE
AUGUST 2020
SUBMITTAL
FINAL DESIGN
DESIGN
Shea/Love
DRAWN
Tauzer
SHEET
24 of 27

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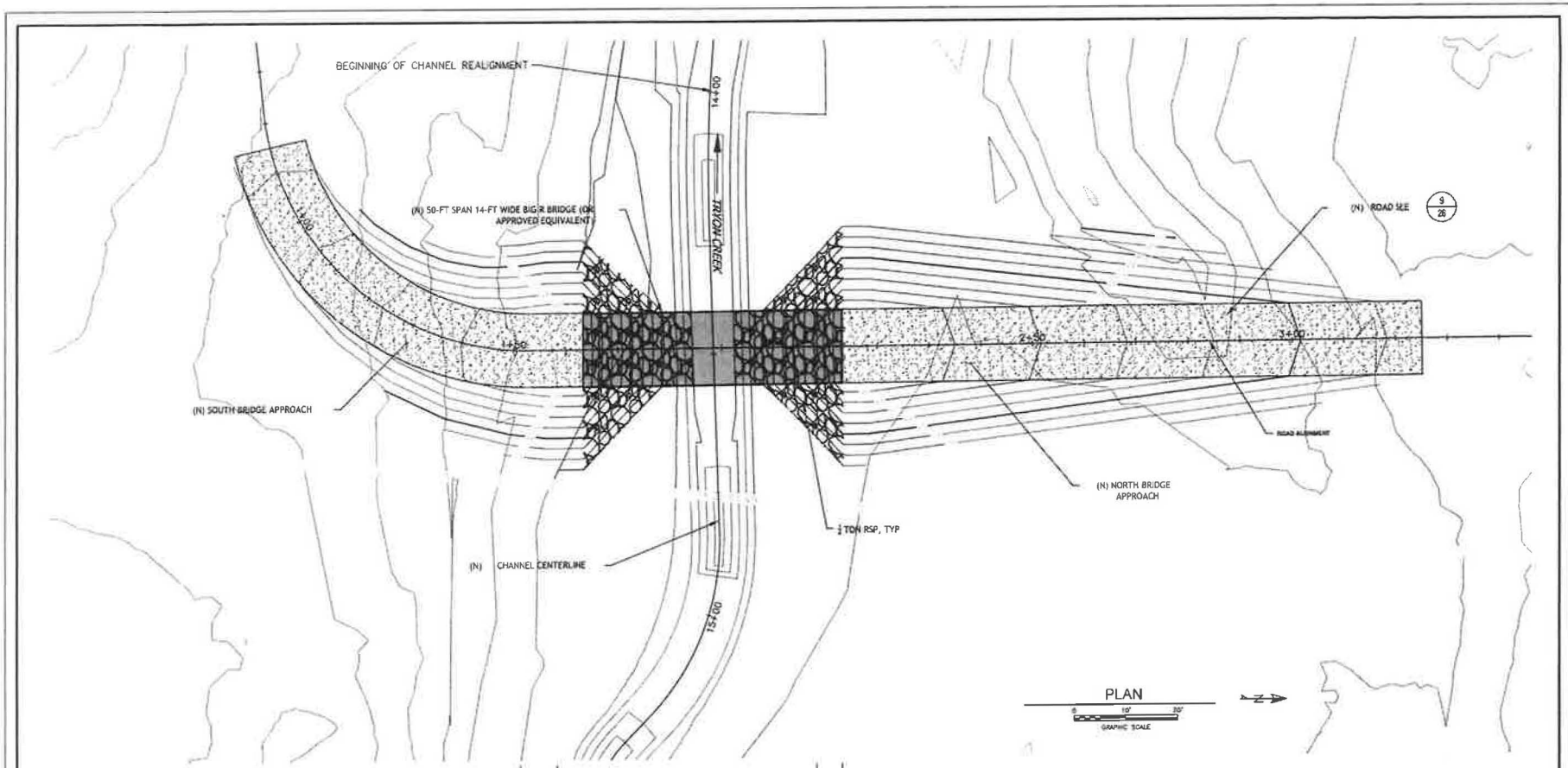

ROAD ALIGNMENT PROFILE

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UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

BRIDGE LAYOUT

DATE
AUGUST 2020
SUBMITTAL
FINAL DESIGN
DESIGN
Shea/Love
DRAWN
Tauzer
SHEET
25 of 27

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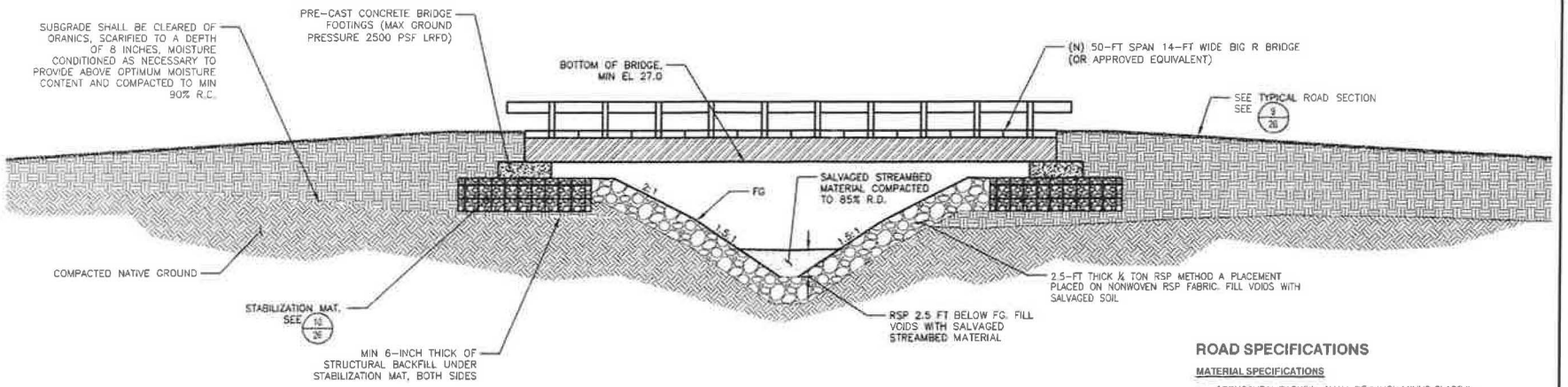
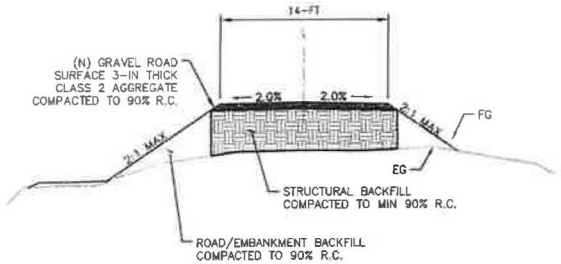
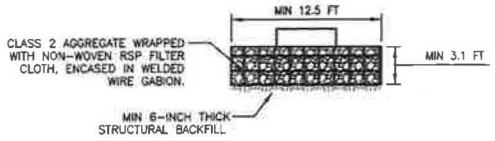


8 **CHANNEL SECTION AT BRIDGE**
TYPICAL (NTS)

GRAPHIC SCALE



9 **TYPICAL ROAD SECTION**
TYPICALS (NTS)



10 **STABILIZATION MAT**
TYPICALS (NTS)

ROAD SPECIFICATIONS

MATERIAL SPECIFICATIONS

1. STRUCTURAL BACKFILL SHALL BE 3-INCH MINUS CLASS II AGGREGATE PLACED IN 6-INCH LIFTS AND COMPACTED AS SPECIFIED.
2. EMBANKMENT BACKFILL SHALL CONSIST OF SUITABLE MATERIAL NO LARGER THAN 6-INCHES IN DIAMETER. MATERIAL SHALL BE PLACED IN 6-INCH LIFTS AND COMPACTED AS SPECIFIED.
3. NEW GRAVEL ROAD SHALL CONSIST OF 1-1/2 INCH MINUS CLASS II AGGREGATE COMPACTED AS SPECIFIED.

INSTALLATION SPECIFICATIONS

1. PREPARE SUBGRADE AS SPECIFIED.
2. PLACE AND COMPACT MATERIALS AS SPECIFIED.

ROCK SLOPE PROTECTION (RSP)

MATERIAL SPECIFICATIONS

1. ROCK SHALL MEET MATERIAL PROPERTIES IN ACCORDANCE WITH CALTRANS, 2015 SECTION 72-2.
2. RSP SHALL BE ¼ TON CLASS ROCK.
3. RSP FABRIC SHALL BE NONWOVEN CLASS 8 IN ACCORDANCE WITH CALTRANS, 2015 SECTION 72-2

INSTALLATION SPECIFICATIONS

1. ROCK SHALL BE PLACED IN ACCORDANCE WITH CALTRANS, 2015 SECTION 72 AND USING "METHOD A" PLACEMENT, INDIVIDUALLY PLACED ON NON-WOVEN RSP FABRIC.
2. ROCK SHALL HAVE A MINIMUM OF THREE CONTACT POINTS.
3. PLACE ROCK IN ROWS BEGINNING IN THE CHANNEL AND WORKING UP THE BANK.
4. BACKFILL ALL VOIDS WITH SALVAGED SOIL AND COMPACT AFTER THE EACH ROW IS PLACED.

STABILIZATION MAT SPECIFICATIONS

1. STABILIZATION MAT SHALL EXERT NO MORE THAN 1,000 PSF GROUND PRESSURE UNDER LRDF LOADING.
2. THE BRIDGE FOOTING LOAD SHALL BE CENTERED ON THE STABILIZATION MAT.
3. THE THICKNESS OF THE STABILIZATION MAT SHALL BE A RATIO OF 1:4 WITH THE BASAL WIDTH ALONG THE ENTIRE LENGTH OF THE PRECAST BRIDGE ABUTMENT.
4. THE BASE OF THE STABILIZATION MAT CLOSEST TO THE CHANNEL SHOULD BE CONSTRUCTED ON OR BEHIND A SLOPING PLANE OF 2H:1V FROM THE FINISHED CHANNEL TOE.
5. ROCK SHALL MEET MATERIAL PROPERTIES IN ACCORDANCE WITH CALTRANS, 2015 SECTION 72-2.

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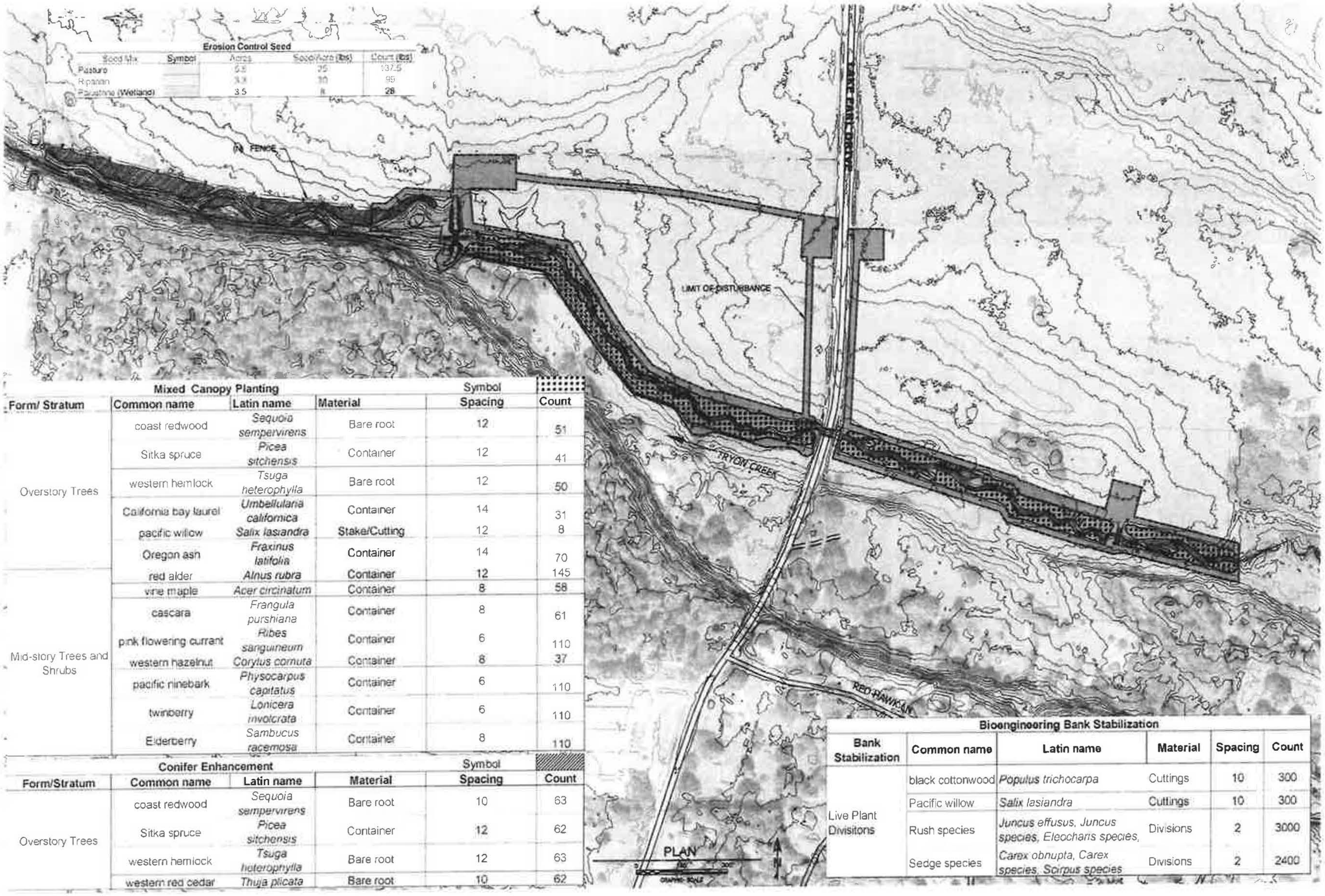
UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California
BRIDGE DETAILS

DATE: AUGUST 2020
SUBMITTAL: FINAL DESIGN
DESIGN: Shea/Love
DRAWN: Tauzer
SHEET: 26 of 27



Erosion Control Seed

Seed Mix	Symbol	Acres	Seed/Acre (lbs)	Count (lbs)
Pasture		5.5	25	137.5
Riparian		3.3	30	99
Palustrine (Wetland)		3.5	8	28

Mixed Canopy Planting

Form/ Stratum	Common name	Latin name	Material	Symbol Spacing	Count
Overstory Trees	coast redwood	*Sequoia sempervirens*	Bare root	12	51
	Sitka spruce	*Picea sitchensis*	Container	12	41
	western hemlock	*Tsuga heterophylla*	Bare root	12	50
	California bay laurel	*Umbellularia californica*	Container	14	31
	pacific willow	*Salix lasiandra*	Stake/Cutting	12	8
	Oregon ash	*Fraxinus latifolia*	Container	14	70
	red alder	*Alnus rubra*	Container	12	145
Mid-story Trees and Shrubs	vine maple	*Acer circinatum*	Container	8	58
	cascara	*Frangula purshiana*	Container	8	61
	pink flowering currant	*Ribes sanguineum*	Container	6	110
	western hazelnut	*Corylus cornuta*	Container	8	37
	pacific ninebark	*Physocarpus capitatus*	Container	6	110
	twinberry	*Lonicera involcrata*	Container	6	110
	Elderberry	*Sambucus racemosa*	Container	8	110

Conifer Enhancement

Form/Stratum	Common name	Latin name	Material	Symbol Spacing	Count
Overstory Trees	coast redwood	*Sequoia sempervirens*	Bare root	10	63
	Sitka spruce	*Picea sitchensis*	Container	12	62
	western hemlock	*Tsuga heterophylla*	Bare root	12	63
	western red cedar	*Thuja plicata*	Bare root	10	62

Bioengineering Bank Stabilization

Bank Stabilization	Common name	Latin name	Material	Spacing	Count
Live Plant Divisitons	black cottonwood	*Populus trichocarpa*	Cuttings	10	300
	Pacific willow	*Salix lasiandra*	Cuttings	10	300
	Rush species	*Juncus effusus, Juncus species, Eleocharis species,*	Divisions	2	3000
	Sedge species	*Carex obnupta, Carex species, Scirpus species*	Divisions	2	2400

Michael Love & Associates, Inc.
PO Box 4477 • Arcata, CA 95518 • (707) 822-2411

SMITH RIVER ALLIANCE

VERIFY SCALE
THIS BAR IS ONE INCH LONG AT FULL SCALE

UPPER TRYON CREEK ENHANCEMENT PROJECT
Del Norte, California

PLANTING PLAN

DATE AUGUST 2020
SUBMITTAL FINAL DESIGN
DESIGN M. Scholey
DRAWN Tauzer
SHEET 27 of 27