

RESTORATION PLAN

Digital 299 Broadband Project

Humboldt, Trinity, and Shasta counties, California

For submittal to:

U.S. Army Corps of Engineers

U.S. Fish and Wildlife Service

California Department of Fish and Wildlife

California State Water Resources Control Board

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INTRODUCTION

The Digital 299 Broadband Project (Digital 299) is a proposed regional telecommunications network supporting portions of Humboldt, Trinity, and Shasta counties between Cottonwood and Eureka, California. The network route generally follows California State Route 299, with portions crossing federally managed public land, state-owned or controlled property, privately owned property, and Tribal lands. Digital 299 would include installation of approximately 300 miles of underground fiber optic cable, mostly buried along existing roadways with connection of some aerial attachments to nearby communities.

In accordance with AMM BIO-3, reproduced below, Vero Networks has prepared this Restoration Plan for the Digital 299 Broadband Project:

AMM BIO-3: A Restoration Plan will be developed that provides detailed plans for the restoration of temporarily disturbed waterways, wetlands, and riparian habitat. The plan will outline restoration and conservation activities, locations, monitoring requirements, and criteria to measure mitigation success. Restoration shall include planting and/or seeding with locally sourced native species, erosion control measures, non-native plant control, and site monitoring of the restoration of temporarily disturbed waterways and vegetated areas. This plan shall also be submitted to and approved by the United States Army Corps of Engineers, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife (CDFW) prior to initiating any mitigation activities.

Objectives

The Restoration Plan addresses the restoration of all work areas where dry waterways are trenched or vegetation removal is necessary for bore pit construction, plowing and/or trenching operations, and/or ILA location construction, or to allow equipment access on narrow roads; these areas will be revegetated and restored to near pre-construction conditions (referred to as “impact areas” within this document). No trenching or excavation will occur in wet channels or wetlands. horizontal directional drilling (HDD) is anticipated to be the primary construction method. Disturbance resulting from HDD will be largely confined to bore pit locations, access vaults, and staging areas associated with construction and will be restricted to the construction corridor only. Bore pits will be placed an average of approximately 800 feet apart along the construction corridor and will be placed to avoid wetlands and wet channels. For a detailed description of the project location and construction methods, please refer to the Digital 299 Biological Evaluation.

Restoration will minimize impacts to impact areas and promote soil stability and native vegetation, minimizing the potential encroachment of invasive plant species and erosion. Monitoring and maintenance of impact areas will be conducted for a minimum of 3 years to ensure bank stabilization, regeneration of wanted species, and accessibility.

ENVIRONMENTAL SETTING

Disturbance to impact areas will be restricted to the construction corridor, which is largely unvegetated roadsides. However, the greater environmental setting described considers the Action Area, which is defined as all areas that have the potential to be affected directly or indirectly by the Proposed Action. In general, the Action Area encompasses the construction corridor in addition to a 0.25-mile buffer on each side measured from the center of the road (i.e., a 0.5-mile-wide corridor).

Geology

The western portion of the Action Area is within the Northern Coast Ranges subset of the Coast Ranges Geomorphic Province. The Coast Ranges of California are northwest-trending mountain ranges (typically

2,000 to 4,000 feet above sea level) and valleys that run subparallel to the San Andreas Fault. The province is bordered to the west by the Pacific Ocean, to the east by the Great Valley Geomorphic Province, to the south by the Transverse Ranges of southern California, and to the north by the Klamath Mountain Range. The middle portion of the construction corridor is within the Klamath Mountains, a range of mountains reaching 6,000 to 8,000 feet in elevation that straddle the California–Oregon border. They have a varied geology consisting of significant formations of metamorphic, granitic, and serpentinite-derived rock. In California, the Klamath Mountains are bordered to the south and west by the Northern Coast Ranges and to the east by the Cascade Range. The eastern end of the Action Area is within the Great Valley—a basin formed between the Coast Range Province to the west and Sierra Nevada Province to the east. The Great Valley is characterized by alluvial deposit fill from the Sierra Nevada and Coast ranges (Schoenherr 2017).

Serpentine Soils

Portions of the Action Area traverse isolated patches of serpentine soil, an uncommon soil type produced by the weathering of ultramafic rocks such as serpentinite. Serpentinite, a metamorphic rock, is composed of minerals high in magnesium and heavy metals such as chromium, cobalt, iron, lead, and nickel. Soils derived from this rock tend to have high levels of heavy metals while lacking vital nutrients, making it difficult for many plants to survive in such extreme conditions. Plants found on these soils are specifically adapted to these soil conditions and are often found exclusively on serpentine soils (Schoenherr 2017).

Vegetation Communities

Since most of the Action Area is within lands managed by federal agencies, vegetation/habitat communities were mapped using the Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) system to conform with federal mapping standards (USDA 2008). Each CALVEG community was also matched with the equivalent California Wildlife Habitat Relationship community (Mayer and Laudenslayer 1988). Communities present in the Action Area are depicted in **Appendix A** and described in detail in the Digital 299 Biological Evaluation (Transcon Environmental, Inc. 2021).

Sensitive Natural Communities and Environmentally Sensitive Habitat Areas

Sensitive natural communities, as defined by CDFW, were also identified in the Action Area. Sensitive natural communities are those communities that are of limited distribution statewide or within a county or region and are often vulnerable to disturbance (CDFW 2021). Sensitive natural communities are tracked by the California Natural Diversity Database and may or may not contain individual plants or animals classified as special status species. Although sensitive natural communities have no legal status alone save for some sensitive natural communities that are afforded protection separately under federal and/or state regulations (i.e., wetlands, riparian areas), lead and trustee agencies may request that impacts to these communities be addressed in environmental documents. Local agencies may also have policies requiring avoidance of rare community types.

Five sensitive natural communities have been identified within the Action Area: beach pine, redwood–Douglas-fir, willow thickets, ceanothus chaparral, and pickleweed-cordgrass.

Special Status Plants and Fungi

Analysis conducted for the Digital 299 Biological Evaluation identified 40 state-listed and/or other special status plant and fungi species that may be present within the Action Area, including: 25 vascular plants (i.e., perennial and annual herbs), 1 bryophyte, 1 fern, 12 fungi, and 1 lichen. A full description of these is available in the Biological Evaluation. There are no federally-listed plants that are likely to occur within the Action Area. Surveys for special status plants were conducted in spring and early summer 2019 in portions of the construction corridor where direct impacts to plants might be possible. Only one individual

special status plant, white-flowered rein orchid (*Piperia candida*, listed as a California Native Plant Society Rare Plants Rank 1B.2, Bureau of Land Management Sensitive, and Forest Service Watchlist species) was positively identified in the construction corridor. Additional surveys for special status plants are planned prior to the onset of construction.

PROJECT SCHEDULE

Late Spring/Summer 2022—pre-construction surveys and construction begin

Late Summer 2022—species lists for seed mixes are drafted and sent to agencies for approval, and seeds are ordered from nurseries or California native seed companies

Fall/Winter 2022*—seeds and mulching are applied to completed construction sites

2023 – pre-construction surveys and construction continue

Fall/Winter 2023*—seeding and mulching of 2023 construction sites

2024—pre-construction surveys and construction continue

Summer 2024—first year monitoring and maintenance of sites planted in 2023

October 2024—construction concludes

Fall/Winter 2024*—seeding and mulching of 2024 construction sites

Summer 2025—first year monitoring and maintenance of sites planted in 2024

second year monitoring and maintenance of sites planted in 2023

third year monitoring and maintenance of sites planted in 2022

Summer 2026—second year monitoring and maintenance of sites planted in 2024

third year monitoring and maintenance of sites planted in 2023

Summer 2027—third year monitoring and maintenance of sites planted in 2024

*October and November are ideal seeding months in California, after the first fall rain.

PRE-CONSTRUCTION VEGETATION SURVEYS AND DOCUMENTATION

In order to identify the vegetation resources that may be impacted, a qualified biologist or botanist will survey all final work areas and overland access routes using GPS coordinates provided by Vero Networks. Vegetation surveys should be conducted during the same year as scheduled construction while plants are blooming and identifiable. These surveys may be performed concurrently with required rare plant surveys.

Impact areas suitable for restoration will be identified based on the amount of native vegetation present before construction, the area's proximity to rare plants or sensitive habitats, and presence of noxious weeds in the project area. Land managing agencies will receive summaries in annual reports of restoration efforts for each applicable impact area, and the suitability of disturbed sites for restoration. For each impact area scheduled for restoration, an adjacent location outside of the construction footprint will be surveyed and documented as a reference location. In burned impact areas, the reference plot will also be located in burned habitat so that restoration can be compared directly to habitat outside of the construction footprint. Reference locations will be selected based on the similarity of their vegetation composition to the impact areas. A subset of these reference locations will also be monitored annually to serve as control sites to determine annual levels of invasive plants and overall growth conditions in non-impact areas.

A qualified biologist or botanist will survey each impact area and one adjacent/comparable reference location (if native vegetation is present in the impact area and will require restoration) following the CDFW-California Native Plant Society (CNPS) Protocol for Combined Vegetation Rapid Assessment (CDFW-CNPS 2019). This method will provide standardized data collection that is applicable to future monitoring and reporting efforts. Resumes of field biologists will be provided to relevant agencies. The following survey data will be collected, quantified, and documented in a Pre-Construction Form with a corresponding

photo log. A handheld GPS-equipped tablet will be used to record the following data during pre-construction surveys, post-construction surveys, maintenance, and monitoring:

- General contours
- Project work area and access route locations (flagged and marked by GPS)
- Extents of vegetation communities and dominant/sub-dominant species composition
- Special status plant individual locations (if present)
- Characteristics of special status plant populations (i.e., size and cover estimates)
- Tree and shrub inventory (if present) with estimated cover of herbaceous species
- Reference photo points, one in each cardinal direction

Photographs of the entire impact area will be taken from fixed photo points with the same orientation to allow a review of the restoration progress over time. The location, direction, and magnification of each photo point will be documented using GPS units to ensure that the same fixed points are used during each survey. The above data that is collected will inform the following:

- Anticipated restoration acreages and conditions for impacted grassland, woodland, and forest vegetation communities (if vegetation is present)
- Topsoil salvage recommendations
- Seed mix for the site type (if seed mixes are recommended)

Vegetation alliances and associations ranked S1, S2, or S3 are considered sensitive natural communities by the CDFW and are addressed under the California Environmental Quality Act guidelines. If sensitive natural communities as identified by CDFW (CDFW 2020) and/or special status plants are found in work areas and overland access routes during pre-construction surveys, work areas and overland access routes shall be repositioned where possible to avoid adverse impacts to sensitive natural communities. In areas that cannot be avoided by a minor re-route, the project biologist will contact the appropriate agency to discuss the potential for salvaging affected special status plants prior to construction. No trees larger than 6 inches diameter at breast height will be removed.

POST-CONSTRUCTION REVEGETATION, RESTORATION, AND REPORTING

In accordance with avoidance and minimization measure (AMM) BIO-3, when dry waterways are trenched or vegetation removal is necessary for bore pit construction, plowing and/or trenching operations, and/or ILA location construction or to allow equipment access on narrow roads, the impact areas will be revegetated and restored to near pre-construction conditions.

The vegetation and site data recorded during the pre-construction surveys will be used to establish the baseline conditions for each site. Percent cover of desirable vegetation, and percent cover of undesirable invasive plants, will be quantified by the qualified biologist or botanist to determine the final performance standards. The Vegetation Performance Standards section of this Plan includes specific details on how pre-construction vegetation data will be used to establish revegetation goals at each site.

Seeding

Vegetated areas disturbed by project construction will be revegetated with a native seed mix to stabilize soils and minimize the introduction or spread of invasive plants. Seeds will be applied by hand, broadcast seeding, or via hydroseeding procedures. Vero Networks will work with local native plant nurseries or native seed companies to develop the final seeding mixes along with federal botanists, ensuring that only native species are used at desired ratios and appropriate elevations. Baseline species likely to be used that

are widespread in the project area are listed in **Appendix B**. The species listed in **Appendix B** may be narrowed down, or expanded upon, depending on agency approvals and seed availability. Palettes used will be based on the vegetation community/native species that currently occur at the work locations, including grasses and forbs.

Seeding methods include manual seeding for targeting small areas and hydroseeders for larger areas. The seed bed should be raked or tilled, or the soil crust broken in some other manner in order to incorporate the seed into the soil. Generally, seed applications for native grasses will range from 6 to 12 pounds of pure live seed per acre on level soils. Forbs and nitrogen fixers, such as lupine and lotus, and forbs native to the local restoration areas will be included in the seed mixes. In California, the standard is to seed prior to mid-November to maximize first year growth before summer dormancy. After the first rain stabilizes the soil, seed contact with soil surface will be much improved.

All seeded areas will be covered with wood mulch or a mixture of compostable material and wood to 30 to 35 percent cover. If straw is used in the compostable material, it will be certified weed-free. On slopes steeper than 45 degrees, a slurry of purely compostable materials may be used to stabilize the soil, facilitate seed germination, and prevent invasion. Application of a tackifier, an adhesive for mulch, is preferred when hydroseeding. If invasive plants are present at a restoration site, hand weeding will be done prior to manual seeding or hydroseeding.

Erosion, Water Quality, and Channel Protection

Construction and excavation activities shall be conducted in a manner that will protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act, Water Code section 13000, et seq., and the Federal Clean Water Act, 33 U.S.C. section 1251, et seq.

A detailed Stormwater Pollution Prevention Plan (SWPPP) has been developed for the Project. The SWPPP details how erosion and sedimentation shall be controlled during all phases of construction and restoration through the implementation of control measures including berms, silt fences and revegetation. Spoils shall be stored away from the banks of waterways or slopes above waterways and will be loaded onto trucks if no level storage space is available.

All exposed or disturbed areas (i.e., waterways and vegetated areas) within the construction corridor shall be returned to pre-existing contours and conditions. Unvegetated slopes up to 45 degrees in the excavation area will be stabilized with a combination of seed and wood mulch. For slopes greater than 45 degrees, a hydraulic mulch slurry will be used in addition to seeding to prevent erosion.

Sites requiring treatment to prevent erosion will be monitored for additional erosion and/or soil degradation throughout the monitoring period. If new or additional erosion is observed in the impact areas, the stormwater inspector will identify and install the appropriate sediment control device, and the change will be included in post-construction SWPPP documentation. The SWPPP shall remain in effect until all impact areas are sufficiently revegetated, and until soils have been permanently stabilized.

Post-construction hydrology surveys will be conducted annually at impact areas within 50 feet of the Ordinary High Water Mark of streams. A hydrology survey consists of a visual inspection of a restored site to ensure that the potentially impacted watercourse is functioning properly, and the restored channel bed/bank does not have any visible scour, head cuts, knickpoints, erosional rills or gullies, bank slumping, or sediment deposition.

Sensitive Natural Communities

Sensitive natural communities with potential to occur are beach pine, redwood–Douglas-fir, willow thickets, ceanothus chaparral, and pickleweed-cordgrass (see **Appendix A**). If one of these communities is documented in an impact area on the Pre-Construction Form, restoration within the impacted sensitive natural community will focus on the affected native stratum only. Restoration will consist of hydroseeding the disturbed herbaceous understory with an appropriate seed mix. The seed mix will not include non-native, invasive, or noxious weed species. Seeding with a native seed mix will not guarantee restoration to conditions free of noxious weeds and/or non-native species due to the presence of a long-established non-native seed bank that may be present.

Post-Construction Documentation

When applicable work at any given location is completed, a qualified biologist or botanist shall promptly document/update data collected in a Post-Construction Form that will reflect actual impact areas as post-construction documentation. The entire impact area will be surveyed. In impact areas with more than one vegetation type, each vegetation type will be sampled separately. The following data will be collected:

- General contours, as restored
- Absolute cover of vegetation compared to bare ground
- Dominant plant species and cover (defined as greater than or equal to 20 percent cover); relative percent cover of each dominant species
- Invasive and noxious weed species (California Invasive Plant Council [Cal-IPC]-rated moderate or high listed species [Cal-IPC 2021 CDFA]; noxious weeds listed by California Department of Food and Agriculture [CDFA], California Code of Regulations [CCR] 4500, or United States Department of Agriculture [USDA]; **Appendix C**) and relative percent cover (if present)
- Presence or absence of native species other than the dominants
- Reference photos of reclaimed uplands, one in each cardinal direction, marked by GPS
- Channel photos depicting upstream, downstream, and both banks

ANNUAL MONITORING, MAINTENANCE, AND REPORTING

Post-construction monitoring and maintenance of impact areas will occur according to the annual monitoring protocol for three years after seeding or sooner if the relevant agencies concur that no further monitoring or actions are necessary. If restoration sites do not meet annual performance standards, minor maintenance (hand pulling of weeds, additional seeding application) may be performed after annual monitoring. Any control of invasives beyond minor hand pulling will be performed in accordance with the Integrated Pest Management Plan (IPMP) of the site's jurisdiction. The following subsections describe the performance standards, protocols, and reporting procedures to be used for annual monitoring of impact areas.

Annual Monitoring Protocol

Monitoring surveys to assess vegetation conditions and progress towards performance standards will be conducted on an annual basis until performance standards are achieved, or sooner if relevant agencies concur that no further monitoring or corrective actions are necessary. An Annual Monitoring Form capturing identical information to the Pre-Construction and Post-Construction forms will be filled out. Annual monitoring at each impact area should occur once annually between April and June but preferably in May at most locations to capture the highest number of blooming species. Biologists will survey impact areas following the same protocol used for pre-construction vegetation surveys.

The subset of unimpacted areas that were surveyed pre-construction will continue to be monitored annually for comparison to restoration sites to determine if broader regional changes may affect restoration outcomes.

The sections below summarize the annual and final performance standards that will be applied to vegetation, sensitive natural communities, and hydrologic channels. The performance standards for these resources are also summarized at the end of this section in **Table 1. Vegetation Performance Standards**. Annual and final performance standards (i.e., success criteria) for restoration of vegetated areas will be measured using two criteria: total percent cover of desirable vegetation and total percent cover of invasive plants. Performance standards for both vegetation cover and invasive plants are set relative to baseline conditions established during pre-construction surveys. For example, if pre-construction percent cover of total vegetation in a work area was documented as 50 percent cover, the performance standard for restoration would be 80 percent of the original 50 percent ($0.80 \times 0.50 = 0.40$), or 40 percent total vegetation cover.

Percent Cover

Using the same metric defined above, a minimum of 30 percent vegetation cover will be expected during year one annual monitoring, and a minimum of 60 percent vegetation cover will be expected during year two annual monitoring. Additionally, annual monitoring will assess the health and vigor of seedlings by employing a visual/qualitative monitoring method. Plant growth and/or foliage volume will be evaluated at regular intervals following planting. Healthy seedlings will display vertical growth and/or accumulated biomass that will support healthy adult plants by the end of the second year of monitoring. Reclamation monitors will evaluate seed germination success and annual growth/maturity and will note any conditions that have hindered plant health or vigor, such as drought or competition with invasive plants.

In reclamation areas that are free of invasive plants, a minimum of 80 percent vegetation cover relative to baseline conditions, consisting of a native species composition consistent with the pre-construction vegetation conditions, is required in order to meet the final performance standard for vegetation.

Perennial vegetation must sufficiently cover bare soil to prevent soil erosion. If plants are not healthy and vigorous, or are fewer than the 80 percent standard, or should evidence of erosion become noticeable, the Adaptive Management and Corrective Action section of this Plan will be implemented. The maintenance operator will develop corrective actions designed to reduce erosion, stabilize soils, and locations with inadequate vegetative cover may be reseeded and/or mulched.

Invasive Plants

Percent cover of invasive plants will be determined compared to baseline conditions. For example, if 10 percent of the total vegetation in a work area was occupied by invasive plants listed as moderate in the Cal-IPC, the performance standard for restoration would be less than 5 percent increase in invasive plants from the original 10 percent (i.e., invasive plants must account for less than 15 percent of total cover).

At the end of the monitoring period, percent cover of plants listed as high in the Cal-IPC in reclaimed areas will be less than or equal to invasive plant cover of neighboring, unexcavated areas. Reclaimed areas will have no more than a 5-percent increase of percent cover of invasive grasses listed as moderate in the Cal-IPC, and no increase in percent cover of invasive forbs listed as moderate in the Cal-IPC (**Appendix C**). Control of invasives in the restoration areas will largely rely on native plant seeding and mulching cultural controls. Any additional chemical or mechanical controls will be in compliance with the IPMP of the restoration site's jurisdiction.

Invasive plant species (ranked as high or moderate by Cal-IPC) that were not present in pre-construction surveys, or not included in **Appendix B**, shall not be present in restored areas. Invasive plant species already established in parts of the project area will not be present in restored areas where they had not previously occurred.

Sensitive Natural Communities Performance Standards

Success criteria in sensitive natural communities will follow the performance standards for other vegetation communities, focusing on the affected native stratum only, and relative to documented pre-construction conditions. This will ensure a 1:1 replacement for sensitive natural communities relative to baseline conditions.

Channel Protection Performance Standards

The post-construction storm water performance standard for channel restoration is based on the State Water Resources Control Board's fact sheet associated with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (SWRCB 2010). The General Permit fact sheet specifically addresses water quality and channel protection events. The performance standard aims to match post-construction runoff to pre-construction runoff for the 85th percentile storm event, which not only reduces the risk of impact to the receiving water's channel morphology but also provides some protection of water quality

Table 1 Summary of Annual and Final Performance Standards		
Resource	Annual Performance Standard	Final Performance Standard
Vegetation– Percent Cover	<p>A minimum of 30 percent vegetation cover will be expected during year one annual monitoring.</p> <p>A minimum of 60 percent vegetation cover will be expected during year two annual monitoring.</p>	A minimum of 80 percent vegetation cover relative to baseline conditions, consisting of a native species composition consistent with the pre-construction vegetation conditions.
Vegetation– Invasive Plants	<p>No increase in percent cover of plants listed as high in the Cal-IPC,</p> <p>No more than a 5-percent increase of percent cover of invasive grasses listed as moderate in the Cal-IPC.</p> <p>No increase in percent cover of invasive forbs listed as moderate in the Cal-IPC</p> <p>Invasive plant species (ranked as high or moderate by Cal-IPC) that were not present in pre-construction surveys, or not included in Appendix B, shall not be present in restored areas.</p>	Invasive plant cover in restored areas at the end of the monitoring period will be less than or equal to invasive plant cover of neighboring, unexcavated areas.
Sensitive Natural Communities	<p>A minimum of 30 percent vegetation cover will be expected during year one annual monitoring.</p> <p>A minimum of 60 percent vegetation cover will be expected during year two annual monitoring.</p>	Ensure a 1:1 replacement for sensitive natural communities relative to baseline conditions.
Hydrologic Channels	<p>Impacted watercourse inspections will be performed to ensure:</p> <ul style="list-style-type: none"> • The channel is functioning properly. • The restored channel bed/bank does not have any visible scour, head cuts, knickpoints, erosional rills or gullies, bank slumping, or sediment deposition. 	Match post-construction runoff to pre-construction runoff for the 85th percentile storm event.

Stochastic Events

Vero Networks will not be responsible for meeting the success criteria at restoration sites that are disturbed by stochastic events such as fires, landslides, droughts, floods, unseasonal extreme temperatures etc., as well as landowners or other unaffiliated parties. Disturbance to restoration sites will be documented during annual monitoring. In addition, because reclamation success criteria are heavily contingent upon sufficient rainfall, the approving agencies may recommend that the performance standards and/or success criteria be modified, or that the monitoring period be extended if climatic conditions are unfavorable.

Annual Monitoring Report

Annual Monitoring Reports will be prepared and submitted to required agencies as dictated by permitting requirements. The reports shall provide determinations of restoration suitability for each impact area, summarize restoration efforts for each applicable impact area, provide data on annual performance standards and success criteria, and detail any corrective actions necessary to close out sites. Information and data in the Annual Monitoring Report will include Pre-Construction, Post-Construction, and Annual Monitoring forms for each impact area, initial seeding and planting data, maintenance activities, additional surveying and monitoring data, and status of restored/revegetated sites.

Once the final success criteria have been achieved for a given impact area, annual monitoring will not be conducted in that area and data on the given work area will not be included in subsequent annual monitoring reports after restoration has been listed as complete.

ADAPTIVE MANAGEMENT AND CORRECTIVE ACTION

In the event of significant changes to the project description, the Restoration Plan will be revised. The implementation of additional protection measures or additional corrective actions may potentially be required, including if sensitive plants are found during surveys in the construction corridor prior to construction. If fires, landslides, droughts, floods, or other stochastic events/unanticipated circumstances impact revegetation and restoration efforts, the impacted site will revegetate in parallel with the damage sustained by surrounding vegetation communities.

Adaptive management will utilize monitoring data on a site-specific basis to assess whether restoration activities are on track to meet performance criteria. If revegetated areas do not meet the annual performance standards, Vero Networks will attempt to expediently ascertain and address the source of the problems. Sites not meeting performance standards and corrective actions taken shall be documented in the Annual Monitoring Report. Additional seeding, removal of invasive plant species, and additional application of weed control measures may potentially occur as corrective actions. Implementation of supplemental actions will be based on the general revegetation recruitment trend, site-specific conditions, and climactic factors. Consideration of supplemental actions will be based on the causal factors contributing to mortality, slow growth, or poor recruitment, which will be detailed in each Annual Monitoring Report.

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APPENDIX A

VEGETATION COMMUNITIES



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Department of Defense
- State Lands
- Trinidad Rancheria

CALVEG Community Type*

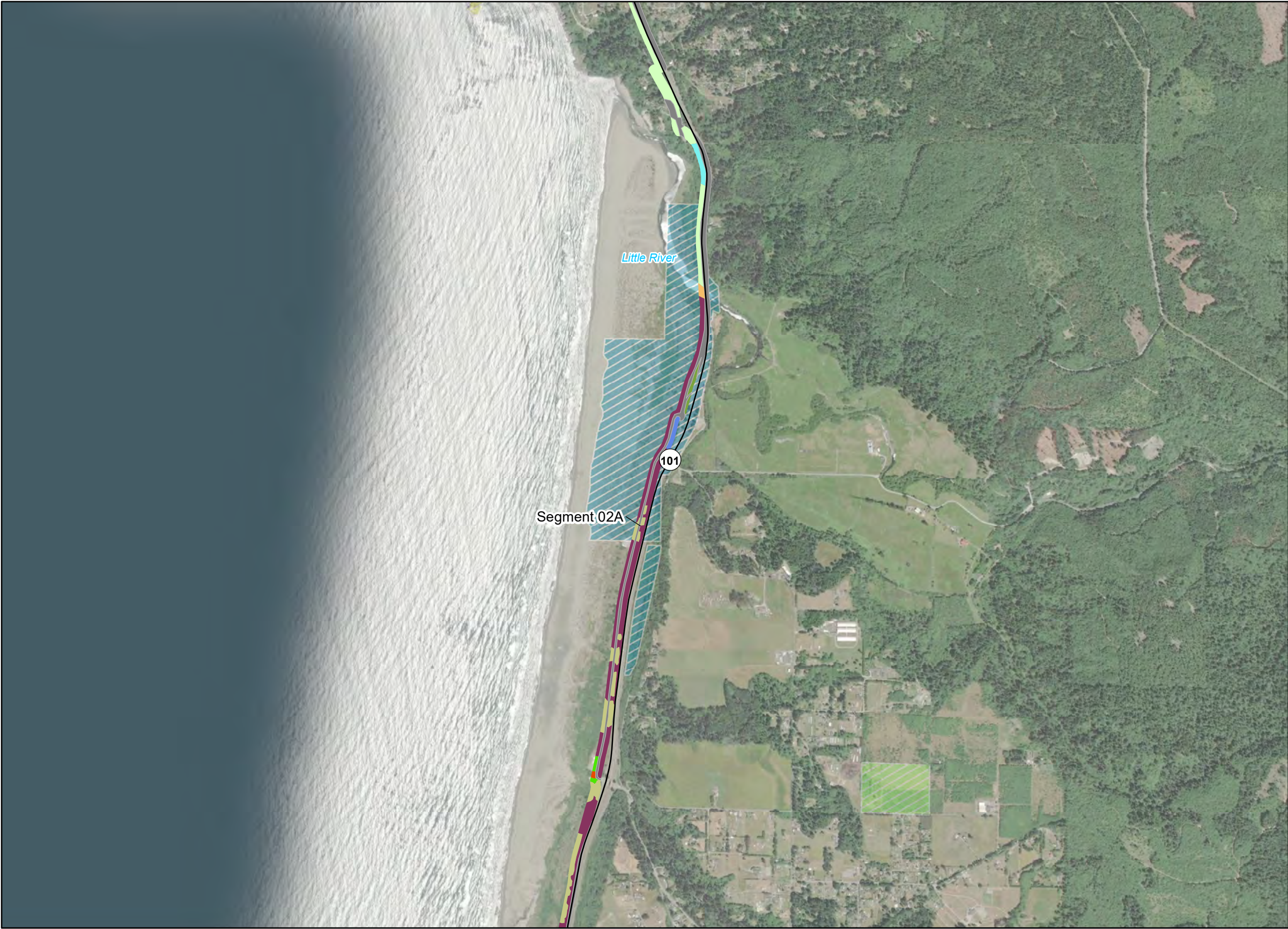
- Annual Grasses and Forbs Alliance
- Beach Pine Alliance
- Pacific Douglas-Fir Alliance
- Urban or Developed

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon ENVIRONMENTAL



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership

Bureau of Land Management

Six Rivers National Forest

State Lands

CALVEG Community Type*

Annual Grasses and Forbs Alliance (Dunes)

Barren

Beach Pine Alliance

Coyote Brush Alliance

Non-Native / Invasive Forb And Grass Alliance

Non-Native / Ornamental Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

Water

Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Department of Defense

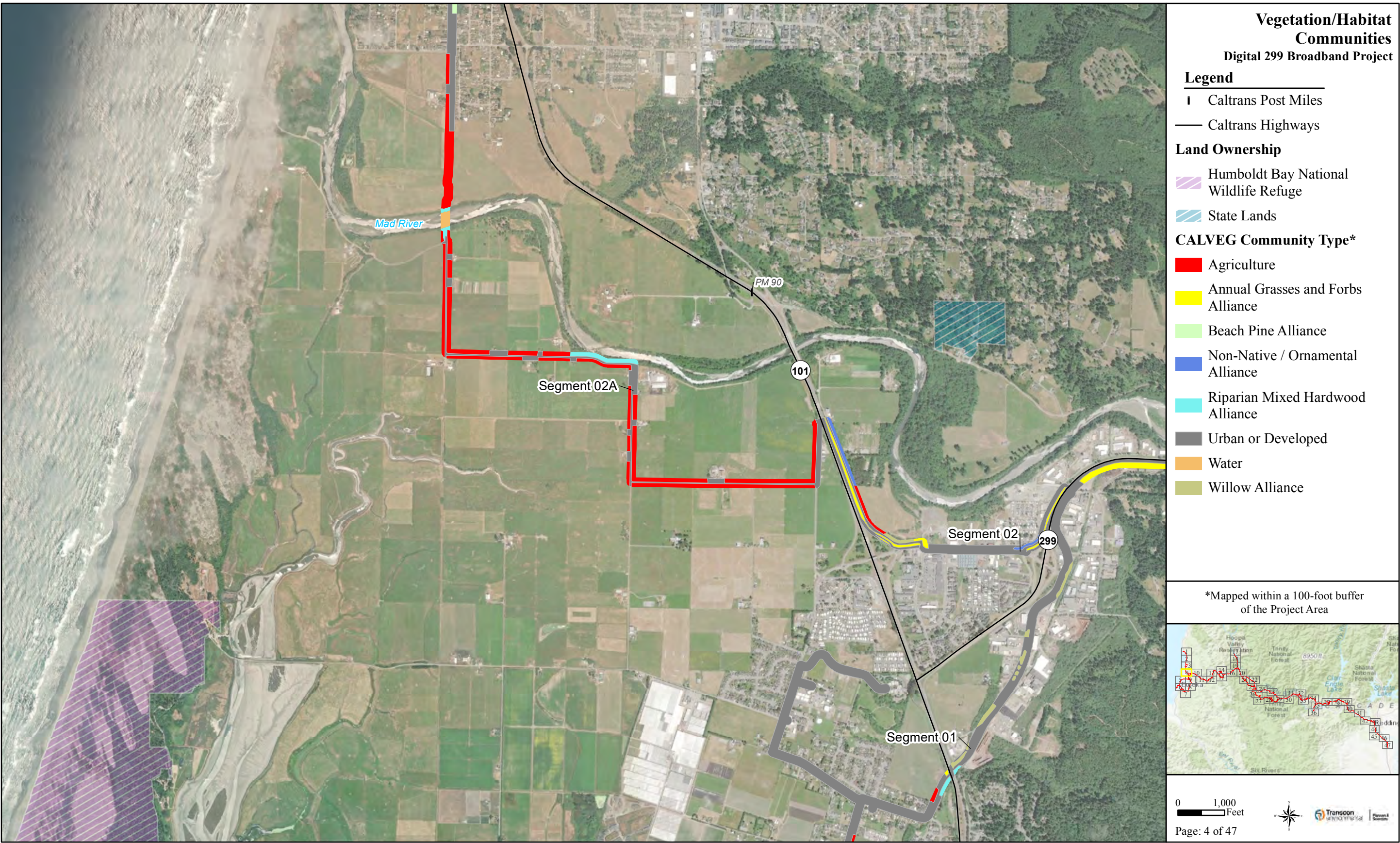
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Annual Grasses and Forbs Alliance (Dunes)
- Barren
- Beach Pine Alliance
- Coyote Brush Alliance
- Non-Native / Ornamental Alliance
- Urban or Developed
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Caltrans Post Miles

Caltrans Highways

Land Ownership

Bureau of Land Management

Humboldt Bay National Wildlife Refuge

State Lands

CALVEG Community Type*

Annual Grasses and Forbs Alliance

Annual Grasses and Forbs Alliance (Dunes)

Barren

Beach Pine Alliance

Pickleweed-Cordgrass Alliance

Urban or Developed

Water

Wet Meadows (Wet Grasses And Forbs) Alliance

Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

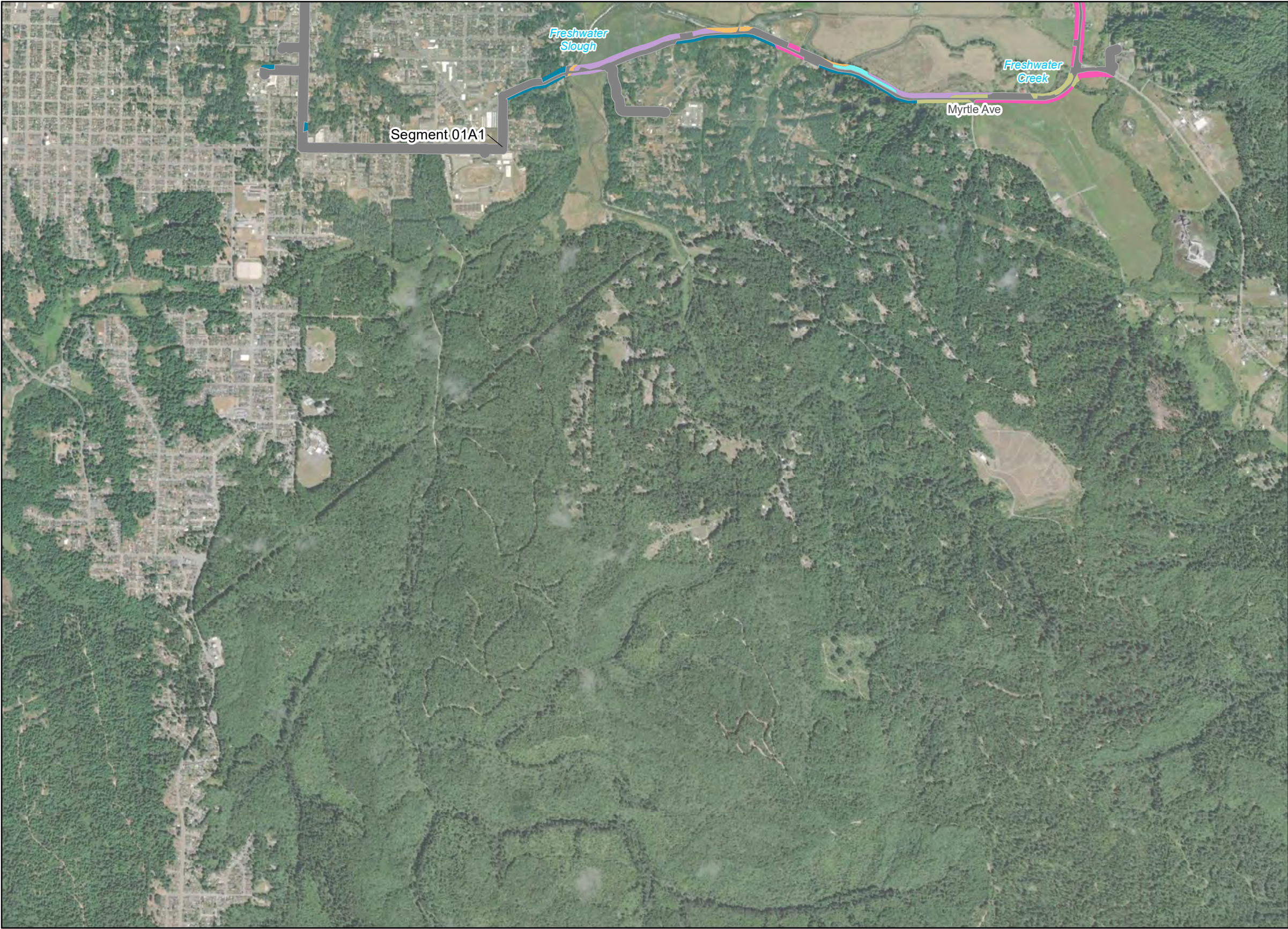
01,000 Feet

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Transcon

Environmental





Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

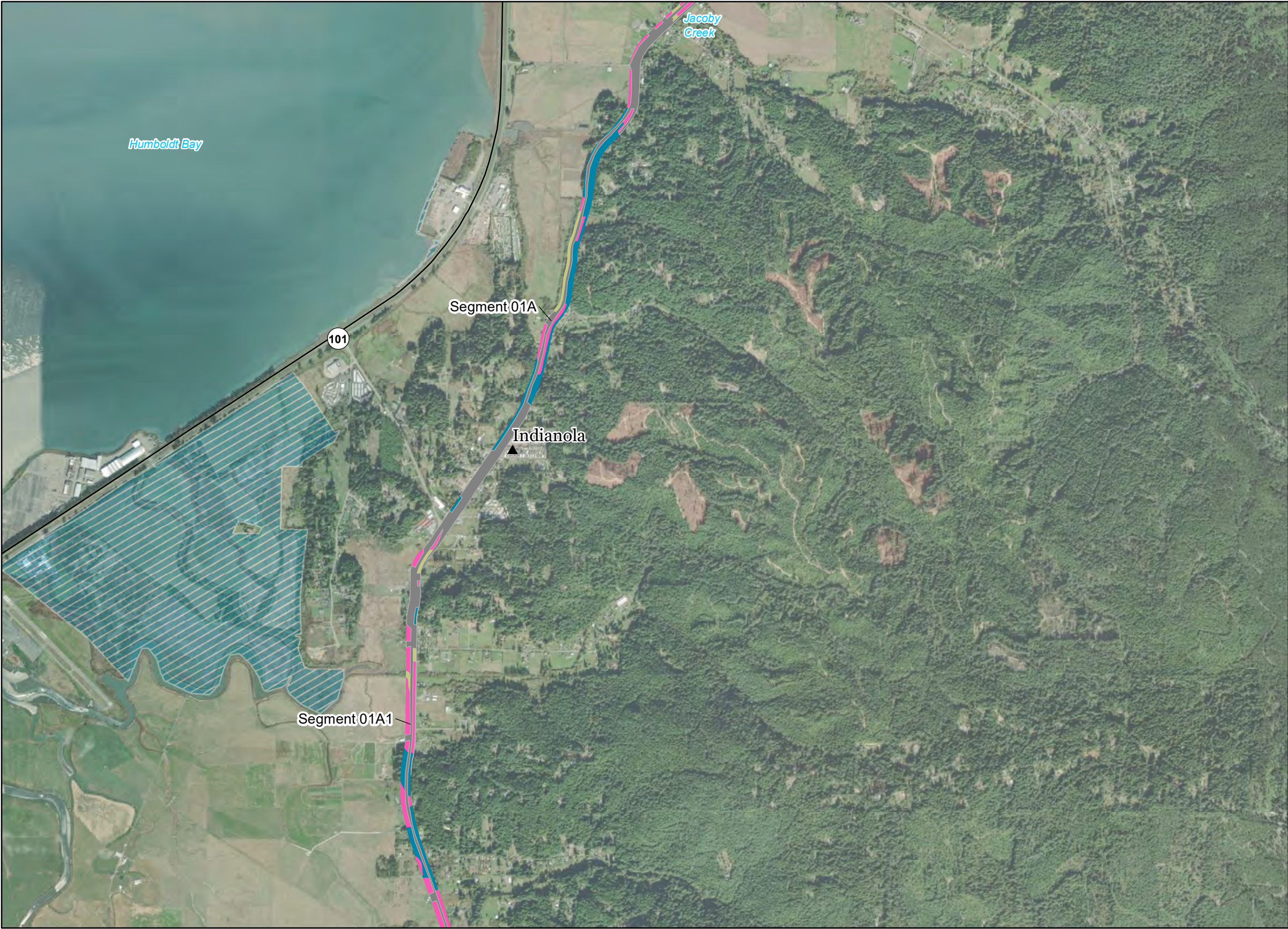
CALVEG Community Type*

- Agriculture - Pasture
- Redwood - Douglas-fir Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Water
- Wet Meadows (Wet Grasses And Forbs) Alliance
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

Page: 7 of 47



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

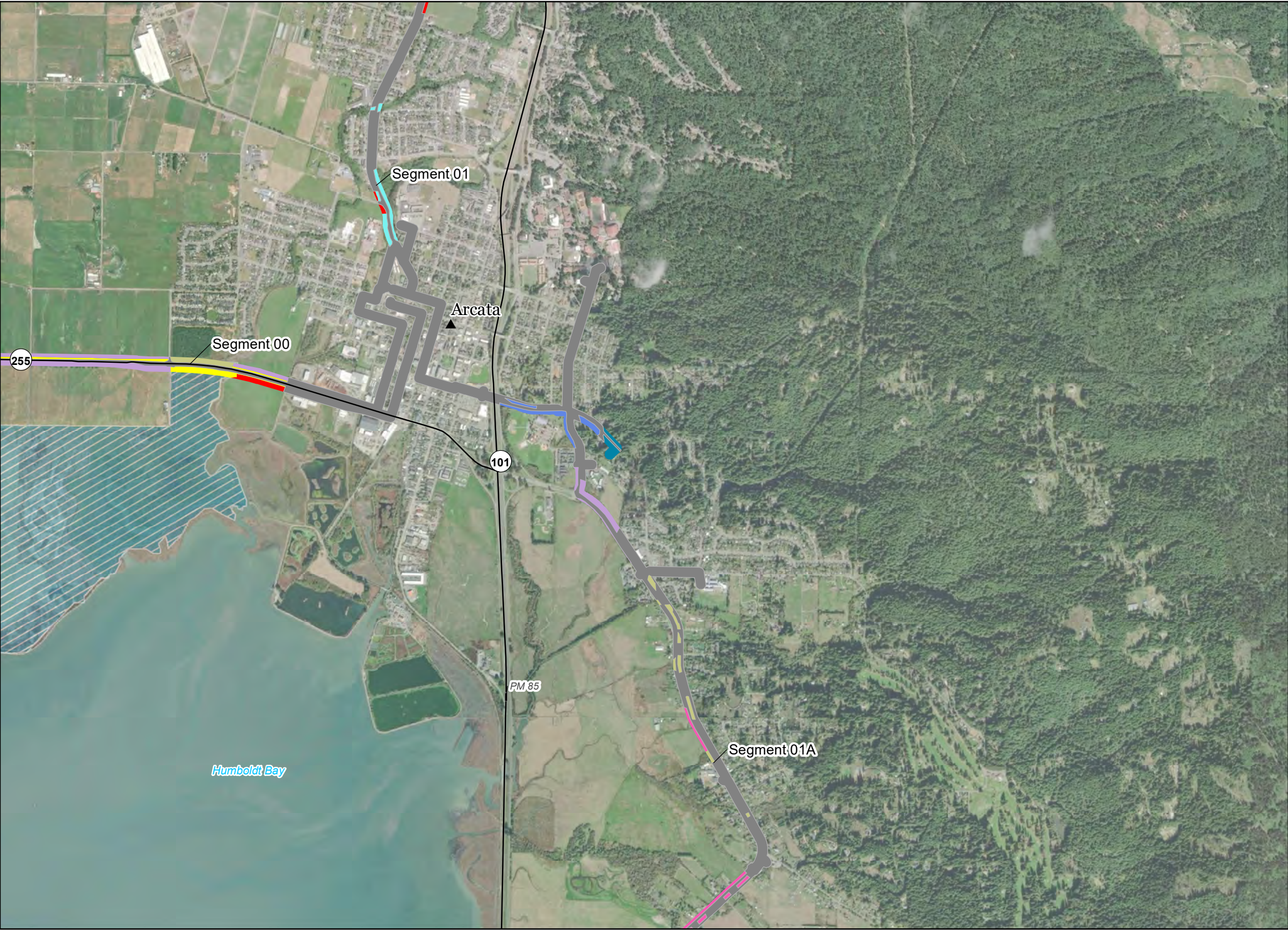
- Agriculture - Pasture
- Redwood - Douglas-fir Alliance
- Urban or Developed
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

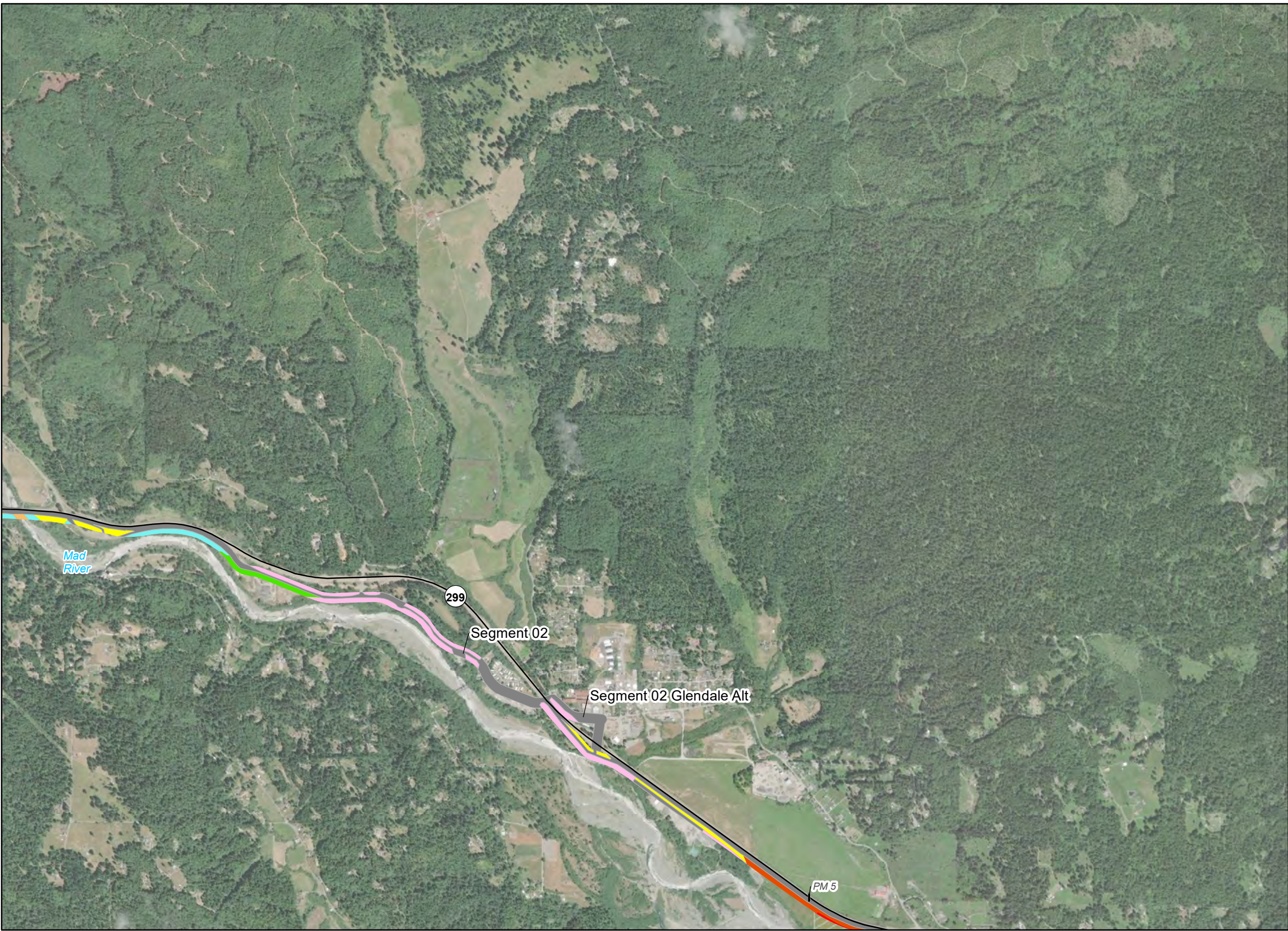
- Agriculture
- Agriculture - Pasture
- Annual Grasses and Forbs Alliance
- Non-Native / Ornamental Alliance
- Redwood - Douglas-fir Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Wet Meadows (Wet Grasses And Forbs) Alliance
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

01,000

Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

┆

 Caltrans Post Miles

—

 Caltrans Highways

Land Ownership

Blue Lake Rancheria

CALVEG Community Type*

Agriculture

Annual Grasses and Forbs Alliance

Barren

Coyote Brush Alliance

Interior Mixed Hardwood Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

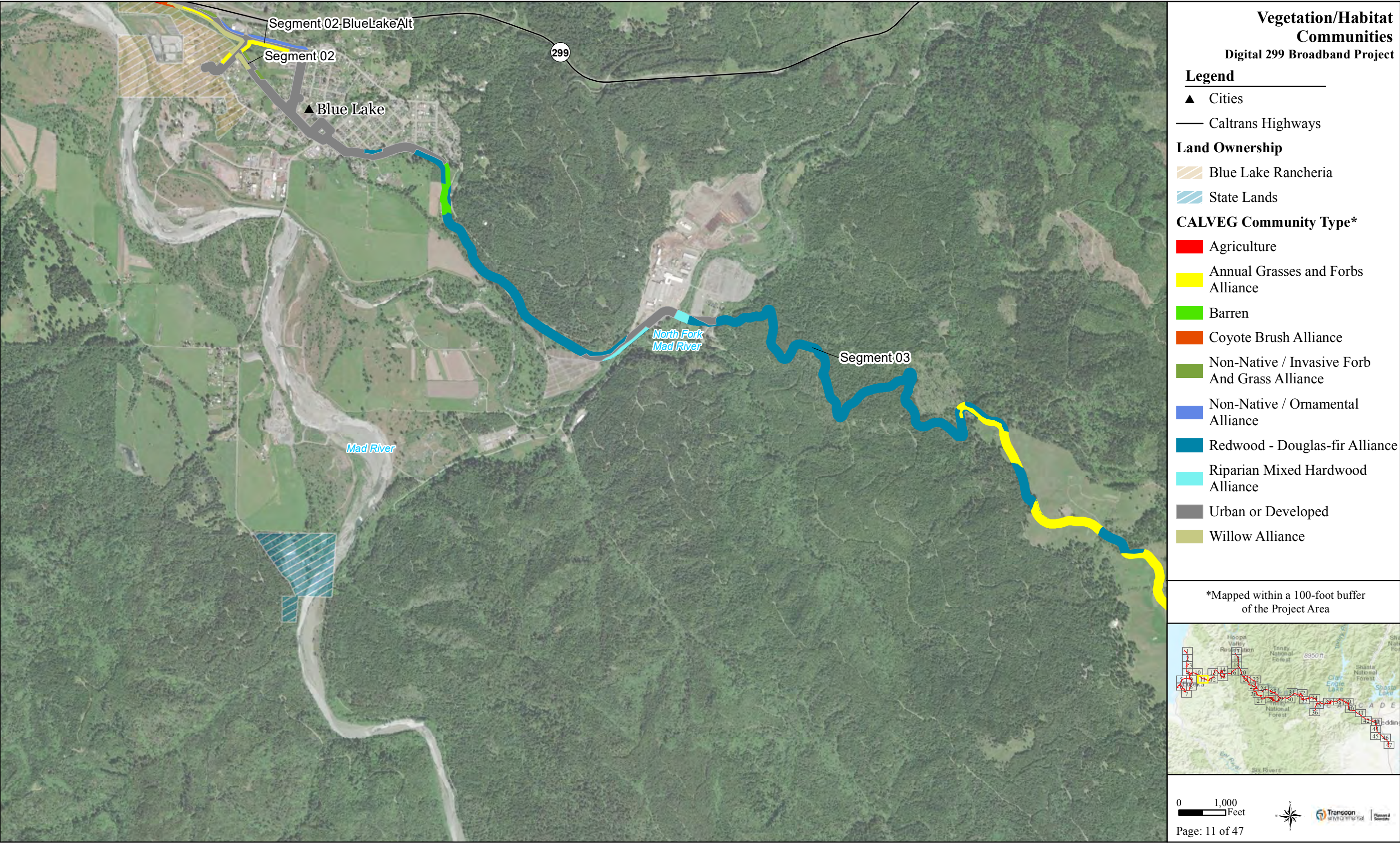
Water

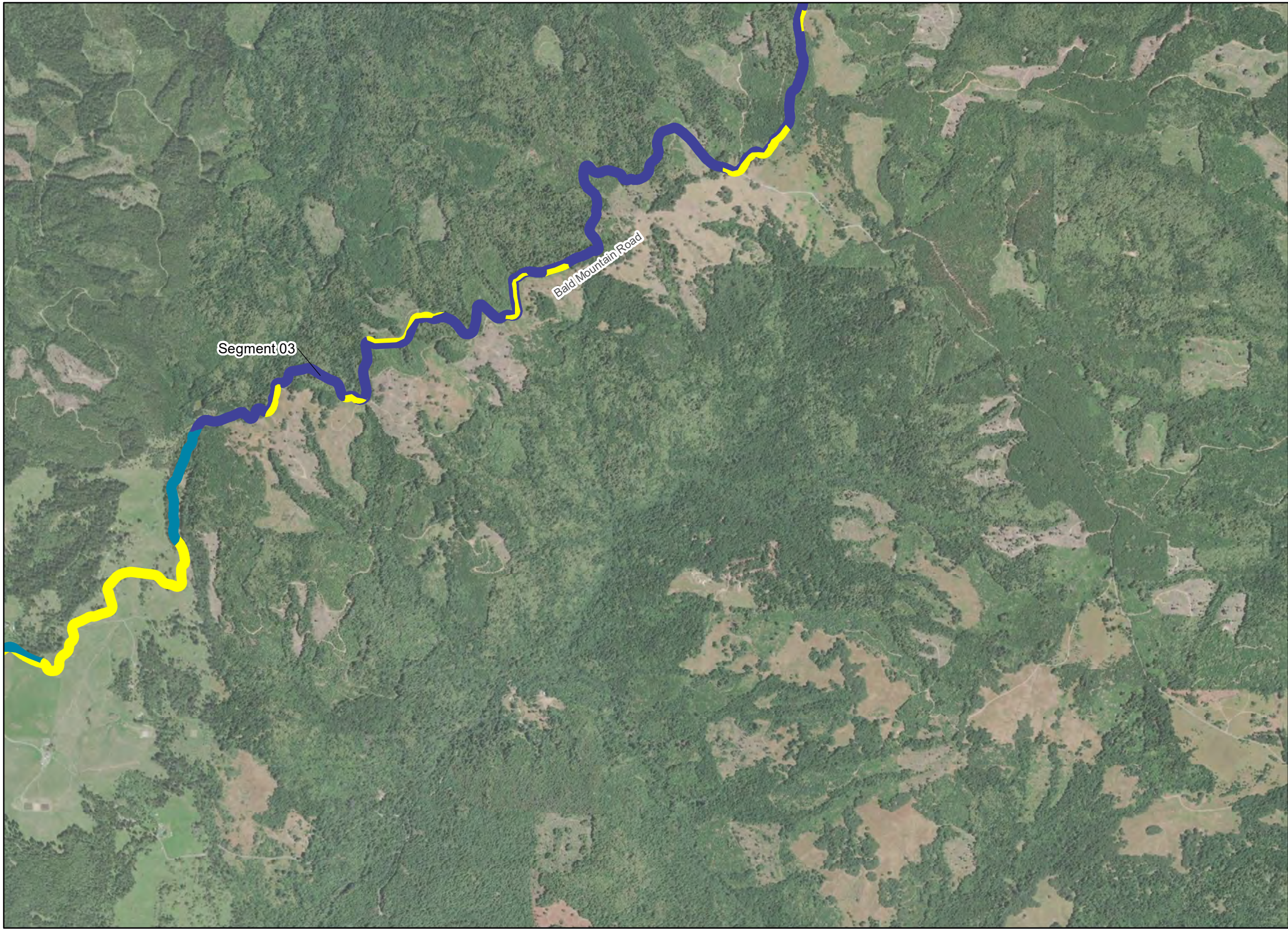
*Mapped within a 100-foot buffer of the Project Area

01,000

Feet

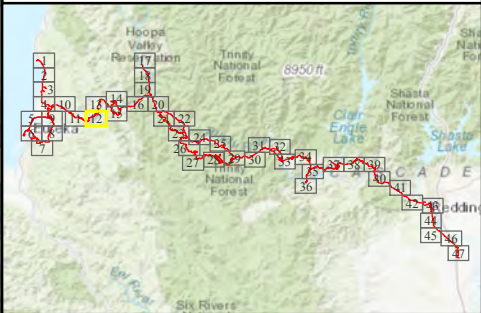
Page: 10 of 47





**Vegetation/Habitat
Communities**
Digital 299 Broadband Project
Legend

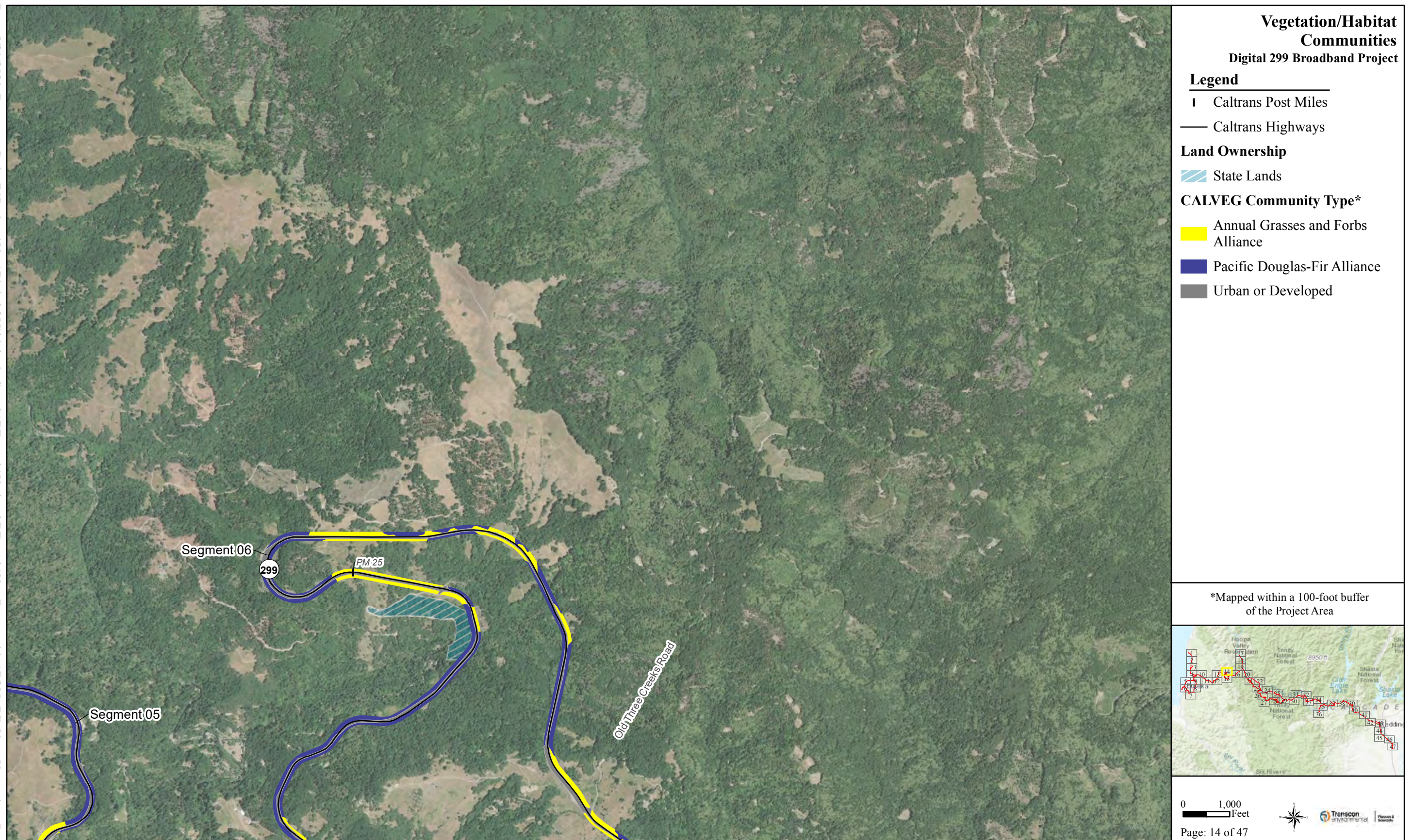
*Mapped within a 100-foot buffer
of the Project Area

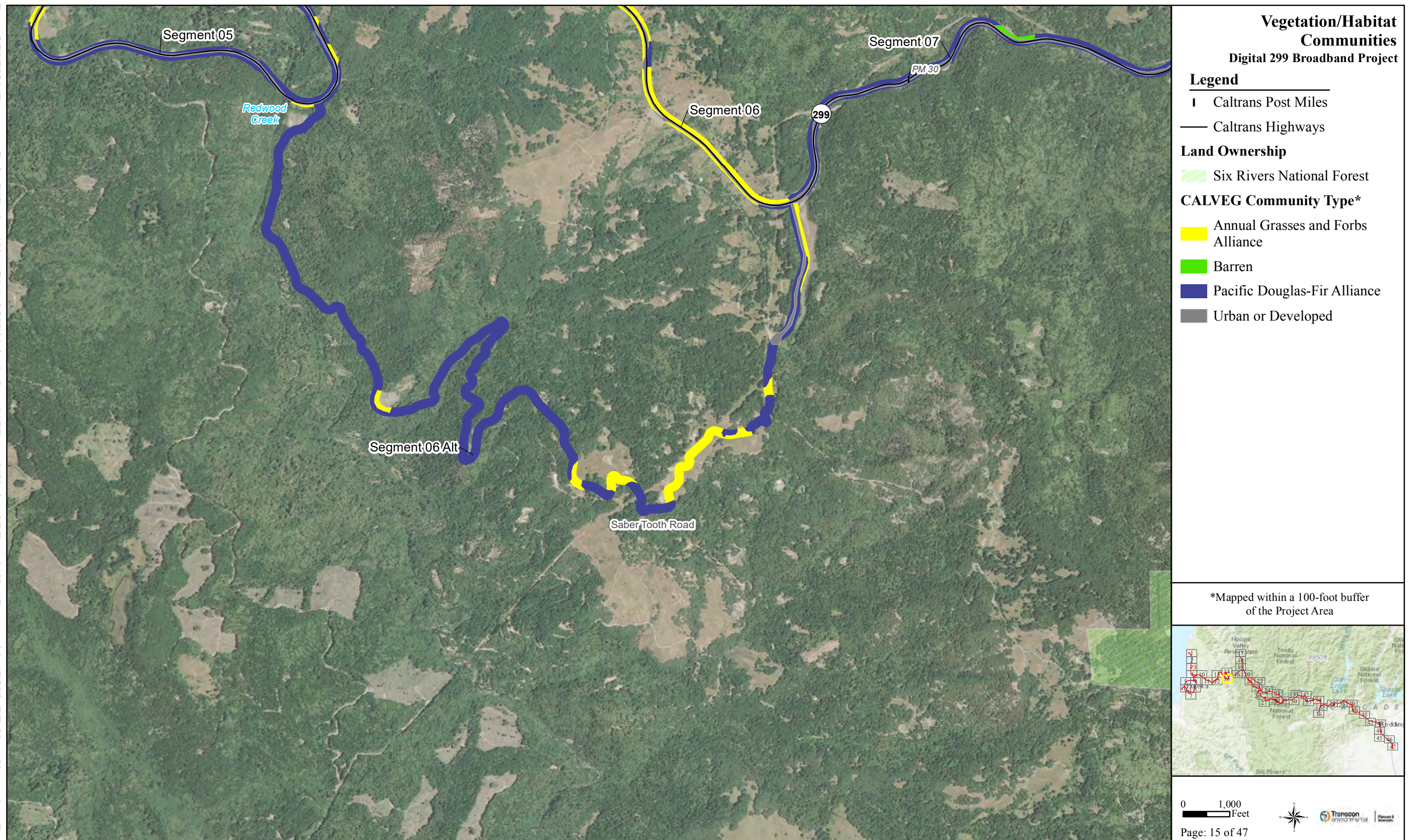


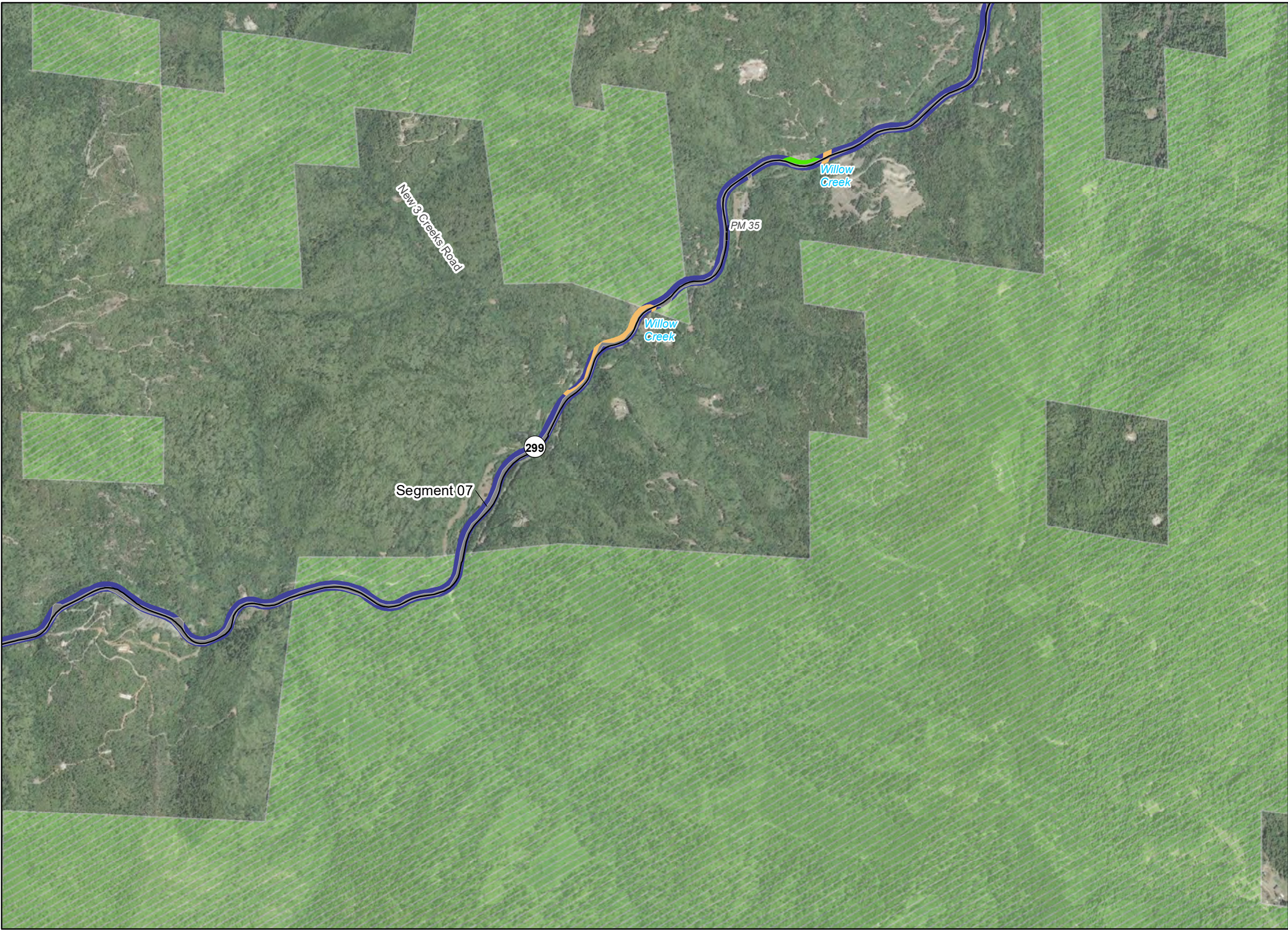
0 1,000
Feet
Page: 12 of 47











Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Six Rivers National Forest

CALVEG Community Type*

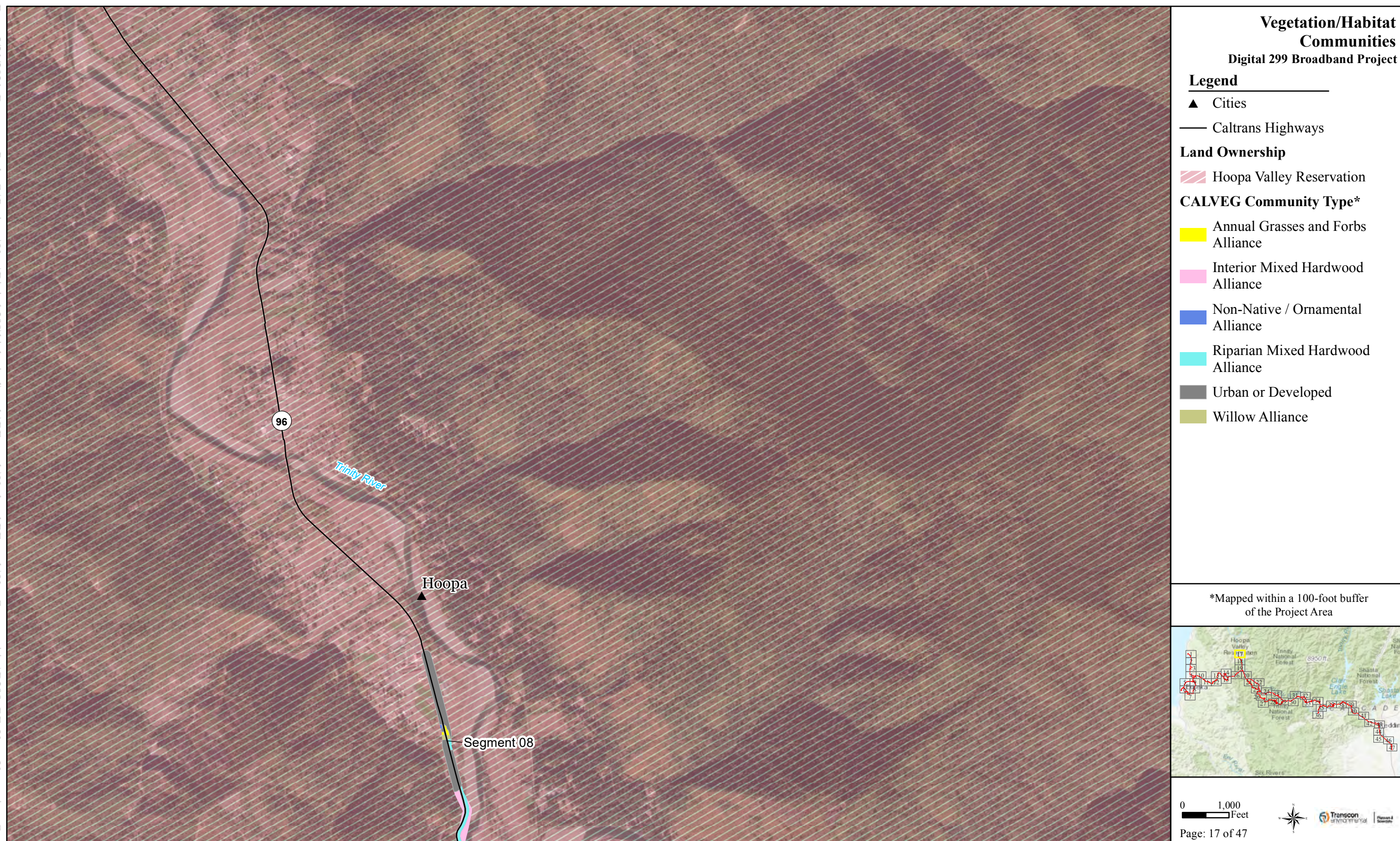
- Barren
- Pacific Douglas-Fir Alliance
- Urban or Developed
- Water

*Mapped within a 100-foot buffer of the Project Area

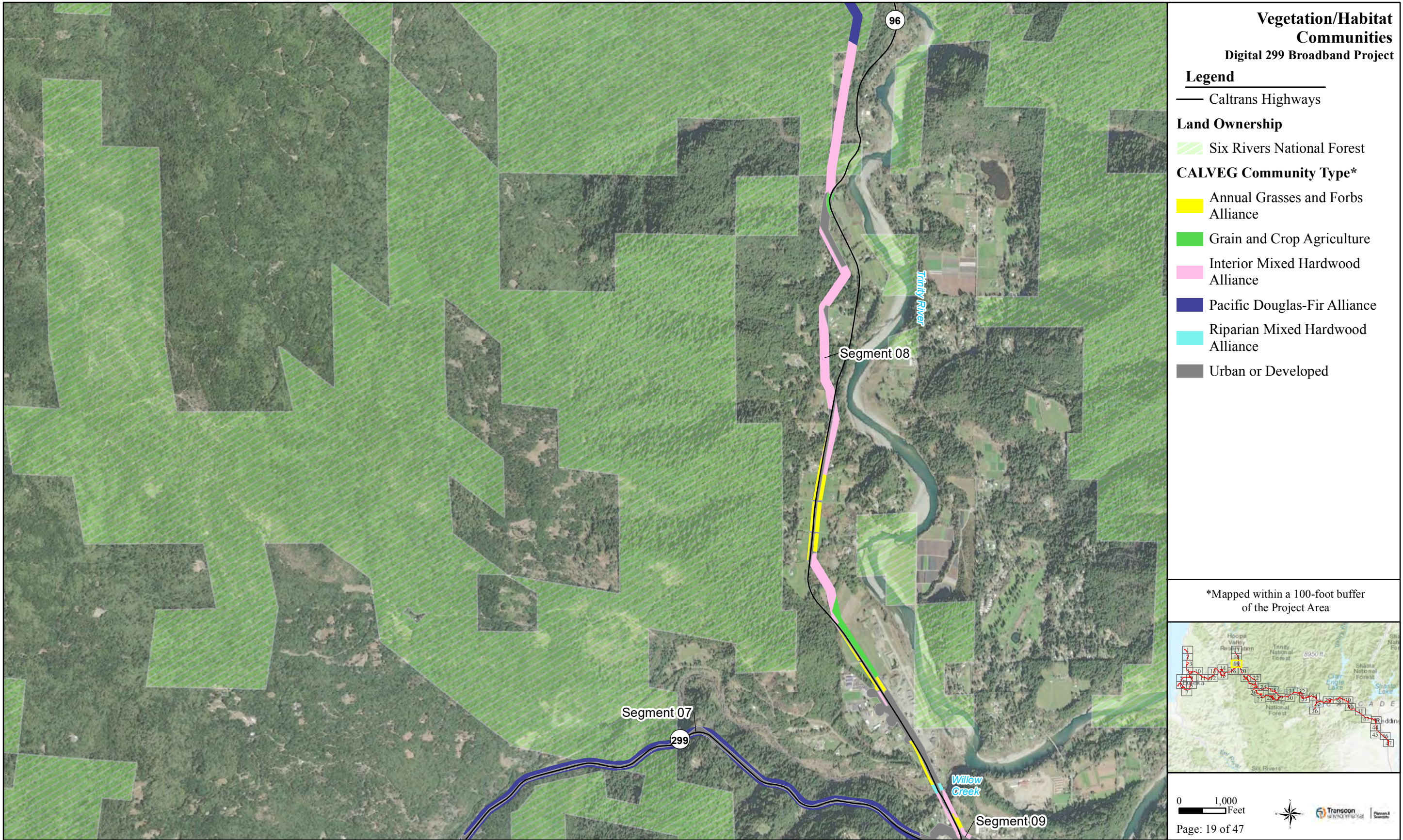
0 1,000 Feet

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Transcon Environmental Sciences









Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Six Rivers National Forest

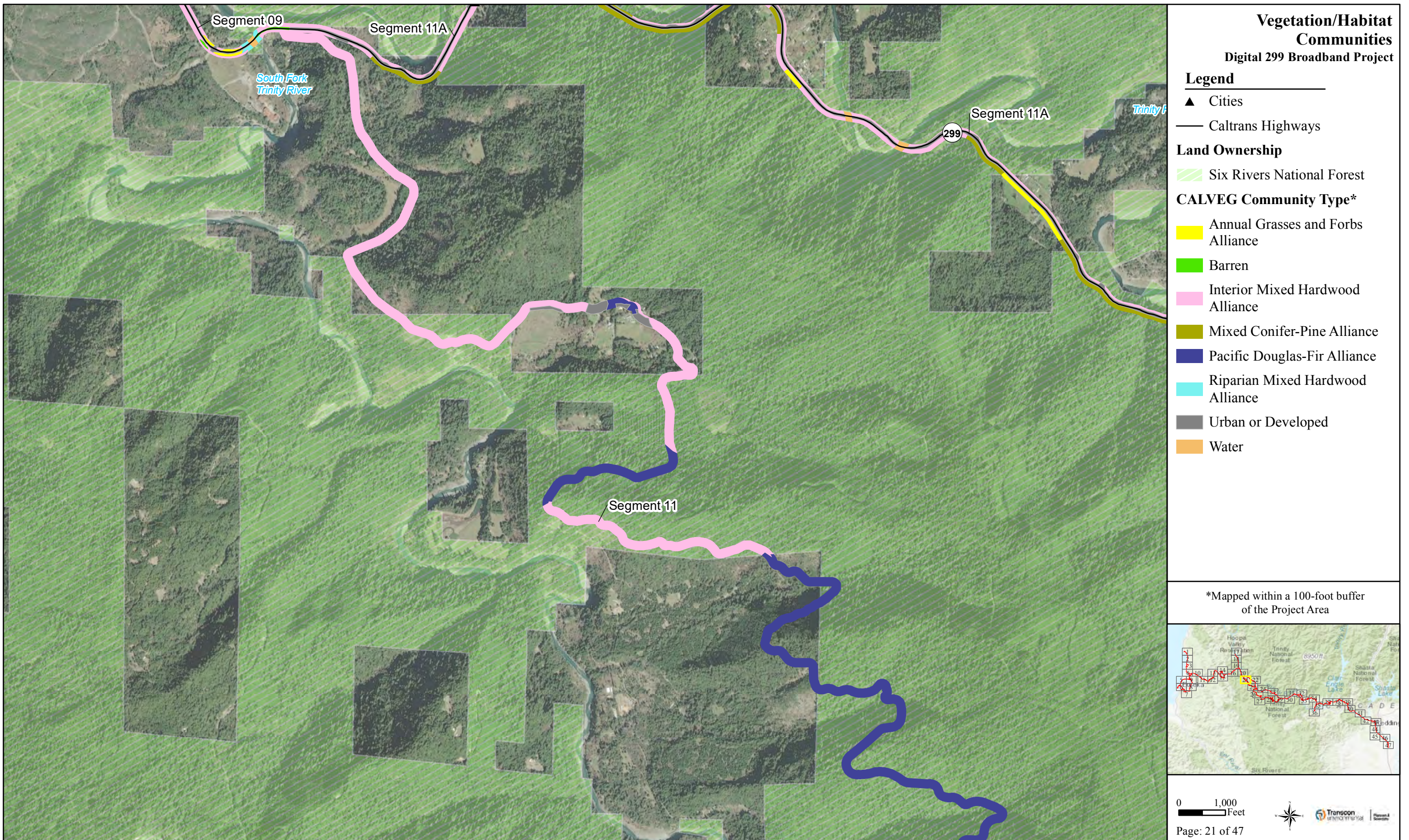
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Barren
- Interior Mixed Hardwood Alliance
- Mixed Conifer-Pine Alliance
- Pacific Douglas-Fir Alliance
- Urban or Developed

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership

Shasta-Trinity National Forest

Six Rivers National Forest

CALVEG Community Type*

Annual Grasses and Forbs Alliance

Barren

Interior Mixed Hardwood Alliance

Mixed Conifer-Pine Alliance

Non-Native / Invasive Forb And Grass Alliance

Urban or Developed

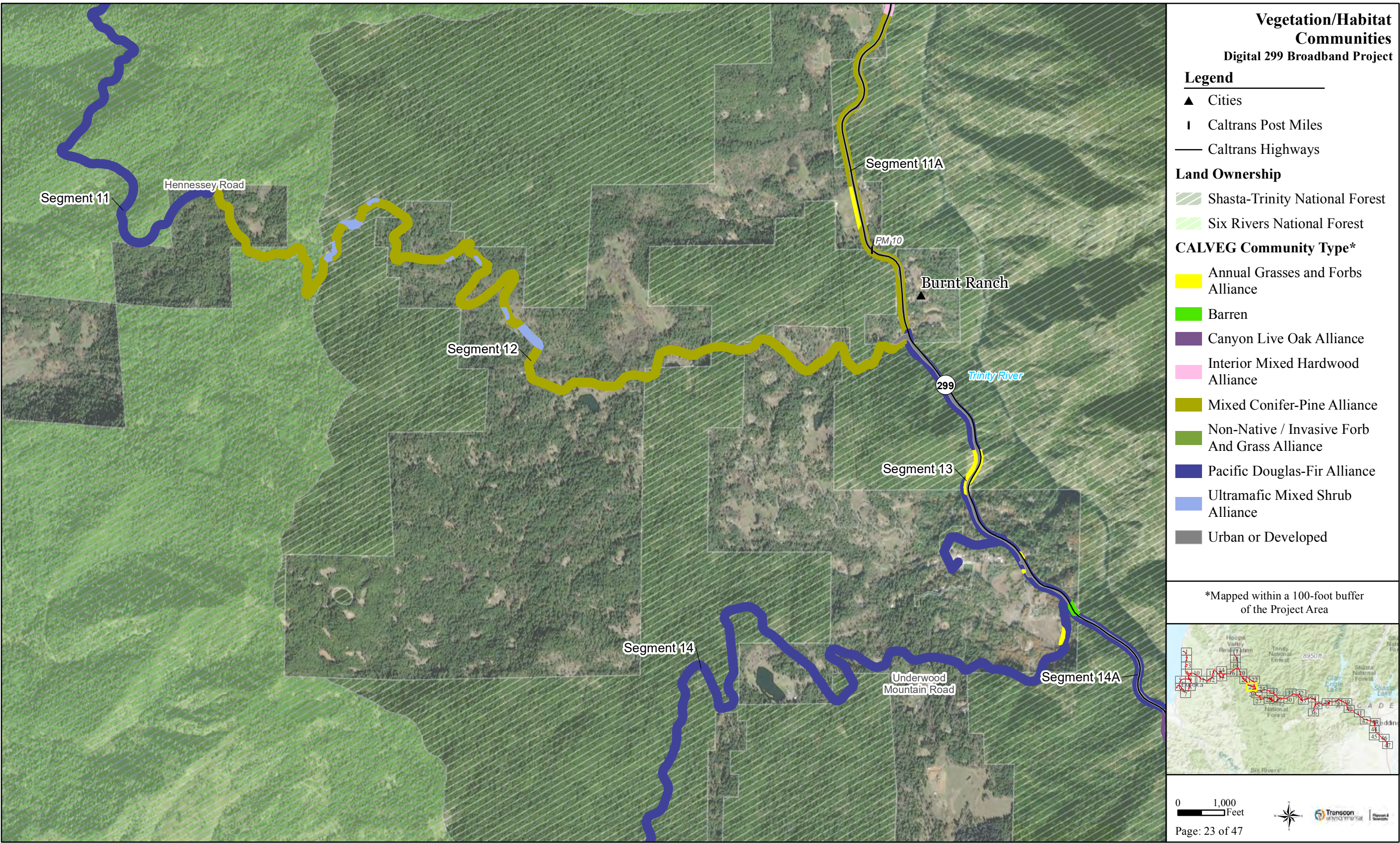
*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

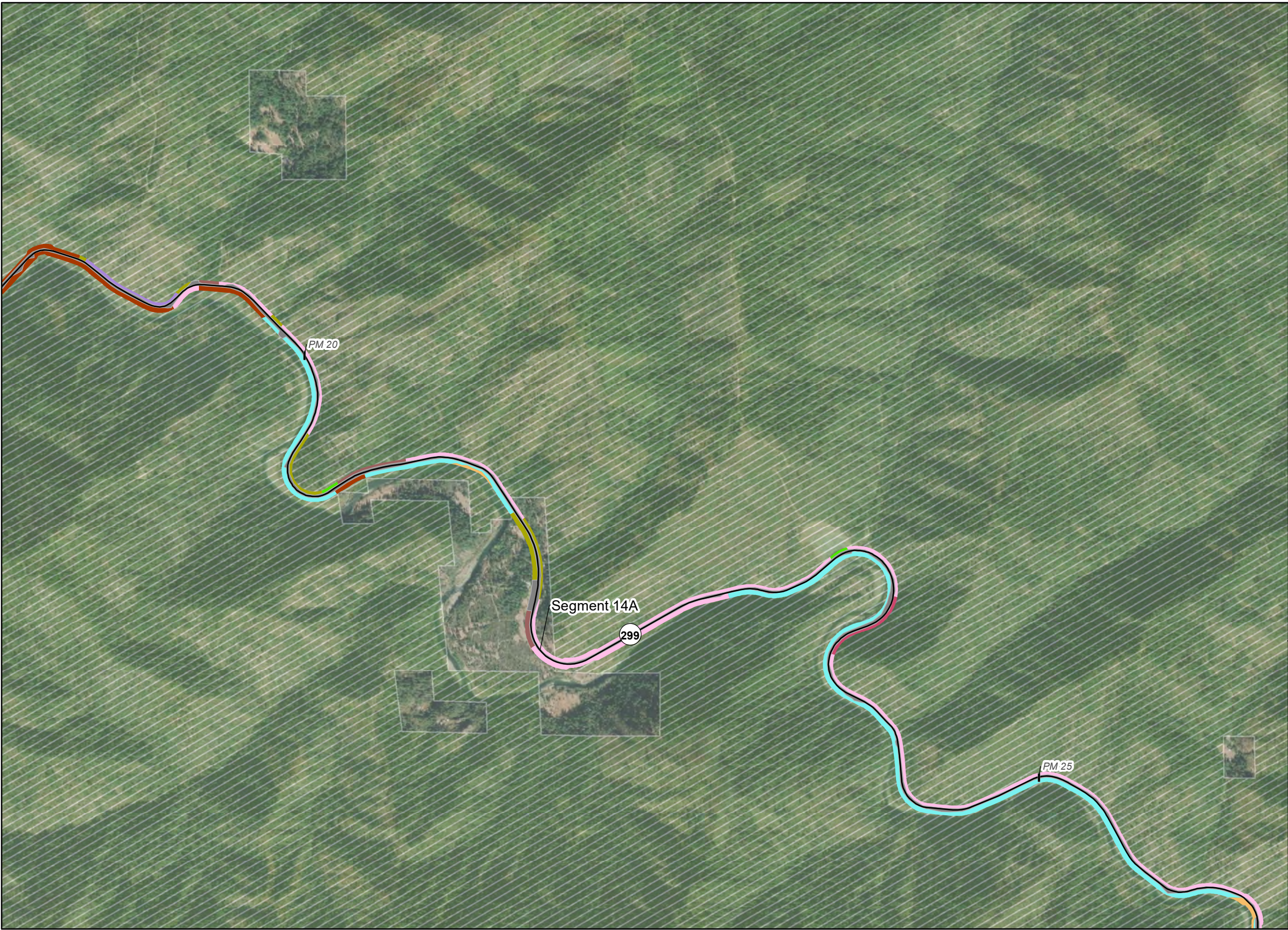
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Transcon ENVIRONMENTAL

DESIGN & CONSTRUCTION







Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Caltrans Post Miles

Caltrans Highways

Land Ownership

Shasta-Trinity National Forest

CALVEG Community Type*

Barren

Douglas-Fir - Pine Alliance

Gray Pine Alliance

Interior Mixed Hardwood Alliance

Manzanita Alliance

Mixed Conifer-Pine Alliance

Ponderosa Pine Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

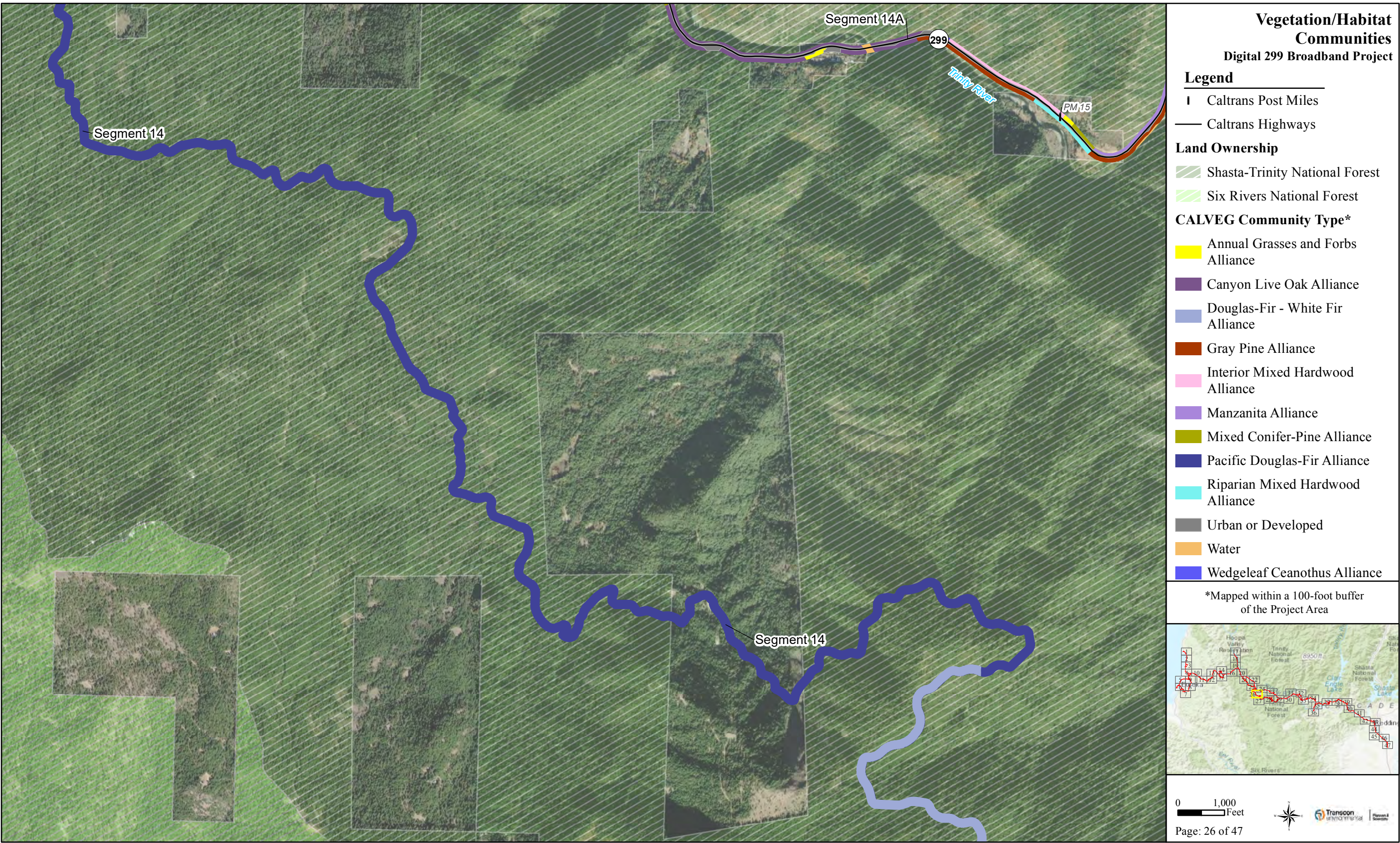
Water

*Mapped within a 100-foot buffer of the Project Area

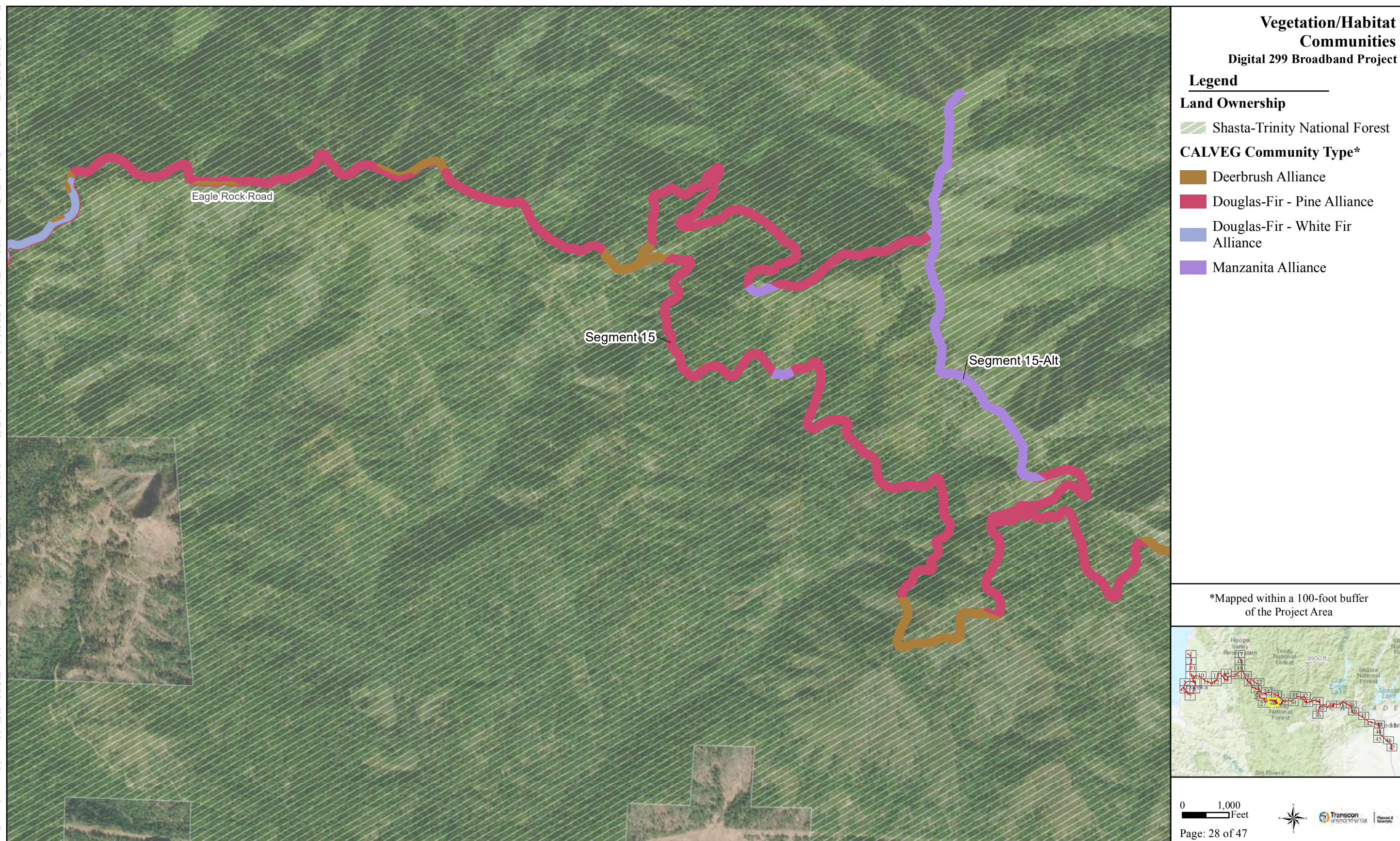
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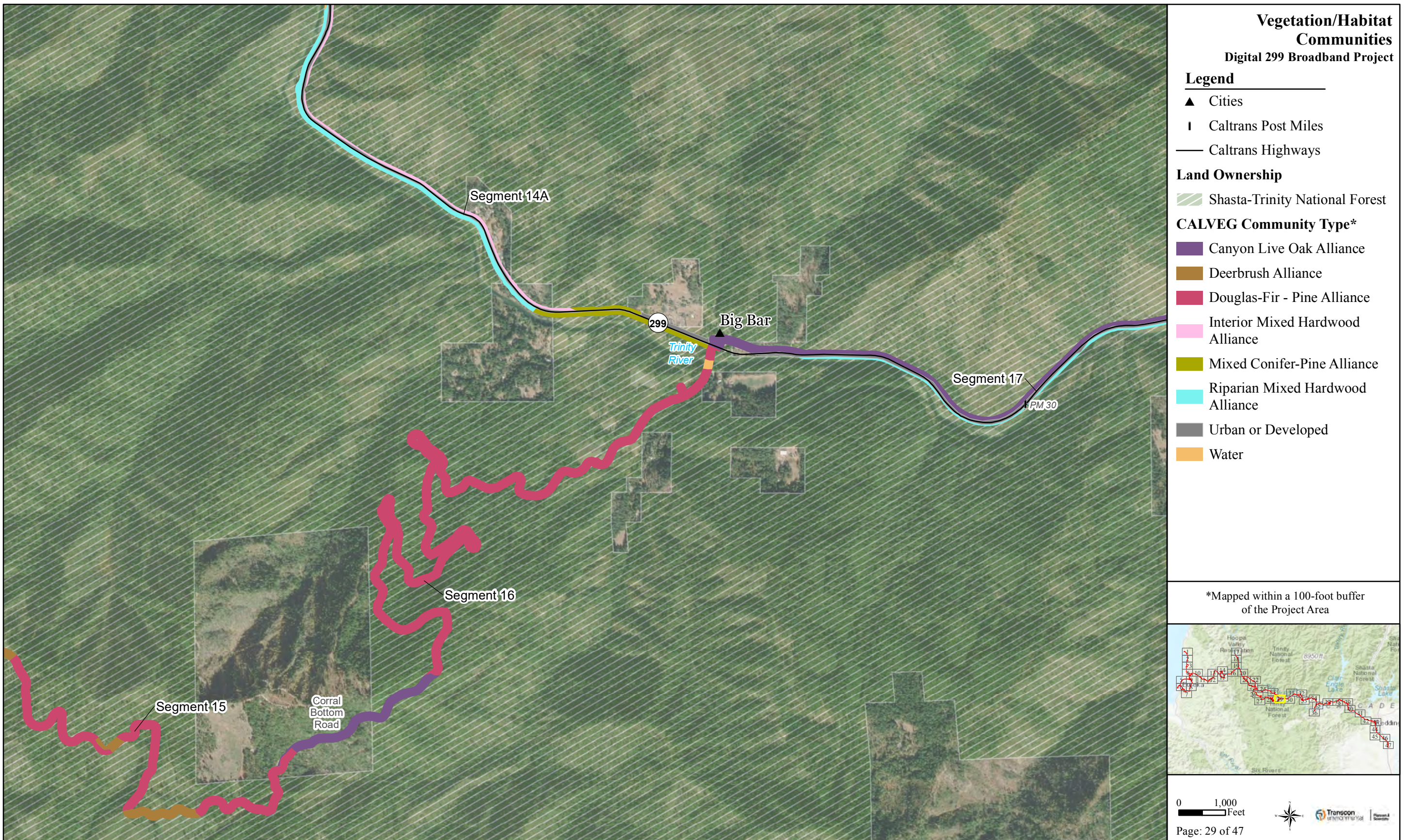
Feet

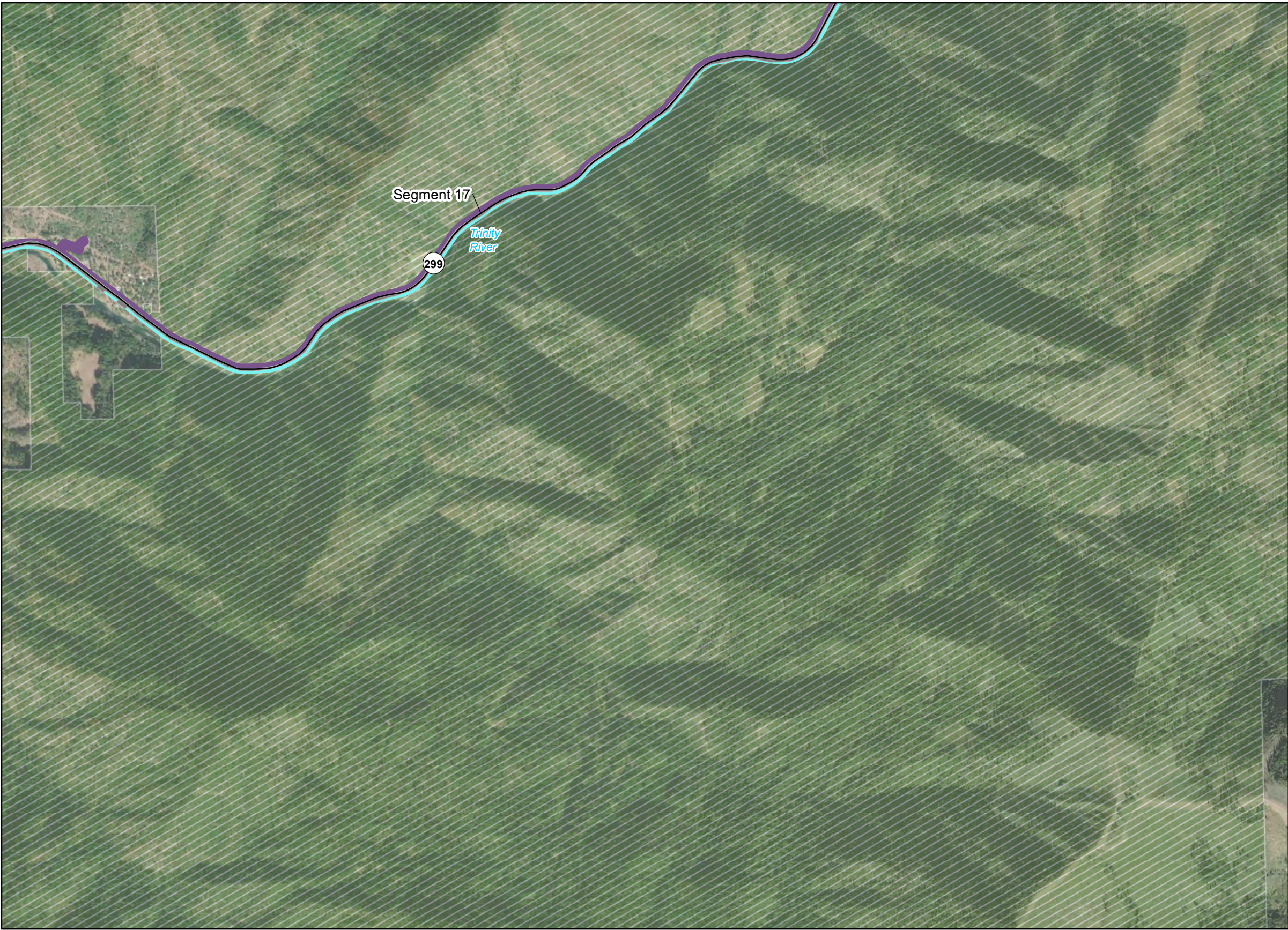
Page: 25 of 47











Vegetation/Habitat Communities
Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership
 Shasta-Trinity National Forest

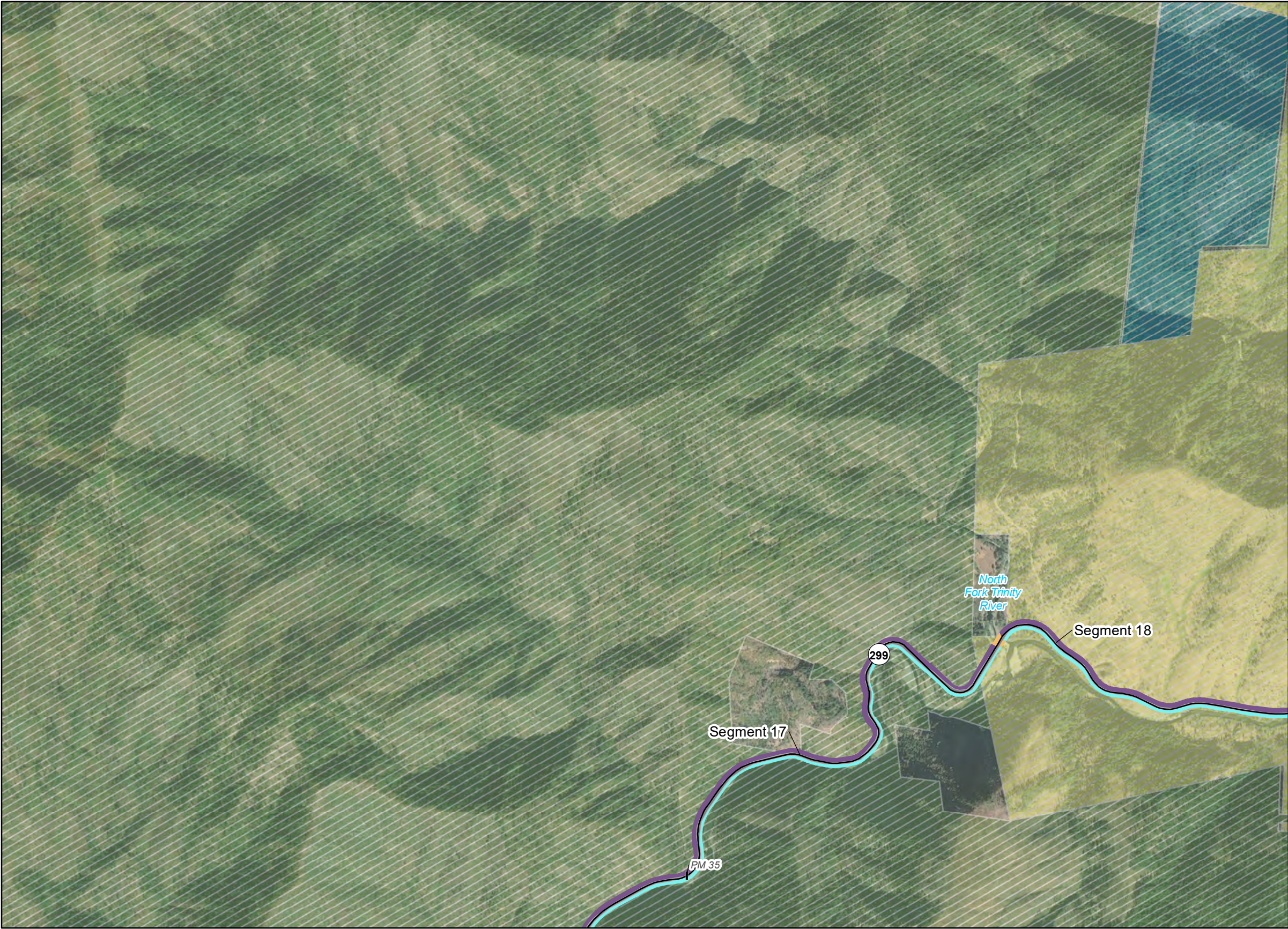
CALVEG Community Type*
 Canyon Live Oak Alliance
 Riparian Mixed Hardwood Alliance
 Urban or Developed

***Mapped within a 100-foot buffer of the Project Area**

01,000
Feet

Page: 30 of 47

Transcon
ENVIRONMENTAL



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest
- State Lands

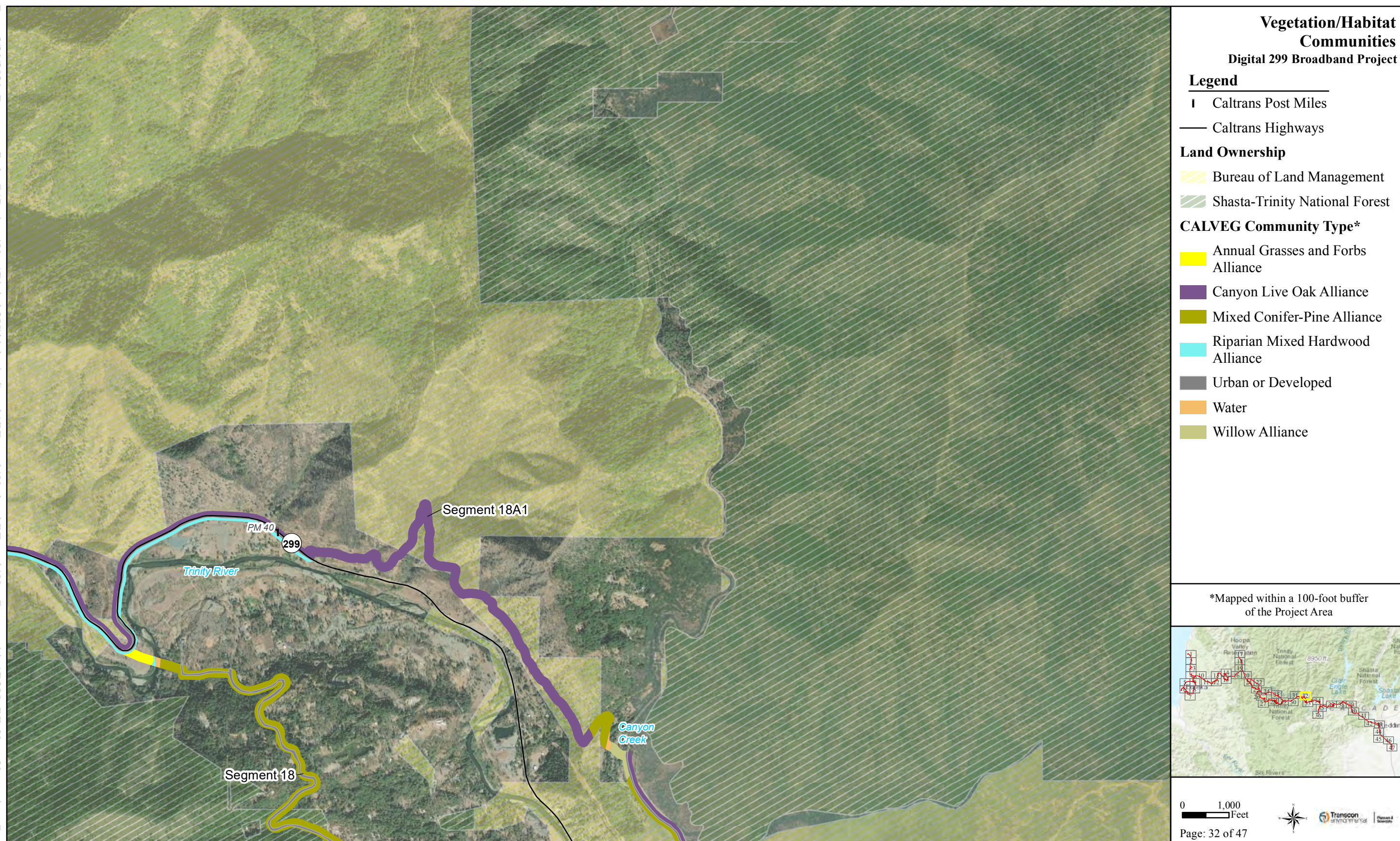
CALVEG Community Type*

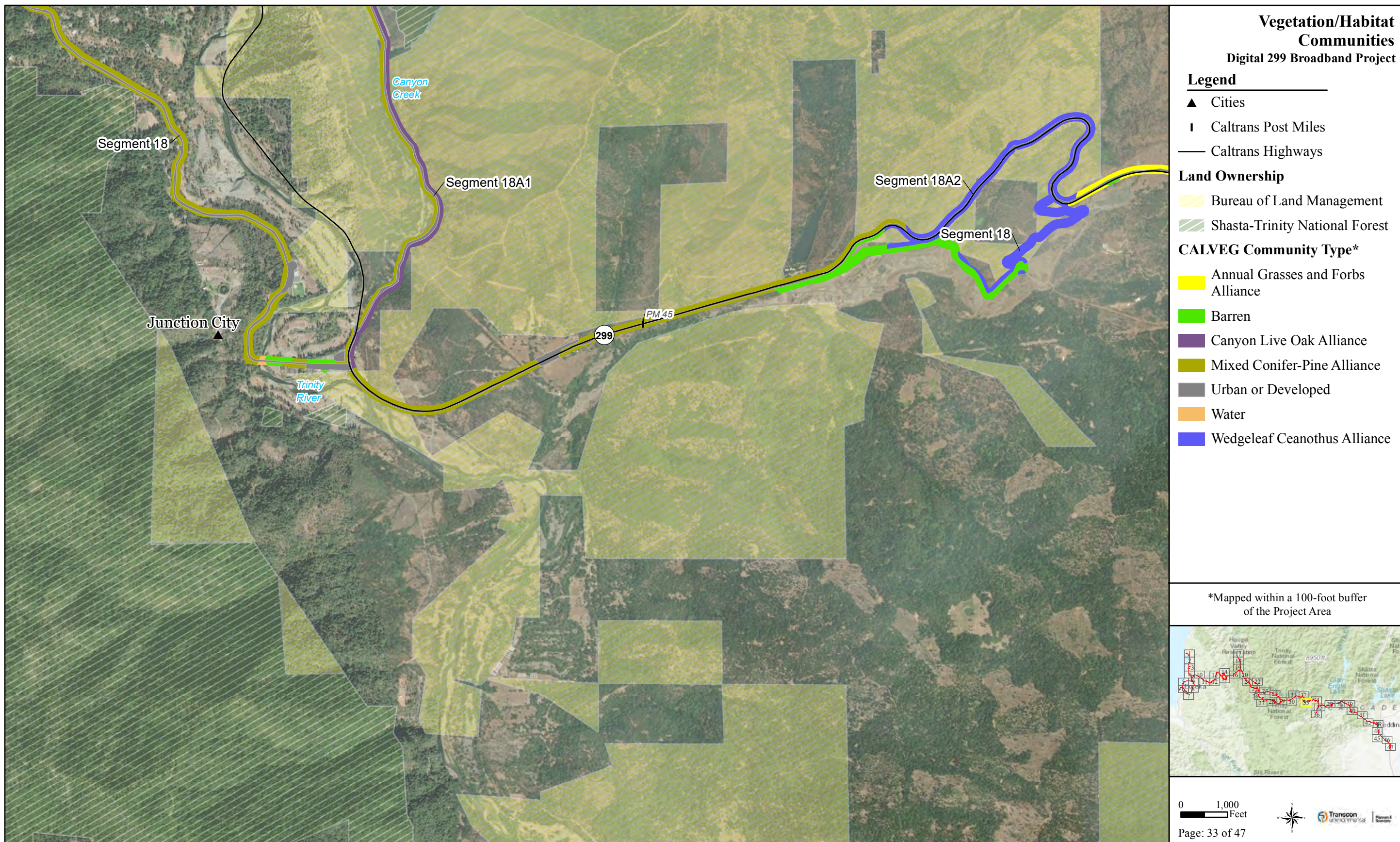
- Canyon Live Oak Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Water

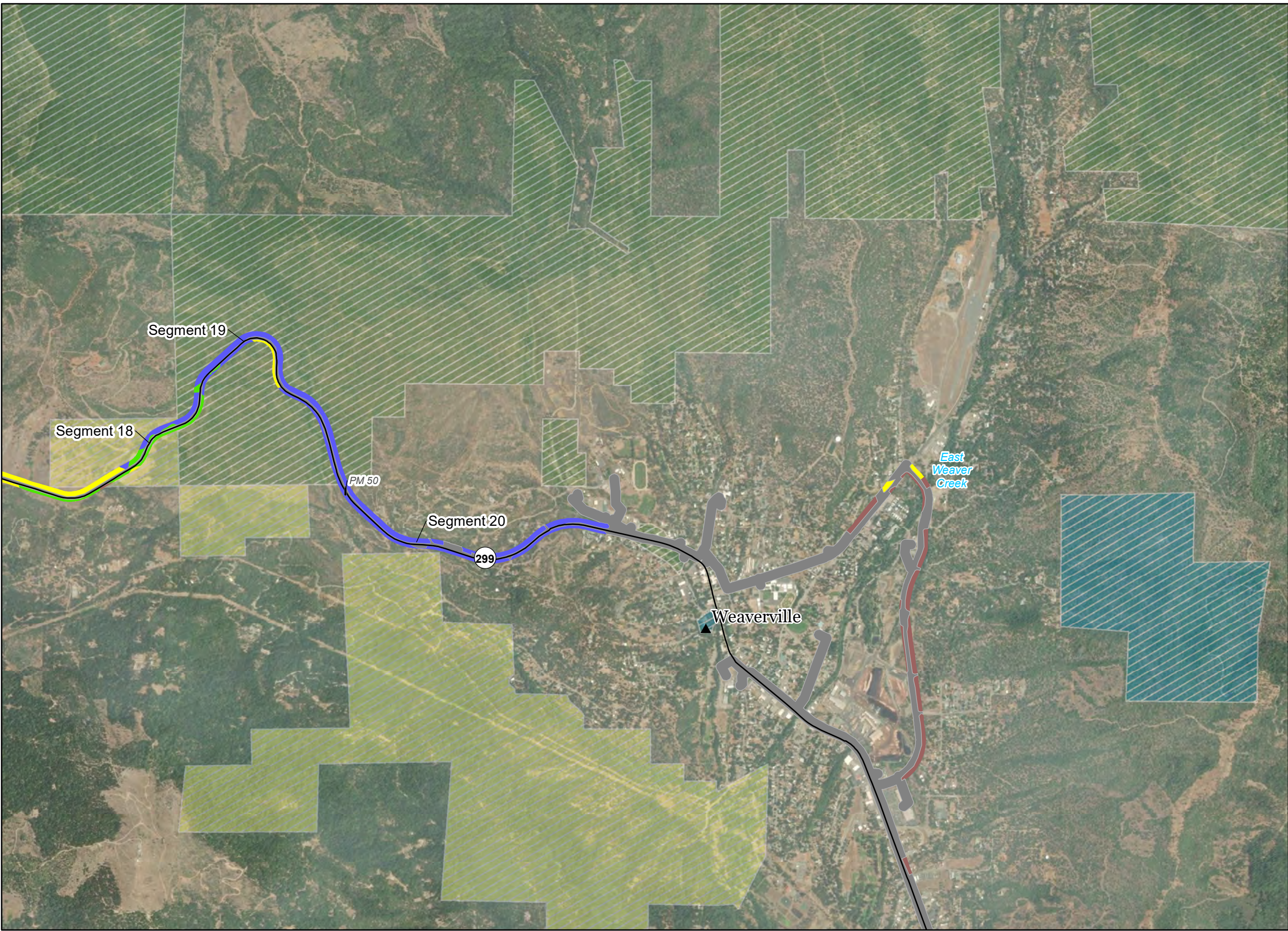
*Mapped within a 100-foot buffer of the Project Area

01,000Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest
- State Lands

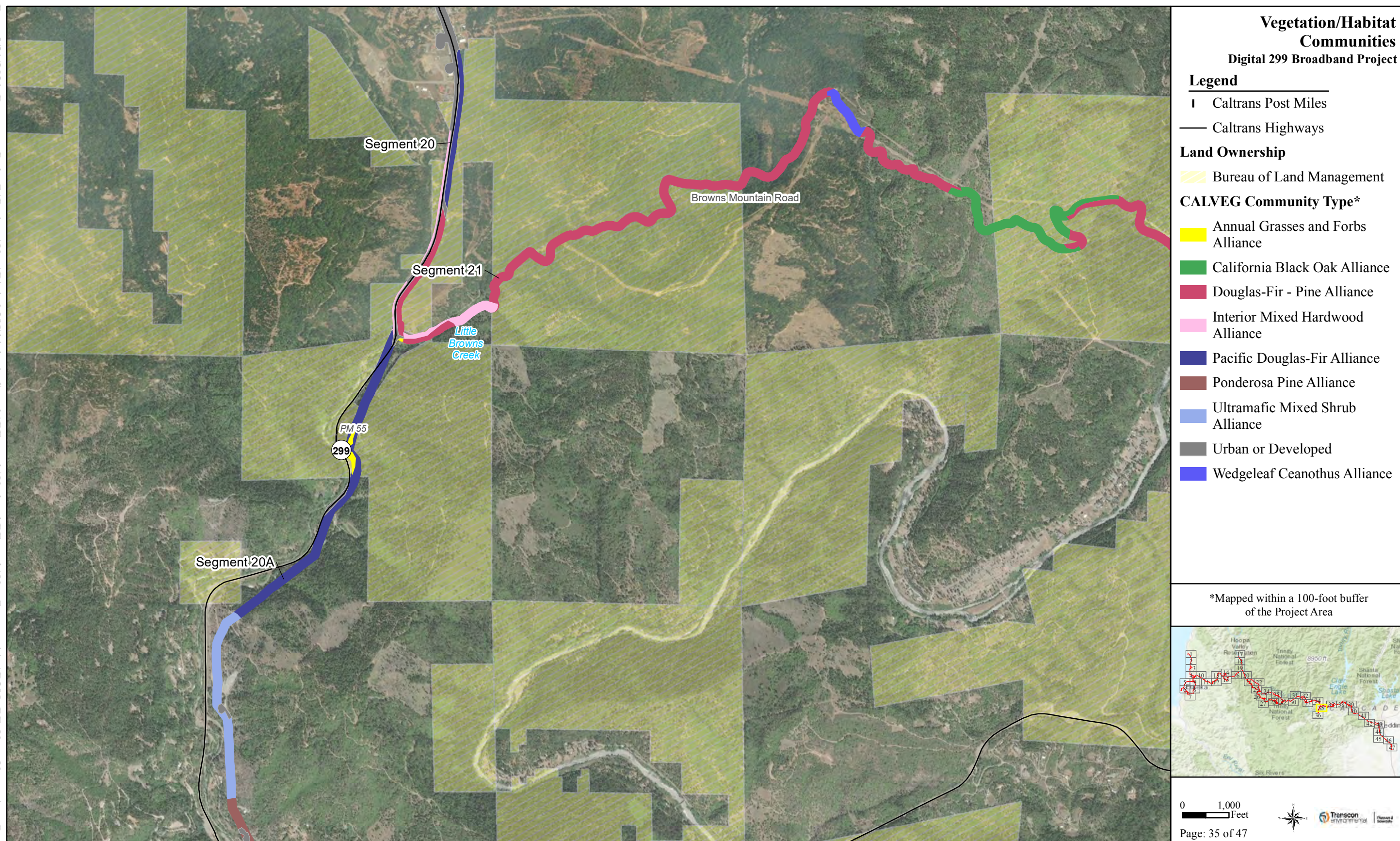
CALVEG Community Type*

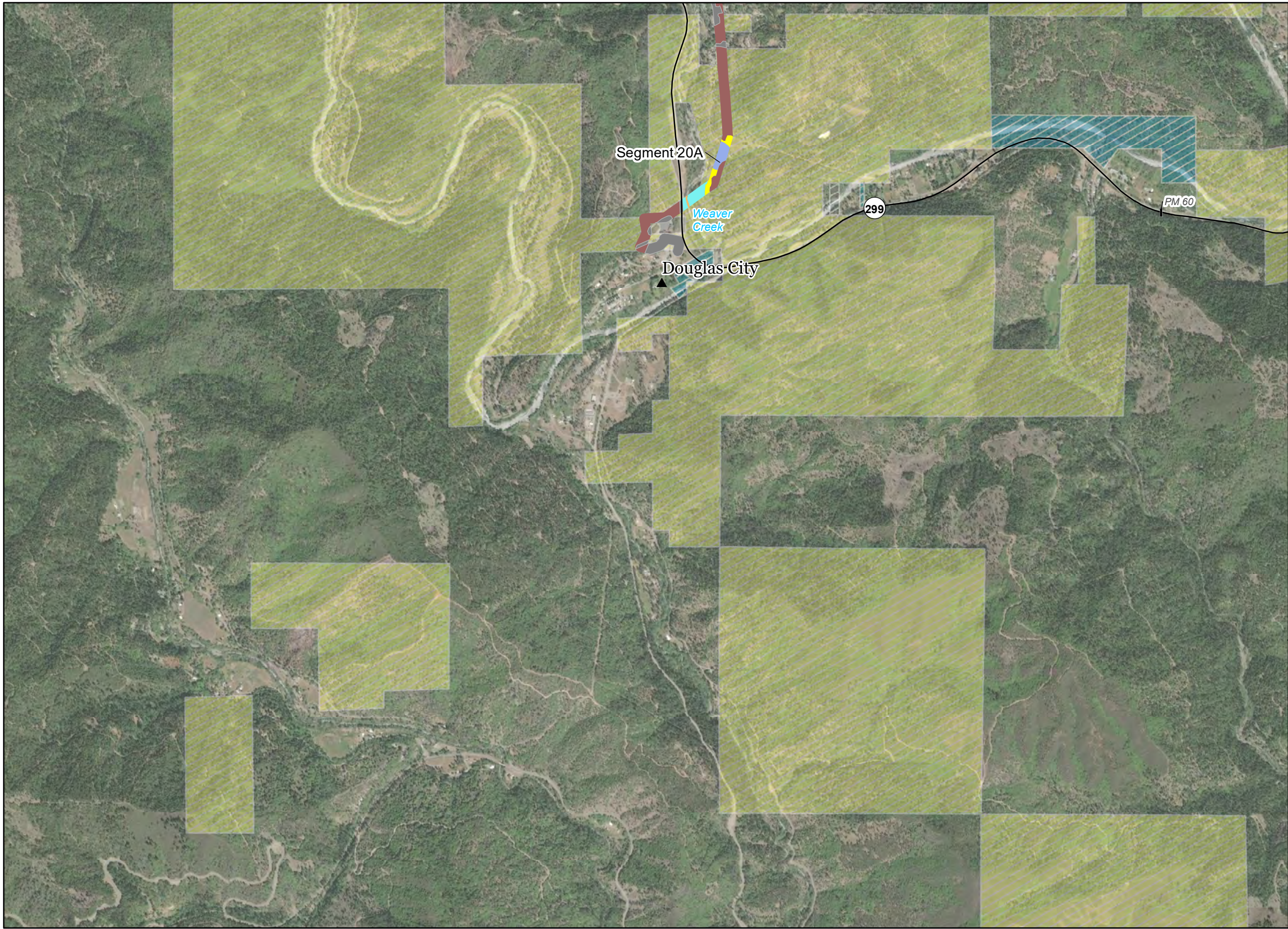
- Annual Grasses and Forbs Alliance
- Barren
- Ponderosa Pine Alliance
- Urban or Developed
- Wedgeleaf Ceanothus Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- State Lands

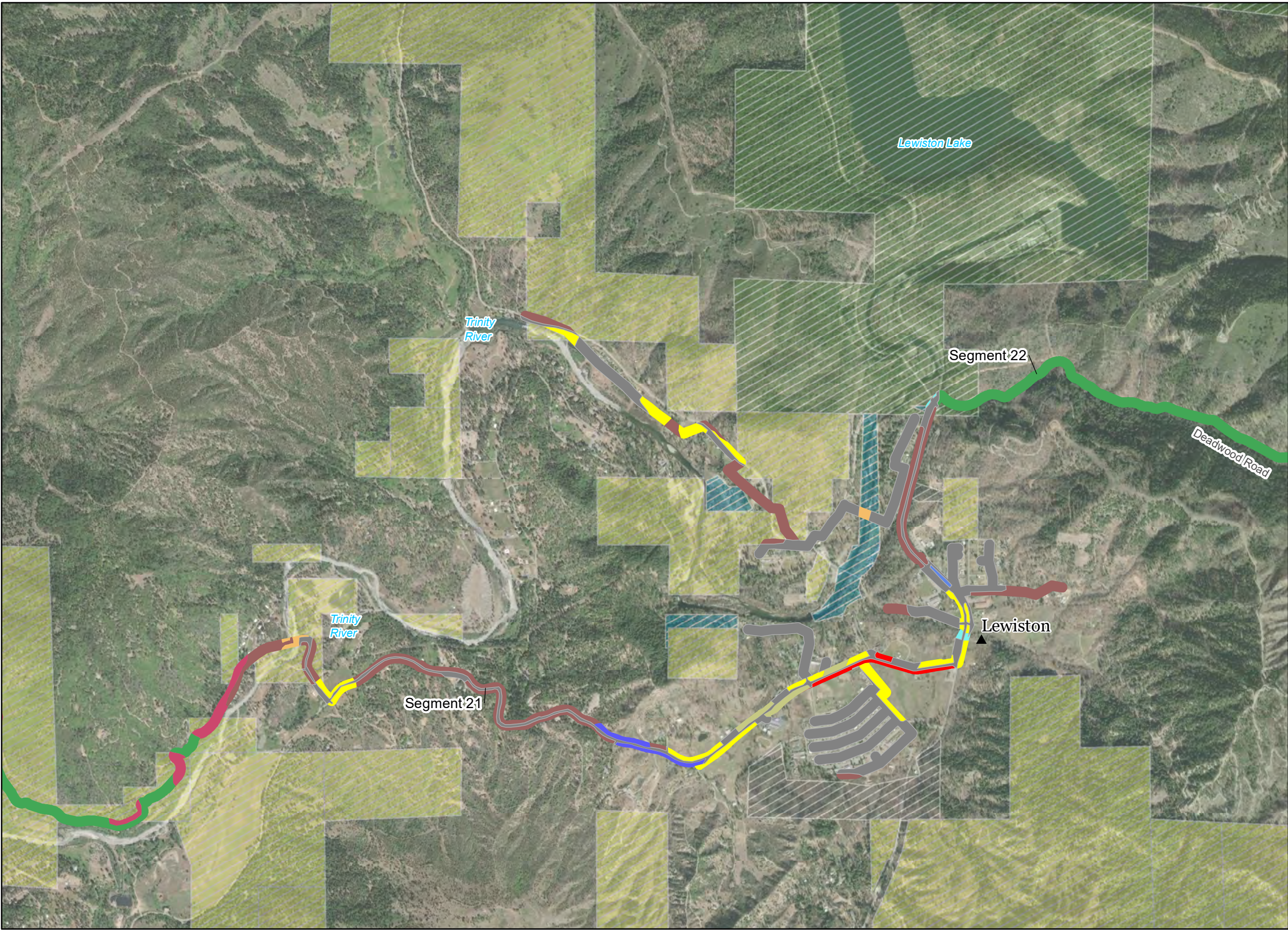
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Ponderosa Pine Alliance
- Riparian Mixed Hardwood Alliance
- Ultramafic Mixed Shrub Alliance
- Urban or Developed
- Water

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

▲ Cities

Land Ownership

Bureau of Land Management

Bureau of Reclamation

Shasta-Trinity National Forest

State Lands

CALVEG Community Type*

Agriculture

Annual Grasses and Forbs Alliance

California Black Oak Alliance

Douglas-Fir - Pine Alliance

Non-Native / Ornamental Alliance

Ponderosa Pine Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

Water

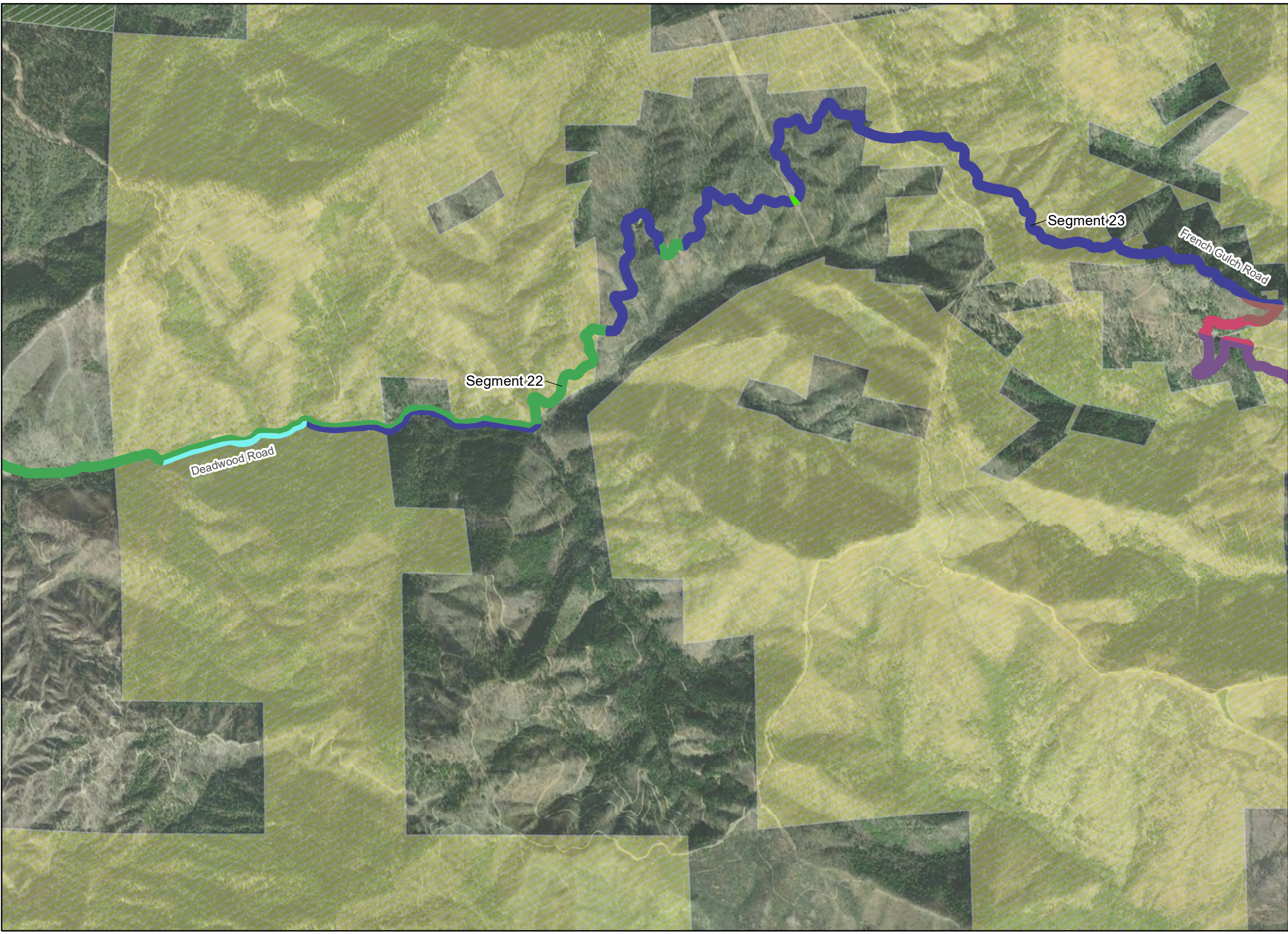
Wedgeleaf Ceanothus Alliance

Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest

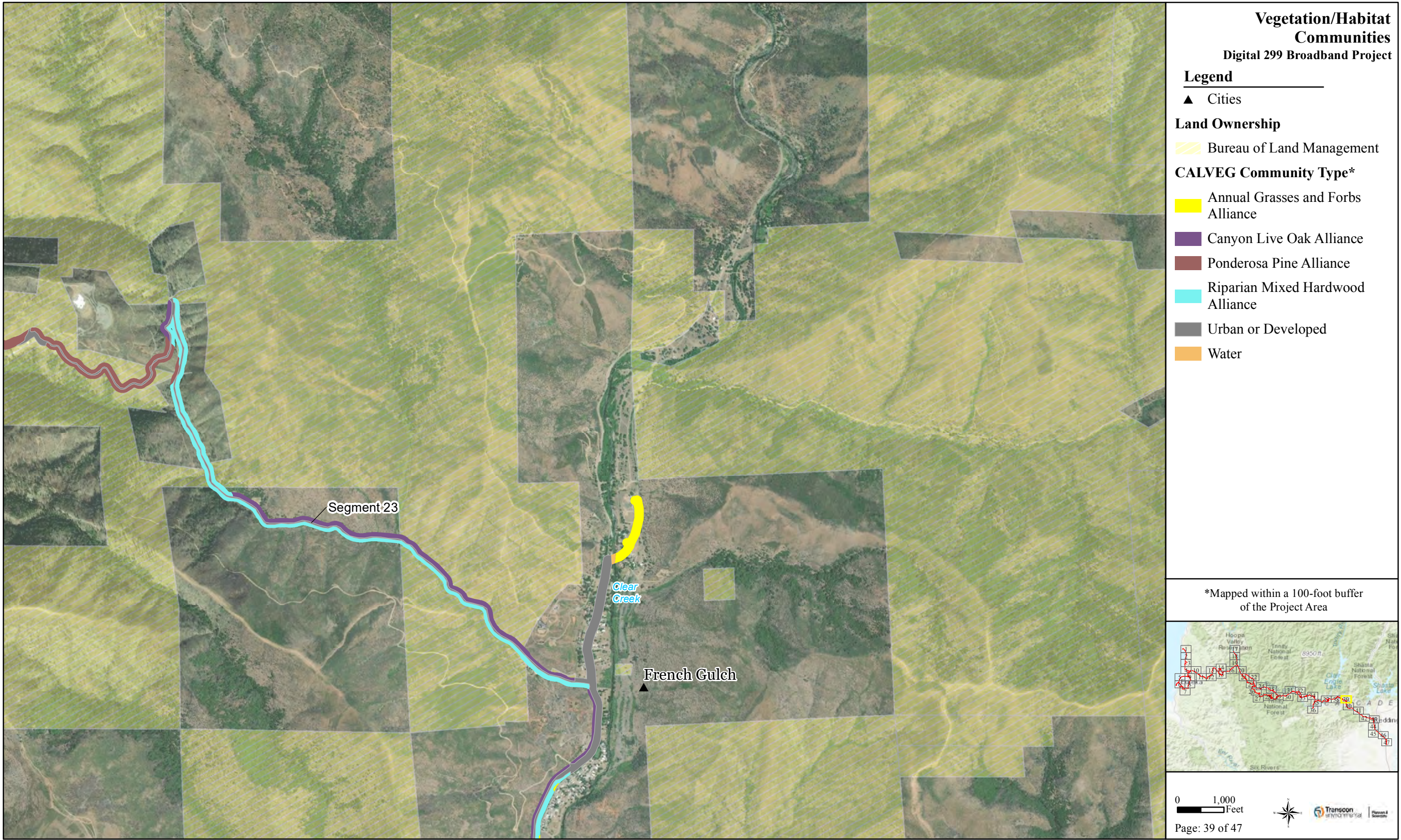
CALVEG Community Type*

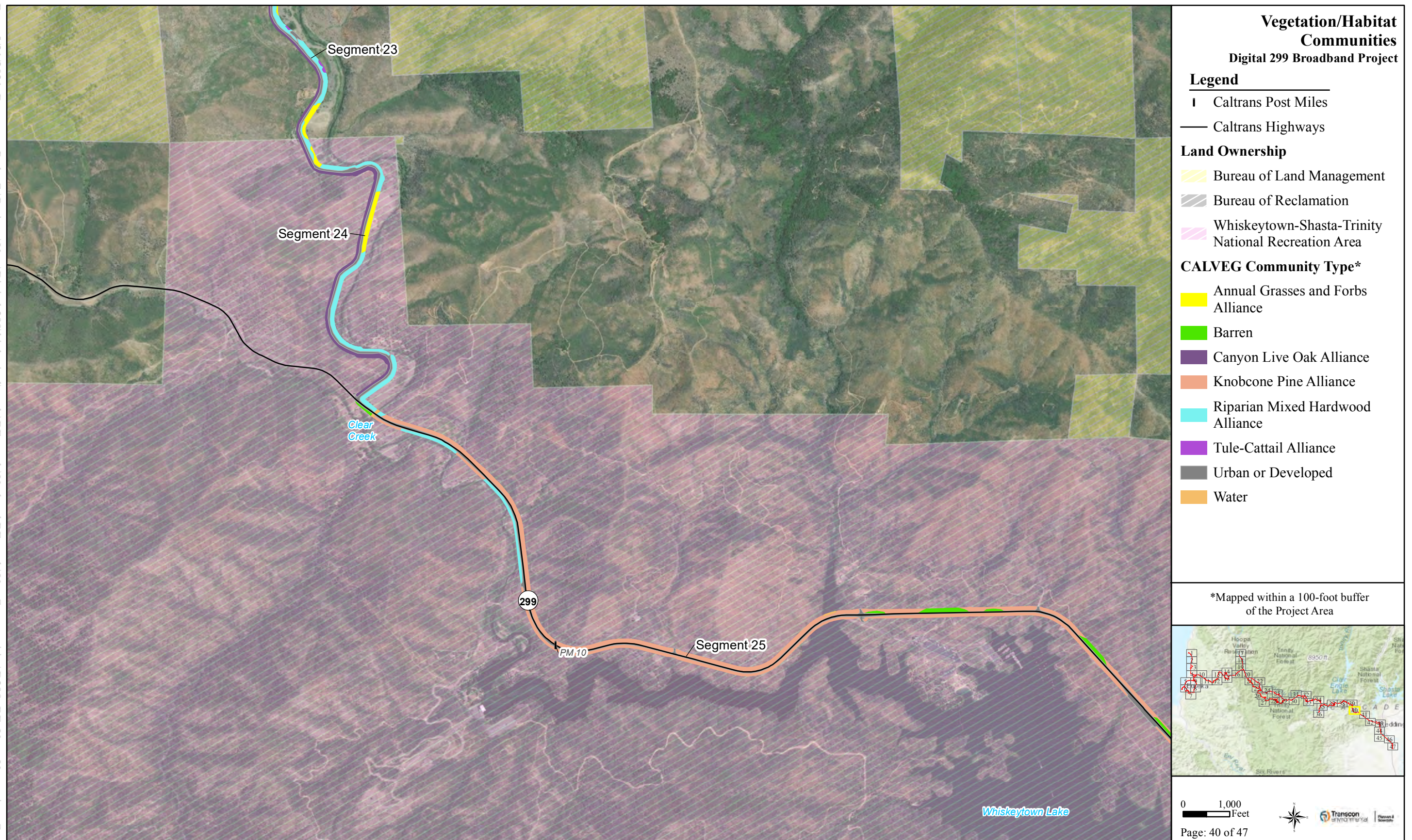
- Barren
- California Black Oak Alliance
- Canyon Live Oak Alliance
- Douglas-Fir - Pine Alliance
- Pacific Douglas-Fir Alliance
- Ponderosa Pine Alliance
- Riparian Mixed Hardwood Alliance

*Mapped within a 100-foot buffer of the Project Area

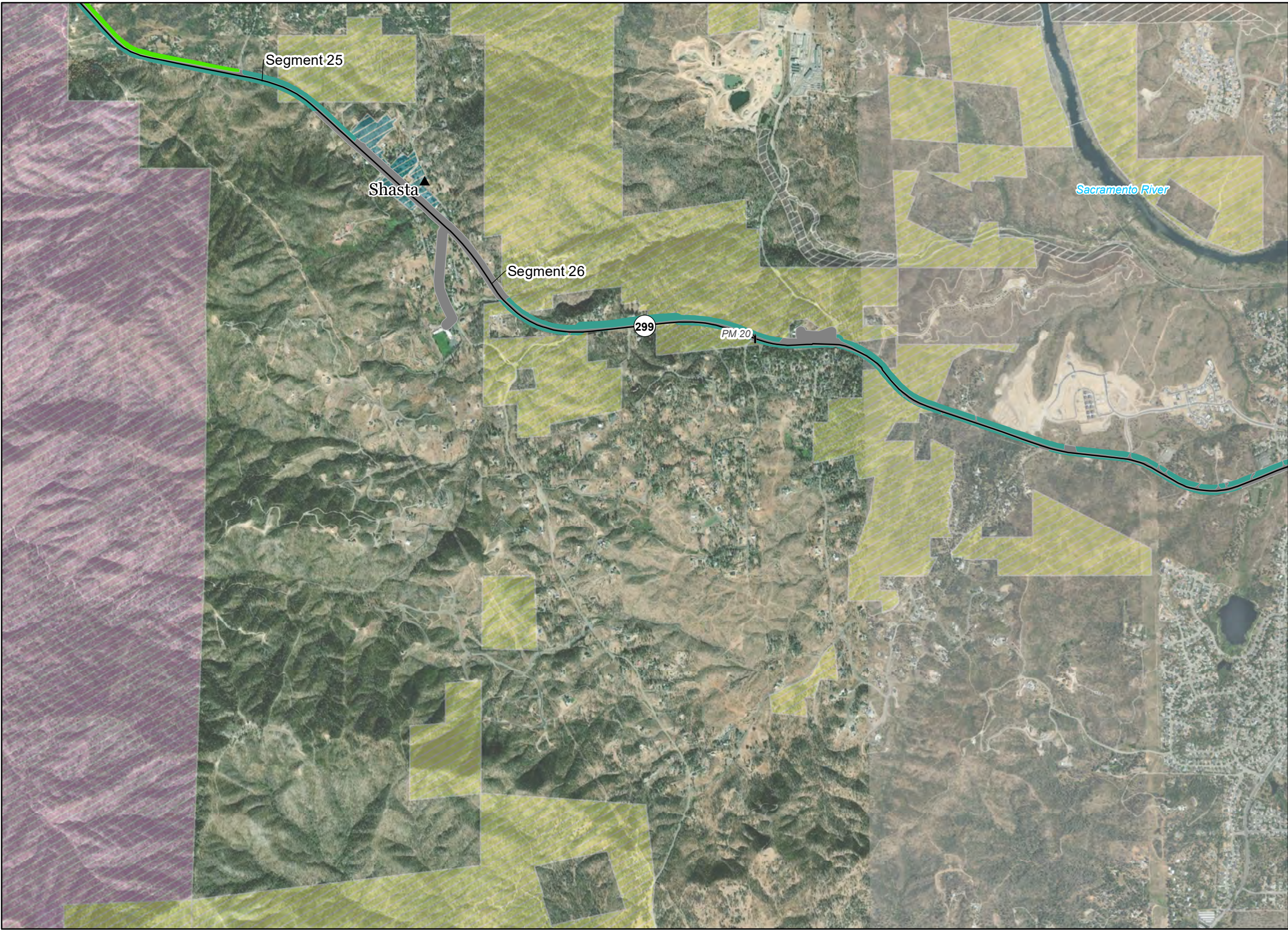
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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- State Lands
- Whiskeytown-Shasta-Trinity National Recreation Area

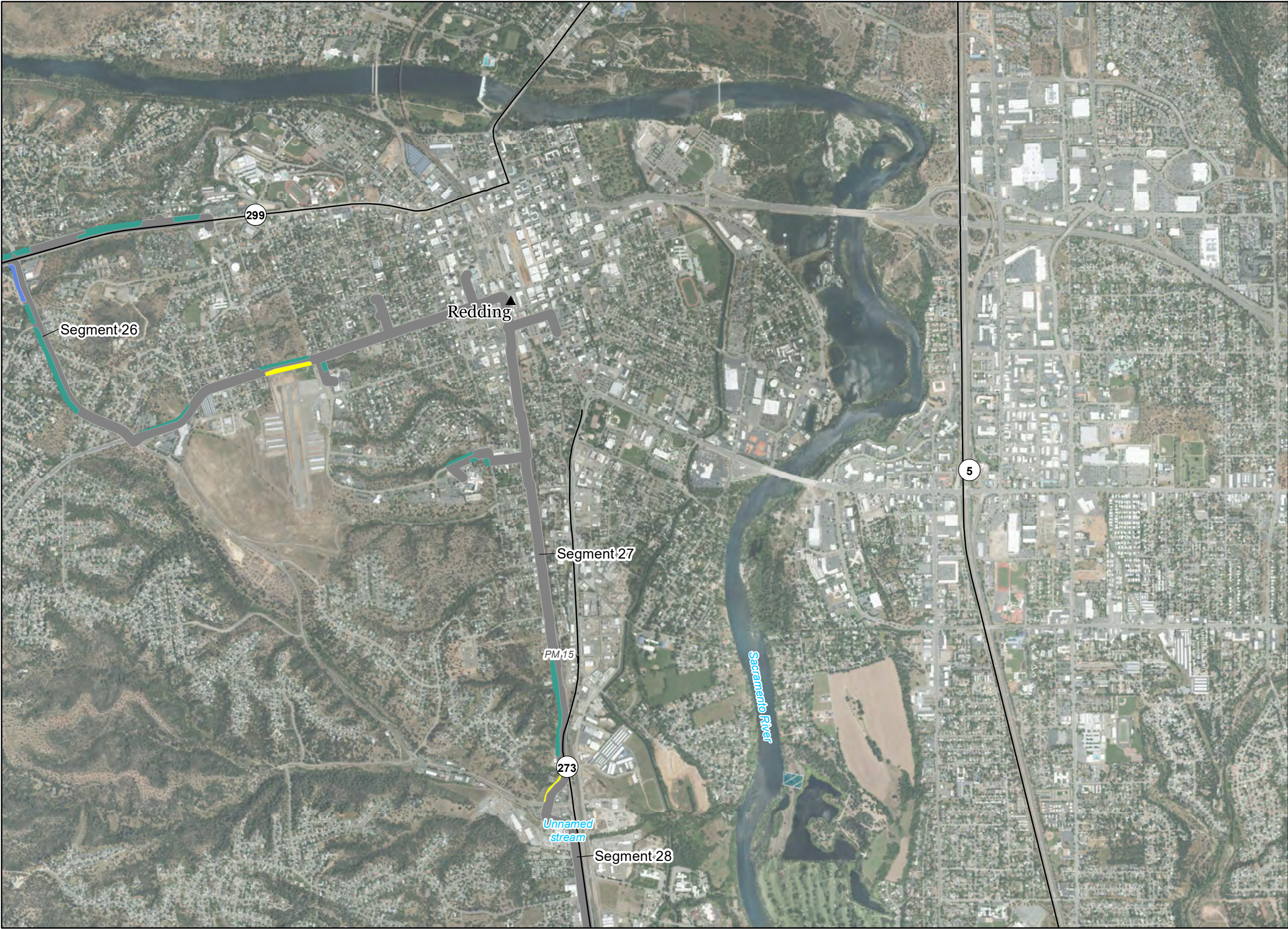
CALVEG Community Type*

- Barren
- Urban or Developed
- Valley Oak Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

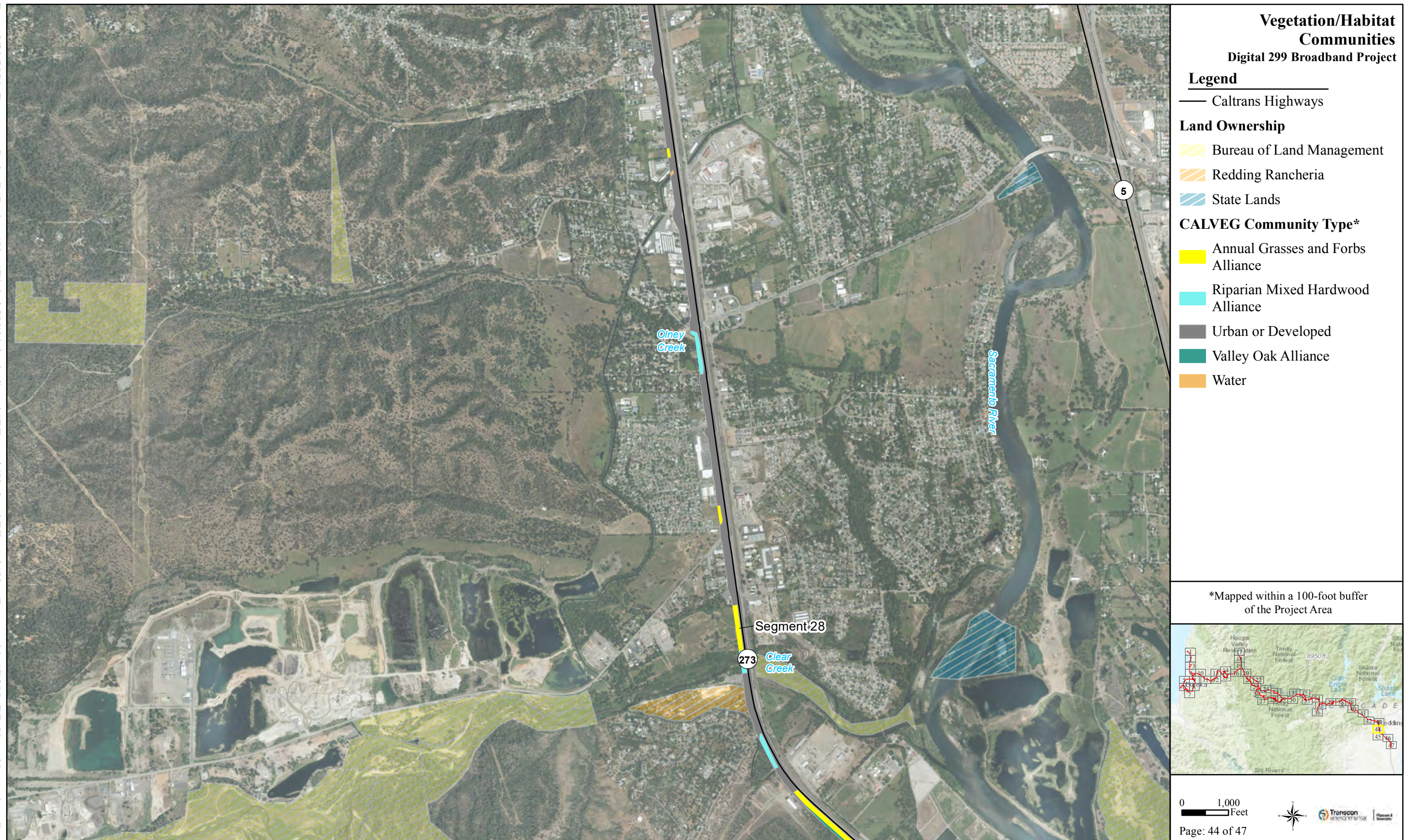
- Annual Grasses and Forbs Alliance
- Non-Native / Ornamental Alliance
- Urban or Developed
- Valley Oak Alliance

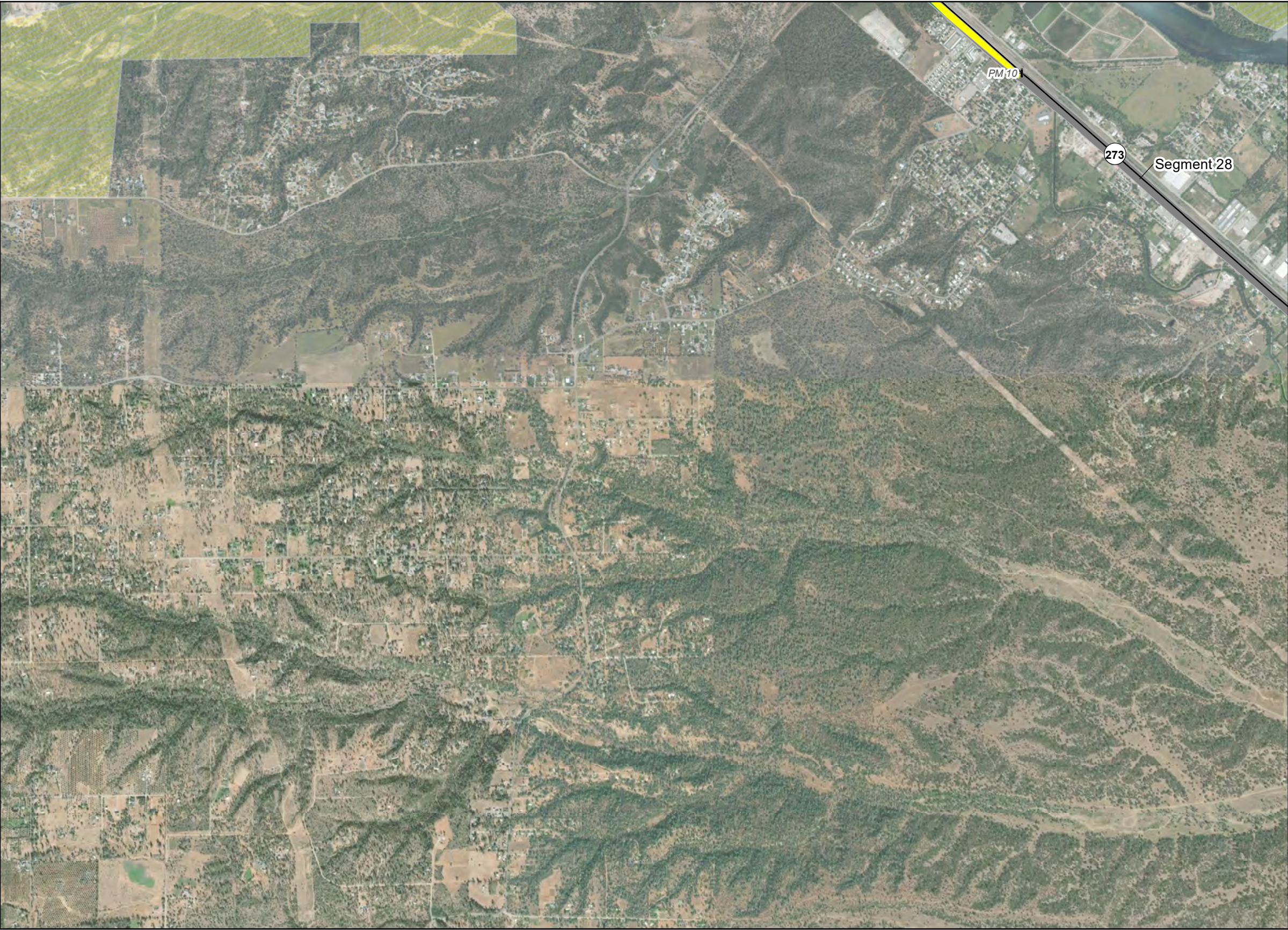
*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon ENVIRONMENTAL





Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

 Caltrans Post Miles

 Caltrans Highways

Land Ownership

 Bureau of Land Management

CALVEG Community Type*

 Annual Grasses and Forbs Alliance

 Urban or Developed

 Valley Oak Alliance

***Mapped within a 100-foot buffer of the Project Area**



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1,000

Feet







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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

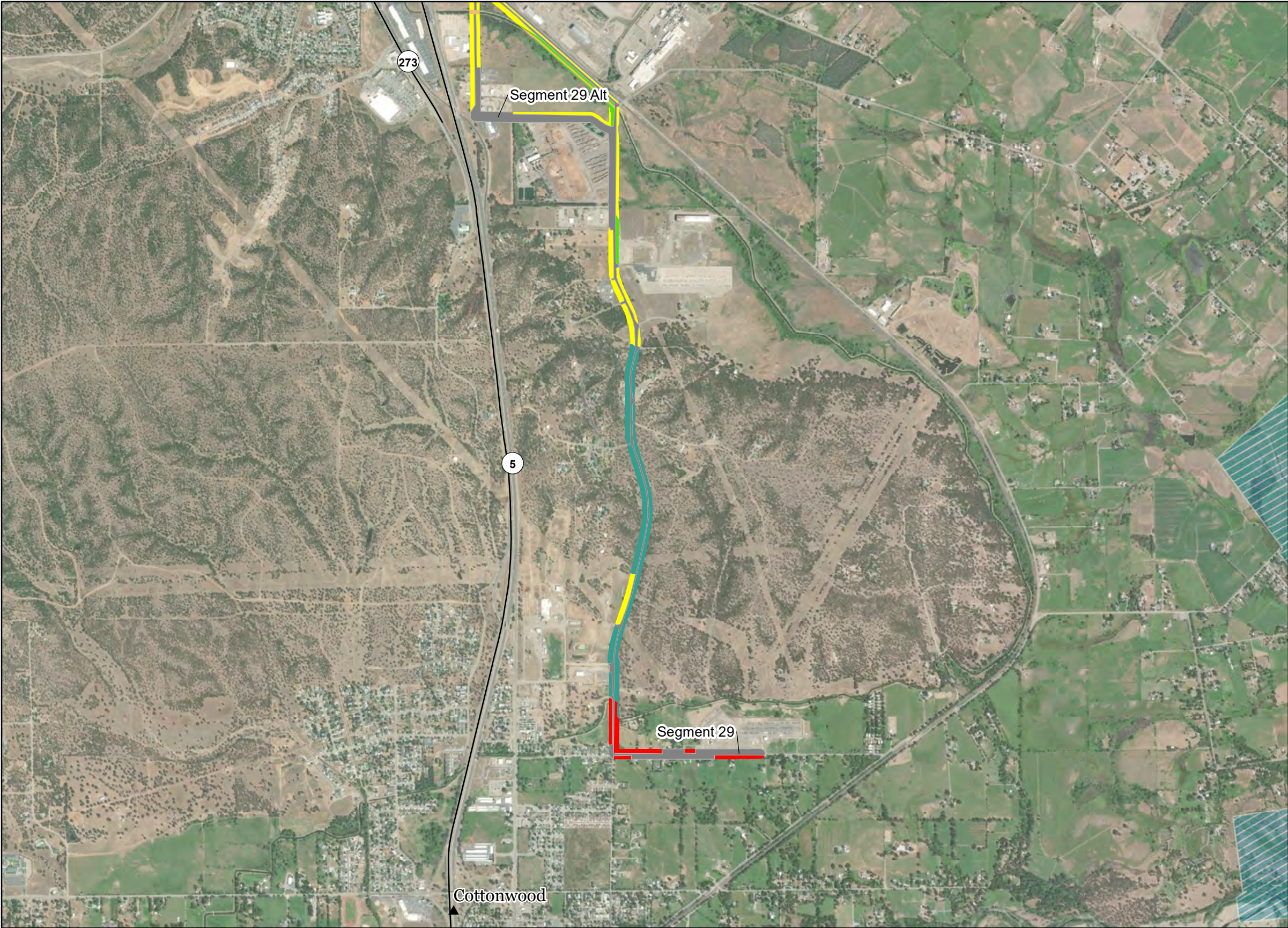
- Agriculture
- Agriculture - Pasture
- Annual Grasses and Forbs Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Valley Oak Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

- Agriculture
- Annual Grasses and Forbs Alliance
- Barren
- Urban or Developed
- Valley Oak Alliance
- Water

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Department of Defense
- State Lands
- Trinidad Rancheria

CALVEG Community Type*

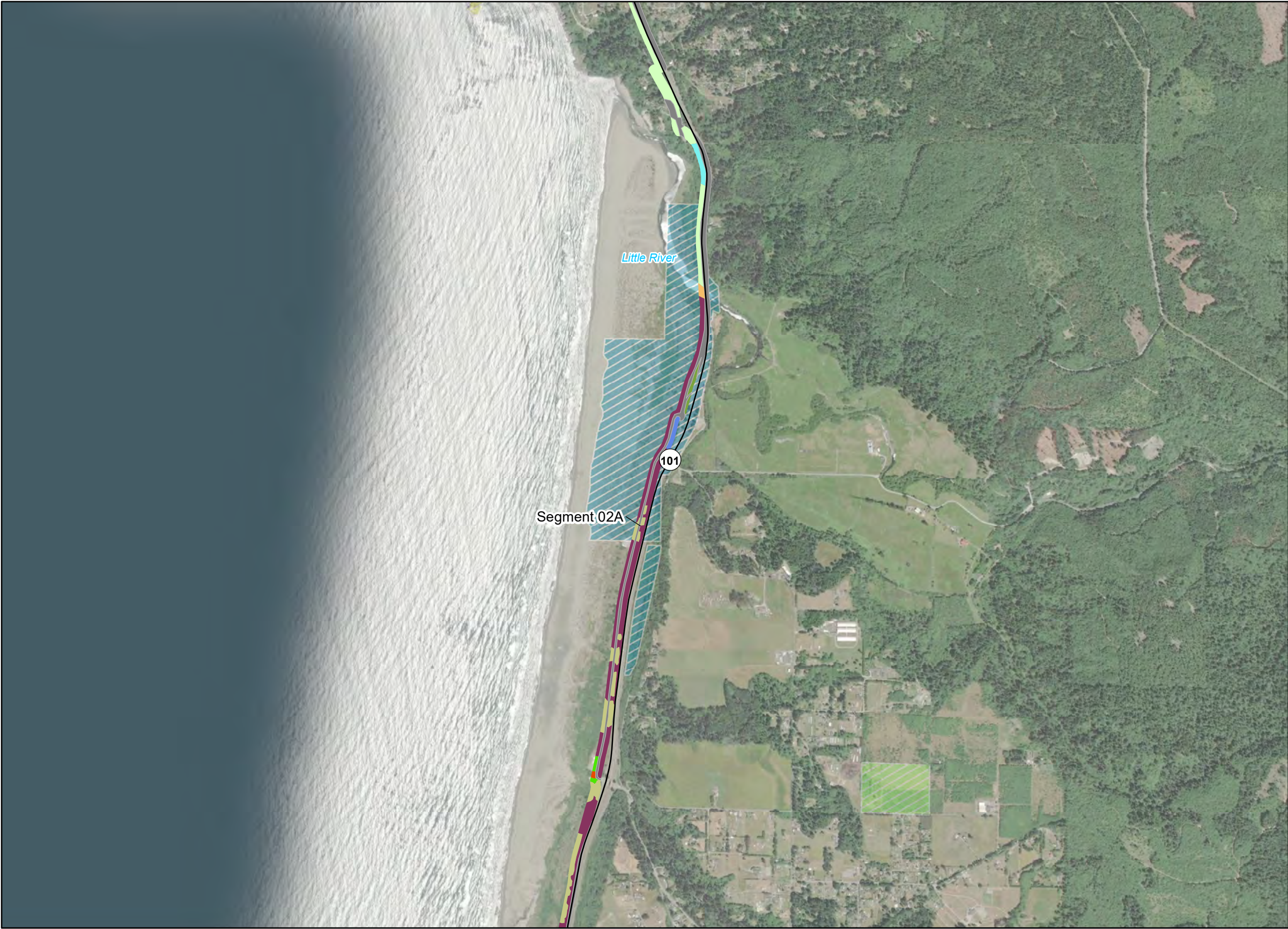
- Annual Grasses and Forbs Alliance
- Beach Pine Alliance
- Pacific Douglas-Fir Alliance
- Urban or Developed

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon ENVIRONMENTAL



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership

Bureau of Land Management

Six Rivers National Forest

State Lands

CALVEG Community Type*

Annual Grasses and Forbs Alliance (Dunes)

Barren

Beach Pine Alliance

Coyote Brush Alliance

Non-Native / Invasive Forb And Grass Alliance

Non-Native / Ornamental Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

Water

Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon

Environmental Services



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Department of Defense

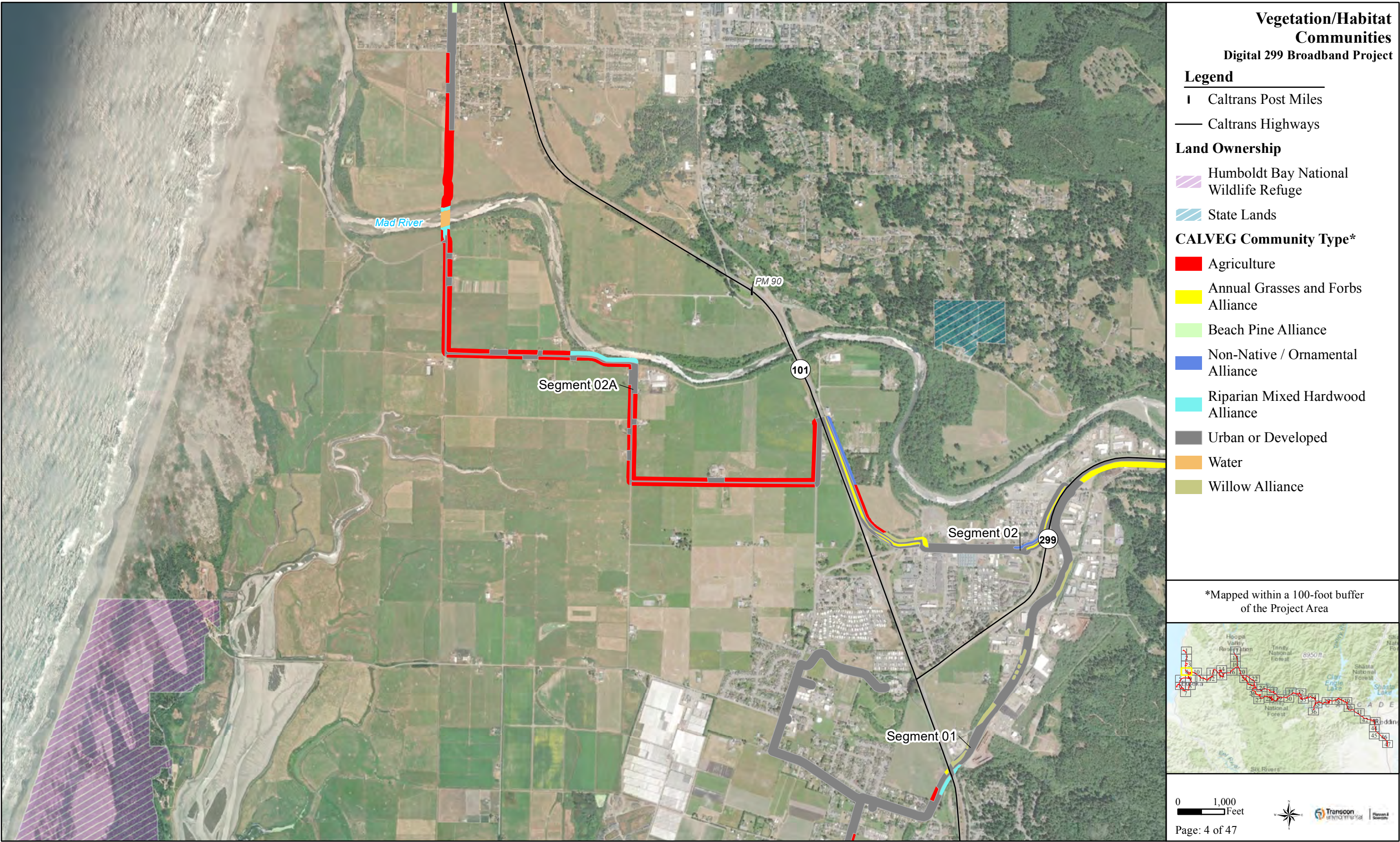
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Annual Grasses and Forbs Alliance (Dunes)
- Barren
- Beach Pine Alliance
- Coyote Brush Alliance
- Non-Native / Ornamental Alliance
- Urban or Developed
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

01,000
Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Caltrans Post Miles

Caltrans Highways

Land Ownership

Bureau of Land Management

Humboldt Bay National Wildlife Refuge

State Lands

CALVEG Community Type*

Annual Grasses and Forbs Alliance

Annual Grasses and Forbs Alliance (Dunes)

Barren

Beach Pine Alliance

Pickleweed-Cordgrass Alliance

Urban or Developed

Water

Wet Meadows (Wet Grasses And Forbs) Alliance

Willow Alliance

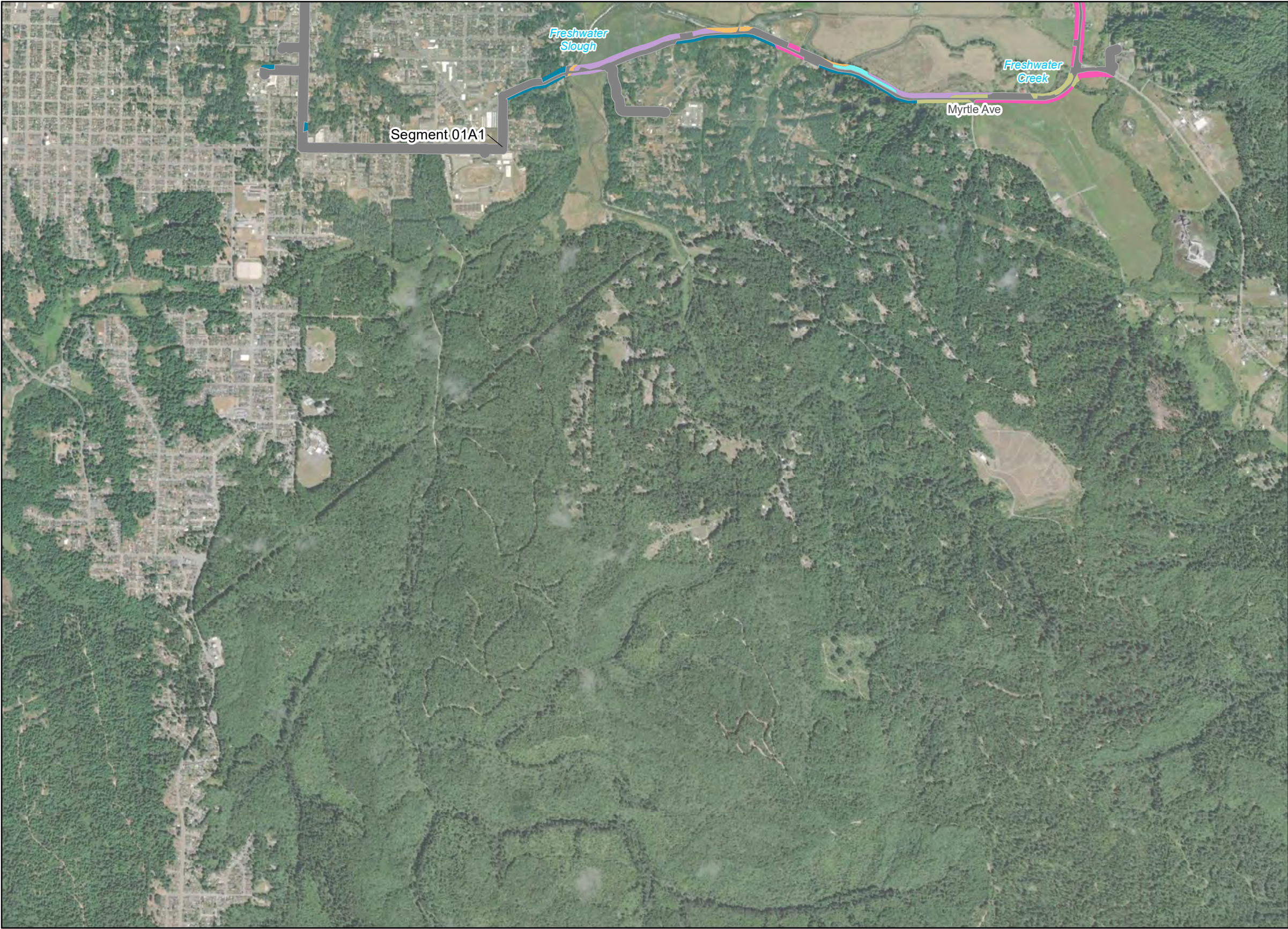
*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

Page: 5 of 47

Transcon





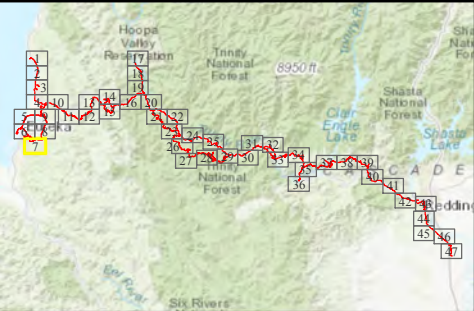
**Vegetation/Habitat
Communities**
Digital 299 Broadband Project

Legend

CALVEG Community Type*

-  Agriculture - Pasture
-  Redwood - Douglas-fir Alliance
-  Riparian Mixed Hardwood Alliance
-  Urban or Developed
-  Water
-  Wet Meadows (Wet Grasses And Forbs) Alliance
-  Willow Alliance

*Mapped within a 100-foot buffer
of the Project Area

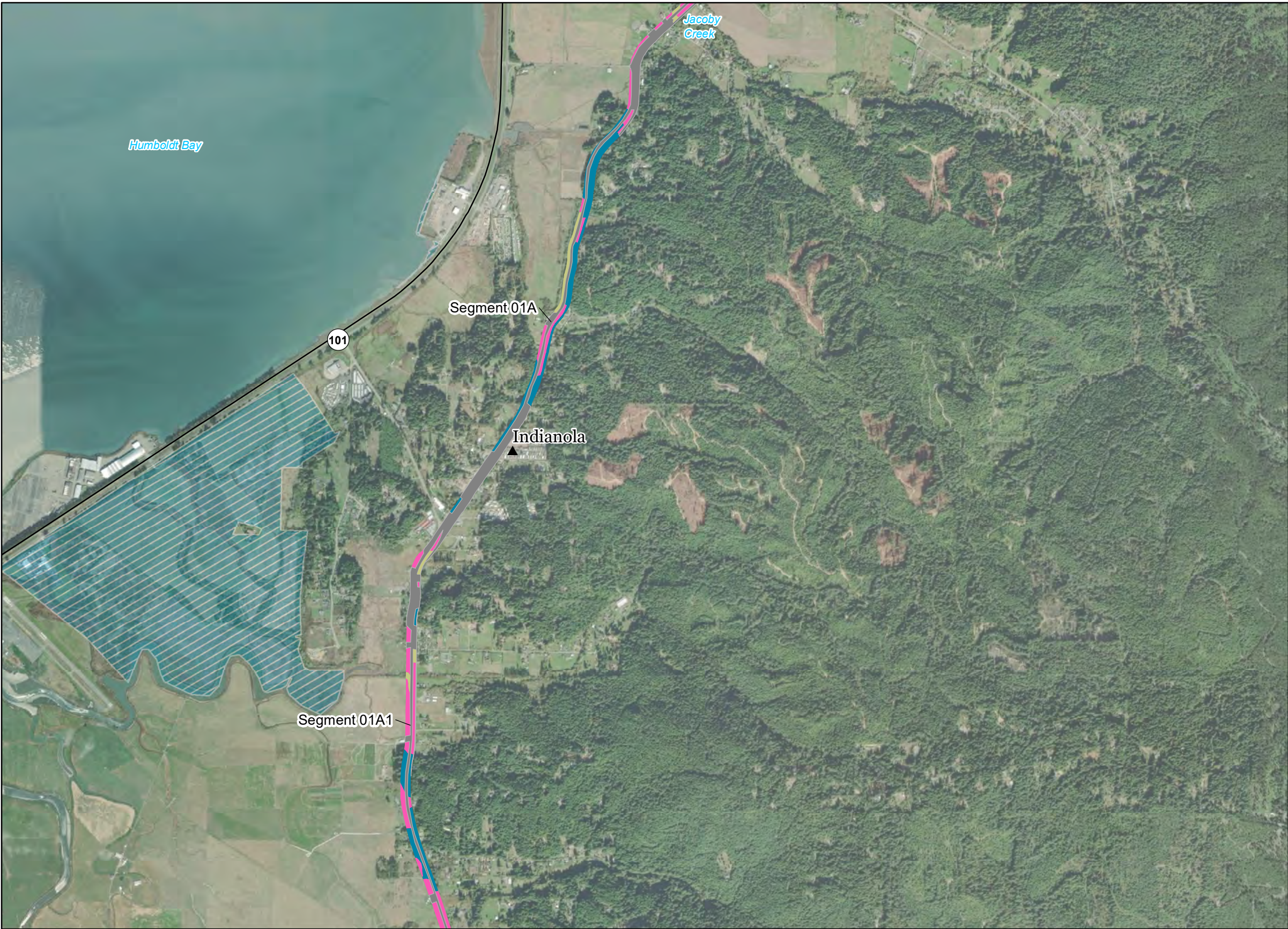


0 1,000
Feet



Transcon
ENVIRONMENTAL

DESIGN &
SCIENCE



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

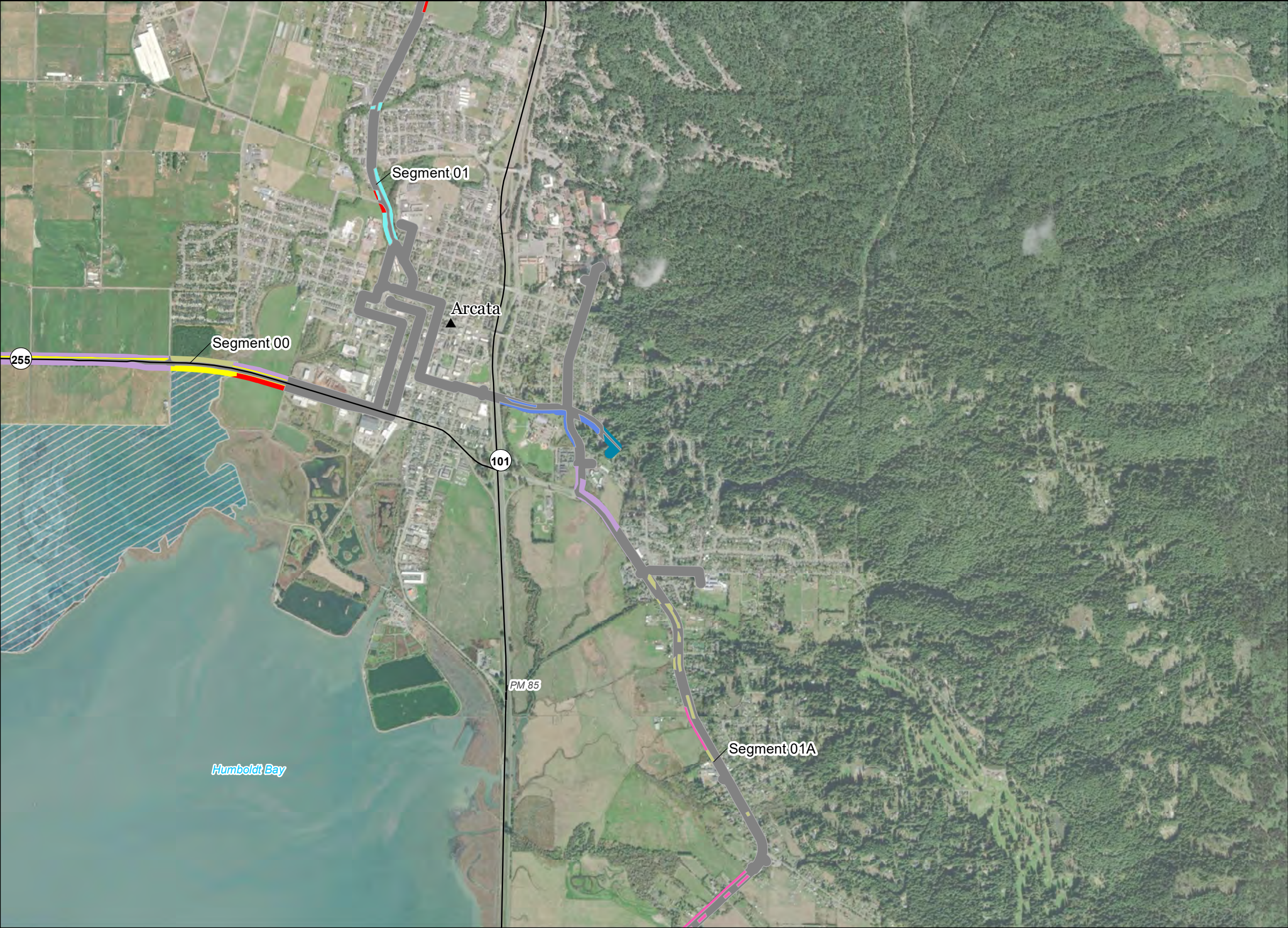
- Agriculture - Pasture
- Redwood - Douglas-fir Alliance
- Urban or Developed
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

Page: 8 of 47

Transcon



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

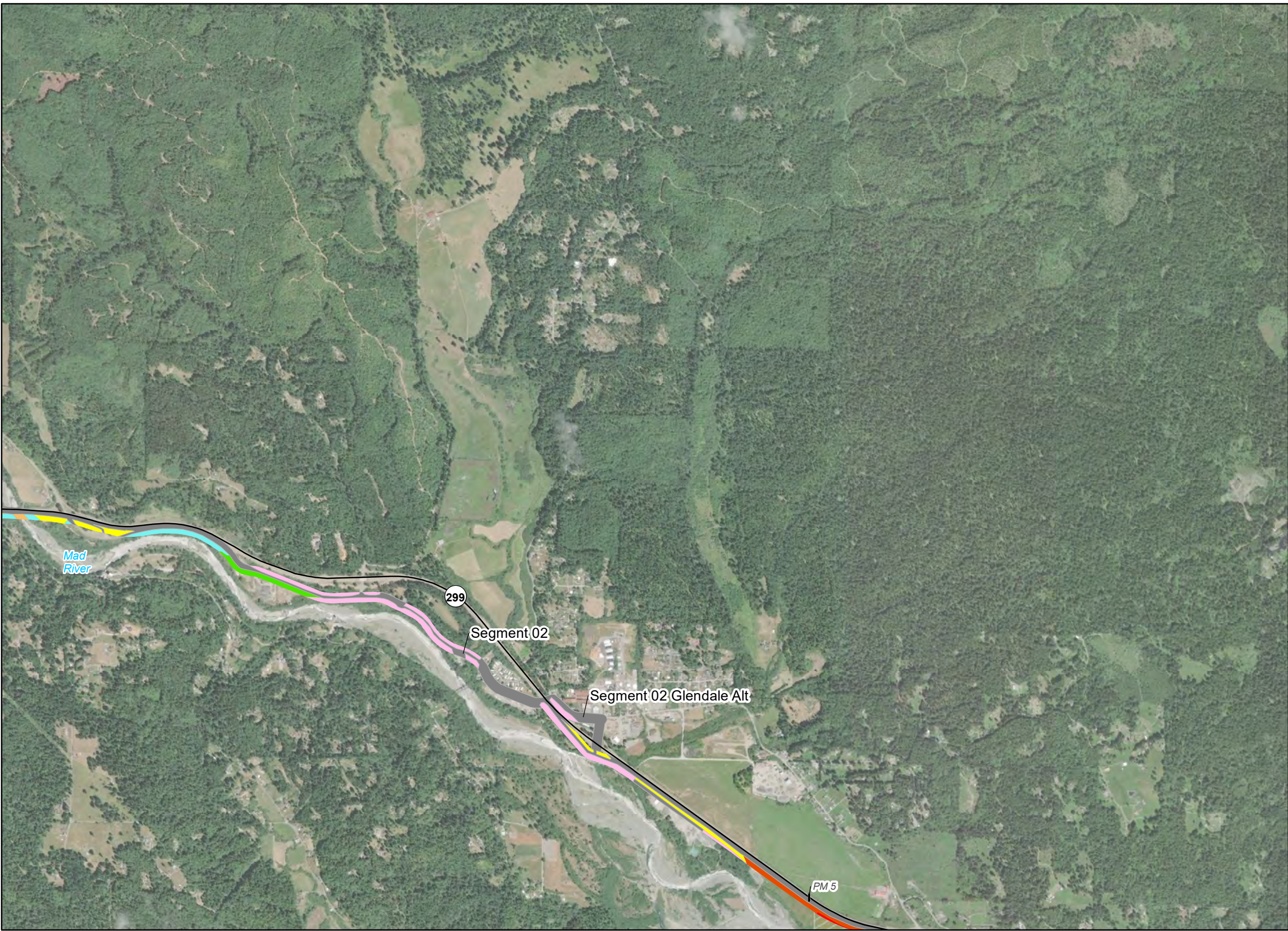
- Agriculture
- Agriculture - Pasture
- Annual Grasses and Forbs Alliance
- Non-Native / Ornamental Alliance
- Redwood - Douglas-fir Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Wet Meadows (Wet Grasses And Forbs) Alliance
- Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon Environmental Services



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

┆ Caltrans Post Miles

— Caltrans Highways

Land Ownership

Blue Lake Rancheria

CALVEG Community Type*

Agriculture

Annual Grasses and Forbs Alliance

Barren

Coyote Brush Alliance

Interior Mixed Hardwood Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

Water

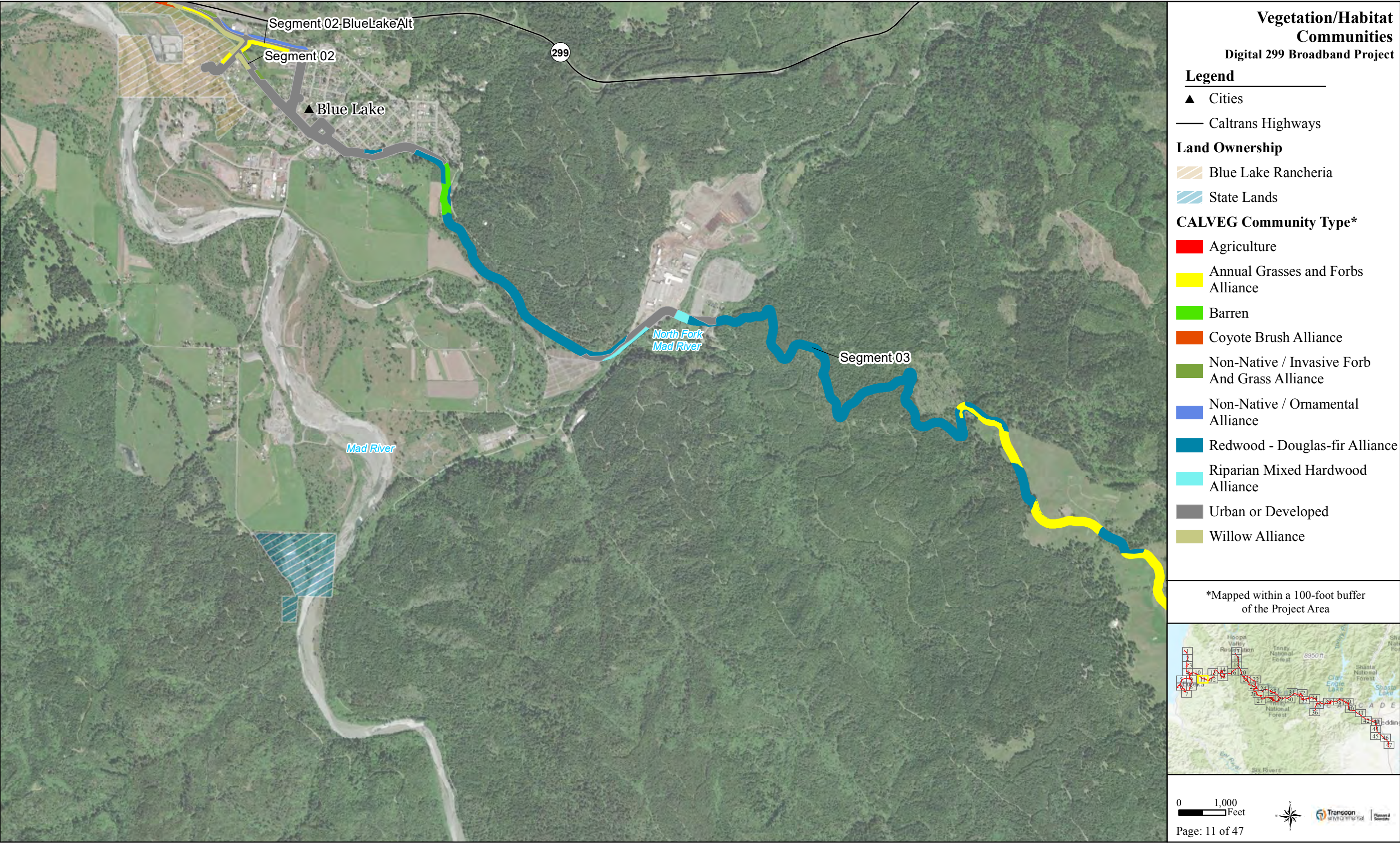
*Mapped within a 100-foot buffer of the Project Area

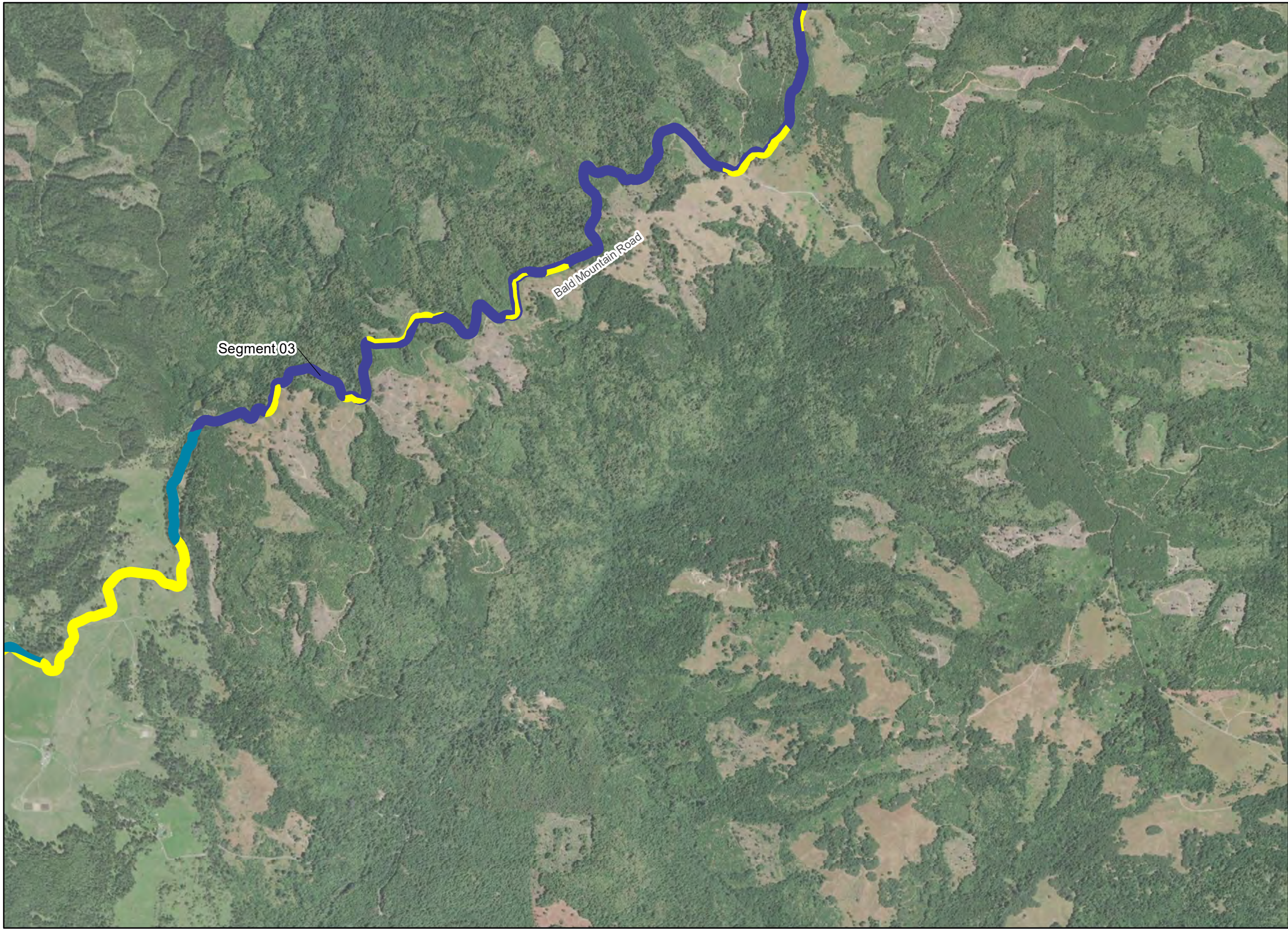
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Transcon ENVIRONMENTAL

DESIGN & CONSTRUCTION





Vegetation/Habitat Communities
Digital 299 Broadband Project

Legend

*Mapped within a 100-foot buffer of the Project Area

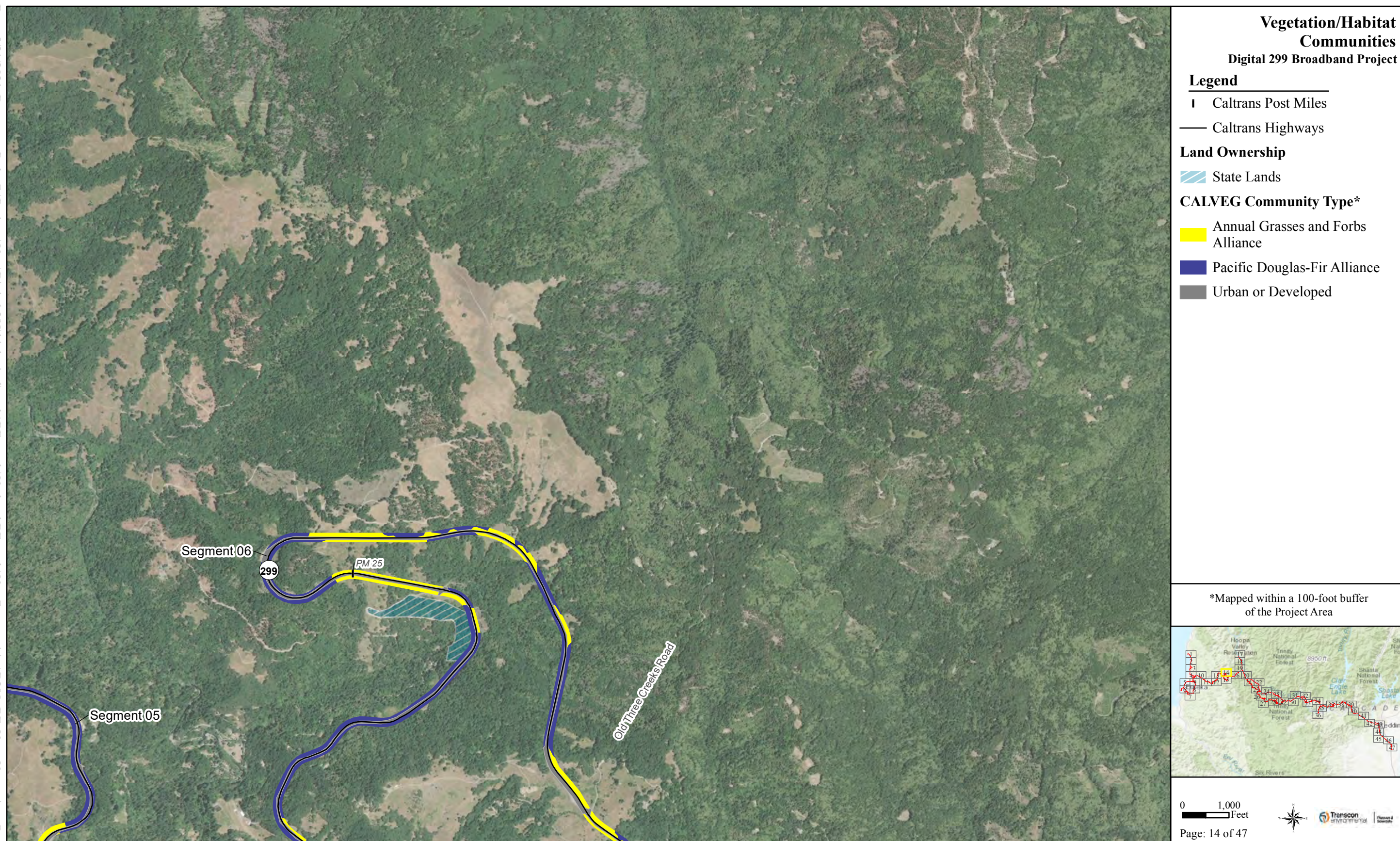
An inset map showing a larger geographic area. It includes labels for 'Hoopa Valley', 'Tule Lake', 'National Forest', 'Shasta National Forest', 'Shasta Lake', 'Six Rivers', and 'C.A.D.E.'. A red line with numbered points (1-47) indicates the project route. A yellow box highlights the area shown in the main map.

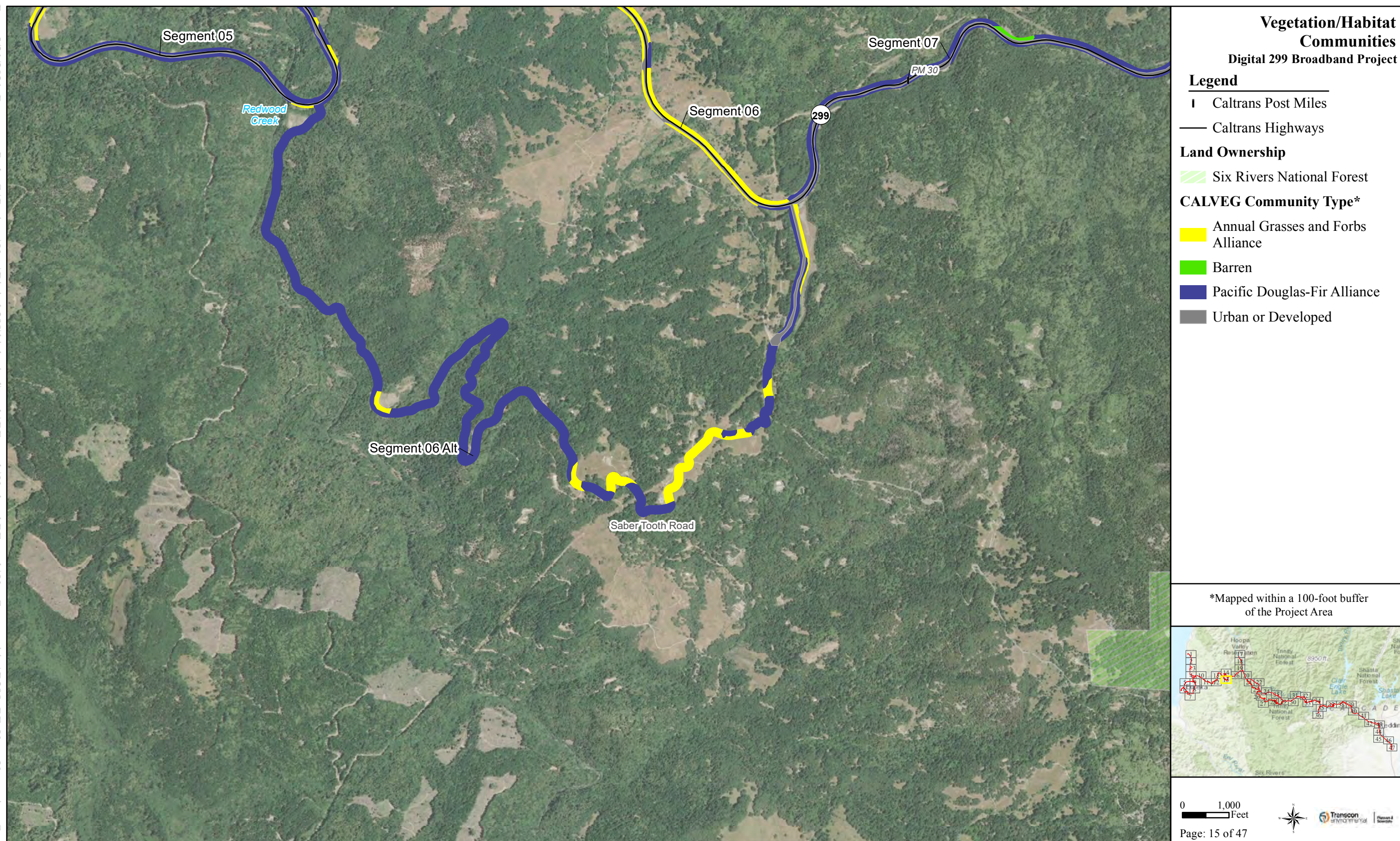
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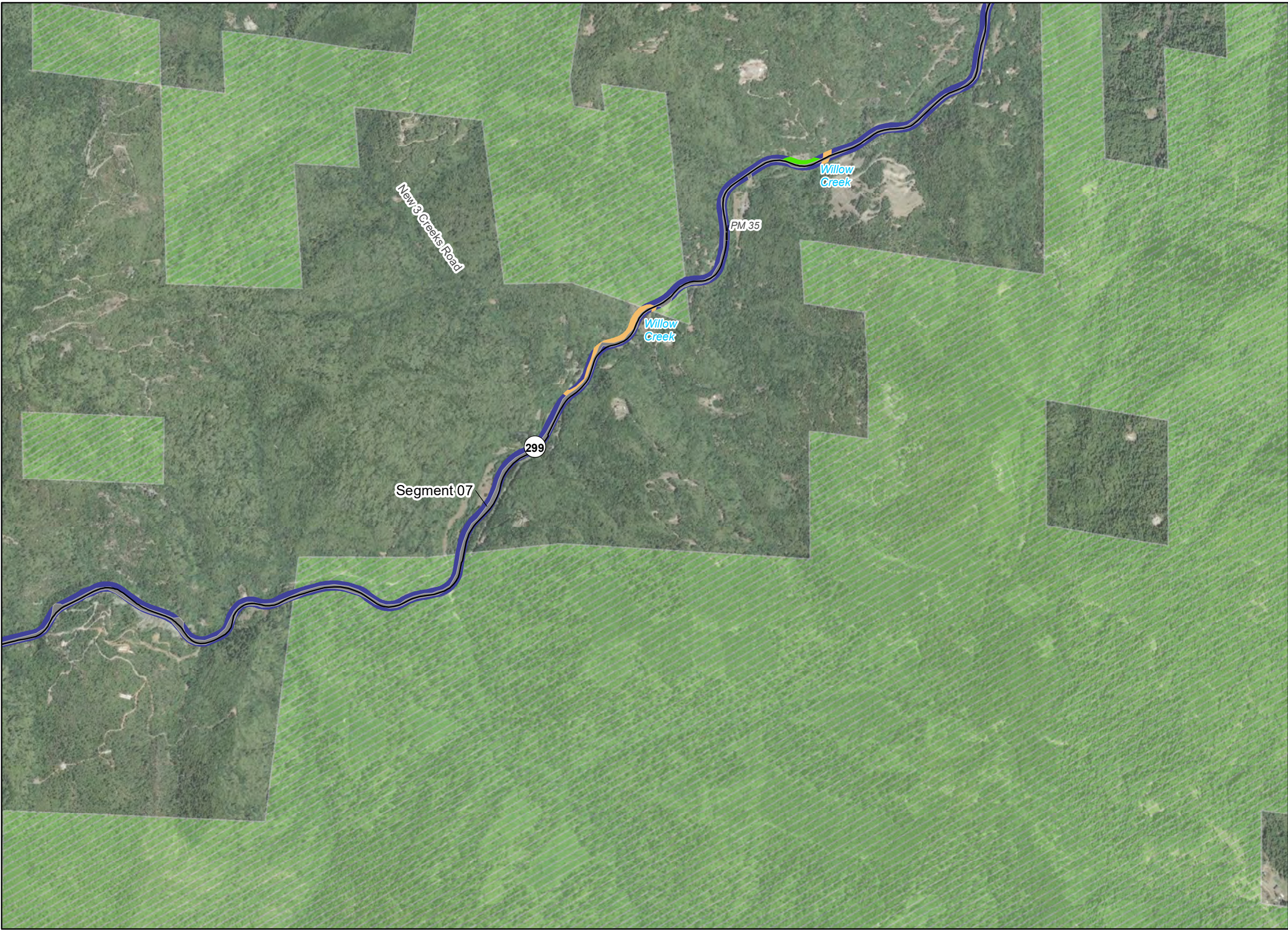
Page: 12 of 47

A north arrow pointing upwards. To its right are two logos: 'Transcon Environmental' and 'Bureau of Land Management'.









Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Six Rivers National Forest

CALVEG Community Type*

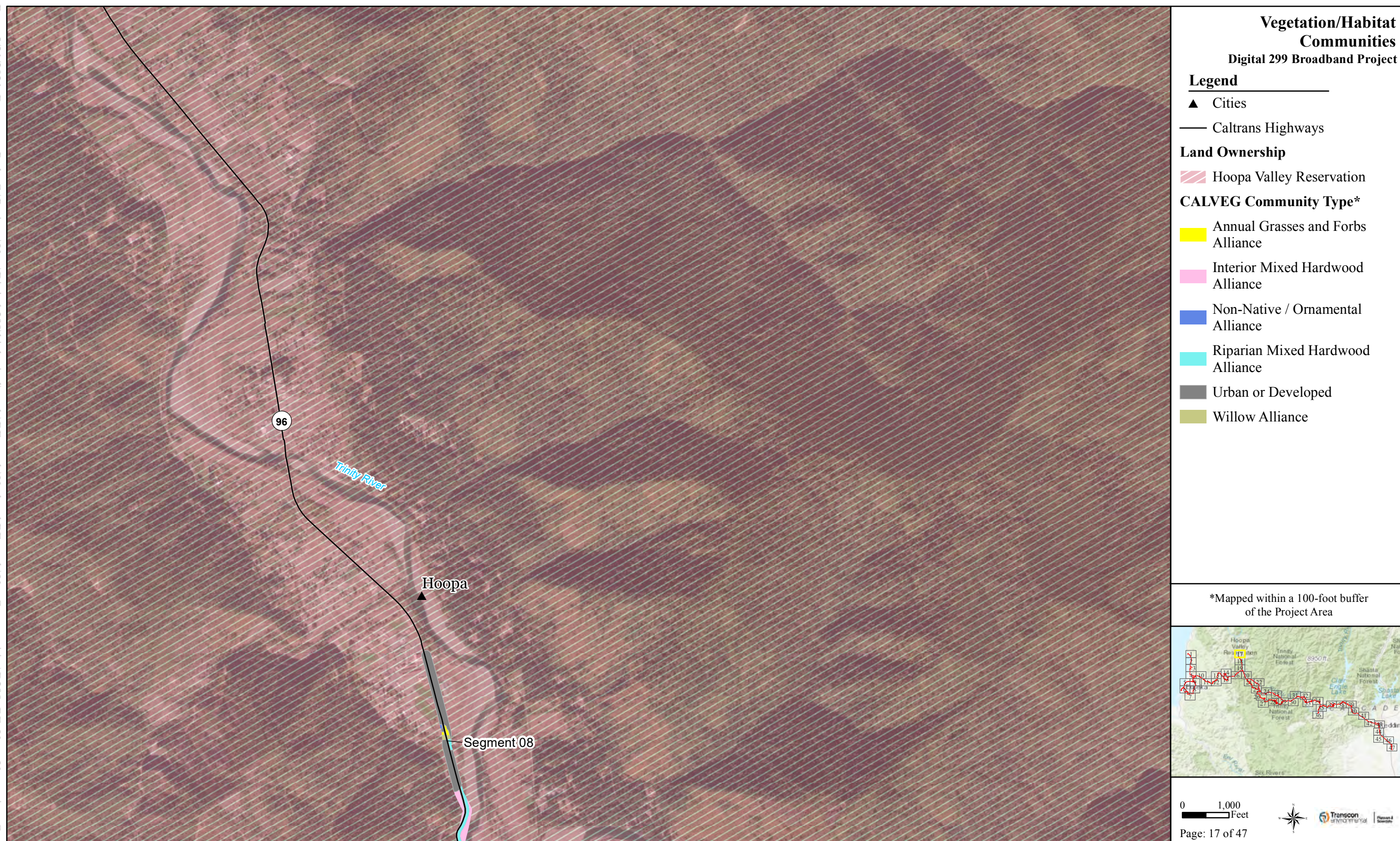
- Barren
- Pacific Douglas-Fir Alliance
- Urban or Developed
- Water

*Mapped within a 100-foot buffer of the Project Area

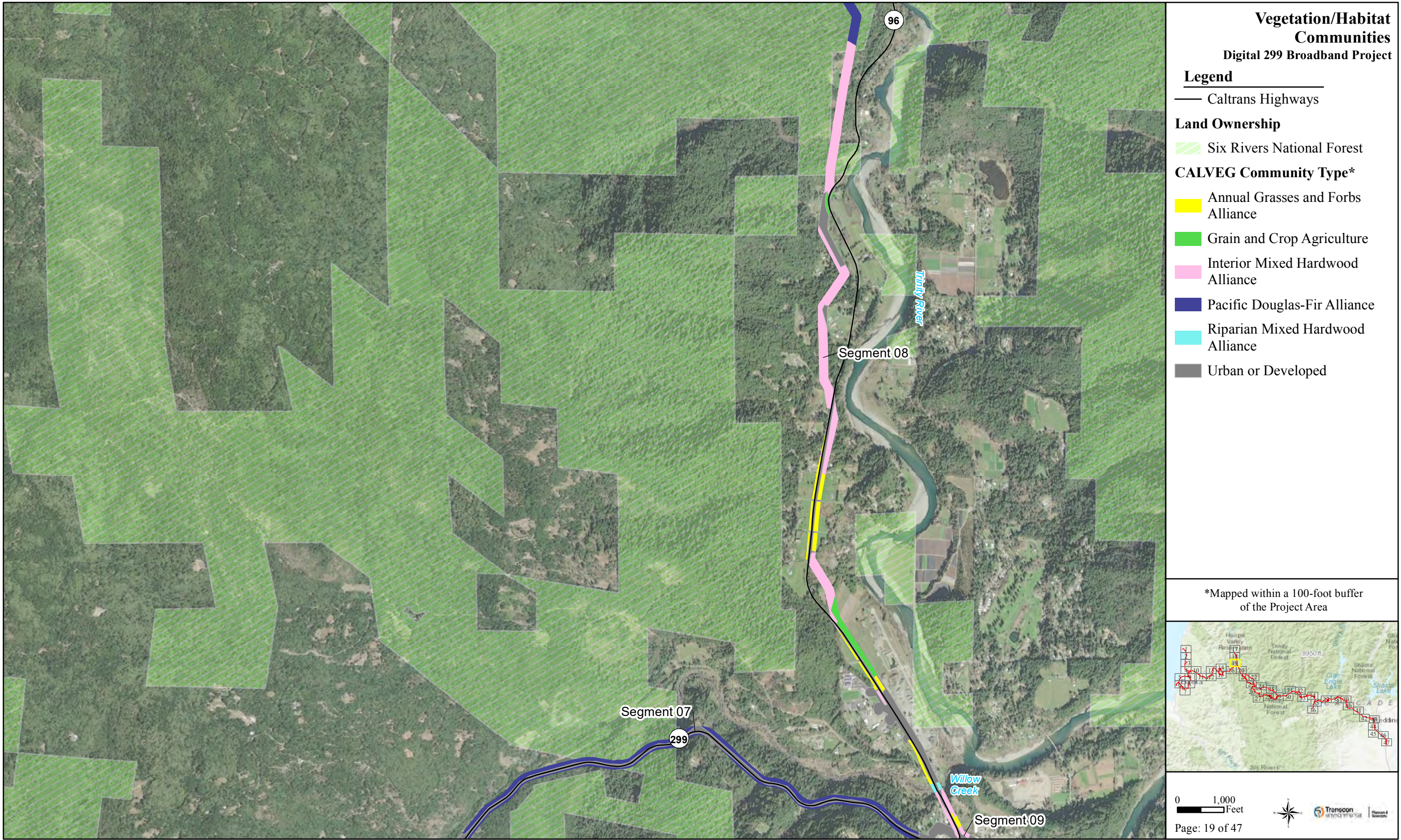
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Transcon









Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Six Rivers National Forest

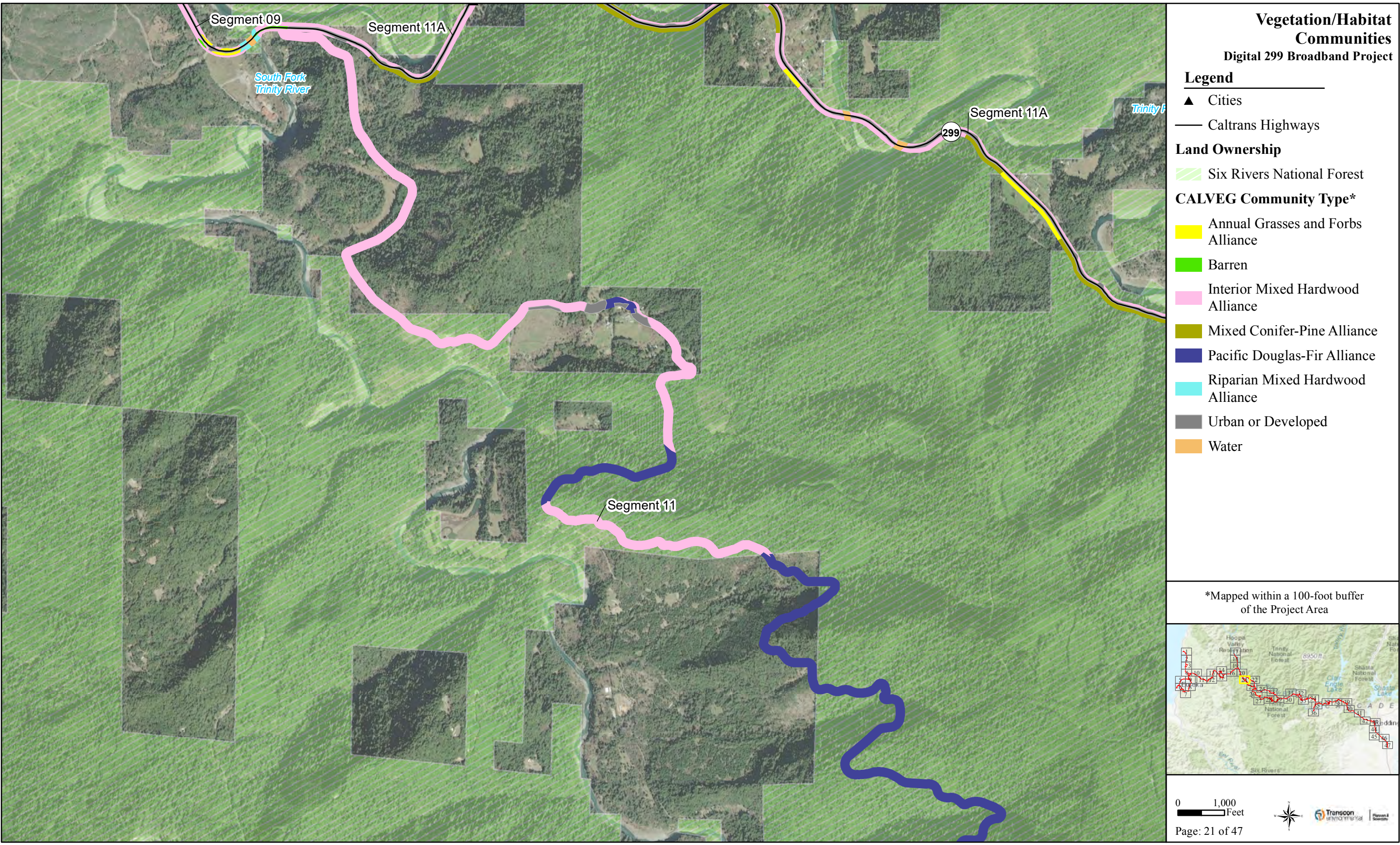
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Barren
- Interior Mixed Hardwood Alliance
- Mixed Conifer-Pine Alliance
- Pacific Douglas-Fir Alliance
- Urban or Developed

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership

Shasta-Trinity National Forest

Six Rivers National Forest

CALVEG Community Type*

Annual Grasses and Forbs Alliance

Barren

Interior Mixed Hardwood Alliance

Mixed Conifer-Pine Alliance

Non-Native / Invasive Forb And Grass Alliance

Urban or Developed

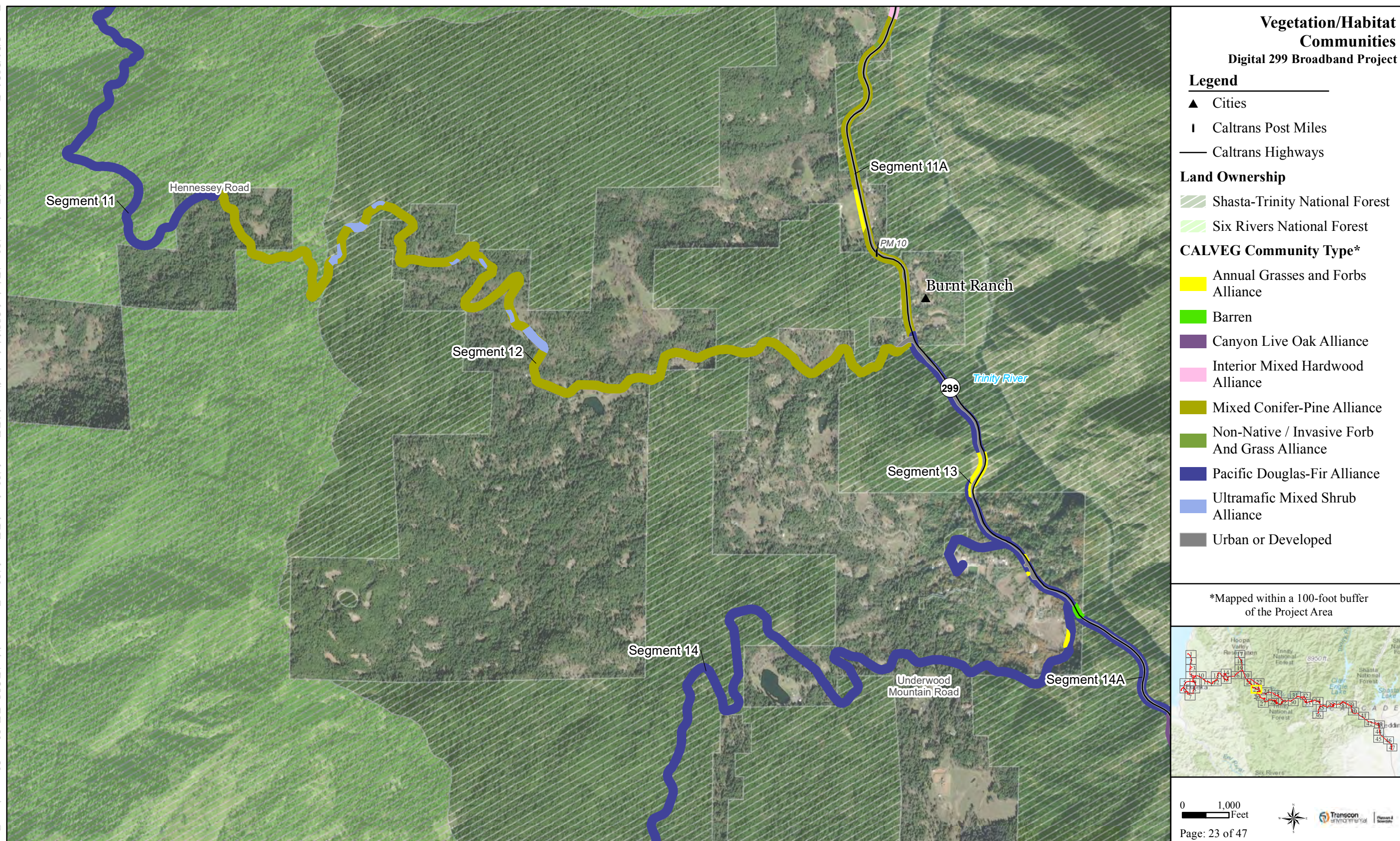
*Mapped within a 100-foot buffer of the Project Area

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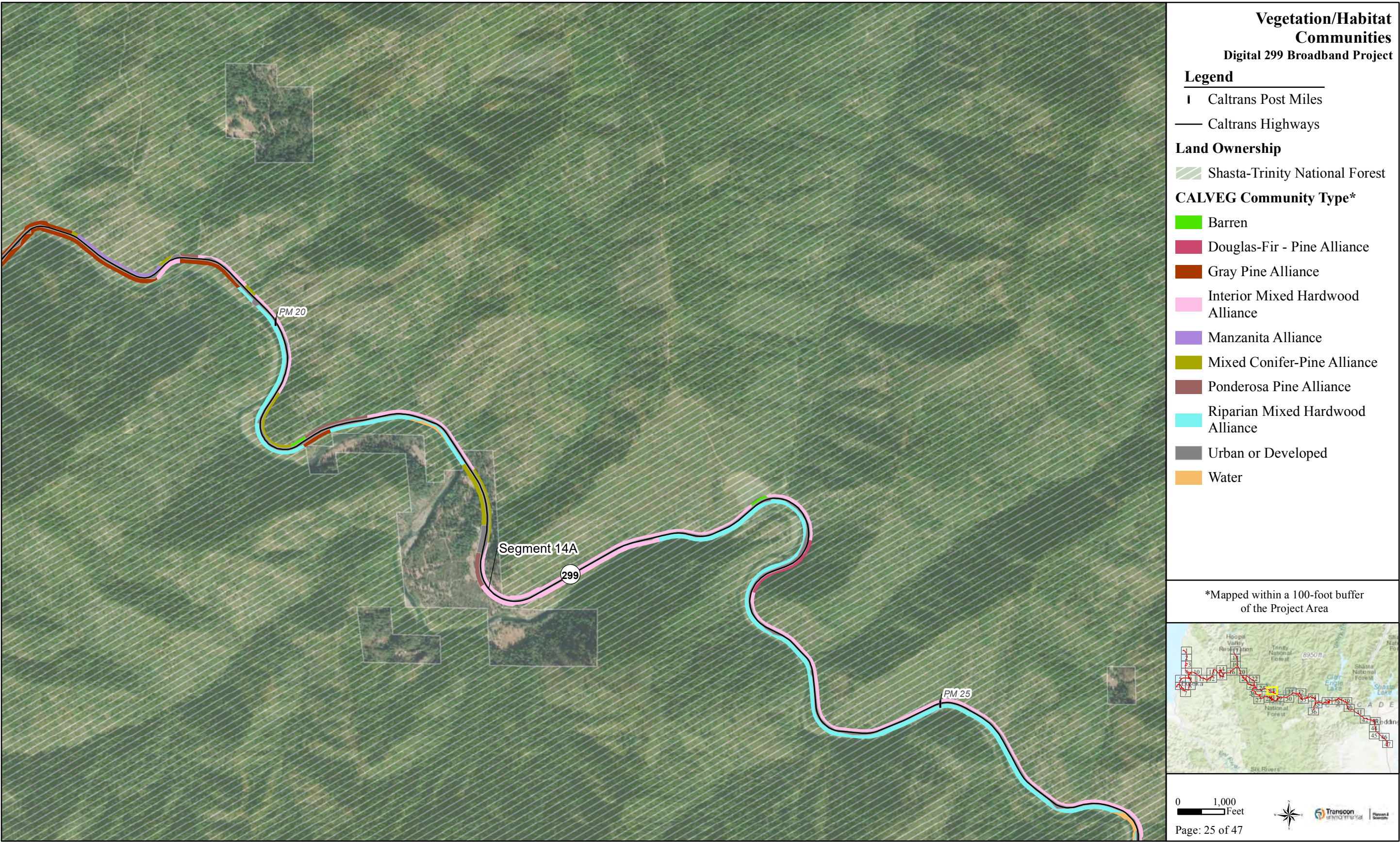
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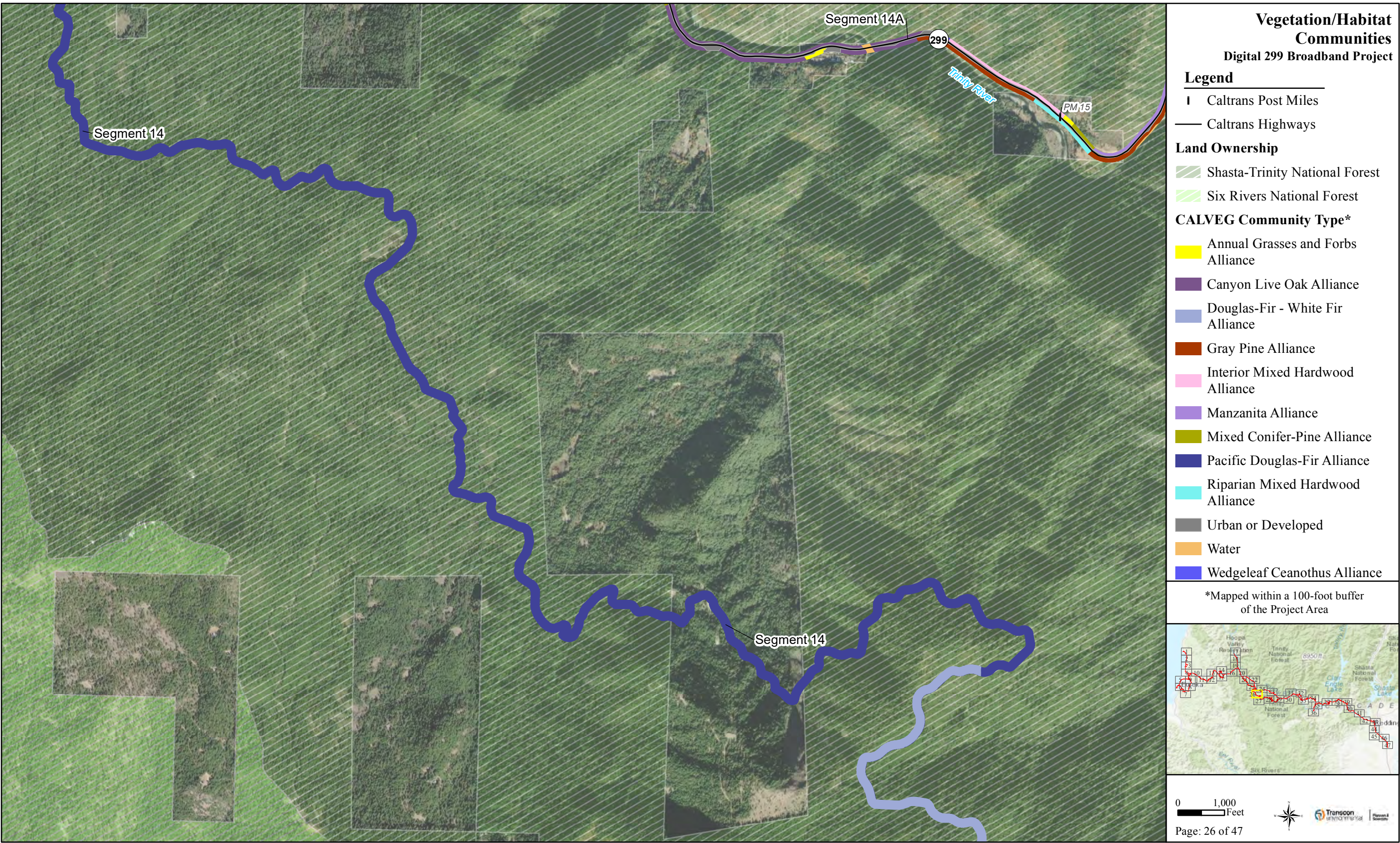
Transcon ENVIRONMENTAL

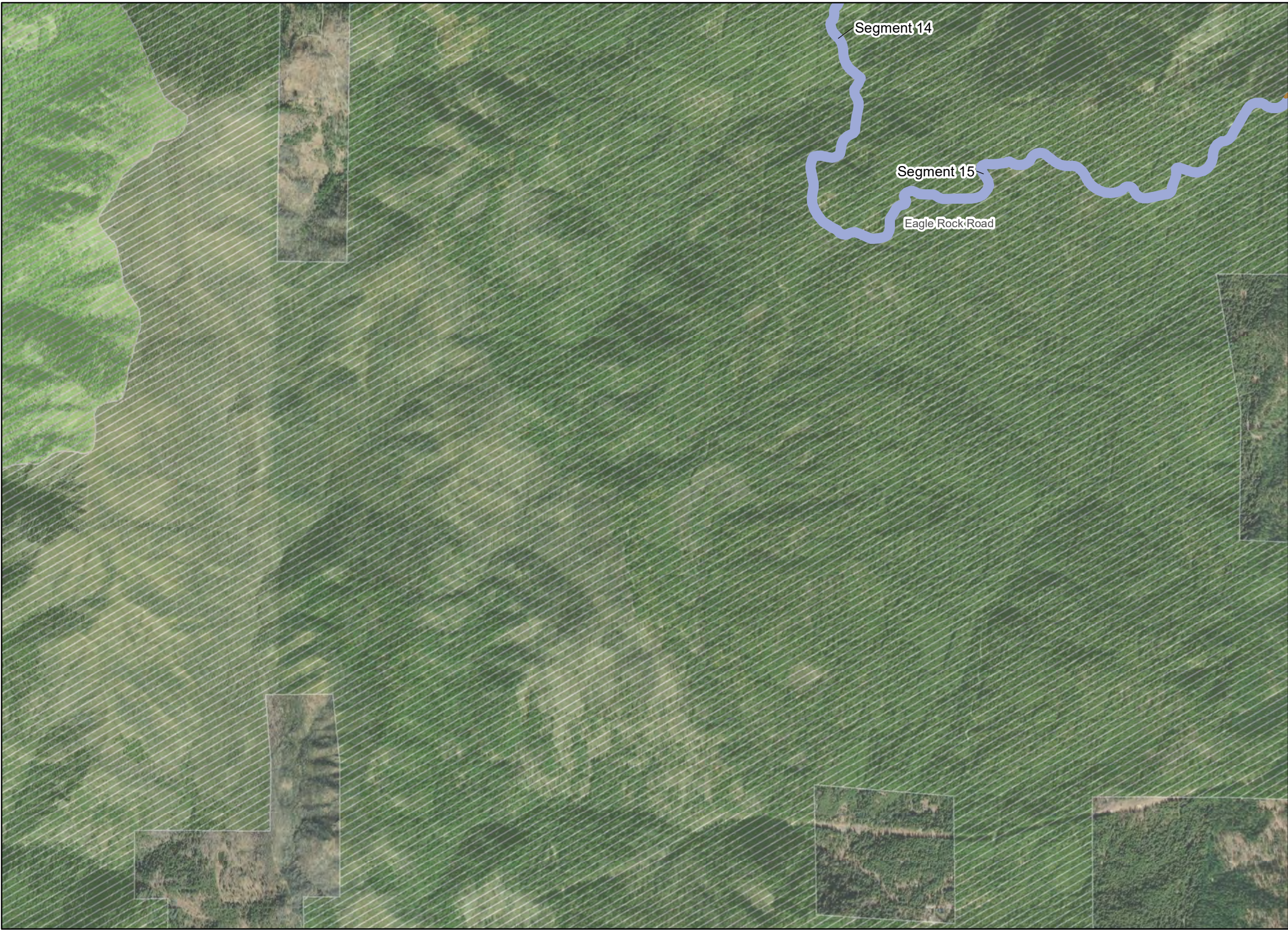
DESIGN & CONSTRUCTION











Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Land Ownership

- Shasta-Trinity National Forest
- Six Rivers National Forest

CALVEG Community Type*

- Deerbrush Alliance
- Douglas-Fir - White Fir Alliance

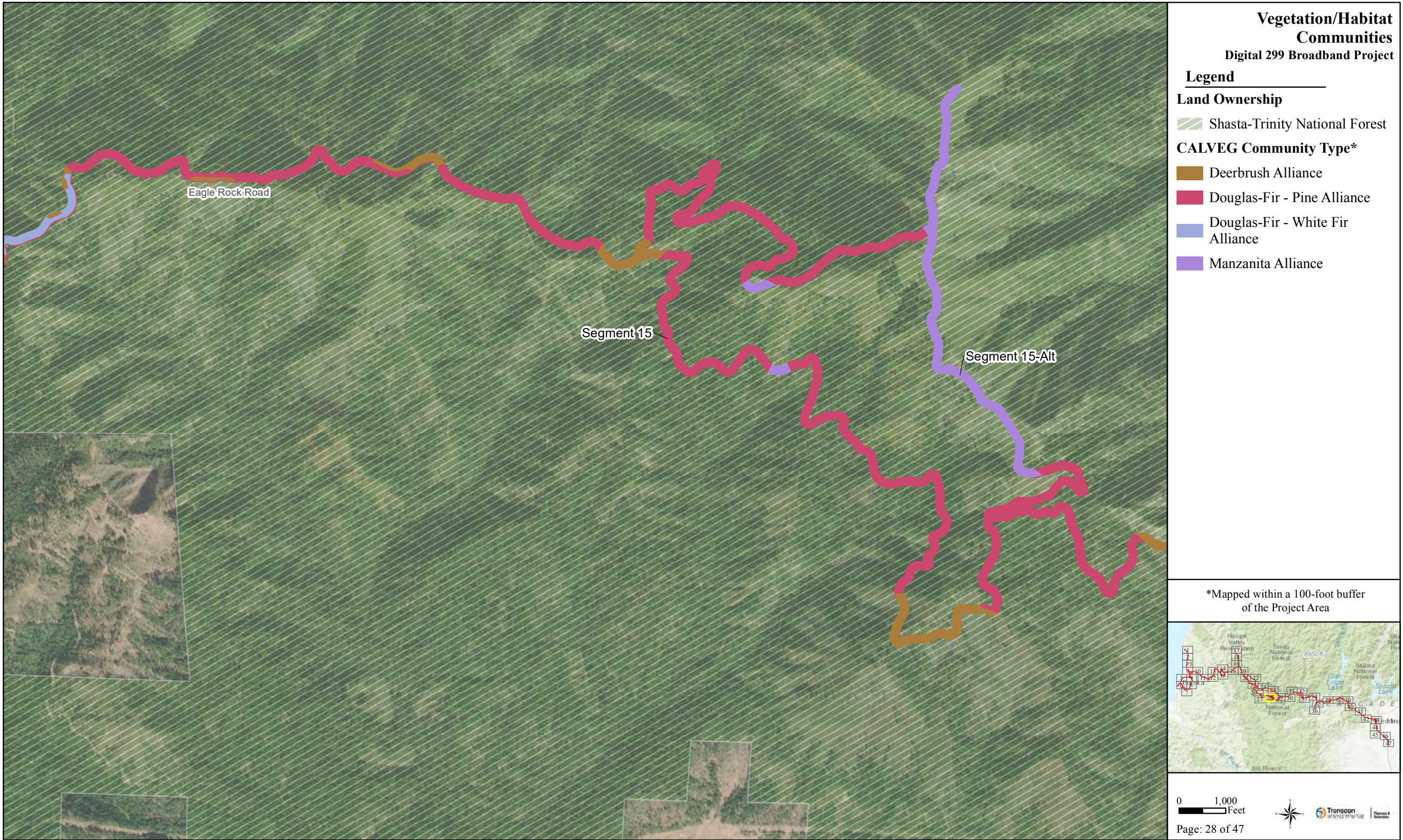
*Mapped within a 100-foot buffer of the Project Area

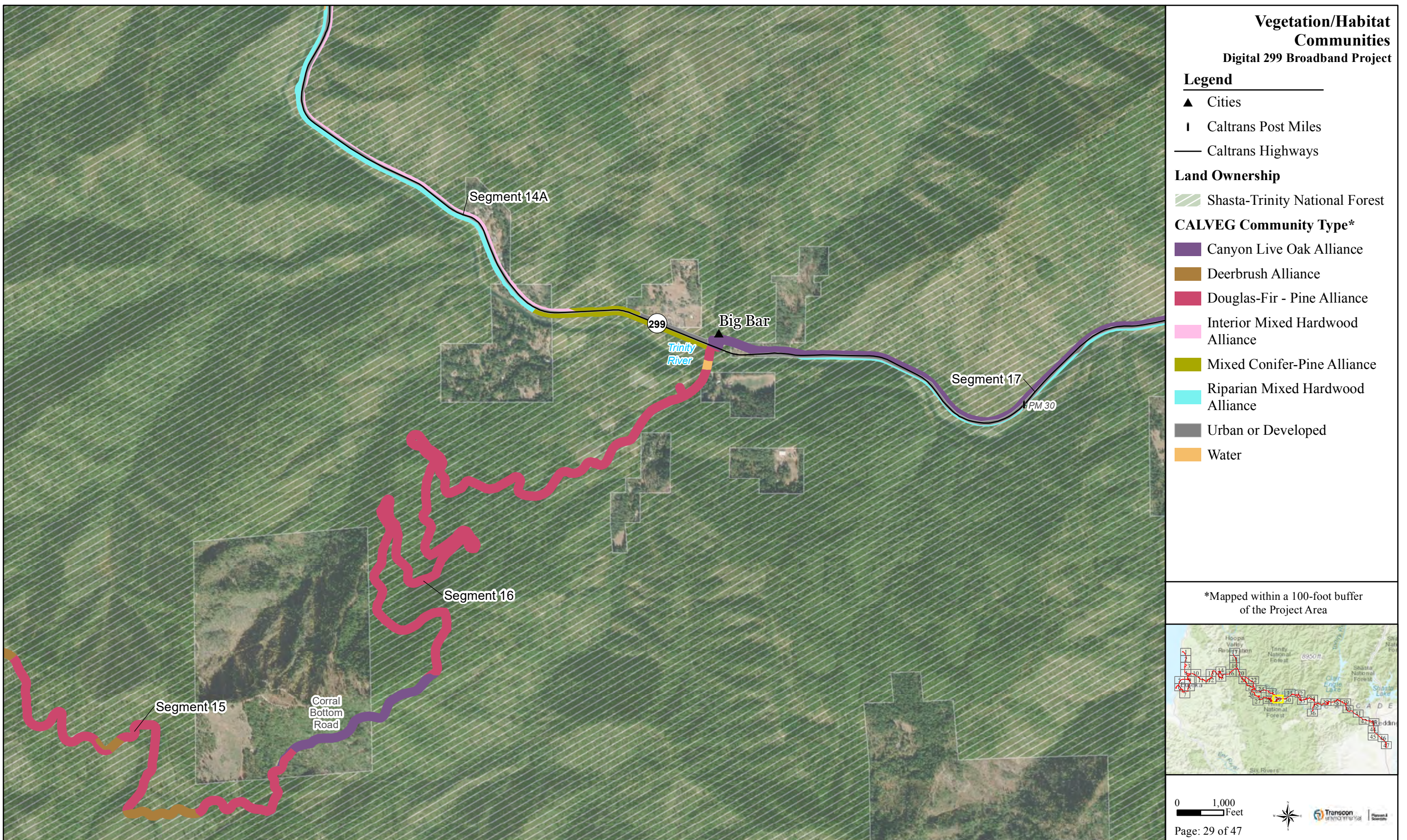
An inset map in the bottom right corner provides a regional context. It shows a larger area with various geographical features and labels. Key labels include 'Hoopa Valley', 'Tule Lake', 'Shasta National Forest', 'Clair Fork', 'Shasta Lake', and 'Six Rivers'. A red line indicates the project's path through the region. The inset map also shows a grid of numbered boxes, likely corresponding to the main map's segments.

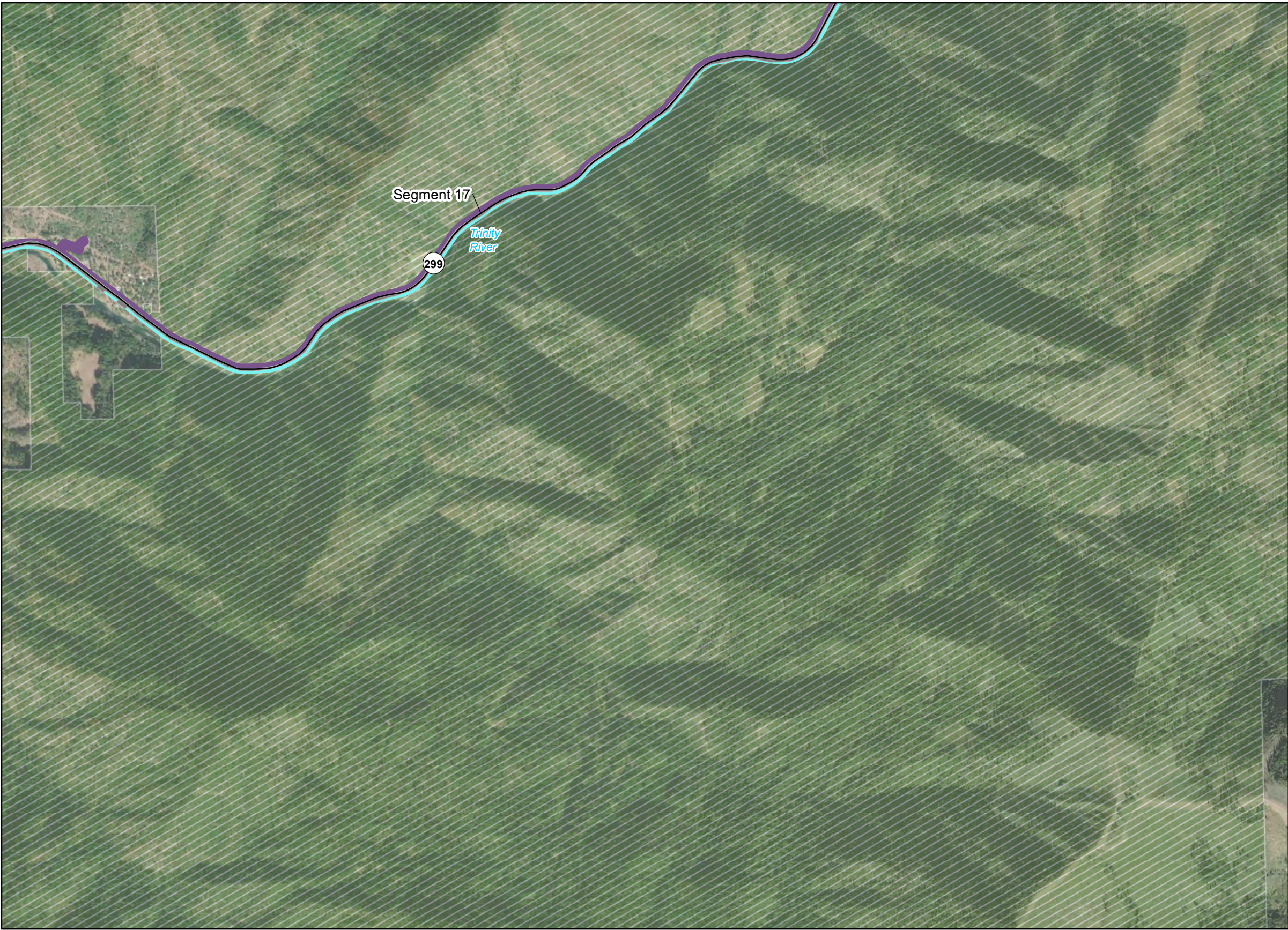
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A north arrow is located in the bottom right corner, pointing upwards. Below it are two logos: 'Transcon Environmental' and 'Bureau of Land Management'.







Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

— Caltrans Highways

Land Ownership

 Shasta-Trinity National Forest

CALVEG Community Type*

 Canyon Live Oak Alliance

 Riparian Mixed Hardwood Alliance

 Urban or Developed

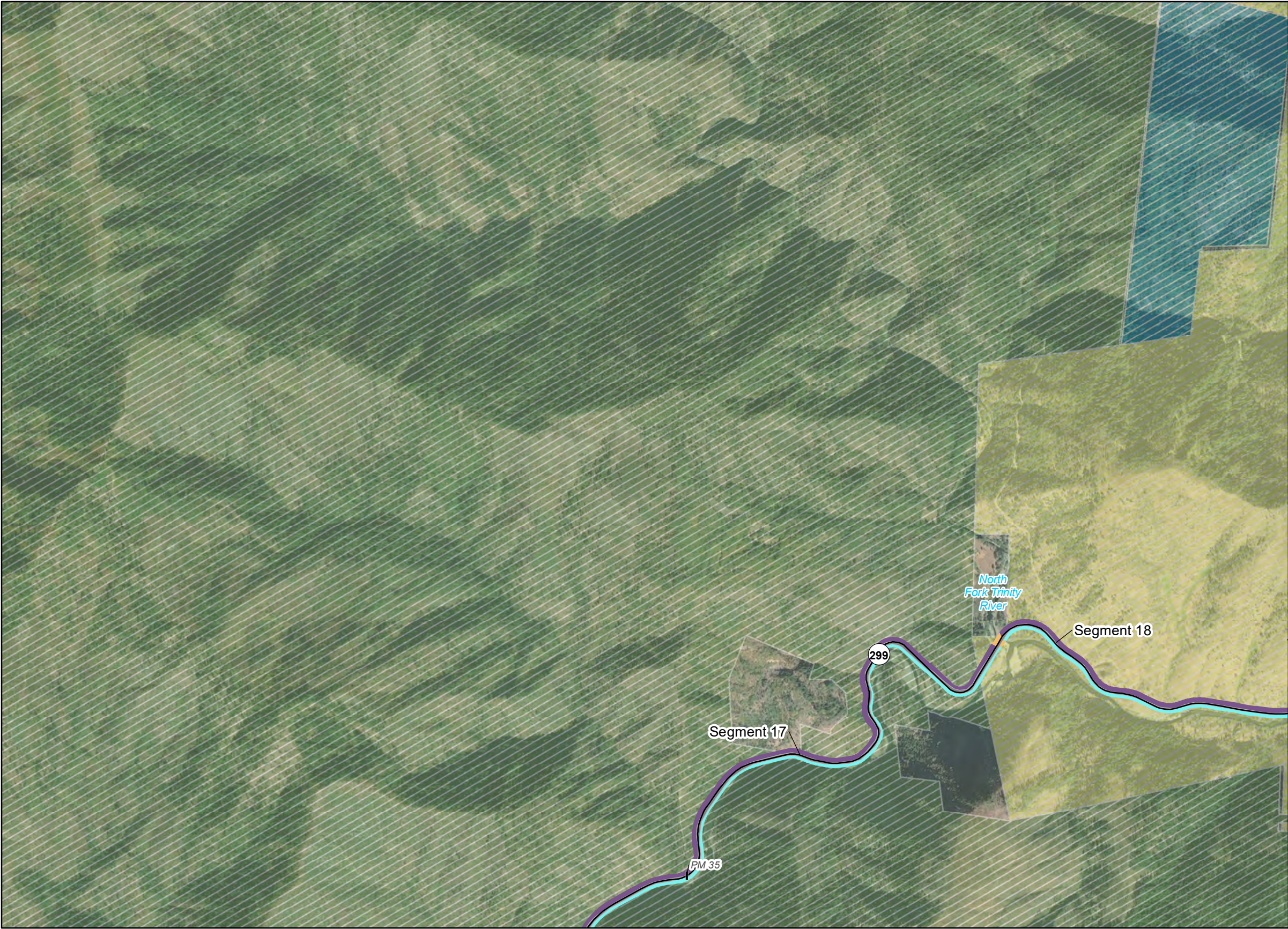
*Mapped within a 100-foot buffer of the Project Area



0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest
- State Lands

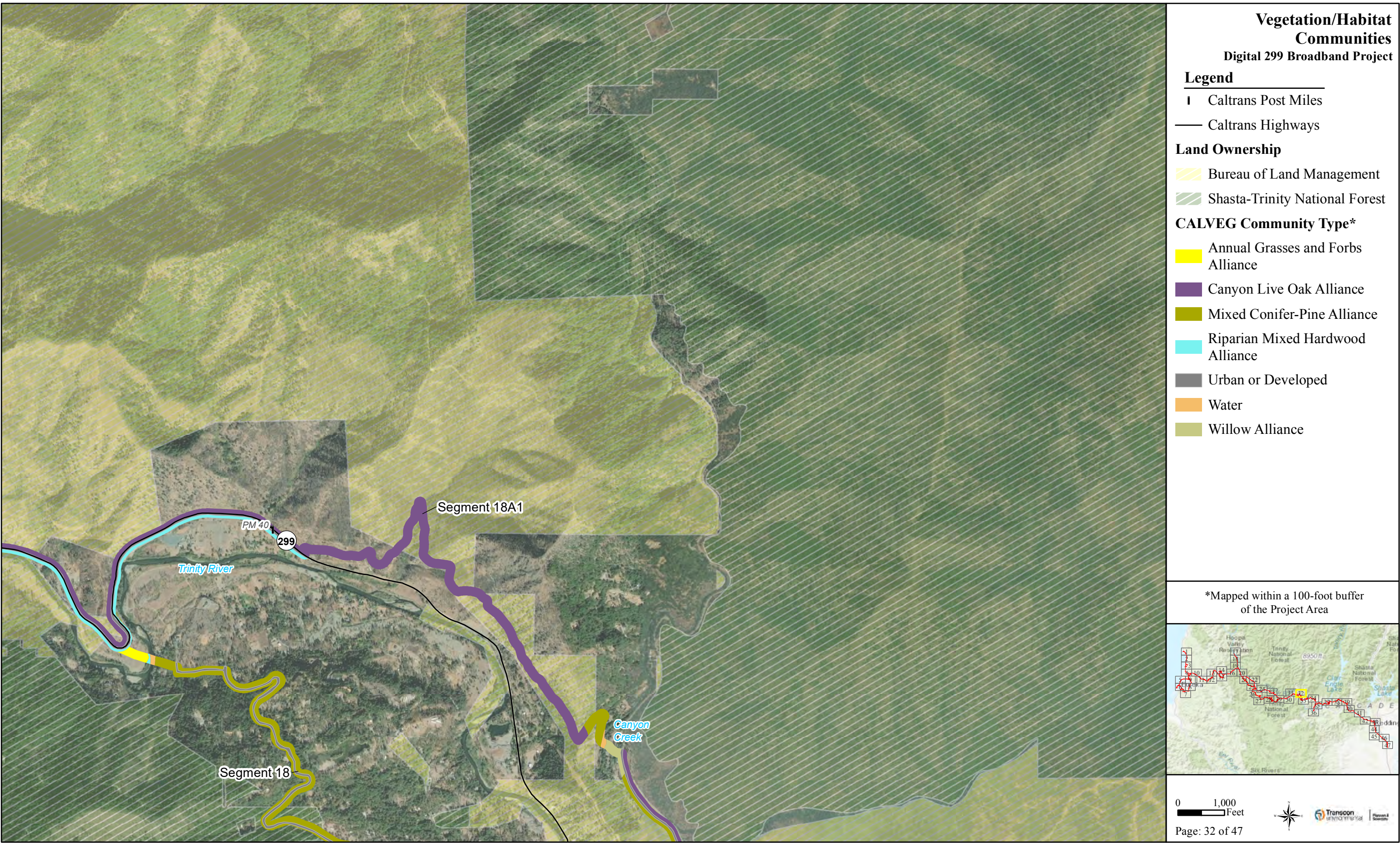
CALVEG Community Type*

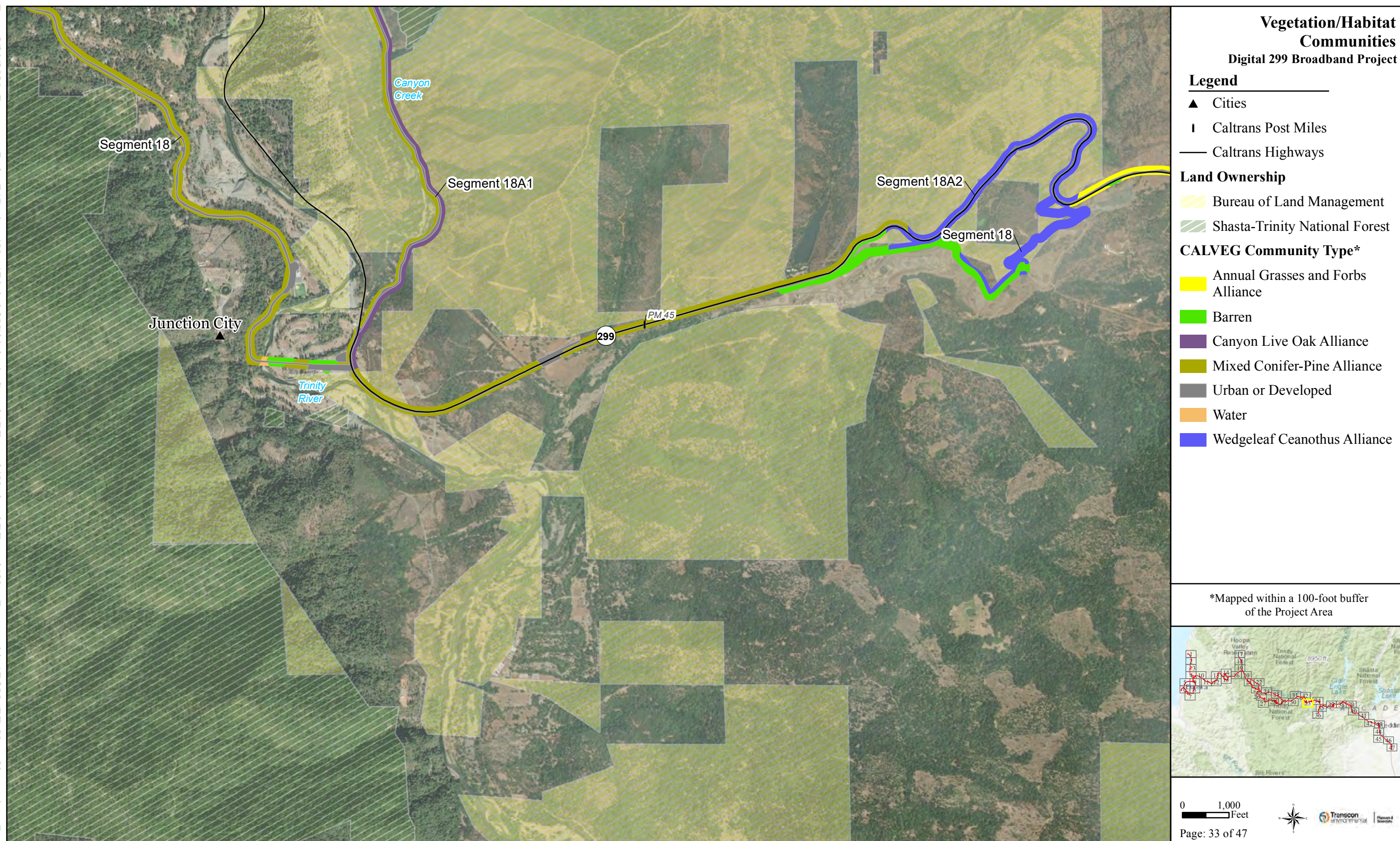
- Canyon Live Oak Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Water

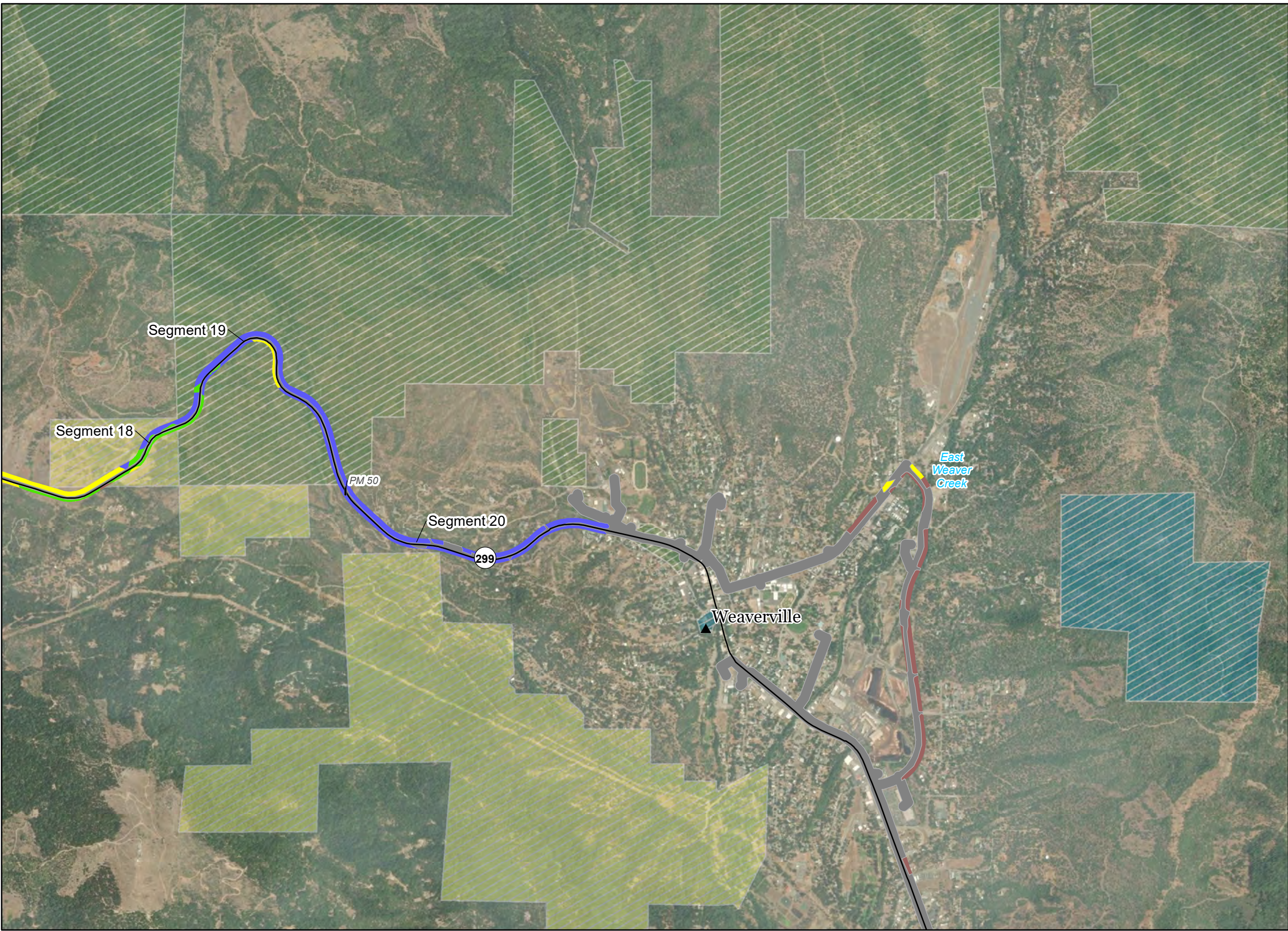
*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest
- State Lands

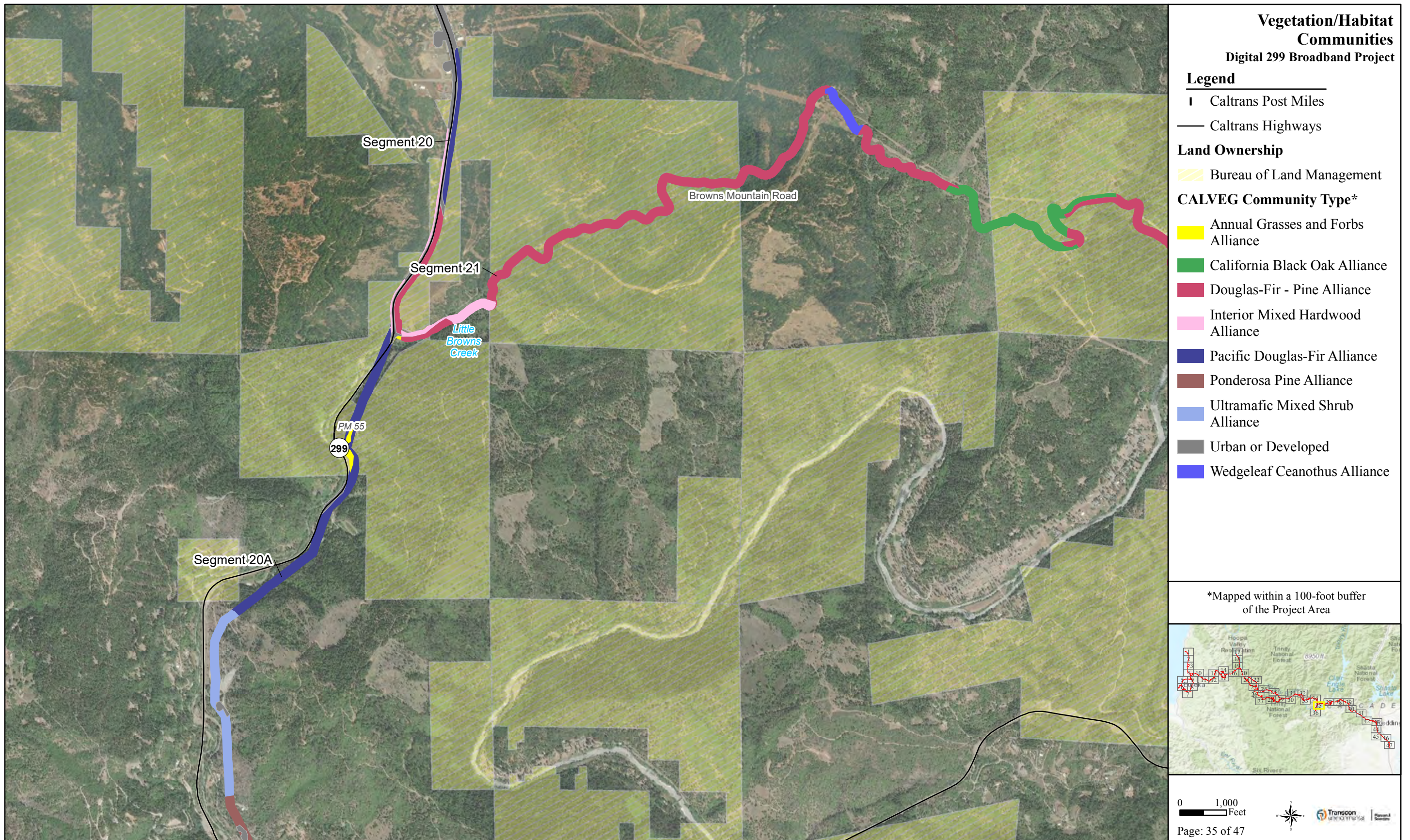
CALVEG Community Type*

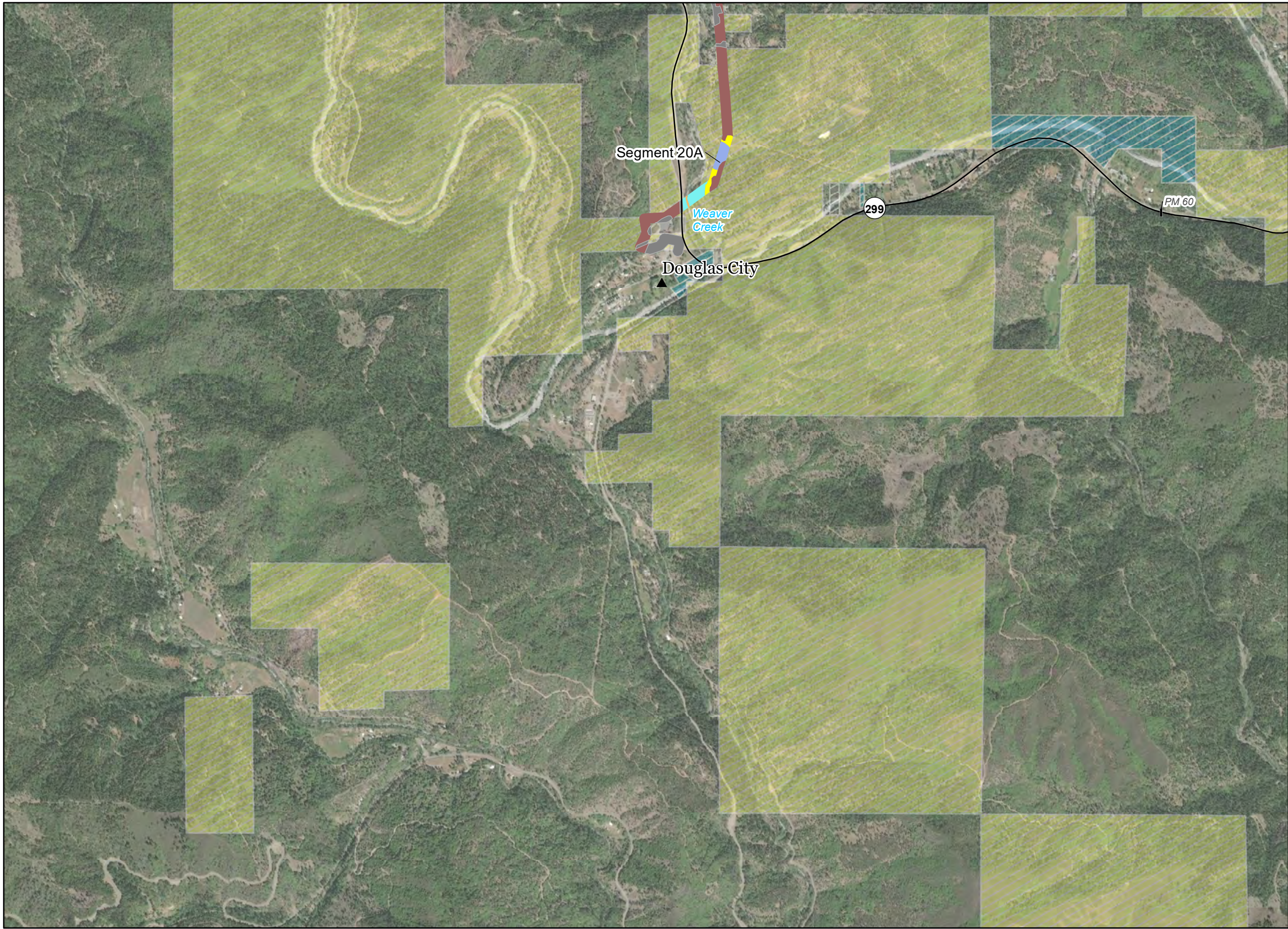
- Annual Grasses and Forbs Alliance
- Barren
- Ponderosa Pine Alliance
- Urban or Developed
- Wedgeleaf Ceanothus Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- State Lands

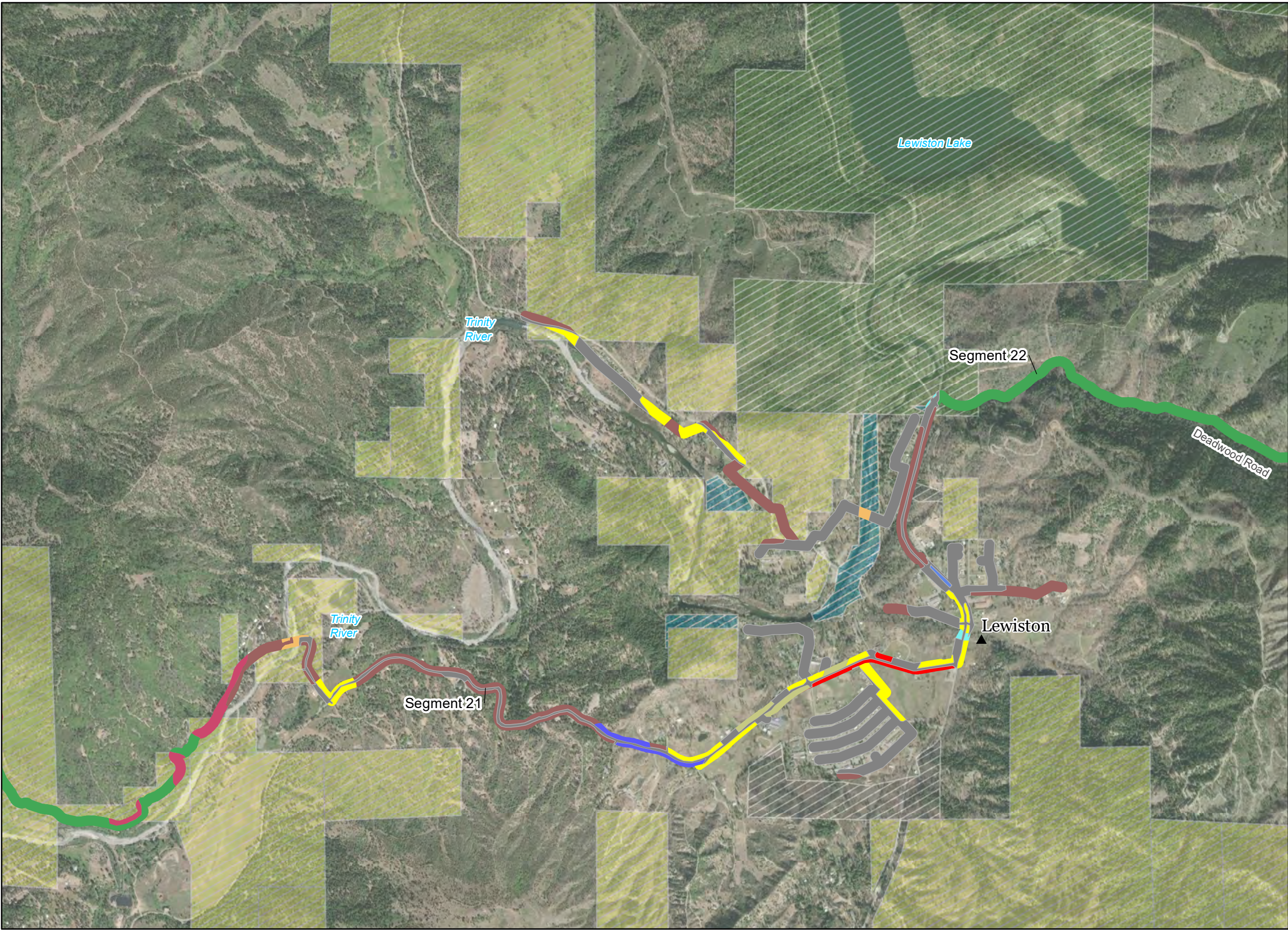
CALVEG Community Type*

- Annual Grasses and Forbs Alliance
- Ponderosa Pine Alliance
- Riparian Mixed Hardwood Alliance
- Ultramafic Mixed Shrub Alliance
- Urban or Developed
- Water

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

▲ Cities

Land Ownership

Bureau of Land Management

Bureau of Reclamation

Shasta-Trinity National Forest

State Lands

CALVEG Community Type*

Agriculture

Annual Grasses and Forbs Alliance

California Black Oak Alliance

Douglas-Fir - Pine Alliance

Non-Native / Ornamental Alliance

Ponderosa Pine Alliance

Riparian Mixed Hardwood Alliance

Urban or Developed

Water

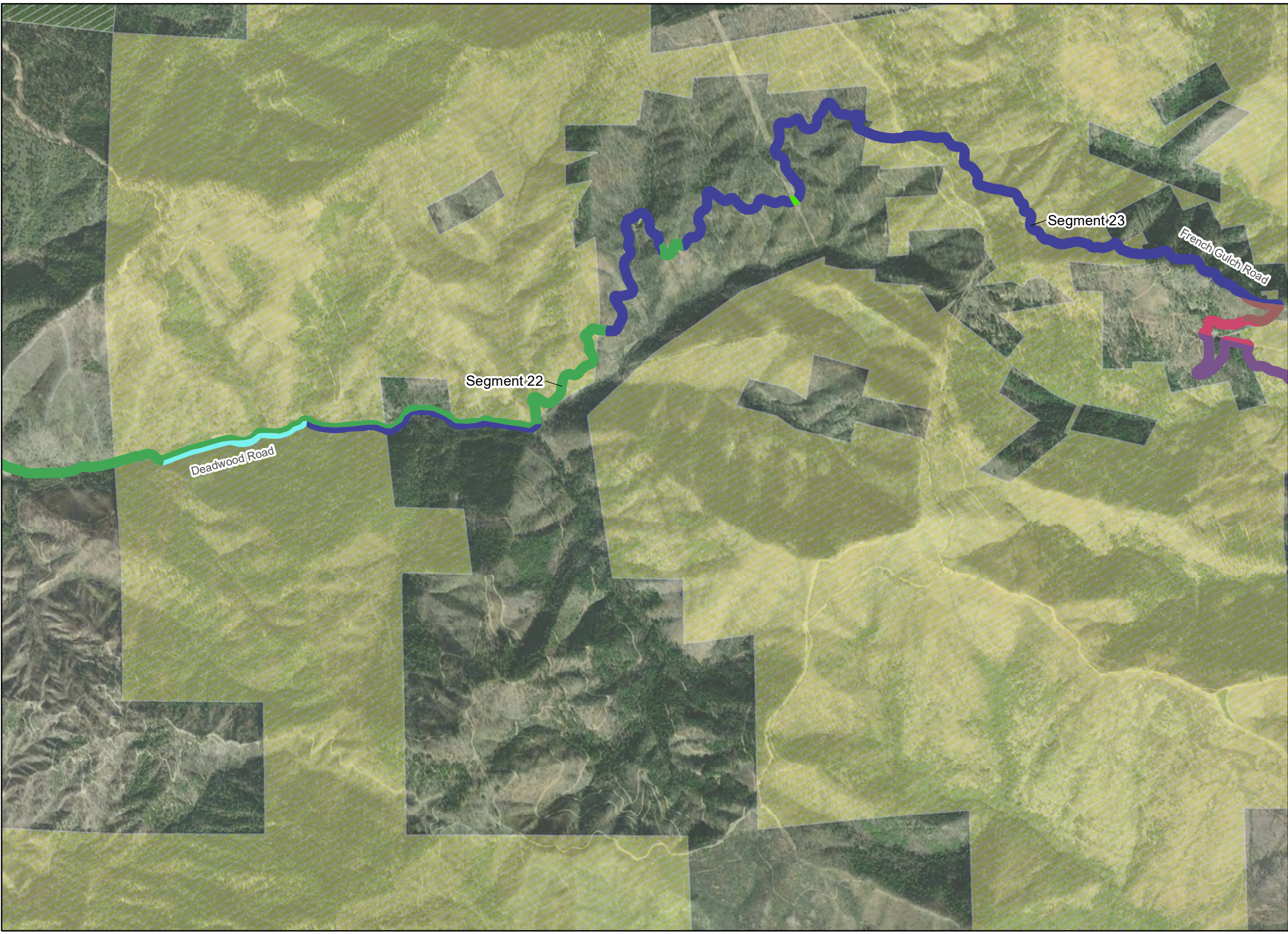
Wedgeleaf Ceanothus Alliance

Willow Alliance

*Mapped within a 100-foot buffer of the Project Area

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Land Ownership

- Bureau of Land Management
- Shasta-Trinity National Forest

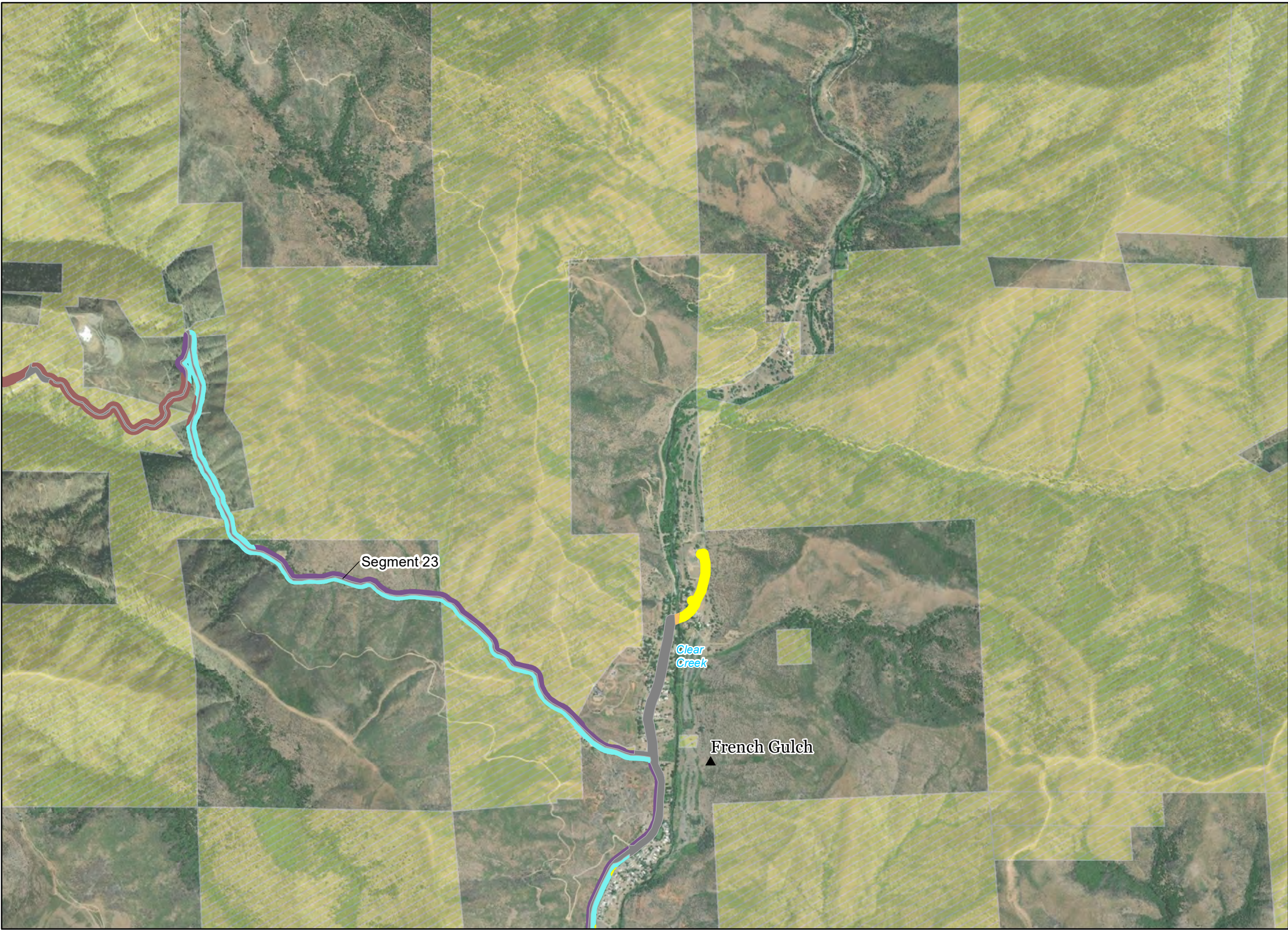
CALVEG Community Type*

- Barren
- California Black Oak Alliance
- Canyon Live Oak Alliance
- Douglas-Fir - Pine Alliance
- Pacific Douglas-Fir Alliance
- Ponderosa Pine Alliance
- Riparian Mixed Hardwood Alliance

*Mapped within a 100-foot buffer of the Project Area

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Vegetation/Habitat Communities
Digital 299 Broadband Project

Legend

▲ Cities

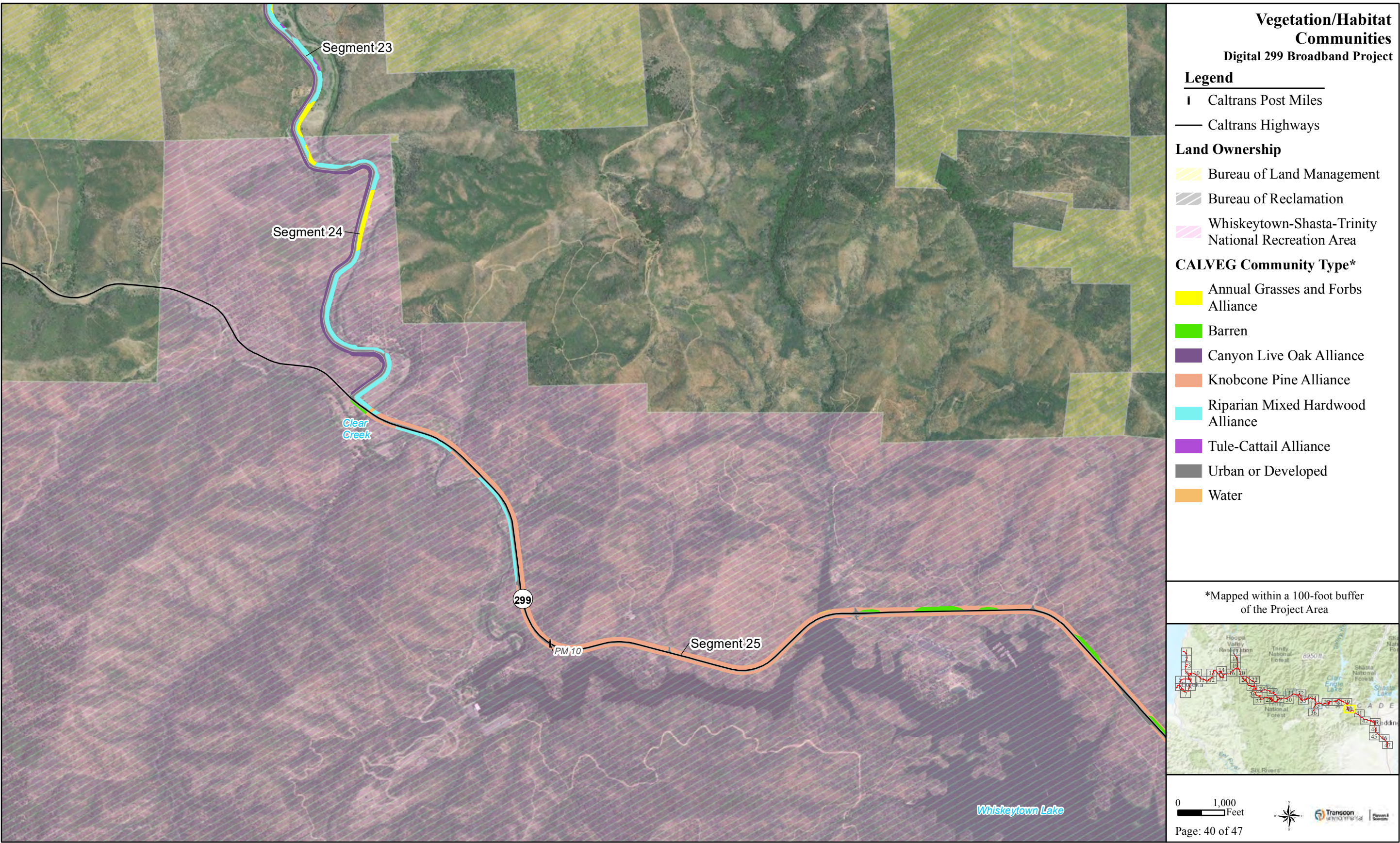
Land Ownership
Bureau of Land Management

CALVEG Community Type*
Annual Grasses and Forbs Alliance
Canyon Live Oak Alliance
Ponderosa Pine Alliance
Riparian Mixed Hardwood Alliance
Urban or Developed
Water

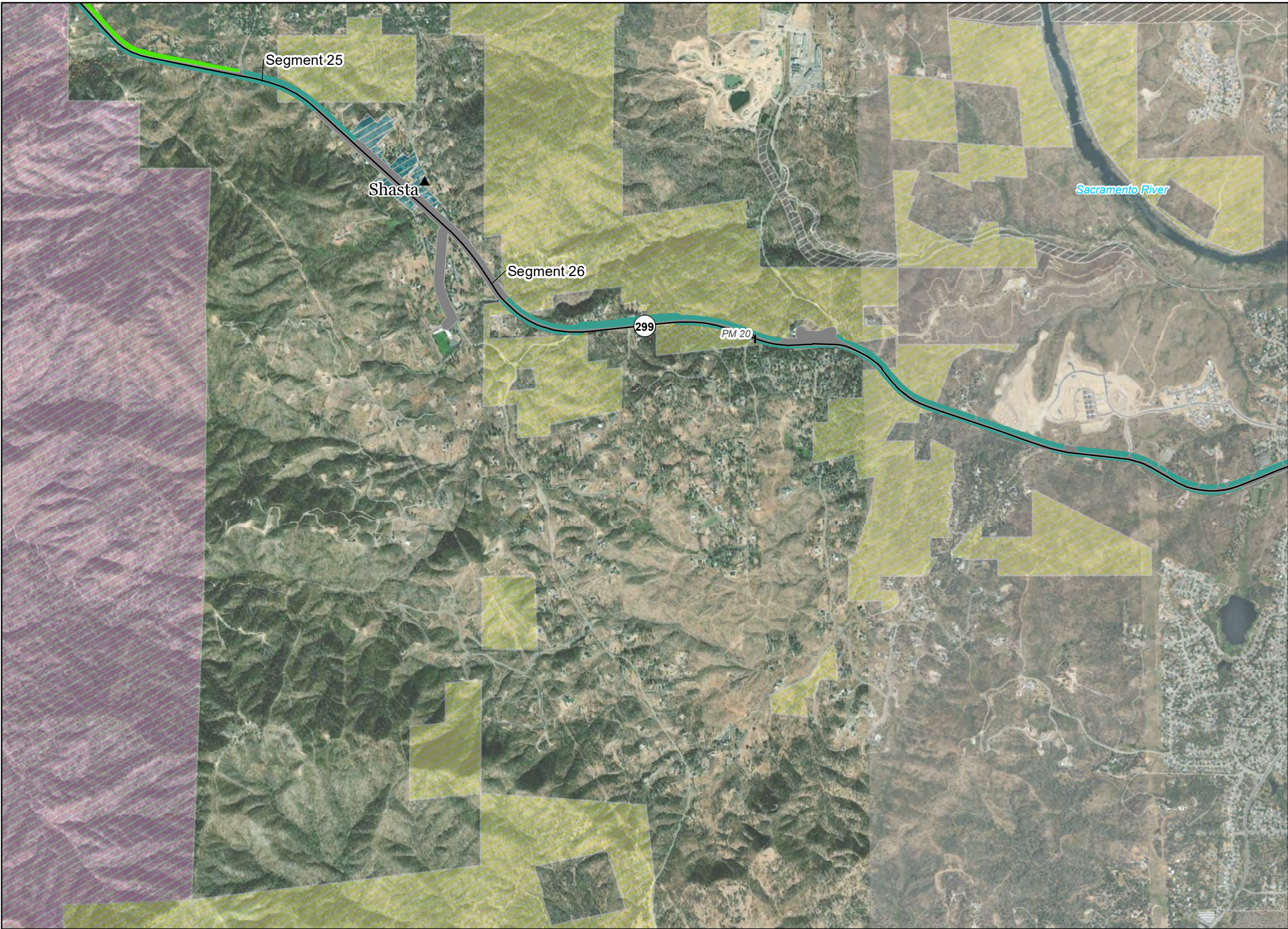
*Mapped within a 100-foot buffer of the Project Area

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- State Lands
- Whiskeytown-Shasta-Trinity National Recreation Area

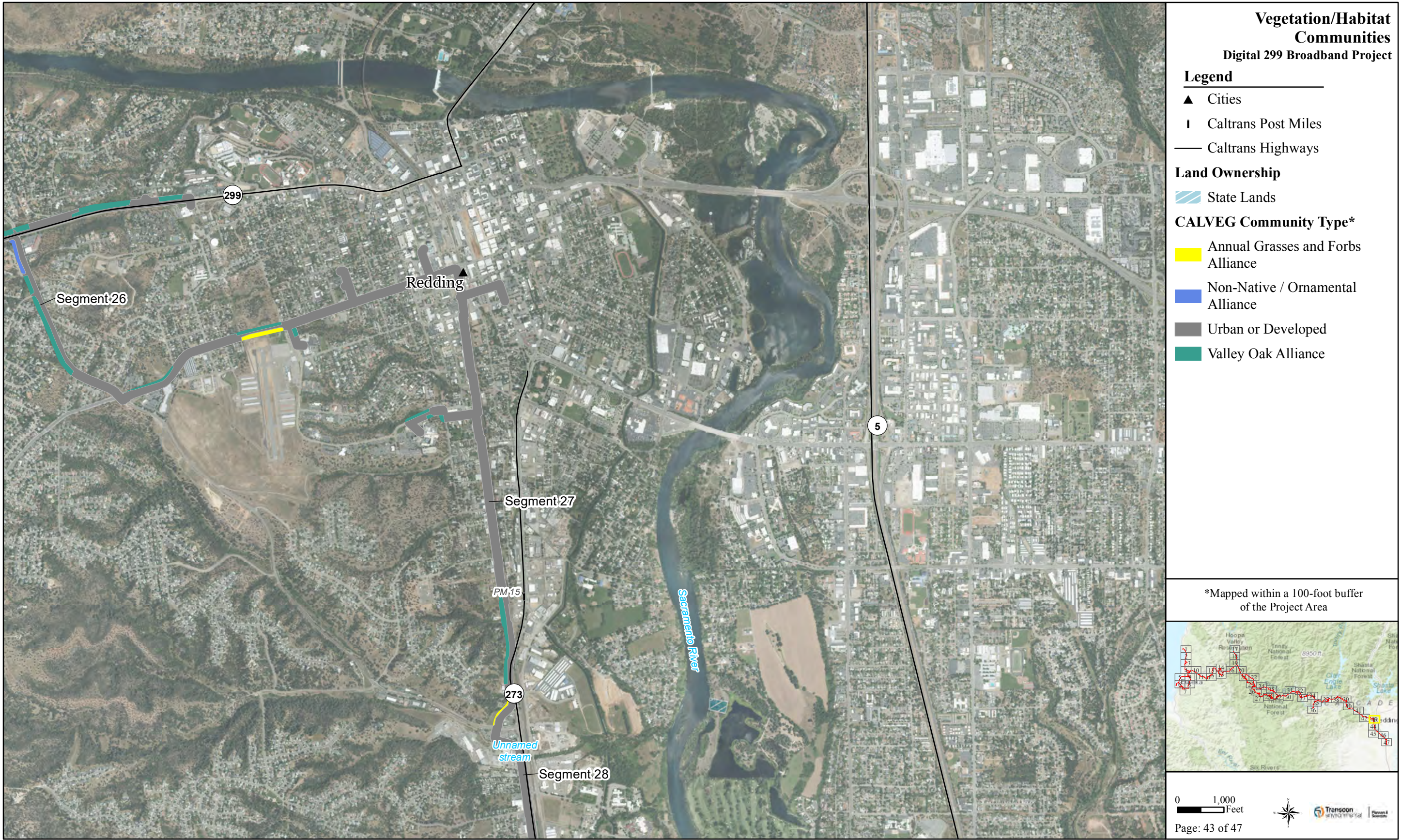
CALVEG Community Type*

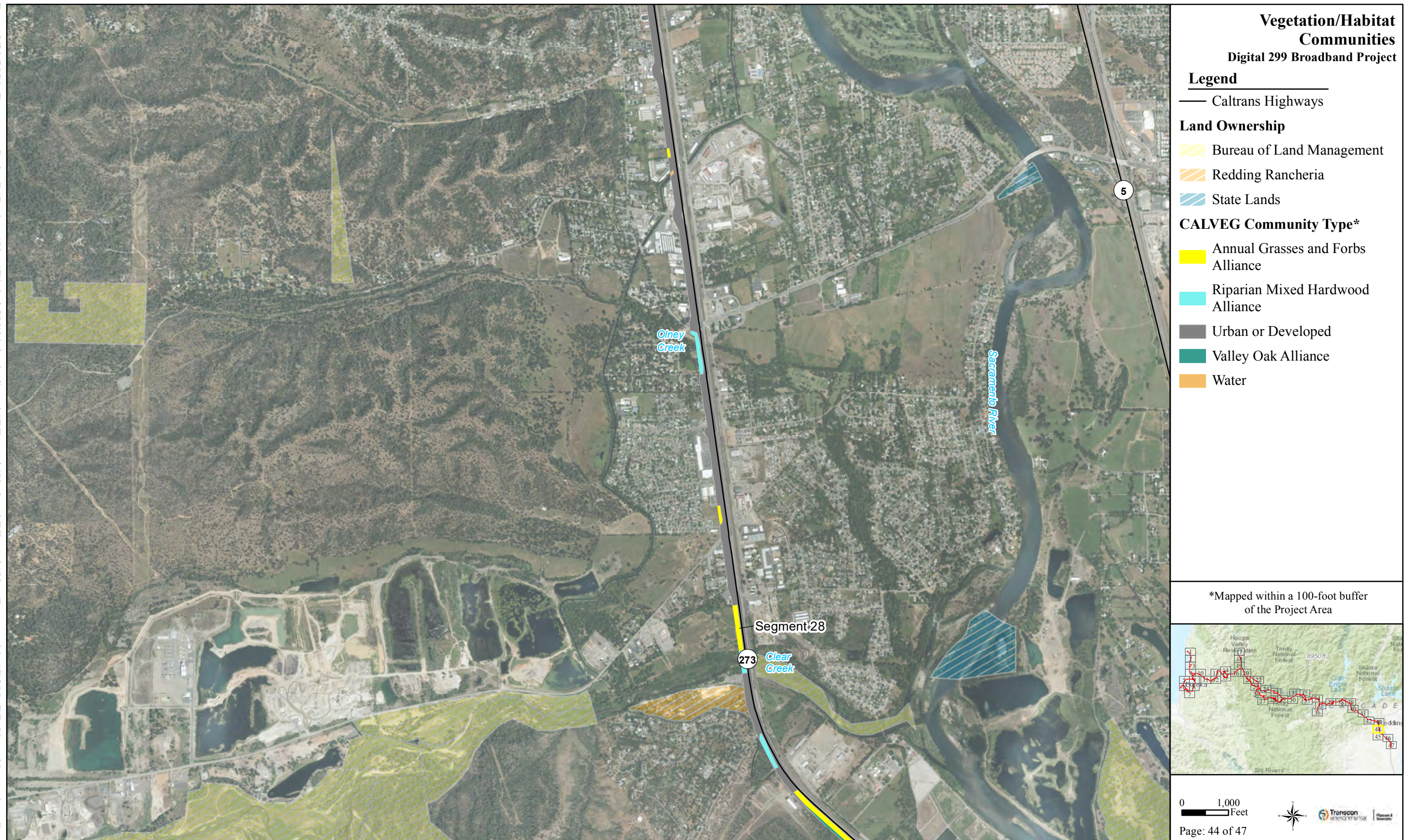
- Barren
- Urban or Developed
- Valley Oak Alliance

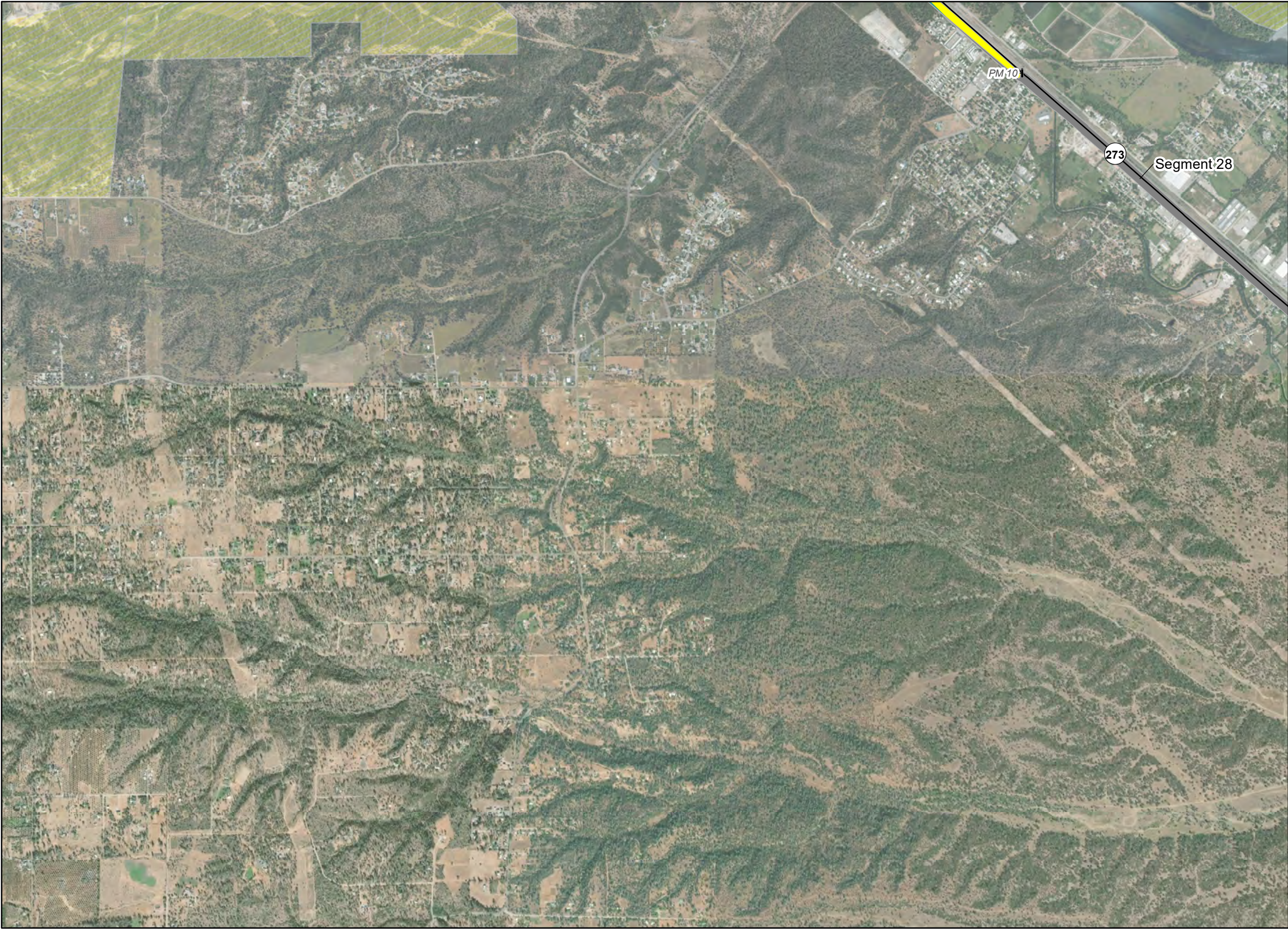
*Mapped within a 100-foot buffer of the Project Area

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

Caltrans Post Miles

Caltrans Highways

Land Ownership

Bureau of Land Management

CALVEG Community Type*

Annual Grasses and Forbs Alliance

Urban or Developed

Valley Oak Alliance

*Mapped within a 100-foot buffer of the Project Area

01,000

Feet

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Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- | Caltrans Post Miles
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

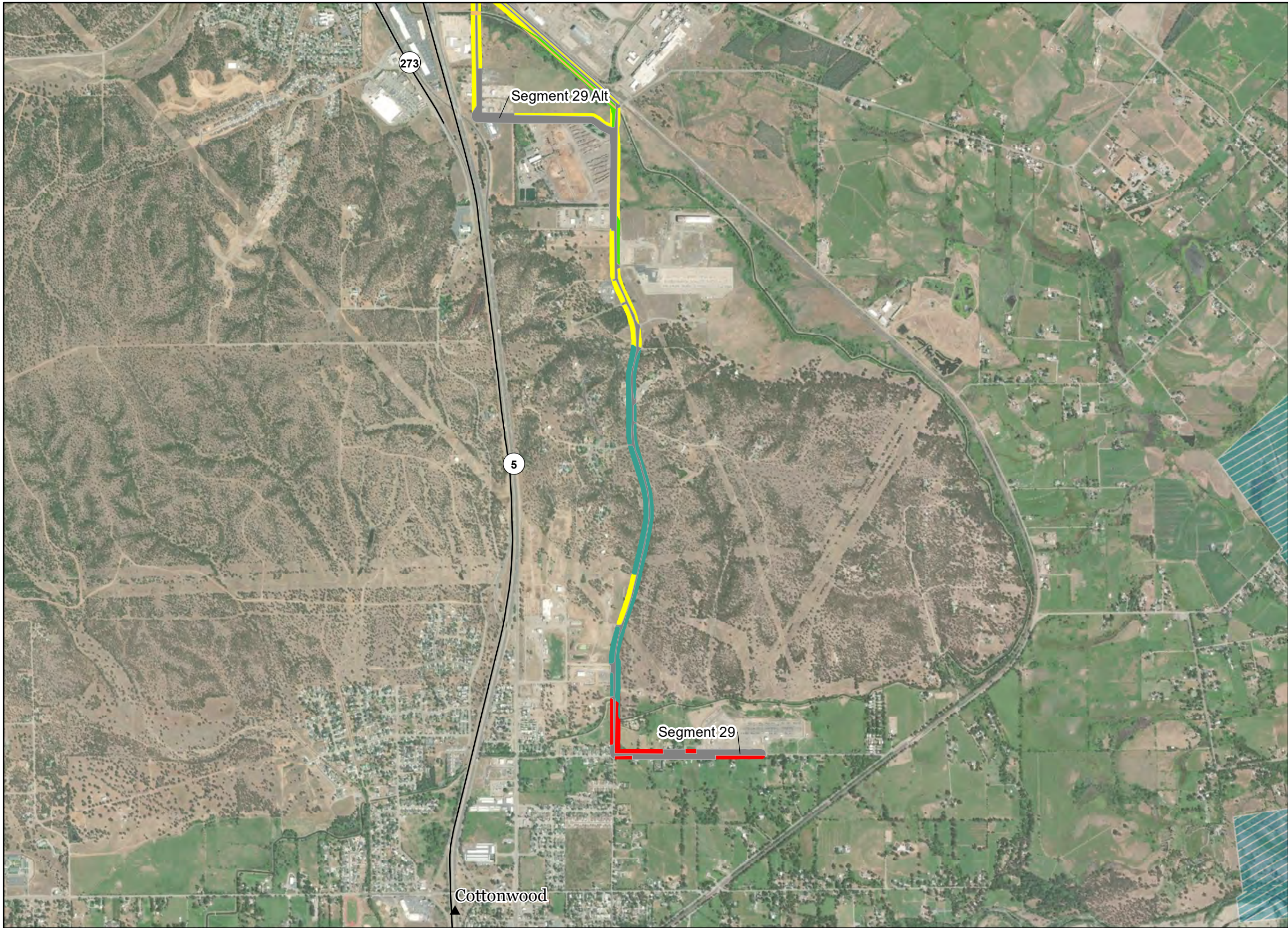
- Agriculture
- Agriculture - Pasture
- Annual Grasses and Forbs Alliance
- Riparian Mixed Hardwood Alliance
- Urban or Developed
- Valley Oak Alliance

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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Transcon



Vegetation/Habitat Communities

Digital 299 Broadband Project

Legend

- ▲ Cities
- Caltrans Highways

Land Ownership

- State Lands

CALVEG Community Type*

- Agriculture
- Annual Grasses and Forbs Alliance
- Barren
- Urban or Developed
- Valley Oak Alliance
- Water

*Mapped within a 100-foot buffer of the Project Area

0 1,000 Feet

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APPENDIX B

POTENTIAL NATIVE PLANT SPECIES TO USE FOR SEEDING (AS AVAILABLE AND APPROPRIATE)

Grasses:

Blue wildrye (*Elymus glaucus*)
Mountain brome (*Bromus carinatus* var. *carinatus*)
Idaho fescue (*Festuca idahoensis*)
One sided blue grass (*Poa secunda*)
Red fescue (*Festuca rubra*)
Small fescue (*Festuca microstachys*)
Tufted hairgrass (*Deschampsia cespitosa*)

Nitrogen fixing forbs

American bird's-foot trefoil (*Acmispon americanus*)
Indian clover (*Trifolium albopurpureum*)*
Maiden clover (*Trifolium microcephalum*)*
Miniature lupine (*Lupinus bicolor*)
Tomcat clover (*Trifolium willdenovii*)*
Whitetip clover (*Trifolium variegatum*)

Other forbs

Spring madia (*Madia elegans*)
Baby blue eyes (*Nemophila menziesii*)
Common bedstraw cleavers (*Galium aparine*)
Gumweed (*Madia gracilis*)
Miner's lettuce (*Claytonia perfoliata*)
Purple clarkia (*Clarkia purpurea*)

Coastal dune habitat

Beach buckwheat (*Eriogonum latifolium*)*
Beach poa (*Poa macrantha*)*
Coastal sagewort (*Artemisia pycnocephala*)*
Common yarrow (*Achillea millefolium*)*
Miniature lupine (*Lupinus bicolor*)*
Silky beach pea (*Lathyrus littoralis*)*
Small flowered lotus (*Acmispon parviflorus*)*

*Not present throughout project area.

APPENDIX C

INVASIVE PLANTS IN THE PROJECT AREA

TABLE C-1 INVASIVE PLANTS IN THE PROJECT AREA						
Common Name	Scientific Name	Cal-IPC Ranking	Lifeform	CDFA noxious	CCR 4500 noxious	USDA noxious
Barbed goatgrass	<i>Aegilops triuncialis</i>	High	Grass		X	
Brazilian water weed	<i>Egeria densa</i>	High	Forb			
Broadleaved pepperweed	<i>Lepidium latifolium</i>	High	Forb		X	
Cape-ivy	<i>Delairea odorata</i>	High	Vine		X	
Cheatgrass	<i>Bromus tectorum</i>	High	Grass	C		
Dense flowered cord grass	<i>Spartina densiflora</i>	High	Grass		X	
English ivy	<i>Hedera helix</i>	High	Vine			
European beachgrass	<i>Ammophila arenaria</i>	High	Grass			
French broom	<i>Genista monspessulana</i>	High	Shrub	C	X	
Giant reed	<i>Arundo donax</i>	High	Grass		X	
Gorse	<i>Ulex europaeus</i>	High	Shrub		X	
Himalayan blackberry	<i>Rubus armeniacus</i>	High	Shrub			
Hydrilla	<i>Hydrilla verticillata</i>	High	Aquatic forb	A	X	X
Iceplant	<i>Carpobrotus edulis</i>	High	Forb			
Medusahead	<i>Elymus caput-medusae</i>	High	Grass			
Purple pampas grass	<i>Cortaderia jubata</i>	High	Grass		X	
Rattlebox	<i>Sesbania punicea</i>	High	Forb		X	
Saltcedar	<i>Tamarix ramosissima</i>	High	Tree		X	
Scotch broom*	<i>Cytisus scoparius</i>	High	Shrub		X	
Scotch thistle	<i>Onopordum acanthium</i>	High	Forb		X	
South American spongeplant	<i>Limnobium laevigatum</i>	High	Aquatic forb			
Spanish broom	<i>Spartium junceum</i>	High	Shrub		X	
Spotted knapweed	<i>Centaurea stoebe ssp. micranthos</i>	High	Forb		X	
Uruguayan pampas grass	<i>Cortaderia selloana</i>	High	Grass			
Water hyacinth	<i>Eichhornia crassipes</i>	High	Aquatic forb			
Water primrose	<i>Ludwigia hexapetala</i>	High	Aquatic forb			
Yellow star-thistle*	<i>Centaurea solstitialis</i>	High	Forb		X	

TABLE C-1 INVASIVE PLANTS IN THE PROJECT AREA						
Common Name	Scientific Name	Cal-IPC Ranking	Lifeform	CDFA noxious	CCR 4500 noxious	USDA noxious
Common velvetgrass**	<i>Holcus lanatus</i>	Moderate	Grass		X	
Dogtail grass**	<i>Cynosurus echinatus</i>	Moderate	Grass			
Dwarf eelgrass**	<i>Zostera japonica</i>	Moderate	Aquatic grass		X	
Ripgut brome**	<i>Bromus diandrus</i>	Moderate	Grass			
Tall fescue**	<i>Festuca arundinacea</i>	Moderate	Grass			
Bermuda buttercup	<i>Oxalis pes-caprae</i>	Moderate	Forb			
Bigleaf periwinkle	<i>Vinca major</i>	Moderate	Forb			
Black mustard	<i>Brassica nigra</i>	Moderate	Forb			
Broomleaf toadflax	<i>Linaria genistifolia</i>	Moderate	Forb			
Brown star-thistle	<i>Centaurea jacea ssp. pratensis</i>	Moderate	Forb		X	
Bull thistle	<i>Cirsium vulgare</i>	Moderate	Forb		X	
Canada thistle	<i>Cirsium arvense</i>	Moderate	Forb		X	
Cape weed	<i>Arctotheca calendula</i>	Moderate	Forb			X
Chinese tallowtree	<i>Triadica sebifera</i>	Moderate	Tree			
Cotoneaster	<i>Cotoneaster franchetii</i>	Moderate	Shrub/Tree			
Dalmatian toadflax*	<i>Linaria dalmatica</i>	Moderate	Forb		X	
Diffuse knapweed	<i>Centaurea diffusa</i>	Moderate	Forb		X	
Dyer's woad*	<i>Isatis tinctoria</i>	Moderate	Forb		X	
Edible fig	<i>Ficus carica</i>	Moderate	Tree			
Fuller's teasel	<i>Dipsacus fullonum</i>	Moderate	Forb			
Giant knotweed	<i>Fallopia sachalinensis</i>	Moderate	Forb	A	X	
Hairy cats ear	<i>Hypochaeris radicata</i>	Moderate	Forb			
Italian plumeless thistle	<i>Carduus pycnocephalus</i>	Moderate	Forb		X	
Japanese knotweed	<i>Fallopia japonica</i>	Moderate	Forb	A	X	
Maltese star-thistle	<i>Centaurea melitensis</i>	Moderate	Forb		X	
Meadow knapweed	<i>Centaurea debeauxii</i>	Moderate	Forb			
Oxeye daisy	<i>Leucanthemum vulgare</i>	Moderate	Forb			
Pennyroyal	<i>Mentha pulegium</i>	Moderate	Forb			

TABLE C-1 INVASIVE PLANTS IN THE PROJECT AREA						
Common Name	Scientific Name	Cal-IPC Ranking	Lifeform	CDFA noxious	CCR 4500 noxious	USDA noxious
Poison hemlock	<i>Conium maculatum</i>	Moderate	Forb			
Prostrate cape weed	<i>Arctotheca prostrata</i>	Moderate	Forb			
Rush skeletonweed	<i>Chondrilla juncea</i>	Moderate	Forb		X	
Sea fig	<i>Carpobrotus chilensis</i>	Moderate	Forb			
Sheep sorrel	<i>Rumex acetosella</i>	Moderate	Forb			
Shortpod mustard	<i>Hirschfeldia incana</i>	Moderate	Forb			
Silver wattle	<i>Acacia dealbata</i>	Moderate	Tree			
Spreading hedgeparsley	<i>Torilis arvensis</i>	Moderate	Forb			
Stinkwort*	<i>Dittrichia graveolens</i>	Moderate	Forb		X	
Sweet fennel*	<i>Foeniculum vulgare</i>	Moderate	Forb			
Tree of heaven*	<i>Ailanthus altissima</i>	Moderate	Tree	C	X	
Woolly cotoneaster	<i>Cotoneaster pannosus</i>	Moderate	Shrub/Tree			
*Species known to intersect with the Construction Corridor through GIS analysis. **Invasive grasses have differing performance standards than forbs; see Performance Standards section.						