September 13, 2022

McKay Community Forest Stewardship Plan

Eureka, Cutten, Myrtletown, Ridgewood Heights
Ryan Creek Watershed, Humboldt County

Humboldt County
Public Works Department
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Eureka, CA 95501

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www.humboldtgov.org/mckayforest

Executive Summary

- The McKay Community Forest ("Community Forest") is located southeast of Eureka within the watershed of Ryan Creek along the urban interface with Myrtletown, Cutten, and Ridgewood Heights. The Community Forest was created in 2014 when the County of Humboldt acquired 997 acres of forestland from Green Diamond Resource Company, and then expanded in 2020 through the acquisition of an additional 197 acres, resulting in a total area of 1,194 acres.

- The Community Forest was established for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation. The Community Forest is envisioned as a place that enhances the quality of life for Humboldt County residents and visitors by providing opportunities to experience a diverse, dynamic, and productive forest.

- This Forest Stewardship Plan is the County's guidance document for managing the Community Forest through the next ten to fifteen years. The Stewardship Plan describes existing conditions, defines the management goals and objectives, presents the overall management approach, establishes guiding principles and conservation measures, and highlights the initial priorities.

- The Community Forest will be managed using principles of forest stewardship and ecological forest management, where the focus is on the entire ecosystem. The Stewardship Plan addresses how silviculture, fire risk reduction, habitat restoration, carbon sequestration, monitoring, and adaptive management will be integrated into the management of the Community Forest. The Stewardship Plan is a companion document to the Non-Industrial Timber Management Plan, which is a regulatory document developed to demonstrate compliance with the California Forest Practice Rules.

- The McKay Community Forest Trail Plan ("Trail Plan") was completed in December 2020. The Trail Plan provides a blueprint for the development of trails, access points, and amenities to support recreational and educational activities. The Trail Plan describes the overall goals, objectives, guiding principles, design standards, and construction practices for building sustainable trails to support outstanding outdoor experiences for a diversity of trail users. The Trail Plan proposes a trail network with 31 miles of multi-use roads, multi-use trails, hiking trails, and mountain bike trails. The Trail Plan is Attachment A of the Stewardship Plan.

- An environmental study for the Trail Plan, called a Mitigated Negative Declaration, was released for public review on June 2, 2022, for compliance with the California Environmental Quality Act ("CEQA"). Trails will be developed incrementally in a logical sequence over the course of several years. The first trails to be built and opened to the public will be located near Northridge Road, Harris Street, and Redwood Acres. Trail construction will depend heavily on support from the Volunteer Trail Stewards program of the Humboldt Trails Council, the California Conservation Corps, and the Redwood Coast Mountain Bike Association. Connecting the northern and southern portions of the Community Forest will require securing an easement on the east side of the McKay Ranch subdivision which surrounds Redwood Fields. The Trail Plan includes a proposed Bike Skills Park near the Northridge parking area.

- The Community Forest occupies highly productive forestland. The dominant tree species within the forest is the coast redwood, an iconic and economically valuable species that is a major part of the North Coast's natural and cultural heritage. Old-growth trees were cut over 100 years ago and since then the forest has been managed for short rotations of uniform, even-

aged trees, which has simplified the forest structure and reduced habitat quality. Many of the stands are stocked with densely spaced trees exhibiting reduced growth rates due to shading. The desired future condition is a dynamic, healthy forest ecosystem with mixed-age trees and complex structure. The County's management approach will shift the trajectory of the forest toward a composition with larger, older trees and more complex structural characteristics.

- Timber harvesting will be implemented to provide consistent income and enable the Community Forest to be economically self-sustaining over the long term. An inventory of forest resources was developed to understand baseline stand compositions, timber volume, and standing carbon. The County will manage the forest through uneven-aged management which involves thinning, single tree selection, and small group openings. The rate of harvest will average approximately 50 to 60% of annual tree growth. Harvests will be designed with an emphasis on enhancing structural complexity and creating stands with diverse age classes. Standing dead trees (snags) and live trees with unique and beneficial structural features will be retained. The age, size, and total volume of timber will increase over time, along with biomass and carbon sequestration. In addition to complying with the Forest Practice Rules and all applicable laws and regulations, the County has identified voluntary conservation measures within this Stewardship Plan.

- The Community Forest contains creeks and streams with high-quality habitat for salmonids and other aquatic species, including portions of lower Ryan Creek and Ryan Slough which serve as a valuable stream-estuary ecotone. Habitat for coho salmon is an especially important ecological asset of the Community Forest. Opportunities to benefit salmon by enhancing off-channel habitat have been identified and several restoration projects will be pursued. Historically, northern spotted owls have been active within the Community Forest although recently nesting sites have not been occupied consistently.

- Roads are needed for timber harvest operations, restoration activities, maintenance, patrols, firefighting, and emergency response. Roads within the Community Forest are classified as logging roads for the purpose of forest management activities and are not public roads. Road upgrades and new trail construction will be one of the most significant and expensive aspects of managing the Community Forest over the next 20 to 25 years. In general, the highest priority will be controlling sediment sources near fish-bearing streams, providing safe public access via a network of recreational trails, and development of a road network suitable for timber harvest operations. The County proposes to retain and upgrade 9.2 miles of existing logging roads for timber operations; construct 2.0 miles of new logging roads for timber operations; convert 1.8 miles of existing logging roads to service roads (no timber operations); and decommission 4.0 miles of existing logging roads and convert a portion of them to trails.

- While redwood forests on the North Coast generally have high resilience to wildfire, drought, disease, and blowdown, there is still a need to actively manage risks. Key actions for managing wildfire risks include developing shaded fuel breaks adjacent to roads and neighborhoods, thinning over-stocked stands, managing the forest for increased tree size and spacing (less ladder fuels), upgrading the road network, carefully planning any managed use of fire, and restricting activities that could cause ignition.

- The County plans to convene a seven-member McKay Community Forest Advisory Group to help guide the management of the Community Forest. The Advisory Group will include three designated members (City of Eureka, tribal, Humboldt Trails Council) and four at-large members. The four at-large members will be selected by the Public Works Director through an annual application process.

Acknowledgements

Green Diamond Resource Company
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California Department of Housing and Community Development
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City of Arcata
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Wiyot Tribe
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Third District	Mike Wilson
Fourth District	Virginia Bass
Fifth District	Steve Madrone

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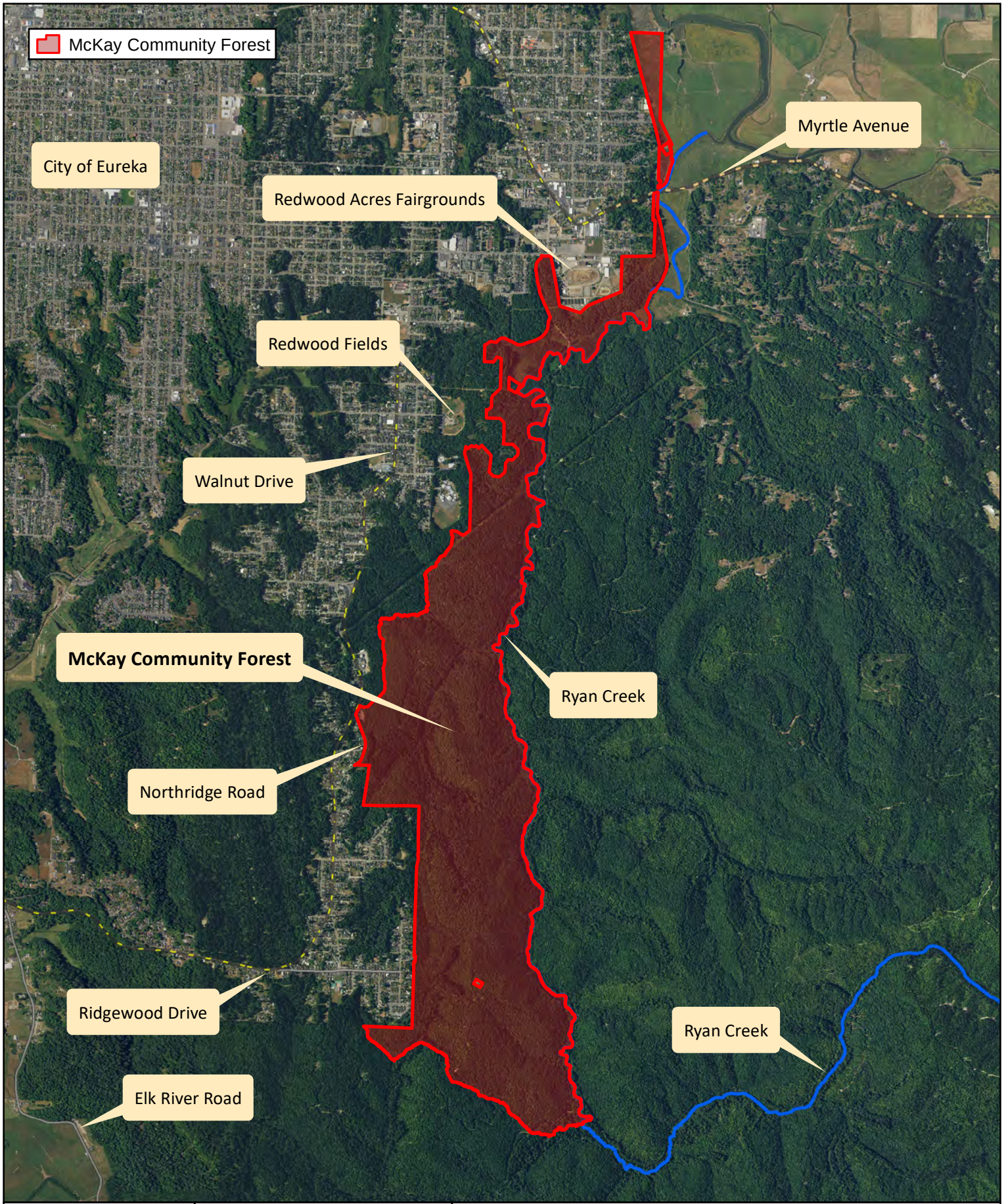

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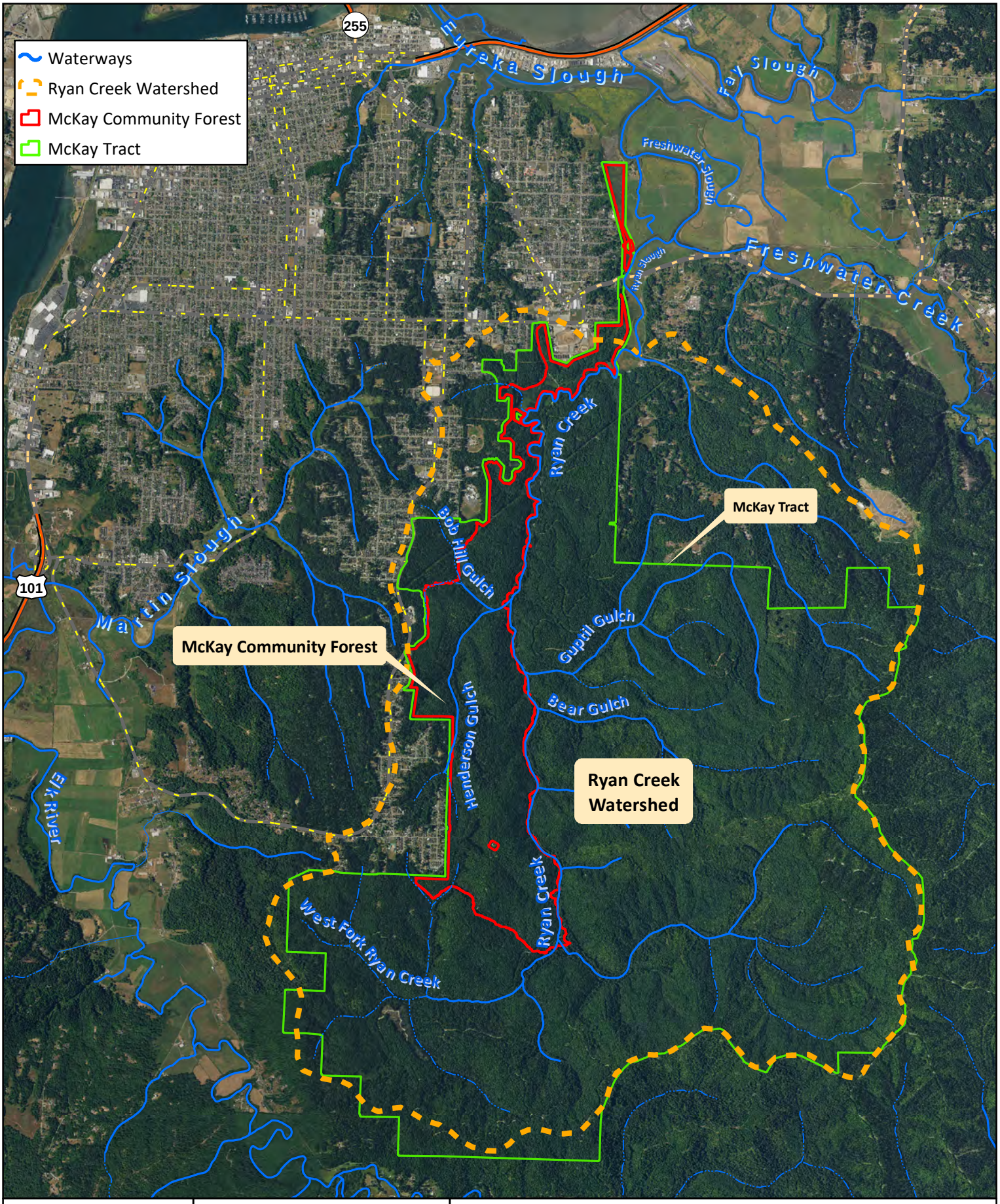
McKay Community Forest

Community Forest Overview

Figure 1



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McKay Community Forest

Ryan Creek Watershed

Figure 2

1 INTRODUCTION

The McKay Community Forest ("Community Forest") is located southeast of Eureka within the watershed of Ryan Creek along the urban interface with Myrtletown, Cutten, and Ridgewood Heights (Figure 1). Ryan Creek flows into a network of sloughs connected to Eureka Slough and Humboldt Bay (Figure 2). The Community Forest was created in 2014 when the County of Humboldt acquired 997 acres of forestland from Green Diamond Resource Company, and then expanded in 2020 through the acquisition of an additional 197 acres, resulting in a total area of 1,194 acres. The Community Forest was established for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation.

The McKay Community Forest will be managed using principles of forest stewardship and ecological forest management. **Forest stewardship** is a general approach to managing the forest that conserves all the forest's resources, including wildlife, timber, soil, water, and recreational opportunities (Harris, 2007). Forest stewardship takes a long-term view and manages the land with a sense of service and responsibility for future generations. **Ecological forest management** relies on science-based strategies to integrate multiple environmental, economic, and social goals while sustaining the integrity of forest ecosystems and landscapes and reducing risks to the forest resources (Franklin, 2018). Ecological forest management views forests as complex, diverse ecosystems providing a broad array of valuable services and products. The focus of ecological forestry is on the entire ecosystem and not just on the trees. Ecological forestry seeks to create forest ecosystems and landscapes that will be resilient to climate change.

This Forest Stewardship Plan is the County's guidance document for managing the McKay Community Forest during the next ten to fifteen years. The purpose of the Stewardship Plan is to:

1. Describe existing conditions within the Community Forest.
2. Define the County's management goals and objectives.
3. Establish core principles and present the general management approach.
4. Identify important conservation measures and management practices.
5. Highlight the needs, opportunities, and priorities for enhancing the services and benefits of the Community Forest.

This Stewardship Plan applies only to county-owned property[1]. The Stewardship Plan is a companion document to the Community Forest's Non-Industrial Timber Management Plan ("NTMP"), which is a regulatory document developed to demonstrate compliance with the California Forest Practice Rules (Section 4.2). While the Stewardship Plan is not a regulatory permit or legally binding instrument, the plan guides the preparation of the NTMP. The County submitted an NTMP application to the California Department of Forestry and Fire Protection ("CAL FIRE") in April 2022.

The Community Forest is envisioned as a place for residents and visitors of all ages to engage in recreational and educational activities such as walking, hiking, mountain-biking, wheeling (with mobility devices), horseback riding, studying nature, and enjoying the outdoors. The McKay Community Forest Trail Plan ("Trail Plan") was completed in December 2020 and is attached in **Attachment A**. The Trail Plan provides a blueprint for the development of trails, access points, and amenities to support recreational and educational activities.

[1] In this plan, the terms "McKay Community Forest" and "Community Forest" refer to county-owned property while the term "McKay Tract" refers to property within the Ryan Creek watershed owned by Green Diamond.

An environmental study for the Trail Plan, called a Mitigated Negative Declaration, was released for public review on June 2, 2022, for compliance with the California Environmental Quality Act ("CEQA")[2]. The Board of Supervisors will consider adoption of the Trail Plan Mitigated Negative Declaration on or around September 27, 2022.

The Community Forest will be managed by the Environmental Services Division and Parks and Trails Division of the Humboldt County Public Works Department. The cost of management and maintenance will be funded primarily by timber harvest revenue along with grants and donations. The Community Forest will depend on active volunteer public involvement in a variety of forms, including donations and fund raising, trail building and maintenance, trail clean-up, volunteer patrols, restoration activities, advisory support, and educational programs. Timber harvest revenues will need to be re-invested into the property for 20 to 30 years to provide for development of trails and access points and road upgrades. Grants and donations can provide additional financial assistance, especially for habitat restoration. Timber revenue derived from forest management will expand the range of grant opportunities because many grant opportunities require match funding.

[2] The Forest Stewardship Plan is a planning study that provides the context for decisions on future actions and is therefore exempt from review under CEQA. The NTMP is a CEQA-equivalent document that applies to timber harvest activities and management of logging roads. The County prepared an Initial Study and Proposed Mitigated Negative Declaration (June 2, 2022) for the Trail Plan, which proposes specific actions related to trails and access points. Future projects related to restoration, wildfire risk reduction, and other actions not analyzed in the NTMP or Trail Plan Mitigated Negative Declaration will require analysis for CEQA compliance on a project by project basis as they are further specified.

1.1 Community Forest Concept

Forests can provide a multitude of benefits and services[3] that contribute to community prosperity and well-being. Three essential elements of a "**community forest**" include (1) local control in management and use of the land, (2) management of forest resources specifically to provide benefits based on community values and priorities, and (3) permanent protection of the land (TPL, 2021). A community forest is frequently owned by a local entity, often a local government such as a city, tribe, or non-profit organization, and managed in a manner that balances social, economic, and environmental interests. Management decisions are informed by active public participation, giving residents both the opportunity and the responsibility to manage their natural resources effectively and sustainably (Aspen Institute, 2005).

Community forests are different from reserves or parks in that the management goals include utilization of forest resources to produce economically valuable forest products, and therefore a level of periodic forest disturbance from harvest activities is expected. A fundamental premise of community forestry is that public recreational use, wood production, and forest conservation are not mutually exclusive. While timber production is not the first objective, timber harvesting contributes to the economy and generates revenue that enables other values to be achieved on the landscape. Community forests can help people understand where consumable forest products come from and how ecosystem services are maintained.

Community forests have been established across the United States and around the globe with a variety of ownership types and organizational structures. Examples of community forests on the North Coast include the Arcata Community Forest, Weaverville Community Forest (Trinity County), Usal Redwood Forest (Mendocino County), and Yurok Community Forest (Del Norte County). In addition, the McKinleyville Community Services District is initiating a community forest east of McKinleyville through an acquisition from Green Diamond. The McKay Community Forest is the first county-owned community forest in California. Existing examples provide useful models and reference points to learn from, while recognizing that each one is fundamentally unique to the community that benefits from the forest.

Arcata Community Forest

The Arcata Community Forest was established in 1955 as the first community forest in California and active management began in the mid-1960s. The McKay Community Forest is currently in a "raw" condition, analogous to where Arcata Community Forest was in the mid-1960s. The Arcata Community Forest is comprised of a total of 2,445 acres of second growth redwood forest with 23 miles of trails (including adjacent city-managed conservation easement areas) that are heavily used by hikers, runners, bicyclists, and equestrians. Timber harvest revenue funds forest operations, habitat restoration, and management of the forest for recreational uses. A combination of working forest areas, special management areas, and ecological reserves create a balanced management approach. Community forestry in Arcata is designed to provide local residents the opportunity and responsibility to manage their natural resources.

[3] **Ecosystem services** are the benefits people obtain from ecosystems. Millennium Ecosystem Assessment (2005) defines four categories of ecosystem services:

(1) Provisioning services (often called products) such as food, water, timber, and fiber.
(2) Regulating services that affect climate, floods, disease, wastes, and water quality.
(3) Cultural services that provide recreational, aesthetic, and spiritual benefits.
(4) Supporting services, such as soil formation, photosynthesis, and nutrient cycling.

In 2021, the City of Arcata updated their Forest Management Plan, which includes the following management goals:

1. Maintain the health of the forest system, specifically, maintain the integrity of the watershed, wildlife, fisheries and plant resources, their relationships and the process through which they interact with their environment.
2. Produce marketable forest products and income to the City in perpetuity, balancing timber harvest and growth.
3. The Community Forest shall also be managed to provide forest recreational opportunities for the Community.
4. The City's forests shall serve as models of managed redwood forests for demonstration purposes.

Operation of the Arcata Community Forest is tied to the approved forest management plans and a 1979 voter approved initiative to manage the forests using ecological principles with a portion of the net revenue to be used for parkland acquisition. The Arcata Forest was the first municipal forest certified in the U.S. under the Forest Stewardship Council. Since 2003, the city has expanded the community forest by 1,125 acres. Most of the new acquisitions were funded from state, federal, and foundation grants that were leveraged with a portion of timber harvest revenue from the city's timber program.

The Arcata Community Forest is owned by the City of Arcata and managed by the City's Environmental Services Department. A volunteer Forest Management Committee advises staff and the City Council on forest policy matters. The Committee consists of seven members with backgrounds and expertise in botany, forest ecology, wildlife, fisheries, geology, recreation, and forestry. The forest is being managed under a Non-Industrial Timber Management Plan (1-99-NTMP-033-HUM) to maximize habitat diversity with an emphasis to move the forest towards an old-growth condition. Management priorities include watershed, wildlife habitat, recreation, carbon sequestration and timber harvest revenue. Approximately 25% of the land base is in reserve status. The maximum allowable annual harvest is currently one-half of the annual growth increment on the working landscape portion (excluding the reserves). Therefore, the forests are accruing volume and age over time.

Trail junction at the Sunny Brae unit of the Arcata Community Forest

1.2 Community and Environmental Setting

1.2.1 Community Setting

The McKay Community Forest is located southeast of Eureka on the North Coast of California within the watershed of Ryan Creek, a tributary of Humboldt Bay (Figure 3). The Ryan Creek watershed is primarily forested with some dispersed residential development and rural agricultural uses in the lower watershed. The eastern property boundary of the Community Forest is defined by Ryan Creek and Ryan Slough. The Community Forest borders residential areas on the west and provides a de facto urban limit line that buffers a large, forested expanse to the east. The primary access points will be situated on Northridge Road in Cutten and along Harris Street west of Redwood Acres, with other access points to be developed over time. The Community Forest includes an approximately 17-mile network of existing logging roads, in varying condition. The main road leading into the McKay Community Forest (the R-Line) intersects with Harris Street west of Redwood Acres. Nearly all of the R-Line road remains within Green Diamond's ownership and is not part of the Community Forest.

In addition to residential neighborhoods on the west side of the Community Forest, notable adjacent properties and inholdings include the following (Figures 4 through 6):

Redwood Acres Fairgrounds
The McKay Community Forest borders Redwood Acres on the west, south, and east sides.

Redwood Fields
Redwood Fields is a youth sports complex located at the east end of Fern Street in Cutten, surrounded by the McKay Ranch subdivision. The facility is managed by the Redwood Field Committee. The property was split off from the McKay Tract in 1996.

Private inholding
A privately-owned residential property (APN 017-071-002) is situated within the Community Forest. The property is located southwest of Redwood Acres and east of Redwood Fields and the McKay Ranch subdivision. The property is accessed by vehicle from Harris Street on logging roads owned by Green Diamond and the County, over which the property owners hold non-exclusive easements. Additional information on road access is provided in Section 4.4.6. The property receives municipal water through a water line that extends westward from the property toward Cutten. Approximately 200 feet of the water line to the residence passes through the Community Forest.

McKay Ranch Subdivision
This 80-acre parcel is located at the east end of Fern and Redwood Streets in Cutten. The property was split off from the McKay Tract in 1996 and is currently owned by Kramer Properties, Inc. The property is currently forestland and proposed for phased development of a 320-unit, mixed-use subdivision including workforce housing apartment units, affordable single-family parcels, townhouse units, condominium units, single family parcels, and neighborhood commercial space. On March 22, 2022, the Board of Supervisors certified the Environmental Impact Report for the subdivision and approved a Development Agreement (further actions are needed before the Development Agreement is executed). Under the proposed Development Agreement, the developer would provide up to six open space areas as parkland dedications that would be progressively conveyed to the County as the phases of development proceed. The developer would provide an easement for a trail along the eastern boundary of the subdivision when the first subdivision phase is recorded. This easement would enable construction of a trail that bypasses the private inholding. Portions of the Community Forest may be used for up to 100 feet of defensible space for parcels within the new subdivision in accordance with the standards and review process identified in the conditions of approval.

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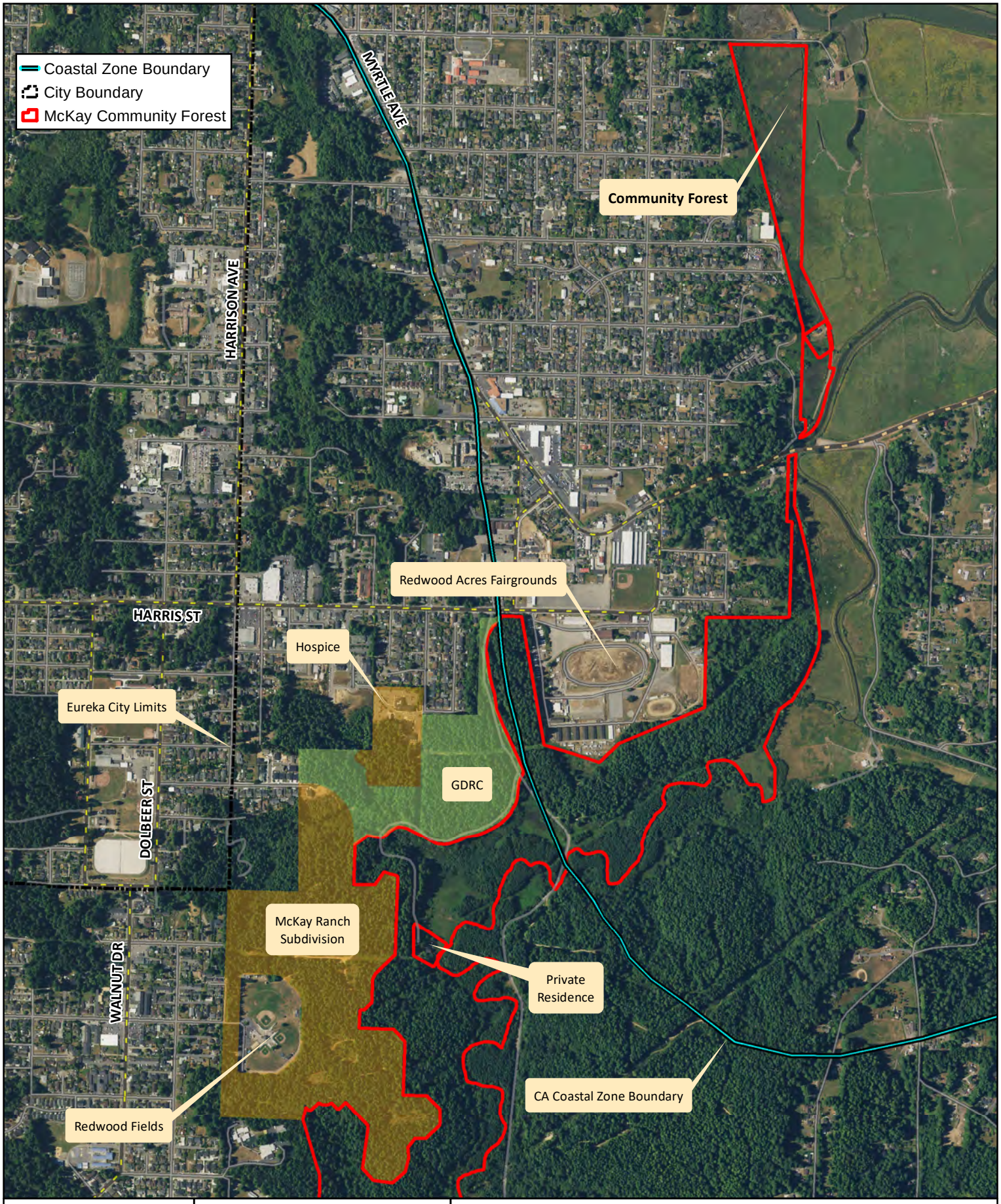
McKay Community Forest

Humboldt Bay Area

Figure 3



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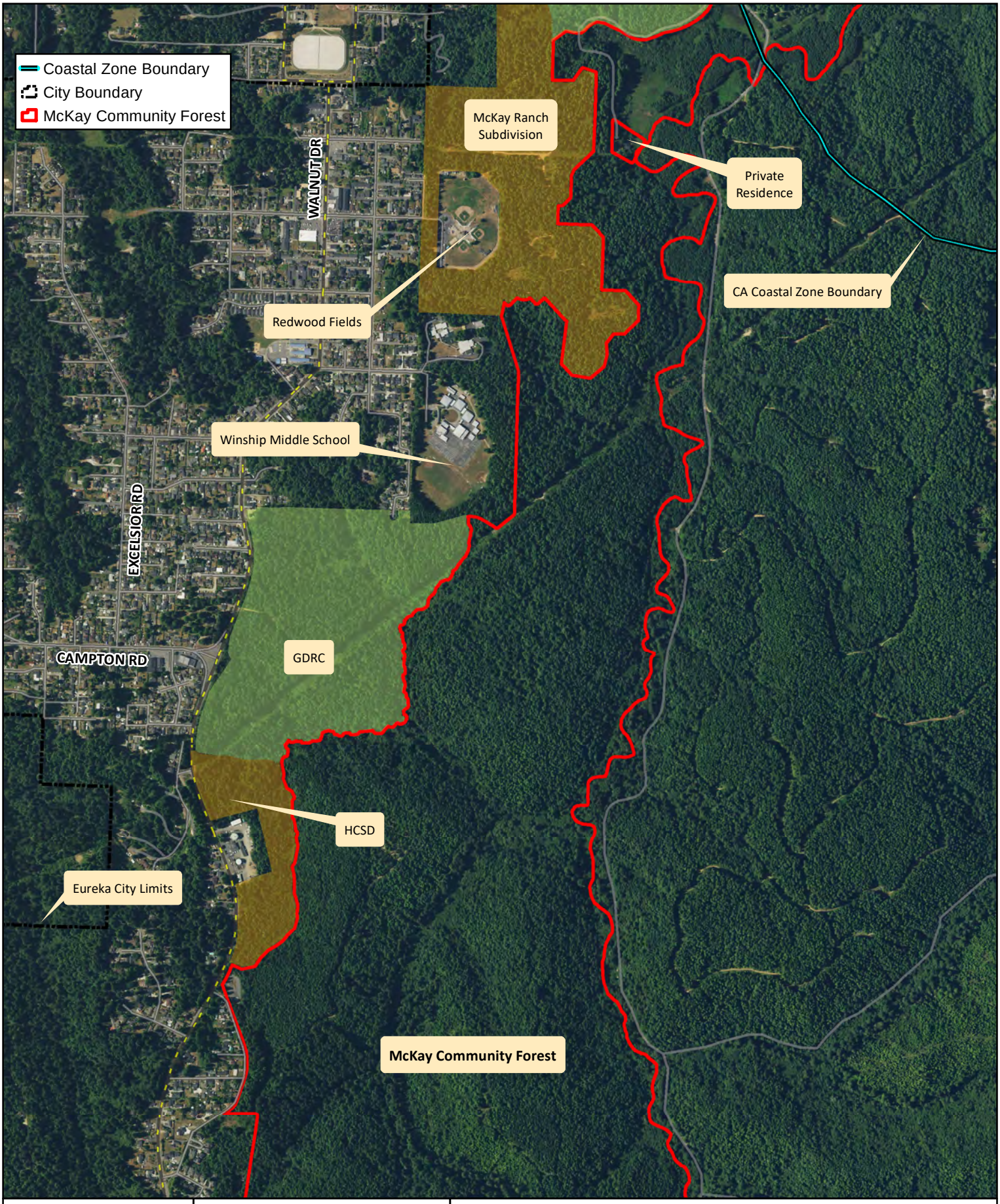
McKay Community Forest

Northern Section

Figure 4



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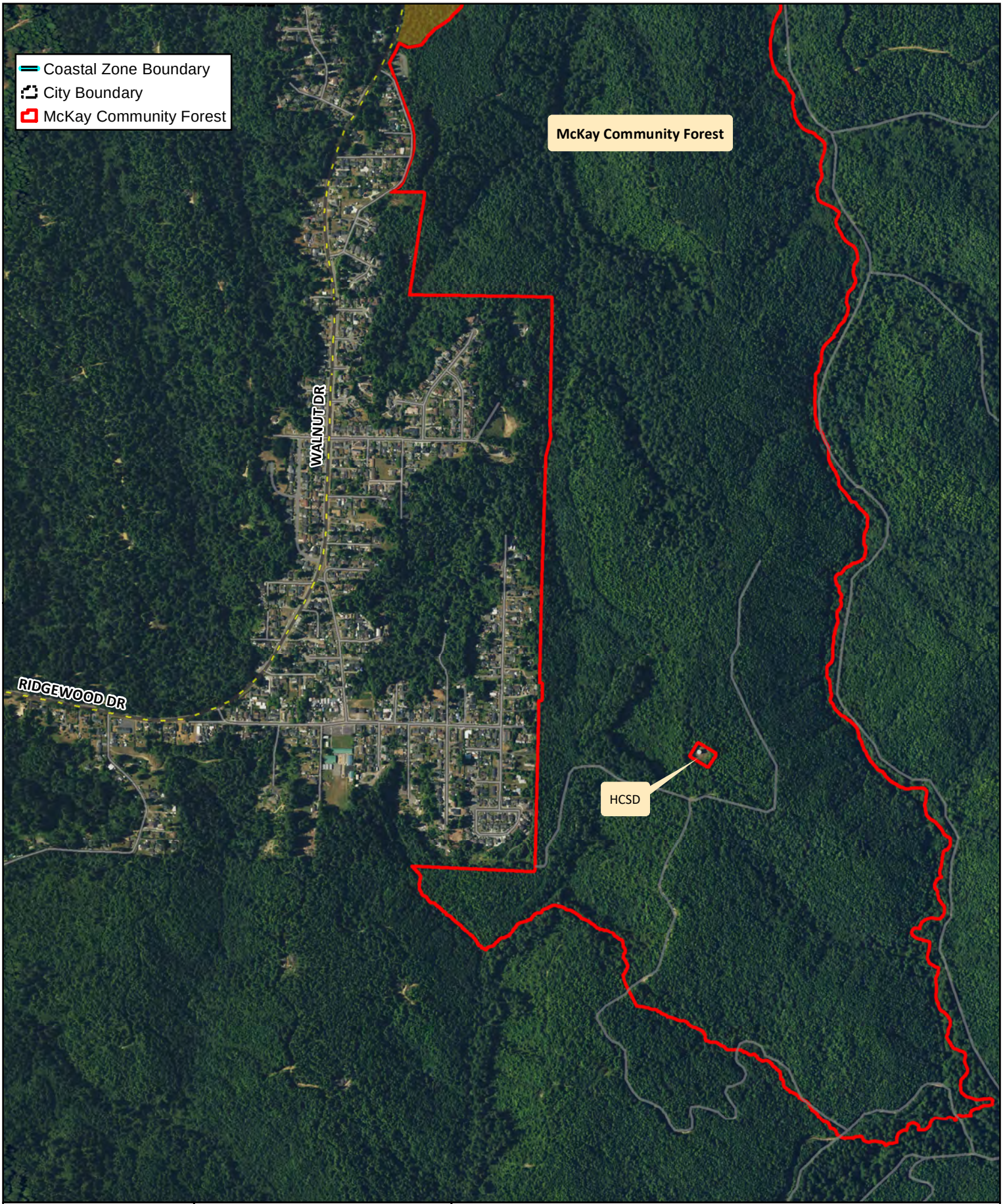
McKay Community Forest

Middle Section

Figure 5



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McKay Community Forest

Southern Section

Figure 6

City of Eureka inholding

The City of Eureka owns a 0.91-acre in-holding parcel (APN 017-151-009) within the northern portion of the Community Forest for a water pump station that moves water through the main feeder line up to their storage facility adjacent to Sequoia Park. The City holds an easement for road access to the pump station from Myrtle Avenue.

PG&E Infrastructure

PG&E's natural gas transmission lines (underground) and electric power transmission lines (aboveground) pass through the Community Forest. PG&E performs regular vegetation management along the transmission lines. PG&E operates a gas booster station north of Myrtle Avenue (APN 017-151-008).

Winship Middle School and Glen Paul School

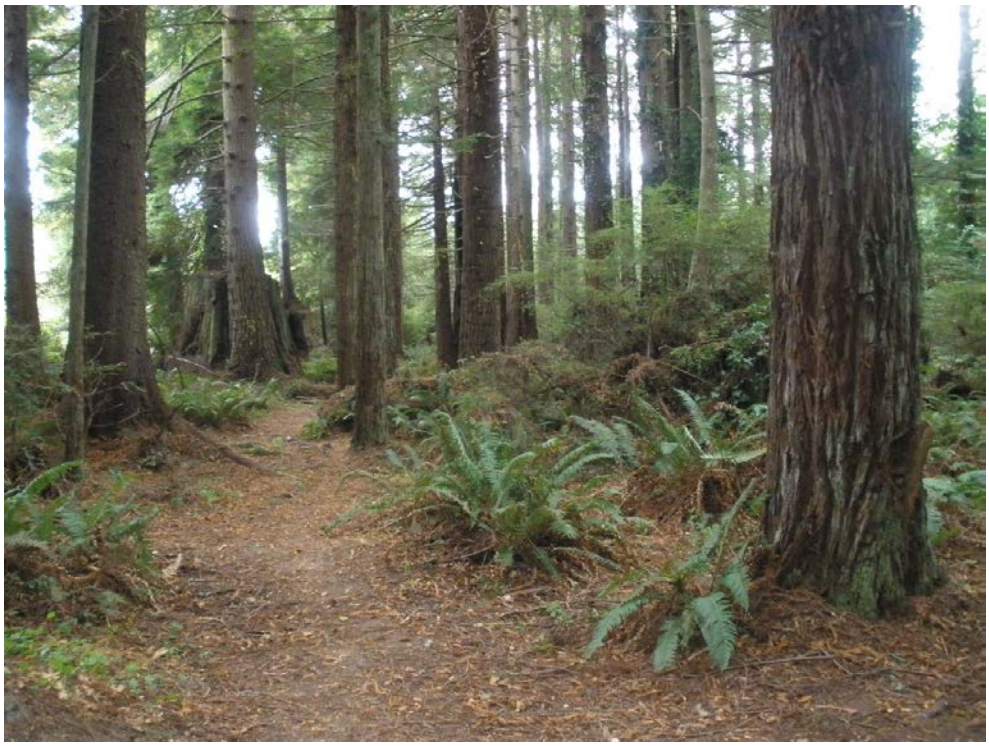
Winship School is part of the Eureka City School District. Glen Paul School is administered by the Humboldt County Office of Education. The school properties include a small portion of the bordering forestland to the east and south. The properties were split off from the McKay Tract in 1963.

Humboldt Community Services District

The Humboldt Community Services District (HCSD) provides wastewater collection and conveyance services and water services for the unincorporated areas within district boundaries adjacent to Eureka. HCSD has a facility located on Walnut Drive adjacent to the Community Forest and owns a 0.47-acre in-holding parcel (APN 303-012-020) within the southern portion of the Community Forest for a water storage tank.

Green Diamond Resource Company

Green Diamond owns extensive timberlands adjacent to the McKay Community Forest to the east and south within the Ryan Slough watershed. These lands include 5,967 acres with a recorded conservation easement that precludes future subdivision and conversion to non-forest uses.



View of forest near Northridge Road

1.2.2 Environmental Setting

The Ryan Creek watershed is a relatively small coastal watershed (12.9 square miles) draining into Humboldt Bay through Freshwater and Eureka Sloughs. The watershed is primarily forested with dispersed residential development. Ryan Creek is a low-gradient stream transitioning into Ryan Slough south of Myrtle Avenue. Major tributaries to Ryan Creek include Bob Hill Gulch, Henderson Gulch, Guptil Gulch, and Bear Gulch. Climate conditions are heavily influenced by coastal weather patterns due to the close proximity to the Pacific Ocean. Annual rainfall averages 38 inches with the majority falling between November and March. Summer temperatures are mild and the presence of a marine fog layer is common. The topography varies with flat ridgetops, moderate to steep hillslopes, and broad floodplains. The geologic setting of the Community Forest is described in Section 3.1.

Climate conditions and soil characteristics contribute to making the Ryan Creek watershed one of the most highly productive forest areas in the North Coast redwood region. Forestland is dominated by coastal redwood and Douglas-fir, with small components of grand fir, western hemlock, Sitka spruce, and red alder. Redwood trees can reach a diameter of 15 inches within 20 years and up to six feet in diameter in 80 years (Green Diamond, 2008). The Community Forest is generally comprised of second- or third-growth stands with scattered individual old-growth trees and snags. Forest resources are described in Section 3.2.

Ryan Creek hosts significant populations of coho salmon, Chinook salmon, steelhead, and coastal cutthroat trout. Other fish species found in the lower watershed include tidewater goby and longfin smelt. Numerous other bird and animal species are found in the watershed including peregrine falcon, northern spotted owl, osprey, northern red-legged frog, foothill yellow-legged frog, western pond turtle, and Sonoma tree vole. Black-tailed deer and black bear are common. Aquatic resources and terrestrial wildlife are described in Sections 3.3 through 3.5.

View of McKay Community Forest facing northwest

1.3 Historical Background

1.3.1 Historic Profile

Prior to the arrival of Euro-Americans and other settlers around 1850, the Wiyot people inhabited this area and actively managed their natural resources. Wiyot ancestral lands extend from Little River to the north, Bear River Ridge to the south, and inland to Chalk Mountain and Berry Summit. Native people lived in villages adjacent to the forests and waterways which they frequented for hunting, fishing, and other uses. Village sites were located near the Pacific Ocean, Humboldt Bay, and creeks, with trails leading to grassy openings and from one village to another. The Wiyot population prior to 1850 is estimated to have been between 1,000 and 3,300 individuals (Roscoe, et. al., 2010). Soon after the Euro-American and other settlers arrived, the Wiyot population was decimated by violence and disease. Today, three federally recognized tribes – the Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria – include citizens of Wiyot ancestry who are culturally affiliated with the traditional Wiyot territory.

Local historian Jerry Rohde prepared a report titled Historic Profile of the McKay Tract – Logging, Ranching, and Railroads (Rohde, 2014). The history of logging extends back to the 1850s and spans the use of oxen, steam donkeys, tractor skidding, and modern methods. In the early period logs were transported to Eureka Slough and rafted through Humboldt Bay to mills along the Eureka waterfront, including the Occidental Mill. Logs were conveyed by railroad to a log-dump at the foot of Park Street on Eureka Slough from the 1880s to the 1930s. The parents of former Humboldt County Supervisor Roger Rodoni leased a house and ranch within the McKay Tract from 1940 to 1976. The ranch was converted back to forestland by planting Sitka spruce trees in the 1990s.

Green Diamond (as its predecessor Simpson Timber Company) took ownership of the McKay Tract from Louisiana-Pacific Corporation in 1998. Louisiana-Pacific was formed in 1972 through a re-organization of Georgia-Pacific Corporation, which had acquired the property from Pacific Conservation Company in 1967. Previous owners included McKay & Company (under principal owner Allan McKay) and Ryan, Duff & Company (co-owned by James Ryan) which began acquiring property in the 1850s.

Most of the old-growth forest in the McKay Tract was harvested by the 1930s. Over two-thirds of the tract was commercially thinned between 1969 and 1984, and nearly half the tract was harvested using clear-cut or shelterwood methods between 1975 and 1989. Since 1989, timber harvesting regulations and methods have been modified to have less environmental impacts and land management activities have emphasized infrastructure upgrades and watershed rehabilitation (Green Diamond, 2008).

1.3.2 Creation of the McKay Community Forest

Green Diamond began working with The Trust for Public Land ("TPL") in 2009 to develop a long-term conservation strategy for the McKay Tract. TPL is a national, non-profit, land conservation organization that works to protect land in and around cities for public use and enjoyment. TPL's expertise includes facilitating large-scale conservation projects and negotiating land sales and easements for conservation and habitat preservation. TPL assisted with appraisals and land evaluations and led efforts to obtain funding. Formal announcement of this partnership was made on December 15, 2010. Green Diamond's decision to pursue a conservation strategy coincided with Humboldt County's multi-year process to update the Humboldt County General Plan. Green Diamond identified several factors for its decision to consider selling a portion of its land within the McKay Tract for a community forest, including: management challenges at the urban interface; infrastructure constraints for developing forestland within the McKay Tract; near-term opportunities for acquisition funding; and recognition of the public benefits of a community forest.

Concurrent with the discussions that began in 2009 between Green Diamond and TPL, an informal Humboldt Bay Regional Community Forest Work Group was formed with representatives from local community organizations and government agencies to pursue the goal of creating new community forest units around the Humboldt Bay area modeled on the City of Arcata's community forest. This group became inactive after the McKay Tract opportunity was announced and a new team was created to assist in evaluating the feasibility of the proposed McKay Tract project.

The proposed property boundaries and acreages for the Community Forest were developed by Green Diamond and TPL based on a variety of factors. The overall approach was intended to create opportunities for public access, establish a logical buffer between residential communities and Green Diamond's remaining lands, and maintain a limited amount of land available for future development. The configuration of the Phase 1 property was developed with the intent of creating viable management units for timber production. Property boundaries were developed primarily by following existing hydrologic features, major ridgelines, and roads. At the southern end, preference was given to the operating units situated adjacent to Ryan Creek.

As the Community Forest proposal was being developed, Green Diamond executed two property transactions for portions of the McKay Tract near the urban interface. In June 2013, Hospice of Humboldt purchased approximately 10.6 acres for a new end-of-life care facility. The Hospice property is accessed from Timber Falls Court which connects to Harris Street. In 2013, the Humboldt Community Services District purchased 22.5 acres of forestland surrounding their facility on Walnut Drive to address future needs. Green Diamond retained property an approximately 35-acre parcel located near Freese Avenue and Harris Street and an approximately 88-acre parcel located near the intersection of Campton Road and Walnut Drive, for future residential and commercial development.

The Board of Supervisors heard a presentation on the proposed community forest on December 6, 2011. At that meeting, the Board adopted a position of support for the concept of a community forest within the McKay Tract, excluding those areas necessary for maintaining an adequate residential land inventory to meet projected future housing needs. The Board also authorized staff to continue evaluating the feasibility of Humboldt County becoming the owner and manager of a community forest within the McKay Tract.

Public Works initiated a planning and evaluation process to develop a management strategy that would meet the desires and interests of the community; be appropriate for the land and its resources and context; be economically self-sustaining over the long-term; and match the County's organizational capabilities. Public meetings were held on April 30, 2013, at Winship School and on September 11, 2013, at Redwood Acres. An e-mail list was formed to distribute updates, and the Open Humboldt function on the County web site was used to pose a series of questions soliciting public input. Public Works provided update presentations to the Board of Supervisors on October 15, 2013, and December 17, 2013. In November 2013, Humboldt County and the City of Eureka executed a Memorandum of Understanding for collaborative planning related to the proposed community forest.

Public Works initiated four technical studies to support the planning efforts. BBW & Associates developed potential scenarios for future timber harvest and calculated projected costs and revenues. BBW's results were presented and discussed at two meetings of the Humboldt County Forestry Review Committee (October 30, 2013, and December 12, 2013). Pacific Watershed Associates evaluated the condition of logging roads on the property and the needs for upgrades or decommissioning. LACO Associates performed an analysis of road circulation and traffic levels in the Cutten and southern Eureka area to support consideration of transportation issues in the planning process and ensure that options for improvements to public roads are maintained. Local historian Jerry Rohde prepared a historic profile of the McKay Tract documenting its logging, ranching, and railroad history.


Public meeting at Winship School on April 30, 2013

In April 2014, the County published a Project Report which provided property information, discussed issues and concerns, presented a management framework, and analyzed anticipated costs and revenues. In August 2014, the Phase I acquisition (997 acres) was completed with funding from the California Natural Resources Agency, California Wildlife Conservation Board, and State Coastal Conservancy.

Following acquisition of the Phase I property, the County continued gathering information about the property with a focus on identifying feasible access points and planning the road and trail network. The County had discussions with Redwood Acres, Hospice of Humboldt, Kramer Properties, Eureka City Schools, the owners of the private inholding, landowners along Northridge Road, and others. The County also performed wildlife monitoring and worked with various organizations to identify restoration needs and opportunities. From 2014 through 2017, the County convened an advisory group and held periodic meetings.

In 2018, the County constructed new parking and trailhead facilities near the intersection of Northridge Road and Walnut Drive, along with the construction of a left-turn pocket on Walnut Drive. The Northridge parking area includes 26 standard vehicle parking spaces, four equestrian parking spaces, two accessible parking spaces, stormwater retention area, signage, lockable gate, and a paved area for a future portable restroom. Funding was provided by a state Housing-Related Parks Program grant, Eureka Community Planning Area Parkland Dedication (Quimby Act) fees, and Measure Z. The state grant had a “use it or lose it” provision and therefore implementation of this project was accelerated to meet the expenditure deadline.

From 2018 through 2020, the California Conservation Corps worked in the Community Forest to performing initial site preparation activities such as erosion control, drainage improvements, slope stabilization, and removal of invasive plants.

In January 2019, a draft Trail Plan was released for public review with a comment period ending March 1, 2019. A total of 85 comments were received. The Trail Plan was revised and updated based on the comments received and a new section was added with specific responses to comments. The final Trail Plan was released in December 2020 and is provided in Attachment 1.

In June 2020, the Phase II acquisition added approximately 197 acres contiguous to the south end of the Phase I acquisition with funding from the California Natural Resources Agency and CAL FIRE. The County also acquired an easement on one of Green Diamond’s logging roads that connects the Community Forest with Eggert Road.

2 PLANNING FRAMEWORK

2.1 Vision Statement

The McKay Community Forest will be managed for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation. The Community Forest is envisioned as a place that enhances the quality of life for Humboldt County residents and visitors by providing opportunities to experience a diverse, dynamic, and productive forest. The Community Forest will:

- Provide opportunities for people to maintain and improve health and fitness through outdoor physical activity.
- Provide recreational trails that enable people to seek challenges and engage in play.
- Provide a refuge where people can connect with nature, experience solitude and wildness, make discoveries, and observe natural beauty.
- Provide access to an outdoor classroom.
- Support appreciation of watershed services, forest management, and modern timber harvest practices.
- Nurture a sense of place in the greater Eureka area and boost civic pride.
- Promote tourism and support the local economy.

2.2 Management Goals

Managing the Community Forest for multiple purposes will require careful and deliberate balancing of ecological, social, and economic values. This multiple-purpose approach is expressed in the list of management goals provided in Table 1. This list serves as the charter for the Community Forest.

Table 1: Community Forest Management Goals (Humboldt County, 2014)

Goal 1: Forest Stewardship	Practice environmentally appropriate, socially beneficial, economically viable forest management
Goal 2: Environmental Values	Conserve and enhance the environmental values of the forest to maintain its biodiversity, productivity, and ecological processes
Goal 3: Working Forest	Maintain a working forest that supports timber-related jobs and economic productivity on a sustainable basis
Goal 4: Public Access and Recreation	Provide high-quality recreational opportunities to support active living and enhance quality of life
Goal 5: Community involvement	Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset
Goal 6: Public Safety	Manage the community forest to promote a safe and secure environment for families and visitors of all ages
Goal 7: Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

2.3 Silviculture

Silviculture is the art and science of influencing the establishment, growth, composition, health, and quality of a forest to meet diverse needs and values on a sustainable basis (Franklin, 2018). Two principal categories of silviculture are even-aged and uneven-aged management. The even-aged management approach relies on removing all, or most, trees from within each stand during a single entry, resulting in a rotation of trees in a single age class. The uneven-aged management approach removes only a portion of the trees from each stand during each entry, resulting in trees from multiple age classes.

The McKay Community Forest will be actively managed using uneven-aged silvicultural methods, primarily with light thinning and selection practices, in accordance with the California Forest Practice Rules and all applicable laws and regulations. The NTMP that is the companion to this Forest Stewardship Plan describes how timber harvest practices will conform with the Forest Practice Rules. The existing condition of forest resources within the Community Forest are described in Section 3.2. A summary of some of the key requirements of the Forest Practice Rules is provided in Section 4.1. The major elements of the County's approach to timber harvesting are presented in Section 4.2.

2.4 Core Principles

This section presents the core principles that lay the foundation for the overall management approach for the McKay Community Forest. Core principles provide guidance for decisions and actions. These principles will remain firm and stable while strategies and action plans may change and evolve over time.

1. The Community Forest contains diverse animal and plant life, complex physical features, and a web of ecological processes and relationships. Management will strive to maintain and enhance biological richness, structural complexity, and ecological function.

2. Public involvement in community forestry is essential for success. As the primary forest manager on behalf of the community, the County will seek to understand the community's evolving priorities and interests for achieving benefits and services from the Community Forest and will integrate community input into key decision-making processes.

3. Management of the Community Forest needs to be economically self-sustaining over the long-term through revenues from timber harvesting, grants, fees, donations, and other potential revenue sources.

4. Management of the Community Forest will rely on science-based methods and continuous learning and improvement. The County will be adaptive to new scientific and technical developments.

5. Management of the Community Forest will strive to reduce vulnerability to wildfire, climate change impacts, invasive species, and other threats. The County will actively look for feasible opportunities to enhance safety for trail users, volunteers, staff, contractors, and adjacent property owners.

6. Management of the Community Forest will strive to be compatible with adjacent land use. Similarly, adjacent land use should be compatible with the Community Forest. The County will take reasonable measures to avoid conflicts with adjacent properties and will seek collaborative opportunities to advance mutual interests with adjacent property owners.

7. Management of the Community Forest will seek to create forest ecosystems and landscapes that are resilient to climate change. The County will use data and information to assess whether the forest is at risk for undesirable changes caused by a changing climate. The County will assess whether fundamental assumptions and approaches need to be adjusted to adapt to future climate conditions.

2.5 Management Objectives

This section presents management objectives related to forest management. Additional objectives related to public access and recreation are presented in the Trail Plan (**Attachment A**). Objectives are specific tasks, methods, milestones, or targets for achieving long-term goals. Objectives can identify specific actions or measurable achievements that are necessary to reach a set of goals.

1. Increase the abundance of trees larger than 36 inches in diameter and trees older than 50 years over time, especially redwood and Douglas-fir.

2. Increase the volume of standing timber and terrestrial carbon over time.

3. Generate sufficient revenue from timber harvest and grant funding to fully fund forest management, road maintenance, and infrastructure upgrades.

4. Look for opportunities to improve habitat function and water quality concurrent with implementation of timber harvest activities.

5. Seek grants and collaborative opportunities to implement projects and other actions to improve the quality of fish and wildlife habitat, especially for Ryan Creek and fish-bearing tributaries. Aim to implement two to four grant-funded restoration projects every ten years

6. Promote native species and biodiversity as the primary components of the ecosystem and reduce or eliminate non-native species to the extent feasible. Maintain tree species diversity and retain locally rare trees such as hemlock and red cedar.

7. Maintain aesthetically pleasing views for forest visitors and from surrounding public roads and viewpoints.

8. Provide a sustainable road and trail network for forest management and recreational use.

9. Provide an outdoor laboratory for local schools, colleges, and universities where learning and research can be conducted. Support tribes and community organizations with efforts to increase awareness and appreciation of cultural heritage.

10. Create processes for the public to learn about proposed forest management activities and to provide comments prior to significant decisions.

11. Coordinate with volunteer groups to maintain and construct trails, remove litter, remove invasive plants, plant trees, provide interpretive programs, monitor for appropriate use, and implement other activities consistent with the Forest Stewardship Plan.

12. Collaborate with adjacent property owners, agencies, and community organizations to reduce the risk of high intensity, damaging wildfires. Implement projects to reduce hazardous fuel levels. Plan emergency access and evacuation routes and improve the readiness for responding to fire incidents.

13. Identify opportunities to help avoid or minimize conflicts between various trail users.

14. Increase awareness and understanding of community-based forestry. Share information and assist other communities in exploring and developing opportunities for community forestry.

2.6 Financial Management

The McKay Community Forest was established based on the premise that the forest would be economically self-sustaining over the long-term without reliance on the County's General Fund (Humboldt County, 2014). Continuation of a working forest, similar to the Arcata Community Forest, is essential to financial viability. From a financial perspective, the Community Forest can be viewed as an economic asset that is managed similar to other public enterprises such as utility services, except that revenues are derived from periodic timber harvest rather than user fees or charges.

The Community Forest represents some of the most productive redwood forestland on the North Coast. Based on existing stand volume, the Community Forest has the potential for a moderate amount of profitable timber harvest in the short-term, and revenues are projected to increase significantly over time as the volume increases (BBW, 2013). The need to develop access points and trails and upgrade logging roads represents a major infrastructure cost. Timber harvest revenues will need to be re-invested for an extended period of time (up to 30 years) in conjunction with grants and donations. In the future, surplus revenue could be used to fund parks, trails, and other community services.

The County received full title to the property without the need for ongoing debt payments because the property that comprises the Community Forest was acquired with state and federal funds. Starting in 2014, the County has financed the initial planning and management of the Community Forest through an internal loan that will be paid off with future timber harvest revenues. Through December 31, 2021, the loan balance for the Community Forest is $508,545.

The County develops an annual budget corresponding to the fiscal year that begins July 1 and ends June 30. The Community Forest is managed within budget unit (1710716) which tracks revenues and expenditures. Revenue sources will include timber harvest revenues, grants, donations, and permit fees. Expenditures include County labor, materials and equipment, professional services, fees, and other expenses. The budget accounts for fund transfers associated with the internal loan that is financing initial operations. Each year the County's budget document includes a program discussion, list of accomplishments from the previous fiscal year, and list of goals for the upcoming fiscal year. The budget development process involves workshops and public meetings, typically in May and June, with opportunities for public comment.

A fund has been established at the Humboldt Area Foundation called "Friends of the McKay Community Forest Fund" to receive donations that will be used to support achievement of the Community Forest management goals, especially to accelerate trail development and habitat restoration.

2.7 Initial Priorities

Initial priorities for managing the Community Forest include:

1. Developing public access points.
2. Building out the trail network.
3. Securing approval of the Non-Industrial Timber Management Plan.
4. Implementing thinning treatments for over-stocked stands and shifting the trajectory of the forest to conditions with increased age diversity and structural complexity.
5. Initiating planning and implementation of aquatic restoration projects.
6. Developing effective processes for robust public involvement.

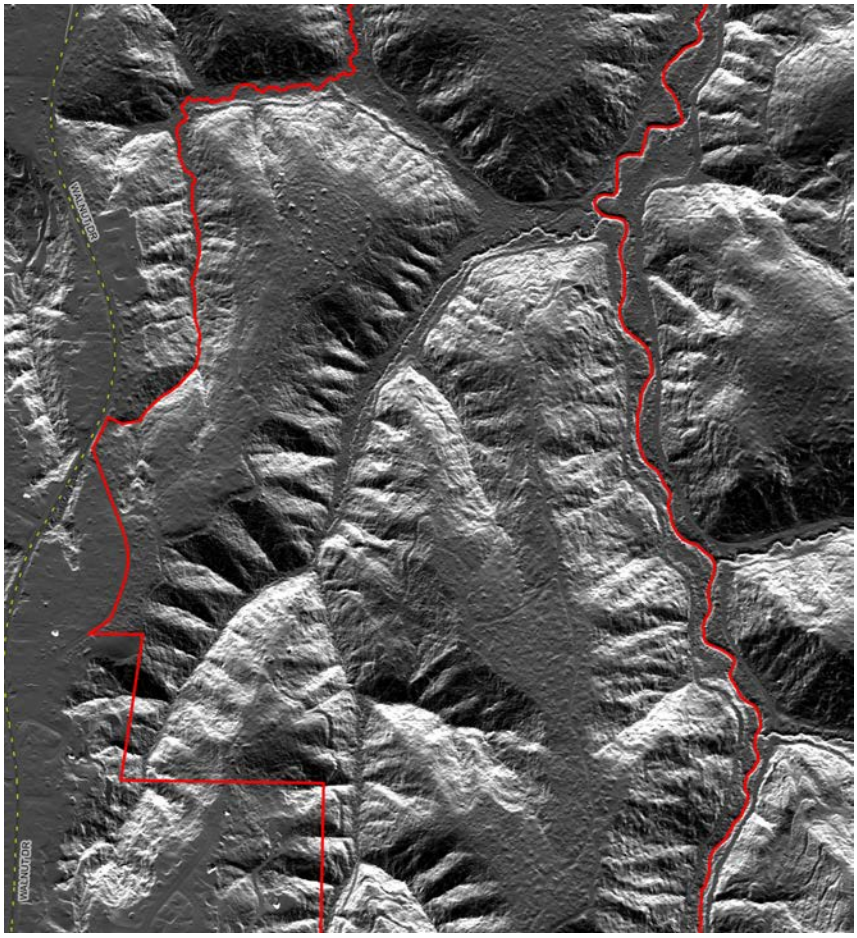
3 EXISTING CONDITIONS

3.1 Geologic Setting

3.1.1 Topography and Geomorphology

The McKay Community Forest is comprised of forested uplands incised with a network of streams that drain into Ryan Creek, one of the four major tributaries of Humboldt Bay. Ryan Creek originates in the hills southeast of Eureka and flows northward along the east side of Eureka. The Community Forest is situated primarily on the west side of Ryan Creek. Ryan Creek generally flows through a confined channel until the lower 1.5 miles of the watershed, where it meanders through a broad alluvial valley located south and east of Redwood Acres.

The Community Forest contains a variety of landscape types including flat, upland terraces; steep hillslopes; flat, stream valley bottomlands; and altered tidelands. Elevations of the upland terraces range from approximately 200 and 400 feet above sea level. The terrace surfaces transition to moderately steep stream valley sidewall slopes (> 65% slope) that surround the lowlands of lower Ryan Creek and its tributaries. Tributary streams transition from confined, deeply dissected gulches to broad, alluvial-filled stream valleys. The Community Forest includes the majority of the Henderson Gulch and Bob Hill Gulch sub-basins. The diked former tidelands in the northern segment of the Community Forest are a legacy of the historical logging railroad that delivered logs to Ryan Slough and the log dump located on Freshwater Slough at the foot of Park Street.



Topography of middle portion of the Community Forest

3.1.2 Summary of Geologic Conditions

The flat upper Eureka terrace surface is underlain by a relatively thin veneer of Quaternary-age sediments mapped as the Hookton Formation. These sediments are non-marine, poorly consolidated sands, gravels, and clay. Underlying the Hookton Formation is the Quaternary to Tertiary-age "undifferentiated" sediments of the Wildcat Group. These formations are blue-gray marine siltstones and claystones with thin interbedded layers of sandstone. The Hookton Formation is exposed in the stream valley sidewalls and is a primary controlling variable in terms of landscape development and forest management. The substrate is easily excavated with bladed equipment. Roads constructed in this material have high erosion potential and are slippery when wet unless covered with rock. Steep road grades are difficult to maintain.

Mass wasting (movement of rock and soil under the force of gravity) within the Ryan Creek watershed is generally limited to stream valley sidewall slopes. The upland terraces and stream valley bottomlands are essentially devoid of mass wasting potential. Available mapping typically depicts the valley sidewall slopes as "debris slide slopes," subject to shallow localized debris sliding where steeper slopes occur. Rare, larger, dormant rotational landslides are present in the landscape as well. Although unstable areas are present, the density of landslides is relatively low due to the modest relief within the area.

The North Coast region is seismically active with numerous active faults and a nearby subduction zone. Large to very large earthquakes capable of generating seismically induced landslides are possible. The McKay Tract has a long history of industrial logging, which has resulted in a landscape significantly modified by previous management. Equipment operation and slash fill in watercourses were common, resulting in a current condition with subsurface flow in many tributary streams. Excessive skid trail construction is evident on side slopes throughout the area. The maze of existing legacy skid trails is a uniform condition throughout the Community Forest. Review of geologic reports associated with previous harvest plans on these lands indicates many slides occurring along former roads and skid trails.

Soil productivity is important for a healthy forest ecosystem. The predominant soil types in the Community Forest are generally characterized as relatively deep, moderately well-drained, silty clay loam, fine sandy loam, silt loam, or loam. Using the Board of Forestry Technical Addendum #1 and based upon the soil types, slopes, geology, and rainfall intensity in the area, the estimated Erosion Hazard Rating varies from low to moderate with slope being the differentiating factor. The Erosion Hazard Rating is low where the slope is 50% or less and moderate where the slope is greater than 50%.

3.1.3 Geologic Suitability of Future Forest Management

The McKay Community Forest has sustained a long history of forest management. Despite the impacts associated with early logging and the legacy of those high-impact methods, the area is highly productive timber ground and appears capable of sustaining lower-impact forest management (and recreational use) well into the future. Low-gradient terrace uplands are associated with negligible geologic hazards and are ideal management areas. The primary geologic constraints to future land management are associated with valley sidewall slopes, where landslide potential occurs, and with the nature of the fine-grained substrate, which impacts the development and maintenance of roads and trails. On valley sidewall slopes, timber management will require specific, low impact harvest methods, especially near existing unstable areas. With adequate input and planning, timber management on these slopes can be implemented with minimal impacts related to the geologic conditions. All-season use of truck roads will require aggregate base to provide a stable road surface and to minimize erosion potential. New road construction will require careful planning, construction, and maintenance. Existing skid trails will provide opportunities for ground-based yarding on moderate gradient slopes.

3.2 Forest Resources

3.2.1 Overview

Nearly the entire Ryan Creek watershed has been harvested two to three times over the past century. This history has shifted the forest composition to younger and smaller trees, lower total standing biomass and volume, less structural complexity, and reduced habitat quality. Forests can be described qualitatively based on the period of time since the forest has experienced a major disturbance event that resets the succession of the ecological community. Potential disturbance events include timber harvesting (especially clear-cutting) and natural disturbances such as fire, insect infestation, landslide, or **windthrow** (uprooting of trees by strong winds, also known as "**blowdown**"). Old-growth forests feature large, old trees that have developed to maturity without recent significant disturbance. Second-growth forests contain the trees that grew after the old-growth trees were removed. Third-growth forests contain the third cohort of trees that regenerated after the initial old-growth harvest. The McKay Community Forest is generally comprised of second- and third-growth trees with scattered individual old-growth trees and snags. The following sections provide more detailed discussion of the forest resources within the Community Forest.

3.2.2 Forest Inventory and Analysis

A comprehensive forest inventory was conducted to assess the location, composition, and distribution of trees within the Community Forest. The forest inventory is one of the primary sources of information for supporting management decisions. Because counting and measuring each tree is not feasible, a forest inventory utilizes field measurements and statistical sampling techniques to derive reasonably accurate estimates for the total survey area. Data from the forest inventory provide a baseline for tracking growth and composition changes over time. The data also support modeling of forest growth and future timber production (yield) and monitoring progress toward meeting the management goals and objectives.

The forest inventory is organized geographically by delineating and mapping logical units (called stands) based on tree size and age. A **stand** is a geographically identifiable group of trees (typically less than 40 acres) that are sufficiently uniform in age-class distribution, composition, and structure to be a distinguishable unit. Stands with similar management history and access can be grouped into logical management units. A **management unit** is a geographically identifiable area delineated for silvicultural or management purposes, often including multiple stands, and typically ranging in size from 20 to 200 acres.

A total of 31 stands were identified within the Community Forest, ranging in size from seven to 106 acres, and the identified stands were grouped into eight management units (Figure 7). These management units correspond to the trail planning units identified in the Trail Plan. The Park Street area was identified as a management unit although it is not forested. Stand and management unit boundaries are not fixed and could be adjusted in the future. For example, some of the stands could be lumped or split as necessary to facilitate the logistics for timber harvest activities. Stands in close proximity could be re-combined in any given year to form alternative management units.

The forest inventory was prepared using a statistical analysis technique called **stratification**, in which a population of objects is divided into distinct sub-groups of relatively homogenous elements. Each single sub-group is a **stratum** and a group of more than one stratum is referred to using the plural, **strata**. The sampling approach is customized based on the size and variability of each stratum. Measurements are analyzed at the stratum level and then aggregated to derive estimates of the total population. This technique decreases sampling errors and improves precision. In the forestry context, the forest is considered a population of trees and stratification means classifying the forested areas into homogenous strata based on average size, age, and species composition.

Sampling data (size, frequency, species) were compiled and imported into an Excel spreadsheet for calculation of timber volume. The most common unit of measurement for timber volume is "**board-feet**." One board-foot of timber is equivalent to a piece of rough lumber with the dimensions of one-foot wide, one-foot-long, and one-inch thick. Large volumes of timber are commonly expressed as thousands of board-feet (abbreviated as MBF) or millions of board-feet (abbreviated as MMBF). Calculation of net timber volume accounts for a deduction from the gross volume due to defects or damage.

Five forest strata were defined for the McKay Community Forest, as follows:

- RW2 ("Young"): <25-year-old redwood (size class 2: 1-6 inches average diameter)
- RW3: 25- to 35-year-old third-growth redwood (size class 3: 8-11 inches average diameter)
- RW4: 35- to 45-year-old third-growth redwood (size class 4: 12-24 inches average diameter)
- RW5 ("Mature"): >85-year-old second-growth redwood (size class 5: >24 inches average diameter)
- Forested Wetlands: non-commercial, hardwood dominated riparian forests near watercourses

The distribution of the five strata within the Community Forest are shown on Figures 8 through 10 and the forest inventory results are summarized on Table 2.

Table 2: 2020 Forest Inventory Results [(1)]

Strata	Acres [(2)]	Number of Plots [(3)]	Trees per Acre	Basal Area (ft^2/ac)	Percent Redwood Composition	Average Diameter (inches)	Net Conifer Volume per Acre (MBF/ac)	Total Net Volume (MBF)	Standard Error [(4)]
RW2	138.0	22	536	169	87	7.6	3.5	480	28.0%
RW3	280.2	71	349	308	78	12.7	25.6	7,183	6.8%
RW4	520.3	145	289	372	85	15.4	46.0	23,934	4.6%
RW5	122.3	59	136	430	80	24.0	100.5	12,298	6.3%
TOTAL	1,061	297					41.4	43,895	3.3%

Key:
MBF = Thousand board feet
ft^2/ac = square feet per acre

Notes:
(1) This table was developed for strata with merchantable timber and does not include forested wetlands.
(2) Acreages in the NTMP are slightly different due to further refinement of feasibly manageable area.
(3) A total of 297 variable-radius plots were sampled from a uniform grid, with higher densities in the RW5 stratum.
(4) **Standard error** is a statistical measure of the variation, or confidence, of an estimated parameter of a population. Standard error is a function of the sampling size and the spread of the data. Larger sampling sizes and narrower spreads of data result in lower standard errors.

Stratum RW5

The RW5 ("Mature") stratum encompasses 122 acres and is comprised of six stands with trees 85 to 115 years old. Trees that compose the overstory are 50 to 70 inches in diameter and up to 240 feet tall. This stratum is distinctly older with much larger trees than the other strata and represents second-growth conditions. The largest of the stands (63 acres) is located in the center of the Community Forest. Two stands most likely to be seen by the public are located at the Redwood Acres entrance on Harris Street and adjacent to Northridge Road, just south of the parking area. One of the expected outcomes of implementing the silvicultural prescriptions described in this Stewardship Plan is increasing the extent of stands in the RW5 stratum.

Strata RW3 and RW4

The majority of the Community Forest (20 stands) is composed of RW3 and RW4 strata, which represent small and medium size classes of dominant redwood trees respectively. These strata are third-growth. These even-aged stands range in age from 25 to 45 years old and will be the focus of commercial timber harvesting in the coming decades.

Stratum RW2

The Community Forest contains five stands less than 20 years old in the RW2 (or "Young") strata. These stands have sufficient stocking of young conifers but will not be ready for timber harvest for approximately 20 years.

Forested Wetlands Stratum

The fifth stratum, Forested Wetlands, is composed of tree species that are non-commercial, primarily red alder and big leaf maple, along with wetland-adapted understory species. In addition to being non-commercial, this stratum is unavailable for harvest due its proximity to watercourses. This stratum occurs primarily along larger watercourses at low elevations and occupies a total of approximately 116 acres. Timber inventory data were not collected for this stratum, but it has been well described in PCFWWRA (2018). This ecologically sensitive habitat type will not be subject to timber harvest operations.

Example of mature, second-growth stand (RW5 Stratum)

Example of dense, young third-growth stand (RW2 Stratum) near Northridge parking area

Timber Volume

According to the 2020 forest inventory, the net volume of commercial timber within the Community Forest is 43.9 million board feet. However, the 1,061 acres of timberland include constrained areas from which timber harvest is restricted or entirely off limits, such as adjacent to watercourses and within owl buffer zones. The proportion of the area which is constrained varies over time with changing regulations and protected species designations but is typically 15-20% in an environment like the Community Forest. As a result, the volume of timber on lands available for harvest is approximately 35 to 37 million board feet.

The Community Forest is primarily composed of young, even-aged stands (RW-2, RW-3, RW-4) that are densely stocked with fast-growing trees. Timber volumes are high due to large numbers of trees per acre, but the log quality is relatively low due to the abundance of small stems containing a high proportion of sapwood. The RW3 and RW4 stands are at an optimal stage to benefit from thinning so that future growth accumulates on fewer stems, resulting in better growth conditions (less shading), more diverse structure (and habitat quality), and higher quality logs over time.

At the landscape level, the RW5 stands are relatively rare in the redwood region because historically they were prioritized for harvest on many ownerships due to the high volume of timber (typically 60 to 100 thousand board feet/acre). The RW2, RW3, and RW4 type stands are relatively common in the Ryan Creek watershed and the larger redwood region. Silvicultural prescriptions in this Plan (Section 4.3) will gradually convert these stands from even-aged to uneven-aged composition over time.

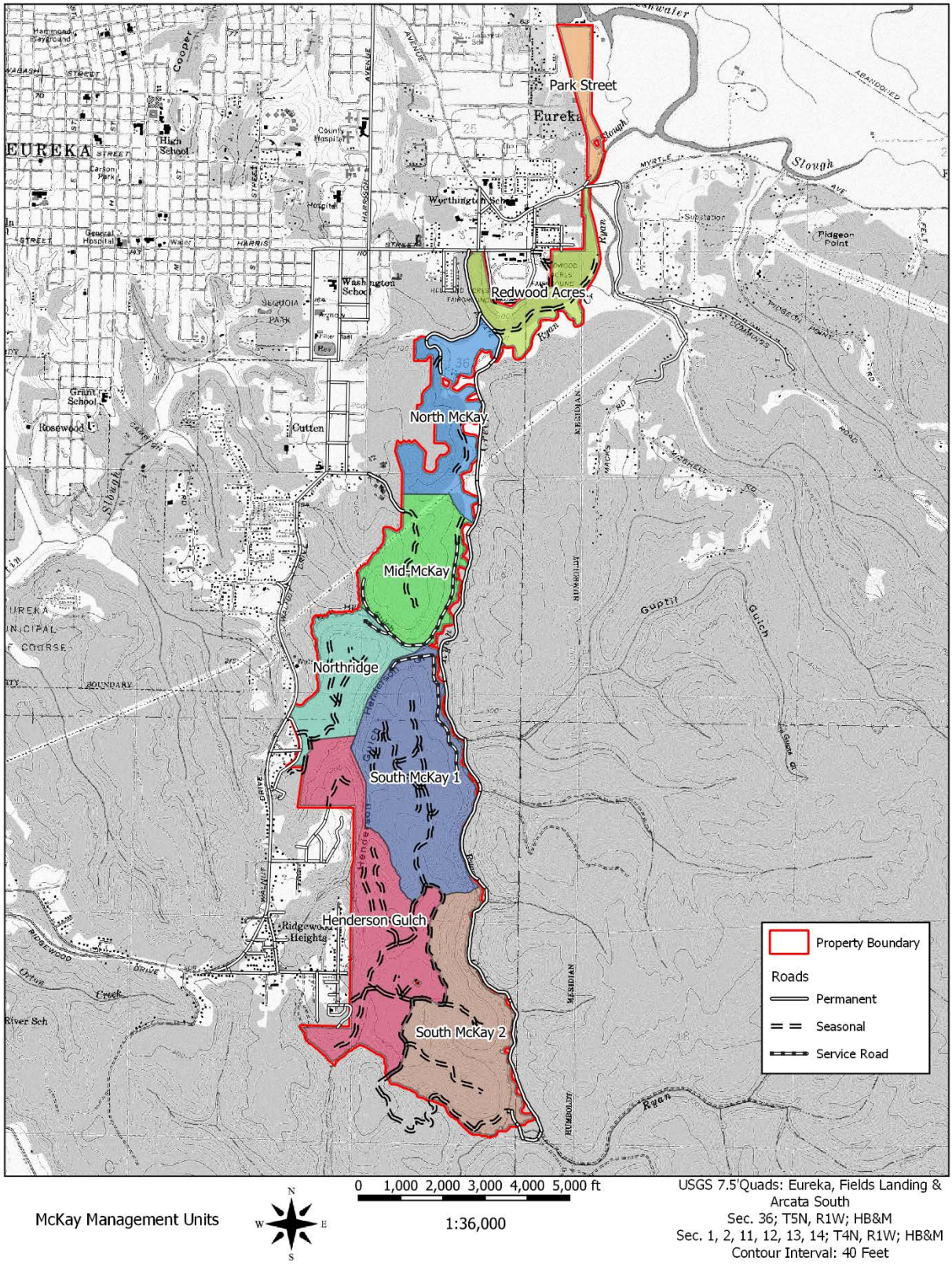


Figure 7. Management Units

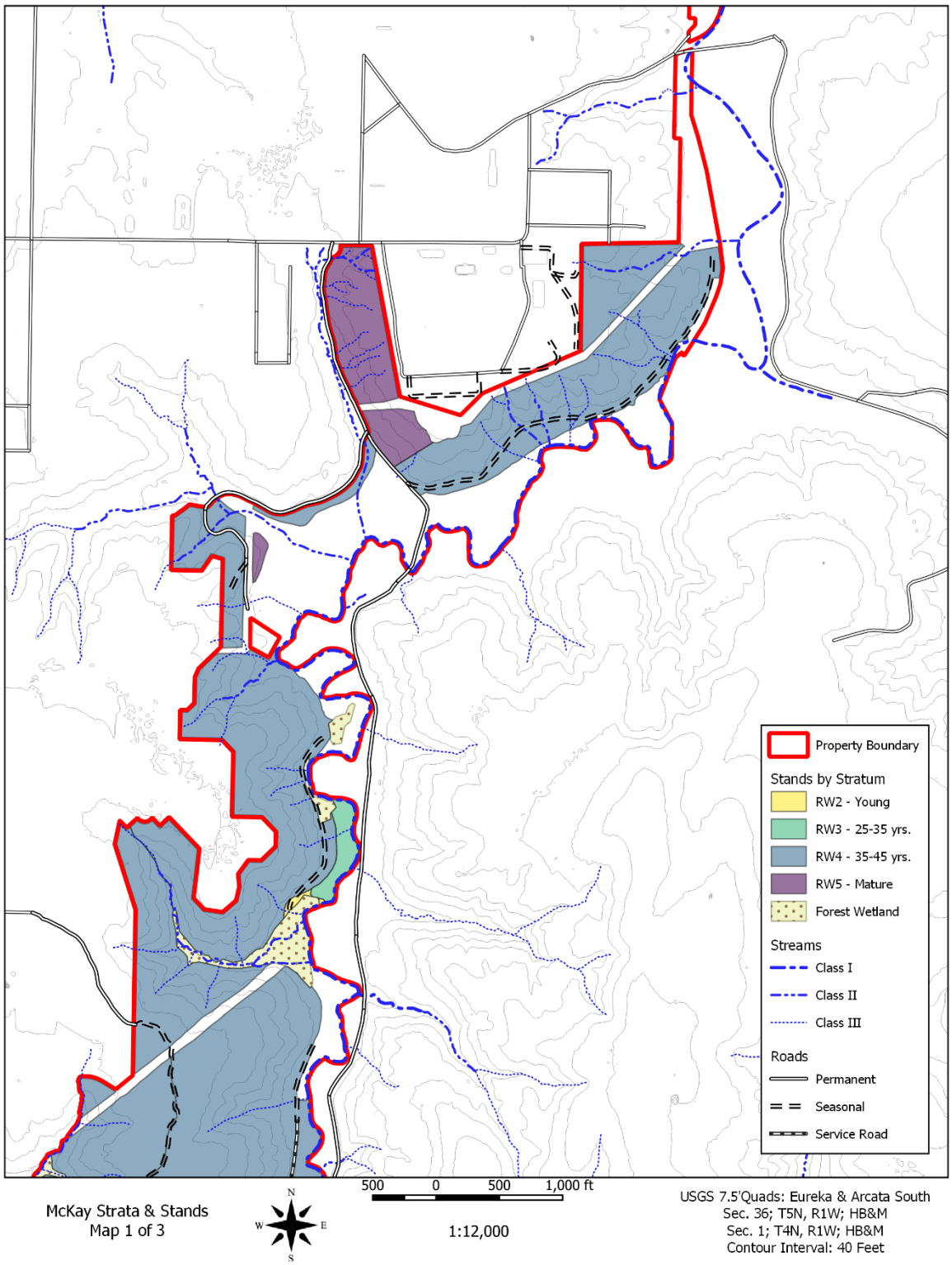


Figure 8. Stands and Strata North

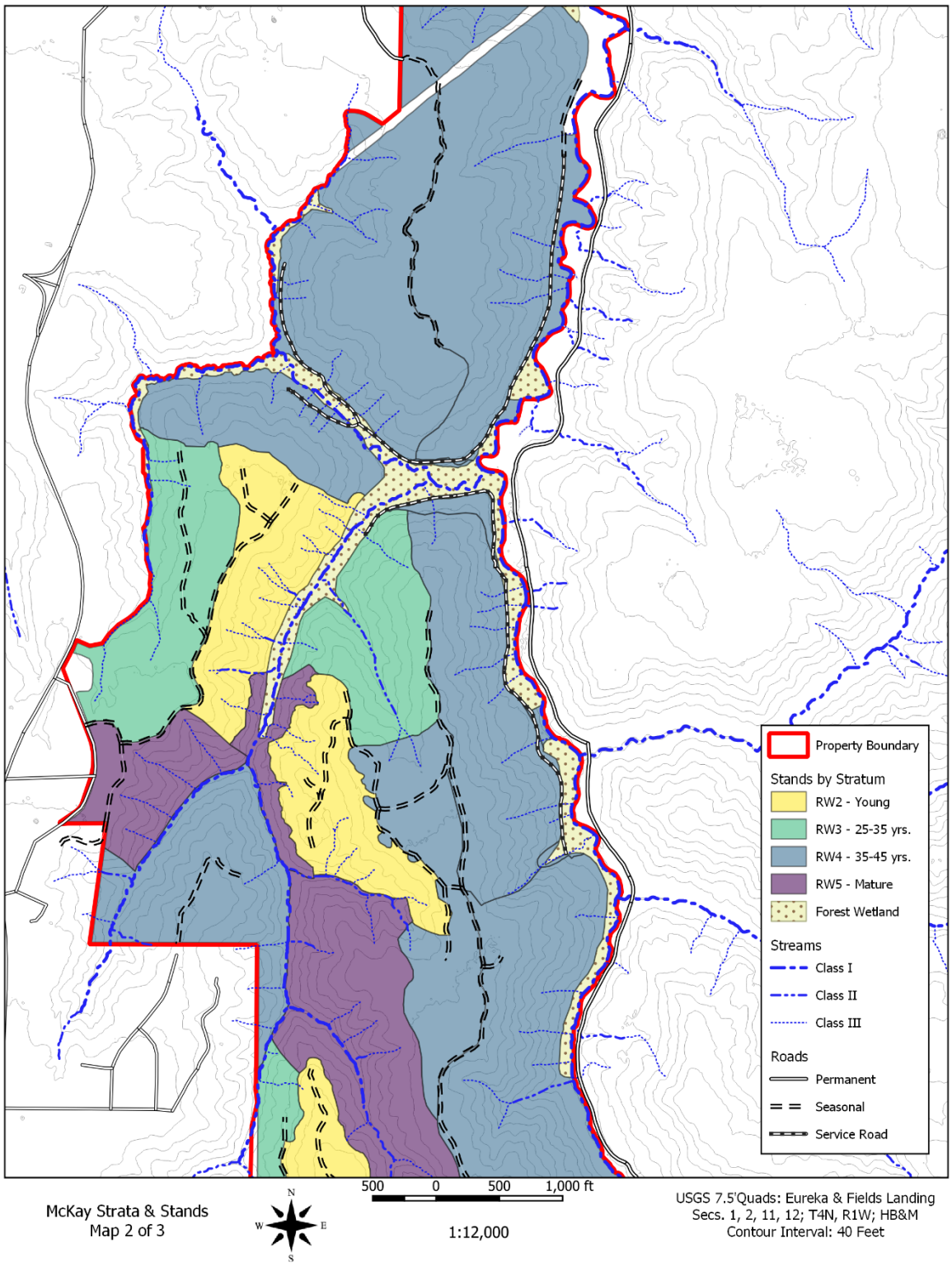


Figure 9. Stands and Strata Middle

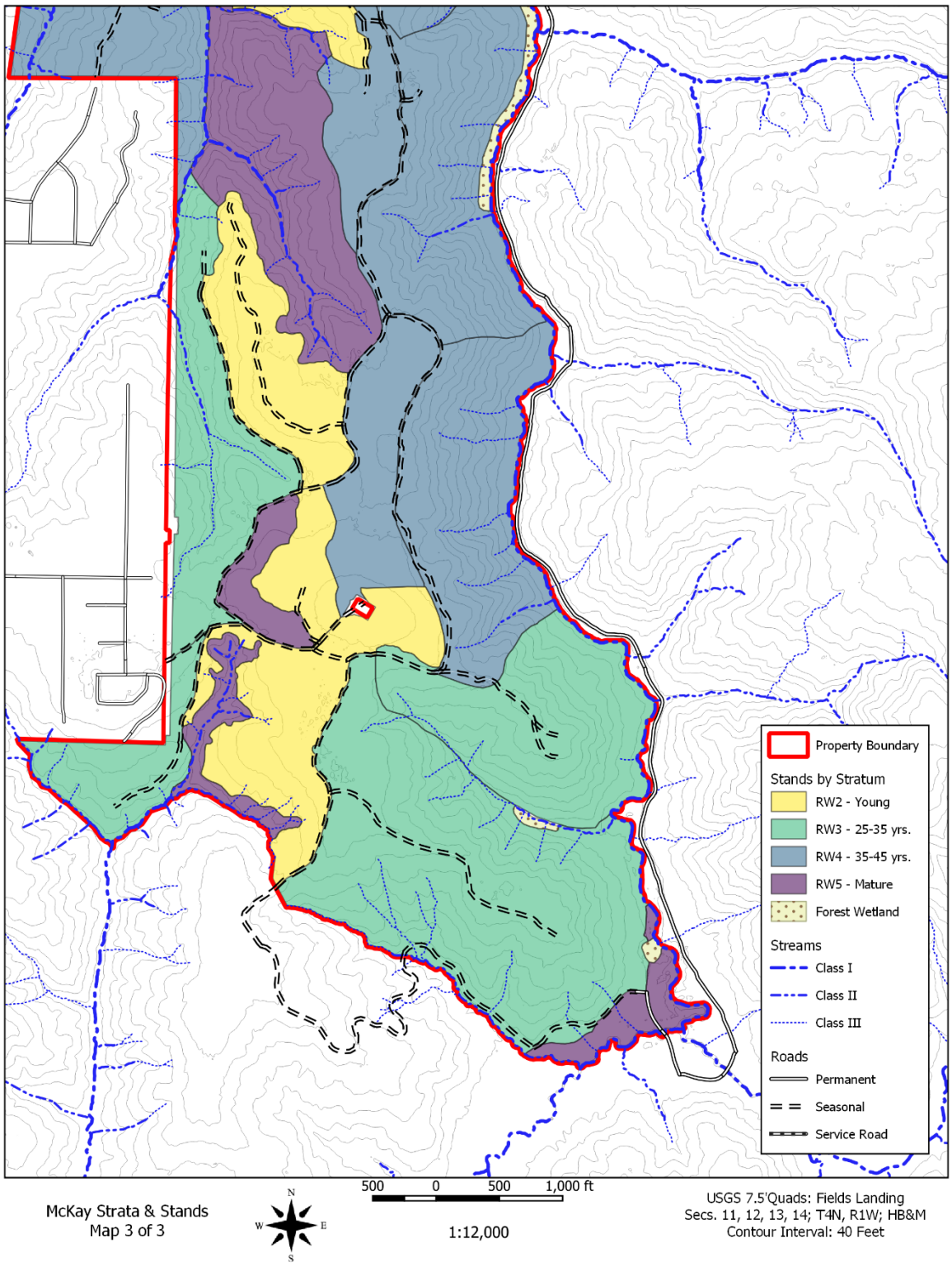


Figure 10. Stands and Strata South

3.2.3 Forest Structure

The term "**forest structure**" refers to the physical features or elements of the forest and the spatial patterns in which they are arrayed (Franklin, 2018). Key structural elements include live trees, standing dead trees (also known as "**snags**"), fallen trees and other woody debris on the forest floor, understory plants, large stumps, and over-turned root mounds. Snags provide nesting and roosting habitat for a variety of bird species. Important spatial patterns within the forest include the vertical distribution of the canopy, the horizontal distribution of tree stems, and the presence of gaps and openings. Gaps are important for allowing light to reach the ground, giving young seedlings and saplings the chance to grow and creating edges between different habitat types. Redwood trees are especially valued for their massive, complex forms that dominate the structural complexity of the forest. Habitat quality and ecological function are directly dependent on forest structure. A general ecological principle is that diverse structure maintains important habitat features and provides opportunities for ecological niches where species are specialized for specific environmental conditions. A more diverse ecosystem is also more likely to have higher resilience to stresses and disturbances associated with fire, pests, and climate change.

Older conifer forests naturally accrue structural diversity and multi-layered tree canopies over time. The structure of the forest that is now the McKay Community Forest was greatly simplified over the last 125 years by removing old-growth trees and managing the forest for short rotations of uniform, even-aged trees. Many of the stands are stocked with densely spaced trees exhibiting reduced growth rates due to shading, with little light penetration to the forest floor. As described in Section 4.3, the County's management approach will shift the trajectory of the forest toward a composition with larger, older trees and more complex structural characteristics.

Example of residual snag tree within the McKay Community Forest

3.2.4 Forest Carbon

Forests can play a role to mitigate the effects of climate change as they are one of the most important terrestrial biomes contributing to carbon sequestration and storage (Exhibit 1). Forests remove carbon dioxide from the atmosphere through photosynthesis and serve as a net carbon sink when they store more carbon than they lose over a period of time. Redwood forests can sequester more carbon than any other forest type in the world (Sillett et. al. 2019) and are generally more resistant to wildfire and insect infestations that can reduce forest carbon stocks.

Carbon gains can be made by increasing the rate of accumulation of new biomass (timber volume) as well as by retaining more biomass or timber volume per acre when harvesting. Carbon sequestration is achieved through a repeating cycle of harvesting and growing trees that remove carbon dioxide from the atmosphere and store carbon in tree fiber. When a tree is harvested, most of the carbon-filled tree fibers become lumber that is sequestered in buildings or durable wood products while remaining trees continue to grow. To the extent these wood building products replace the demand for new concrete or steel building components, they reduce substantial carbon dioxide emissions that are associated with the manufacture of cement and steel. Some of the tree fibers such as branches and tops are left in the forest. A portion of this material may be burned to reduce fire hazard but the vast majority is left to decay. The decaying slash will emit carbon dioxide over time but this material also supplements the forest soils and forest duff layer where carbon is stored and serves as a substrate and nutrients for more tree growth. Thus the release of carbon dioxide from decaying slash is partially offset by the increased growth rate of remaining trees in the stand and other vegetation that sequesters carbon.

Based on the 2020 forest inventory, the total standing stocks of above-ground carbon sequestered in live trees within the Community Forest is approximately 295,000 metric tons of carbon dioxide equivalent (CO_2e), or 278 metric tons per acre on average. This value was calculated using the equations stipulated by the California Air Resources Board in their compliance protocol for forest carbon offset projects. This estimate of carbon stocks within the Community Forest is higher than the "common practice" value for aboveground live carbon for the Northern California Coast, which is 205 tons per acre (Climate Action Reserve, 2019). Carbon stocks within the Community Forest are expected to increase over time commensurate with increasing timber volume.

Humboldt County is developing a Climate Action Plan to provide targets for reducing greenhouse gas emissions. The Community Forest could play a role in providing net carbon sequestration that factors into this plan as a potential measure to offset emissions from burning fossil fuels. The County could explore participation in compliance and voluntary carbon markets by developing a forest carbon offset project. However, the relatively small size and public ownership of the Community Forest would make developing a carbon project, particularly a stand-alone compliance project, challenging and costly.

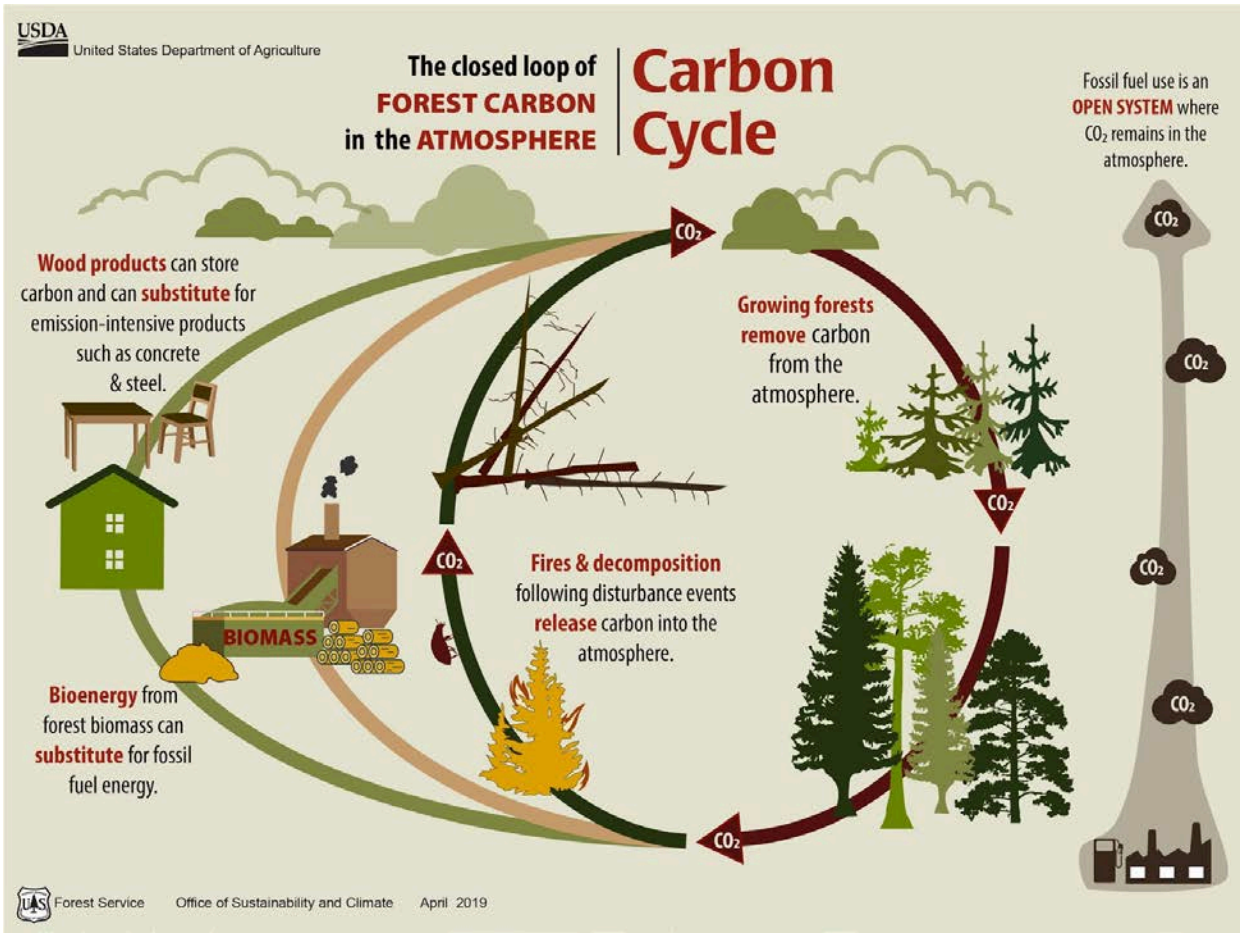


Exhibit 1 - The Closed Loop of Forest Carbon in the Atmosphere (Source: USDA, 2019)

3.3 Aquatic Resources

The McKay Community Forest is situated within the Ryan Creek watershed[4], which occupies approximately 9,400 acres and is one the largest watersheds draining to Humboldt Bay. The Community Forest represents approximately 13% of the Ryan Creek watershed and includes Bob Hill Gulch and Henderson Gulch, which are significant tributaries to Ryan Creek. Two other large tributaries (Guptil Gulch and Bear Gulch) are located on land owned by Green Diamond.

Overall, watershed conditions are in a process of long-term recovery from historical high-impact logging practices from the turn of the 20th century. Over the last 20 to 30 years, stream channel conditions have improved as deposits of sediment and woody debris have worked their way out of the system in conjunction with modern forest management practices and the implementation of restoration and rehabilitation projects. These changes have been beneficial to fish by increasing access to spawning habitat and improving habitat quality. The long-term prospects for the ecological viability of the Community Forest are very good based upon the surrounding land use patterns, and the fact that habitat protection and enhancement projects are occurring on adjacent properties and in the lower reaches of the watershed.

[4] The State designates this watershed as the "Ryan Slough watershed" (CA Interagency Watershed Map CDF ID 1110.000104).

The Forest Practice Rules define the term "**watercourse**" as any well-defined channel, either natural or man-made, with a distinguishable bed and bank showing evidence of having contained flowing water (14 CCR 895.1). The term "**stream**" refers to a natural watercourse. In practice, the terms are often used interchangeably. The Forest Practices Rules group the waters of the State into four classes based on key beneficial uses:

- Class I watercourses are used for domestic water supplies, and/or have fish present on site (either permanently or seasonally).
- Class II watercourses provide aquatic habitat for non-fish aquatic species, and/or fish are present off-site (downstream) within 1,000 feet.
- Class III watercourses do not have aquatic life present but are capable of transporting sediment to Class I or Class II streams under normal high water flow conditions.
- Class IV watercourses are man-made.

An inventory of watercourses within the Community Forest using the Forest Practice Rules classification system is provided in Table 3.

Table 3: Watercourses within the Community Forest

Class (Forest Practice Rules)	Total Length (miles)
Class I (perennial flow, fish-bearing)	9.1
Class II (supports aquatic life, not fish-bearing)	4.5
Class III (intermittent streams, no aquatic life)	11.9

Ryan Creek is a low gradient stream that flows into Ryan Slough, which flows into Freshwater Slough, Eureka Slough, and Humboldt Bay. The lower portions of Ryan Creek are tidally influenced and hydrologically connected to the adjacent floodplains. The relatively flat, seasonally flooded lower reaches of Ryan Creek support marshes and riparian wetlands. The wetlands feature a variety of woody and herbaceous vegetation such as willows, cattails, rushes, and pondweeds. Along Ryan Creek, dense willow thickets and a sapling and shrub layer of bigleaf maple and alder provide cover, shade, and food for wildlife. Understory layers of sword fern, lady fern, wood fern, and fruit-bearing shrubs attract migrating and nesting songbirds. Riparian vegetation helps maintain stream temperatures ideal for salmon and provide shady, protected habitat for otters and red-legged frogs.

Ryan Creek is extensively utilized by juvenile coho salmon, many of them migrating out of the Freshwater Creek system, to take advantage of Ryan Creek's velocity and thermal refugia and feeding opportunities during high flow events in the winter, as well as to over-summer in Ryan Creek's cool water pools (PWA, 2019). Green Diamond operated a stream flow gaging station and juvenile salmonid out-migrant trap from 2004 through 2014. As summarized in their 2015 monitoring report, out-migrant smolt populations for coho salmon averaged 4,100 smolts per year over the 11-year period and exceeded 6,500 during the most productive year (2006). Ryan Creek also supports populations of steelhead and coastal cutthroat trout. Recent monitoring (Anderson and Ward 2021) indicates that the average number of spawning redds (spawning bed or nest) in Ryan Creek is 15 per year; all are located upstream from the Community Forest. Live coho salmon have been documented in Ryan Creek in 2020 and 2021 and for many years prior.

3.4 Terrestrial Habitat and Wildlife

3.4.1 Overview

Terrestrial forest habitat provides food, cover, or special habitat elements for species that live predominantly or entirely on land. Redwood forests provide habitat for a total of 193 wildlife species, which includes 12 reptiles, 18 amphibians, 109 birds, and 54 mammals (Marcot 1979).

Large mammals such as black-tailed deer, mountain lion, and black bear are common in the Community Forest and the surrounding area. Given the size of the Community Forest and the complementary large forested areas to the south and east that have recorded conservation easements, large mammals should have ample habitat in the future. Hunting is not permitted in the Community Forest.

The Pacific fisher is a medium sized carnivorous mammal in the weasel (Mustelidae) family that has been found in the Ryan Creek watershed. Fishers tend to favor "late seral" or mature old-growth stand conditions and occurrence of features such as down log, snags, and tree hollows or cavities.

Open areas (areas with little to no forest cover) within the Community Forest include utility line corridors and natural wetland and meadow openings near Ryan Slough. These areas favor certain species such as wood rats and create transitional edge habitat for ground foraging animals such as California quail. Brushy habitat is expected to host Anna's hummingbird, wrentit, fox sparrow, warbling vireo, and Wilson's warbler. Riparian understory areas provide habitat for ruffed grouse and white-footed vole.

Species that use cavities in live trees and deadwood structures (snags) include hairy woodpecker, pileated woodpecker, northern spotted owl, chestnut backed chickadee, red-breasted nuthatch, screech owl, pygmy owl, violet-green swallow, Vaux's swift, brown creeper, Douglas-squirrel, and several bats. Red-tailed hawk, raven, and osprey nest or roost at the top of snags. The presence of snags is a key factor in survival of many animal species such as the pileated woodpecker.

The Community Forest contains habitat suitable for nesting rookeries for great blue heron, nesting and roosting habitat for great egret, breeding habitat for sharp-shinned hawk, and nesting habitat for bald eagle. Great blue heron and great egret generally prefer secluded groves of tall tree habitat near shallow water feeding areas. The lower portion of the Community Forest close to the intertidal areas are the most likely potential rookery habitat for these species (Ziener et al. 1990).

Common species found in the canopy are primarily insect eaters and include orange-crowned warblers, Swainson's thrush, winter wrens, olive-sided flycatcher, red-breasted nuthatch, and chestnut-backed chickadee. This group also includes Sonoma tree vole and northern flying squirrel.

Amphibians likely to be found within the Community Forest include western toad, pacific tree frog, northern red-legged frog, rough-skinned newt, northwestern salamander, and Pacific giant salamander. These amphibians are associated with the various freshwater wetland habitats and breed in permanent freshwater areas such as Ryan Creek.

Reptiles likely to be found within the Community Forest include gopher snake and several species of garter snakes. Lizards that may be present include northern alligator lizard, western skink, and western fence lizard.

3.4.2 Northern Spotted Owl

Northern spotted owls (*Strix occidentalis caurina*) are long-lived, medium-sized forest owls which often spend their entire adult life in one territory. Northern spotted owls most often thrive in coastal Northern California among a mosaic of old and young stands (ICF 2011). Northern spotted owls prefer to nest in older stands or stands with complex structure that often display habitat features such as tree cavities, broken tops and limbs, and large downed logs. Northern spotted owls are listed as Threatened under the federal Endangered Species Act and California Endangered Species Act. Threats to northern spotted owls include habitat impacts associated with wildfire and timber harvest and displacement by barred owls *(Strix varia*).

Northern spotted owls and barred owls are often difficult to distinguish in the field, which creates challenges for surveying. U.S. Fish and Wildlife Service (2011) provides the protocol for surveying northern spotted owls. The County has conducted annual surveys for northern spotted owls since 2015 (Leopardo Wildlife Associates, 2015, 2016; Natural Resources Management, 2017, 2018, 2019; S.E. McAlister, 2020, 2021). All survey efforts were coordinated with Green Diamond. McAlister (2021) recommended adjusting the methods for future surveys to behavioral changes of spotted owls in response to the presence and impacts of barred owls. The U.S. Fish & Wildlife Service is developing a new protocol that utilizes passive autonomous recording units rather than traditional vocal response methods.

An **activity center** is a mapped point within an area of nesting and roosting habitat for northern spotted owls with concentrated activity and detections. Activity centers are designated by California Department of Fish & Wildlife ("CDFW"). The area within a 0.7-mile radius of the activity center is considered the home range. The Community Forest contains one designated activity center within the Community Forest boundary, near Henderson Gulch. Four activity centers have a portion of their home ranges (0.7-mile radius) within the Community Forest boundary, of which two are located within 0.25 miles of the Community Forest boundary.

In 2021 and 2022, S.E. McAllister performed spot check surveys for the Henderson Gulch activity center and the two activity centers located within 0.25 miles of the Community Forest boundary. No spotted owls were detected by McAllister or Green Diamond within the survey areas for these activity centers.

In 2020, S.E. McAllister performed a total of six site visits in and around the Community Forest, which yielded no positive detections of northern spotted owls, four detections of barred owls, and one detection of an unidentified *Strix* owl. Certain *Strix* owl vocalizations are not diagnostic and are recorded as "unknown *Strix*" unless a visual observation is made or a diagnostic call is also heard. Green Diamond detected northern spotted owls on three occasions within the Ryan Creek stream corridor along the east boundary of the Community Forest.

The Forest Practice Rules (Section 4.2.2) contain requirements for protecting northern spotted owls and their habitat. In addition, the U.S. Fish and Wildlife Service publishes guidelines for measures to avoid incidental take of northern spotted owls during timber operations (USFWS, 2019). U.S. Fish and Wildlife Service (2019) specifies habitat protection measures for a 100-acre core use area centered on an activity center and on additional habitat within a 0.7-mile radius of each activity center. A minimum of 500 acres of suitable habitat must be maintained within the 0.7-mile radius, with an emphasis on the highest quality habitat (i.e., areas with the largest trees and densest canopy cover). Seasonal restrictions apply for work within the core area and 0.7-mile radius buffer. The County will need to coordinate with Green Diamond on maintaining the minimum habitat acreages where the 0.7-mile radius activity center buffer extends onto both properties. Green Diamond manages its holdings under a Forest Habitat Conservation Plan.

3.5 Special Status Species

The term "special status species" includes species listed at the state or federal level as rare, threatened, endangered, or candidates for listing, as well as species that are considered sensitive or of special concern due to limited distribution or lack of adequate information. This term also encompasses plant species identified by the California Native Plant Society (CNPS) as rare, endangered, or needing further study. Special status species require disclosure in CEQA documents and frequently additional provisions for land management. The County is responsible for managing wildlife habitat within the McKay Community Forest while wildlife populations are managed by CDFW and U.S. Fish and Wildlife Service.

According to direct observations and the California Department of Fish and Wildlife Natural Diversity Database ("CNDDB"), special status species documented as occurring on or adjacent to the Community Forest include:

- Pacific fisher
- chinook salmon
- coho salmon
- coastal cutthroat trout
- Pacific lamprey
- western brook lamprey
- Northern red-legged frog
- Northern spotted owl
- Great blue heron
- southern torrent salamander
- Osprey
- Peregrine falcon

In addition, special status species whose ranges may overlap the McKay Community Forest include:

- Bald eagle
- Northern goshawk
- Cooper's hawk
- Tailed frog
- Marbled murrelet
- Golden eagle
- Sonoma tree vole
- Sharp-shinned hawk
- Great egret
- white-footed vole
- Vaux's swift
- western pond turtle
- foothill yellow-legged frog
- Townsend's big-eared bat
- Pallid bat
- Northern harrier

The Community Forest is within the range of the marbled murrelet, however specific habitat elements such as unfragmented stands of old-growth or mature forests with large limbs do not exist within or adjacent to the Community Forest. Individual tree attributes that provide conditions suitable for nesting for this species (i.e., provide a nesting platform) include large branches (ranging from 4 to 32 inches diameter, with an average of 13 inches) or forked branches; deformities (e.g., broken tops); dwarf mistletoe infections; witches' brooms; and growth of moss or other structures large enough to provide a platform for a nesting adult murrelet (Hamer and Cummins 1991; Hamer and Nelson 1995; Singer et al. 1991, 1992; McShane et al., 2004). No sightings of this species within the Community Forest or adjacent areas have been reported to the California Natural Diversity Database.

Two recent plant surveys were conducted for portions of the proposed trail system for the McKay Community Forest (Stillwater Sciences, 2019; Stillwater Sciences, 2020). Five special-status plants were identified in the survey area: sea watch, Lyngbye's sedge, nodding semaphore grass, Pacific golden saxifrage, and Howell's montia. Two of these species (nodding semaphore grass and golden saxifrage) were also located during a wetland inventory for the Community Forest (PCFWWRA, 2018). Stillwater Sciences (2019) and Stillwater Sciences (2020) contain a comprehensive list of vascular plants observed in the Community Forest.

3.6 Transportation System

Roads are needed for timber harvest operations, restoration activities, maintenance, patrols, firefighting, and emergency response. Roads within the Community Forest are classified as logging roads for the purpose of forest management activities and are not public roads open to the general public.

The McKay Community Forest contains approximately 17 miles of existing logging roads within its boundaries. The roads were originally constructed over the last 120 years by previous landowners to haul logs out of the forest. Some roads began as railroad alignments which were then converted to truck roads. The conditions of the existing road network ranges widely. Some roads are in suitable locations and require minimal effort to re-open, while others are in poor condition and require upgrades, to varying degrees. Typical upgrade needs include new stream crossings, road surface drainage improvements, removal of unstable fill material, and rock surfacing. Some road segments are barely recognizable as roads and are considered "legacy roads." Some roads were built prior to modern standards and requirements for location, design, and construction. Some roads are situated in inappropriate locations and warrant decommission. The majority of roads are surfaced with native materials (soil) and only a small portion are surfaced with aggregate rock. Many roads are seasonal truck roads and can only be used during the dry season for timber harvest activities. Many of the unsurfaced seasonal truck roads are not suitable for even light duty administrative use during the wet season due to the muddy surfaces.

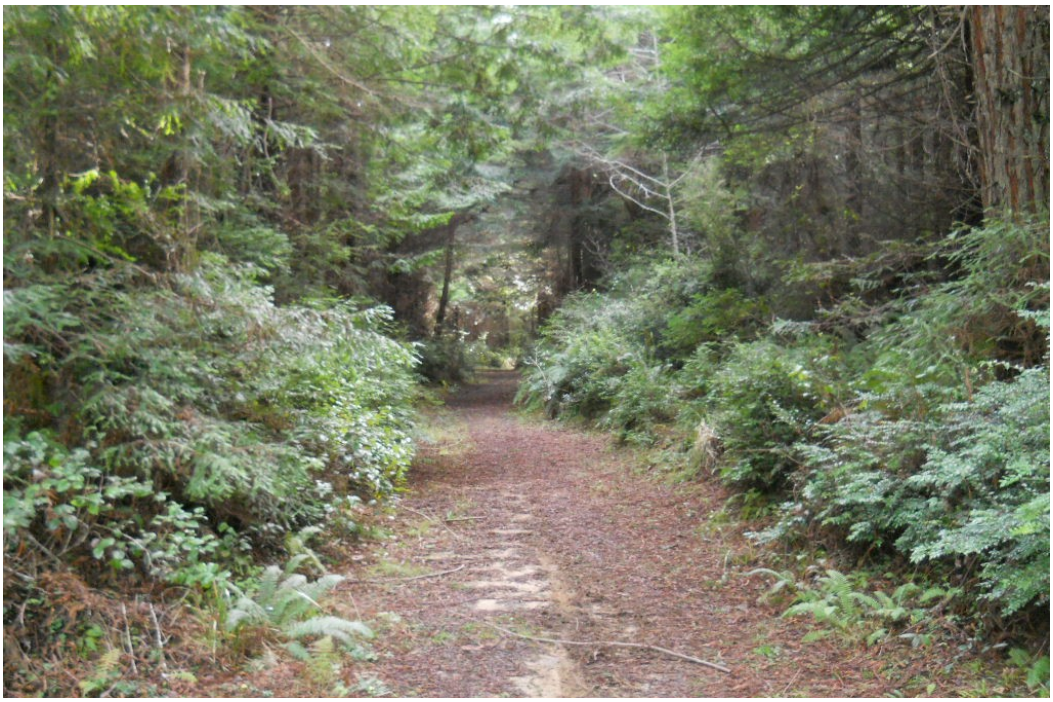
Vehicle access into the Community Forest is challenging. The R-Line[5] is the main haul road leading out of the Community Forest and McKay Tract. The R-Line connects to Harris Avenue west of Redwood Acres. Only a small portion of the R-Line is situated within the Community Forest. The R-line is a permanent rocked truck road used for year-round administrative access and seasonally for log hauling and other truck traffic. The R-Line is gated at Harris Street. The road segment leading from Harris Street to the second gate is on Green Diamond property. The road segment from the second gate to the third gate (situated near a bridge over Ryan Creek) is part of the Community Forest. Beyond the crossing with Ryan Creek, the remainder of the R-Line is on the east side of Ryan Creek on Green Diamond property.

As a result of topographic features and the layout of the property, the southern portions of the Community Forest are not independently accessible and require access from the R-Line. The County and Green Diamond share a reciprocal access easement for specified roads including the R-Line to ensure adequate future road access by both entities. The County has access to the R-Line for administrative and forest management purposes to reach the southern portion of the Community Forest, but the reciprocal access easement does not provide for use of the R-Line east of Ryan Creek by the general public. The reciprocal access easement between the County and Green Diamond explicitly allows general public use for pedestrian, equestrian, and bicycling purposes on the R-Line between Harris Street and the second gate and on the R-2 logging road.

The County holds a 40-foot-wide easement for ingress/egress across Winship School between the Community Forest and Cypress Street in Cutten for forest management activities, including timber harvest.

Proposed improvements to the transportation system are described in Section 4.4.

[5] Green Diamond utilizes a road-naming convention that applies a unique letter-number combination to each road segment based on road type. Green Diamond's main haul road through the McKay Tract is designated the R-Line. Other primary roads are designated with numbers (e.g., R-1, R-2), and connector spurs are given further sub-designations (e.g., R-6-1). The roads accessed from Northridge Road are designated NR-1 and NR-2.



Example of logging road in fair condition

3.7 Cultural Resources

The term "cultural resources" includes archeological resources and historical buildings and/or structures. The Community Forest is situated within the traditional territory of the Wiyot Tribe, which encompasses the greater Humboldt Bay area including the lower portions of the Eel River, Mad River, and Little River. Three federally recognized tribes – the Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria – include citizens of Wiyot ancestry who are culturally affiliated with the traditional Wiyot territory.

On February 10, 2020, Humboldt County sent a letter to the Wiyot Tribe, Blue Lake Rancheria, and Bear River Band of the Rohnerville Rancheria inquiring whether the tribes desire to request consultation regarding tribal cultural resources for the Trail Plan. On March 6, 2020, Humboldt County received an e-mail from Ted Hernandez, Wiyot Chairman and Cultural Director, who recommended adoption of an inadvertent discovery protocol during trail building activities. Mr. Hernandez also expressed the Wiyot Tribe's interest in participating in any advisory committee for the Forest Stewardship Plan. On March 9, 2020, Humboldt County received an e-mail from Janet Eidsness, Tribal Historic Preservation Officer for the Blue Lake Rancheria. Ms. Eidsness expressed support for the Wiyot Tribe participating in the development of the Forest Stewardship Plan. In previous communications with the Natural Resources Department of the Wiyot Tribe, staff expressed the Wiyot Tribe's interest in ethnobotanical gathering around the Humboldt Bay region and noted that coho salmon are a culturally important species (Adam Canter, personal communication). Mr. Canter expressed interest in opportunities for cultural interpretation such as signs and displays.

BBW (on behalf of the County) conducted further evaluation of potential cultural resources to support preparation of the NTMP, including a check of records with the Northwest Information Center ("NWIC") of the California Historical Resources Information System. In a letter dated September 18, 2020, the NWIC indicated that there are no previously recorded Native American archeological resources within or adjacent to the Community Forest. According to NWIC, there is a moderate potential for unrecorded

Native American resources to be present within the McKay Community Forest due the forested ridge lines and proximity to watercourses. BBW conducted a field survey for Native American archeological resources as part of development of the NTP and none were identified.

According to the letter from NWIC, the railroad grade of the McKay & Company railroad is recorded as a historic-period cultural resource. The railroad grade extended approximately seven miles along Ryan Creek and was used from the 1880s to the mid-1930s to haul logs to a log dump station, where logs were then rafted along Eureka Slough to the Occidental mill on the Eureka waterfront. Most of the railroad grade was reconstructed into a truck road (the R-line) in the 1960s. No rails or trestles remain, but the excavated landform of the railroad grade is still recognizable. A portion of the historic railroad grade crosses the Community Forest, including the northernmost portion of the grade between Myrtle Avenue and Park Street which was built on a long dike (fill prism) along Ryan Slough.

3.8 Special Management Areas

Special management areas are locations with unique habitat features where timber management activities are either restricted or excluded.

3.8.1 Wetlands

Wetlands support specialized plant communities, which in turn provide foraging and breeding habitat for a diverse array of invertebrates, amphibians, reptiles, birds, and mammals. Approximately 116 acres of wetlands have been mapped within the Community Forest (PCFWWRA, 2018). The majority of wetlands within the Community Forest are freshwater forested wetlands concentrated near Ryan Creek and its tributaries Bob Hill Gulch and Henderson Gulch (Figure 11). In the landscape, these forested wetlands are transitional between aquatic channel habitats and upland forest habitats. The forested wetlands typically have open canopies dominated by red alder with occasional big-leaf maple and a sparse shrub layer dominated by red elderberry with occasional salmonberry. The herb layer is variable, but usually contains a dense mixture of plants that are adapted to the wet soil conditions including yellow skunk cabbage, slough sedge, small-headed bulrush, water parsley, coastal monkeyflower, western sweet coltsfoot, lady fern, Pacific waterleaf, and American stinging nettle. In addition to forested wetlands, there are small areas of freshwater emergent wetlands in the southeast and northeast portions of the Community Forest.

3.8.2 Riparian Areas

Riparian areas provide habitat for a large number of wildlife species, serve as travel connectors (movement corridors) between habitat types, provide food cover, and have distinct microclimates and edge effects at adjacent forest margins. Riparian areas provide different vegetation from the upland forest areas and present important areas for wildlife. The maintenance of quality riparian habitat is an important issue on the forest because many species are dependent on riparian areas at some time in their life cycles. Management activities which affect these habitats have more potential for affecting the overall wildlife resources within the Community Forest than any other type of activity. Riparian areas are protected under the Forest Practices Rules and the majority fall into Watercourse and Lake Protection Zones, which require special protections for timber harvest (see Section 4.1).

3.8.3 Hardwood Habitat

While the Community Forest is dominated by conifer species, hardwoods such as red alder, bigleaf maple, bay laurel (pepperwood), and cascara are also present. Hardwoods are likely to be found in riparian areas, areas with wet soils, and openings where sunlight penetrates the canopy. The most significant hardwood areas are present within the forested wetlands found along Ryan Creek, Bob Hill Gulch, and Henderson Gulch. Red alder and bigleaf maple are ecologically important by providing snags,

riparian shading, food (through seed production), nutrients (through leaf drop), and vertical structural diversity. Hardwoods are utilized as a source of food and cover by many birds and mammals and can be a source of large woody debris. Hardwoods are an important substrate for epiphytes (organisms that grow on other plants) such as mosses, ferns, and lichens. The leaf litter dropped each fall enriches the soil. The understory vegetation below hardwood stands can be very different compared to heavy conifer areas. Bigleaf maple has the largest leaves of any maple tree. Large, multi-stemmed bigleaf maple trees covered in moss and lichen can be a visually striking feature in the forest.

Hawk perched on bigleaf maple tree

3.8.4 Meadow and Small Opening Habitat

Openings free from dominance by trees are ecologically important landscape patches because they support shrub- and herb-dominated early successional ecosystems that are needed by many native organisms for all or part of their life cycles (Franklin, 2018). The Community Forest contains openings ranging from small gaps up to several acres in size. These openings contribute to vegetative diversity and are important to many wildlife species by providing forage areas. Some of the existing openings include overhead powerline and gas line corridors that are frequently maintained and kept in an early seral stage.

3.8.5 Features from Historic Logging

The Community Forest contains unique features from historic logging activities such as old-growth “butt logs” with double-bit axe marks and large stumps with elevated springboard notches. These features will be considered for protection during timber management activities.

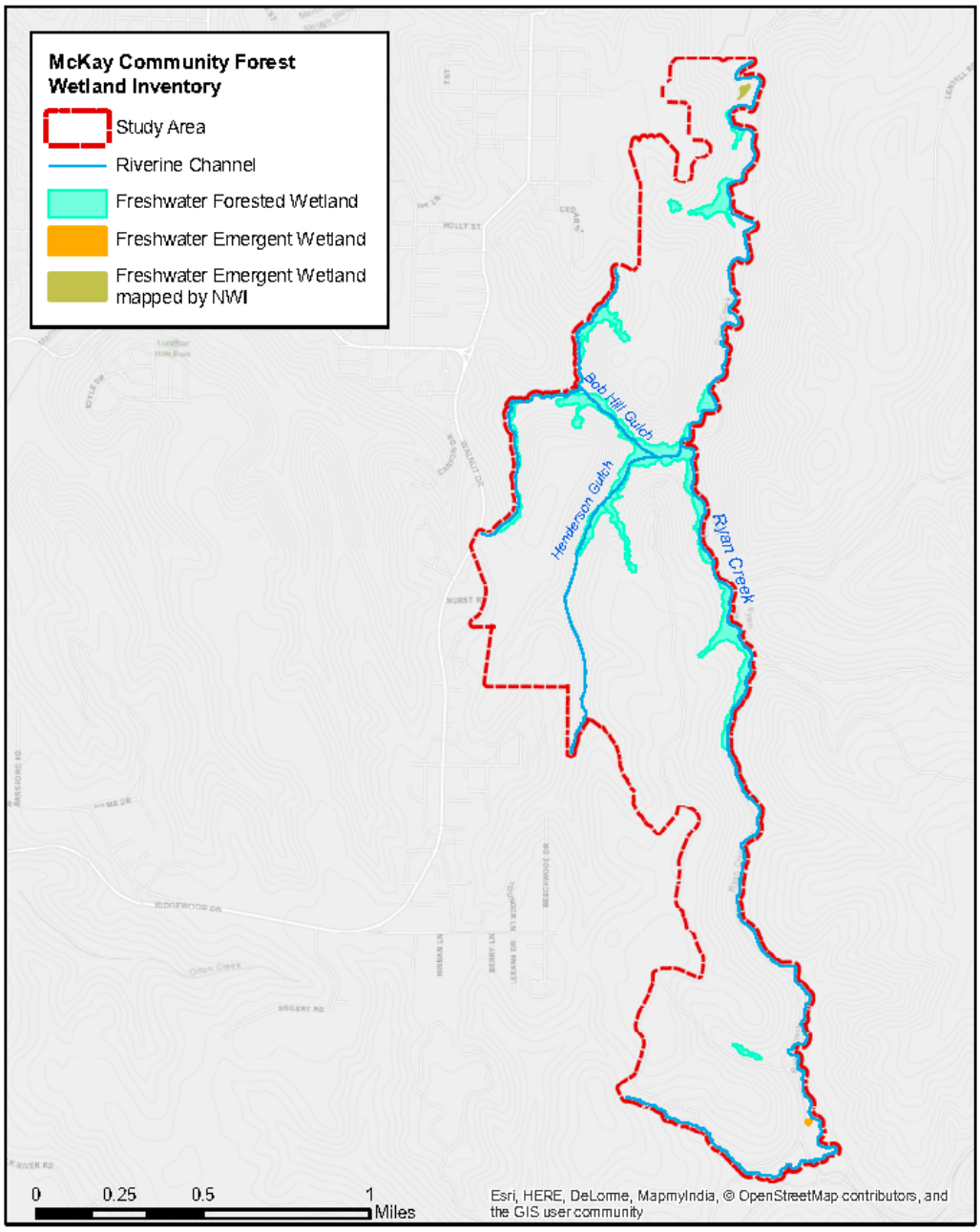


Figure 11. Wetlands. (Map credit: Pacific Coast Fish, Wildlife & Wetlands Restoration Association 2018

3.9 Fire and Fuels Management

The Humboldt County Community Wildfire Protection Plan (Humboldt County, 2019) provides detailed information on wildfire risks and hazards within Humboldt County and identifies priority actions that can improve community and ecosystem resilience to wildfire. Most of the ecosystem types in Humboldt County, including the redwood forest, evolved with fire. Fire suppression practices, land management practices, and land use changes over the last century have significantly altered the natural patterns and dynamics of wildfire. While wildfire is a natural ecological process, wildfire can threaten human life and property in many situations, especially at the interface between undeveloped or lightly developed wildlands and urban areas (the "**wildland-urban interface**"). California has been severely impacted by wildfires over the last several years, with many incidents of wildfires spreading across the wildland-urban interface. Although fire is an integral part of the redwood forest ecology, wildfires cannot be allowed to burn within the McKay Community Forest due to the proximity to urban areas.

Topography, weather, and vegetation contribute to the type and intensity of wildfire. CAL FIRE uses a fire-hazard ranking system with three categories (moderate, high, very high) based on the expected behavior of fire in severe weather. Contributing factors to wildfire hazards include buildup of fuel levels, extended periods of drought, and sources of ignition. The Community Forest is situated within an area that is mapped as having a "High" fire hazard severity (https://egis.fire.ca.gov/FHSZ/). The fire hazard within the Community Forest is likely mitigated to some extent by the lower temperatures and higher humidity along the coast. Recent fires in other redwood forest areas such as the Canoe Fire (2003) in Humboldt Redwoods State Park and the CZU lightning complex fires (2020) in the Santa Cruz Mountains shows that extensive wildfire in redwood forests can occur. Managing the risks of a severe wildfire is a high priority because the Community Forest forms the wildland-urban interface with much of Cutten and the greater Eureka area.

The Humboldt County Community Wildfire Protection Plan identified neighborhoods east of Walnut Drive and towards the end of Ridgewood Drive (Ridgewood Heights), adjacent to the McKay Tract/Community Forest as a priority for fuel reduction, chipper programs, defensible space, and landscape treatments.

The Community Forest is situated within the State Responsibility Area ("SRA") where CAL FIRE has primary responsibility for wildfire protection services. In addition, the northern portion of the Community Forest are situated within the district boundary of Humboldt Bay Fire. CAL FIRE retains responsibility for the suppression of grass and forest fires in SRA lands that are located within the boundaries of a local agency. However, Humboldt Bay Fire will likely be first on scene in the event of a wildfire due to the proximity of their resources. Humboldt Bay Fire Station # 5 is located on Harris Street across the street from the northern portion of the Community Forest. Humboldt Bay Fire Station # 4 is on Myrtle Avenue approximately two miles from the Community Forest.

Potential sources of ignition within the Community Forest include natural lightning strikes, illegal campfires, unauthorized fireworks, powerline incidents, and fires that escape from forest management activities such as pile burning. Potential sources of ignition adjacent to the Community Forest include structure fires, fires that escape from burn piles, improper disposal of barbeque coals, and fireworks.

One of the priorities for the transportation system (Section 4.4) is to provide access for fire suppression access to the greatest extent feasible. Actions to reduce wildfire risk are discussed in Section 4.6.

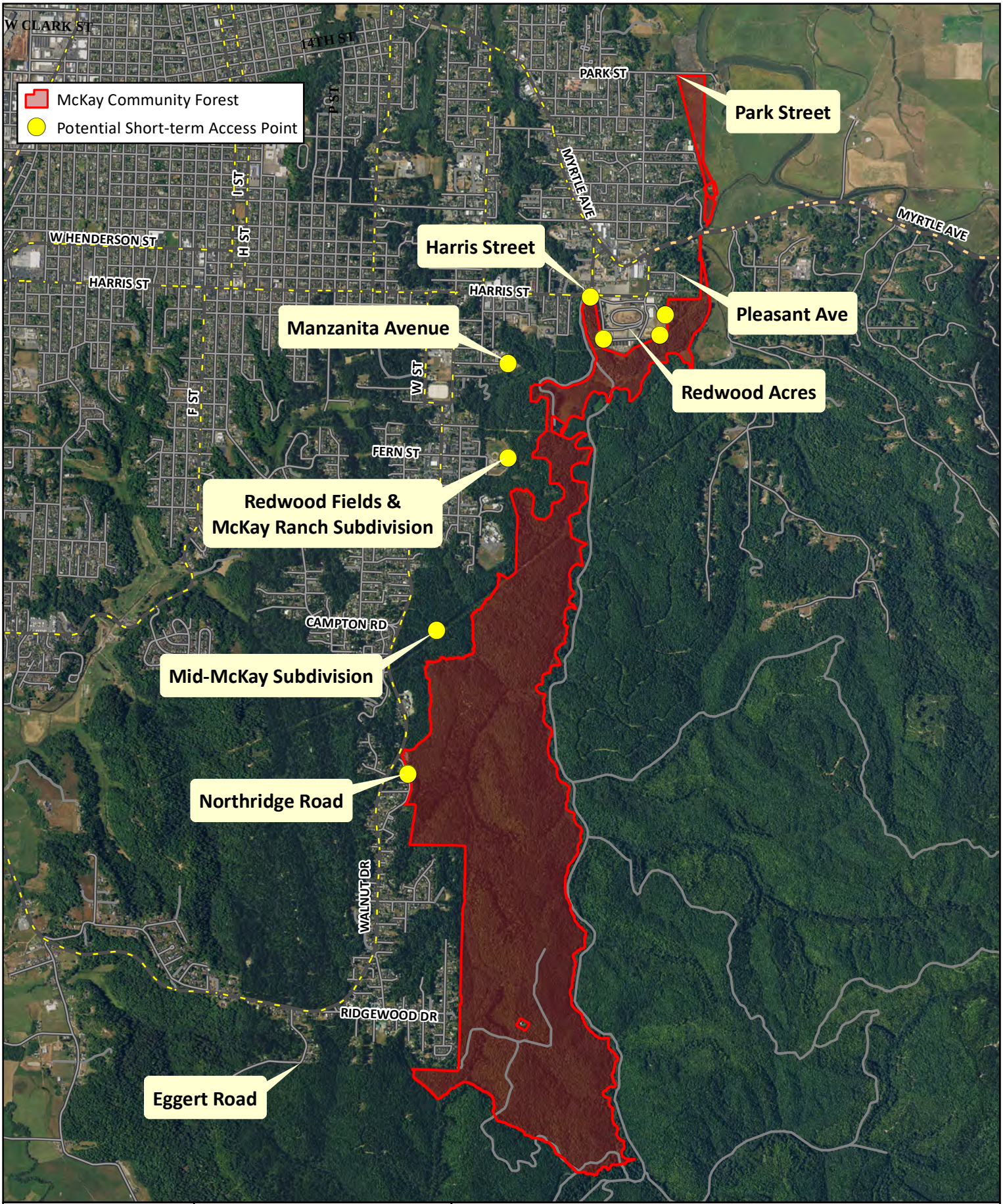
3.10 Pests and Invasive Species

Pests are insects, animals, plants, or diseases that adversely affect forest resources. Invasive species are species that have been introduced to an environment where they are not native and have become a nuisance through rapid spread and increase. Pests and invasive species are dynamic and can expand rapidly in areas where they were not found previously. Certain pests can cause tree mortality, reduce growth, or affect seed production, while invasive species are often detrimental by using significant resources (including space and nutrients) that are then unavailable for native species.

Pest problems are often the result of complex forest ecosystem interactions. For example, young trees under stress from logging damage or prolonged drought are more susceptible to problems. Douglas-fir trees close to the coast tend to become affected by conk, a fungal pathogen, when they reach an age of approximately 80 years. Humboldt County is an area that has been declared a Zone of Infection for Sudden Oak Death ("SOD") by the Board of Forestry and Fire Protection. SOD has not been observed in the McKay Community Forest, but potential SOD host species including coast redwood, Douglas-fir, bay laurel, huckleberry, bigleaf maple, rhododendron, cascara, and western starflower are present. Best Management Practices can help protect against spread of SOD on personnel and equipment.

Animals that could be considered pests include black-tailed deer, wood rats, and black bears. Black-tailed deer that browse on unprotected leaders of conifer seedlings. Wood rats can girdle small trees. Black bears can strip the bark from young pole-sized trees to access the phloem layer where sugars are stored and transported. Girdling or striping of bark on young conifers (mainly redwood) by black bear is currently the only significant animal pest issue within the Community Forest. Although bear damage is noticeable in many areas and can lead to mortality and increased tree defect, it does not appear to be at a level that will impact merchantable timber values. Bear damage should be monitored as thinning of stands in the future and increased growth rates and sugar production may induce increased bear damage (Perry et al, 2016).

Invasive plant species found within the Community Forest include pampas grass, French broom, Scotch broom, English ivy, English holly, Himalayan blackberry, and Canadian thistle. These species have little or no food value for wildlife and can alter or displace native plant communities. Reed canary grass, which is a noxious weed, has also been documented within the Community Forest.



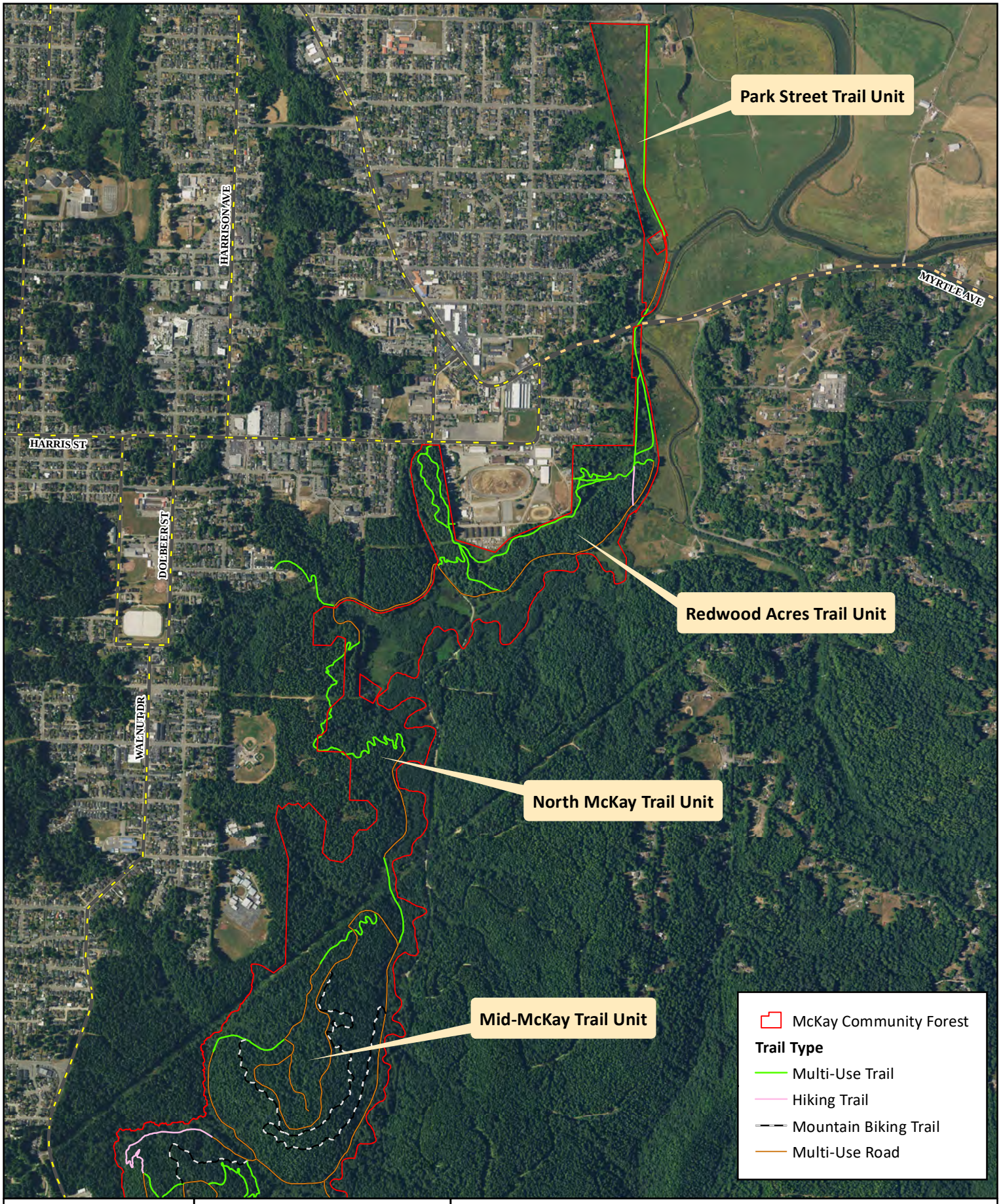
0 1,500 3,000 Feet

Imagery: 2020 NAIP
Printed: April 21, 2022
Humboldt County Public Works

McKay Community Forest

Potential Short-term Access Points

Figure 12



0 850 1,700 Feet

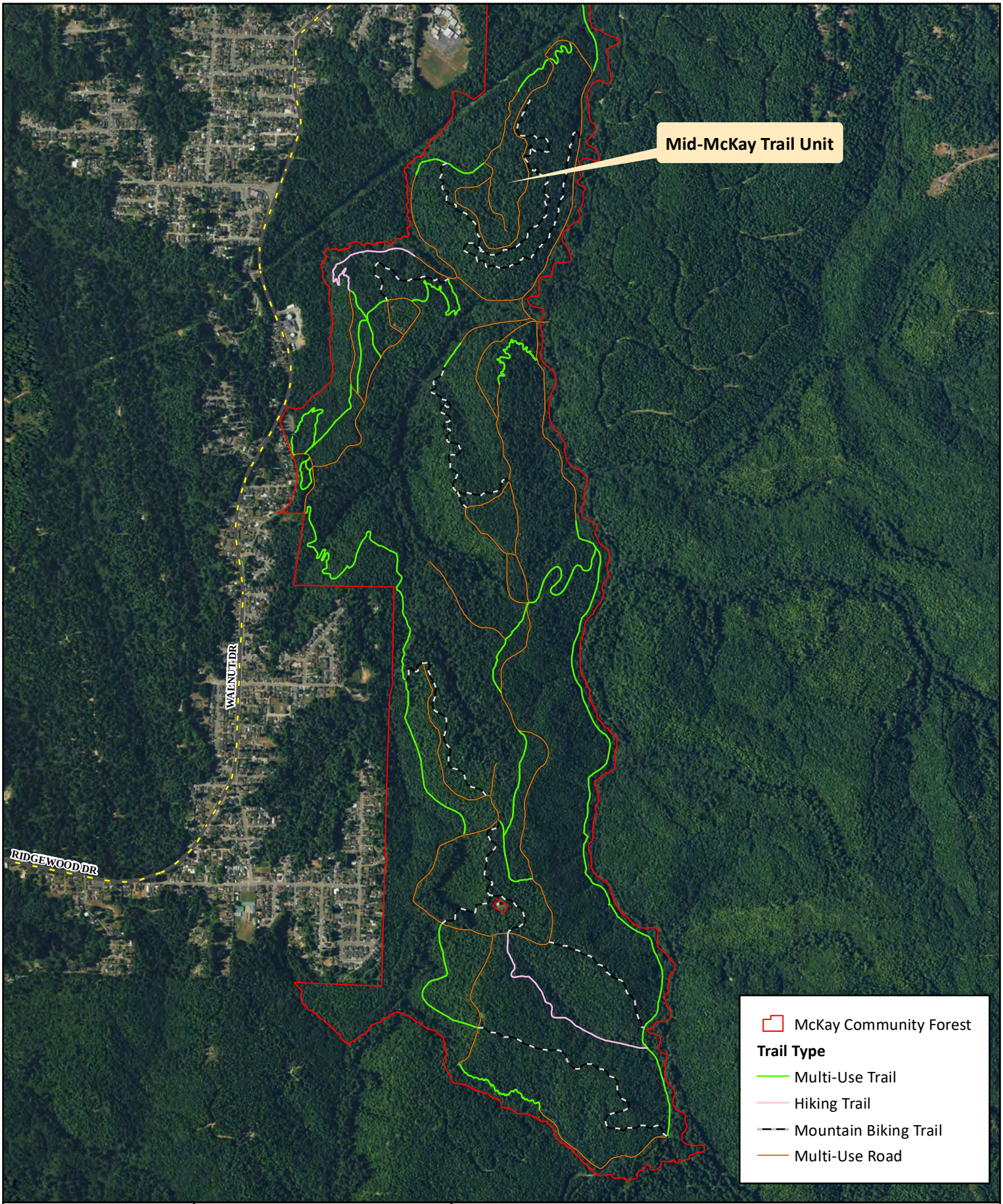
N W E S

Imagery: 2020 NAIP
Printed: April 21, 2022
Humboldt County Public Works

McKay Community Forest

Proposed Trail System – North

Figure 13



0 900 1,800 Feet

N W E S

Imagery: 2020 NAIP
Printed: April 21, 2022
Humboldt County Public Works

McKay Community Forest

Proposed Trail System – South

Figure 14

4 IMPLEMENTATION OF FOREST MANAGEMENT

4.1 Public Access and Recreation

The Trail Plan (**Attachment A**) provides a blueprint for the development of trails, access points, and amenities, including a trail network with 31 miles of multi-use roads, multi-use trails, hiking trails, and mountain bike trails, with additional trails to be considered in the future. Short-term proposed access points are shown on Figure 12 and the proposed trail network is shown on Figures 13 and 14. Some of the access points depend on the parcels being subdivided for development. Trails will be developed over several years following adoption of the CEQA Initial Study of the Trail Plan.

4.2 Timber Harvest Regulatory Requirements

Forest management activities involving timber harvesting are subject to the requirements of the California Forest Practice Rules[6], which specify how timber harvest operations can be conducted with consideration for water quality, wildlife, safety hazards, archeological sites, aesthetics, and other issues. Compliance with the Forest Practice Rules is demonstrated either through the preparation of a Non-Industrial Timber Management Plan ("NTMP") or a series of Timber Harvest Plans. Preparation of an NTMP is an option for property owners with less than 2,500 acres who limit management activities to certain practices. The County is developing an NTMP as a companion document to this Forest Stewardship Plan. This section describes the NTMP process and summarizes the regulatory requirements of the California Forest Practice Rules that are applicable to the McKay Community Forest.

4.2.1 Overview

An NTMP is a document prepared by a registered professional forester ("RPF") specifying how management of a forestland property will conform with the Forest Practice Rules. Technical studies supporting the NTMP include a detailed forest inventory and analysis, inventory of controllable sediment discharge sites, biological resources analyses, geomorphic and geological analysis, cumulative effects analysis, and cultural and archeological resources analysis. Upon approval by CAL FIRE, the NTMP serves as a regulatory permit for timber harvest operations subject to conditions incorporated into the plan. The NTMP serves as the functional equivalent of an Environmental Impact Report under CEQA by analyzing potential environmental impacts and identifying how impacts will be minimized or mitigated.

NTMPs are submitted to CAL FIRE which administers a public comment process. Once approved by CAL FIRE, an NTMP is valid in perpetuity. The NTMP may need to be amended or updated if forest conditions or management goals change. Minor amendments or deviations to the NTMP are generally handled through an administrative process with CAL FIRE and other state agencies. Minor deviations are defined in the Forest Practice Rules as "any change, minor in scope, in the NTMP which can reasonably be presumed not to make a significant change in the conduct of Timber Operations and which can reasonably be expected not to significantly adversely affect Nonindustrial Timberland productivity or values relating to soil, water quality, watershed, wildlife, fisheries, range and forage, recreation, and aesthetic enjoyment or to result in a violation of the applicable water quality control plan." A major amendment or substantial deviation would require public notice and public and agency input opportunities. Major amendments include adding additional lands, changing silviculture, changing road locations, or adding new roads.

While the NTMP is the comprehensive long-term permit, a notice must be submitted to CAL FIRE prior to individual timber harvest operations that occur under an approved NTMP. This Notice of Timber Operations ("NTO") is valid for one year. The NTO provides a focused description of a particular timber harvest operation, including maps, updated biological survey information, the name of the Licensed

[6] Title 14, California Code of Regulations (CCR), Chapter 4.

Timber Operator, and any new information that has been discovered indicating a potential change to the approved NTMP. Such changes could include archaeological or historical sites being discovered within the NTMP area, newly listed or discovered sensitive species within the cumulative impacts assessment area, or other physical environmental changes which could cumulatively impact the assessment area. After harvest operations are complete, a Completion Report for the NTO is filed with CAL FIRE by the RPF.

As stated in Section 2, the McKay Community Forest will be managed using the uneven-aged silvicultural approach. According to the Forest Practice Rules, "**Uneven-aged management** is utilized to establish and maintain an uneven-aged stand structure. Uneven-aged management attributes include the establishment and/or maintenance of a multi-aged, balanced stand structure, promotion of growth on **leave trees**[7] throughout a broad range of diameter classes, and encouragement of natural reproduction" (14 CCR 913.2). Using the selection silvicultural method, trees are removed individually or in small groups sized from 0.25 acres to a maximum of 2.5 acres.

Portions of the Forest Practice Rules apply state-wide, while other portions are specific to the forest district in which the property is located. The McKay Community Forest is situated within the Coast Forest District of the state. For some requirements, the Forest Practice Rules make a distinction based on how the productivity of a site is classified. Site I refers to sites of highest productivity, while Site II and Site III refer to sites of intermediate productivity potential, and Site IV and Site V refer to sites of lowest productivity potential. The Community Forest has a mixture of Site Class I and Site Class II stands. Site classification dictates the minimum stocking standard, which is expressed as square feet of basal area of trees per acre of land.

The following section highlights some of the most important constraints and requirements of the Forest Practice Rules applicable to the Community Forest. This section provides only a brief summary and the Forest Practice Rules should be consulted for all applicable requirements.

4.2.2 Summary of NTMP Requirements (Coast Forest District)

Silvicultural Methods

- On Site I lands, at least 100 square feet of basal area per acre shall be retained.
- On Site II and Site III lands, at least 75 square feet of basal area per acre shall be retained.
- On Site IV and Site V lands, at least 50 square feet of basal area per acre shall be retained.
- Small group openings shall be limited to not more than 20% of the total area harvested under any harvest operation.
- The NTMP shall demonstrate how sustainable harvest yields to support the production of high quality timber products will be achieved while at the same time:
  (1) Meeting minimal stocking and basal area standards.
  (2) Protecting soil, air, fish and wildlife, water resources, and any other public trust resources.
  (3) Giving consideration to recreation, range and forage, regional economic vitality, employment, and aesthetic enjoyment.
  (4) Balancing growth and harvest over time.

Harvesting Practices and Erosion Control

- Heavy equipment is prohibited on slopes steeper than 65%, slopes steeper than 50% where the erosion hazard rating is high or extreme, and slopes steeper than 50% where water flow could convey sediment to a watercourse.

[7] "Leave trees" are trees retained after harvest activities.

- Heavy equipment equipped with a blade shall not operate on skid roads or slopes that are so steep as to require the blade to be used for breaking (generally >50% slope).
- Tractor roads shall be limited in number and width to the minimum necessary for removal of logs.
- Heavy equipment shall not operate on unstable areas. If such areas are unavoidable, the RPF shall develop specific measures to minimize the effect of operations on slope instability.
- Slash and debris from timber operations shall not be bunched adjacent to residual trees required for silvicultural or wildlife purposes or placed in a location where they could discharge into a Class I or II watercourse.
- Desirable residual trees and seedlings shall not be damaged or destroyed by tractor operations.

Watercourse Protection

- During timber operations, the timber operator shall not place, discharge, or dispose of or deposit in such a manner as to permit to pass into the water of this state, any substances or materials, including, but not limited to, soil, silt, bark, slash, sawdust, or petroleum, in quantities deleterious to fish, wildlife, or the quality and beneficial uses of water.
- Accidental depositions of soil or other debris within Class I, II, or IV watercourses shall be removed immediately after the deposition or as approved by CAL FIRE.
- Watercourse and Lake Protection Zones are established with standard widths and protection measures based on watercourse class and ground slope (14 CCR 916.5, Table 1).
- The timber operator shall not construct or use tractor roads in watercourses, the Watercourse and Lake Protection Zone, marshes, wet meadows, and other wet areas, except at approved crossings or as explained in the NTMP and approved by CAL FIRE.
- At least 75% surface cover and undisturbed area shall be retained within Watercourse and Lake Protection Zones to act as a filter strip for raindrop energy dissipation, and for wildlife habitat.

Hazard Reduction

- Slash created and trees knocked down by road construction or timber operations within 100 feet of the edge of the traveled surface of public roads, and within 50 feet of the edge of the traveled surface of permanent private roads open for public use, shall be treated by lopping for fire hazard reduction, piling and burning, chipping, burying, or removal.
- All woody debris created by timber operations greater than one inch but less than eight inches in diameter within 100 feet of permanently located structures maintained for human habitation shall be removed or piled and burned. All slash created between 100-200 feet of permanently located structures maintained for human habitation shall be lopped for fire hazard reduction, removed, chipped, or piled and burned.

Wildlife Protection Practices

- All snags within a logging area shall be retained to provide wildlife habitat, unless one of the exceptions listed at 14 CCR 919.1 is applicable.
- Nest sites for bird species of special concern shall be left standing and unharmed.
- Buffer zones shall be established around all nest trees containing active nests, with the size of the buffer zone determined based on the bird species.
- The NTMP shall include maps depicting nesting, roosting, and foraging habitat for northern spotted owls within the NTMP boundary and within 0.7 miles of that boundary. The maps shall also identify all known owl observations within 1.3 miles of the NTMP boundary.

- Where an activity center for a northern spotted owl has been located within the NTMP boundary or within 1.3 miles of that boundary, the NTMP shall identify the following protection measures:

  (1) Within 500 feet of the activity center, characteristics of functional nesting habitat must be maintained. No timber operations shall be conducted in this area during the northern spotted owl breeding season.

  (2) Within 500 to 1,000 feet of the activity center, sufficient functional characteristics to support roosting and provide protection from predation and storms must be retained. No timber operations shall be conducted in this area during the northern spotted owl breeding season.

  (3) 500 acres of owl habitat must be provided within a 0.7-mile radius of the activity center. Less than 50% of the retained habitat should be under operation in any one year.

  (4) 1,336 total acres of owl habitat must be provided within 1.3 miles of each activity center.

Logging Roads, Landings, and Logging Road Watercourse Crossings

- Logging roads and landings shall be planned and located within the context of a systematic layout pattern that uses existing logging roads and landings where feasible and appropriate and provides access for fire and resource protection activities.
- Logging roads and landings shall be planned and located to minimize the following:

  (1) Duplicative roads and total road mileage.

  (2) The number of logging road watercourse crossings.

  (3) Construction and reconstruction near watercourses, marshes, wet meadows, and other wet areas.

  (4) Construction and reconstruction across steep areas that lead without flattening to Class I, II, III, or IV watercourses.

  (5) Construction and reconstruction on unstable areas or in connected headwall swales.

  (6) Construction and reconstruction near nesting sites of rare, threatened, or endangered bird species.

  (7) Construction and reconstruction near populations of rare, threatened, or endangered plants.

  (8) Ground disturbance and the size of cuts and fills.

  (9) The potential for affecting surface hydrology, including, but not limited to, concentrating or diverting runoff or draining the logging road or landing surface directly into a watercourse.

  (10) Maintenance needs while being compatible with the logging road classification and long-term road usage.
- No logging roads or landings shall be planned for construction (i) within 150 feet of the Class I watercourse transition line, (ii) within 100 feet of the Class II watercourse transition line on slopes greater than 30%, (iii) within Class I, II, III, or IV watercourses, (iv) within a Watercourse and Lake Protection Zone, or (v) in marshes, wet meadows, and other wet areas, except at approved watercourse crossings.
- No logging roads or landings shall be planned for reconstruction (i) within Class I, II, III, or IV watercourses, (ii) within a Watercourse and Lake Protection Zone, or (iii) in marshes, wet meadows, and other wet areas, except at approved watercourse crossings.
- Logging roads and landings shall be planned and located to avoid unstable areas and connected headwall swales.
- As part of the planning and use of logging roads, landings, and watercourse crossings, the RPF shall: (i) locate and map significant existing and potential erosion sites and (ii) specify feasible treatments to mitigate significant adverse impacts from the road or landing, with consideration for the key factors listed at 14 CCR 923.1(e)(2).

- Logging roads and landings shall:
  (1) Avoid or mitigate potential impacts to public safety.
  (2) Avoid unstable areas and connected headwall swales to the extent feasible and minimize activities that adversely affect them.
  (3) Minimize the size of cuts and fills to the extent feasible.
  (4) Be outsloped where feasible and drained with waterbreaks and/or rolling dips.
  (5) Be hydrologically disconnected from watercourses to the extent feasible to minimize sediment delivery from road runoff to a watercourse, and to reduce the potential for hydrologic changes that alter the magnitude and frequency of runoff delivery to a watercourse.
  (6) Include adequate drainage structures and facilities necessary to avoid concentrating and diverting runoff, to minimize erosion, to minimize the potential for soil erosion and sediment transport, and to prevent significant sediment discharge.
- All logging roads shall:
  (1) be no wider than a single lane compatible with the largest type of equipment specified for use on the logging road, with adequate turnouts; and
  (2) avoid grades greater than 20% or grades greater than 15% that extend greater than 500 continuous feet, unless exceptions apply.
- All landings shall be no larger than one-half acre and avoid construction on slopes greater than 40% where the landing will exceed one-quarter acre in size.
- Logging roads and landings on slopes greater than 50% shall meet standards at 14 CCR 923.4.
- All logging road and landing surfaces shall be adequately drained through surface shaping in combination with the installation of drainage structures or facilities and shall be hydrologically disconnected from watercourses to the extent feasible. Erosion control standards are specified at 14 CCR 923.5.
- Standards for use, maintenance, monitoring, abandonment, and deactivation of logging roads and landings are specified at 14 CCR 923.6 through 14 CCR 923.8.
- Standards for watercourse crossings are specified at 14 CCR 923.9 and summarized below in Section 4.1.4.

4.2.3 Hydrologic Disconnection

The Forest Practice Rules require that logging roads and landings shall be hydrologically disconnected from watercourses to the extent feasible when constructed or reconstructed (14 CCR 923.4). The Board of Forestry issued Technical Rule Addendum No. 5 which provides guidance on implementing hydrologic disconnection of logging roads. The term "**hydrologically disconnected**" means removing direct routes of drainage or overland flow to prevent road runoff from reaching a watercourse. Particular attention is needed at road-watercourse crossings and road segments located close to watercourses (< 200 feet). According to Technical Rule Addendum No. 5:

> "The goal of hydrologic disconnection is to minimize sediment delivery and hydrologic change derived from road runoff being routed to a watercourse. Hydrologic disconnection is achieved by creating a road surface and drainage configuration that directs water to discharge from the road in a location where it is unlikely to directly flow into a watercourse."

Hydrologic disconnection can often be accomplished by directing road runoff onto effective filter strips containing vegetation, woody debris, and/or slash. The purpose of the filter strips is to dissipate energy, facilitate percolation into the soil, and resist erosion.

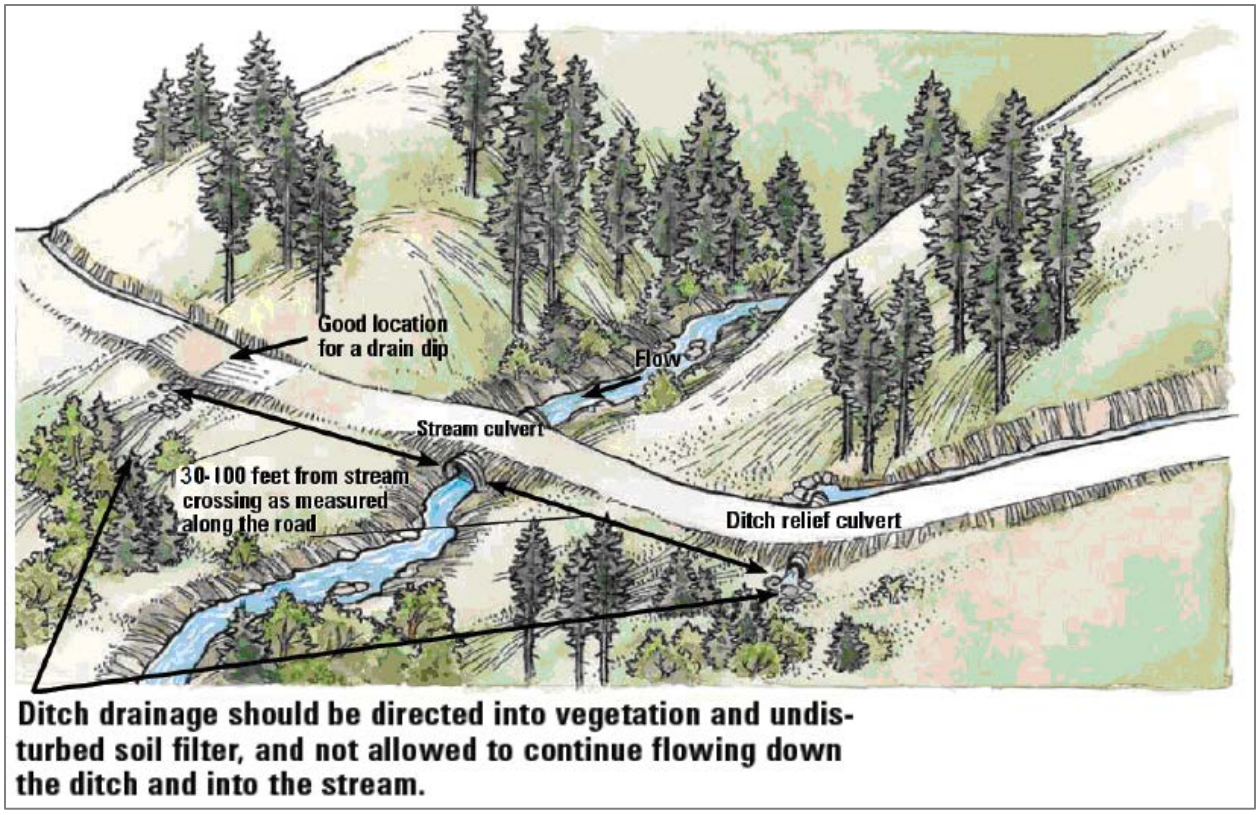


Exhibit 2 – Diagram illustrating hydrologic disconnection of road drainage to limit sediment delivery into a watercourse (Source: Forest Practice Rules, Technical Rule Addendum No. 5)

The primary mechanisms for decreasing hydrologic connectivity are:

1. Installation of a "disconnecting" **drainage facility or structure**[8] close to the watercourse crossing.
2. Increasing the spacing frequency of ditch drain culverts for roads with inboard ditches.
3. Converting crowned roads, or insloped roads with inside ditches, to **outsloped roads**[9] with rolling dips.
4. Removing or breaching outside berms on crowned or outsloped roads to facilitate effective drainage.
5. Applying treatments to dissipate energy, disperse flows, and minimize erosion at road drainage outlets not connected to watercourses.
6. Avoiding concentration of flows onto unstable areas.

[8] **Drainage facilities or structures** for logging roads include ditch drain culverts, water breaks, and rolling dips. A **ditch drain culvert** (also known as a ditch relief culvert) is a pipe passing under a road to convey runoff from one side to the other. A **water break** (also known as water bar) is a ditch, dike, or dip constructed diagonally across the surface of a logging road so that water flow is effectively diverted from flowing down the road. A **rolling dip** is a gradual depression in the road over a distance of approximately 75 to 125 feet with runoff at the trough of the dip directed to a preferred location.

[9] **Outsloped roads** are built with a slight angle of the road surface towards the outside edge, allowing road surface runoff to drain in a dispersed manner rather than concentrating within an inboard ditch. Rolling dips are typically constructed on outsloped roads to ensure adequate drainage of the road surface.

The Forest Practice Rules provide erosion control standards for drainage facilities and structures at 14 CCR 923.5. Technical Rule Addendum No. 5 provides further guidance on the location of drainage facilities and structures and the use and selection of appropriate energy dissipators. Technical Rule Addendum No. 5 also provides guidance on road outsloping and the spacing of rolling dips.

4.2.4 Watercourse Crossings

The Forest Practice Rules provide standards for watercourse crossing drainage structures on logging roads (14 CCR 923.9). Some of the key standards include the following:

- All crossings on watercourses that support fish or listed aquatic species shall allow for unrestricted passage of all life stages that may be present and allow for the natural movement of bedload to form a continuous bed through the crossing.
- All permanent watercourse crossings that are constructed or reconstructed shall accommodate the estimated 100-year flood flow, including debris and sediment loads.
- **Critical dips**[10] shall be incorporated into the construction or reconstruction of crossings utilizing culverts, except where diversion of overflow is addressed by other methods.
- Watercourse crossings and associated fills and approaches shall be constructed and maintained to prevent diversion of stream overflow down the road and to minimize fill erosion should the drainage structure become obstructed.
- Logging road approaches shall be hydrologically disconnected from the crossing to the extent feasible.
- Where a significant volume of sediment is stored upstream from a watercourse crossing that is proposed to be reconstructed or removed, the stored sediment shall be removed or stabilized.

Technical Rule Addendum No. 5 provides additional guidance on crossings with higher risk of failure and higher risk to the environment. The preferred crossing design for a Class I stream is a bridge or bottomless arch culvert. Where culverts are used and the overlying fills are large, the culverts may need to be sized to accommodate high flows along with sediment and debris. In addition, the crossings may need enhanced reinforcement at the inlet and outlet and enlarged critical dips.

On small and medium sized watercourses, the use of rock fords or rock armored fill crossings may be the preferred crossing design to reduce the risk of culvert failure. A rock ford is an open crossing where the streambed is stabilized with rock. Fords are a potential option where the streambanks are low, the streambed is shallow, the channel gradient is low to moderate, and the road approaches are gradually sloped. The road approaches should be surface with rock to prevent sediment delivery to the stream. Fords are especially applicable for small, ephemeral streams that flow only in direct response to rainfall.

4.2.5 Other Permitting and Approval Requirements

The County will obtain coverage under the General Waste Discharge Requirements for Discharges from Timber Operations on Non-Industrial Timber Management Plans (NTMPs) in the North Coast Region from the North Coast Regional Water Quality Control Board. In addition, the County will obtain streambed alteration agreements from the California Department of Fish and Wildlife for each NTO and for crossings that affect the bed, bank, or channel of watercourses within their jurisdiction.

[10] A **critical dip** is a low point across a logging road down grade from a watercourse crossing that serves to intercept overflow and return it to the downstream channel rather than draining down the road.

4.3 Timber Harvest Planning

4.3.1 Silvicultural Prescriptions

As described in Section 2.3, the Community Forest will be managed using the uneven-aged silviculture approach with a combination of prescriptions involving thinning, individual tree selection, and group selection to gradually transition the forest toward a multi-age class composition. Prescriptions will be planned to create a mosaic of heterogenous (non-uniform) spatial patterns and a diversity of habitat conditions. Thinning and/or selection prescriptions will need to balance tree growth targets, regeneration recruitment, structural complexity, concerns of bear damage, aesthetics, and economic viability. Many trees will be allowed to grow until they attain characteristics common to mature trees (e.g., complex crowns, large diameters, heights of 200 feet or more, complex crowns, fissured bark). Eventually, older cohorts of trees may be many hundreds of years old and still be available at each entry to either harvest or retain. Growing trees to older ages results in larger and fewer trees harvested per acre and higher aboveground carbon stocking levels. This approach also results in less un-merchantable slash debris following logging operations compared to younger harvested stands, and the need for site preparation is lessened by the lower volumes of slash material. In addition, larger and fewer logs are handled during harvest, resulting in lower overall operating costs.

The Forest Practice Rules allow harvesting of trees in small groups up to 2.5 acres in size under an approved NTMP. Larger group openings (no larger than 2.5 acres) could be a desirable prescription under specific and unusual circumstances, such as seeking to re-set the stocking for a stand with poor stocking conditions or to mimic a larger natural disturbance like wind blowdown or landslide. However, the County expects that smaller group openings would normally be implemented (less than approximately 1 or 1.5 acres).

4.3.2 Harvest Intensity and Retention Level

The term "**harvest intensity**" (also known as **removal rate** or **harvest rate**) refers to the percentage of standing timber that is harvested from a stand during an entry. The companion term "**retention level**" refers to the percentage of standing timber that remains following the harvest entry. Harvest intensity and retention level can be measured as a percent of total timber volume, total basal area, or total number of trees.

Timber harvest planning involves selecting a point within the retention/removal continuum, ranging from high retention/low removal to low retention/high removal. Harvest intensity generally ranges from low (15-25%) to moderate (40-60%) to high (80-100%). According to Franklin (2018):

> "The most productive area for creating silvicultural systems that effectively integrate ecological, economic, and cultural objectives is application of silvicultural practices in the central range of the retention/removal continuum. Such practices result in the creation and maintenance of forest ecosystems of mixed age and complex structure…. Approaches that focus on prescriptions at either the very low or very high ranges of retention are likely to be significantly less effective at integrating multiple objectives."

Typical harvest intensities for selection silviculture range from 20 to 40%, with the majority of the standing timber retained. In general, thinning less than 20% does not alter forest canopy structure enough to introduce structural complexity, reduce fire hazard, or result in a significant growth increase for residual trees. Very light harvests are also typically not cost-effective. Conversely, high-intensity harvests tend to simplify forests by removing the majority of trees and habitat structures and producing sparse stands which may not be aesthetically appealing. Removing more than 40% also reduces stocking

to well below site capacity, increases risk of bear damage, and increases susceptibility to wind throw. Traditional uneven-aged management typically harvests 70% or more of standing timber at each entry.

This Forest Stewardship Plan assumes that forest management will involve a harvest intensity of 20 to 40% and a retention level of 60 to 80% over the next 20-year period.

4.3.3 Re-entry Period and Future Trends

The term "**re-entry period**" (also known as **cutting cycle**) is the time between timber harvest entries into a stand. Harvest intensity is linked with re-entry period: lower harvest intensity generally requires more frequent re-entries, while higher harvest intensity requires less frequent re-entries. Re-entry periods are typically spaced approximately 10 to 25 years apart depending on many factors. The longer the return interval, the more time for the stand to recover with understory vegetation and generally have a more appealing visual appearance. In general, it can be expected that timber could be harvested on approximately 50 to 100 acres annually within the Community Forest under a relatively light to moderate harvest intensity of 20 to 40%.

The general approach for the initial 10 to 15 years will include thinning the RW3 and RW4 strata and selection harvesting of the RW5 strata, with an emphasis on thinning the over-stocked, even-age stands. As a result of this approach, future growth will be focused on higher quality, faster growing trees while still maintaining unique ecological features such as older, complex snags and trees with unique wildlife habitat. In later entries (25 to 30 or more years from now), there will be an opportunity to harvest some of the larger trees that have been cultivated over the early years. The age, size, and total volume of timber will generally increase over time in the Community Forest and the intent is to regularly harvest trees of multiple ages and sizes, including larger trees.

The number of acres harvested with each operation and the frequency of harvest will be determined by ecological, logistical, and economic conditions. Timber harvest operations will likely occur almost every year. Trees are growing fast enough and there is a large enough land base that this will be an effective way to manage the forest. To have an efficient timber harvest program, it is important to harvest on a regular basis. Having a consistent and regular harvest schedule ensures that roads are maintained, forestry and biological staff have predictable survey and monitoring protocols, and relationships with loggers, log-buyers, and regulatory review agencies are well established. If market conditions are poor for timber sales in some years, timber harvest could be deferred until market conditions improve. In general, the history of timber markets indicates that poor log markets tend to be short lived, so it is likely that markets would be sufficient for harvesting at least one to three years in every five-year period.

Growing trees to an older age generates larger log sizes. Over the long term there are potential market advantages and disadvantages for emphasizing larger logs. For redwood, a larger log diameter results in a lower sapwood to heartwood ratio. Larger redwood logs often command a higher price in the market. Some mills prefer larger log diameters as indicated by recent regional timber sales that show a higher price for larger diameters especially larger than 24 inches in diameter on the small end of the log. Larger logs allow the volume for each truckload to be higher which can make a difference in trucking costs especially when trucking a significant distance. Harvesting larger trees generally results in lower logging costs as there are less logs to handle and higher volumes for each skid to the log landing. Larger average tree size generally results in less unmerchantable material such as treetops and lower slash disposal costs. Larger trees require a higher level of skill and care in falling to avoid excess drainage. However, it is hard to anticipate sawmill preferences in the future. Some mills have set up their milling infrastructure for optimizing smaller log sizes. Currently for Douglas fir (since the closure of the Sierra Pacific sawmill), there are limited local markets for larger diameter Douglas fir logs.

4.3.4 Sustainability

The projected annual growth rate of trees in the Community Forest is 3.6%, which corresponds to a growth in volume of 1,630,000 board feet per year, or 1,538 board feet per acre per year. The Forest Practice Rules require that, at a minimum, timber harvest levels do not exceed growth. Thus, the theoretical upper limit of timber harvest would be to harvest 100% of growth. Harvest levels of 30-40%, 50-60%, and 80-90% of annual growth were considered for analysis. Computer modeling indicated that:

- A harvest level of 30-40% of annual growth would yield a timber harvest volume of approximately 500 MBF/year[11].
- A harvest level of 50-60% of annual growth would yield a timber harvest volume of approximately 750 MBF/year.
- A harvest level of 80-90% of annual growth would yield a timber harvest volume of 1,300 MBF/year.

These projections of timber harvest volumes assume that 15 to 20% of merchantable timber will not be harvested due to Watercourse and Lake Protection Zones and wildlife protection practices. Timber harvest revenue would generally increase proportionally with the harvest levels, while standing volumes and carbon sequestration (see Section 4.3.6) would decrease proportionally with harvest levels.

This Forest Stewardship Plan assumes a target of harvesting 50 to 60% of the annual growth over the initial 20-year period, in order to optimize ecological and economic goals.

The 50% of total growth option is presented below in the Growth and Harvest Modeling section. This level of harvest can be re-visited and re-adjusted in the future after determining (1) if the desired stand condition goals are being met; (2) if public acceptance of the timber harvesting program is maintained; and (3) if the initial modeling accurately predicted growth and mortality. This level of planned harvesting (approximately half of annual growth) is similar to the harvest forecast for the Arcata Community Forest (City of Arcata 2020). The result of harvesting less than growth at each cutting cycle is that standing volume will increase over time. Treating the young stands with an emphasis on thinning will decrease the stand density, remove damaged and slow-growing trees and increase the average size per tree and size per acre. This approach will move the forest to a more visually appealing structure while accelerating the development of mature forest characteristics.

4.3.5 Growth and Harvest Modeling

The forest inventory data (Section 3.2.2) were compiled and analyzed using the Forest and Stand Evaluation Environment (FORSEE) computer program (CAGYM 2011). FORSEE is a computer-based forest growth and yield model that can project future growth of the forest and simulate how periodic harvest would affect timber volume, carbon stocks, and tree size over time. Modeling growth and yield forms the basis for predicting potential forest harvest over time. Modeling future stand conditions also provides a forecast of how forest composition and habitat suitability changes over time and can be used to determine if various goals and objectives are being met.

Modeling of all commercial strata was carried out for 45 years in five-year periods, with selection harvesting simulated on a 15-year cutting cycle in the RW5 stratum and a 10-year cutting cycle in the others. The RW4 and RW5 strata are ready to harvest immediately; RW3 is projected to be ready in five years; and the RW2 stratum was modeled to grow for 20 years before any harvest occurs. Modeling was done on a per-acre basis in such a manner that volumes gradually increase over time along with the average size of dominant trees up to a point where growth and harvest are roughly balanced.

[11] MBF/year = Thousand board-feet (see Section 3.2.2).

Figure 15 shows the projection of volume for an example acre of RW4, the most prevalent stand type within the Community Forest. The line goes down when harvesting occurs showing that about 25% of the volume has been cut. Over the following 10 years, the line goes up to a level slightly higher than before the previous harvest. The trend of the peaks of the line over time indicates that the volume on the example acre is increasing. Figures 16 shows the trend in harvest volume across the whole property. The height of each bar corresponds to the total amount harvested in that five-year period. While the harvest levels fluctuate from period to period, the overall trend is upward. The colors on the bars show the proportion of redwood and Douglas-fir harvested. Figure 17 shows the total volume in redwood and Douglas-fir growing on the property over time, assuming the harvesting scenario described here is implemented.

4.3.6 Carbon Modeling

Given the location and highly productive soils of the McKay Community Forest and accounting for low to moderate intensity sustainable forest management with an active uneven-aged timber harvest program, an estimated 4-7 metric tons of above ground forest carbon (CO_2e) per acre per year or approximately 6,000 tons will be sequestered per year. This estimate takes into account emissions from timber harvest activities such as heavy equipment and trucking as well as carbon storage in durable wood products. The level of carbon sequestration will increase or decrease proportional to the level of harvesting. The no-harvest scenario would result in the most carbon sequestration in the forest. However, the Community Forest is being managed for multiple objectives rather than for a single outcome. Therefore, the no-harvest scenario is not consistent with the planning framework and management goals presented in Section 2.

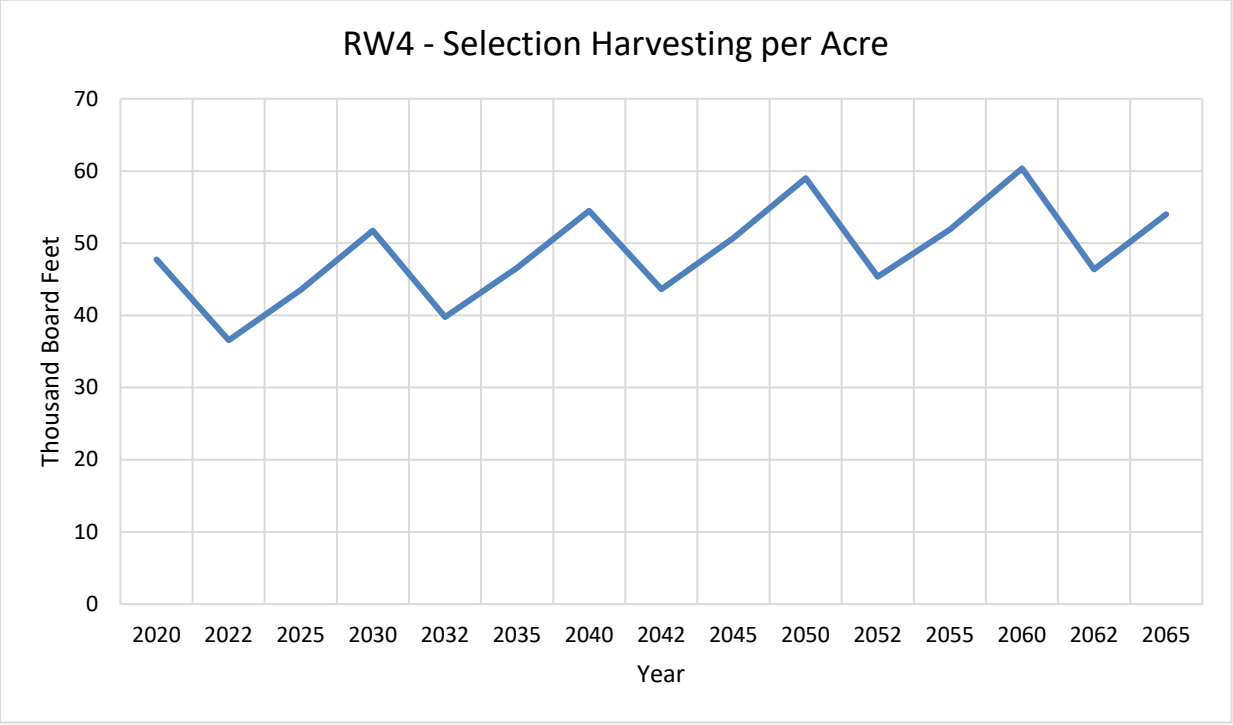


Figure 15. Modeled stocking per acre in RW4 strata over next 45 years

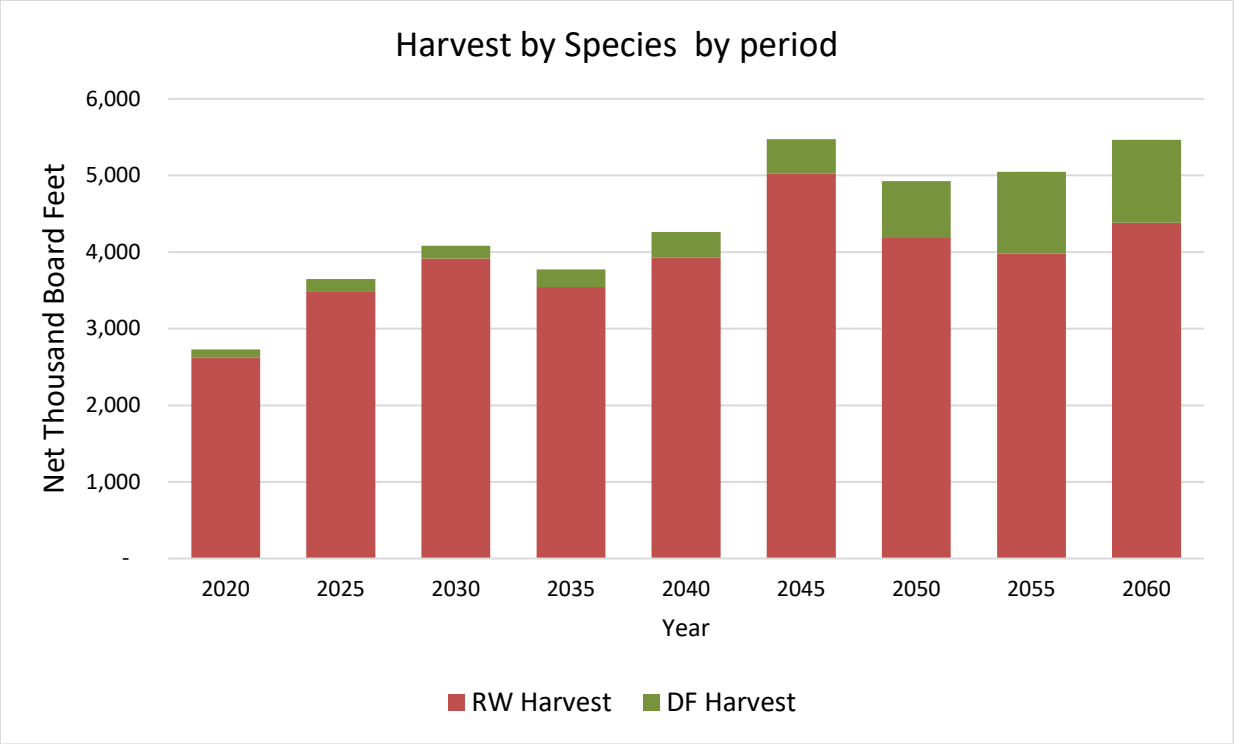


Figure 16. Harvest by species and period during the 2020-2060 time period

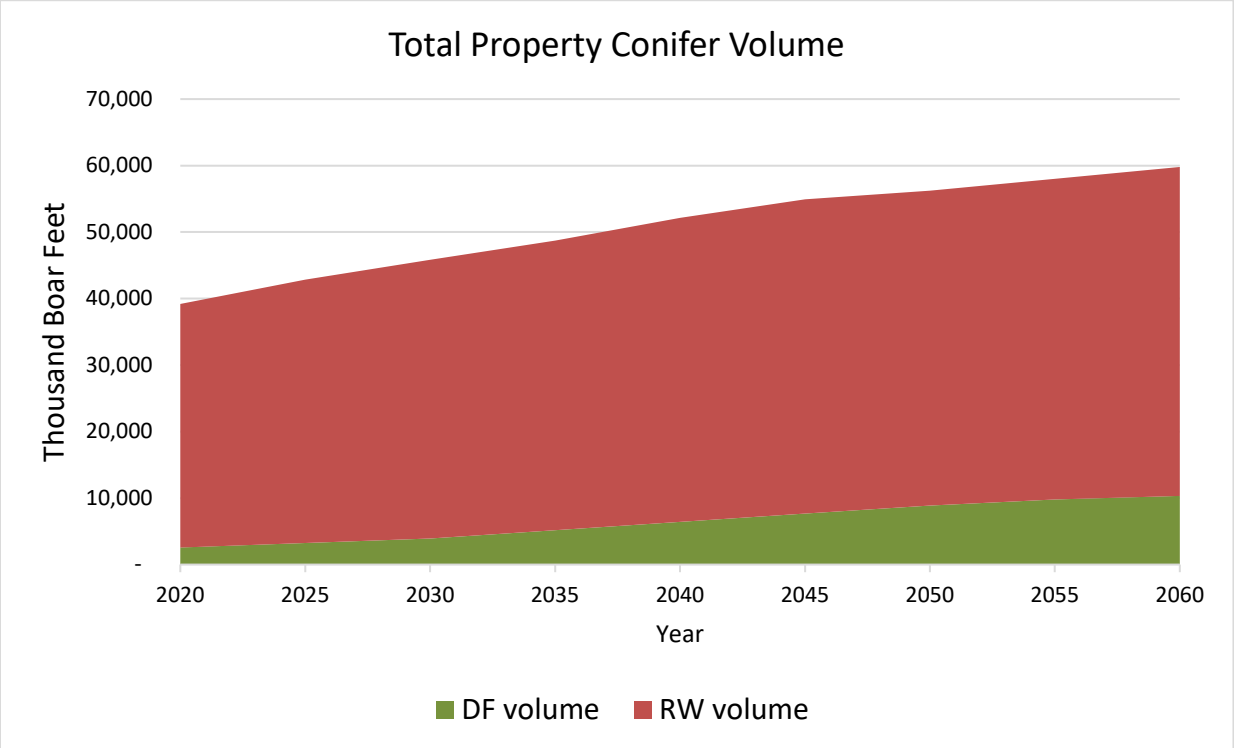


Figure 17. Projection of total conifer volume over time in the McKay Community Forest

4.3.7 Conservation Measures

The following conservation measures were developed to guide the development of each timber harvest prescription and help achieve the ecological goals and objectives presented in Section 2.

Conservation Measure 1: Apply single tree selection, group selection, thinning, and no-harvest treatments to create a diverse forest landscape mosaic with vertical and horizontal heterogeneity.

The planning and layout of each timber harvest operation will require decisions about how many trees to retain, which trees to retain, and the spatial pattern of the retention. Harvest designs will strive to create and sustain biologically diverse and structurally complex forest conditions. Critical elements of forest complexity include snags, large down logs, and live trees with decadent features like basal hollows, cavities, and dead tops. Prescriptions will create a mixture of low tree density and high tree density areas, openings, and un-harvested patches.

Conservation Measure 2: Grow and maintain trees in older (>50 years) and larger size classes (>36 inches diameter-at-breast height).

During each harvest cycle, the County will retain a significant portion of the larger older trees in each stand. Over time, the total basal area of tree growth will be re-allocated from smaller trees to larger trees. In addition to enhancing habitat quality, this measure will reduce fire risk by increasing the spacing between trees and decreasing smaller trees which can serve as ladder fuels.

Conservation Measure 3: Harvest trees from all size classes to increase light availability and stimulate growth of the understory and trees occupying intermediate positions in the canopy (with the exception that any residual tree that existed prior to 1850 will be retained).

Silvicultural prescriptions may include removal of dominant and codominant trees in the overstory ("thinning from above") and removal of small and intermediate trees ("thinning from below"). Thinning and group openings can be designed to mimic natural disturbance events.

Conservation Measure 4: Rely on native species for reforestation and habitat restoration, using local seed and plant sources.

Native tree and plant species will be the focus of management activities. Non-native species will be discouraged (shaded out) or actively eliminated (removed physically).

Conservation Measure 5: Create multi-layered canopies.

Modified single-tree and group selection timber harvests will be used to release the growth of seedlings and saplings in the understory, establish new redwood tree cohorts, and recruit shade-tolerant species (such as western hemlock and grand fir) in areas where they are underrepresented.

Conservation Measure 6: Maintain and recruit large snags (standing dead trees) and live trees with unique, complex structural attributes such as large basal hollows, broken tops, reiterated tops, dead tops, multiple stems, and fire scars (with the exception of trees that pose a significant safety or fire hazard).

Conservation Measure 7: Increase and maintain downed woody debris densities and volumes.

Existing fallen trees and cull logs produced during timber operations will be left in the forest for coarse woody debris recruitment, where appropriate, with consideration for avoiding excess fuel loads. Some fallen trees and cull logs will be utilized within the forest for trail bridges, retaining structures, boundary

markers, and other purposes. Existing woody debris in riparian areas will be left undisturbed to the greatest extent practicable.

Conservation Measure 8: Retain hardwoods and other unique trees during forest management activities.

Hardwoods and unique minor conifer species such as red cedar or yew will be retained.

Conservation Measure 9: Minimize creation of non-forested areas.

Skid trails will be minimized to minimize soil compaction. Existing skid trails will be re-used as much as possible. To keep landings as small as possible, boom-type shovel loaders will be preferred over front-end log loaders. Construction of "tree layouts" (creation of cushions with soil to fall trees onto) will be avoided. Exposed areas of mineral soil may need to be revegetated with native trees and plants, and/or protected with slash or weed-free straw mulch, where there is a potential for erosion of surface soil erosion. Soil compaction will be limited by reusing existing skid trails and avoiding the use of heavy equipment when soils are saturated.

Conservation Measure 10: Minimize slash accumulations and reduce fuel loading.

Post-harvest treatment of slash within harvest units and on landings may include piling and burning, masticating, crushing with machines, removal, or other techniques. Small trees not suitable for regeneration recruitment or otherwise over-abundant should be treated during each harvest to minimize accumulation of fuel sources.

4.3.8 Logging Systems

Timber harvest operations include tree marking, site preparation, road maintenance, **felling** (tree cutting), yarding, log loading, log hauling, and slash management. **Yarding** (also known as "**skidding**") is the movement of cut trees from the point of felling to a **landing** (temporary storage site where logs are loaded onto trucks). Selecting the appropriate logging system for yarding trees is important for minimizing erosion and impacts to residual trees and sensitive habitats. Historically, most of the McKay Tract was logged using tractors, yarding logs downhill to truck roads and landings located along the main watercourses. Going forward, most heavy equipment and large trucks will be limited to the gentler slopes and upland terraces far from watercourses. Most of the historic roads located within the Community Forest near the watercourses will be decommissioned and/or converted to trails.

Methods for falling, yarding, and processing trees into logs (collectively called "**logging systems**") are constantly evolving to reduce environmental impacts, reduce costs, and increase safety for workers. The falling of trees is increasingly being done with large tractors rather than people using chainsaws. Similarly, turning large trees into logs by delimbing them and cutting them into specific lengths is also being done primarily by machine rather than chainsaw operators. Yarding may occur with a wide variety of equipment depending primarily on slope and size of trees.

Tractor yarding (also known as "**ground-based yarding**") involves transporting trees with rubber-tired or track-mounted machines ("**skidders**"). Skidders can be equipped with grapples or a winch and line. Tractor yarding is used on gentler slopes (<50%) where it can be accomplished with minimal ground disturbance and erosion risk is minimal. Skidding equipment can often work on slopes up to 35 percent or more without excavating skid trails. As slopes steepen, skid trail construction and soil displacement become more likely. The practical limit of reach with a winch line is approximately 200 feet. On gentle terrain, and when skidding downhill, tractor skidding is usually the most efficient and cost-effective method. Where protection of residual trees and regeneration is important, tractor yarding often has an

advantage because it is easier to control the logs as they are being moved compared to cable logging. Adverse skidding (skidding uphill) is inefficient on slopes over about 30 percent and impractical on slopes over 50 percent. The Forest Practice Rules prohibit tractor logging on slopes over 65 percent, or over 50 percent where certain sensitive conditions exist. Another type of tractor or ground-based yarding system is known as "**shovel logging**." In this system, a tracked log loader travels throughout the harvest unit and moves the logs to the landing by picking them up and carrying them. The log loader operates on mats of cut slash and does not drag the logs, so ground disturbance is lower than traditional skidding machines.

Example of ground-based yarding at the Arcata Community Forest. Photo credit: M. McDowall 2019

When slopes become too steep for traditional ground-based tractors (>50-65% slope), the logging systems switch to cable-based equipment, or "**cable yarders**." **Cable yarding** involves use of a suspended cable (wire rope) controlled by a stationary yarding machine, usually parked high on a hillside, to provide lift and pull the logs from the hillslope to the nearest road or landing. Trees/logs may be fully or partially suspended for all or a portion of the yarding distance. The cables are strung in corridors through the stand from a high point where the yarder is located to a low point where the end is secured to a fixed point. Another logging system that is being used more frequently on steep slopes in the North Coast region is called "**tethered logging**" in which tractors are lowered down steep slopes with heavy-duty winches and cables to cut and/or yard logs. This logging system is designed to work on steep slopes where high-lead cable systems are currently the standard practice. If conditions are suitable, this type of logging system can conduct low-impact logging in sensitive areas at a lower cost than cable systems. Tethered logging systems are considered to be low impact because the machines travel on a mat of cut slash (not on skid roads) and all logs are transported on the bed of a tractor (known as a "**forwarder**") rather than dragged along behind a tractor. The primary limitation of the tethered logging operations is tree size, as they are typically limited to trees less than approximately 30 inches in diameter.

Figures 18 through 20 identify the silviculture and yarding systems that are anticipated in different areas of the Community Forest based on ground slope. Ground-based tractors will be used on gentle slopes (<30% slope), labeled as "Group Selection/Tractor" on the maps. On intermediate slopes (30-50% slope, labeled as "Group Selection/Tractor ELZ[12]"), ground-based tractors may operate, but may not construct any new skid roads. On steep slopes (>50% slope, labeled "Selection/Cable"), cable or tethered logging systems will be required. The area alongside of watercourses, known as Watercourse and Lake Protection Zones ("WLPZ") may have trees removed, but ground-based equipment cannot enter these areas. These WLPZ areas are delineated on the maps using the "Selection/Cable" symbology because only single tree selection is allowed and ground-based machines are prohibited- although a cable from a ground-based machine could be used to pull trees out of the WLPZ so that a ground-based piece of equipment could transport it to the landing. Shovel logging systems are well suited to the two gentler slope classes and are less likely to operate effectively on the steeper slopes.

4.3.9 Reforestation

Forest stewardship includes consideration of how the forest will regenerate following timber harvest activities. Redwood trees typically re-sprout vigorously from a cut base. By using selection silviculture for the Community Forest, natural regeneration through basal sprouting of redwoods and seedling recruitment by other conifer species is expected to be sufficient in most cases. In some situations it may be desirable to augment natural regeneration with planted seedlings. For example, areas harvested under group selection, log landings that will not be used for an extended time-period, and existing areas with low stocking may warrant re-planting. Areas lacking conifer diversity such as shade-tolerant species (e.g., western hemlock, grand fir, western red cedar) could be interplanted following a harvest event. Areas impacted by unauthorized recreational use or overuse could be re-vegetated with native conifers or hardwoods. Planted seedlings should be grown from seeds or generated from clone stock collected from the appropriate source zone (seed zone 092 on the California Tree Seed Zone Map).

4.3.10 Timber Harvest Administration and Sale of Timber Products

Sawlogs will be the principal commodity produced in the Community Forest. The County will retain a **licensed timber operator** ("LTO") for logging and trucking through its standard procurement process and sell the harvested logs commercially. Road construction/reconstruction and upgrades may be accomplished by the LTO as part of a logging contract or by another contractor separate from the logging operations, depending on setting, timing, and extent of work required. For example, the LTO may install stream crossing culverts on truck roads used for timber operations; however, for extensive road removal projects outside of a harvest area a separate contractor that specializes in road removal may be appropriate.

The County plans to sell timber using the delivered log sale method. Most industrial and non-industrial landowners including the City of Arcata use the delivered log timber sale method which allows for more control on the timber operations and the timing of the timber harvest activity. Delivered log timber sales can be conducted by soliciting competitive (sealed) bids for "delivered log price" from log buyers. Timber sale agreements would be based upon delivery of a certain quantity of logs to the mill. Logs are typically **scaled** (measured for gross and net volume) by an independent third-party log scaling firm. The County would be paid for net log scale (volume after deductions for defects).

The County is prohibited from exporting logs per federal Department of Commence restrictions (15 CFR 792) for raw log exports that affect state owned timberlands and subdivisions of the state that includes counties, cities, and special districts. Some log buyers who export logs oversees may choose not to bid on the County's logs to ensure that they don't inadvertently export logs from public lands.

[12] ELZ = Equipment Limitation Zone

The sale of commercial timber is subject to a yield tax based on a schedule of values provided by the Board of Equalization. Yield tax of 2.9% is calculated using a formula that accounts for species, total volume, volume per log, logging method, and state-average stumpage values. Humboldt County falls under Timber Value Area 1 on the Board of Equalization's Harvest Values Schedule which is published semiannually.

As an alternative to the delivered log sale method, logs could be sold as a stumpage sale. A stumpage sale is when a log bidder purchases the logs "at the stump" and implements and pays for the logging and log transport. With this type of sale, the purchaser hires the logging and trucking firms. State Demonstration Forests, Bureau of Land Management, and U.S. Forest Service typically use the "stumpage sale" method. With this system, the log buyer (mill) controls who conducts the logging rather than the landowner.

A schedule of potential forest harvests was developed based on the 2020 inventory of timber resources at the McKay Community Forest. The harvest schedule used the FORSEE electronic growth and yield model to forecast the timber inventory data into the future and simulate growth and harvest that would be possible under the NTMP. Assuming an annual harvest level of approximately 50% of total stand growth, the Community Forest could produce approximately 750 MBF of timber on an annual basis over the next 50 years, which would produce net incomes of approximately $300,000 or more annually (not accounting for inflation). This harvest scenario represents an annual harvest level of approximately 50% of total stand growth, which optimizes ecological and economic goals.

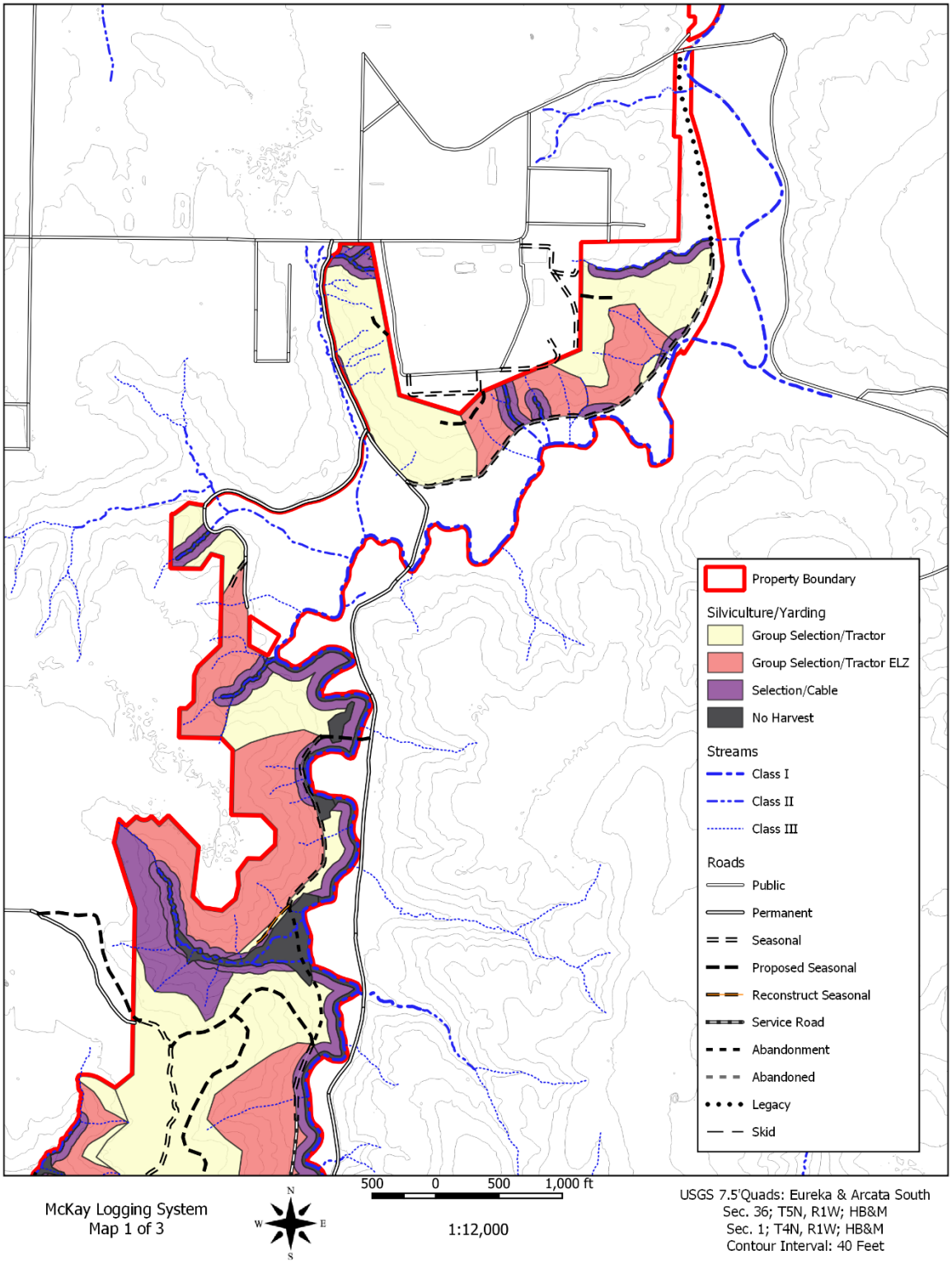


Figure 18. Logging System North

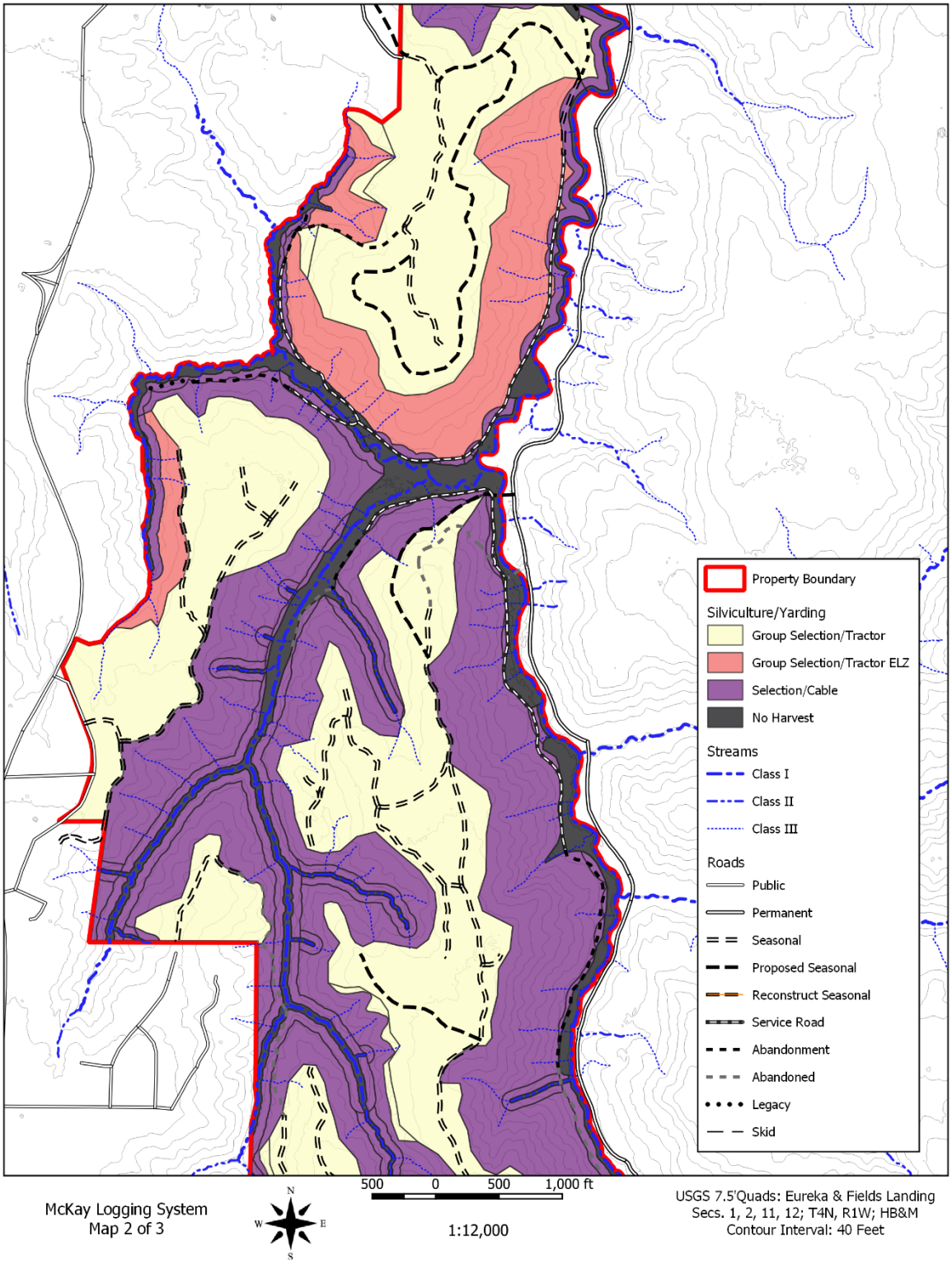


Figure 19. Logging System Middle

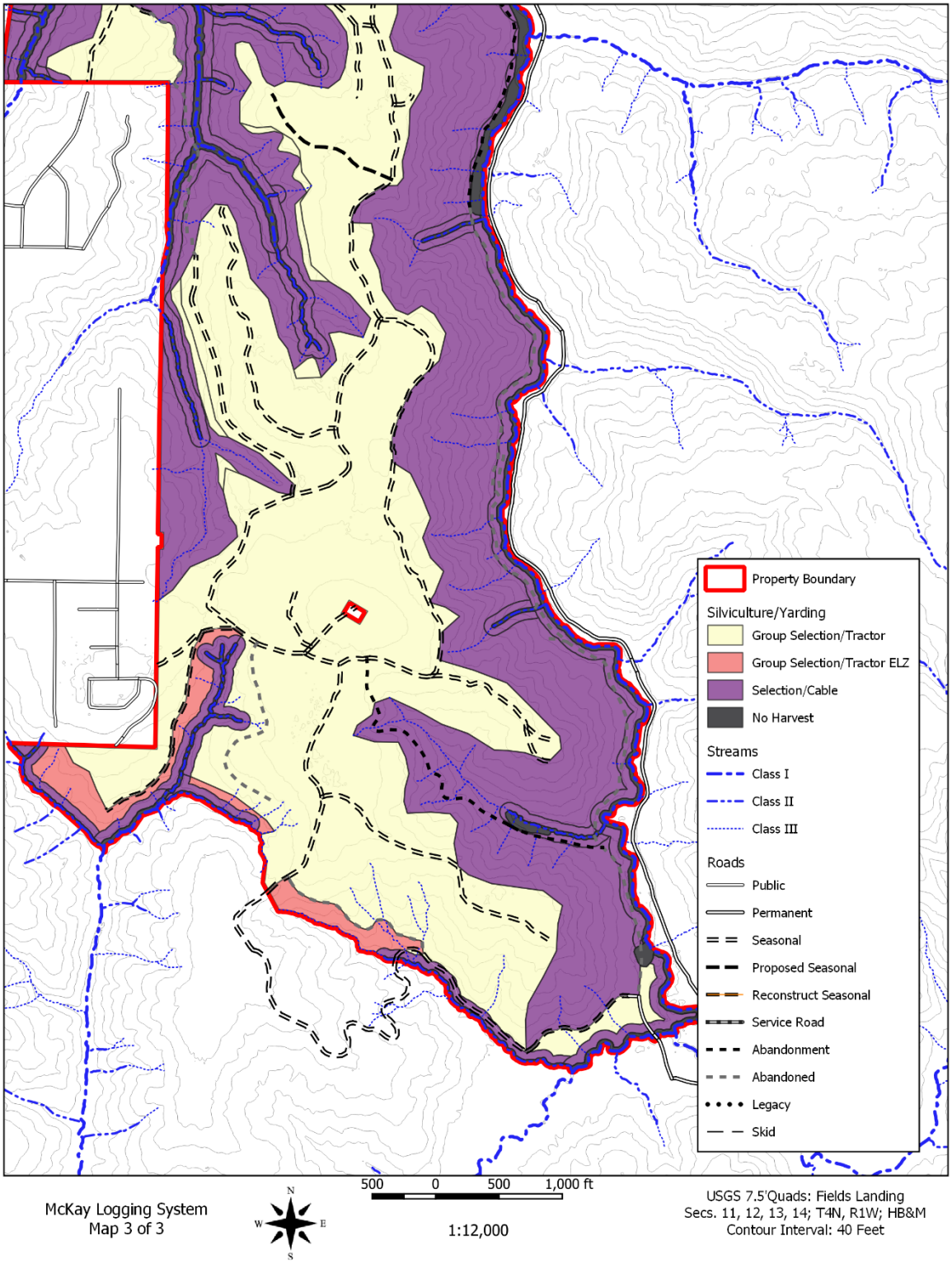


Figure 20. Logging System South

4.3.11 Slash Management

The term "**slash**" refers to woody debris such as limbs, bark, and small-diameter (unmerchantable) treetops generated during timber operations. Treating slash by burning, removing, or lopping and scattering in place to a depth of 18 to 24 inches or less is standard procedure for timber harvest operations. Concentrations of slash tend to be greatest at landings. If the quantity of landing slash is not significant, it can be placed back into the forest with log loaders and spread to decompose. In some cases, slash can serve as an erosion-control measure to cover disturbed areas like skid trails or to block unauthorized recreational trails. All logging slash will be removed from actively used roads and trails and piles will be located to minimize visual impacts from designated trails. Slash can be chipped adjacent to high use trails and multi-use forest roads to improve aesthetics. An important consideration during slash treatments will be to avoid excessive fuel build-up. Slash management will emphasize burning, removing, or chipping near residential areas and in areas with elevated fuel levels.

4.3.12 Public Safety

Some trails may need to be closed for periods of time during active timber harvest or road reconstruction activities unless detours can be set up to maintain trail use. When timber operations affect main roads and trails, security staff can set up traffic control points to stop recreational users and let them through when conditions are safe. During periods of high lead cable logging, roads and trails that are located under cables must be closed for public safety. Log hauling should not conflict with recreational use as long as roads are watered for dust control and trucks limit speeds to 10-15 miles per hour. Hours of operating for logging will be limited from 6 a.m. to 5:30 p.m. to avoid conflicts with the heaviest recreational use which is likely after 5:00 p.m. on weekdays during the summer season. Timber harvest operations will not be conducted on weekends and designated County holidays.

4.4 Transportation

4.4.1 Road Network

The existing network of logging roads within the McKay Community Forest was described in Section 3.6. Many of the logging roads have not been upgraded or maintained for many years. Road upgrades and new trail construction will be one of the most significant and expensive aspects of managing the Community Forest over the next 20 to 25 years. In general, the highest priority will be controlling sediment sources near fish-bearing streams, providing safe public access via a network of recreational trails, and development of a road network suitable for timber harvest operations.

The County developed an inventory of the existing road network and divided the roads into logical segments based on location, condition, and proximity to water crossings and road intersections. For example, the R-4 road is subdivided into three segments (R-4a, R-4b, R-4c). The condition of each road segment and landscape context were evaluated, weighing the benefits of maintaining a road segment against the anticipated cost of upgrades and potential feasible alternatives. The detailed road inventory is contained in Tables 1-3 of **Attachment B**. The proposed transportation system is shown on Figures 21-23.

The Trail Plan uses the general term "**multi-use road**" which includes two fundamental road types: timber operation roads and service roads. **Timber operation roads** will be used for timber harvest operations and are intended to accommodate periodic use by large trucks and heavy equipment. Timber operation roads will be managed in accordance with the Forest Practice Rules. **Service roads** are former logging roads that are no longer needed for timber operations but are important for providing seasonal vehicle access for trail maintenance, patrols, and emergency response. Service roads are intended to accommodate periodic use by pick-up trucks and other light vehicles.

In summary, the County proposes to:

1. Retain and upgrade 9.2 miles of existing logging roads for timber operations.
2. Construct 2.0 miles of new logging roads for timber operations.
3. Convert 1.8 miles of existing logging roads to service roads (no timber operations).
4. Decommission 4.0 miles of existing logging roads and convert a portion of them to trails.

Five new road segments (totaling 2.0 miles) will be constructed in appropriate locations in accordance with the Forest Practice Rules. The new road segments are identified on Table 3 of **Attachment B**. The road segment designated as R-7.6 will provide access to a large tract of land south of Henderson Gulch that is currently only accessible by an exceptionally long route which includes unsurfaced, seasonal roads primarily on Green Diamond property. This road segment will require careful construction due to the slopes. Construction of the R-7.6 road will reduce reliance on the southern portion of the R-7 road which is located on Green Diamond property and has several locations in poor condition.

Four existing road segments (totaling 1.8 miles) will be converted from logging roads to service roads. The road segments are not needed for timber operations because timber harvesting in the vicinity will be planned using cable yarding to an uphill landing. These roads segments will be upgraded or reconstructed and the sediment sources will be treated. The service roads will be narrower than multi-use roads and will resemble eight-foot wide trails more than truck roads. The service roads will be blocked off to vehicular traffic using gates, bollards, or other means and will not be available for timber operations.

At a minimum, the existing logging roads within an operating unit will be upgraded concurrent with the first timber harvest entry into the unit. Grants will be pursued to upgrade roads on an expedited timeframe and to incorporate restoration goals to the extent feasible. The County expects to upgrade the entire road network within approximately 20 to 25 years.

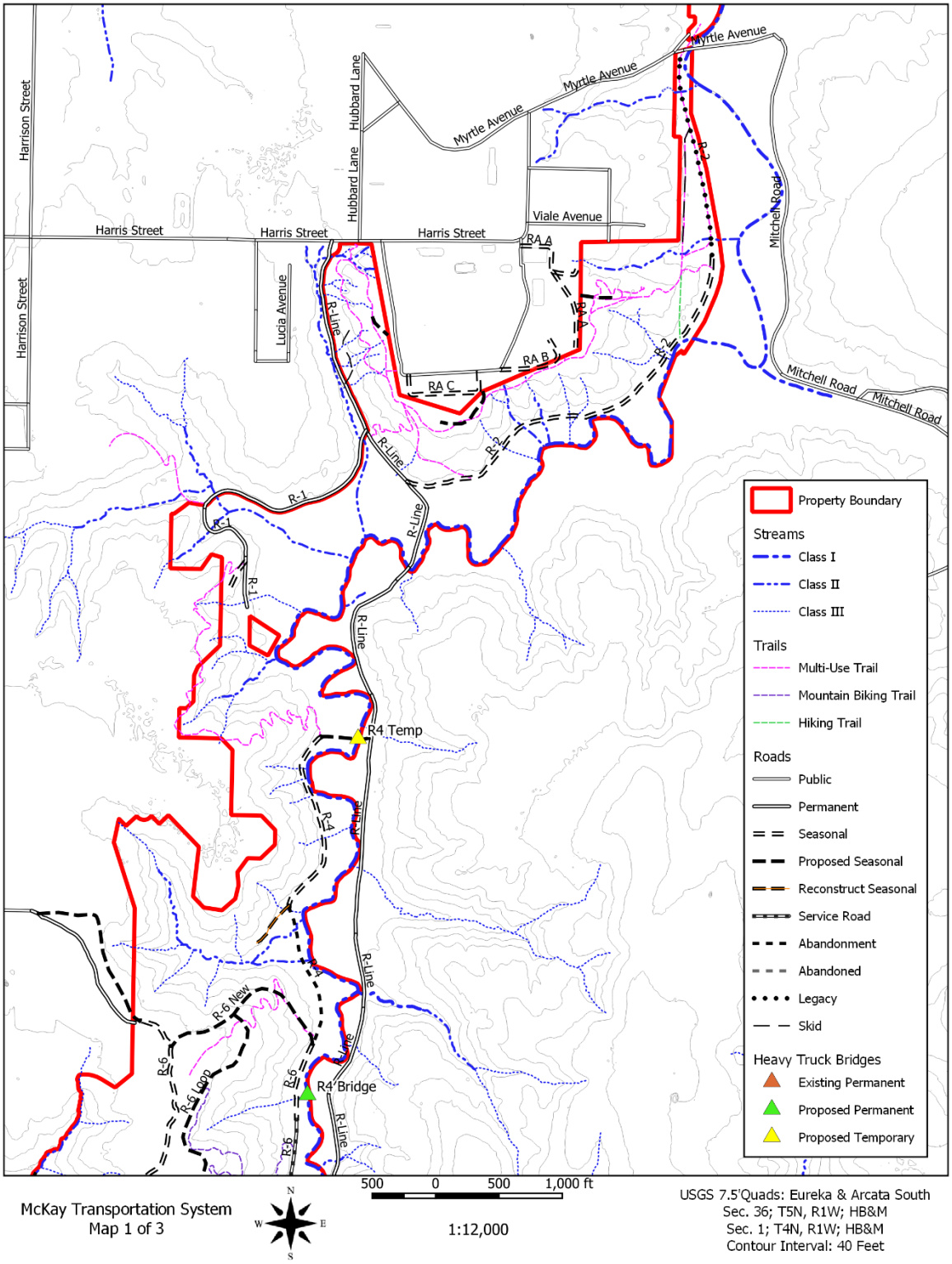


Figure 21. Transportation System North

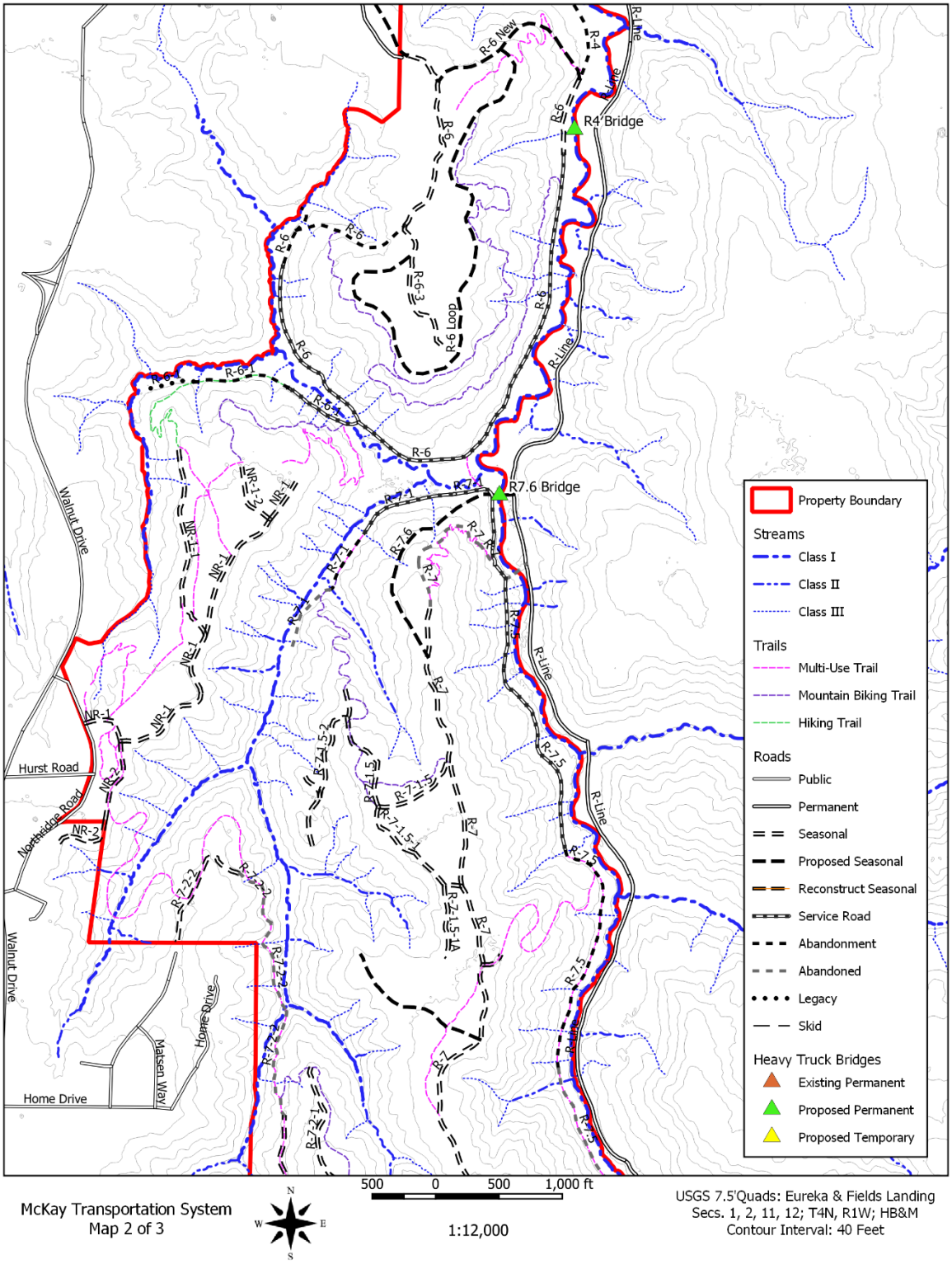


Figure 22. Transportation System Middle

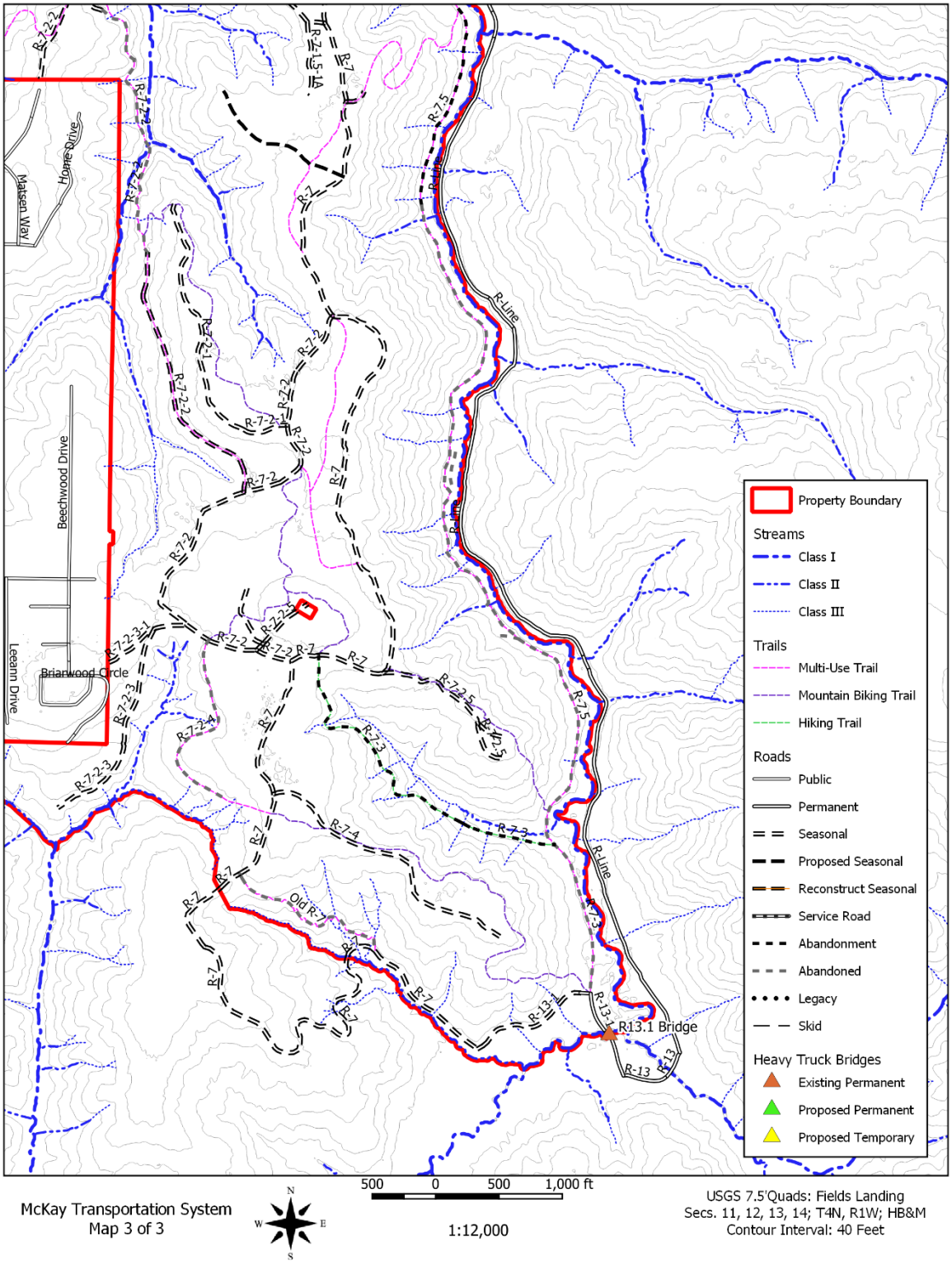


Figure 23. Transportation System South

4.4.2 Sediment Source Treatments

Pacific Watershed Associates ("PWA") conducted a sediment source inventory across the Phase I portion of the McKay Community Forest in 2013 (PWA, 2013). The inventory was expanded by BBW in 2021 to include the Phase II portion of the Community Forest. Sediment sources will be treated during the first timber harvest in the area or during construction of the trail network, whichever occurs first. The NTMP contains a table identifying the proposed treatment and a schedule for each sediment source in accordance with 14 CCR 923.1(e). All treatments of controllable sediment discharge sites will need to meet Forest Practice Rules standards.

4.4.3 Road Surfacing

Many road and trail segments will require surfacing with imported rock material to accommodate year-round recreational use, especially near road-watercourse crossings and wet areas. Roads surfaced with loose, rounded rock material or large, angular rock material are not as pleasant for recreational users, and the County will strive to utilize material with optimal composition to maintain stability while also providing suitable compaction. Road surfacing will be performed with appropriate shaping using outsloping and rolling dips to disperse runoff.

4.4.4 Managing Roads for Shared Recreational Use

Rolling dips will generally be preferred over water bars as a road drainage technique within the Community Forest because rolling dips allow recreational users (and vehicles) to maintain their travel without stopping to cross an abrupt edge, and rolling dips are more resilient to regular use by vehicles and mountain bikes. Trails that occupy skid trails or other temporary roads will be designed with drainage features that can withstand year-round use.

Trails or road segments affected by logging operations will be returned to pre-harvest condition after operations are complete. Yarding (whether cable or tractor based) will likely impact portions of existing recreational trails. Following timber operations, recreational trails will be re-constructed and, in many cases, upgraded, following timber operations. Timber harvest operations provide an opportunity to upgrade trails because roads will be opened for access, dump truck loads of rock may be brought to the site for trail surfacing and having heavy equipment on site may provide an opportunity to reshape or improve an existing trail. Traffic control will be required whenever recreational users could interact with ongoing forest operations such as logging or road construction.

4.4.5 Inspection and Maintenance

Proper maintenance is key to reducing long-term contribution of road-related sediment. Permanent and seasonal roads will be inspected at least once annually to ensure that drainage facilities and structures are functioning properly. Formal inspections, rapid ad hoc inspections, and storm patrol inspections will be used. During formal inspections, all crossings and roads will be carefully observed every two years and problem sites will be recorded on road/crossing inventory forms. To cover the period between detailed inspections, a rapid ad hoc inspection will be made by County staff and foresters during normal activities. Storm patrol inspections of known or anticipated problem facilities will be triggered by large winter storm events. Abandoned roads will be inspected at least twice following the completion of the decommissioning process, including at least one inspection following a large hydrologic event. Erosion Control Plans ("ECP") will be submitted to CAL FIRE and the Regional Water Quality Control Board with every Notice of Timber Operations. The ECP details erosion control actions, sediment source treatments, and monitoring requirements that take place following each timber operation.

4.4.6 Special Provisions for R-1 Multi-use Road

The Trail Plan Mitigated Negative Declaration (June 2, 2022) included a discussion of the unique conditions on the R-1 multi-use road. This information is presented here.

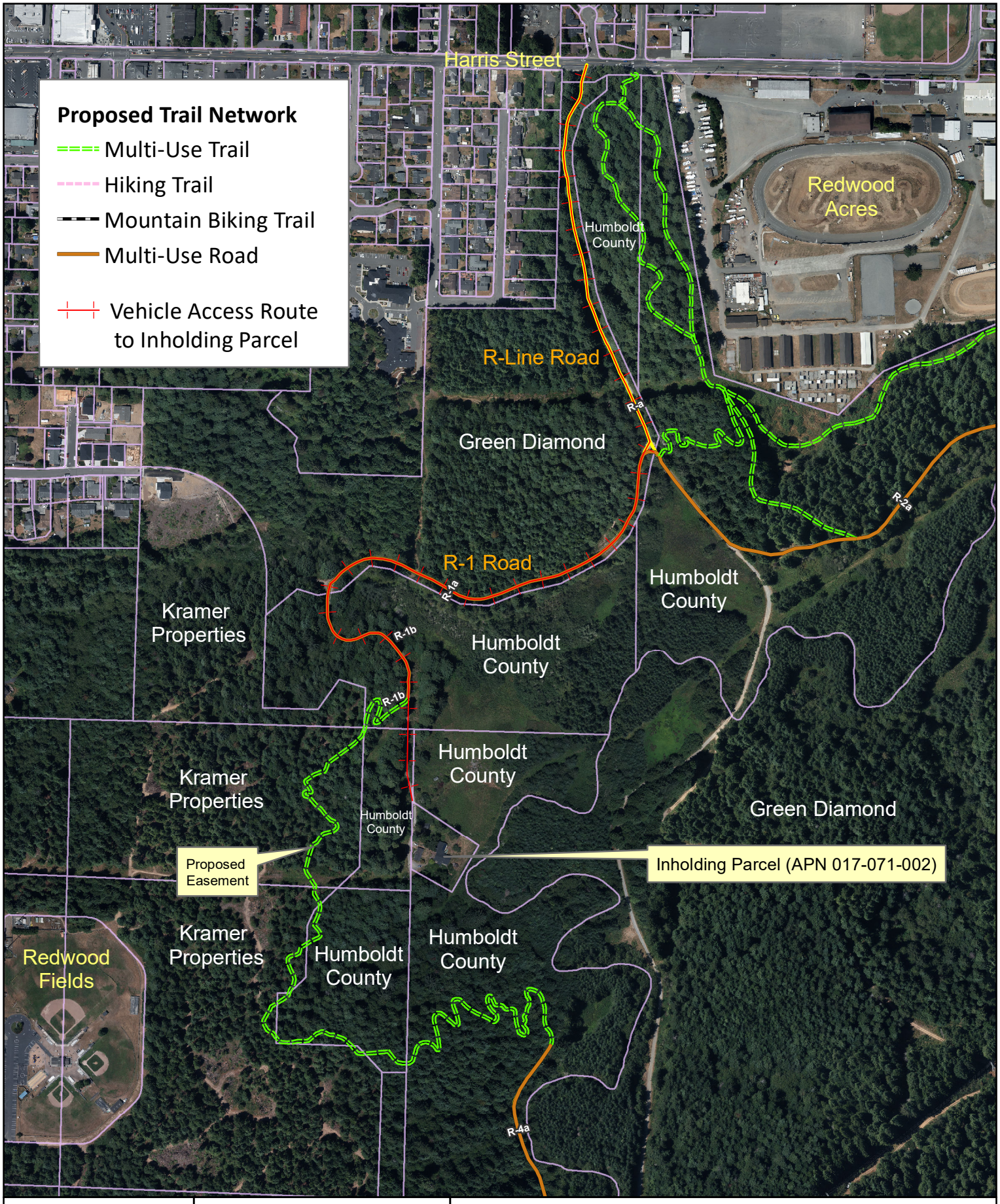
A privately-owned residential property (APN 017-071-002) is situated within the Community Forest (Figure 24). This inholding property is accessed by vehicle from Harris Street on approximately 0.84 miles of logging roads owned by Green Diamond and the County. Specifically, the property is accessed across an approximately 0.31-mile portion of the R-Line road owned by Green Diamond; an approximately 0.32-mile portion of the R-1 road owned by Green Diamond; and an approximately 0.21-mile portion of the R-1 road owned by the County. The property owners hold a non-exclusive easement (2009-6208-14) for the portions of the R-Line road and the R-1 road between Harris Street and the residence. The R-Line road and R-1 road are not open to the general public for vehicular travel. The R-Line road and the R-1 road have been used regularly by the public for many years to access the McKay Tract for hiking, biking, and other recreational uses. Under current conditions, public use is generally higher on the R-Line road than the R-1 road.

The R-Line road segment between Harris Street and the junction with the R-1 road is not proposed as part of the Community Forest trail network because the County plans to construct trails that bypass this R-Line road segment. The topography of the land between the R-Line road and Redwood Acres is favorable for trails (i.e., flat or gradually sloped) and sensitive habitat areas can generally be avoided with minimal impacts.

The County plans to designate a portion of the R-1 road (approximately 0.45 miles) as a multi-use road for hiking, biking, and equestrian use to connect the Redwood Acres trail unit with the North McKay trail unit in an area where the Community Forest is narrow and confined by sensitive areas. The R-1 road segment is proposed to connect to a new off-road trail that would extend up the hillside onto the McKay Ranch subdivision to bypass the private inholding. The bypass trail is contingent upon the landowner granting an easement to the County. Provisions for such an easement are included in the Development Agreement for the McKay Ranch subdivision, whereby an easement would be dedicated when the map for the first subdivision phase is recorded.

Green Diamond owns the northern segment of the R-1 road (approximately 0.32 miles) and the County owns the southern segment (approximately 0.21). The County and Green Diamond have a reciprocal access agreement (2014-014703-54) that applies to various roads, including the R-1 road. Most of the County's access to Green Diamond's logging roads are limited to management and timber harvest activities. However, condition 1(a)(iii) of the reciprocal access agreement specifies that the portion of the R-1 road owned by Green Diamond may be used by the general public for pedestrian, equestrian, and bicycle access purposes.

The "shared roadway" approach is appropriate for low-volume, low-speed roads such as the R-1 road. Examples of the shared roadway approach include the portion of the Hammond Trail along Letz Avenue in McKinleyville; the southern end of I street in Arcata that connects to the Arcata Marsh and Wildlife Sanctuary; county roads within the Arcata Bottoms; and many city streets within Eureka, Arcata, and elsewhere. Shared roadways are common on streets and highways (Chapter 1000 of the Highway Design Manual; Caltrans, 2020). Under existing conditions (May 2022), the width of the R-1 road ranges from approximately nine to 15 feet, with a typical width of ten to 12 feet, and with approximately three wide-spots (pull-outs).



0 280 560 Feet

Imagery: Access Geographic 2019
Printed: September 07, 2022
Humboldt County Public Works

McKay Community Forest

Map of Proposed Trail Network near Redwood Acres and the Inholding Parcel

Figure 24

View of portion of R-1 road (May 25, 2022)

View of portion of R-1 road (May 25, 2022)

View of portion of R-1 road (May 25, 2022)

The volume of vehicle trips on the R-1 road is low (approximately 10 to 20 one-way trips per day). Daily vehicle users include residents and visitors of the private inholding property. Occasional users include delivery vehicles and utility companies. Infrequent users include Green Diamond and the County. The R-1 road will rarely, if ever, be used for timber operations.

Drivers on the R-1 road will be responsible for driving at safe speeds, operating their vehicle with regard for the safety of other users, and being attentive to pedestrians, cyclists, and equestrians. Special provisions for using the R-1 road as a multi-use road include the following:

1. The County will install a set of permanent signs similar to the signs shown below in Exhibit 1. The purpose of the signs will be to alert drivers that they need to control their speeds and share the road, and to alert pedestrians and cyclists that they need to be prepared for vehicles driving on the road.
2. A speed limit of 15 miles per hour on the R-1 road will be established.
3. The County will periodically cut back road-side vegetation to improve sight distance. Periodic brushing and limbing is expected to result in a minimum road width of 12 feet, with a typical road width of 14 to 16 feet.
4. When heavy equipment or extra-large vehicles utilize the R-1 road under direction of the County, the County will implement traffic control with flaggers and temporary signs.
5. The County will offer to install a gate at the entrance to the private inholding property.

Alternatives to utilizing the R-1 road as a multi-use road were considered. However, the terrain and environmental conditions near the R-1 road were found to be incompatible with developing a new trail separated from the road. The R-1 road is situated at the bottom of a steep, forested hillslope with deep,

incised stream channels (to the west and north) and along the edge of the Ryan Creek floodplain (to the east and south). The alternative of developing a trail west and north of the R-1 road was considered. The majority of this area is not part of the Community Forest and thus the alternative presumes that the landowner would be willing to sell property or provide an easement. However, the terrain in this area is not suitable for constructing a new trail due to the steep slopes, unstable ground, incised stream channels, and the presence of the "Cutten Branch" stream which passes through a wide floodplain. The Cutten Branch has significant potential for restoring a fish-bearing stream and will be the subject of a planning study starting later in 2022. In addition, the alternative of developing a trail east and south of the R-1 road on a fill prism or boardwalk within the Ryan Creek floodplain was considered. However, this alternative would cause significant impacts to wetlands and would require a new crossing of the Cutten Branch stream. Both of these alternatives were rejected due to the magnitude of the environmental impacts that would be caused by constructing a new trail within sensitive habitat areas, compared to the proposed shared-use of an existing road.

The concept of widening the R-1 road and using paddle markers to designate a parallel lane for trail use at the edge of the road was considered at the request of the owners of the inholding property. In some locations the road could be widened with minimal environmental impact, but in other locations road widening would have significant impacts on wetlands. The primary deficiency of this concept is that it would most likely be ineffective, because pedestrians and cyclists could easily bypass the parallel lane and utilize the full road width. Therefore, the alternative of paddle markers was rejected.

Examples of warning signs for the R-1 multi-use road

4.5 Habitat Enhancement and Restoration

Community forestry provides the opportunity to emphasize ecological enhancement and restoration goals in forest management. Several existing studies and reports (USFWS, 2016; Thomas Gast and Associates, 2020) have identified needs and opportunities for habitat enhancement and restoration within the Ryan Creek watershed, and future studies and monitoring will inform ongoing adaptive management efforts. Restoration work will be accomplished through stand-alone projects utilizing grant funds and timber revenue and by integrating restoration objectives with timber harvest and trail-building activities. Each timber harvest operation provides an opportunity to treat legacy watershed impacts and improve fish and wildlife habitat concurrent to operations. The following sections describe the current understanding of restoration needs and opportunities within the Community Forest and identify a collection of project concepts and projects currently in progress.

4.5.1 Forest Structure

The importance of forest structure is described in Section 3.2.3. One of the County's primary management objectives is to shift the forest composition from uniform, even-aged stands to diverse, multi-age stands over the next several decades. The proposed silviculture approach is described in Section 4.3. The primary conservation measures to increase structural complexity include growing old, large trees; retaining and recruiting snags; maintaining coarse woody debris on the forest floor; and protecting riparian zones.

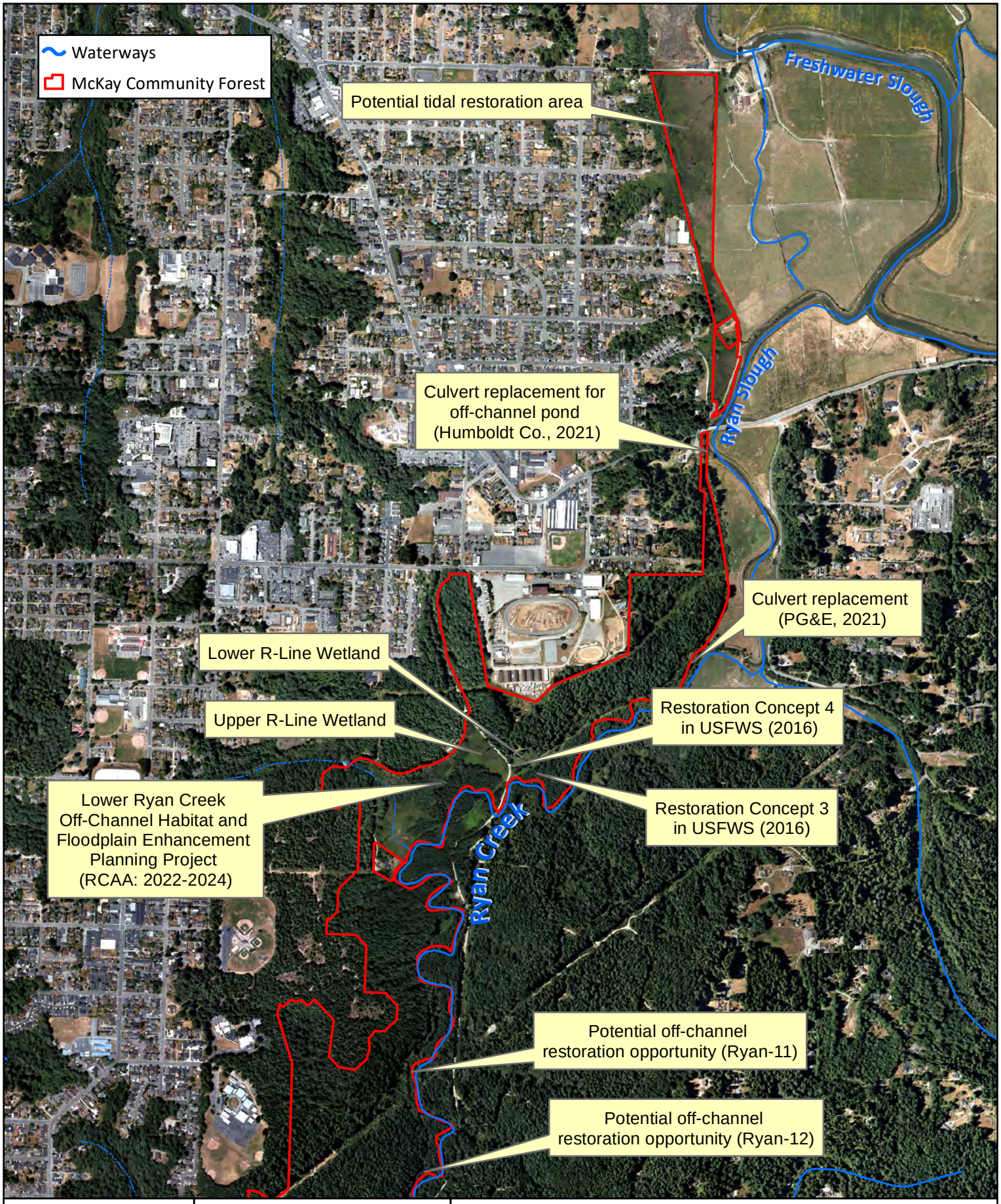
The County intends to develop a forest structure management plan within three years (i.e., by July 1, 2025) that would further refine the objectives for enhancing forest structure, define key terms, set operational guidelines, develop a monitoring methodology, and establish data management protocols.

4.5.2 Aquatic Habitat

Currently the highest restoration priority within the McKay Community Forest is to expand off-channel habitat along Ryan Creek for juvenile rearing by coho salmon, steelhead, and coastal cutthroat trout. In particular, the lower portions of Humboldt Bay tributaries serve as stream-estuary ecotones which are especially important areas for salmonids to grow, find cover and refuge, and undergo physiological changes before entering the ocean (CDFW, 2018). Historically, reclamation of tidelands and development in floodplains significantly reduced off-channel habitat. A primary technique for restoring off-channel habitat is re-establishing connections between stream channels and adjacent wetlands.

In November 2021, the County replaced a failing culvert under the R-2 road that provided water flow and connection between a pond on private property and Ryan Slough, approximately 200 feet south of Myrtle Avenue. CDFW had identified this off-channel pond as providing important winter refugia for juvenile coho salmon. Also in 2021, PG&E performed a major erosion mitigation project on the natural gas transmission line along the R-2 logging road east of Redwood Acres. This project included placement of a concrete box culvert within the R-2 road for an unnamed tributary of Ryan Slough.

The U.S. Fish and Wildlife Service published a report in 2016 documenting an investigation of potential off-channel habitat enhancement projects in lower Ryan Creek on County and Green Diamond property (USFWS, 2016). Thomas Gast and Associates published a report in 2020 identifying and prioritizing potential restoration sites throughout the Humboldt Bay watershed, including Ryan Creek (Thomas Gast and Associates, 2020). Locations of identified aquatic habitat restoration opportunities within the Community Forest are shown in Figure 25 and described below.



0 0.075 0.15 Miles

Imagery: 2019 Access Geographic
Printed: April 19, 2022
Humboldt County Public Works

McKay Community Forest

Aquatic Habitat Restoration Opportunities

Figure 25

In January 2022, Redwood Community Action Agency ("RCAA") was awarded funding from the Fisheries Restoration Grant Program to develop design plans and acquire permits for an off-channel habitat and floodplain enhancement project along a small, unnamed tributary of Ryan Creek informally called the "Cutten Branch" (Exhibit 3). This project (designated Ryan-09) was ranked as the highest-priority feasible project in Thomas Gast and Associates (2020). The Cutten Branch was previously channelized to flow through a drainage ditch. This project proposes to reroute the Cutten Branch to flow through a new, off-channel ponded water feature located on the floodplain of Ryan Creek, along with other connectivity enhancements in the vicinity. The project aims to create habitat conditions that would be available during winter and summer and take advantage of cold water inflow from the Cutten Branch. The design project is expected to be completed in 2024. Future funding will be needed for construction.

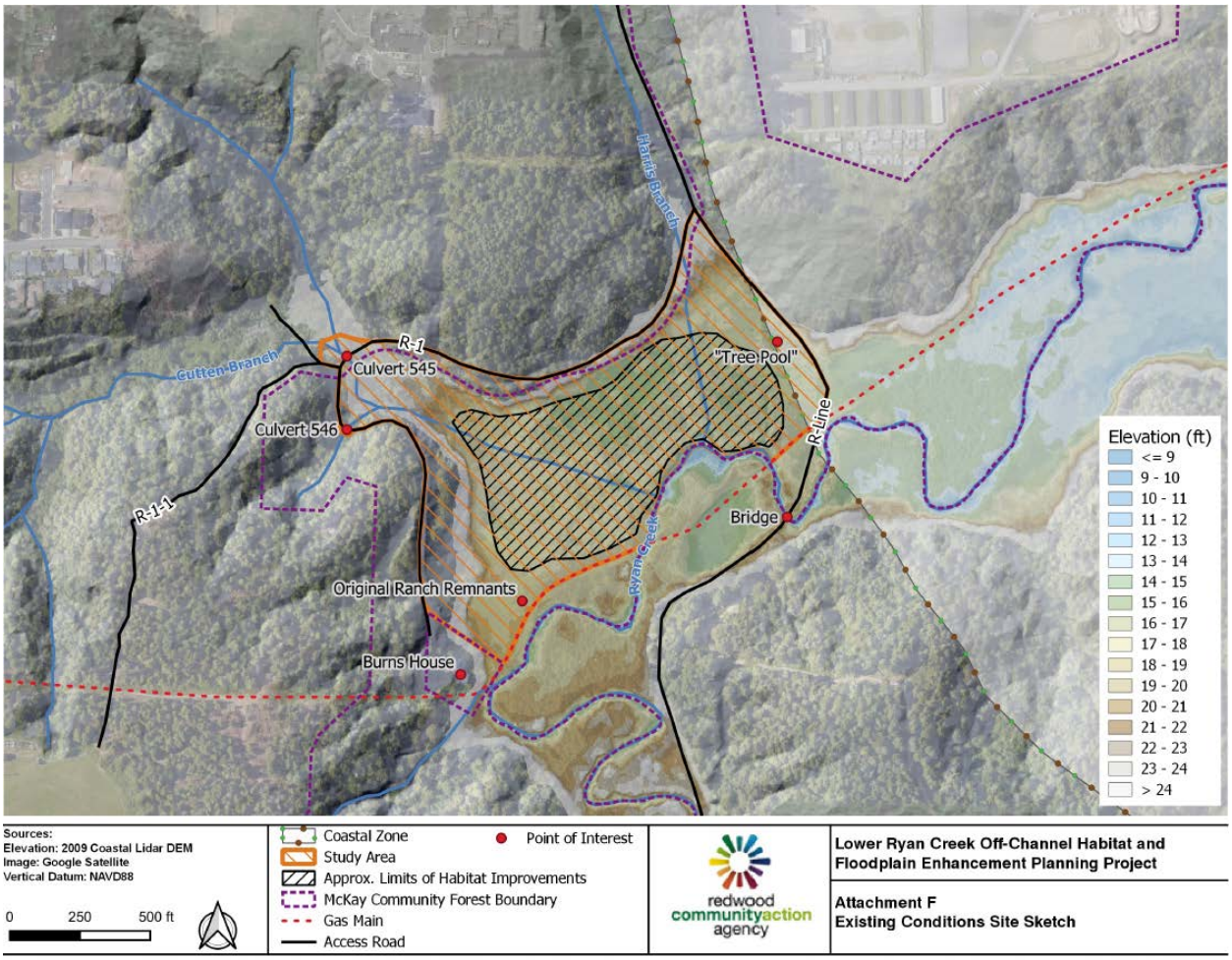


Exhibit 3 – Study Area for Lower Ryan Creek Off-Channel Habitat and Floodplain Enhancement Planning Project (RCAA, 2021).

Thomas Gast and Associates (2020) identified opportunities at two locations (Ryan-11 and Ryan-12) along the west side of the middle section of Ryan Creek to create off-channel alcove or pond features. Further investigation would be needed to verify topography and confirm that substantial restoration benefits could be achieved.

In addition to the Cutten Branch project described above, USFWS (2016) identified two restoration concepts for off-channel habitat enhancement at locations within the Community Forest. Concept 3 would involve constructing a small stream channel between the "Lower R-Line Wetland" area and Ryan Creek to enhance fish passage. Further design analysis would be needed to advance this concept. Issues

to be addressed include maintaining channel stability, potential changes to wetland hydrology and road flooding, avoidance of fish stranding, proximity to PG&E's gas line, and equipment access. Concept 4 would involve connecting the "Upper R-Line Wetland" and "Lower R-Line Wetland" areas to enhance fish passage across the R-Line road. Historically, the road at this location experienced frequent flooding due to an undersized culvert in poor condition. Green Diamond replaced the existing culvert with two new culverts in 2020. The concept of raising the roadway and installing a bridge or large culvert could be explored. Further design and engineering would be needed to minimize obstructing floodplain flows, minimize wetland impacts, and ensure that the roadway can maintain the desired vehicle use. Ideally Concept 3 and Concept 4 could be evaluated together and potentially integrated to maximize benefits and cost-effectiveness. Next steps include site assessment, alternatives analysis, and preliminary design.

A parcel (APN 017-151-007) in the northernmost portion of the Community Forest was predominantly intertidal wetlands prior to development but now is largely disconnected from Ryan Slough. This parcel represents a potential restoration opportunity for re-establishing tidal connectivity to create off-channel rearing habitat. The U.S. Fish and Wildlife Service is currently developing a site assessment that may lead to further project development.

The in-stream channel conditions of Ryan Creek, Henderson Gulch, and Bob Hill Gulch are variable. Some segments contain abundant large-woody debris and are lined with a healthy riparian corridor, while other segments lack complex channel features and woody debris is largely absent. PWA (2019) developed a basis of design report for two project concepts to improve in-stream conditions within Ryan Creek, including wood loading and creation of alcove features. The study areas for the two project concepts spanned both County and Green Diamond property.

General opportunities to enhance aquatic habitat within the Community Forest include:

- Replace aging culverts with more resilient designs and increased capacity.
- Plant native tree species where there are gaps in the riparian corridor.
- Block unauthorized trails through streams and riparian areas.
- Expedite the timeframe for decommissioning roads and treating active sediment sources.

4.5.3 Spruce Floodplain Forest

A plantation comprising approximately 30 acres of primarily Sitka spruce with some redwood was planted in the lower portion of the Ryan Creek valley in the mid-1990s after cattle ranching was discontinued. The ground was tilled before planting, resulting in flat ground without natural microtopography. The plantings have never been thinned and now consist of a dense stand with complete canopy cover and little or no understory vegetation. Most of the plantation is situated within the Ryan Creek floodplain.

Thinning the spruce plantation and planting other native species in the understory would enhance riparian habitat quality and provide water quality benefits by increasing filtration of surface runoff draining to Ryan Creek. The area could be assessed for potential creation of off-channel ponds and/or a more diverse array of wetlands. The trees in this stand are currently of merchantable size, but the plantation is not included in the NTMP because the County does not plan to maintain this plantation for timber production in the long term. The County may consider a habitat enhancement project for the spruce plantation, which would likely need to develop a timber conversion THP as part of the planning and permitting efforts.

View of R-Line road, "Upper R-Line Wetland," and spruce plantation

4.5.4 Northern Spotted Owl Conservation

The County has extensive monitoring data for this species and conducts annual surveys (Section 3.4.2). All proposed timber harvests containing suitable nesting or roosting habitat will continue to be surveyed in accordance with established survey protocols. The County will evaluate any forthcoming guidance from U.S. Fish and Wildlife Service regarding new survey methods. The conservation measures listed in Section 4.3.7 should serve to enhance nesting and roosting habitat for northern spotted owl and increase the availability of a suitable prey base. Efforts will be made to set aside the best existing habitat in the core areas around historic activity centers in accordance with U.S. Fish and Wildlife Service (2019). Thinning of overstocked areas will promote and improve functional habitat for northern spotted owls. Currently, the County does not envision engaging in barred owl removal programs. Overall, there will be a need to consider adaptive management based on the best available information.

4.6 Wildland Fire Risk Reduction and Fire Management

Wildfire risks under existing conditions are discussed in Section 3.9. One of the management objectives for the Community Forest is to collaborate with adjacent property owners, agencies, and community organizations to reduce the risk of high intensity, damaging wildfires. Although fire is a natural component of the redwood forest ecosystem, fire risk needs to be carefully managed for life safety, watershed health, and protection of residential areas. Elements of an integrated strategy for fire risk reduction include preventing fire ignition, reducing hazardous fuel loads, providing road and trail access for evacuation and firefighting, conducting pre-planning with emergency responders, and supporting wildland fire training. The proposed forest management approach for the Community Forest will reduce fuel loading through the selective harvest of trees and reducing the density of the even-aged stands. Over time, the Community Forest will become more resilient to wildfire as the forest transitions to larger, more widely spaced trees. Additional techniques for reducing hazardous fuel loads include slash management (Section 4.3.11), shaded fuel breaks, prescribed fire, and prescribed grazing.

Shaded Fuel Breaks

Areas within the Community Forest bordering public roads and residential areas will be considered for shaded fuel breaks. Shaded fuel breaks are strips of land in which vegetation has been modified to act as a strategic "defensible landscape" and reduce the rate of spread of an advancing fire (CAL FIRE, 2021). Combustible materials are reduced so that if a fire reaches the area it will decrease in intensity, cool down, and drop from the canopy to the ground. Shaded fuel breaks are typically 75 to over 100 feet wide and most often placed strategically on ridgetops, roads, and around structures. Along roadways, shaded fuel breaks create safer ingress and egress routes. Within the interior of a property, shaded fuel breaks can provide safe locations for fire control lines and contain a wildfire to its smallest size possible. Fuel breaks can help avoid the need to install fire lines with bulldozers as an emergency measure.

Within shaded fuel breaks, dead trees and ladder fuels (shrubs and lower tree limbs) are removed and the overstory canopy is thinned to a level where shade would still retard the growth of new ground fuels. Trees are typically spaced so their crowns are not in contact, lower branches are pruned, and brush and dead and down material are removed or chipped. Whenever possible, fuel breaks should visually merge with the surrounding landscape, conforming to the natural features of the area. Periodic maintenance would be needed to maintain fuel break specifications.

Prescribed Fire and Pile Burning

Fire could be used as a management tool to burn understory fuel accumulations (small dead and down material), restore native plant species diversity, control invasive species, and mimic natural disturbance to maintain an uneven-aged understory. In addition, fire could be used as a management tool to eliminate excess slash material that accumulates at log landings.

Burning for forest management or hazard reduction would be conducted in compliance with a burn permit and approved Smoke Management Plan from the North Coast Unified Air Quality Management District. Such activities would be planned for consistency with CAL FIRE's Vegetation Management Program. Locations for prescribed fire and pile burning would need to be carefully selected with consideration of sensitive receptors to manage smoke concerns. Prescribed fire and pile burning would be conducted outside the fire season on permissive burn days. The County would close public access as appropriate if there is an active fire. Burn piles would be completely extinguished at the end of the workday before personnel leave the area.

Prescribed Grazing

Focused prescribed grazing could be a management tool to reduce understory fine fuels or to maintain shaded fuel breaks. If available locally and managed appropriately, goats could be used periodically for

fuel break maintenance and follow up treatments to maintain fuel breaks as well as a tool to control invasive plants.

High-use Areas
Vegetation around parking areas and trailheads will be treated to reduce fire hazards.

Restricted Activities
Campfires, hunting, shooting, and fireworks will be prohibited within the Community Forest. Fire hazard and prevention information and Community Forest regulations will be posted on informational kiosks.

4.7 Aesthetic Considerations

The appearance of the Community Forest is an important consideration of forest management activities. The Community Forest will maintain a continuously forested appearance from a near- and far-view perspective after timber harvest operations. Harvested stands would be more open but should be well-stocked and composed of various age classes displaying distinct layers of tree crowns. Some gaps and group openings will mimic forest openings created by natural disturbances.

Within the Arcata Community Forest, the two primary distractions for recreational users are landings and accumulation of logging slash (Mark Andre, personal communication). As discussed in Section 4.3.11, logging slash will be removed from actively used roads and trails. Log landings will be kept to a minimum size and many landings will be naturalized (mulched and/or re-planted) after use for timber harvesting. Some landings will need to remain open for staging and stockpiling for other forest management activities.

Tree damage during logging will generally be minimized, but when major damage does occur those trees will typically be removed, especially near roads and trails. Trees that were marked with blue paint for harvest but not cut for some reason should have the highly visible blue paint painted over with black or brown tree paint to improve the visual nature of the stand. Flagging will be removed post-harvest where it is visible to the public. This may include skid trail flagging, watercourse zone flagging, equipment exclusion zone flagging, etc. Biodegradable flagging is available for some purposes.

Forested areas near existing neighborhoods will have a high priority for fuel hazard reduction treatments. These treatments typically remove trees less than six inches in diameter, limb up larger trees, and dispose of the slash. This results in a forest that is easier to see through (longer sightlines) and walk through (fewer stems, less branches at eye level). The increased openness of the stands tends to discourage illegal camping because it is more difficult to hide when the vegetative cover has been removed.

Additional measures for enhancing the visual appearance of the Community Forest include the following:

- Reduce injury to residual trees during harvest operations. Lower value trees such as Sitka spruce can be used as “bumper trees” to protect more valuable trees behind them. After harvest, bumper trees and other trees that have significant damage can be removed to reduce aesthetic impacts.
- Remove illegal trails and shortcuts that leave scars on the forest floor.
- Develop roads and trails with meanders and gradual curves that follow the natural contours.
- Implement brush thinning along roadside areas to allow visual penetration into the forest.
- Consider removal of limbs near ground level in stands with dense tree canopies.
- Consider special rock treatment at inlets and outlets of drainage culverts to provide a more “park like” visual appeal and soften the look of plastic and corrugated metal pipes.
- To the extent possible, locate new roads and landings out of view of designated trails.

4.8 Community Involvement

The County plans to communicate with the public regarding the Community Forest with e-newsletters, public meetings, and an annual report. In addition, the County plans to re-establish a McKay Community Forest Advisory Group that would advise the Public Works Department on forest management matters.

4.8.1 McKay Community Forest Advisory Group

The role of the McKay Community Forest Advisory Group ("Advisory Group") will be to provide feedback and recommendations, share information, and help guide the County in managing the Community Forest consistent with the Forest Stewardship Plan. The Advisory Group would be composed of a total of seven individuals with three designated positions and four at-large positions. Three positions would be designated for a City of Eureka representative, tribal representative, and Humboldt Trails Council representative. Four at-large positions would be selected by the Public Works Director through an annual application process. Individuals serving in the four at-large positions would be selected based on the applicant's experience related to one or more of the Community Forest management goals and experience participating in a collaborative framework, with consideration for ensuring diverse perspectives. The at-large positions would have a term corresponding to the calendar year. Applications would be issued in November and selections for the following calendar year would be made in December. Members could re-apply to serve on the Advisory Group for more than one year. Public Works would convene approximately four Advisory Group meetings per year, with meetings open to the public. Advisory Group meetings would include informational presentations, opportunities for questions and discussion, and periodic votes on recommendations by Advisory Group members.

4.8.2 Public Outreach Calendar for 2022-2023

The proposed calendar for public outreach in 2022 and 2023 is outlined in Table 4. The timeline for public outreach in subsequent years will be adjusted based on the experience during this initial period.

Table 4: Public Outreach Calendar (subject to change)

September 2022	Issuance of final Forest Stewardship Plan. Presentation at Board of Supervisors.
October 2022	E-newsletter providing a status update on projects and activities.
November 2022	Post applications for Advisory Group.
December 2022	Selection of 2023 Advisory Group members.
January 2023	E-newsletter identifying specific goals for 2023 and transmitting the annual report for 2022. Advisory Group meeting.
February 2023	Presentation at Board of Supervisors.
April 2023	E-newsletter summarizing the proposed work plan for calendar year 2023 and the proposed budget for fiscal year 2023-2024. Advisory Group meeting.

July 2023	E-newsletter providing a status update on projects and activities. Advisory Group meeting.
October 2023	E-newsletter summarizing the work performed. Advisory Group meeting.

4.8.3 Notice for forest management activities and opportunities for participation

Various methods such as postings at trailhead kiosks, webpage notices, e-mail notices, and press releases will be used to provide notice for important events and to identify opportunities for public participation. Examples of important events include the start-up of timber harvest operations, trail closures, and large organized events such as a mountain bike race or equestrian event that require temporary trails closures.

4.8.4 Priorities for Community Involvement

California Conservation Corps

Members of the California Conservation Corps can gain experience with natural resource management and receive environmental education while working on projects within the Community Forest.

Volunteer Trail Stewards

The County has a Memorandum of Understanding with the Humboldt Trails Council for supporting a Volunteer Trail Stewards program within the Community Forest and other County parks and trails. The Volunteer Trail Stewards are expected to play a significant role in trail-building, trail maintenance, trail monitoring, and other activities.

Schools

The Community Forest can provide an outdoor classroom for local elementary schools, junior high schools, high schools, College of the Redwoods, and Cal Poly Humboldt. Students from the adjacent Winship Middle School and Cutten Elementary School can easily walk to the Community Forest. Other schools can use buses to access the main trailheads or obtain a forest permit to drive into the forest interior. The Community Forest can provide individual students an ideal location for research projects, science fair projects, citizen science projects, and classroom activities.

Other Community Groups

Various organized user groups may be interested in assisting with trail construction, trail maintenance, native plant restoration, invasive plant removal, litter control, and other activities. Participation in community workdays would provide opportunities for people to be actively involved in the Community Forest and take pride in their community. Humboldt County has a strong and diverse volunteer pool that includes individuals, civic service groups, businesses, university clubs, non-profit organizations, and schools. Organizations like the Redwood Region Audubon Society, Humboldt Mycological Society, California Native Plant Society, and others could request permission from the County to utilize the Community Forest for regular or special-event docent lead walks.

4.9 Other Issues

4.9.1 Property Boundaries

Boundary Demarcation

The County will work progressively over time to delineate the property boundary of the Community Forest using appropriate methods based on location and site-specific conditions. Potential methods include boundary markers affixed to trees, signs, and/or fences.

Compatibility with Adjacent Property

Measures to promote compatibility with adjacent properties include the following:

- The County will work with adjacent landowners to discourage any trespass on private property.
- Timber harvest operations near residential areas will not start before 7 a.m.
- Notifications will be issued prior to timber harvest or forest management activity using heavy equipment.
- County staff will be available during timber operations to address issues or concerns.

4.9.2 Signs

The County will develop an appropriate system of signs to enhance safety, enjoyment, and resource conservation. Signs are further discussed in Section 2.9 of the Trail Plan. The signage system is intended to provide necessary information without diminishing the aesthetics of the natural setting. Signs can perform a variety of functions and convey different types of information:

1. Identification signs indicate or designate features such as trailheads, trail segments, and property boundaries.
2. Directional signs (also known as orientation signs) help users confirm where they are and the direction they want to go. Directional signs also serve a safety function by assisting public safety agencies in responding to emergencies. Examples of directional signs include trail maps, trail distance signs, and mile markers.
3. Regulatory signs identify actions that are allowed or not allowed.
4. Safety signs warn users of potential hazards or temporary closures.
5. Interpretive signs provide historical or scientific information and convey messages in order to enhance understanding and appreciation.
6. Trail closure signs warn users that trails are temporarily closed (for example, during timber harvest operations, trail construction, or adverse weather conditions).

A single physical sign can have multiple functions. One general principle is to minimize signage in order to avoid visual clutter and information overload. Too many signs, or overly detailed signs, can result in the signs being ignored. Sign content should emphasize effective communication with short, easily remembered messages and simple symbols. Regulatory signs should provide a balanced message by identifying the allowable and encouraged activities along with prohibited activities. Trailheads will be equipped with trail information kiosks to provide a comprehensive set of information for users initiating their visit to the Community Forest.

4.9.3 Regulations for Appropriate Use

The County will prepare and adopt an ordinance governing appropriate use and conduct within the Community Forest. Issues to be addressed include the following:

- Closing hours.
- Parking limitations at the Northridge parking area.
- Prohibition against camping, hunting, discharging firearms, shooting bow-and-arrow, fireworks, unauthorized fires, paintball, air-soft guns, construction of tree houses, unauthorized trail construction, and unmanned aerial vehicles (drones).
- Rules for Class I and Class II e-bikes, including potential restriction to certain trails.
- Prohibition against motorcycles, unauthorized motorized vehicles, Class III e-bikes.
- Prohibition against unauthorized cutting or removing of trees and plants. The ordinance may include provisions to allow for collection of native plant material in areas that will experience ground disturbance, such as power line corridors, timber harvest areas, and new road segments.
- Prohibition against cannabis growing.
- Control of dogs, including provisions for leashes and waste clean-up.
- Handling of stock and other animals.
- Provisions for amplified music or sounds.
- Provisions for yielding on trails. The ordinance would likely establish that all users should yield to equestrians, bicyclists should yield to pedestrians, and bicyclists traveling downhill should yield to bicyclists traveling uphill. Yielding involves slowing down to a safe speed, being prepared to stop, establishing communication, and passing safely.
- Commercial filming.
- Commercial activities.
- Special events (group events).
- Research projects.

4.9.4 Noise

Management of the Community Forest will periodically create temporary, small to moderate increases in ambient noise levels. Trail construction, creation of shaded fuel breaks, habitat restoration, timber harvest operations, and road maintenance often involve the use of chainsaws and construction equipment. Cable yarding requires the use of frequent whistle signals for logger communication per OSHA standards. Cable yarder noise travels a great distance and will likely be noticeable to forest users and some adjacent property owners. Noise impacts will generally be limited to 7 am to 6 pm, Monday through Friday. Noise impacts from the County's forest management would be consistent with the historical use of the property for timber production.

4.9.5 Disc Golf

The Par Infinity Disc Golf Club has approached the County about the possibility of siting a disc golf course within the Community Forest. Further planning will be required to determine whether a disc golf course is established. Any proposed plan would be circulated for public comment prior to approval.

4.9.6 Hazard Trees

The County will conduct periodic assessments of potential hazard trees in high-use areas and along property boundaries and implement treatments as appropriate. The term "hazard tree" refers to a tree that has an observable structural defect creating a significantly increased likelihood of failure and that is located near potential targets (people or structures). Ideally, hazard tree removal will occur during a scheduled timber harvest operation in the vicinity.

4.9.7 Siting of New Infrastructure

Currently there are no plans for siting significant new infrastructure such as new utility lines, campgrounds, water storage tanks, or cell towers on county-owned property within the Community Forest. If future infrastructure projects are proposed, they will need to be planned to be consistent with this Forest Stewardship Plan and the easements, agreements, and covenants that apply to the property (Section 4.9.9).

4.9.8 Future Expansion

Opportunities may develop in the future to expand the land base of the Community Forest through property acquisition. The process for acquiring property generally includes the following steps:

- The County evaluates the potential benefits and initiates discussions with the property owner.
- The County evaluates financing options and contacts potential funders.
- A third-party professional appraiser appraises the fair market value of the property.
- The County and the property owner may choose to develop a term sheet identifying points of agreement and specifying next steps.
- The County performs due diligence activities including an assessment for any evidence of historical discharges of hazardous materials.
- The County prepares a memo describing the proposed acquisition, the public benefits, and how it would be managed.
- The County works with funders to develop grant agreements.
- The County and the property owner negotiate a purchase and sale agreement.
- The Humboldt County Planning Commission makes a determination whether the proposed acquisition is consistent with the General Plan pursuant to Government Code 65402.
- The County publishes a notice of intent to purchase real property pursuant to Government Code section 25350.
- The Board of Supervisors approves the purchase and sale agreement.
- A title company administers escrow proceedings.

A similar process would be followed for securing easements on adjacent lands for public access into the Community Forest or other purposes.

4.9.9 Easements, Agreements, and Covenants

The McKay Community Forest is encumbered by several easements, agreements, and covenants (collectively, "legal restrictions") that are primarily associated with the public funding that was used to acquire the Phase 1 and Phase 2 properties. The Phase 1 property is subject to the following legal restrictions:

- Memorandum of Unrecorded Grant Agreement (Natural Resources Agency, 2014-014715-19).
- Notice of Unrecorded Grant Agreement (Wildlife Conservation Board, 2014-014704-20).
- Irrevocable Offer to Dedicate Title in Fee and Declaration of Restrictive Covenants (Coastal Conservancy, 2014-014706-24).
- Declaration of Covenants, Conditions and Restrictions Implementing Joint Timber Management Plan and Guide (Green Diamond, 2014-014707-48).

The Phase 2 property is subject to the following legal restrictions:

- Conservation Easement (CALFIRE, 2020-010594).
- Grant Deed (2020-010591) with restrictions specified by the Natural Resources Agency.

Utility easements with PG&E and Humboldt Community Services District are described in Section 1.2. A road easement for the private inholding is described in Section 1.2. The reciprocal access agreement with Green Diamond is described in Section 3.6.

4.9.10 Forest Certification

Forest certification involves demonstrating adherence to established nongovernmental standards as verified by independent, third-party auditors. The two most common certification programs are the Forest Stewardship Council and the Sustainable Forestry Initiative. Forest certification generally involves reviewing management plans, silvicultural practices, logging road construction, environmental protection measures, community relations, and relations with workers and indigenous peoples. Auditors produce monitoring reports identifying any deficiencies and making recommendations. Forest certification provides a means of demonstrating responsible forest management to stakeholders and constituents, and some log buyers may prefer logs from certified forests. Forest certification comes with direct costs associated with hiring auditors and indirect costs associated with staff time. The County may consider pursuing forest certification once the initial forest management program for the Community Forest is established and functioning.

4.10 Monitoring and Adaptive Management

4.10.1 Overview

Monitoring provides data and information to help determine if forest management activities are meeting the Forest Stewardship Plan's goals and objectives. Monitoring also demonstrates compliance with the NTMP, permit conditions, and conservation easement requirements. An emerging dimension of monitoring involves identifying indicators of climate change.

Adaptive management is a process of implementing management strategies when and if analysis of monitoring results indicate that resource conditions begin to deviate from the desired trajectory and condition. Adaptive management is one approach for dealing with uncertainty. Adaptive management requires clear goals, an understanding of alternatives, observation and monitoring, and the ability to adapt management decisions to new information. Adaptive management is a critically important tool when decisions have to be made in uncertain circumstances. Much of forest management is experimental and dynamic. This context requires revisiting actions and changing course (i.e., adapting) when circumstances warrant. There are many definitions in the literature on adaptive management, but a common theme shared by them all is that adaptive management is a learning-based process. Through monitoring, determinations may be made as to whether the Forest Stewardship Plan and/or NTMP need to be amended or management practices or activities need to be redesigned.

The County intends to develop a stand-alone monitoring plan within two years (i.e., by July 1, 2024) that would establish monitoring objectives, identify monitoring parameters and methods, and describe data management protocols. The monitoring plan will be designed to generate information that is useful for assessing whether the goals and objectives of this Forest Stewardship Plan are being achieved based on the outcomes of forest management activities, and to identify the key factors involved in order to inform future management actions. The monitoring plan will also be designed to help keep the public informed regarding the effects and outcomes of forest management activities. The monitoring plan will address topics such as rare plants, snags, timber volume, carbon stocks, tree species diversity, and wildlife.

4.10.2 Required Monitoring

The NTMP is a long-term permit that requires periodic updating of forest inventories; botanical surveys; monitoring of erosion sites; northern spotted owl habitat surveys; and assessment of wildlife habitat and use and cumulative effects on the entire Ryan Slough watershed. The County will monitor all timber operations (including all harvesting areas and new roads, skid trails, and landings) annually for five to seven years following completion of the operations to ensure that sediment discharges do not adversely impact water quality and fisheries. Occurrences of substantial surface erosion (i.e., gullies) or mass wasting (i.e., landslides or slumps) resulting from the operations will be identified and described by a Registered Professional Forester. Provisions for road inspections are described in Section 4.4.5.

Erosion Source Inventory
Descriptions of all controllable sediment discharge sites are included in the NTMP. During each harvest entry, a description of how each site will be treated is included in the Notice of Operations. Over time, this provides a record of how existing sediment sources are addressed. The North Coast Regional Water Quality Control Board requires monitoring the condition of each controllable sediment discharge site for three years after every harvest entry to evaluate performance of the control measures. CAL FIRE requires monitoring of roads and skid trails one to three years after operations to ensure erosion control measures were successful. The County will maintain and update an electronic database of all controllable sediment discharge sites and road maintenance points.

Biological Survey Data
Northern spotted owls require regular and ongoing monitoring regarding distribution and nesting status as well and habitat classifications. A complete floristic list of plants, including special status species, will be generated for areas subject to timber harvest.

4.10.3 Opportunities for Research and Technical Studies

The McKay Community Forest represents an excellent opportunity for short and long-term research projects that can inform forest management and benefit the region. Cal Poly Humboldt, College of the Redwoods, and other schools can be issued use permits for studies pertaining to forestry, wildlife, water quality, visitor use, forest ecology, and other subjects. Additionally, the U.S. Forest Service's Redwood Sciences Laboratory may be interested in utilizing the Community Forest for research and monitoring.

Potential topics for research within the Community Forest include:

- Sustainable forestry and comparison of various growth and yield models.
- Watershed science, restoration and aquatic habitat recovery.
- Soil organic carbon fluxes.
- Upland terrestrial habitat and forest structural relationships.
- Tracking forest carbon response to management.
- Forest understory vegetation response to thinning.
- Evaluation of impacts of trail density on ground nesting birds and other wildlife.
- Quantitative and qualitative study of recreational use. Outputs would include statistical information on recreational use. Studies should document public perceptions on how well existing facilities serve their needs.
- Research on the economic value of recreation, effect on adjacent property values and the ecosystem services provided by the Community Forest.
- Ryan Slough fish population trends and utilization of restored habitat.

4.10.4 Community/User Group Satisfaction

The County may consider publishing periodic user surveys to monitor public perception of how the Community Forest is being managed. This information could help identify opportunities for adjustments to better align with community values and priorities.

5 PUBLIC ENGAGEMENT AND RESPONSE TO COMMENTS

The draft Forest Stewardship Plan (dated April 22, 2022) was released for a public comment period extending from April 22, 2022, through May 31, 2022. A summary of public engagement activities is provided in Attachment D. Public engagement activities included sending a notification e-mail to a list of interested parties, posting documents on the County website, hosting an on-line public meeting, and conducting tabling events and focused stakeholder meetings. A comment form with four questions was provided for optional use and commenters were also invited to submit letters or e-mails. The County retained Redwood Community Action Agency to assist with public engagement. A total of 16 comment letters and forms were received during the comment period or shortly thereafter. Copies of the comments are included in Attachment D. This section summarizes the comments by theme and provides brief responses.

One commenter (Jim Clark) requested maps showing the proximity of the proposed trails to watercourses and wetlands. He expressed the need for a process to resolve potential conflicts between trail users and wildlife. The Redwood Region Audubon Society also requested a defined process for protecting important habitat areas from overuse by the public.

Response: Developing the requests maps could be considered in the future but will not be included in the final Forest Stewardship Plan. The County will refer the concerns about potential conflicts and overuse to the Advisory Group for further discussion.

One commenter (Larry Lampi) expressed support for the education goal and providing historical information about the forest.

Response: Comment noted.

One commenter (Chris Turner) advised that trails should be placed in locations favorable for long-term sustainability and emphasized the importance of taking time and consideration to build trails properly.

Response: This comment supports several guiding principles in the Trail Plan.

Four commenters (Larry Lampi, Carol Mayes, Dean and Nancy Howatt) expressed concern about illegal camping. Two commenters (Dean and Nancy Howatt) also expressed concern for unauthorized motorcycles, trail-building, tree cutting, and cannabis growing.

Response: As discussed in Section 4.9.3, County staff plan to develop a proposed ordinance for the Community Forest that will include prohibitions against specified activities. The ordinance will go through a public review process and then will be considered by the Board of Supervisors for adoption. When the Community Forest is opened for public use, staff from Humboldt County Parks will provide a regular presence and will work to deter unauthorized activities. Public Works will maintain records of reported incidents to track trends. If incidents within the Community Forest begin to rise, Public Works will respond within its abilities and work with the Sheriff's Office and the Department of Health and Human Services as appropriate.

Three commenters (Larry Lampi, Katie Vaughn-Kelso, Susan Penn) requested that a portion of the trails be hiking-only. Ms. Vaughn-Kelso noted that hiking-only trails are desirable for older hikers and people hiking with dogs. Two commenters (Dean and Nancy Howatt) expressed support for easy walking access for older visitors and small children. One commenter (Pamela Cosel) requested making the Community Forest accessible to people in wheelchairs, people with dogs, and people of all ages, including parents with toddler bike seats and strollers. One commenter (Susan Vaughn) expressed a specific concern about

conflicts between hikers and mountain bikers on an existing trail near Harris Street that is narrow and has limited sight distance around curves.

Response: The Trail Plan proposes certain hiking-only trails as part of the overall trail network. The benefits of hiking-only trails are acknowledged, and the County will aim to ensure that they become part of the completed trail system, with an emphasis on trails near established access points. The referenced trail near Harris Street is a social trail (not built by the County). County staff will review this social trail and opportunities to reduce conflicts when formal trails are developed in this trail unit.

One commenter (Katie Vaughn-Kelso) stated that she cares about the health of waterways and having the opportunity for an experience of immersion in nature. Harvest plans should preserve forest health.

Response: The vision statement (Section 2.1) describes experiences that are consistent with immersion in nature. The Forest Stewardship Plan describes methods and practices to preserve and improve forest health.

One commenter (Warren Moak) requested incorporation of a disc golf course.

Response: The potential for developing a disc golf course is briefly discussed in Section 4.9.5. Further planning is needed to determine whether a disc golf course will be established within the Community Forest.

One commenter (Bruce Cann) requested that roads and landings are located in areas that minimize visual impacts from designated trails. He also requested that management of slash place an emphasis on reducing fuel loading.

Response: Sections 4.3.11 and 4.7 were revised in response to these comments.

One commenter (Susan Penn) expressed a desire for an access point to the southern portion of the Community Forest.

Response: Opportunities for a public access point to the southern portion are extremely limited due to the patterns of existing land use in the Ridgewood Heights area. The County will continue to look for feasible opportunities.

One commenter (Humboldt Trails Council) expressed support for the community involvement component of the plan and the emphasis on public access and safety. The Humboldt Trails Council affirmed its commitment for supporting Humboldt County with volunteer trail maintenance.

Response: The Humboldt Trails Council's assistance through the Volunteer Trail Stewards Program is greatly appreciated.

One commenter (Pamela Cosel) requested dog waste bags and trash cans.

Response: The County intends to provide the requested amenities.

Two commenters (Jessica Heiden and Rees Hughes) requested consideration of changing the name of the Community Forest.

Response: County staff will seek direction from the Board of Supervisors regarding a potential name change when the Board considers approval of the Forest Stewardship Plan.

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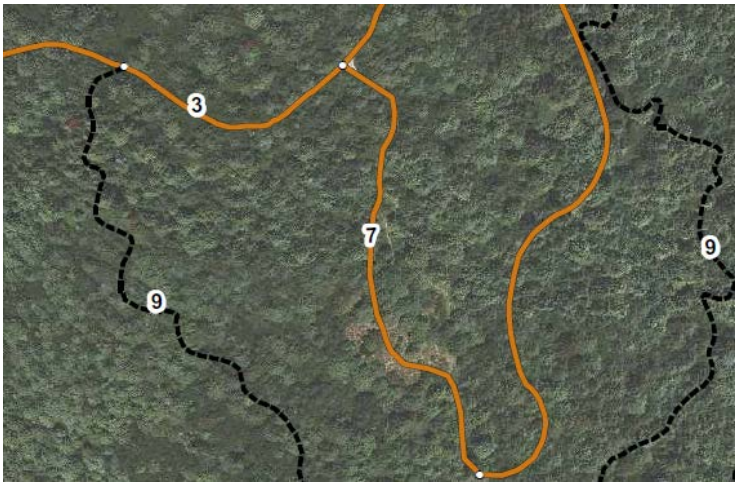
Attachment A

Trail Plan (text and figures only)

DECEMBER 16, 2020

McKay Community Forest Trail Plan

Eureka, Cutten, Myrtletown, Ridgewood Heights
Ryan Creek Watershed, Humboldt County



McKAY COMMUNITY FOREST

Prepared by:	Humboldt County Department of Public Works 1106 Second Street, Eureka, CA 95501 (707) 445-7741 www.humboldtgov.org/mckay

Executive Summary

- The County of Humboldt's McKay Community Forest is envisioned as a place for residents and visitors of all ages and abilities to enjoy walking, hiking, mountain-biking, wheeling, horseback-riding, learning, and connecting with the natural world. The McKay Community Forest Trail Plan proposes a trail network with 31 miles of multi-use roads, multi-use trails, hiking trails, and mountain bike trails. Additional trails may be considered in the future.

- The Trail Plan was prepared with an emphasis on accommodating users with accessibility needs to the greatest possible extent, based on the 2013 Accessibility Guidelines for Outdoor Developed Areas. A total of 1.5 miles of fully accessible trails and 0.7 miles of improved access trails are proposed.

- The McKay Community Forest currently contains approximately 1,194 acres, including 997 acres acquired from Green Diamond Resource Company in August 2014 and 197 acres acquired from Green Diamond in June 2020. Also in 2020, Humboldt County acquired a trail easement on a Green Diamond logging road connecting the Community Forest with Eggert Road.

- The Trail Plan describes the overall goals, objectives, guiding principles, design standards, and construction practices for building sustainable trails to support outstanding outdoor experiences for a diversity of trail users. The seven guiding principles are connectivity, integration, stewardship, accessibility, diversity, safety, and aesthetics.

- A parking area was constructed in Cutten along Northridge Road in 2018 to provide dedicated access to the Community Forest. Additional access points will be located along Harris Street and within Redwood Acres. Access points are expected to be developed near Redwood Fields, Manzanita Avenue, and Walnut Drive within two to five years as large parcels are permitted for subdivision.

- Trails will be developed incrementally in a logical sequence over the course of several years. The first trails to be built and opened to the public will be located near Northridge Road, Harris Street, and Redwood Acres. The timeframe for trail development will depend on available funding and working through the applicable permitting processes. Trail construction will depend heavily on support from the California Conservation Corps, the Volunteer Trail Stewards program of the Humboldt Trails Council, and Redwood Coast Mountain Bike Association. Connecting the northern and southern portions of the Community Forest will require securing an encroachment onto the McKay Ranch subdivision which surrounds Redwood Fields. The Trail Plan includes a proposed Bike Skills Park near the Northridge parking area.

- Expected benefits of the McKay Community Forest include:
  - Providing opportunities for physical activity, discovery, fun, and enjoyment.
  - Providing a refuge where people can connect with nature, experience wildness, and observe natural beauty.
  - Providing access to an outdoor classroom.
  - Supporting appreciation of watershed services and modern forest management.
  - Helping to nurture a sense of place in the greater Eureka area and boosting civic pride.
  - Promoting tourism and supporting the local economy.

Reflections on Trails

Certain trails are so elegant that they seem to lie sleeping just beneath the surface of the earth. Rather than being created by us, it is as if these trails unveiled themselves *through* us. When humans, bison, deer, and other woodland animals go in search of the shallowest pass in a mountain chain, they tend to decide on the same route. Who, then, invented the trail? The humans? The bison? The deer? The answer, it seems, is that no one can claim full credit, because an essential trail is predetermined by the shape of the topography and the needs of its walkers. Just as biologists sometimes say that "function precedes structure," in some sense, a trail precedes the trail-maker, waiting there for someone to come along and brush it off.

– Robert Moor, *On Trails (2016)*

At its best, a trail is a unique extension of its site. Much more than merely a connection between two points, a trail can create a safe and sustainable corridor through the site which brings visitors into the site's natural features. A trail can be subtly integrated into its site such that it feels like it belongs there – complementing the site with its presence – and in the process making us feel as if we, too, belong there. And the best trails provide a rich combination of landscape, visual and sensory experiences, intellectual discoveries, and emotions and feelings that continually makes them enjoyable to use, time and time again.

Trails such as this usually don't just happen. They are designed to be sustainable, to bring visitors in contact with the site – to be enjoyable to use.

– Troy Scott Parker, *Trails Design and Management Handbook (1994)*

Build it right, build it once.

– International Mountain Bicycling Association,
Trail Solutions: IMBA's Guide to Building Sweet Singletrack (2004)

Acknowledgements

Ryan Creek/McKay Tract Conservation Partners

Green Diamond Resource Company	The Trust for Public Land
CAL FIRE	City of Eureka

Funding Partners

Agency	*Funding Source*
California Natural Resources Agency	River Parkways Grant Program Urban Rivers Grant Program
California Wildlife Conservation Board	Forest Conservation Program
California Department of Housing and Community Development	Housing-Related Parks Program
California Coastal Conservancy U.S. Fish & Wildlife Service	National Coastal Wetlands Conservation Grant Program
Humboldt County	Headwaters Fund
	Parkland Dedication (Quimby Act) Fees

Planning Partners

Accessibility Representatives	Charlie Bean	David Beard	Eric Smiley
City of Arcata	Dennis Houghton	Darius Damonte	Mark Andre
Green Diamond Resource Company	Craig Compton	Greg Templeton	Jeremy Wright
Redwood Community Action Agency	Emily Sinkhorn	Denise Newman	
California Conservation Corps	Mark Allee Raquel Ortega	Michael Asprey	Peter Luvaas
Trail Planners and Engineers	Bruce Cann	Chris Whitworth	Chris Turner
Humboldt Trail Council	Volunteer Trail Stewards		
Redwood Coast Mountain Biking Association	Board of Directors		

McKay Community Forest Advisory Group (2014-2017)

Marlene Allen	Cindy Bedingfield	Craig Benson	Dan Ehresman
Greg Gardiner	Geoff Hales	Dave Hayes	Pete Johnston
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Humboldt County Board of Supervisors

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Second District	Estelle Fennell
Third District	Mike Wilson
Fourth District	Virginia Bass
Fifth District	Steve Madrone

Second District	Clif Clendenen (2008-2012)
Third District	Mark Lovelace (2008-2016)
Fifth District	Ryan Sundberg (2010-2018)

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1 INTRODUCTION

1.1 Purpose

The McKay Community Forest ("Community Forest") is located southeast of Eureka within the watershed of Ryan Creek, a tributary of Humboldt Bay (Maps 1-1 through 1-3). The Community Forest is situated along the urban interface with residential and commercial areas of Myrtletown, Cutten, and Ridgewood Heights (Maps 1-4 through 1-6). The Community Forest was established in 2014 for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation (Table 1-1). The Community Forest is envisioned as a place for residents and visitors of all ages and abilities to enjoy walking, hiking, mountain-biking, wheeling, horseback-riding, learning, and connecting with the natural world.

The purpose of this Trail Plan is to provide a blueprint for the development of trails, access points, and amenities to support recreational and educational activities within the McKay Community Forest. Trails are intended to be community resources that enable safe travel through the Community Forest and support outstanding outdoor experiences for a diversity of trail users.

The Trail Plan presents the results of evaluating the opportunities and constraints for developing a network of recreational trails within the forested landscape of the Community Forest and a set of access points that integrate with surrounding land use. The Trail Plan provides a "big picture" view of the proposed trails and access points to ensure a unified trail network. In addition, the Trail Plan discusses general trail-building principles and practices and presents technical guidelines to ensure consistency and sustainability.

A draft Trail Plan was released for public review on January 30, 2019, with a comment period ending March 1, 2019. Comments are summarized in Section 6. The final Trail Plan was revised and updated based on the comments received.

Table 1-1: Management Goals for the McKay Community Forest (Humboldt County, 2014)

Goal 1: Forest Stewardship	Practice environmentally appropriate, socially beneficial, economically viable forest management
Goal 2: Environmental Values	Conserve and enhance the environmental values of the forest to maintain its biodiversity, productivity, and ecological processes
Goal 3: Working Forest	Maintain a working forest that supports timber-related jobs and economic productivity on a sustainable basis
Goal 4: Public Access and Recreation	Provide high-quality recreational opportunities to support active living and enhance quality of life
Goal 5: Community involvement	Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset
Goal 6: Public Safety	Manage the community forest to promote a safe and secure environment for families and visitors of all ages
Goal 7: Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

1.2 Background

In 2009, Green Diamond Resource Company (Green Diamond) began working with The Trust for Public Land (TPL) to develop a three-phase conservation strategy for the Ryan Creek watershed, which included the concepts of establishing a publicly-owned community forest in two phases and creating a conservation easement over the majority of the land that will remain privately owned timberland (Map 1-7).

In August 2014, Humboldt County acquired approximately 997 acres of forestland as the Phase I acquisition of the McKay Community Forest. The western boundary of the Phase I property is situated adjacent to residential and commercial areas. The eastern property boundary is defined by Ryan Creek and Ryan Slough. The northern boundary is situated near Harris Street, Redwood Acres, and Park Street. The southern property boundary is adjacent to Green Diamond timberland. The terms "McKay Community Forest" and "Community Forest" refer to County-owned property, while "McKay Tract" refers to property owned by Green Diamond within the Ryan Creek watershed.

In June 2020, Humboldt County acquired approximately 197 acres contiguous to the south end of the Phase I property as the Phase II expansion of the community forest. Also in June 2020, Phase III of the conservation strategy was completed through establishment of a conservation easement over 5,976 acres of Green Diamond's remaining holdings in the McKay Tract. Completion of the Phase II and Phase III elements included a trail easement on a logging road owned by Green Diamond to provide a future connector trail from the Community Forest to Eggert Road.

The Community Forest is managed by the Humboldt County Department of Public Works. The cost of managing the Community Forest will be funded by timber harvest revenue, grants, and donations.

One of the first priorities for developing the Community Forest after the Phase I acquisition was to identify appropriate locations for public access, taking into account property boundaries, topography, watercourses, and proximity to adjacent properties and infrastructure. The property that became the Community Forest was previously integrated into the larger McKay Tract road network and did not come with "ready-to-go" access points providing sufficient parking or gathering areas for public use. A key principle in developing access points is to ensure compatibility with adjacent property and land use. In addition, there was a need to inventory the condition of the existing roads and prepare a plan for the permanent road network. Some informal trails currently exist; however, these trails are not linked to appropriate access points, do not have a logical configuration, and in many cases are in poor condition. Substantial work over several years will be needed to establish access points and trails in order to enable the public to have full access and recreational use within the Community Forest.

Public access points and trails will be developed incrementally in a logical sequence over the course of several years. The timeframe for trail development will depend on available funding, volunteer interest, and working through the applicable permitting processes. In June 2018, the California Conservation Corps (CCC) was awarded grant funding through the state Active Transportation Program to support two years of trail construction within the Community Forest. The CCC performed initial site preparation activities from October 2018 through August 2020. Local organizations expressing interest in actively supporting the development of trails and recreational opportunities include the Volunteer Trail Stewards program of the Humboldt Trails Council, Retired Seniors Volunteer Program, Redwood Coast Mountain Bike Association, Redwood Region Endurance Riders, Boy Scouts of America, and Rotary Club of Eureka.

The County will develop a Forest Stewardship Plan and Non-industrial Timber Management Plan (NTMP) to guide timber harvest activities and watershed and resource conservation. The Forest Stewardship Plan will be concise, revisable document describing the County's long-term goals and objectives for managing the Community Forest. The Forest Stewardship Plan will address how silviculture, fire risk reduction, wildlife habitat restoration, carbon sequestration, monitoring, and adaptive management will be implemented over the term of the plan. The Forest Stewardship Plan will also address how forest management goals and objectives will be integrated with other management goals and how the County intends to strive for compatibility with the neighborhoods bordering the McKay Community Forest. The NTMP will be a technical document demonstrating how the County intends to comply with the California Forest Practice Rules and associated laws and regulations. Technical studies to support the Forest Stewardship Plan and NTMP include a forest inventory and analysis, inventory of controllable sediment discharge sites, and geomorphic and geological analysis. The scheduling goal is to complete these plans in mid-2021 and to perform the first commercial timber harvest by the end of the 2021 season.

1.3 Plan Overview

The audience for this Trail Plan includes community members, public agencies, and County staff. The plan will be used as a tool for formulating management decisions, setting priorities, initiating projects, providing guidance and training, applying for grant funding, and administering subdivisions on adjacent property. In addition, the plan will be used to support analysis of environmental impacts under the California Environmental Quality Act and application for permits and approvals. The plan presents the overall approach for developing the trail network and is intended to ensure a logical sequence of implementation over time.

This Trail Plan focuses on an initial network of access points and trails to expedite opening the Community Forest to the public. Additional trail segments, recreational facilities, and amenities could be developed in future phases. Ideas for recreational facilities that have been brought forward include the following: logging or railroad museum, nature center, lodge, mountain biking skills park, ropes course, zip lines, disc golf course, picnic areas, and playgrounds. This Trail Plan can also be used to support planning for future regional connections to locations such as Elk River Road, Headwaters Preserve, and the Humboldt Bay Trail.

The grant agreements for the acquisition of the Community Forest property specify that recreational uses must be compatible with forest conservation and protection. Allowable recreational activities include walking, running, and hiking; education and research; bicycling on designated trails; equestrian use on designated trails; walking with dogs; and fishing in accordance with California fishing regulations. Driving motorized vehicles (cars, trucks, motorcycles, ATVs) and hunting are not an allowable recreational use.

Preparation of the Trail Plan was informed by feedback from several public meetings held from 2012 through 2014 and input from the McKay Community Forest Advisory Group which was initiated in late 2014 after the Phase I property was acquired. Planning activities included consulting with user groups, assessing the existing road network, planning the future road network, inspecting the property to identify appropriate trail locations and alignments, developing technical standards, coordinating with adjacent landowners, designing parking facilities, and planning road upgrades. Humboldt County partnered with the City of Arcata through a collaborative agreement in which City staff provided valuable assistance assessing conditions and providing consultation on trail routes, designs, and construction techniques, based on their experience developing the Arcata Community Forest.

1.4 Applicable Planning Documents

1.4.1 Project Report (Humboldt County, 2014)

Public Works issued a Project Report in April 2014 to support the Board of Supervisors' decision whether to accept the Phase I property for the establishment of the Community Forest. The Project Report presents background information on the property, describes the overall management approach, and provides a preliminary discussion of access points and trails.

1.4.2 Humboldt County General Plan

The Humboldt County General Plan (October 2017) applies to unincorporated areas outside the coastal zone. The General Plan contains goals, policies, standards, and implementation measures for land use planning and development. The northern portion of the Community Forest is situated within the coastal zone, but the majority is situated outside the coastal zone (Map 1-8). Goals, policies, standards, and implementation measures relevant to the Community Forest outside the coastal zone are summarized in Table 1-2.

Table 1-2: Applicable Goals, Policies, Standards and Implementation Measures of the Humboldt County General Plan (outside the coastal zone)

Goal/Policy/Standard	Description
Goal CO-G4	**Parks and Recreation**. Well maintained and accessible parks offering a range of popular recreation opportunities and a regional trail system that meets future recreational and non-motorized transportation demands.
Policy CO-P9	**Develop and Maintain County Parks**. Secure, develop, and maintain county parks and recreation areas that are highly accessible to the public in order to serve the present and future needs of county residents.
Policy CO-P11	**Public Recreation**. Support acquisition, development and management of parklands and trails primarily in locations that are highly accessible to the public in order to serve the outdoor recreation and ADA needs of current and future residents, and where such uses do not reduce the agricultural capability, timber productivity and ecological services on open space lands.
Policy C-P38	**Develop a Regional Trails System**. Support efforts to establish and connect regional trails, particularly in the greater Humboldt Bay and lower Mad River areas, the Eel River Valley, along the Avenue of the Giants and in the Klamath-Trinity area. The System should include the California Coastal Trail System and consist of multi-use trails where feasible.
Standard C-S10	**Equestrian Trails**. The Federal Highway Administration "Equestrian Design Guidebook for Trails," or its equivalent, shall be used as a guide for the analysis and design of equestrian trails.
Policy UL-P8	**Neighborhood Connectivity**. Subdivisions shall be designed to promote road and trail circulation between neighborhoods, schools, parks, and open space areas. The subdivision ordinance shall specify standards and limitations for cul-de-sacs, dead end roads, and block sizes.

References:

CO – Conservation and Open Space Element
C – Circulation Element
UL – Land Use Element

1.4.3 Humboldt Bay Area Plan

The Humboldt Bay Area Plan (December 2014) applies to the portion of the Community Forest situated within the coastal zone. The Humboldt Bay Area Plan contains recommendations, policies, and standards for land use. Goals, policies, standards, and implementation measures relevant to the Community Forest inside the coastal zone are summarized in Table 1-3.

Table 1-3: Applicable Policies of the Humboldt Bay Area Plan (inside the coastal zone)

Policy	Description
Policy 30213	Lower cost visitor and recreation facilities… shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.
Policy 30233(a)	The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (8) Nature study, aquaculture, or similar resource-dependent activities.
Policy 30236(e)	New development within the riparian corridors shall be permitted when there is no less environmentally damaging feasible alternative, where the best mitigation measures feasible have been provided to minimize adverse environmental effects, and shall be limited to the following uses. (8) Public access trails provided that the length of the trail within the riparian corridor shall be minimized, where feasible, by rights of way which cross streams at right angles, which are kept as far up slope from the stream as possible, which involve a minimum of slope disturbance and vegetative clearing, and are the minimum width necessary.

1.4.4 Eureka Community Plan

The Eureka Community Plan (1995) contains goals and policies for land use and development, hazards and resources, and public services and facilities within the Eureka Community Planning Area. The western portion of the Community Forest is situated within the Eureka Community Planning Area (Map 1-9). The Eureka Community Plan is a companion document to the Humboldt County General Plan, which applies to all unincorporated areas of Humboldt County.

Sections 4400, 4410, and 4420 of the Eureka Community Plan address parks and recreation. The Eureka Community Plan encourages development of two types of facilities, neighborhood parks and community parks, to enhance quality of life. The Eureka Community Plan defines a community park (Page 76) as follows:

> Community Park – A park or facility developed primarily to meet the requirements of a large portion of the Planning Area. The location services an area within a three mile radius. The size is generally from 5 to 20 acres. In addition to neighborhood park elements, a community park might also have restrooms, large landscaped areas, a community center, a swimming pool, lighted sport fields, and specialized equipment not found in a neighborhood park.

The McKay Community Forest meets this definition of Community Park because it will provide an extensive trail network for recreational use by walkers, hikers, bicyclists, and equestrians and provides opportunities to develop other recreational facilities over time. A portion of the trails,

especially near adjacent neighborhoods, will be designed to accommodate use of baby strollers and bicycling by children. The high-quality recreational experience provided by several miles of trails within a forest setting is reasonably expected to attract visitors from at least a three mile radius. Goals and policies relevant to the Community Forest are summarized in Table 1-4.

Table 1-4: Applicable Policies of the Eureka Community Plan

Policy	Description
Goal 4410	To provide a well balanced system of park and recreation facilities offering a variety of active, passive and cultural recreational opportunities to all residents, and adequate to meet changing recreational needs of Planning Area residents.
Policy 4420.1	The County should encourage a Parkland Dedication fee to fund development of new parkland. The County is encouraged to accept dedication of parkland when a means of securing funding for maintenance, administration and operation of the parkland is created or available.
Policy 4420.4	Parks should be located and sized and should contain appropriate facilities to serve both the existing and projected population within each service radius.
Policy 4420.5	Park sites should be provided with adequate water supply, sewer, police and fire protection services, and should be accessible by foot, bicycle, and automobile.
Policy 4420.6	Neighborhood and community park and recreation facilities should, to the extent possible, be located in predominantly residential areas.
Policy 4420.7	To the extent possible, all parklands should be dedicated and held inviolate in perpetuity, protected by law against diversion to non-recreational purposes and against invasion by inappropriate uses.

1.5 Traveling to the Community Forest

People will travel to the Community Forest utilizing private vehicles and public transit as well as on bicycle or by foot. Maps 1-10 and 1-11 show transit stops and bicycle routes, respectively.

1.6 Community Forest Road Network

The proposed road network within the Community Forest is shown in Maps 1-12 and 1-13. Roads provide the backbone and starting point for planning the Community Forest trail system. In addition to timber harvest operations, roads are necessary for maintenance vehicles, construction equipment, patrols, fire-fighting, and emergency response. The proposed road network includes 11.5 miles of road segments to be retained and upgraded and 2.0 miles of new road segments. A total of 4.8 miles of historic road segments would be decommissioned or have already been decommissioned.

Green Diamond utilizes a road-naming convention which applies a unique letter-number combination to each road segment based on road type. Green Diamond's main haul road through the McKay Tract is designated the R-Line. The R-Line intersects with Harris Street west of Redwood Acres. The majority of the R-Line was retained by Green Diamond and is not part of the Community Forest. The segment leading from the first gate at Harris Street down to the second gate where the road splits is Green Diamond property. At the second gate, the R-Line continues to the left and the 0.23-mile segment from the second gate to the third gate (situated near a bridge over Ryan Creek) is part of the Community Forest. The remainder of the R-Line, situated east of Ryan Creek, is owned by Green Diamond and is not part of the Community

Forest. Other primary roads are designated with numbers (e.g., R-1, R-2), and connector spurs are given further sub-designations (e.g., R-6-1). The roads accessed from Northridge Road are designated NR-1 and NR-2.

The roads in the Community Forest were developed over the course of several decades in the context of the overall road network for the McKay Tract. Public Works evaluated the existing road network to determine which roads should be maintained, which roads should be decommissioned, and where new roads should be developed. The conditions of the existing road network are variable. Some roads are legacy roads built prior to modern standards for road location, design, and construction. The majority of roads are surfaced with native materials with only a small portion surfaced with aggregate. Some roads are in suitable locations and require minimal effort for re-opening, while others are in poor condition and require upgrades to varying degrees. Typical upgrade needs include new stream crossings, road surface drainage improvements, removal of unstable fill material, and rock surfacing. Some roads are situated in inappropriate locations and warrant decommissioning.

Public Works adopted the operating unit boundaries and designations established by Green Diamond, subject to future change or adjustment. Public Works analyzed each operating unit, the existing road network, and options for accessing each unit for harvest operations (felling, yarding, and hauling). Public Works looked at the condition of each road and how they are situated in the landscape, weighing the benefits of maintaining a road against the anticipated cost of upgrades and potentially feasible alternatives. Detailed information regarding the proposed road inventory is provided in Attachment 1. The road inventory may be adjusted based on more detailed assessment of road conditions and management needs. Grants will be pursued to upgrade roads on an expedited timeframe and to incorporate restoration goals to the extent feasible. At a minimum, roads within an operating unit will be upgraded concurrent with the first entry into the unit. The entire road system is expected to be upgraded within 20 to 25 years.

2 PLANNING FRAMEWORK

2.1 Vision Statement

Public Access and Recreation Vision Statement:

The McKay Community Forest enhances the quality of life for Humboldt County residents and visitors by providing outstanding recreational opportunities. Recreational facilities will be compatible with adjacent land uses, forest stewardship, resource conservation, and a working forest. The McKay Community Forest will:

- Provide opportunities for people to maintain and improve health and fitness through outdoor physical activity.
- Provide recreational trails that enable people to seek challenges and engage in play.
- Provide a refuge where people can connect with nature, experience solitude and wildness, make discoveries, and observe natural beauty.
- Provide access to an outdoor classroom.
- Support appreciation of watershed services, forest management, and modern timber harvest practices.
- Nurture a sense of place in the greater Eureka area and boost civic pride.
- Promote tourism and support the local economy.

2.2 Goals and Objectives

Management goals are broad statements about what needs to be accomplished to achieve the vision. Management goals for public access and recreation are presented in Table 2-1.

Table 2-1: Recreation Goals

Goal 1:	Provide an integrated trail system for a diversity of trail users.
Goal 2:	Promote a safe and secure environment for visitors of all ages and abilities.
Goal 3:	Protect the Community Forest's natural and cultural resources.
Goal 4:	Provide a trail information system.
Goal 5:	Foster community partnerships to assist with trail development and maintenance.
Goal 6:	Promote trail-oriented tourism and special events.
Goal 7:	Pursue linkages with other trails and recreational facilities.

Management objectives represent specific tasks, milestones, or methods for achieving management goals. Management objectives associated with each management goal are presented in Table 2-2.

Table 2-2: Recreation Objectives

Goals	Objectives
Goal 1: Provide an integrated trail system for a diversity of trail users.	1-1: Provide multiple access points with parking and other support facilities where appropriate. 1-2: Provide a combination of multi-use and single-use trails with a range of distances, trail features, and challenge levels. 1-3: Ensure that the trail network is navigable and user friendly. 1-4: Provide accessible trails near access points where feasible based on terrain and other constraints. 1-5: Provide trail connectivity between different portions of the Community Forest. 1-6: Establish guidelines for trail development and maintenance. 1-7: Coordinate with the Humboldt County Planning and Building Department to incorporate proposed long-term access points into appropriate planning documents. 1-8: Acquire easements to improve access to the Community Forest.
Goal 2: Promote a safe and secure environment for families and visitors of all ages and abilities.	2-1: Plan to avoid user conflicts by designing trails with consideration for appropriate trail widths, passing areas, visibility, and signage. 2-2: Develop an ordinance with appropriate rules and regulations. 2-3: Encourage appropriate trail etiquette with signs, brochures, and other methods. 2-4: Provide regular safety patrols with a combination of staff presence and volunteer "eyes and ears." 2-5: Coordinate with Humboldt Bay Fire, the Humboldt County Sheriff's Office, and mutual aid agencies. 2-6: Perform consistent trail inspections and maintenance based on established standards. 2-7: Ensure safety for trail users during timber harvest operations.
Goal 3: Protect the Community Forest's natural and cultural resources.	3-1: Evaluate sensitive resources including rare species and important habitat areas and features. 3-2: Design and maintain trails to avoid impacts to forest resources and landscape constraints. 3-3: Design and maintain trails to discourage short-cutting. 3-4: Design and maintain trails to avoid impacts to adjacent property. 3-5: Provide interpretation to encourage appreciation of the forest's resources and voluntary practices to avoid impacts.
Goal 4: Provide a trail information system.	4-1: Develop and implement a uniform signage system for trails and access points. 4-2: Develop trail maps in a variety of physical and digital forms. 4-3: Use naming conventions that are consistent, concise, and memorable.

Table 2-2: Recreation Objectives (Continued)

Goals	Objectives
Goal 5: Foster community partnerships to assist with trail development and maintenance.	5-1: Execute a Memorandum of Agreement with the Humboldt Trails Council for regular assistance by the Volunteer Trail Stewards. 5-2: Execute a Memorandum of Agreement with the Redwood Coast Mountain Bike Association for assistance with trail-building and maintenance, and development, operation, and maintenance of a pump track/skills park. 5-2: Develop staffing capacity to provide coordination and oversight of volunteer work. 5-3: Maintain a working list of volunteer projects. 5-4: Develop opportunities for financial donations to be applied directly to specific trail projects.
Goal 6: Promote trail-oriented tourism and special events.	6-1: Develop guidelines for trail-related events. 6-2: Coordinate with organizations that promote local and regional tourism.
Goal 7: Pursue linkages with other trails and recreational facilities.	7-1: Evaluate potential connections with the Headwaters Forest and Humboldt Bay Trail. 7-2: Pursue collaboration opportunities with Sequoia Park Zoo.

2.3 Trail Users

The McKay Community Forest will be developed with a network of access points and trails to accommodate a variety of non-motorized recreational uses and a range of ages and abilities, while minimizing conflicts and environmental impacts. Expected users include foot travel users, mountain bikers, and equestrians. Users will include people with physical disabilities. The Community Forest is expected to serve residents and be a destination for out-of-town visitors. Different types of trail users have different needs and interests, as described below.

Foot Travel Users include hikers, walkers, joggers, runners, wildlife-viewers, people pushing baby strollers, and people using appropriate mobility devices. Foot travel users are expected to constitute the largest user group. Travel speeds (miles per hour, mph) will vary from less than one mph to over six mph, and trip distances will vary from less than one mile to several miles. Some hikers seek more strenuous routes through diverse terrain.

Mountain Bikers have diverse interests based on age and skill level. Desired routes for biking will vary from gentle and easy to strenuous and challenging. Travel speeds will vary from less than two mph to over ten mph. Experienced bikers will seek more remote, less travelled trails with complexity and technical trail features. Trail designs for mountain bikers can range from "open and flowing," with gentle slopes, gradual turns, and long sightlines, to "tight and technical," with sharper turns, narrower tread, and natural obstacles (IMBA, 2004; IMBA/BLM, 2018). Proper transitions between trail sections with different types of flow are important.

A new development during the last five to ten years is the increased use of electric motor-assisted bicycles (also known as "e-bikes"). Electric mountain bikes are sometimes called "e-MTBs." An e-bike operates at relatively low speeds with a low-power electric motor to assist in pedaling. E-bikes are considered consumer products rather than motor vehicles (such as mopeds and motorcycles). An e-bike has fully operable pedals and an electric motor less than 750 Watts. Three classes of e-bike have been designated in California based on motor speed and the level of electric assist. Class 1 e-bikes have motor assist only when the rider is pedaling, and assistance stops when the bike reaches 20 miles per hour. Class 2 e-bikes can be propelled by the motor alone without pedaling, up to a speed of 20 miles per hour. Class 3 e-bikes have motor assist only when the rider is pedaling, and assistance stops when the bike reaches 28 miles per hour.

One of the benefits of e-bikes is they expand opportunities for biking especially for people who are older or have physical disabilities. Potential concerns about e-bikes include safety, trail impacts, and social impacts (noise and nuisance). In 2017, the International Mountain Bicycling Association (IMBA) released the following position statement:

> *IMBA is supportive of Class 1 eMTB access to non-motorized trails when the responsible land management agency, in consultation with local mountain bikers, deem such eMTB access is appropriate and will not cause any loss of access to non-motorized bikes. IMBA recognizes that changes in design, technology and the numbers of eMTB users is evolving, and believes these bikes can be managed in a sustainable way for both the environment and other trail users.*

Further review will be needed to determine which trails in the Community Forest are appropriate for e-bikes. In addition, further review is needed to determine whether e-bikes are considered Other Power-Drive Mobility Devices under the Americans with Disabilities Act.

Equestrians generally desire wide trails, soft surfaces, generous vertical and horizontal clearances, and sight distances of at least 100 feet (USDA Forest Service, 2007). Typical travel speeds range from three to six mph. Staging areas and space for trailer parking at access points are necessities. Desirable attributes at access points include pull-through parking, wide clearances around trailheads, and the absence of sharp edges on fences, signs, and buildings. Horses prefer non-metal bridge decks and can spook easily when other users appear abruptly or approach rapidly.

Trails will be planned to be accessible for people with physical disabilities to the greatest extent possible. Accessibility is discussed further in Section 2.7.2.

Regulations for control of dogs will need to be incorporated into the ordinance governing appropriate use and conduct within the Community Forest.

2.4 Trail System Elements

The trail system includes access points, trails, and amenities.

2.4.1 Access Points

Access points (also known as **Trailheads**) are the formal entryways to the Community Forest and provide the linkage between the broader community and the forested landscape of the Community Forest. Access points serve as meeting and gathering areas and provide information to help people plan their trip. A **major access point** provides designated off-street parking and more extensive amenities. A **minor access point** utilizes on-street parking and provides less extensive amenities. Access points for the Community Forest are discussed in Section 3.

2.4.2 Trails

Trails provide routes to pass through the Community Forest by foot, bicycle, horse, or mobility device. For this report, the term **"trail"** is used broadly to include multi-use roads, multi-use trails, hiking trails, and mountain bike trails. Trails include the surface tread, underlying foundation, bridges for creek crossings, and a variety of drainage, slope stabilization, and safety features.

Multi-use Roads provide vehicle access for management, maintenance, timber harvest, and emergency response, and serve as trails for recreational use. Multi-use roads are designed for vehicle loading and clearances which are normally more than adequate for a range of non-motorized users. One of the benefits of multi-use roads is they provide ample space to accommodate side-by-side travel.

Multi-use Trails are intended for all types of allowable non-motorized use. Multi-use trails are designed to accommodate a mixed traffic of users with a range of speeds and abilities.

Hiking Trails are planned in areas with challenging terrain where a multi-use trail is not feasible or preferred. Hiking trails provide the opportunity to create smaller openings to allow for a more intimate experience in nature.

Mountain Bike Trails are planned to provide loops with trail features designed specifically to enhance the mountain biking experience. Mountain bikers often prefer features that are technically challenging and provide an experience of play and discovery. Examples of bike-specific features include berms, rollers, jumps, tabletops, drop-offs, and rock gardens (IMBA/BLM, 2018). Naturally occurring objects such as roots, rocks, and woods are often incorporated as features of the trail. Mountain bike trails are often kept narrow and have a preferred direction of travel.

The proposed trail network (Section 4) includes 11.1 miles of multi-use roads, 11.7 miles of multi-use trails, 1.1 miles of hiking trails, and 5.0 miles of mountain bike trails. Additional trails may be considered in the future. Equestrian use is expected on the majority of multi-use roads and multi-use trails. No specific equestrian trails are currently planned. Inclusion of hiking trails and mountain bike trails is expected to help disperse or separate users and reduce user conflicts.

Multi-use roads and multi-use trails are considered **shared-use trails**, which are designed to accommodate all user groups. Signs will be used to promote respectful trail etiquette. User group organizations can assist in promoting respectful trail use practices among their members. Hiking trails and mountain bike trails are considered **preferred-use trails**, which are designed primarily for one user group but other users are not prohibited from accessing the trails. The Trail Plan does not propose **restricted-use trails,** which are designed for one user group with other users prohibited. A primary goal of restricted use trails is to avoid user conflicts; however, compliance with restrictions is difficult to enforce. Signs will be used to identify the intended use of hiking trails and mountain bike trails and indicate that other uses are not recommended.

Useful definitions for trail planning and design include the following:

Trail Tread – The surface of the trail upon which users travel.

Natural Surface Trail – An unpaved trail with tread formed by native soil or imported rock material (as opposed to a trail paved with asphalt or concrete).

Trailbed – The soil mass providing the foundation for the trail surface. The trailbed includes the **sub-grade** (the native soil in the landscape) and may include a **sub-base** layer (material placed on top of the sub-grade to support the trail surface).

Trail Corridor – The area along a trail that is maintained clear of obstacles and obstructions to allow users to travel freely and safely.

Trail Grade – The steepness of a trail segment, measured by rise-over-run and expressed as a percentage of its length (also known as **running slope** or **longitudinal slope**).

Cross Slope – The slope of the trail tread from edge to edge perpendicular to the direction of travel.

Sideslope – The natural slope of the ground.

Contour Trail – A trail designed in a manner where its grade does not exceed half the grade of the surrounding sideslope (for example, an 8% trail grade on a 20% sideslope).

Fall Trail – A trail where the grade exceeds half the grade of the sideslope of the surrounding terrain (for example, a 15% trail grade on a 20% sideslope).

Singletrack – Narrow trails where users normally travel in single file.

Flow – The rhythm or character of a trail.

Control Points – Specific places or features that influence the location and alignment of a trail. Control points include constraints (e.g., property boundaries), areas to avoid (e.g., low-lying wet areas, sensitive habitat, steep slopes, potential safety hazards), desirable destinations (e.g., scenic viewpoints, points of interest), and preferred locations for grade changes and stream crossings.

Turnpike – An elevated trail (also known as a **causeway**) formed by placing a layer of fill material above the adjacent ground to accommodate wet soils and poor drainage. Turnpikes can be "walled" by placing edge materials such as rock or timbers to confine the fill material, or "unwalled" where edge materials are absent.

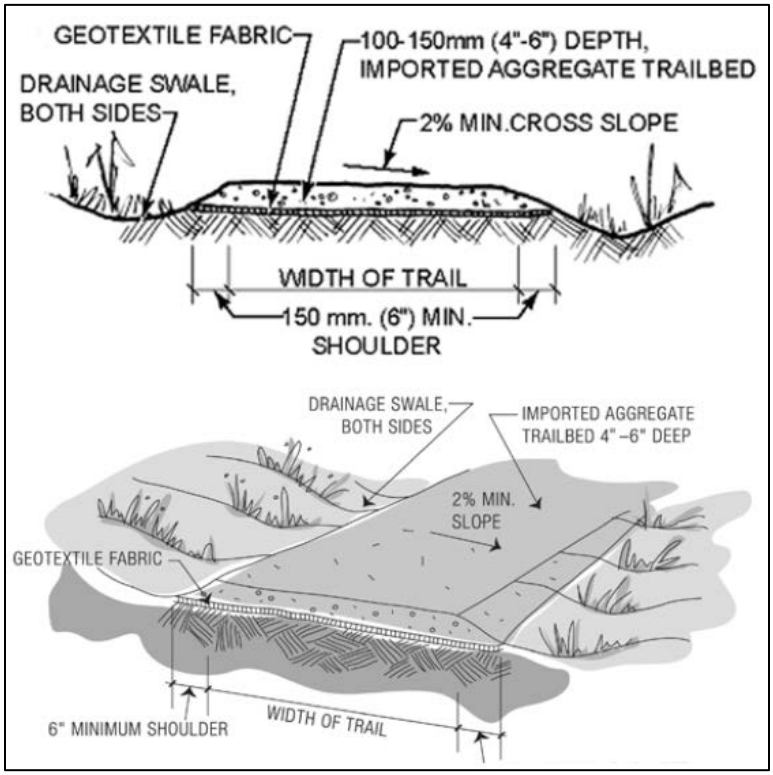

Figure 2-1: Typical Section for Trail Formed with Imported Rock Material

The following definitions and illustrations of mountain bike trail features were adapted from IMBA/BLM (2018) and Architrail.

Berm – A banked and curved cornering feature (also known as a **banked curve**) that provides support for a mountain bike rider when turning a corner, allowing them to turn in a smooth manner.

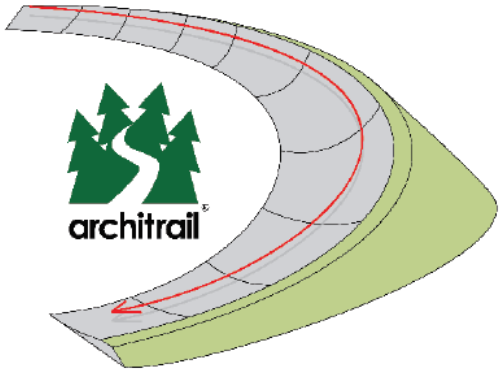

Figure 2-2: Berm (Banked Curve)

Roller – A feature where the trail surface rises and falls smoothly and is ridable without pedaling. Rollers can occur singularly or in series. Skillful riders can use rollers to gain speed and control by "pumping" them. Rollers can also help disperse stormwater runoff.

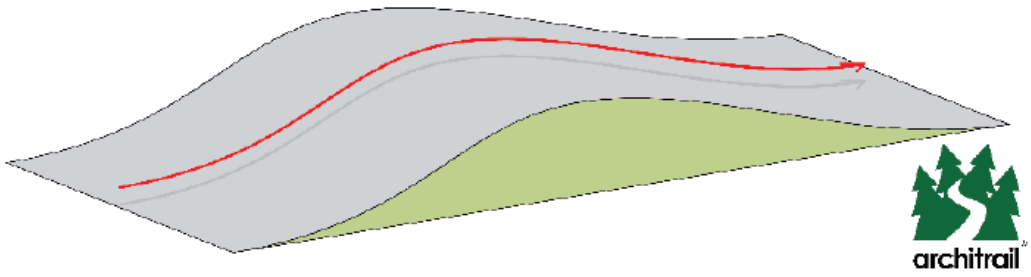

Figure 2-3: Roller

Jump – A feature allowing mountain bike riders to take off from the ground and land safely using their momentum. Care is needed to ensure appropriate entrance to and exit from the feature. A **tabletop** is a jump feature with a flat top between the take-off ramp and downslope landing. Less experienced riders can land on the flat top while more experienced riders can jump over the flat top and land directly on the landing. A **roller double** (also known as a **double**) is a jump feature with a smooth, shallow bowl between the take-off ramp and landing. Less experienced riders can roll over the feature while more experienced riders can perform a larger jump.

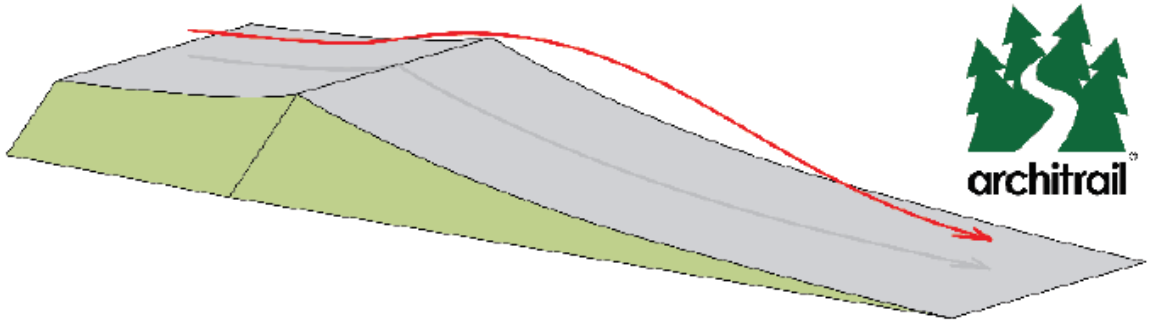

Figure 2-4: Jump

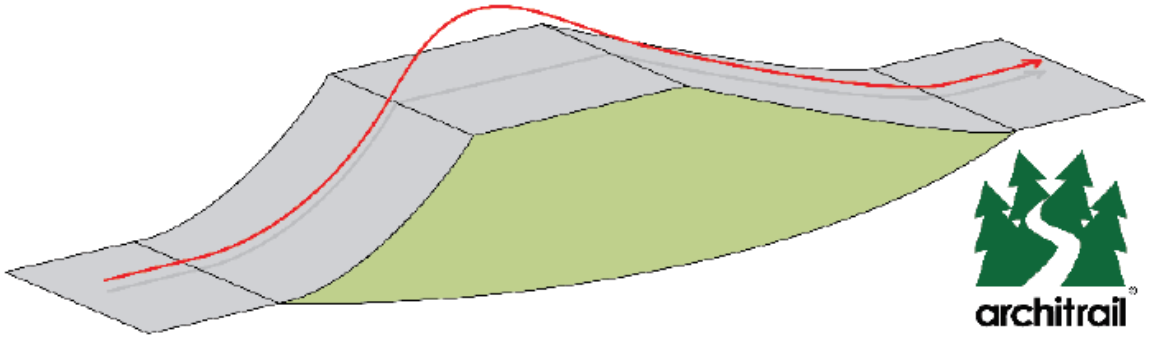

Figure 2-5: Tabletop

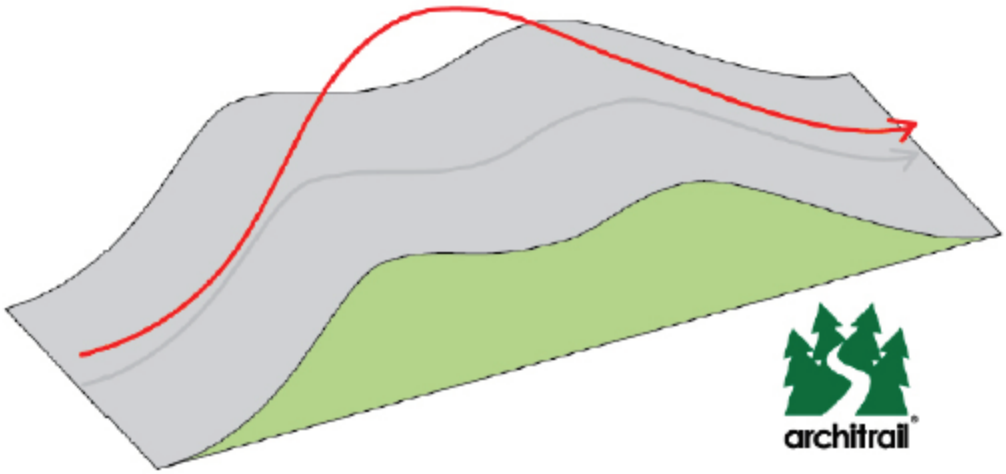

Figure 2-6: Roller Double

Drop-off – A feature where the trail has a vertical step-down over an edge from a high level to a lower level.

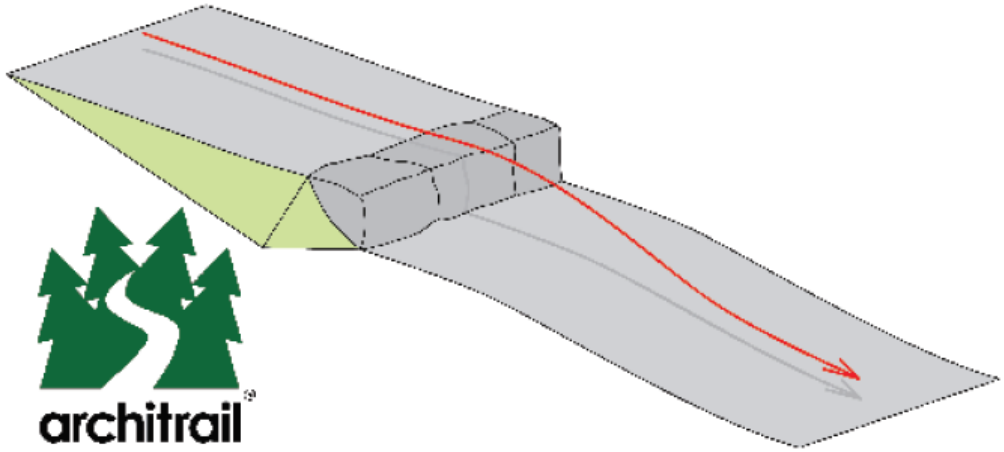

Figure 2-7: Drop-off

Rock Garden – A feature where rocks are placed into the trail surface in close proximity to each other, providing a roughened surface with small obstacles.

Optional Line – A short detour of different difficulty than the main route.

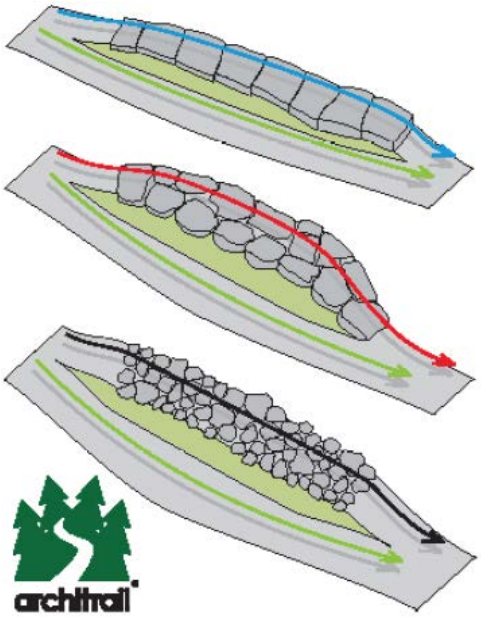

Figure 2-8: Rock Garden

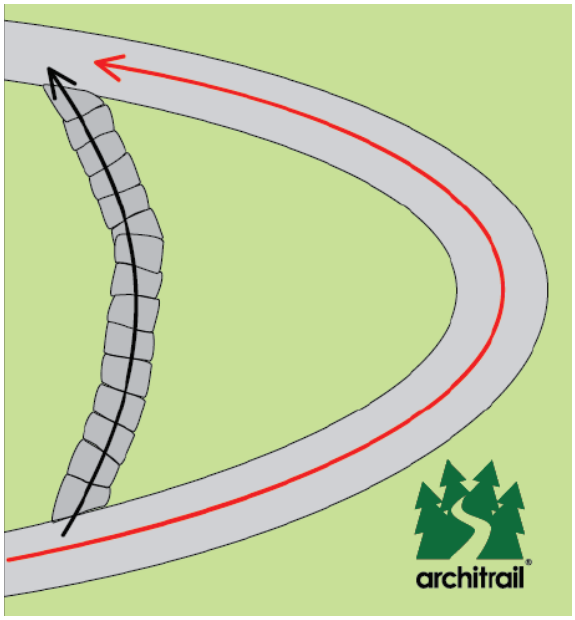

Figure 2-9: Optional Line

2.4.3 Amenities

Amenities provide services and information. Potential amenities include signs, maps, information kiosks, benches, restrooms, picnic tables, equestrian facilities, bike racks, fences, gates, garbage cans, and animal waste bag dispensers (Section 2.10).

2.5 Site Conditions and Features

Property Boundaries

The McKay Community Forest has an irregular property boundary, with a relatively narrow and constrained northern portion and wider and more expansive middle and southern portions. The northern portion contains a privately-owned "in-holding" residence, located southwest of Redwood Acres and east of Redwood Fields. Ryan Creek and Ryan Slough form the eastern property boundary of the Community Forest. The majority of the Community Forest is separated from the nearest public road by private property. The Community Forest abuts only short segments of Harris Street, Northridge Avenue, Myrtle Avenue, and Park Street.

Terrain and Geology

The Community Forest includes flat terraces and ridgetops, moderate to steep hillslopes, broad floodplains, and stream corridors for perennial, intermittent, and ephemeral streams. Soils are a mix of sand, silt, and clay derived from soft sedimentary deposits (primarily Hookton formation). Watercourses within the property include portions of Ryan Creek, Ryan Slough, Bob Hill Gulch, and Henderson Gulch. Many small and medium-sized tributaries are situated within steep-sided ravines. Wetlands are abundant, including features associated with springs or seeps and broader floodplain areas. Some wet areas are the result of limited drainage caused by berms and road-cuts from historic logging roads and skid trails. Areas along streams are subject to seasonal flooding.

Much of the ground has been disturbed and altered by historical logging and road-building, and large rainfall events have triggered occurrences of mass wasting. Overall, the landscape is in a progressive state of recovery from historical disturbance. Potentially sensitive landscape features such as headwall swales, landslides, steep stream banks, and unstable fills are present.

Plants and Wildlife

Forestland is dominated by coastal redwood and Douglas-fir, with small components of grand fir, western hemlock, Sitka spruce, and red alder. The Community Forest supports terrestrial and aquatic habitat for a variety of species. Terrestrial species include blacktail deer, black beer, mountain lion, northern spotted owl, peregrine falcon, osprey, Pacific fisher, tree voles, and bats. Aquatic species include coho salmon, steelhead trout, coastal cutthroat trout, northern red-legged frogs, and coastal tailed frogs. Invasive species (pampas grass, Scotch broom, Himalayan blackberry, English ivy, and English holly) are abundant at certain locations especially along roads and utility corridors and adjacent to neighborhoods.

Points of Interest

The public will have opportunities to discover a variety of points of interest, such as unique trees (e.g., old-growth redwood stumps, goose pens, mature big-leaf maples); second-growth redwood stands; remnants of railroad logging infrastructure; stream restoration and road decommissioning sites; scenic viewpoints; and Ryan Creek.

2.6 Guiding Principles

In addition to goals and objectives (Section 2.2), the following principles were developed to guide the planning approach:

- Connectivity – Establish multiple access points to disperse usage and provide a variety of options for entering the Community Forest. Prioritize connecting the different geographic areas within the Community Forest that are now partially or fully isolated.

- Integration – Integrate the trail network with the road network, recognizing that some roads will need to be upgraded to current standards while other roads will be decommissioned. Look for opportunities to incorporate decommissioned roads, historic skid trails, and existing social trails into the formal trail network.

- Stewardship – Be sensitive to context and build trails that conform to the existing landscape. Design for sustainability (Section 2.9.4) and avoid or minimize impacts to sensitive resources. Ensure that access points and trails are compatible with adjacent properties and land use.

- Accessibility – Provide access for people with disabilities to the greatest possible extent (Section 2.9.3).

- Diversity – Build trails with diverse features and character to stimulate fun, discovery, and enjoyment.

- Safety – Continuously look for opportunities to enhance safety for trail users, volunteers, staff, contractors, and adjacent property owners.

- Aesthetics – Strive to create stimulating places. Build trails with the least amount of disturbance possible. Emulate natural shapes and patterns.

2.7 Evaluation Process

Humboldt County Public Works began developing the proposed trail network by assessing existing conditions including property boundaries, proximity to potential access points, and natural features (topography, drainage, slope stability, and forest composition). An inventory of existing logging roads was prepared and a plan for the permanent road network was developed. Public Works worked with neighboring property owners and/or key stakeholders to evaluate which potential access points are likely feasible, what issues need to be addressed, and the associated timeline. The Community Forest was divided into logical trail planning units. Preliminary trail routes were developed to link together access points and the road network, first focusing on "arterial" trails that can convey larger volumes of users between different units and then supplemented with secondary connections, loops, and spur trails. The initial alignments accounted for bridge crossing locations, steep terrain, drainage challenges, and property lines. Detailed ground survey information and mapping were obtained where necessary. The alignments were then refined using an iterative approach, considering alternatives and making adjustments to optimize benefits while minimizing construction costs and ground disturbance and avoiding sensitive resources, wet areas, and steep slopes wherever feasible.

2.8 Trail Design Standards

2.8.1 Overview

Approach

Design guidelines help ensure that trails are built for the intended recreational use. The design guidelines are intended to serve as general directions and recommendations rather than fixed rules and mandatory actions. The guidelines discuss a variety of trail attributes, often expressed in terms of optimal or limiting conditions. The presumption should be that a trail segment will be designed within the stated limits; however, exceptions will often be warranted due to specific circumstances. The Community Forest contains a variety of contexts and site-specific constraints which necessitate flexibility in trail design. This flexible design approach allows trail segments to be developed in a manner that is most appropriate for on-the-ground conditions. A special case is when a trail is designated to meet accessibility standards. The design guidelines for accessible trails are more prescriptive, although provisions for exceptions are specified.

Progressive Development

The designation of a trail segment as a multi-use road indicates that it is considered part of the Community Forest's permanent road network; however, the majority of the roads have not been maintained for decades and require upgrades to meet current standards. Roads within the Community Forest will be upgraded over the course of approximately 20 to 30 years based on funding and timber harvest planning. Therefore, progressive improvements will be a common practice, where a segment that is ultimately planned for a multi-use road could be improved to serve as a single-use or multi-use trail in the interim until funds are available for the full upgrade.

Trail Surface

The Community Forest will provide natural surface trails composed of native soil or imported rock material. Trail surfaces formed with native soil have the advantage of being less expensive, less developed, and providing a softer surface for absorbing impacts. However, trails over native soil are more prone to displacement and erosion due to precipitation or heavy use and are more susceptible to muddy conditions in the winter. Trails formed with imported rock material provide a hardened surface that is more durable and requires less maintenance.

A common practice for stabilizing multi-use trails is applying a layer of "crusher fines," which are a mix of crushed stone aggregate generated as a byproduct of the gravel crushing process. The key attributes of crusher fines are having angular fractured surfaces and a range of particle sizes from fine dust up to a specified maximum size (typically 3/8 inch diameter). These attributes allow the material to be readily compacted as the particles become interlocked in a tight matrix. Other crushed aggregate material may be suitable if it contains a sufficient fraction of fine-grained particles, which are necessary to bind the larger particles together.

Approximately six inches of suitable imported material is typically applied to form the trail tread. Some locations may warrant placement of geotextile fabric under the imported material to stabilize the foundation, and/or development of a sub-base layer. Compaction can be performed using hand tampers, vibraplate compactor, or vibratory roller with water applied as needed. The finished surface should be uniformly smooth without holes or concave depressions that can trap water. As a finishing step, the trail can be covered with a light layer of duff. Details regarding trail construction are provided in Natureshape (1991), Flink (2001), and Natureshape (2004).

2.8.2 Design Guidelines

Design guidelines are presented for multi-use trails, multi-use roads, hiking trails, and mountain-biking trails are provided in Tables 2-3 through 2-6.

Table 2-3: Guidelines for Multi-use Roads

Aspect/Feature	Guidelines
Surface	• Stable operating surface • Traditional aggregate base or crusher fines • Aim for conditions suitable for year-round use
Running surface width (traveled way and shoulder)	• Typical: 12 to 16 feet (wider around turns).
Longitudinal slope	• Preference for gentle to moderate grades (3 to 8%, or less) • Minimize flat (<1%) and steep (>12%) grades
Cross slope	• Optimal: 2-3% • Maximum: 5% • Preference for out-sloped roads (with banking around turns)
Vertical clearance	• Minimum: 14 feet (for logging trucks and heavy equipment)
Horizontal clearance	N/A
Erosion and Sediment Control	Roads within the permanent road network will ultimately need to be upgraded to meet current standards defined by the California Forest Practice Rules and requirements of the North Coast Regional Water Quality Control Board and Department of Fish and Wildlife. These standards focus on proper drainage structures and stream crossings and designing roads to be hydraulically disconnected from streams.

References:

Weaver, Weppner, and Hagans (2014); California Forest Practice Rules (2017)

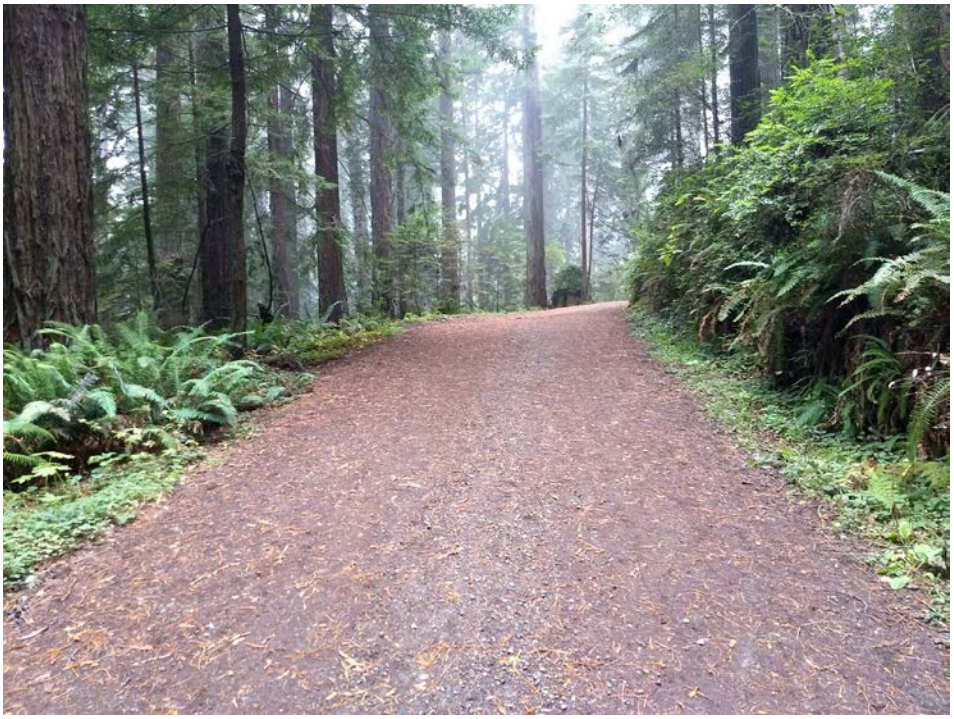

Photo 2-1: Example of Multi-use Road

Table 2-4: Guidelines for Multi-use Trails

Aspect/Feature	Guidelines
Surface	• Native soil or crusher fines (or equivalent). • Occasional obstacles are to be expected. • Aim for conditions suitable for year-round use.
Tread width	• Minimum: 3-4 feet • Aim for wider trails in high-use areas. • Incorporate wide spots where there are long stretches of narrow trail to allow passing.
Longitudinal slope	• Flatter grades (<5%) are less strenuous, which have the advantage of being more accessible to a wider range of users. • Steeper grades (>5%) are more strenuous, which can be a desired featured for users seeking a more challenging recreational experience. • The target maximum slope is 12%, although short segments may need to be steeper due to the natural topography. • Switchbacks can be used to reduce slopes, however switchbacks can be vulnerable to short-cutting.
Cross slope	• Optimal: 2-3%
Vertical clearance	• Minimum: 8 feet
Horizontal clearance (beyond tread)	• Minimum: 1 foot • Optimal: 1-4 feet

References:

Fink (2001); IMBA (2004); RCAA (2011); IMBA/BLM (2018)

Photo 2-2: Example of Multi-use Trail

Table 2-5: Guidelines for Hiking Trails

Aspect/Feature	Guidelines
Surface	• Typically native soil. • Aim for conditions suitable for year-round use.
Tread width	• Minimum: 2 feet • Typical: 3-4 feet • Incorporate wide spots where there are long stretches of narrow trail to allow passing.
Longitudinal slope	• Flatter grades (<5%) are less strenuous, which have the advantage of being more accessible to a wider range of users. • Steeper grades (>5%) are more strenuous, which can be a desired featured for users seeking a more challenging recreational experience. • The target maximum slope is 12%, although short segments may need to be steeper due to the natural topography. • Switchbacks can be used to reduce slopes, however switchbacks can be vulnerable to short-cutting. • In rare situations, steps may be warranted due to steep slopes.
Cross slope	• Optimal: 2-3%
Vertical clearance	• Minimum: 8 feet
Horizontal clearance (beyond tread)	• Minimum: 1 foot • Optimal: 1-4 feet

References:

RCAA (2011)

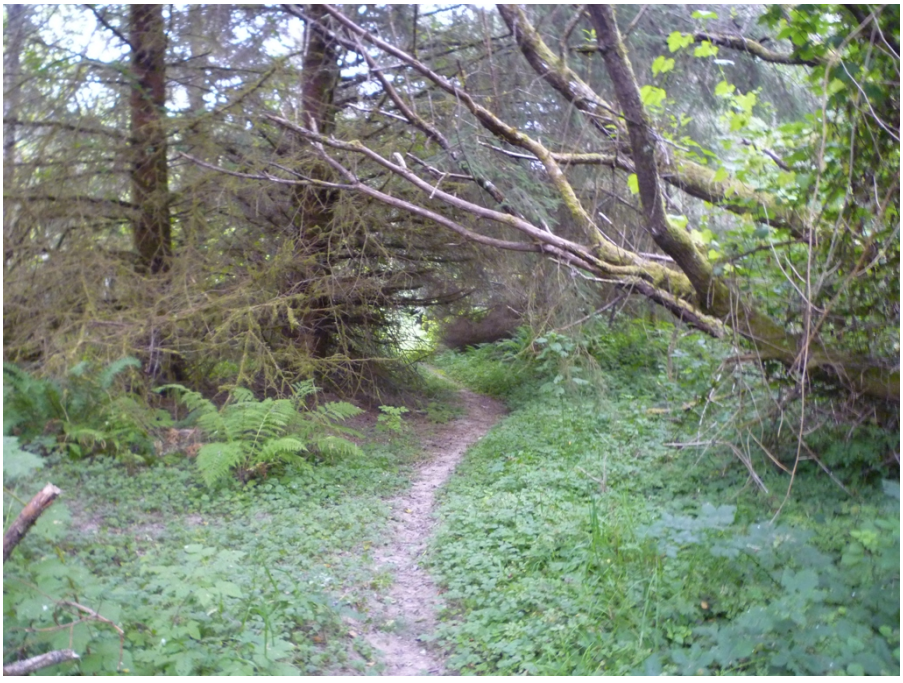

Photo 2-3: Example of Hiking Trail

Table 2-6: Guidelines for Mountain Bike Trails

Aspect/Feature	Guidelines
Surface	• Native soil or crusher fines (or equivalent). • Obstacles and challenges are desirable. • Aim for conditions suitable for year-round use.
Tread width	• Minimum: 2 feet • Typical: 3-4 feet • Single-track trails are the most desirable.
Longitudinal slope	• The target maximum slope is 15%, although short segments up to 30% may be needed due to the natural topography. • Steep and rugged terrain is attractive to experienced bikers.
Cross slope	• Optimal: 2-3% • Insloped turns need higher cross slope and appropriate drainage design • Grade reversals can help maintain trail flow, add variability, control speeds, and enhance drainage.
Vertical clearance	• Minimum: 8 feet
Horizontal clearance (beyond tread)	• 1-4 feet
Technical features	• Technical features may include berms, rollers, jumps, tabletops, drop-offs, and rock gardens.

References:
IMBA (2004); RCAA (2011); IMBA/BLM (2018); Architrail

Photo 2-4: Example of Mountain Bike Trail

2.8.3 Accessibility

Accessibility refers to the elements of a facility that allow for access and use by people with disabilities. Humboldt County is subject to Title II (State and Local Government Programs and Services) of the Americans with Disabilities Act (ADA), a federal civil rights law passed in 1990. Title II of the ADA prohibits discrimination against people with disabilities and requires state and local governments to provide equal access for all community members to participate in or benefit from government-sponsored programs and services. The trail system for the McKay Community Forest will be developed to provide equal access for people with disabilities.

Examples of accessible trails are listed at www.wheelingcalscoast.org/. Examples in Humboldt County include the Headwaters Elk River Trail (Bureau of Land Management) and the Gould Grove Nature Look Trail and Fleishman Grove Trail along Avenue of the Giants (California State Parks).

State Building Code

Trails and access points fall within the category of **outdoor developed areas**. Section 11B-246 of the California Building Code (CBC) provides accessibility standards for outdoor developed areas. Section 11B-246.4 specifies that day use areas, vista points, and similar areas shall be accessible. Section 11B-246.6 contains requirements for parking lots. Section 11B-246.7 applies to trails and paths. According to Section 11B-246.7, "trails, paths and nature walk areas, or portions of them, shall be constructed with gradients permitting at least partial use by wheelchair occupants." The CBC recognizes that not all facilities can be made compliant by providing the following exception (Section 11B-246.1):

> *Where the enforcing agency finds that, in specific areas, the natural environment would be materially damaged by compliance with these regulations, such areas shall be subject to these regulations only to the extent that such material damage would not occur.*

The CBC does not provide specific technical requirements for interpreting the standards for outdoor developed areas. Other sections of the CBC which may be applicable to Community Forest facilities include Section 11B-206 (accessible routes), Section 11B-208 (parking spaces), and Section 11B-216 (signs).

Federal Standards and Guidelines

Local governments are subject to the 2010 Americans with Disabilities Act Standards for Accessible Design (2010 ADA Standards) for construction and alteration of facilities, established by the Department of Justice. The 2010 ADA Standards include the regulations at 28 CFR 35.151 and the 2004 Accessibility Guidelines codified at 36 CFR 1191, appendices B and D. The 2004 Accessibility Guidelines were developed by the Architectural and Transportation Barriers Compliance Board (Access Board). These standards apply primarily to the built environment and have limited applicability to facilities within the natural environment such as trails.

In 2013, the Access Board published the final Accessibility Guidelines for Outdoor Developed Areas (AGODA) to establish accessibility provisions for outdoor developed areas constructed by federal agencies or by non-federal entities on federal land. These federal guidelines for outdoor developed areas are not legal requirements on land administered by state or local governments. However, this Trail Plan adopts and applies the 2013 AGODA as the technical guidelines to support accessible trail design in the McKay Community Forest. This action is consistent with California State Parks (2015) and other counties such as Marin County (2016) which incorporate the AGODA guidelines into their trail standards.

Overview of Technical Requirements

The 2013 AGODA contain technical requirements for outdoor constructed features, viewing areas, outdoor recreation access routes, and trails. **Outdoor constructed features** (Section 1011) include picnic tables, trash and recycling receptacles, and benches. **Viewing areas** (Section 1015) are outdoor spaces developed for viewing a landscape, wildlife, or other points of interest. **Outdoor recreation access routes** (Section 1016) are paths connecting accessible elements, spaces, and facilities within camping and picnic facilities and at viewing areas and trailheads. **Trails** (Section 1017) are defined as pedestrian routes developed primarily for a recreational experience. Technical requirements for accessible trails are summarized in Table 2-7.

Exceptions

Section 1019 of the AGODA identifies four conditions which prevent full compliance and warrant exceptions to the accessibility provisions:

1. Compliance is not practicable due to terrain.
2. Compliance cannot be accomplished with prevailing construction practices.
3. Compliance would fundamentally alter the function or purpose of the facility or setting.
4. Compliance is limited or precluded by federal, state, or local law established to preserve threatened or endangered species; the environment; or archaeological, cultural, historical, or other significant natural features.

If full compliance with the technical requirements is not feasible, compliance should be achieved to the extent practicable. Situations where conditions for exceptions exist should be documented in writing.

Approach

Humboldt County will provide accessible trails within the McKay Community Forest to the greatest extent practicable, in conformance with the standards and requirements of CBC Section 11B-246 and AGODA Section 1019. The most substantial challenges for providing accessible trails are expected to be meeting the standards for running slope (due to steep topography), trail surface (due to deterioration from weather and use), and tread obstacles (due to tree roots).

This Trail Plan identifies two categories of accessible trails:

- **Fully accessible trails** meet all the technical standards listed in Table 2-7.

- **Improved access trails** are trails intended to accommodate users with accessibility needs and that meet most, but not all, of the technical standards listed in Table 2-7. These trails are substantially accessible but full compliance with the AGODA technical requirements is not feasible due to topographic or other constraints.

Surfacing

Accessible trails must have a firm and stable surface. "Firm" means resisting deformation by indentations, and "stable" means not permanently affected by weather or normal wear and tear. Trail surfaces developed with native soil material are unlikely to continuously meet the requirement for a firm and stable surface. Therefore, accessible trails will be improved with gravel and crusher fines to provide a firm and stable surface.

Table 2-7: Technical Standards for Accessible Trails (AGODA, Section 1017)

Attribute	Description
Surface (AGODA 1017.2)	Trail surfaces must be firm and stable.
Clear tread width (AGODA 1017.3)	Minimum of 36 inches, with additional clearance at turns.
Passing spaces (AGODA 1017.4)	Passing spaces at intervals of at least 1,000 feet where the tread width is less than 60 inches.
Tread obstacles (AGODA 1017.5)	Tread obstacles such as tree roots and rocks must be less than 2 inches high.
Openings (AGODA 1017.6)	Openings (such as planks on a bridge deck) must be small enough to prevent passage of a sphere more than one-half inch in diameter.
Running slope (AGODA 1017.7.1)	Trails or trail segments of any length can have slopes up to 5%. To accommodate steep terrain, shorter segments can have steeper slopes (up to 12%) with incorporation of resting intervals: Slope — Maximum Length 0% to 5% — No limit 5% to 8.33% — 200 feet 8.33% to 10% — 30 feet 10% to 12% — 10 feet
Cross slope (AGODA 1017.7.2)	Target of 2% or less, up to 5% is allowable.
Resting intervals (AGODA 1017.8)	Where required for steep segments, minimum length of 60 inches. Width shall be a minimum of 36 inches (with appropriate turning space) if adjacent to the trail, or at least as wide as the trail if provided within the trail. Slopes no steeper than 5%.
Protruding objects (AGODA 1017.9)	Constructed elements must comply with various limits for protruding into the trail clear tread width, passing spaces, and resting intervals. This requirement does not apply to natural features.

References:

U.S. Access Board (2013), California State Parks (2015), Marin County (2016)

2.8.4 Sustainable Trails

Sustainable trails support recreational use while preserving the integrity of the landscape and holding their form over time with limited maintenance. Trails are not static but evolve over time due to compaction, displacement, and erosion (Natureshape, 2004). Managing water and people are the primary challenges for sustainable trails. The most enduring trails are well-drained and properly sloped, resist erosion, and blend with the surrounding area (IMBA, 2004). Conformance to design standards and ensuring proper drainage will help prevent widening or formation of multiple treads from visitors trying to avoid water and mud. Concentrating visitor use on well-designed trails helps minimize impacts to the watershed and ecological communities.

This section describes standard practices for planning, locating, designing, constructing, and maintaining sustainable trails.

Drainage

Sustainable trails are achieved by fitting the trail to the landscape and accounting for sufficient drainage. Drainage is a major consideration in trail design and construction. Without proper drainage, erosion from water movement can quickly damage a trail and cause impacts to vegetation and water quality. Problems are more likely to occur in situations where a trail alters natural drainage processes. Trail design must account for both surface and subsurface flow and for conditions that will occur during the wettest period of the year. A fundamental goal for managing drainage is to disperse runoff (an approach captured with the maxim "Slow it, spread it, sink it") and to avoid concentrating runoff volume and increasing flow velocities. However, in certain cases, it may be more appropriate to collect and route runoff in more concentrated flows (e.g., through a properly sized culvert with appropriate energy dissipation).

Hillslopes

Steep hillslopes are commonly encountered when trying to route a trail between two points. The preferred approach is to create **contour trails** which gently traverse a hillslope with gradual grades and allow stormwater to run across the trail rather than flowing down the length of the trail. The standard for constructing contour trails is to follow the **Half Rule**, which specifies that a trail's grade shouldn't exceed half the grade of the side-slope (IMBA, 2004; pg. 63). For example, if the natural slope of the hillside is 20%, the grade of the trail traversing the hillside should be less than 10%; if the natural slope is 6%, the trail grade should be less than 3%. Trails that exceed the Half Rule are called **fall-line trails**, where water is expected to drain down the trail rather than across the trail, and the likelihood of erosion increases significantly.

A common rule-of-thumb is the **10 Percent Average Guideline**, which specifies that the overall average trail grade from one end to the other should be less than 10 percent (IMBA, 2004; pg. 64). Localized segments may exceed 10% (up to 15% to 20% in some cases), but a maximum grade ("**short pitch maximum**") should be determined based on site-specific conditions. Slope stabilization measures may be required in situations with especially steep slopes and terrain challenges.

Elevation gaining techniques on steep slopes include switchbacks, climbing turns, and stairs. A **switchback** is a reverse in direction of the trail grade that includes a level landing. A **climbing turn** is a reverse in direction of the trail grade without a level landing at the turning point. Switchbacks and climbing turns are vulnerable to drainage problems and short-cutting and require careful layout. Stairways are a last-resort option (for hiking trails only).

Grade Reversals

Grade reversals are undulations (dips and rises) within the trail tread intended to catch water at the low point and divert it off the trail to lower ground in small volumes. Grade reversals effectively divide the trail into small sub-drainages and may be warranted as often as every 25 to 50 feet. The starting point for shaping the trail is seeking to accentuate the natural ground slopes. Techniques for implementing grade reversals include knicks and rolling grade dips (IMBA, 2004; pg. 202). **Knicks** are semi-circular wedges of soil five to ten feet in diameter removed from the side of the trail. **Rolling grade dips** (also called drainage dips) combine a dip with a long, gentle ramp (ten to twenty feet from tip to tail). The excavated soils from the dip can be used to create the ramp. Grade reversals are optimally placed to align with naturally occurring drainage features on the hillslope. Some features may need to be reinforced or armored with rock for stability.

Outsloping

Trails should generally have a slight slope toward the downhill edge to help drain water off the trail in thin dispersed sheets. A rule-of-thumb for outsloping a trail is to provide a minimum cross-slope of 2% and maximum of 5%. Special care will be needed for segments of accessible trails (Section 2.9.3) to ensure the maximum cross-slope does not exceed 5%.

Cut and Fill

Two general trail construction techniques for crossing hillslopes are full bench construction and partial bench construction. **Full bench** construction (Figure 2-10) involves excavation into the hillside to remove materials and soil to allow placement of the trail entirely on native, consolidated subsoil. This technique avoids constructing the trail on fill material and provides the best stability and longevity. **Partial bench** construction involves placement of unconsolidated fill material for some portion of the trail bed. Full bench construction techniques are generally preferred, especially for trails crossing steep terrain.

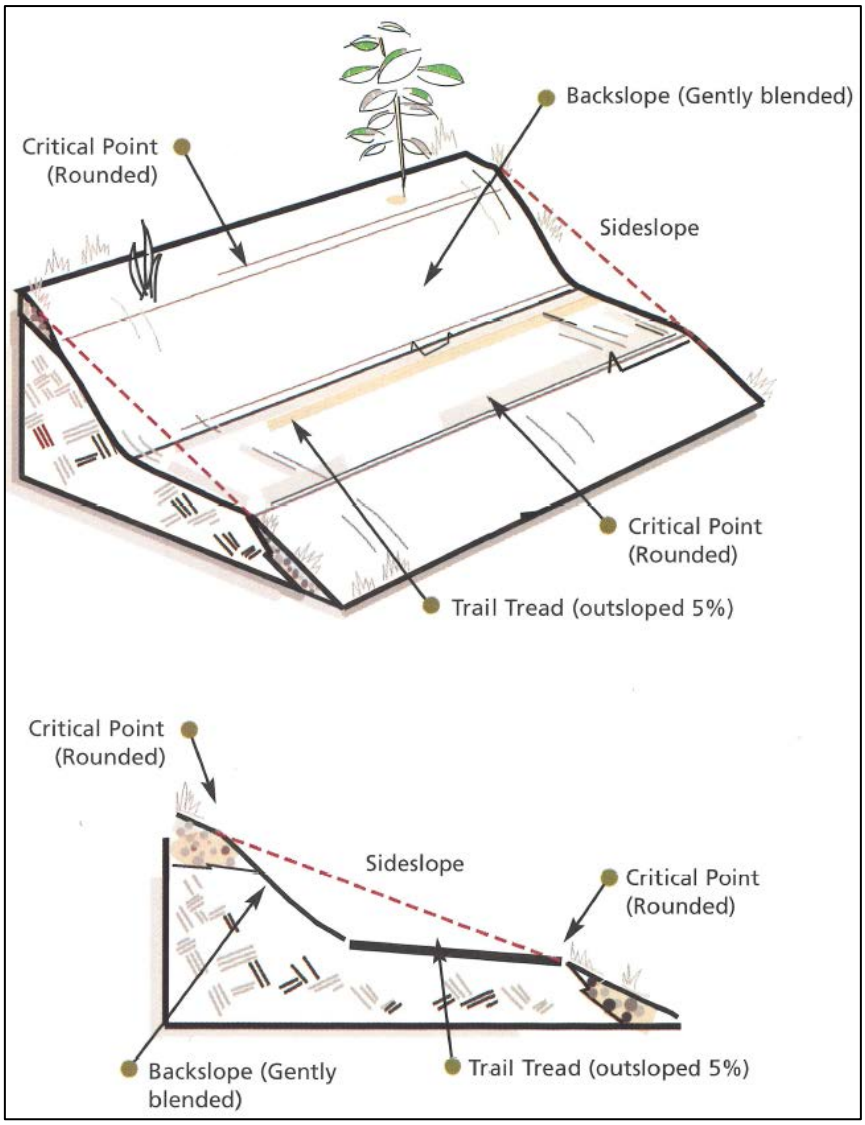

Figure 2-10: Diagram for Full Bench Trail (IMBA, 2004)

Wet Areas

Trails through areas with frequently saturated soils have the potential to cause problems for user access, resource impacts, and maintenance. Trail users will often walk to the side of wet areas to stay on higher ground, thus widening the trail and impacting vegetation. The preferred option is to select trail routes that avoid wet areas. Where avoidance is infeasible, the two basic trail designs for wet areas are constructing directly on the ground and raising the tread with a turnpike, or raising the trail above the ground with a boardwalk. Raised tread trails are normally aligned along the existing high points within the wet area.

Flat Areas

Trails on flat terrain tend to form depressions, pond water, and generate a muddy surface. The trail tread should be slightly higher than the surrounding ground on at least one side to ensure proper drainage. Trails through flat areas can be built by importing four to six inches of aggregate to form an elevated trail bed with drainage swales on each side.

Trail Edges

The ideal condition is for clearly defined edges to encourage users to stay on the established trail surface. The preferred approach is for trail edges to be defined with vegetation and standing trees. For special situations such as protecting sensitive areas or reducing hazards at drop-offs, edge protection using logs or rocks could be provided. However, edge protection with hard features should be used sparingly to avoid impairing drainage or creating trip hazards, and to allow a more natural-looking trail. Edge protection may be useful for providing non-visual tactile warnings or detectable wayfinding for trail users with visual disabilities, although edge protection is not required by the CBC or AGODA for accessible trails.

Erosion Control

Trail planning considers the local topography and geology and determines the route that is least likely to cause erosion, minimizes the amount of soil cutting on slopes, minimizes the amount of maintenance, and provides the best sustainability over the long term. By using the full bench construction technique for trail construction described above, the need for fill material is eliminated. This approach reduces the amount of exposed soil and the potential for erosion.

When constructing trails, care should be taken to only disturb and expose the minimum area necessary. Vegetation material (ferns, grass, forbs, small brush) and forest floor duff (leaves, needles, twigs, humus) will be saved and set to the side of the trail bed. Regardless of trail construction technique utilized, when individual trail segments or portions of segments are completed duff material is spread over any exposed soils, both native soils and imported material. The individual vegetation materials are then replanted to the sides of the trail in select areas that provide soil stabilization and show the most promise for replanting success. By doing this, surface covering and mulching is accomplished while trails are being developed. Mulching is potentially the most cost-effective sediment source control treatment by providing interception of rain drop energy, reduction of surface water flow velocities, and filtration of sediment in surface flows, along with weed suppression and aesthetic benefits.

The spreading of duff and planting of saved vegetation is completed after the area to the sides of the trail bed has been smoothed and graded to facilitate water drainage away from the trail bed and trail tread. Trail beds are then surfaced. By grading the sides of the trail, covering exposed soils with native vegetation and duff material, and surfacing the trail where applicable, erosion during and after trail construction is kept to a minimum.

Renegade Trails and Short-cuts

To be fully sustainable, trails must provide an enjoyable and challenging experience and meet trail users' needs and expectations. A diverse and balanced trail network will help reduce the incentive for people to try to create their own trails (**renegade trails**) without permission. The ordinance governing allowable use will include a provision prohibiting creation of unauthorized trails. Proposals for new trails can be submitted to Public Works for evaluation.

Some trail users are inclined to create or use short-cuts to reduce travel times. Short-cuts are often situated on steep slopes or traverse sensitive areas and are difficult to repair. The potential for short-cuts can be reduced by designing switchbacks and climbing turns such that the two legs of the trail are separated by trees, rocks, or other natural barriers.

Invasive Species Management

Typical invasive species include pampas grass, Scotch broom, Himalayan blackberry, English ivy, and English holly. The primary management technique will be periodic cutting with hand tools. Where advantageous some mechanical equipment may be used for removals along roads and larger trail segments. Prescribed burning may be considered. It is not anticipated that herbicides will be used for vegetation management purposes.

Further Resources

State Parks (1991), Natureshape (1994), Natureshape (2004), IMBA (2004), and USFS (2008) are useful resources for more detailed guidance on trail design and construction.

2.9 Amenities

This section discusses general considerations for design and placement of amenities including signs, restrooms, benches, and trash receptacles. Picnic tables and water spigots are not currently envisioned for the Community Forest.

Planning for amenities seeks to ensure a balance between enhancing the visitor experience, protecting natural resources, and maintaining the visual character of the Community Forest. The general approach is to place a high value on the natural visual character of the forest and to introduce human-made elements only when there is a clear purpose and significant benefit.

2.9.1 Signs

The purpose of the signage system is to enhance safety and enjoyment and help trail users find the experience they're looking for. The signage system is intended to provide necessary information without diminishing the aesthetics of the natural setting. Signs should be clear, consistent, and attractive, and developed to reach a range of audiences including first-time users, repeat users, and special users. Special users include people with decreased visual abilities, children, and people with accessibility needs.

Signs can perform a variety of functions and convey different types of information:

1. Identification signs indicate or designate features such as trailheads, trail segments, and property boundaries.
2. Directional signs (also known as orientation signs) help users confirm where they are and the direction they want to go. Directional signs also serve a safety function by assisting public safety agencies in responding to emergencies. Examples of directional signs include trail maps, trail distance signs, and mile markers.

3. Regulatory signs identify actions that are allowed or not allowed.
4. Safety signs warn users of potential hazards or temporary closures.
5. Interpretive signs provide historical or scientific information and convey messages in order to enhance understanding and appreciation.
6. Trail closure signs warn users that trails are temporarily closed (for example, during timber harvest operations, trail construction, or adverse weather conditions).

A single physical sign can have multiple functions. One general principle is to minimize signage in order to avoid visual clutter and information overload. Too many signs, or overly detailed signs, can result in the signs being ignored. Minimizing signage also reduces maintenance costs. Signs should generally be clustered at trailheads and trail intersections and consolidated where possible. Signs should be constructed of durable materials to withstand weather conditions and vandalism. Sign content should emphasize effective communication with short, easily remembered messages and simple symbols. Regulatory signs should provide a balanced message by identifying the allowable and encouraged activities along with prohibited activities. The County developed a logo (Figure 2-11) to provide a unifying identity element across the signage system.

Figure 2-11: Community Forest Logo

Trailheads should be equipped with trail information kiosks to provide a comprehensive set of information for users initiating their visit to the Community Forest. Kiosks will typically provide the trailhead name, trail map, information on trail type and conditions, distances to destinations, and regulatory and safety information.

Trailhead signs at accessible trails are subject to accessibility standards (AGODA, Section 1017.10), which require the following information:

1. Length of the trail or trail segment;
2. Surface type;
3. Typical and minimum tread width;
4. Typical and maximum running slope; and
5. Typical and maximum cross slope.

This information enables people to make an informed decision about whether to utilize a trail based on its physical characteristics. Trailhead signs at accessible trails shall comply with CBC 11B-703, which contains standards for visual characters (11B-703.5) and pictograms (11B-703.6). Standards for visual characters include finish and contrast, case, style, character proportions, character height, and height from ground. Standards for pictograms include finish and contrast and text descriptors. Examples of accessible trailhead signs are provided below. For trailheads where it is technically infeasible to alter the terrain to create an accessible trail, signs shall be provided identifying the specific barrier (e.g., gradient, width, or surface).

Photo 2-5: Accessible Trailhead Signs

2.9.2 Restrooms

Restrooms are a convenience to visitors and help reduce impacts from dispersed waste disposal. However, restrooms are costly to construct and service and can create odor problems. Permanent restrooms can be plumbed to a sanitary sewer or on-site septic system, or equipped with a subsurface vault that receives periodic pump-outs. Portable restrooms that are pumped out periodically are another option.

2.9.3 Benches

Benches provide visitors the opportunity to rest before continuing their travel along a trail or to enjoy the surroundings, especially at scenic locations. Placement of a bench is generally desirable within the first ½ mile from a trailhead, and then at more extended intervals further away from the trailhead. Benches may be especially desirable for resting after a steep trail section.

Benches on accessible trails are subject to accessibility standards (AGODA Section 1011), which require clear ground space of 30 inches by 48 inches positioned near the bench with one side of the space adjoining the accessible trail. The slope of the clear ground space surface shall not be steeper than 1:48 (2%) in any direction, except if the clear ground surface is other than asphalt, concrete, or boards, then the slope may increase to no steeper than 1:20 (5%) when necessary for drainage.

Community members often have an interest in sponsoring the construction of a bench and placing a plaque on a bench as a memorial to honor a person who is deceased. Public Works will develop a memorial bench dedication policy for review and approval by the Board of Supervisors. The proposed policy will be based on a 10- or 20-year sponsorship of memorial plaques rather than having plaques installed in perpetuity.

2.9.4 Trash Receptacles

Trash receptacles are a convenience to visitors and help reduce litter and dumping. One management challenge is to avoid disposal of household wastes in public trash receptacles, which increases costs. One option is to locate trash receptacles a short distance down the trail rather than at the trailhead, which may discourage people from carrying in large amounts of household waste. However, the location must be readily accessible by maintenance staff. Dog waste bags and dog waste bins will be provided near the most heavily used trails.

Trash receptacles on accessible trails are subject to accessibility standards (AGODA Section 1011), which require clear ground space of 36 inches by 48 inches positioned for a forward approach to the receptacle opening, or 30 inches by 60 inches positioned for a parallel approach. Clear ground space shall be provided as described above (Section 2.10.3) for benches. The operable parts of the receptacles are subject to standards (ADA Standards Section 309.3 and 309.4) which require the operating mechanism to be operable by a single effort with no grasping, pinching, or wrist movement, and operating effort not to exceed five pounds. An exception is allowable if the trash receptacle has hinged lids and controls to keep out large animals, in which case the receptacles shall comply with the standards to the extent practicable.

3 ACCESS POINTS

3.1 Short-term Opportunities

Access points are needed to provide connectivity between neighborhoods, public roads, and the Community Forest trail network. The Trail Plan proposes the creation of six access points to the Community Forest within five years, including three major access points and three minor access points. As discussed in Section 2.4, a major access point provides designated parking and more extensive amenities, while a minor access point utilizes on-street parking and provides less extensive amenities. The six short-term opportunities for access points are listed in Table 3-1 and depicted on Map 3-1.

Access to the Community Forest is highly constrained by adjacent land use. The current property configuration is not amenable to a central gateway. The six proposed access points would enable access to different portions of the Community Forest and encourage dispersed use across the property. Development of the access points at Redwood Fields/North McKay Ranch Subdivision, Manzanita Avenue, and the Mid-McKay Subdivision will depend on the development timelines for the adjacent privately-owned parcels.

Table 3-1: Proposed Access Points (1-5 Years)

Location	Type	Ownership	Parking	Trail Use Options	ADA Accessible
Northridge Road (<1 year)	Major	County-owned	• New parking area constructed in 2018 • Ready for use when connecting trails are constructed	Hiking Biking Equestrian	Yes
Harris Street (1-2 years)	Minor	County-owned	• On-street	Hiking Biking	No
Redwood Acres (1-2 years)	Minor	State-owned/ agreement needed	• Existing parking lot north of Harris Street for biking/hiking • Equestrian parking at stables (with Redwood Acres permission)	Hiking Biking Equestrian	Yes, with future improvements
Redwood Fields & North McKay Ranch Subdivision (2-5 years)	Major	Privately-owned/ easement needed	• Existing parking lot for Redwood Fields • Plan for new parking areas within future subdivision	Hiking Biking (Equestrian TBD)	TBD when developed
Manzanita Avenue (2-3 years)	Minor	Privately-owned/ easement needed	• On-street	Hiking Biking	TBD when developed
Mid-McKay Subdivision (2-5 years)	Major	Privately-owned/ easement needed	• Plan for new parking areas within future subdivision	Hiking Biking (Equestrian TBD)	TBD when developed

TBD = To be determined

3.1.1 Northridge Access Point

New parking and trailhead facilities were constructed near the intersection of Northridge Road and Walnut Drive in 2018, along with the construction of a left-turn pocket on Walnut Drive (Map 3-2). The Northridge Access Point includes 26 standard vehicle parking spaces, four equestrian parking spaces, two accessible parking spaces, stormwater retention area, signage, lockable gate, and a paved area for a future portable restroom (Photo 3-1). Parking for equestrians and standard vehicles were separated to help avoid user conflicts. Funding for the project ($450,000) came from a state Housing-Related Parks Program grant, Eureka Community Planning Area Parkland Dedication (Quimby Act) fees, and Measure Z. The schedule for the project was accelerated in order to meet the expenditure deadline for the state grant.

Northridge Road is a low-volume road serving a neighborhood situated east of Walnut Drive. Public Works conducted neighborhood meetings in March and August 2016 to discuss alternative locations for the parking area. Based on these discussions, the preferred location for the new parking area was at the north end of Northridge Road, in order for the parking area to be situated at the edge of the neighborhood (not directly across from any home) and closer to Walnut Drive for enhanced visibility and easy access by Sheriff's deputies and Parks staff. In order to minimize impacts to the neighborhood from the new access point, the County amended its no-parking ordinance to prohibit parking on the east side of Northridge Road adjacent to the Community Forest (post-mile 0.18 to 0.41). This action will encourage parking within the new parking area rather than dispersed throughout the neighborhood. The vegetation between the parking area and road will be managed to provide a visual buffer while allowing sightlines to aid law enforcement.

The Northridge Access Point is primarily intended to be a jumping-off point for trails within the Community Forest. Initially, amenities will include a portable restroom, bike rack, bench, waste receptacle, and animal waste bag dispenser. A permanent restroom with water and sewer service could be pursued in the future. The County does not plan to install picnic tables or playground equipment in the short term but these features could be considered in the future. A plan for opening and closing the gate will be needed.

Photo 3-1: Northridge Access Point

3.1.2 Harris Street Access Point

Harris Street is a major arterial road aligned in an east-west direction that spans City of Eureka and County of Humboldt jurisdiction. The section of Harris Street adjacent to the Community Forest near Redwood Acres is managed and maintained by Humboldt County Public Works. Harris Street provides access to the main logging road (R-line) that serves the Community Forest and the overall McKay Tract. A public access point to the Community Forest is planned along Harris Street between Redwood Acres and entrance to the R-line road (Map 3-3). However, the R-line road is not intended to provide public access to the Community Forest due to poor sight distances and the potential for conflicts with logging trucks and other vehicles.

A site plan concept is provided in Figure 3-1. On-street parking is available near the Harris Access Point. Additional parking is available in the Redwood Acres parking lot located on the north side of Harris Street. A transit stop is situated approximately 750 feet to the east, on the north side of Harris Street. Amenities will be limited to an informational kiosk, bike rack, and waste receptacle. The County may consider future crosswalk enhancements such as traffic signs, high visibility crosswalk markings, bulb-outs, and/or a new street lights. The cross-slope of Harris Street near the access point ranges from approximately 12 to 15%, and the running slope ranges from 5 to 8%. The terrain within the Community Forest directly south of the sidewalk along Harris Street is a steep ravine. The terrain at this location makes it technically infeasible to provide accessible parking.

Photo 3-2: Harris Street Access Point

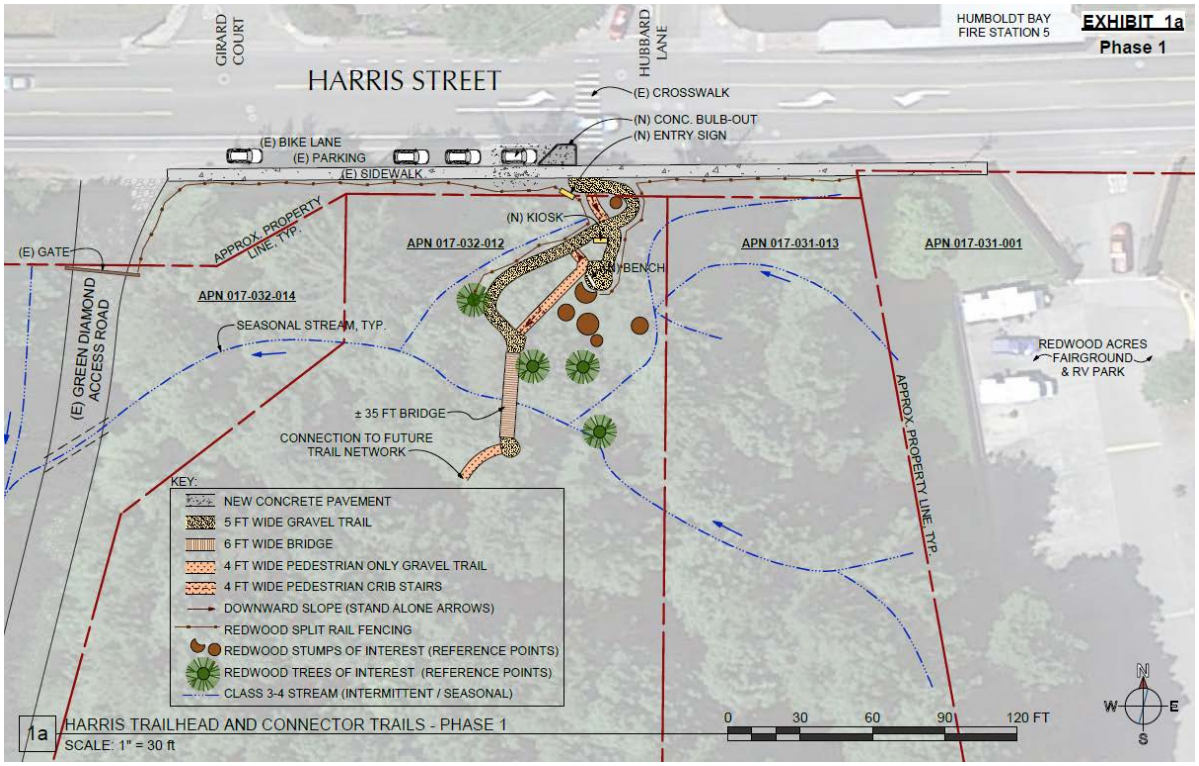

Figure 3-1 Harris Street Site Plan Concept

3.1.3 Redwood Acres

Redwood Acres is a regional event center and community hub managed by the Ninth District Agricultural Association, a state entity. Facilities include buildings and halls, race track, equestrian barns and arenas, RV park, ballpark, community garden, native plant nursery, educational greenhouse, and nature school. Regular events include the Best of Humboldt Fair, Redwood Region Logging Conference, Humboldt Roller Derby, Redwood Acres Raceway, Humboldt Flea Market, Humboldt Artisans Crafts & Music Festival, and many others. Redwood Acres leases facilities for several locally owned food and beverage businesses and serves as an emergency evacuation and response site. Over the last several years, Redwood Acres has worked to support new uses of the property and facilities in order to enhance their service to the community as a destination for social, educational, economic, and recreational opportunities.

The main Redwood Acres site is located south of Harris Street. Limited parking is available within the main site. The primary parking area (Parking Lot A) is situated north of Harris Street. This parking area is surrounded by fencing and has one main access from Harris Street. Portions of the parking area are used by the Department of Motor Vehicles (DMV) for motorcycle and truck driver training. A pedestrian safety project to improve the cross-walk between Parking Lot A and the main site is scheduled for 2019. Redwood Acres management is considering new designated accessible parking on the east side of Redwood Acres near the nature school.

Redwood Acres is surrounded by the McKay Community Forest on three sides (Map 3-4). In 2016, Redwood Acres management expressed support for the concept of integrating Community Forest access within the Redwoods Acres property as an opportunity to offer additional activities and complement their core functions. The details of cooperative management of the access points and associated amenities will need to be defined in a Memorandum of Understanding.

Trailheads

Three trailheads to the Community Forest are proposed at Redwood Acres. Redwood Acres staff would open and close the gates according to posted hours. One trailhead would be located on the east side of Redwood Acres near the Nature School and community garden. This trailhead would be accessible to the general public for use during daylight hours. The second trailhead would be located near the southwest corner of Redwood Acres, inside the horse boarding area, for equestrian use only. The third trailhead would be located on the southeast side near the horse stables. This trailhead would be used by visiting equestrians who obtain a parking permit from Redwood Acres.

Photo 3-3: Redwood Acres (2014)

Parking

Parking for access to the Community Forest is not proposed within the main Redwood Acres site, except for accessible parking at designated parking spaces and equestrian parking at the stables (subject to a special permit from Redwood Acres). In 2016, Redwood Acres management indicated support for allowing public parking for Community Forest visitors in the large parking lot located north of Harris Street, consistent with posted restrictions for DMV use.

3.1.4 Redwood Fields and North McKay Ranch Subdivision

Redwood Fields is a youth sports complex located at the east end of Fern Street in Cutten and managed by the non-profit organization Redwood Field Committee (Map 3-5). Redwood Fields is surrounded by the North McKay Ranch property, which is an approximately 80-acre group of parcels zoned for residential development and owned by Kramer Properties, Inc.

The County proposes to integrate public access to the Community Forest as part of the existing Redwood Fields complex and future subdivision of the North McKay Ranch property. Redwood Fields is a strong candidate for providing Community Forest access because it is currently used

for public recreation and is equipped with a large parking area (although the parking area can reach capacity during soccer and baseball events). The establishment of trails to the Community Forest along with additional parking areas will be incorporated as part of the subdivision process for the McKay Ranch property.

In 2015, the owner of North McKay Ranch submitted an application to the Humboldt County Planning and Building Department for the phased development of a 320-unit, mixed-use subdivision. Additional technical studies and background reports are needed to complete the application and allow further review. In 2017, a registered professional forester submitted a timber harvest plan (THP # 1-17-097 HUM) to the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE issued a letter of conformance in March 2018 and the harvest was implemented in the summer of 2018.

Humboldt County zoning regulations (Section 314-110.1 Parkland Dedication) require that residential subdivisions offer to dedicate land for public park or recreation use, or pay in-lieu fees to provide an appropriate contribution to public parks or recreation, where parkland dedications are required by the Quimby Act (Government Code section 66477) and local community plans. Subdivision of the McKay Ranch property will be subject to the parkland dedication requirements of Section 314-110.1. As discussed in Section 4.5, Public Works determined that encroachment onto the eastern side of the McKay Ranch property is necessary due to property line and topographic constraints in order to create a continuous trail connecting the northern and southern sections of the Community Forest. Conveyance of open space areas to the County to meet parkland dedication requirements as part of the McKay Ranch property subdivision is expected to provide the property necessary to provide this trail connection.

In May 2020, the Humboldt County Planning and Building Department released the draft Environmental Impact Report (DEIR) for the North McKay Ranch Subdivision Project. The DEIR states that the proposed project is anticipated to be developed in nine phases over a period of 20 years. The proposed project consists of the development of 320 dwelling units, 22,000 square feet of commercial uses, approximately 21.73 acres of undeveloped open space (page 2-1). The preliminary site plan (Figure 2-4) depicts six open space areas. Four of these areas (COH 201, COH 202, COH 204, COH 205) are adjacent to the McKay Community Forest. The proposed project would provide 20-foot-wide trail easements and construct trail connections to the McKay Community Forest (page 2-17). The DEIR states, “A temporary trail would be provided from Fern Street, Arbutus Street, or Redwood Street to the McKay Community Forest as part of the project’s first phase, and would be abandoned as each subsequent phase and accompanying trails are developed” (page 2-17). Phase 3 would include trail connections from Arbutus Street/Oakview Drive and Canyon Lane, and Phase 8 or 9 would include a trail connection from Oakview Drive (page 2-17). The DEIR will be revised based on comments received during the public review period to create the final EIR. The General Plan amendment and final EIR for the North McKay Ranch Subdivision Project will be transmitted for review and approval by the Planning Commission and Board of Supervisors. Transfer of the open space areas to the County could occur in 2021.

3.1.5 Manzanita Avenue

Manzanita Avenue is a local road within Cutten near the northwest side of the Community Forest (Map 3-6). The east end of Manzanita Avenue is separated from the Community Forest by private property which is currently undeveloped. Access to the Community Forest should be incorporated as a condition of approval when the adjacent parcels (APN 017-032-003 and 017-032-014) are permitted for subdivision and development.

Photo 3-4: Redwood Fields and North McKay Ranch (2014)

3.1.6 Mid-McKay Subdivision

This approximately 88-acre property (APN 300-011-029) near Walnut Drive and Campton Road is zoned for residential development (Map 3-7). Provisions for public access to the Community Forest will be evaluated after the subdivision process is initiated. The Eureka Community Plan specifies requirements for park dedications as a condition of subdivision.

Photo 3-5: Mid-McKay Subdivision (2014)

3.2 Potential Long-term Opportunities

This section identifies and briefly describes potential long-term access point opportunities. More landowner communications and planning will be needed to pursue these opportunities.

Park Street
Park Street presents an opportunity for limited access to the northern extension of the Phase 1 property (north of Myrtle Avenue). A trail crossing must be established under the Ryan Slough Bridge at Myrtle Avenue before Park Street access could be opened. The next step would be to meet with adjacent residents and property owners and perform a more detailed evaluation of access opportunities and constraints.

Pleasant Avenue
The Wright Refuge (2699 Pleasant Avenue) is owned by Humboldt Area Foundation (HAF) and managed by Humboldt State University Wildlife Department. This 5.85-acre property (APN 016-191-003) has a single-family residence and is adjacent to the Community Forest. The property is located near the intersection of Pleasant Avenue and Wellington Avenue. Discussions between the County and HAF regarding the future of this property have been initiated.

Eggert Road
In June 2020, Humboldt County acquired a trail easement on Green Diamond property extending along the West Fork of Ryan Creek from the southern end of the Community Forest to Eggert Road. A future trail is proposed on Green Diamond roads designated R-13-1, R-13-1-3, and ER-1. The trail would not be developed until a formal access point can be established near Eggert Road. One significant constraint is the narrowness of Eggert Road. Short-term opportunities for an access point near Eggert Road have not been identified. A parcel (Assessor Parcel Number 303-012-022) owned by Green Diamond contiguous to Eggert Road has a land use designation of Open Space, Residential Low Density, and Timberland. If this parcel is subdivided for development in the future, an access point to the Eggert trail easement could likely be incorporated. Any proposed access point along Eggert Road would be subject to a future public review process.

3.3 Locations Not Currently Considered

This section identifies properties that are not currently considered opportunities for access points to the Community Forest. Any future re-consideration of these locations would be subject to a public review process.

Hospice of Humboldt – Timber Falls Court Facility
In 2015 and 2016, the County had initial discussions with Hospice of Humboldt about establishing an access point to the Community Forest at their Timber Falls Court Facility. Initial design concepts were developed and management issues were discussed. In December 2016, Hospice of Humboldt indicated they did not want to continue consideration of an access point on their property. Discussions could be re-initiated if desired by Hospice.

Future Connector Road between Walnut Drive and Harris Street
If a future connector road is pursued between Walnut Drive and Harris Street, development of this road will present new opportunities for establishing access points to the Community Forest.

Ridgewood Drive

Ridgewood Drive is a major collector providing access to Ridgewood Heights from Walnut Drive. Between Avalon Drive and Beechwood Drive, Ridgewood Drive is a two-lane road passing through a residential neighborhood with a posted speed limit of 25 miles per hour. The right-of-way for Ridgewood Drive continues eastward from Beechwood Drive approximately 300 feet to the Phase II portion of the Community Forest. The right-of-way east of Beechwood Drive is a one-lane, dead-end road segment providing access to three residential properties. This location does not appear to be a good candidate for establishing a public access point due to the narrow road width, presence of large trees, direct proximity to residences, and lack of opportunity for off-street parking.

Cedar Street

Cedar Street passes through a residential neighborhood and terminates in a cul-de-sac. This road does not present an immediate opportunity for a public access point because it is not directly adjacent to the Community Forest. This area could be re-evaluated when the Mid-McKay Subdivision process is initiated.

Humboldt Community Services District Facility

The Humboldt Community Services District (HCSD) provides wastewater collection and conveyance services for the unincorporated areas within district boundaries adjacent to Eureka. HCSD has a facility located on Walnut Drive. In 2013, HCSD purchased 22.5 acres of forestland surrounding their facility. In 2014, HCSD management expressed a willingness to have discussions with the County about potential integration with the Community Forest, although no commitments were made. The next step would be to resume discussions between the County and HCSD. This location is a not a high priority because the Northridge Access Point is located in close proximity to the south.

Home Drive/Flekkefjord Drive

The Home Drive/Flekkefjord area is directly adjacent to the Community Forest. This area could be evaluated for potential future access points. Acquisition of an easement or additional property would likely be needed. Any proposed access point along would be subject to a future public review process.

Winship Middle School / Glen Paul School

Winship School is part of the Eureka City School District. Glen Paul School is administered by the Humboldt County Office of Education. The Winship and Glen Paul school campus is not a good candidate for a designated public access point to the Community Forest due to the potential for conflicts with school operations and parking demand and concerns about safety for students and staff.

Myrtle Avenue

Myrtle Avenue does not present an opportunity for establishing a public access point due to the travel speeds of vehicles on the road and the proximity to curves with limited sight distance.

4 TRAIL NETWORK

4.1 Trail Planning Units

The Community Forest was divided into seven trail planning units based on logical boundaries such as streams, ridges, or roads (Map 4-1). Connections between the units are typically limited to one or two connection points due to topographic and property boundary constraints. Trail unit names are intended to be concise, descriptive, and easy to remember. Trail names could be changed in the future if better names are identified to make them even easier to locate and use.

The Trail Plan proposes approximately 31 miles of total trails including multi-use roads, multi-use trails, hiking trails, and mountain bike trails (Map 4-2 and Table 4-1). The proposed trail network emphasizes multi-use trails with selected incorporation of hiking trails and mountain bike based on site-specific conditions. Redwood Acres and Northridge will provide both equestrian access and accessible trails. A detailed inventory of the proposed trail system is provided in Attachment 1.

Table 4-1: Trail Planning Units

Name	Total Trail Miles	Area (Acres)
Redwood Acres	3.0	79
Park Street	0.7	30
North McKay	2.0	105
Mid-McKay	5.0	144
South McKay	9.9	479
Northridge	3.5	113
Henderson Gulch	4.8	249
	Subtotal: 28.9	1,198
Eggert Connector Trail	2.1	n/a
	Total: 31.0	

4.2 Redwood Acres

The Redwood Acres trail unit will provide approximately three miles of trails (Map 4-3 through 4-5). The level of use is expected to be heavy due to the access at Harris Street and Redwood Acres. Equestrian access will be available at the Redwood Acres west and south gates. Approximately 0.5 miles of fully accessible trails would be provided starting at the Redwood Acres east gate. Trails will lead down to Lower Ryan Creek and pass through mature redwood-dominated stands and remnant logging railroad features. Corridors for PG&E's power line and natural gas distribution line pass through this trail unit. PG&E is addressing a sinkhole along the natural gas distribution line caused by impaired drainage. The safety of this location will need to be ensured before the adjacent trail segment is open to the public. This trail unit provides connections to the Park Street and North McKay trail units.

4.3 Park Street

The Park Street trail unit will serve as a connector trail from Myrtletown to the north side of the Community Forest (Map 4-6). The majority of the trail will occupy the prism of a former logging

railroad. The trail will provide views of wetlands and agricultural land along Humboldt Bay. An approximately 200-foot retaining wall will be required to extend the trail under the Ryan Slough bridge on Myrtle Avenue (Turner, 2016). A conceptual design for the retaining wall is provided in Figure 4-1. Additional work is needed to confirm the trail's compatibility with the PG&E natural gas transmission line which passes through the trail unit. As discussed in Section 3.3, no access is planned from Myrtle Avenue. Further planning and landowner outreach is needed to develop the connection point at Park Street. The Park Street connector trail will not be developed until the Redwood Acres trail unit is nearing completion.

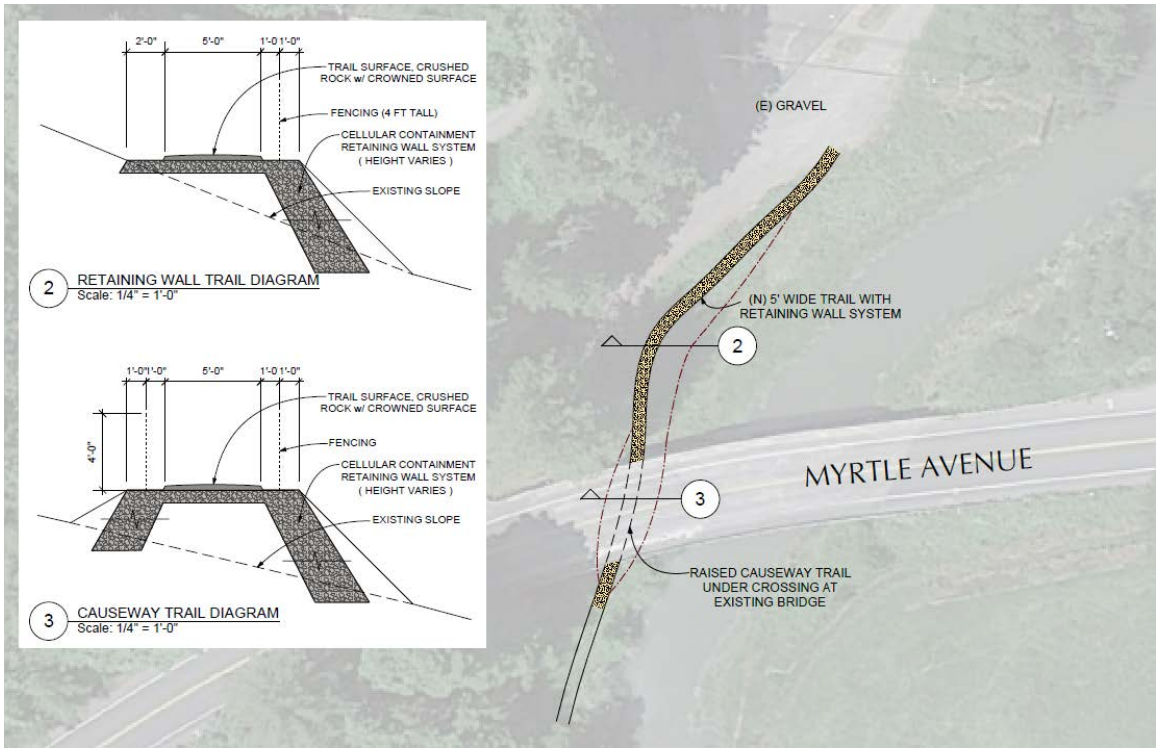

Figure 4-1 Park Street Undercrossing Conceptual Design

4.4 North McKay

The North McKay trail unit provides the connection from the more narrow and constrained northern portion of the Community Forest to the wider and more expansive southern portion (Map 4-7). Heading south from Redwood Acres, the main trail in this unit occupies an existing logging road at the bottom of the Ryan Creek valley. To avoid conflicts with the private inholding, a new trail traversing the hillside east of Redwood Fields is proposed. Due to topographic constraints, an encroachment onto the east side of the McKay Ranch subdivision is necessary (Map 4-8). Trail construction will need to avoid damaging the water line to the inholding residence.

4.5 Mid-McKay

The Mid-McKay trail unit provides over four miles of trails including multi-use roads, multi-use trails, and a mountain biking trail (Map 4-9). This trail unit is "landlocked" and does not have immediately adjacent access points. The trail unit will be accessed from the north through the North McKay trail unit or from the south through the Northridge and South McKay trail units. This trail unit will provide a more remote and wild experience. This trail will feature 1.7 miles of mountain bike trails.

4.6 South McKay

The South McKay trail unit is the largest trail unit with approximately 9.9 miles of total trails (Map 4-10). The trails will include maintained logging roads, former logging roads converted to trails, and new trail segments. This trail unit features a trail along the west side of Ryan Creek and a trail along a ridge top. These parallel creek and ridge trails will be connected with three connector trails. This trail unit will be accessed from the north through the Mid-McKay trail unit and the Henderson Gulch trail unit.

4.7 Henderson Gulch

The Henderson Gulch trail unit is situated within the Phase II expansion area (Map 4-10). This trail unit will connect the Northridge and South McKay trail units with approximately 4.8 miles of total trails. This trail unit will be accessed primarily from the Northridge access point.

4.8 Northridge

The Northridge trail unit features a convenient parking area constructed in 2018 along Northridge Road (Map 4-11). Approximately 3.5 miles of trails in this trail unit will provide connectivity to the Mid-McKay and Henderson Gulch trail units. This trail unit will feature approximately 1.0 miles of fully accessible trails and approximately 0.7 miles of improved access trails.

4.9 Accessible Trails

The McKay Community Forest will provide fully accessible trails and improved access trails at the Northridge access point (Map 4-12), and fully accessible trails at the east side of Redwood Acres (Map 4-13). Additional accessible trails may be possible in the future near Redwood Fields when the McKay Ranch subdivision is completed.

4.10 Eggert Connector Trail

The County owns an easement for a 2.1-mile trail on Green Diamond property that would connect the southern end of the Community Forest with Eggert Road (Map 4-14).

4.11 Bridges

Bridges are necessary for crossing waterways and ravines. A total of 12 bridges are planned as part of the road and trail network. The bridges are summarized on Table 4-2 and shown on Map 4-15. More detailed information is provided in Attachment 1.

Table 4-2: Bridges

Name	Waterbody	Span	Service
Harris Trail Bridge	Unnamed ephemeral stream (ravine)	20 feet	Bike and pedestrian
Ryan Ravine Bridge	Unnamed ephemeral stream (ravine)	25 feet	Bike, pedestrian, equestrian
R-4 Bridge	Ryan Creek	90 feet	Large vehicles and equipment only (not for public use)
Mid-McKay MBT Bridge	Unnamed ephemeral stream	15 feet	Bike and pedestrian
Lower Henderson Gulch Bridge	Henderson Gulch	75-90 feet	Bike, pedestrian, equestrian, light vehicles
Lower Bob Hill Gulch Bridge	Bob Hill Gulch	45 feet	Bike, pedestrian, equestrian, light vehicles
Upper Bob Hill Gulch Bridge	Bob Hill Gulch	20 feet	Bike, pedestrian, equestrian
West Fork Henderson Gulch	West Fork of Henderson Gulch	15 feet	Bike, pedestrian, equestrian
Upper Henderson Gulch Bridge	Henderson Gulch	20 feet	Bike, pedestrian, equestrian
South McKay Creek Trail Bridge #2	Unnamed ephemeral stream (ravine)	30-35 feet	Bike, pedestrian, equestrian
South McKay Creek Trail Bridge #1	Unnamed ephemeral stream (ravine)	25-30 feet	Bike, pedestrian, equestrian
R-7.5 Bridge	Ryan Creek	90 feet	Large vehicles and equipment only (not for public use)

Bridges are expensive structures to build and require expertise to design and construct. The major elements of a bridge include the deck, railing, beams, abutments, and piers (if necessary). A common bridge design for recreational trails is a wood deck with wood, fiberglass, steel, or aluminum beams. Other common bridge designs include pre-cast concrete (for spans up to 30 feet) and steel railcars (standard lengths are 45, 60, and 90 feet). Abutments support the ends of the bridge and must be placed on stable ground. Abutments are typically block structures (sills) made with concrete, plastic composite, or wood timbers. All bridges within the Community Forest can span their respective channels without piers.

Considerations for selecting a specific bridge design include span, loading, durability (service life), aesthetics, cost, and site access for delivery and placement of heavy or over-sized materials. Bridge construction costs are expected to range from approximately $25,000 to $75,000 per bridge. Preliminary design recommendations are provided in Turner (2016).

Photo 4-1: Wood Bridge, Arcata Community Forest

Photo 4-2: Fiberglass Bridge, Redwood National Park

Photo 4-3: Railcar Bridge, Arcata Ridge Trail

4.12 Bike Skills Park

RCMBA proposes to collaborate with the County to plan, develop, operate, and maintain a Bike Skills Park near the Northridge access point (Figure 4-2). Facilities would include a pump track, skills area, kids zone, and three sets of flow trails. The pump track would provide a continuous loop with rollers, berms, and other features that allow riders to gain momentum without pedaling by "pumping" the bike with up and down movements. The skills area would provide features developed with dirt or wood to help riders practice bike handling, balancing, and jumping. The kids zone would provide small-scale features with a focus on safety and skill development. The flow trails would have a concentration of technical features with a range of difficulty levels. These facilities would provide opportunities for riders, especially youth, to learn and practice skills and then apply those skills on the trails within the Community Forest. Additional information is contained in Attachment 2.

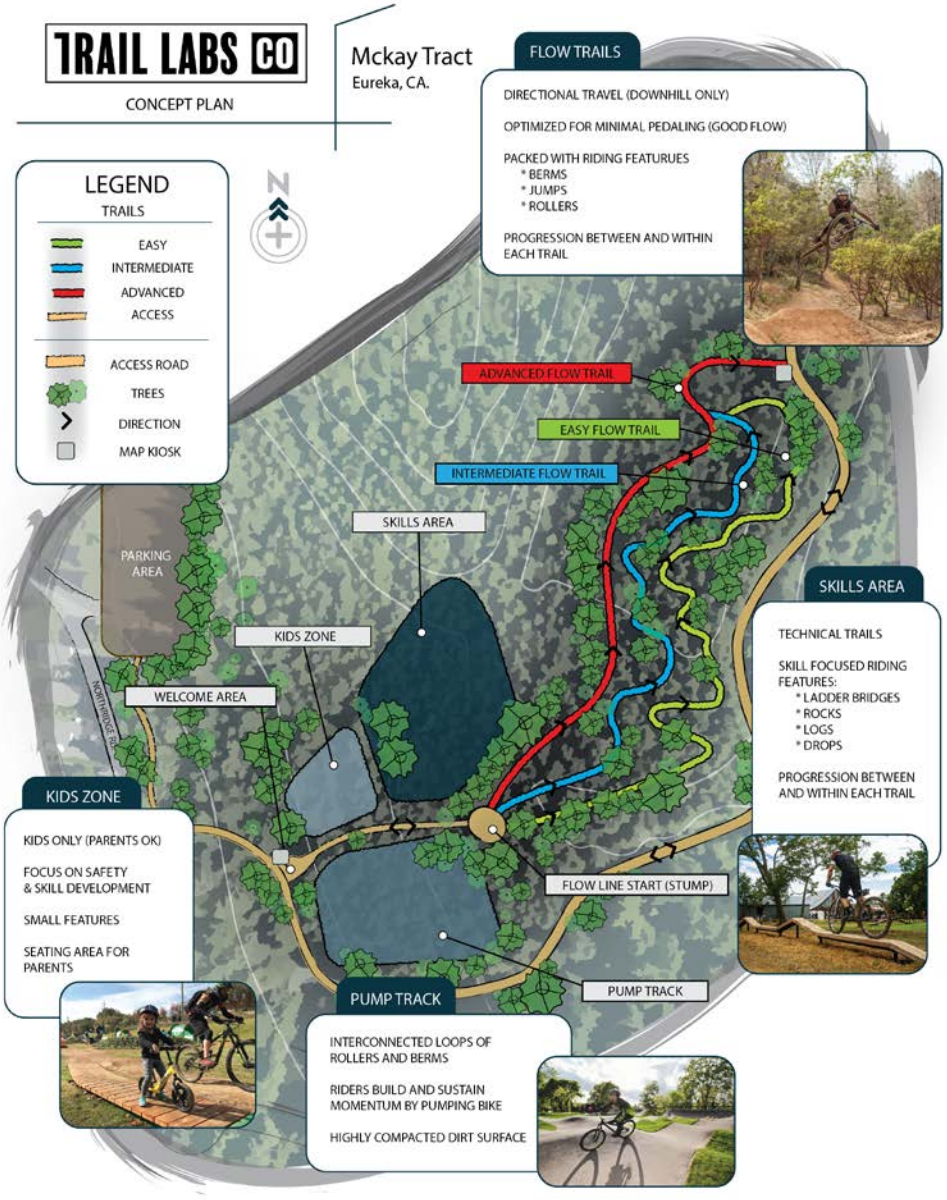

Figure 4-2: RCMBA Bike Skills Park Conceptual Design

5 IMPLEMENTATION

5.1 Trail Construction

Trails will be constructed by California Conservation Corps (CCCs), volunteers, County Parks staff, and contractors. Certain work activities can be performed by CCCs and volunteers with hand tools working under supervision, while some types of work require the use of heavy equipment or more technical expertise. Humboldt County is fortunate to have the Volunteer Trail Stewards program which supports local agencies with trail building and maintenance. The Volunteer Trail Stewards have a strong track record of organizing dedicated and skilled volunteers for fun and productive work. In February 2020, the Board of Supervisors approved a Memorandum of Understanding with the Volunteer Trail Stewards to guide the development and maintenance of trails including within the McKay Community Forest.

Trails can be constructed with hand work, motorized equipment, or a combination of both. Typical construction activities include vegetation clearing, removing stumps and roots, grading and surface preparation, forming the trailbed, placing and compacting the trail surface, forming drainage features, and re-vegetation. Hand tools for trail-building include Pulaskis (two-side tool with axe and hoe), McLeods (two-side tool with rake and hoe), pry bars, shovels, chainsaws, loppers, machetes, hand saws, and griphoists. Safety training is essential, especially with swinging tools. Common motorized equipment for trail-building includes vibrating plate compactors, walk-behind earthmovers, mini-dozers, mini-excavators, and backhoes. Imported material can be transported in wheelbarrows, motorized carriers, or dump trucks.

Hand work allows trails to be built with a light touch and nuanced shaping and sculpting. Trail construction with volunteers provides the additional benefit of fostering a connection between the community and the trail. Motorized equipment is faster but more expensive. Light-touch construction with motorized equipment is possible with a skilled operator. In some situations motorized equipment is the only option due to the amount of grading and earth-moving required.

Photo 5-1: Volunteer Trail Builders

Trails will be developed in a logical sequence that prioritizes trail units with immediate access points or that can easily be connected to access points with continuous trail segments. Trail building will be coordinated with any short-term road upgrades.

The first trail units to be constructed are Northridge and Redwood Acres, followed by Mid-McKay and South McKay. Completion of the trail units may depend on securing funding for constructing any bridges within the units. Construction of the North McKay trail unit will be deferred until the trail encroachment onto the McKay Ranch subdivision is formalized. Construction of the Park Street trail unit will not occur until there is additional planning for suitable access at Park Street, PG&E addresses the sinkhole along their gas distribution line, and the trail undercrossing for Myrtle Avenue is designed and permitted.

Funding is needed for materials, tools, equipment, signs, servicing portable restrooms, waste disposal, and staff time to perform operation and maintenance and coordinate volunteers. Bridges will be a major expense. The CCC's have state funding through 2020 for labor and tools to assist with trail building. Public Works will seek additional funding to support construction of bridges. Potential funding sources include the donations through the McKay Community Forest Fund, parkland dedications fees, state grants, and timber harvest revenues.

5.2 Management

Management functions include planning, coordination, budgeting, contracting, grant administration, communications, and project development. Public Works will aim to consult with the McKay Community Forest Advisory Group at least twice per calendar year.

5.3 Operation and Maintenance

Trails in the Community Forest will require operation and maintenance to keep them in a safe and usable condition. Operation and maintenance will be performed by the Parks division of Public Works. Priorities for operation and maintenance include correcting unsafe conditions, correcting any problems causing damage, and maintaining trails to design standards. The preferred approach is to have the personnel and resources necessary to perform regular inspections to be able to detect and fix problems when they're small, before they grow into bigger problems.

Operations include opening and closing gates, waste disposal, and implementing temporary measures (warnings and closures) during timber harvest operations. Maintenance encompasses a range of routine and non-routine tasks, including:

- Trail surface maintenance. The center of the trail may become compacted with use over time, resulting in a U-shaped tread that traps water. Loose material can collect on the outer edge of the trail, forming a berm that traps water (IMBA 2004, pg. 201). A periodic maintenance activity is filling and grading depressions in the trail tread, removing edge berms, and re-reconditioning drainage features such as drainage dips. Maintaining the surface of accessible trails will be a priority.

- Erosion control. Work will be needed to manage hillslope runoff coming on to the trail system and to implement various slope stabilization measures.

- Vegetation control. Clearing fallen branches, limbs, and trees, especially after storms.

- Responding to vandalism, repairing short-cuts, and decommissioning renegade trails.

Public Works will evaluate the option of developing an adopt-a-trail program, where individuals or organizations could provide volunteer work and/or funding and receive an acknowledgement sign or other form of recognition.

5.4 Patrols and Enforcement

County Parks staff, law enforcement, and the public all have important roles in promoting appropriate use of the Community Forest and creating a safe and secure environment. County Parks staff will provide a limited amount of baseline patrols and monitoring. The most effective and visible deterrent to inappropriate activities is the presence of people using trails appropriately. This approach has worked successfully on the Hammond Trail in McKinleyville with trail users serving as the "eyes and ears" to deter problems and report promptly when they do occur. Volunteer patrols could be coordinated with the Volunteer Trail Stewards program and the Sheriff's Citizens on Patrol program. A longer-term goal is to secure funding to provide a park ranger position dedicated and trained to enforce rules and regulations within the Community Forest as well as other parks and open space areas.

5.5 Emergency Response

An important consideration for the road and trail network is to provide timely access for emergency response to different locations within the Community Forest. Emergency response could be performed with fire engines, ambulances, light vehicles, all-terrain vehicles, and by foot. As the road and trail network is built, Public Works will prepare a map identifying emergency response routes and specific features such as gates and bridges.

5.6 Action Items

Action items are summarized on Table 5-1:

Table 5-1: Action Items

No.	Subject	Description	Trail Plan Section	Target Completion Date
AI-1	Accessible Trails	Develop information materials on accessible trails for the County website and distribute to local organizations	4.9	Concurrent with opening of trails for public use
AI-2	Accessible Trails	Document the location of natural barriers to fully accessible trails.	2.8.3, 4.9	February 1, 2021
AI-3	Signs	Develop sign templates.	2.9.1	February 1, 2021
AI-4	Staffing needs assessment	Assess staffing needs for trail-building, patrols, maintenance, gate-opening, and other duties	5.1, 5.3, 5.4	February 1, 2021
AI-5	Ordinance	Develop an ordinance with rules and regulations for appropriate use.	2.2	May 1, 2021
AI-6	Redwood Acres MOU	Develop a Memorandum of Understanding with Redwood Acres for access points to the Community Forest	3.1.3	May 1, 2021
AI-7	Emergency access maps	Develop maps showing emergency access routes, including gates and bridges	5.5	May 1, 2021
AI-8	Memorial benches	Develop a memorial bench dedication policy and submit to the Board of Supervisors for approval.	2.9.3	June 30, 2021
AI-9	Adopt-a-trail program	Explore the feasibility of an adopt-a-trail program.	5.3	June 30, 2021
AI-10	Trail Event Guidelines	Develop guidelines for trail-related events.	2.2	June 30, 2021
AI-11	E-bikes	Evaluate which trails are appropriate for e-bikes	2.3, 2.4.2	June 30, 2021
AI-12	Allowable Use	Evaluate each trail segment to determine whether certain uses should be prohibited due to safety or resource impact concerns.	2.4.2	Variable, based on when trails are constructed.
AI-13	Bridge design	Develop specific bridge designs	4.11	Variable, based on timeline for development of specific trails
AI-14	Trail Maps	Develop trail maps in a variety of physical and digital forms.	2.2	N/A

6 RESPONSE TO COMMENTS

A total of 85 comment letters were received on the draft Trail Plan during the comment period (January 30-March 1, 2019). This section summarizes the comments by theme and provides brief responses.

6.1 Support for More Mountain Bike-Specific Trails and a Mountain Bike Skills Park/Pump Track

Over 50 commenters requested additional mountain bike trails. Several commenters indicated that the total amount of proposed mountain bike trails in the draft Trail Plan would not meet the level of interest within the mountain bike community. Several commenters noted that existing "legacy" trails within the Community Forest could be enhanced and incorporated into the formal trail network. Redwood Coast Mountain Bike Association (RCMBA) provided a set of maps depicting additional proposed mountain bike trails within the Community Forest. Several commenters stated that dedicated mountain bike trails would help minimize conflicts with other trail users on multi-use trails. Many commenters offered to provide volunteer assistance with trail-building and upkeep.

Several commenters highlighted the desirable features that make mountain biking trails fun to ride. One commenter (Travis Menne) encouraged designing mountain bike trails to be "narrow, natural, crooked, and unique" rather than straight and uniform to provide a high-quality riding experience that will inspire repeat trips. One commenter (Tom Phillips) expressed the importance of designing trails with an understanding of how they will flow when ridden. Several commenters expressed the importance of including mountain bike riders in the planning and design of mountain bike trails and identified RCMBA as a resource for engaging the pool of local people with trail-building experience.

Several commenters recommended inclusion of a pump track and skills park. One commenter (Jim Lucchesi) stated, "Pump track and skill development areas (jumps!) are the holy grail of trail centers. Pump tracks are the best investment because any skill level can ride them, they don't take up much space, they are a community hub, and people will travel to ride them." Some commenters described the popularity of existing facilities in Redding and Weaverville. RCMBA provided a conceptual design for a skills park/pump track located near the Northridge Road parking area and offered to help the County explore funding options.

Several commenters noted the need in the Humboldt Bay region for trails on flat ground to accommodate riders with a full range of abilities. The existing mountain bike trails within the Arcata Community Forest and the Blue Lake Hatchery Ridge Trail System are primarily limited to intermediate and advance riders due to the steep terrain. One commenter (Tessa Thralls) stated that "beginning mountain bike trails that are accessible for anyone to ride" would bring "a missing piece to our community." One commenter (Sean Robertson), director of the Humboldt Composite High School Mountain Bike Team, endorsed the inclusion of easily accessible trails for beginner to intermediate riders, specifically new youth riders, as well as the pump track. One commenter (Brook Sayre) noted that students at Eureka High School have been limited from participating in the Humboldt Composite High School Mountain Bike Team due to lack of trails in the Eureka area and the McKay Community Forest will provide immediate opportunities to meet this need. One commenter (Chris Johnson) described the value of beginner trails for inspiring new riders and recommended the area near Northridge Road for these trails due to the large areas of relatively flat ground.

Several commenters described the social benefits of providing opportunities for family-friendly activities. One commenter (Eric Lamb) described the importance of mountain biking for his family and noted that "helping to lay the infrastructure for mountain biking helps our youth stay connected to nature in a fun and exciting and healthy way." One commenter (Zach Woodward) noted the lack of nearby mountain bike trails was one of the reasons why he left Eureka.

Several commenters described the economic benefits of expanding the regional trail network to create a destination for tourism and a venue for hosting mountain biking events. Several commenters noted that high-quality trails help retain members of the workforce. One commenter (Gina Bauer) shared the following:

> "As a nurse, I know first-hand of the benefit of outdoor recreational opportunities in both community and individual health. I also see the consequence of our lack of retention of doctors, nurses, and other healthcare workers at our hospital. Having Humboldt County known for its trails and bike park would do far more to attract and retain professionals to our area than what we are currently known for.
>
> "As you may know, last weekend was the first race of the season for the Humboldt Composite High School Mountain Bike Team, which was held in Fort Ord. Approximately 500 people attended the event from all over the north state. Our team placed 1st in Composite, and we had several others place on the podium in their individual events (including 1st place for JV Girls and 2nd Place for Varsity Girls!). We have a great opportunity to host these sorts of events if we have the trail infrastructure in place to accommodate the races. This could result in a huge economic benefit to our local economy. Looking at the transformation of areas such as Oakridge, Oregon, and witnessing what one sleepy old timber town has down to revamp their economy through promotion of mountain biking gives me great hope for Eureka. It is estimated that visitors to the area for the purpose of riding mountain bikes brings in approximately $3.5-4 million dollars annually to the local economy. Another example is Nelson, New Zealand, which also happens to be Eureka's "Sister City." In a February 2018 study entitled "Nelson Mountain Biking Economic Study," the authors estimate that mountain biking generates $15.5 (NZD) toward the GDP. While Nelson has more in the way of public lands, we share a similar topography and general environment, and I think they set a great example of what we could achieve through mountain biking tourism and support."

One commenter (Garit Mathews) shared the following:

> "I can tell you from my own experience that we have high school students, doctors, lawyers, mechanics, foresters engineers, professors and entire families that mountain bike several times a week to stay healthy and enjoy our beautiful natural resources. With the acquisition of the McKay [Community Forest], Humboldt County has a great opportunity to provide healthy outdoor activities in our community; continue to grow eco-tourism; and subsequently add to the local economy. I travel with my bike to ride trail systems in other communities and I know that our community would see great economic and social benefits from more outdoor recreational opportunities for tourists and locals alike.
>
> "If you look to cities such as Bend in Oregon or Bellingham in Washington, you can see the tremendous economic opportunity associated with mountain bike tourism. These cities are nationally and internationally recognized as destinations for challenging and beautiful mountain bike trails. Given our location on the coast and the unique redwood forest habitat, the city of Eureka has HUGE potential to become a similar destination for mountain bike tourism."

One commenter (Larry Strattner) encouraged thoughtful route selection, design, and maintenance and offered advice on how to lay out trails to avoid short-cutting. Several commenters encouraged inclusion of trails with technical features for advance riders. One commenter (Darius Damonte) recommended optional lines for beginner and advanced riders on the same trail. One commentor (Jim Lucchesi) recommended designing trail loops that would allow mountain bike riders to ride uphill on multi-use trails and downhill on single-track mountain bike trails. One commenter (Nathan Knudsen), executive director of the Redding Trail Alliance, stated, "We have found that when appropriate, a narrower multi-use trail creates a much more natural and appealing experience for hikers, runners, and riders alike…. A narrower trail is also much more sustainable. Wider treads tend to capture water rather than letting it sheet across, leading to scouring in the middle of the trail." One commenter (Justin Graves) stated, "Progressive trail concepts such as one-way trails, constructed dirt features, pump tracks, skills areas, dirt jumps, advanced and beginner trails are all becoming expected when riders tour to new locations. Our natural beauty combined with state-of-the-art trail design can turn our county into a thriving eco-tourism center."

One commenter (Bruce Cann) encouraged the Trail Plan to allow flexibility for making adjustments in the field to account for conditions on the ground during trail-building. The commenter encouraged inclusion of turnouts and resting areas for the benefit of equestrians and designing switchbacks to be wide and level. The commenter suggested a hiking trail connection between NT-02 and SM-07 and a hiking trail down-slope from RA-02. The commenter recommended that trails generally extend directly away from trailheads to avoid short-cutting. The commenter noted that maintaining the designated wheelchair-accessible trails will be a challenge.

One commenter (Joe Wagenbrenner) expressed opposition to allowing e-bikes due to concerns about e-bike breakdowns putting riders in need of emergency rescue.

Response:

- The additional three miles of trails recommended by RCMBA were incorporated into the Trail Plan (Section 4).
- The pump track/skills park recommended by RCMBA was incorporated into the Trail Plan (Section 4.12).
- A new guiding principle was added to promote trails with diverse features and character that will stimulate fun, discovery, and enjoyment (Section 2.6).
- Collaboration with RCMBA was added to Section 2.2 and Section 5.

6.2 Opposition to an Access Point at Ridgewood Drive

Several residents of Ridgewood Heights (Pete Johnson, Ron Harpham, Sue Ivey, Kathy Lewis, Kailee Lewis, Darlene Johannsen, Sara Beccaria, Susie Smelser, Jon and Myrtice Aronson) expressed opposition to an access point at the east end of Ridgewood Drive due to conflicts with adjacent property and potential impacts on traffic safety and crime.

Response: The commenters presented valid concerns. Ridgewood Drive does not appear to be a good candidate for establishing a public access point. The description for Ridgewood Drive was revised and this location was moved from Section 3.2 (Potential Long-Term Opportunities) to Section 3.3 (Locations Not Currently Considered).

6.3 Opposition to an Access Point at Eggert Road

Several residents along Eggert Road (Lonni Magellan, Jim Yarnall, Bill Peer) expressed opposition to an access point near Eggert Road due to concerns about the narrowness of Eggert Road, inappropriate use, and neighborhood impacts.

Response: The commenters presented valid concerns. The Eggert Road area is not considered an immediate opportunity for a public access point. If a parcel (APN 303-012-022) is subdivided for development in the future, an access point to the Eggert trail easement could likely be incorporated. Any proposed access point along Eggert Road would be subject to a future public review process. The description for the Eggert Road location in Section 3.2 was revised.

6.4 Opposition to Park Street Trail Unit

One commenter (Robert Bronkall) expressed opposition to development of the Park Street trail unit due to concerns about environmental impacts, traffic and parking impacts on Part Street, the safety of trail access on Myrtle Avenue, and potential trespassing on private property. The commenter called for additional neighborhood outreach and elimination of the Park Street trail.

Response: The Trail Plan acknowledges the constraints for an access point at Park Street and the need for further planning and outreach before the Park Street trail unit is developed. Park Street is identified in Section 3.2 as a "potential long-term opportunity." The stated concerns are valid but do not warrant eliminating the Park Street trail unit from future consideration. Any proposed access point along Park Street would be subject to a future public review process.

6.5 Support for a Park Ranger and Concerns about Enforcement

Several commenters expressed concerns about adequate enforcement and impacts on neighbors. Some commentors suggested that Measure Z would be an appropriate funding source for a park ranger position. One commenter (Jim Yarnall) shared the following:

> "The McKay Community Forest Trail Plan is fundamentally flawed and will adversely impact the residents adjacent to and surrounding the proposed trailheads. I am not against the creation of community trails or a community forest but must voice my concerns about the flaws in the current plan.
>
> "My primary objection with the proposed project is that it creates and opens the forest without allocating resources towards necessary personnel. As written, the trail project will be completed and open to the public with no personnel to address the human related issues that WILL occur within the forest. As written the plan only provides for such personnel if funding becomes available at an unspecified later date. The proposed enforcement by volunteers in the interim will not be adequate. Without adequate enforcement, the negative impacts of a minority of forest users will be borne by nearby residents.
>
> "This sequence is flawed. Permanent operational funds must be obtained and committed to this project prior to completion or opening to the public. The presence of a ranger from the outset will set the boundaries of expected behavior for the public. Humboldt County has had numerous experiences mitigating the consequences of activities on public lands without clearly identified and enforced rules. Ultimately when the negative impacts became too great to ignore, a clean-up was required utilizing public funds. Recent examples include the Humboldt Bay South Spit, the Palco Marsh/Hikshari Trail/Devil's Playground, and the Arcata Community Forest. Both the Arcata Community Forest and the Bayfront Trail in

Eureka now have full time dedicated rangers with law enforcement powers to patrol daily and address negative issues.

"The current McKay Plan utilizes citizen volunteers for observation and reporting of negative behavior. The McKay Plan touts the success of this style of enforcement on the Hammond Trail and suggests that such enforcement will be similarly successful in the McKay forest. This ignores obvious differences between the two trail systems. The Hammond Trail is a trail that bisects a developed area. In contrast, the McKay Forest is over 1,000 acres of remote forestland with limited access and observation opportunities. The Arcata Community Forest is a better comparison and requires a dedicated ranger to address negative impacts.

"The proposed plan also fails to provide additional funding for the local fire service which will be called upon to provide services to this area. Wildfires, medical aid calls, and rescues WILL occur with public use of the forest. This property is under CalFire's jurisdiction as State Responsibility Area (SRA) however, Humboldt Bay Fire Department will be called upon to provide initial response. The majority of these responses will not be of a short duration and many will require extended operations, thereby depleting Humboldt Bay Fire's limited resources. Additional funding should be provided to Humboldt Bay Fire to offset this additional workload."

Response: The frequency and magnitude of inappropriate use of public lands varies based on multiple factors, including proximity to downtown areas and major transportation corridors, physical characteristics of the landscape, and tolerance of the managing agency and the public. When the Community Forest is opened for public use, staff from Humboldt County Parks will provide a regular presence. Public Works will maintain records of reported incidents to track trends. If incidents within the Community Forest begin to rise, Public Works will respond within its abilities and work with the Sheriff's Office and the Department of Health and Human Services as appropriate.

The concerns about enforcement and impacts to neighbors will be shared with the Board of Supervisors and County Administrative Office. Public Works will consult with the County Administrative Office and Sheriff's Office regarding the potential for applying for Measure Z funds to increase staffing for patrols and enforcement within the Community Forest.

6.6 Planning for Emergency Response

Humboldt Bay Fire requested the opportunity to be involved with the planning of trail markings and signage. Humboldt Bay Fire also requested consideration of vehicle access for emergency response in planning the road and trail network and endorsed a park ranger position.

Response: Public Works will invite Humboldt Bay Fire to make recommendations on trail markings and signage and will consult with them regarding emergency access routes into the Community Forest.

6.7 Other Comments

Green Diamond expressed a desire to work with the County to limit unauthorized access on their property, especially near the R-4 bridge which is intended for large vehicles and equipment only, not public use. Green Diamond noted the need to correct the boundary of the Conservation Easement on the maps in the Trail Plan.

Response: Public Works agrees to work with Green Diamond to limit unauthorized access on their property.

PG&E commented that the County should ensure that access to PG&E's easement areas is preserved and maintained.

Response: Public Works agrees to work with PG&E to preserve and maintain access to their easement areas.

One commenter (Bruce LeBel) described conflicts with mountain bike riders in the Arcata Community Forest and expressed opposition to dedicated mountain bike trails. The commenter provided suggestions for the content of signs that would help minimize conflicts.

Response: Public Works believes that providing dedicated mountain bike trails will reduce, not increase, user conflicts. Providing signs with clear messaging intended to minimize conflicts among trail users will be a priority.

One commentor (Uri Driscoll), chairman of the Trails Committee of the Northern California Horseman's Association, highlighted the importance of staging areas for equestrian access and the value of adjacent stabling facilities. The commenter supported access at Redwood Acres due to their stabling facilities and space for horse trailer parking. The commenter expressed opposition to a requirement for obtaining a permit or paying fees for equestrian parking at Redwood Acres. In addition, the commenter requested clarification whether non-mountain bike riders would be excluded from mountain bike trails. The commenter requested that if single-use trails are developed, the costs for such trails should be assigned to the specific user groups

Response: This comment will be forwarded to Redwood Acres, which will be responsible for developing policies and requirements for using its facilities for access to the McKay Community Forest. Equestrians will have the option of no-cost parking at Northridge Road, which was designed to accommodate equestrian trailers. For trails designed specifically for hiking or mountain biking, signs will indicate that other uses are not recommended, but other uses will not be prohibited.

One commentor (Mary McCutcheon) recommended a designated place for equestrians to dispose of horse manure at the Northridge parking area. The commentor suggested that people might be interested in using horse manure for their gardens.

Response: The need for a manure disposal area at the Northridge parking area will be monitored.

Redwood Region Audubon Society encouraged interpretation and education materials related to the natural, cultural, and silvicultural history within the McKay Community Forest.

Response: Public Works is open to considering opportunities for providing interpretation and education information. This effort will likely require collaboration with another organization taking the lead role.

One commentor (Chris Johnson), a resident along Northridge Road, expressed appreciation for the new parking lot as a beneficial addition to the neighborhood. One commenter (Tessa Thralls), a resident along Northridge Road, was supportive for the trails in the Northridge area but expressed concern about potential disruption from locating a pump track/skills park near the Northridge neighborhood.

Response: Comments noted.

The Humboldt Trails Council reaffirmed its commitment for supporting Humboldt County with volunteer trail maintenance.

Response: The Volunteer Trail Stewards program is highlighted in Section 5.3 as a major part of the trail development and maintenance program.

7 REFERENCES

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Attachment B

Road and Trail Inventory

McKay Community Forest Road and Trail Inventory

Table 1: Logging Road Segments to be Retained and Upgraded for Permanent Road Network

Road Name	Geodatabase Components	Length (miles)	Trail Planning Unit	Road Type		Description
				Type 1	Type 2	
R-Line (MCF portion only)	R-b	0.23	Redwood Acres	X		Segment R-b is situated between the second and third gate. This segment receives substantial seasonal flooding. Segment R-a (0.31 miles), situated between the first and second gate, is on Green Diamond property.
R-1 (MCF portion only)	R-1b	0.21	Redwood Acres	X		Segment R-1a (0.32 miles) is on Green Diamond property. Road segments R-1a and R-1b provide access to the private inholding property.
R-2	R-2a	0.61	Redwood Acres	X		Southern portion of the R-2 road. Upgrades needed.
R-4	R-4a, R-4c	0.37	North McKay	X		Upgrades needed. The R-4b segment will be decommissioned.
R-4-1a	R-4-1a	0.12	North McKay	X		Upgrades needed
R-4 Bridge	R-4 Bridge	0.05	Mid-McKay	X		Need to restore bridge across Ryan Creek to connect R-4/R-6 and R-Line (likely a 30-foot railcar)
R-6	R-6a	0.07	Mid-McKay	X		
	R-6b1 (MM-4)	0.25	Mid-McKay	X		Ridge-top road.
	R-6b2 (MM-1&MM-2)	0.93	Mid-McKay		X	Situated along left banks of Bob Hill Gulch and Ryan Creek.
	R-6c	0.07	Mid-McKay	X		Haul road leading to Winship School and Cypress Avenue, upgrades needed
R-6-1	R-6-1a (NT-6b)	0.12	Northridge		X	
R-6-3	R-6-3a	0.21	Mid-McKay	X		Spur road for timber harvest, upgrades needed
R-7 (MCF portion only)	R-7b, R-7c, R-7e	2.28	South McKay / Henderson Gulch	X		Primarily ridge-top road, upgrades needed. Segment R-7d (0.64 miles) is on Green Diamond property.
R-7.5 (northern portion)	R-7.5a	0.55	South McKay		X	Adequate setback from streamside area, upgrades needed.
R-7-1	R-7-1a	0.20	South McKay		X	
R-7-1.5 complex	R-7-1.5 R-7-1.5-1 R-7-1.5-1A R-7-1.5-2 R-7-1.5-2A	0.94	South McKay	X		Ridge-top and mid-slope roads, upgrades needed
R-7-2	R-7-2	0.79	Henderson Gulch	X		Primarily ridge-top road, upgrades needed
R-7-2.5	R-7-2.5	0.24	Henderson Gulch	X		Ridge-top road, upgrades needed
R-7-2-1	R-7-2-1	0.45	Henderson Gulch	X		Spur road for timber harvesting operations, upgrades needed, dense brush
R-7-2-3	R-7-2-3	0.38	Henderson Gulch	X		Spur road for timber harvesting operations, upgrades needed

Road Name	Geodatabase Components	Length (miles)	Trail Planning Unit	Road Type		Description
				Type 1	Type 2	
R-7-2-5	R-7-2-5	0.10	Henderson Gulch	X		Primarily ridge top road in good condition. Leads to HCSD water tank.
R-7-4	R-7-4	0.35	South McKay	X		Ridge-top road, upgrades needed
R-13-1 (MCF portion only)	R-13-1b	0.29	South McKay	X		Upgrades needed. Segment R-13-1a (0.07 miles) is on Green Diamond property. In 2017, GDRC installed a temporary railcar bridge over the existing bridge on R-13-1a.
NR complex	NR-1, NR-2, NR-1-1, NR-1-2	1.22	Northridge	X		Upgrades needed
	Total:	11.0		9.2	1.8	

Notes:
Type 1 Roads ("Timber Operations Roads") – Roads will be used for timber harvest operations, forest management, operations, and maintenance. Roads are intended to accommodate periodic use by large trucks and heavy equipment. Roads will be managed in accordance with the Forest Practice Rules.

Type 2 Roads ("Service Roads") – Roads will be used for forest management, operations, and maintenance only (no timber harvest operations). Roads are intended to accommodate periodic use by pick-up trucks and other light vehicles.

Table 2: New Road Segments for Permanent Road Network

Road Name	Geodatabase Components	Length (miles)	Trail Planning Unit	Road Type		Description
				Type 1	Type 2	
R-4-1b	R-4-1b	0.12	North McKay	X		Extension of mid-slope road for timber harvest access
Winship Connector (on school property)	WC	0.29	Mid-McKay	X		Flat terrain, access via easement deed. Needed for timber harvest and emergency response access.
R-6-3	R-6-3b	0.89	Mid-McKay	X		Ridge-top road near break in slope for timber harvest access
	R-6-3c	0.29	Mid-McKay	X		Hillslope road connecting R-6-3 and R-4
Henderson Gulch Connection	HGC	0.06	Mid-McKay / South McKay	X		Construction of new bridge and approaches to connect Mid-McKay and South McKay trail units
R-7.6	R-7.6	0.37	South McKay	X		Hillslope road connecting R-7 and R-7.5
	Total:	2.0		2.0		

Table 3: Historic Road Segments to be Taken Out of Service and Converted to Trails

Road	Geodatabase Components	Length (miles)	Trail Planning Unit	Description
R-2	R-2b (RA-19 and RA-20)	0.33	Redwood Acres	Northern portion of the R-2 road. Inadequate setback from streamside area of Ryan Slough, poor drainage.
R-4	R-4b (NM-7)	0.22	North McKay	Crosses streamside area prone to flooding
R-6	R-6b3 (MM-3)	0.21	Mid McKay	Deep through-cut damaged by motorbike use.
R-7-1	R-7-1b1	0.21	South McKay	Inadequate setback from streamside area of Henderson Gulch
R-7-2-2	R-7-2-2	0.98	Henderson Gulch	Mid-slope road in poor condition, logging access can be provided by R-7-2-1
R-7 (northern portion)	R-7a	0.32	South McKay	Steep, unstable terrain (currently abandoned)
R-7.5 (middle portion)	R-7.5b	0.50	South McKay	Inadequate setback from streamside area of Ryan Creek
R-7.5 (southern portion)	R-7.5c	1.27	South McKay	Decommissioned in 2013
R-7-3	R-7-3	0.54	South McKay	Streamside road, steep terrain
Old R-7	Old R-7	0.27	South McKay	Streamside road, steep terrain (currently abandoned)
R-13-1.1	R-13-1.1	0.18	South McKay	Unnecessary historic road
	Total:	4.9		

Table 4: Historic Road Segments to be Fully Decommissioned

Road Name	Geodatabase Components	Length (miles)	Trail Planning Unit
R-6-1	R-6-1b	0.22	Northridge
R-7-1	R-7-1b2	0.10	
	Total:	0.3	

Table 5: Redwood Acres Trail Planning Unit

No.	Trail Type	Length (miles)	Accessibility	Description
RA-1	Multi-use Trail	0.07	Accessible parking at Harris Street is not practicable.	New trail providing the primary access to the Redwood Acres trail unit from Harris Street. Segment includes new bridge to cross ravine. Connects to RA-12.
RA-2	Multi-use Trail	0.19		New trail ending at power line corridor (junction with RA-3 and RA-10).
RA-3	Multi-use Trail	0.18		New trail construction starting at the power line corridor, crossing wet area, continuing through meadow section and ending on the east side of meadow.
RA-4	Multi-use Trail	0.31	A portion (0.18 miles) can be fully accessible. Slope and width barriers begin 240 feet west of the Redwood Acres south gate.	New trail construction following power line corridor and Redwood Acres property line, ending where segment leaves power line corridor. RA-4 joins RA-5 at southeast corner of Redwood Acres.
RA-5	Multi-use Trail	0.07	Fully Accessible Trail (main segment and west leg, not east leg)	New trail constructed through mature timber, ending at the pedestrian connector trail to Redwood Acres. Segment includes two legs (west and east) connecting to RA-13.
RA-6	Multi-use Trail	0.14	Prohibitive natural barrier	New trail constructed from power line corridor downhill across the former railroad grade to bottom of hillside. Includes connector to RA-14.
RA-7	Multi-use Road	0.12		Trail coincides with former railroad grade and logging road (R-2) on dry ground and continues to the point where the “shunnel” primitive trail connects with main trail.
RA-8	Multi-use Road	0.18		Trail coincides with former railroad grade in wet conditions and continues to where the logging road (R-2) leaves the former railroad grade. A sinkhole associated with the PG&E natural gas distribution line is being addressed by PG&E. Safe conditions must be ensured before the trail is open to the public.
RA-9	Multi-use Road	0.22		Trail coincides with logging road (R-2), ending at start of relatively steep climb at old skid trail.
RA-10	Multi-use Trail	0.17		Trail coincides with skid trail climbing uphill, ends at connection to main trail
RA-11	Multi-use Trail	0.15		New trail constructed through mature timber stand, ending where steeper slope segment begins.
RA-12	Multi-use Trail	0.06	Prohibitive natural barrier	New trail constructed through mature timber stand on steep slope, ending at the transition point to top of flat ridge. Connects RA-1 and RA-11.
RA-13	Multi-use Trail	0.08	Fully Accessible Trail	New trail from Redwood Acres east gate to power line corridor, where RA-13 connects to RA-6.

RA-14	Hiking Trail	0.09		New trail constructed through the “shunnel” grade, classified as primitive trail
RA-15	Multi-use Road	0.18		Trail on logging road (R-2 and R-Line), ending at second gate.
RA-16	Multi-use Trail	0.15		New trail linking North McKay to Redwood Acres, ending at second gate.
RA-17	Multi-use Trail	0.15	Fully Accessible Trail	New trail loop connecting to RA-13 to provide an accessible trail through a mature second growth forest. Future viewing platform at overlook.
RA-18	Multi-use Trail	0.22		New trail from RA-6 to RA-19. Trail follows former railroad grade that was excavated into hillslope. Segment includes new bridge to cross a ravine.
RA-19	Multi-use Trail	0.22		New trail following former railroad grade on flat ground, some wet areas. Segment ends at the connection to loop and near the bridge crossing of gulley.
RA-20	Multi-use Trail	0.12		New trail following former railroad grade on flat ground, ending at south side of Ryan Slough bridge.
	Total:	3.0		

Table 6: Park Street Trail Planning Unit

No.	Trail Type	Length (miles)	Description
PS-1	Multi-use Trail	0.05	New trail constructed under Ryan Slough bridge, linking to access road near PG&E facility on north side.
PS-2	Multi-use Road	0.18	Trail coincides with existing access road north of Ryan Slough bridge.
PS-3	Multi-use Trail	0.51	On top of former railroad prism, from City of Eureka water facility to Park Street. Trail will be 8 to 10 feet wide for emergency vehicle access.
	Total: 0.7		

Table 7: North McKay Trail Planning Unit

No.	Trail Type	Length (miles)	Description
NM-1	Multi-use Road	0.32	Trail coincides with existing logging/access road (R-1) and starts at connector trails to Redwood Acres Loop, ending at GDRC property boundary and start of uphill segment.
NM-2	Multi-use Road	0.13	Trail coincides with existing logging/access road (R-1), ending where trail alignment leaves road
NM-3	Multi-use Trail	0.08	New trail construction through relatively thick timber with some brush, ending at the McKay Ranch Subdivision property line.
NM-4	Multi-use Trail	0.41	New trail construction through McKay Ranch Subdivision, ending at start of downhill segment.
NM-5	Multi-use Trail	0.32	New trail construction using old skid trail alignment intermittently moving downhill, ending at the

			logging road (R-4) at bottom.
NM-6	Multi-use Road	0.29	Trail on portion of logging road (R-4) to be retained, ending north of the power line easement.
NM-7	Multi-use Trail	0.21	Trail on former logging road (R-4) segment, crosses unnamed creek, ends at Mid McKay Trail.
MC-01	Multi-use Trail	0.23	Connector trail to Manzanita Avenue (outside the Community Forest).

Total: 2.0

Table 8: Mid-McKay Trail Planning Unit

No.	Trail Type	Length (miles)	Description
MM-1	Multi-use Road	0.79	Trail associated with logging road (R-6 and R-4) on flat ground, ending at the connection and crossing to the Northridge trail unit.
MM-2	Multi-use Road	0.30	Trail associated with logging road (R-6) on slightly sloped ground, ending at the start of steep uphill segment.
MM-3	Multi-use Trail	0.22	Trail associated with logging road (R-6) in poor condition through steep segment, ending at top of slope on flat ground.
MM-4	Multi-use Road	0.21	Trail associated with logging road (R-6) for the majority of the length, short section through timber. Segment ends at start of downhill off of flat ground.
MM-5	Multi-use Trail	0.11	New trail construction through open small timber, segment ends at start of steeper sloped ground and the descent to bottom.
MM-6	Multi-use Trail	0.16	New trail construction down steep sloped ground with open timber, includes switchbacks. Segment ends at the bottom of hill at the logging road (R-4).
MM-7	Multi-use Road	0.21	Trail coincides with existing spur logging road (R-6-3a) in good condition through flat ground.
MM-8	Multi-use Road	0.89	New trail associated with new logging road (R-6-3b) through flat ground, ending at MM-5.
MM-9	Mountain Bike Trail	1.04	New trail construction through varying terrain and slope. Trail will follow topography to provide a mostly continuous downhill alignment for mountain bike use.
MM-10	Mountain Bike Trail	0.67	New trail construction through varying terrain and slope. Trail will follow topography to provide a mostly continuous downhill alignment for mountain bike use.
MM-11	Multi-use Road	0.18	New trail associated with new logging road R-6-3c.

Total: 4.8

Table 9: South McKay Trail Planning Unit

No.	Trail Type	Length (miles)	Description
SM-1	Multi-use Road	0.55	Trail follows northern portion of R-7.5 road that will be retained. Flat ground, some wet areas, no crossings. Ends at the start of new trail section to top of ridge.
SM-2	Multi-use Trail	1.77	Trail follows southern portion of R-7.5 which is decommissioned. Ends at junction with road R-13-1.
SM-3	Multi-use Road	0.20	Trail following logging road (R-13-1.1) in good condition on flat ground. This segment ends where logging road changes from gentle to steeper slope.
SM-4	Multi-use Road	0.22	Trail following logging road (R-7) in good condition, segment ends where trail leaves logging road.
SM-5	Multi-use Trail	0.31	New trail following former logging road (Old R-7) l in poor condition with wet areas, several steep sections. Segment ends where trail joins with active logging road (R-7) on ridge line.
SM-6	Multi-use Road	0.36	Trail aligned with logging road (R-7) with some steep sections. Segment ends at the junction with active logging/access road at top of ridge.
SM-7	Multi-use Road	0.73	Trail aligned with active logging road (R-7) along ridge, one short steep section.
SM-8	Multi-use Road	0.79	Trail aligned with active logging road (R-7) along ridge on flat ground, one section adjacent to older stand of timber. Segment ends at the start of steeper ground heading downhill.
SM-9	Multi-use Road	0.18	Trail aligned with logging road (R-7) in poor condition on sloping ground, segment ends at start of abandoned section of road.
SM-10	Multi-use Trail	0.34	New trail with some sections following abandoned section of logging road on steep ground, other sections through open timber. Segment ends at bottom of slope and connection to segment 1.
SM-11	Multi-use Trail	0.41	New trail construction using some old skid trail establishing route to top of ridge from bottom road. Segment ends at SM-1/SM-2 junction.
SM-12	Hiking Trail	0.54	New trail aligned with old logging road (R-7-3) in poor condition on sloped ground. Segment connects the Ryan Creek side and ridge top sections of the South McKay Ridge Trail.
SM-13	Multi-use Trail	0.26	New trail constructed on relatively flat ground. Some areas aligned with old skid trails and logging roads.
SM-14	Multi-use Road	0.48	Trail aligned with existing logging road (R-7-1.5) in good condition on flat ground.
SM-15a	Multi-use Road	0.20	Trail aligned with existing logging road in poor condition, stops at creek crossing. Connects with SM-1.
SM-15b	Multi-use Trail	0.07	Trail on former logging road beyond creek crossing.
SM-16	Multi-use Road	0.29	Spur trail to vista point
SM-17	Multi-use Road	0.06	New trail and road construction on flat ground includes bridge crossing of Henderson Gulch.
SM-18	Mountain Bike	0.68	

	Trail		
SM-19	Mountain Bike Trail	0.36	
SM-20	Mountain Bike Trail	0.75	
SM-21	Multi-use Road	0.37	New trail associated with proposed new logging road (R-7.6).

Total: 9.9

Table 10: Northridge Trail Planning Unit

No.	Trail Type	Length (miles)	Accessibility	Description
NT-1	Multi-use Road	0.63	Fully Accessible Trail	Trail on logging road (NR-1) starting at gate, continuing on flat ground, and ending at the start of steep downhill to Bob Hill Gulch. Meeting running slope standards will be challenging but should be feasible.
NT-2	Multi-use Trail	0.37	Prohibitive natural barrier. Slope barriers begin 240 feet from NT-1 junction.	New trail construction in mostly steep terrain, some sections aligned with old skid trails. Segment ends at bottom of hill at the crossing to Mid-McKay.
NT-3	Multi-use Road	0.17	Fully Accessible Trail	New trail construction with a portion utilizing a former logging road on flat ground. Segment ends at the junction with main trail.
NT-4	Multi-use Trail	0.27	Improved Access Trail	New trail construction with a portion utilizing a former logging road on flat ground. Segment ends at the junction with main trail.
NT-5	Multi-use Trail	0.20	Improved Access Trail	New trail construction with a portion utilizing a former skid trail on flat ground. Segment ends at the junction with main trail.
NT-6a	Hiking Trail	0.40	Prohibitive natural barrier. Slope barriers begin 115 feet from NT-11 junction.	Planned as hiking trail due to steep terrain and limited clearances.
NT-6b	Multi-use Road	0.10	Beyond prohibitive natural barrier.	Segment aligns with R-6-1, predominantly in good condition. Includes the 115-foot crossing to the Mid-McKay trail unit (also known as BG-01, the Bob Hill Gulch bridge crossing).
NT-7	Multi-use Trail	0.20	Fully Accessible Trail	New trail on flat ground through large second growth stand of timber.
NT-8	Multi-use Trail	0.05	Fully Accessible Trail	Segment connects parking area to main Northridge Trail system. New trail construction using some old logging and skid trails on flat ground.

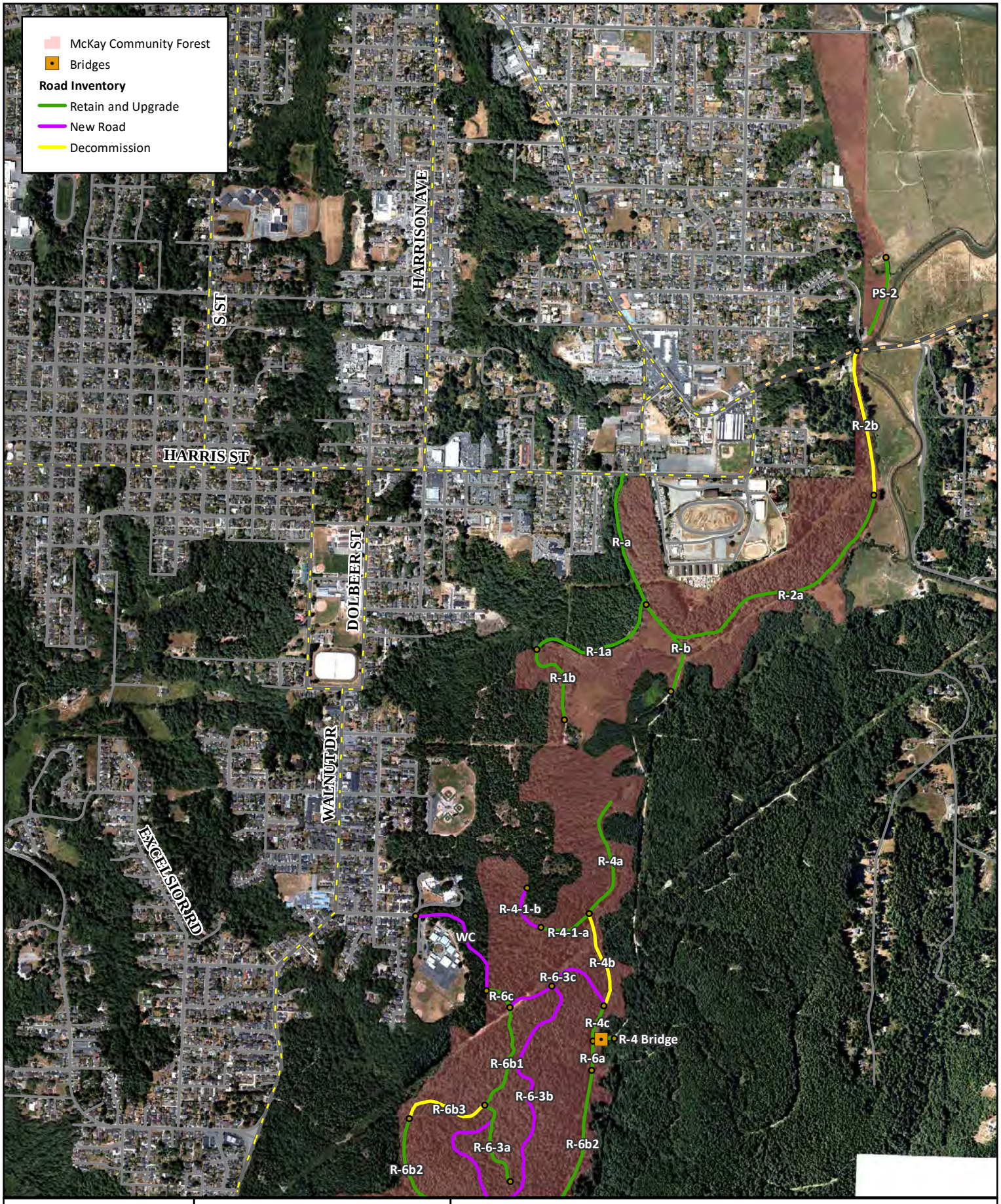
NT-9	Multi-use Trail	0.25	Prohibitive natural barrier. Slope barriers begin 275 feet from trailhead.	From parking area to NT-1. New trail construction in sloped to some steep terrain, some sections aligned with old skid trails. Expect significant equestrian use.
NT-10	Multi-use Trail	0.20	Intended to be lightly developed trail. Not planned for accessibility because alternative accessible trails are nearby	Connects NT-9 and NT-11.
NT-11	Multi-use Road	0.30	Improved Access Trail	Connects NT-1 and NT-6.
NT-12	Mountain Bike Trail	0.33	Single-use trail in steep terrain.	
	Total:	3.46		

Table 11: Henderson Gulch Trail Planning Unit

No.	Trail Type	Length (miles)	Description
HG-1	Multi-use Trail	0.39	New trail construction aligned for a large portion with former logging road (R-7-2-4) on relatively flat ground in heavy brush.
HG-2	Multi-use Trail	0.21	New trail construction through open timber that crosses a low spot in the ridge between logging roads on different sides of ridge.
HG-3	Multi-use Trail	0.28	New trail construction that follows ridgeline and connects to Segment 2 at low spot in ridge.
HG-4	Multi-use Trail	1.55	New trail construction aligned for a large part with a former logging road (R-7-2-2). Includes crossing of Henderson Gulch at former crossing location, connects to the Northridge Trail system.
HG-5	Multi-use Road	0.69	New trail construction following logging road (R-7-2) in good condition on flat ground.
HG-6	Multi-use Road	0.45	New trail construction following logging road (R-7-2-1) in good condition on flat ground in heavy brush. Lower priority due to limited connectivity. Initially projected as out-and-back trail.
HG-7	Mountain Bike Trail	0.60	
HG-8	Mountain Bike Trail	0.52	
	Total:	4.7	

Table 12: New Bridges

No.	Name	Waterbody or Feature	Trail Planning Unit	Trail Segment	Notes
BR-1	Harris Trail Bridge	Unnamed ephemeral stream	Redwood Acres	RA-1	• 20 foot span • Bike, pedestrian, light vehicle
BR-2	Ryan Ravine Bridge	Unnamed ephemeral stream	Redwood Acres	RA-18	• 25 foot span • Bike/pedestrian/equestrian
BR-3	R-4 Bridge	Ryan Creek	Mid-McKay	N/A	• 90 foot span • Logging equipment, emergency vehicles (not for public use) • Connects road R-4 to R-Line • Historical crossing location (railcar bridge removed in 1999)
BR-4	Mid-McKay MBT Bridge	Unnamed ephemeral stream	Mid-McKay	MM-9	• 15 foot span • Bike, pedestrian
BR-5	Lower Henderson Gulch Bridge	Henderson Gulch (near confluence with Ryan Creek)	Connects Mid-McKay and South McKay	SM-17	• 75-90 foot span • Bike, pedestrian, equestrian, light vehicle • Connects road R-6 & R-7-1 (trail segments SM-17 & MM-1)
BR-6	Lower Bob Hill Gulch Bridge	Bob Hill Gulch (upstream of confluence with Henderson Gulch)	Connects Mid-McKay and Northridge	NT-2	• 45 foot span • Bike, pedestrian, equestrian, light vehicle • Connects roads R-6 & R-6-1 (trail segments NT-2/NT-6 & MM-1/MM-2
BR-7	Upper Bob Hill Gulch Bridge	Bob Hill Gulch	Northridge	NT-9	• 20 foot span • Bike, pedestrian, equestrian
BR-8	West Fork Henderson Gulch Bridge	West Fork of Henderson Gulch	Henderson Gulch	HG-4	• 15 foot span • Bike, pedestrian, equestrian
BR-9	Upper Henderson Gulch Bridge	Henderson Gulch	Henderson Gulch	HG-4	• 20 foot span • Bike, pedestrian, equestrian
BR-10	South McKay Creek Trail Bridge #2	Unnamed ephemeral stream	South McKay	SM-2	• 30-35 foot span • Bike, pedestrian, equestrian • 200 feet north of trail junction with SM-12
BR-11	South McKay Creek Trail Bridge #1	Unnamed ephemeral stream	South McKay	SM-2	• 25-30 foot span • Bike, pedestrian, equestrian • 500 feet north of junction with SM-3
BR-12	R-7.5 Bridge	Ryan Creek	South McKay	N/A	• 90 foot span • Logging equipment, emergency vehicles (not for public use)



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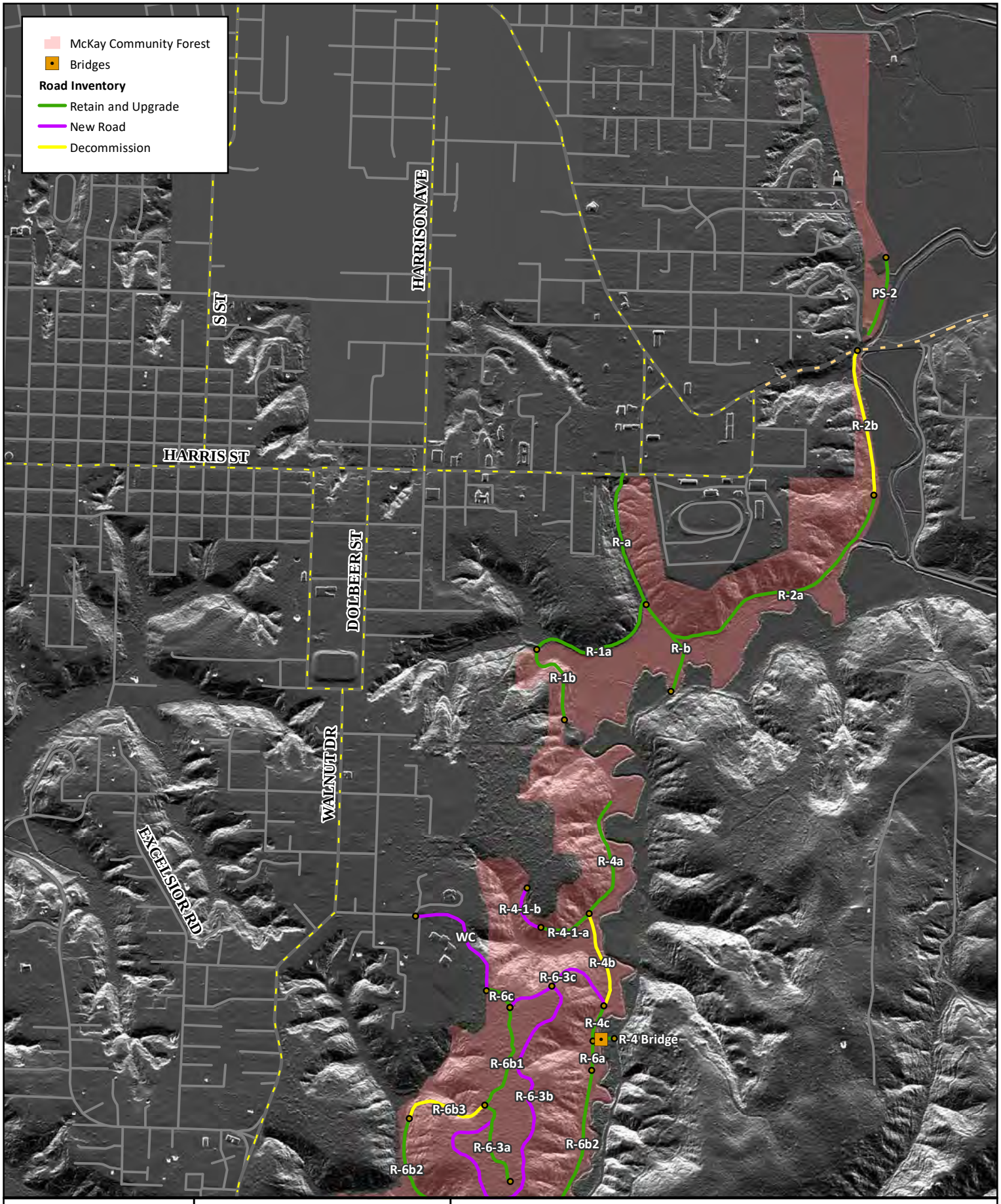
Imagery: Access Geographic 2019
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Proposed Road System - North

Map 1-12
Aerial



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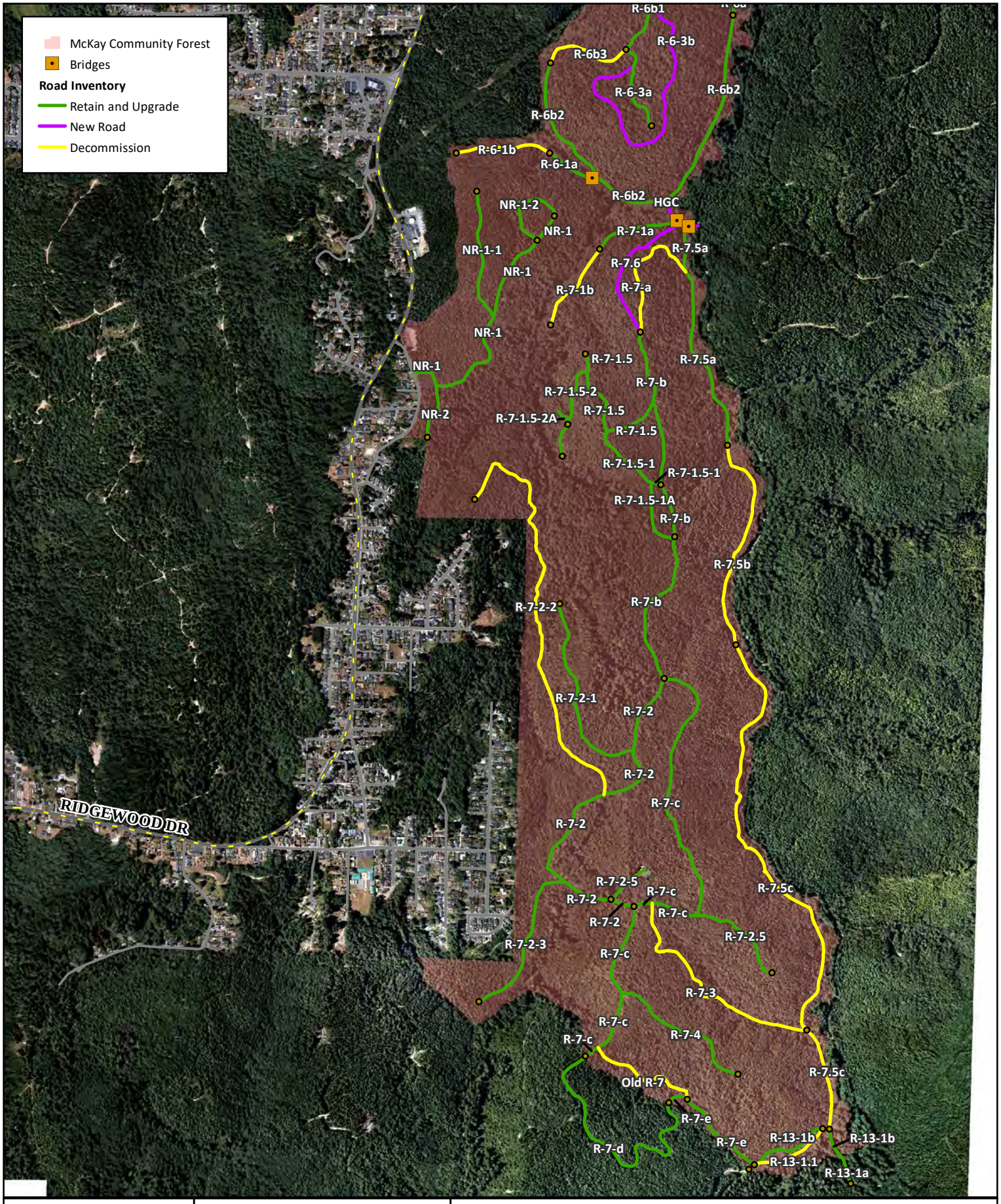
Imagery: LiDAR Hillshade
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Proposed Road System - North

Map 1-12
LiDAR



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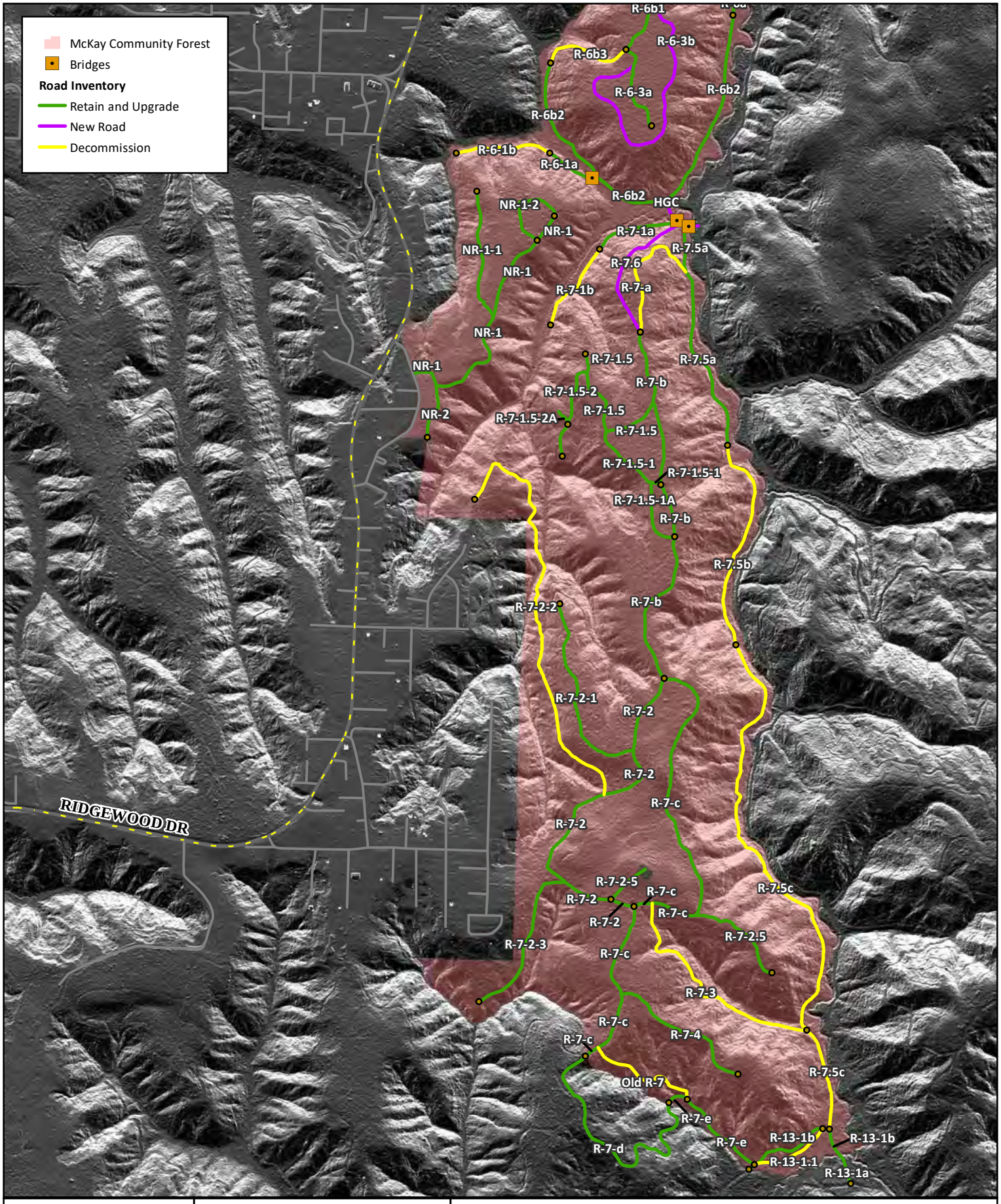
Imagery: Access Geographic 2019
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Proposed Road System - South

Map 1-13
Aerial



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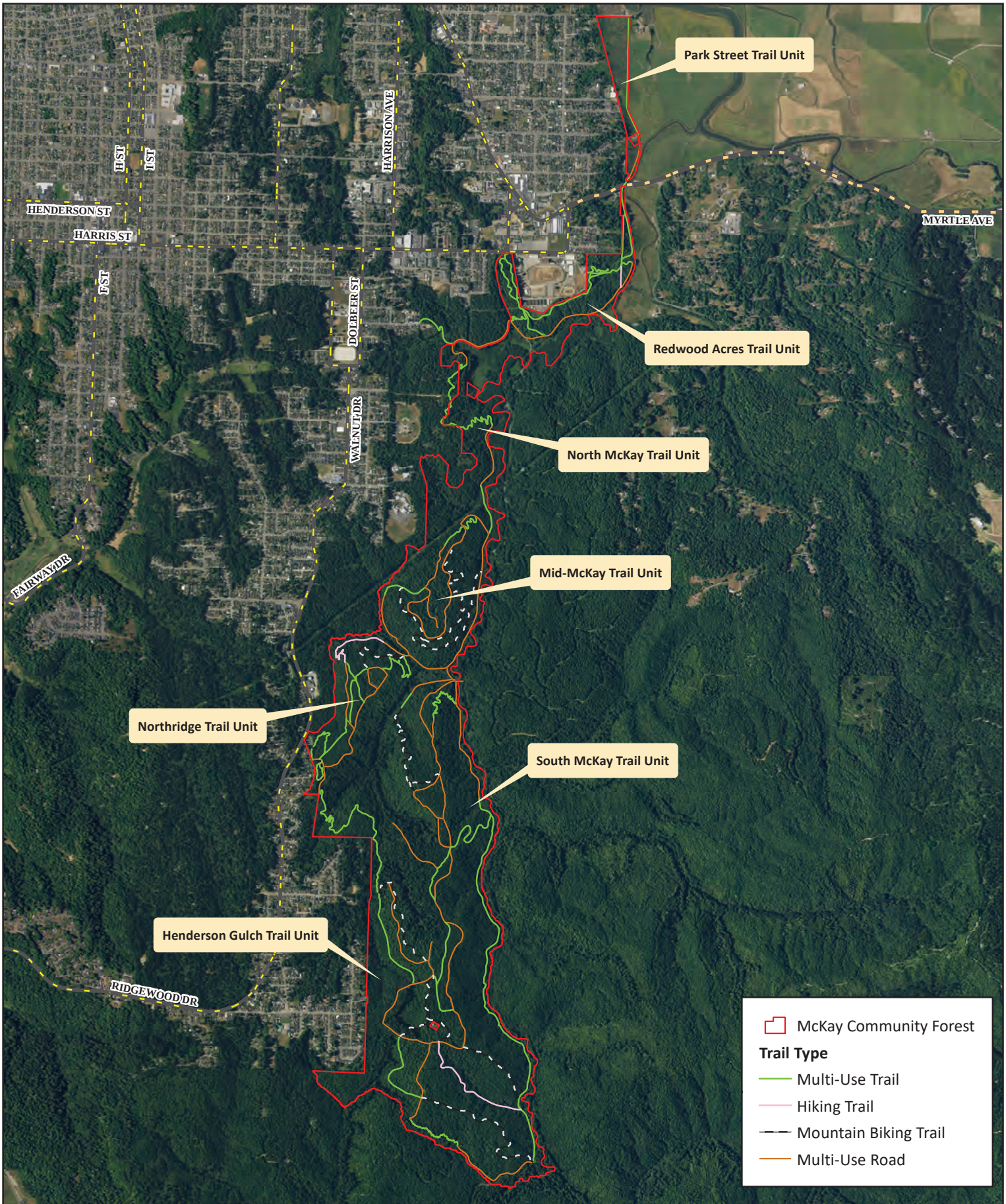
Imagery: LiDAR Hillshade
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Proposed Road System - South

Map 1-13
LiDAR



0 1,500 3,000 Feet

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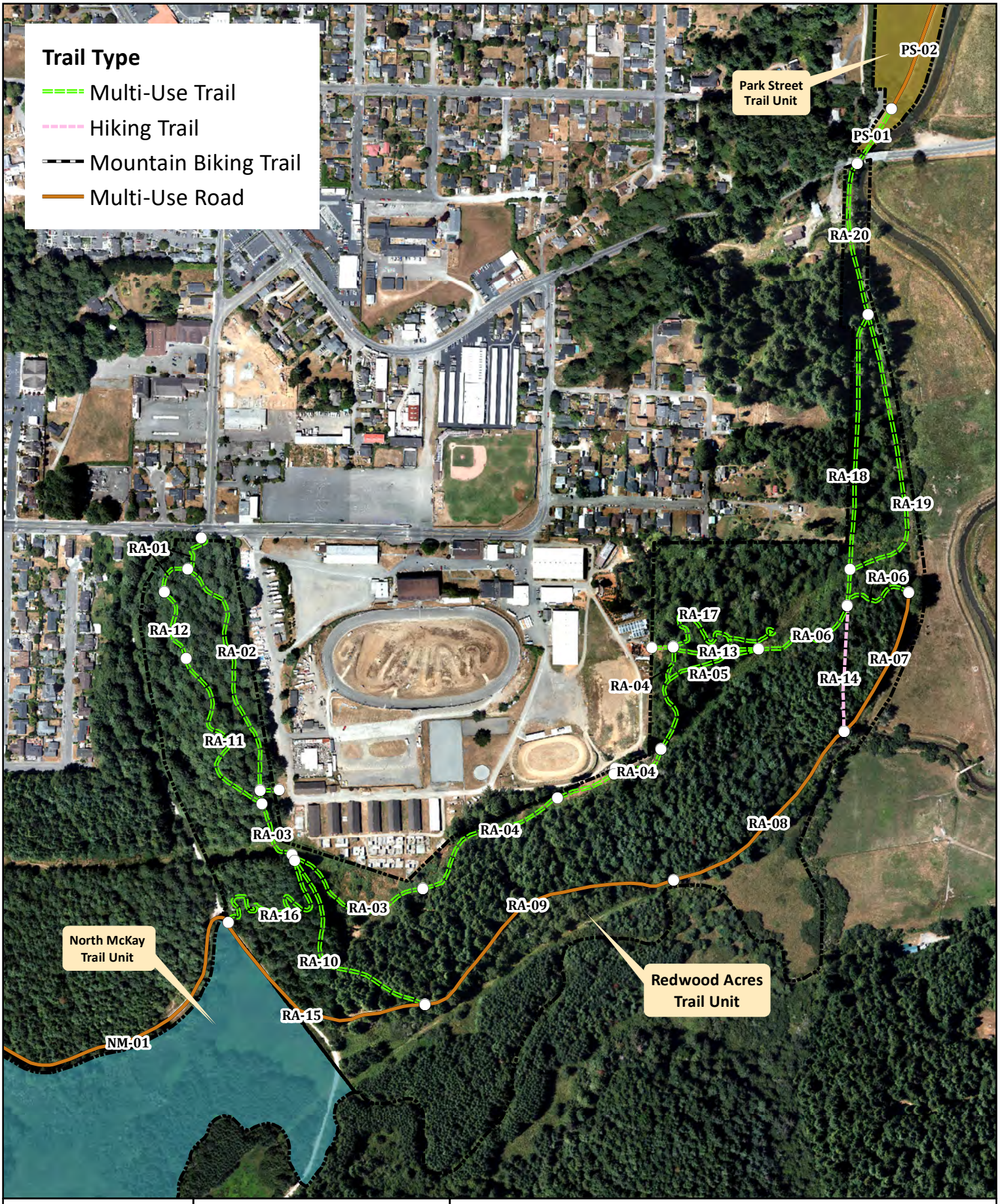
S

Imagery: 2020 NAIP
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Proposed Trail System

Map 4-2



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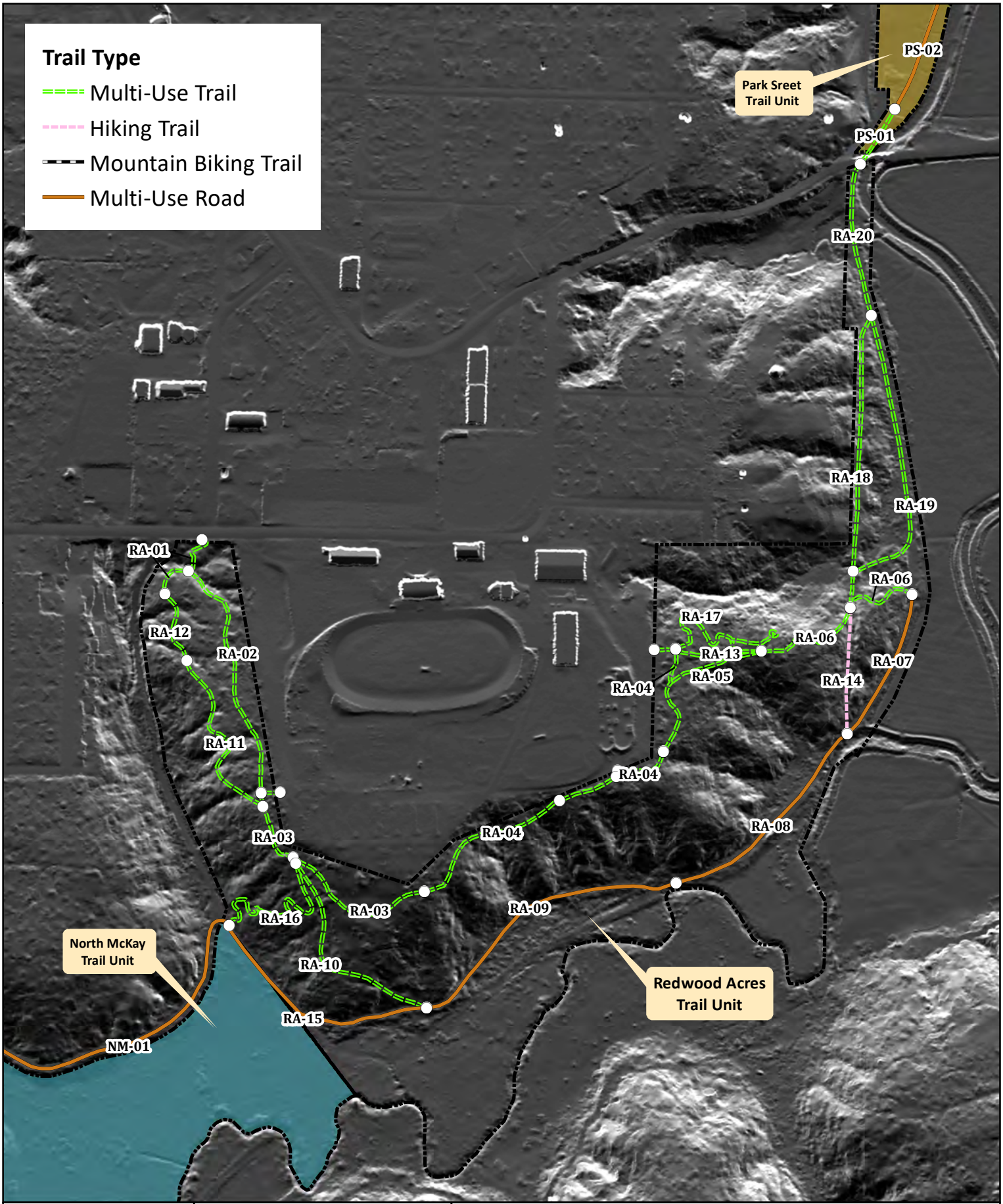
Imagery: Access Geographic 2019
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail

Map 4-3
Aerial



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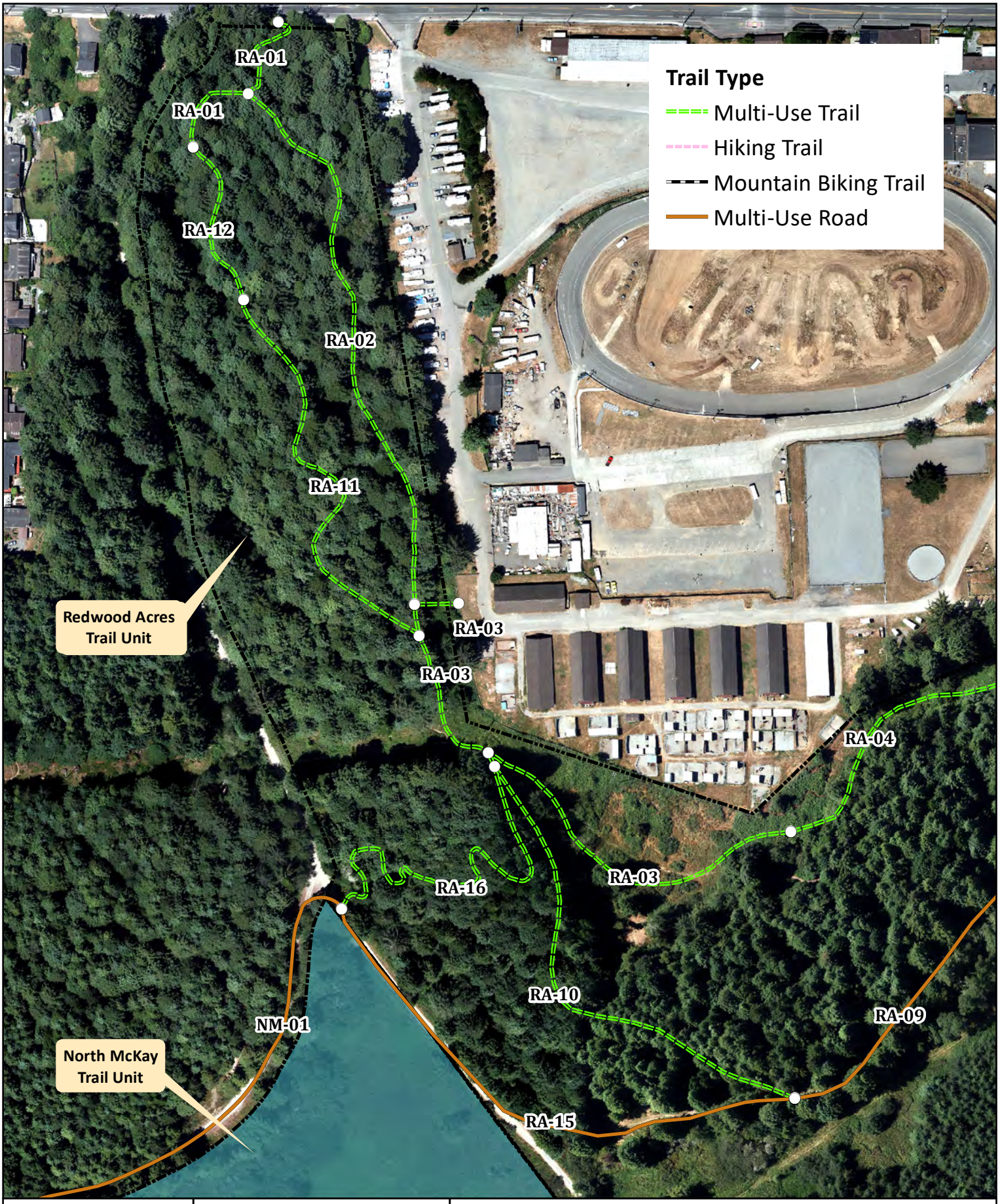
Imagery: LiDAR Hillshade
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail

Map 4-3
LiDAR



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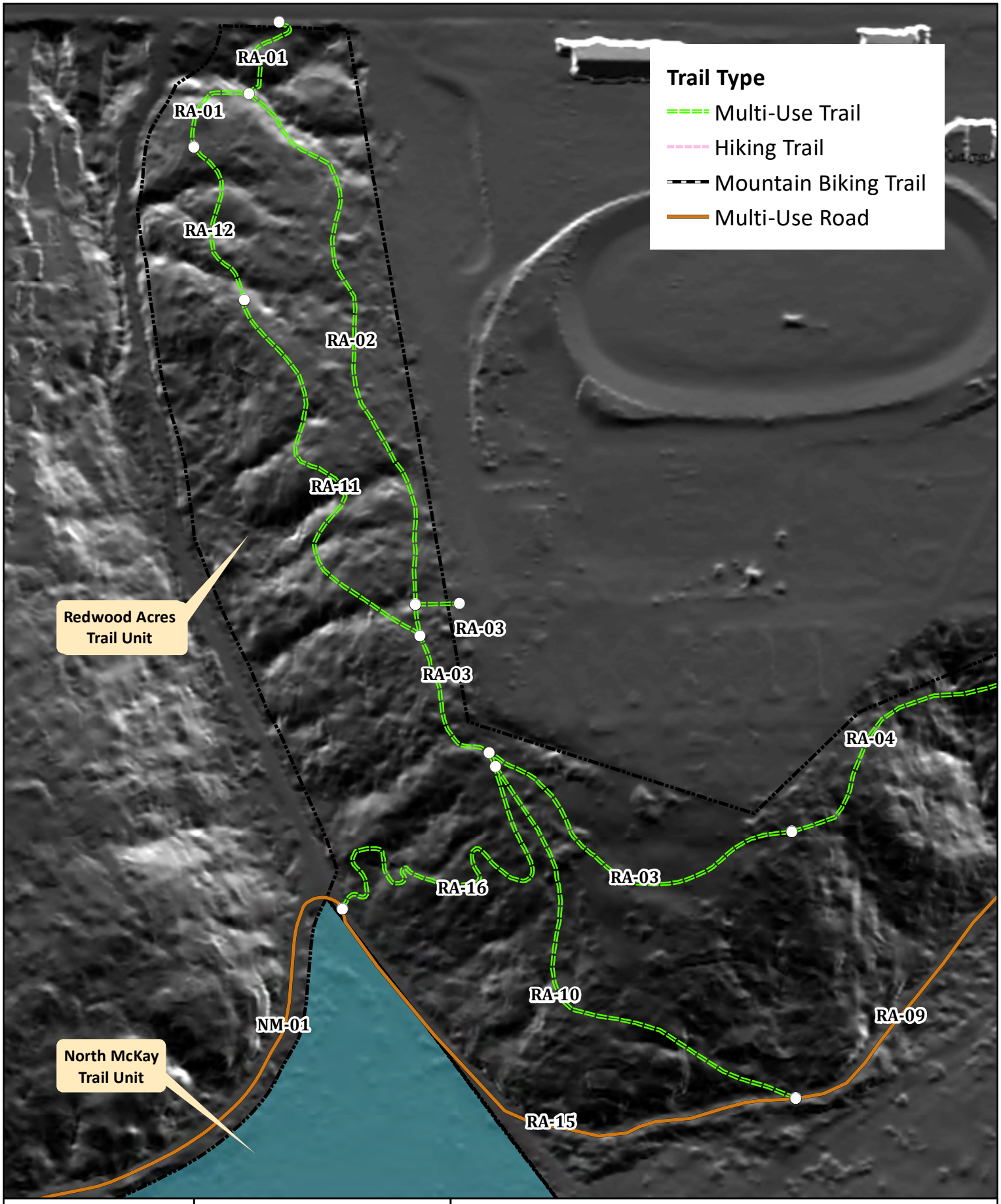
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail (West Side)

Map 4-4
Aerial



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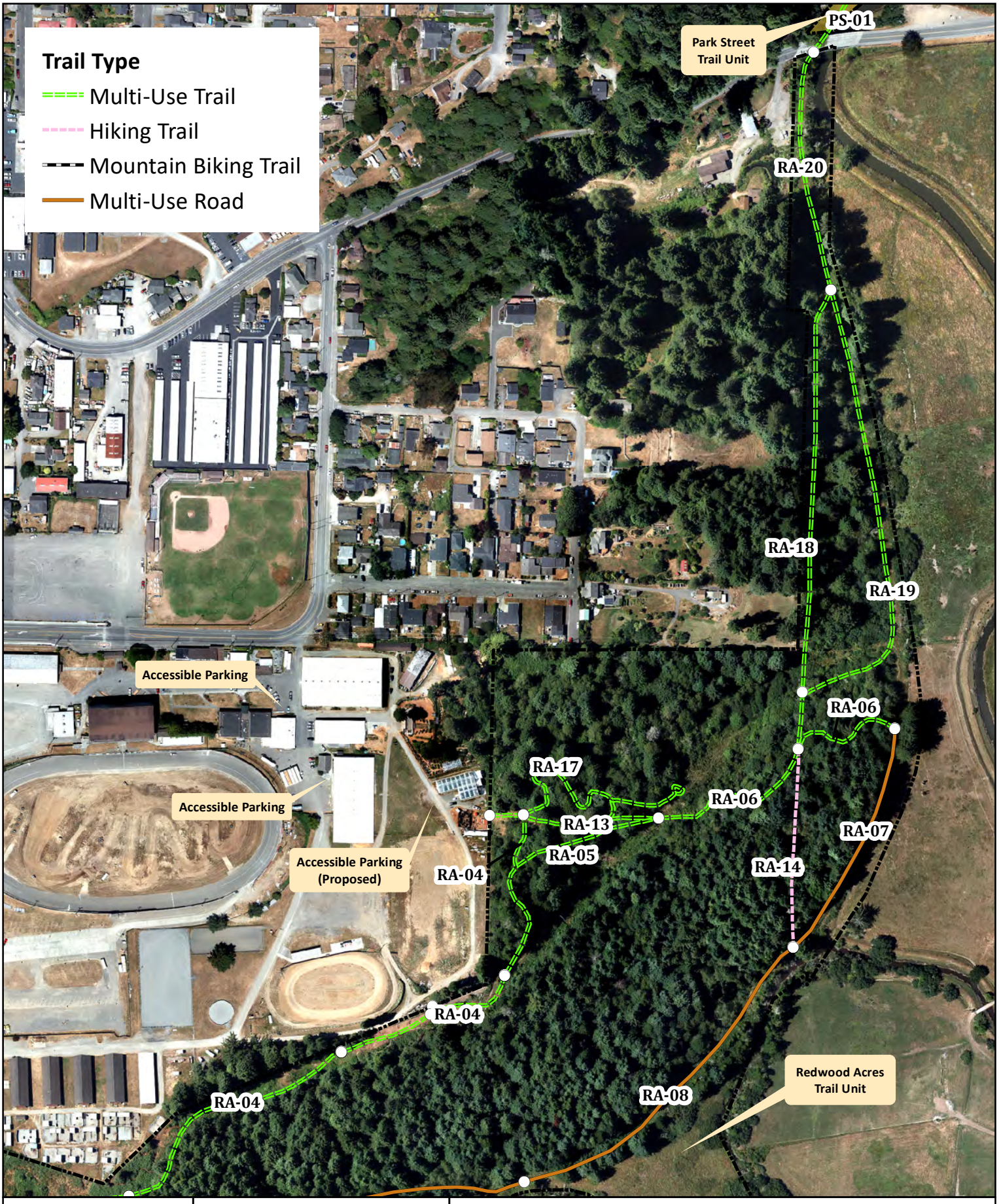
Imagery: LiDAR Hillshade
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail (West Side)

Map 4-4
LiDAR



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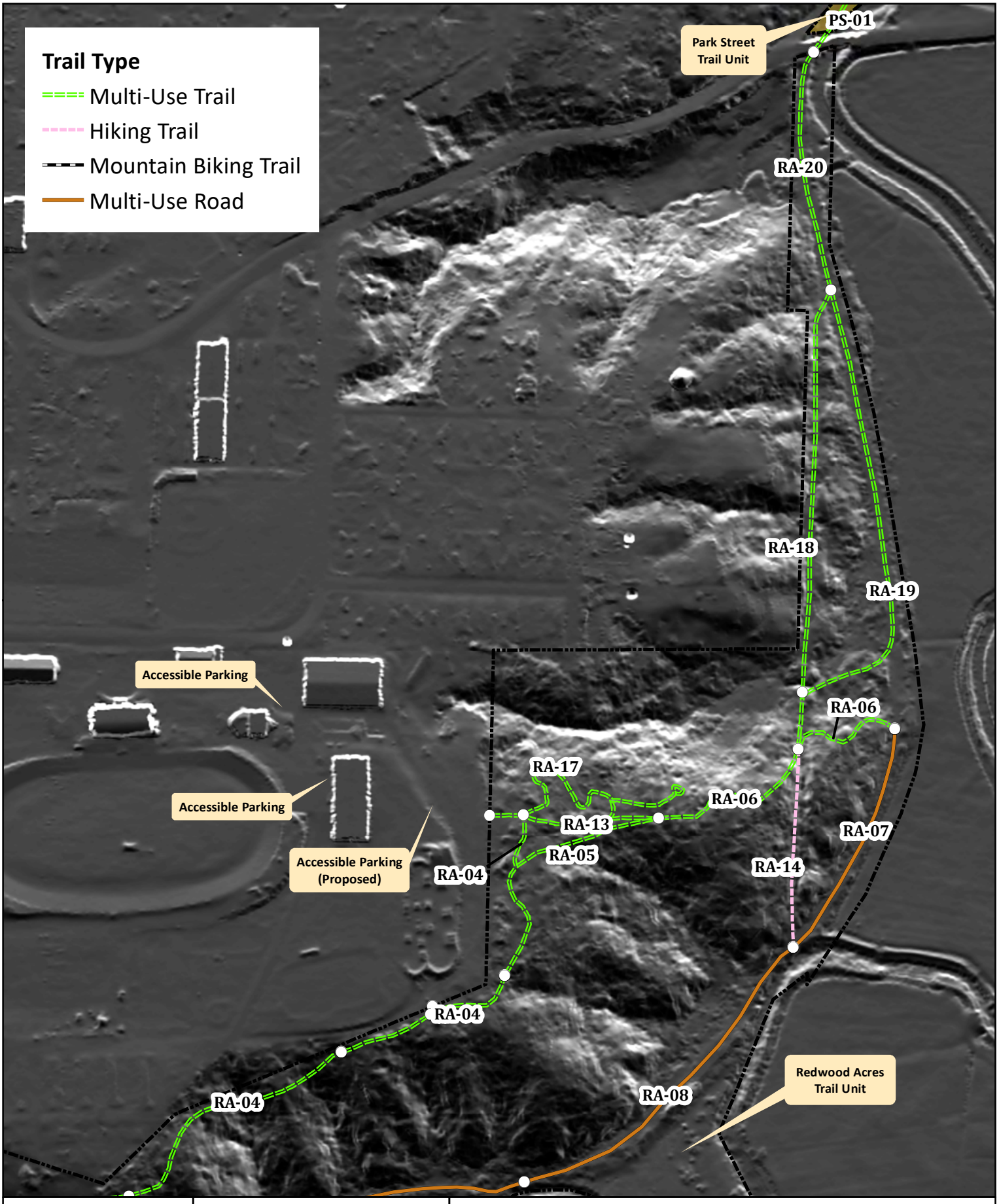
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail (East Side)

Map 4-5
Aerial



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Imagery: LiDAR Hillshade
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Redwood Acres Trail (East Side)

Map 4-5
LiDAR

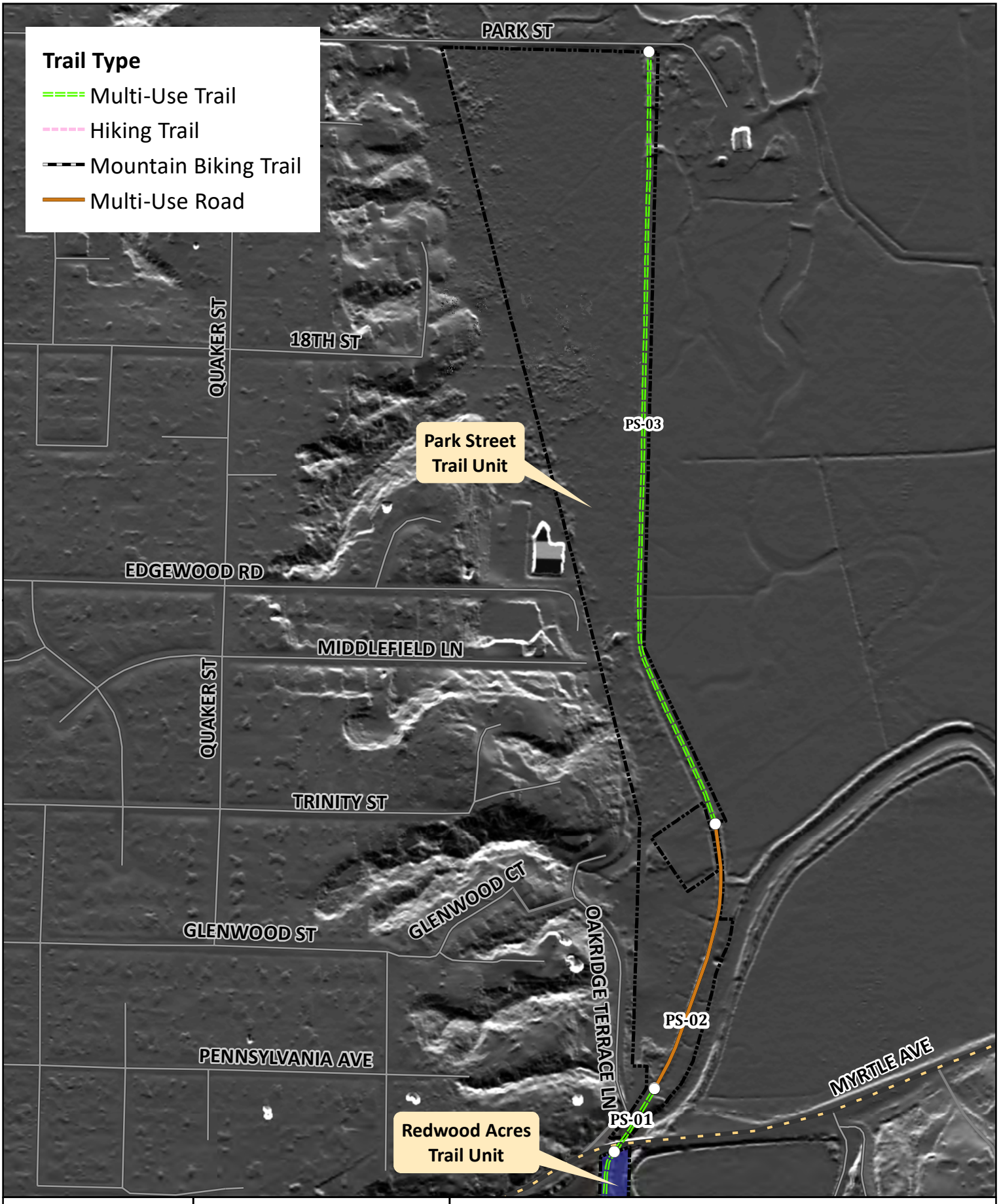
0 200 400 Feet

Imagery: Access Geographic 2019
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Park Street Trail

Map 4-6
Aerial



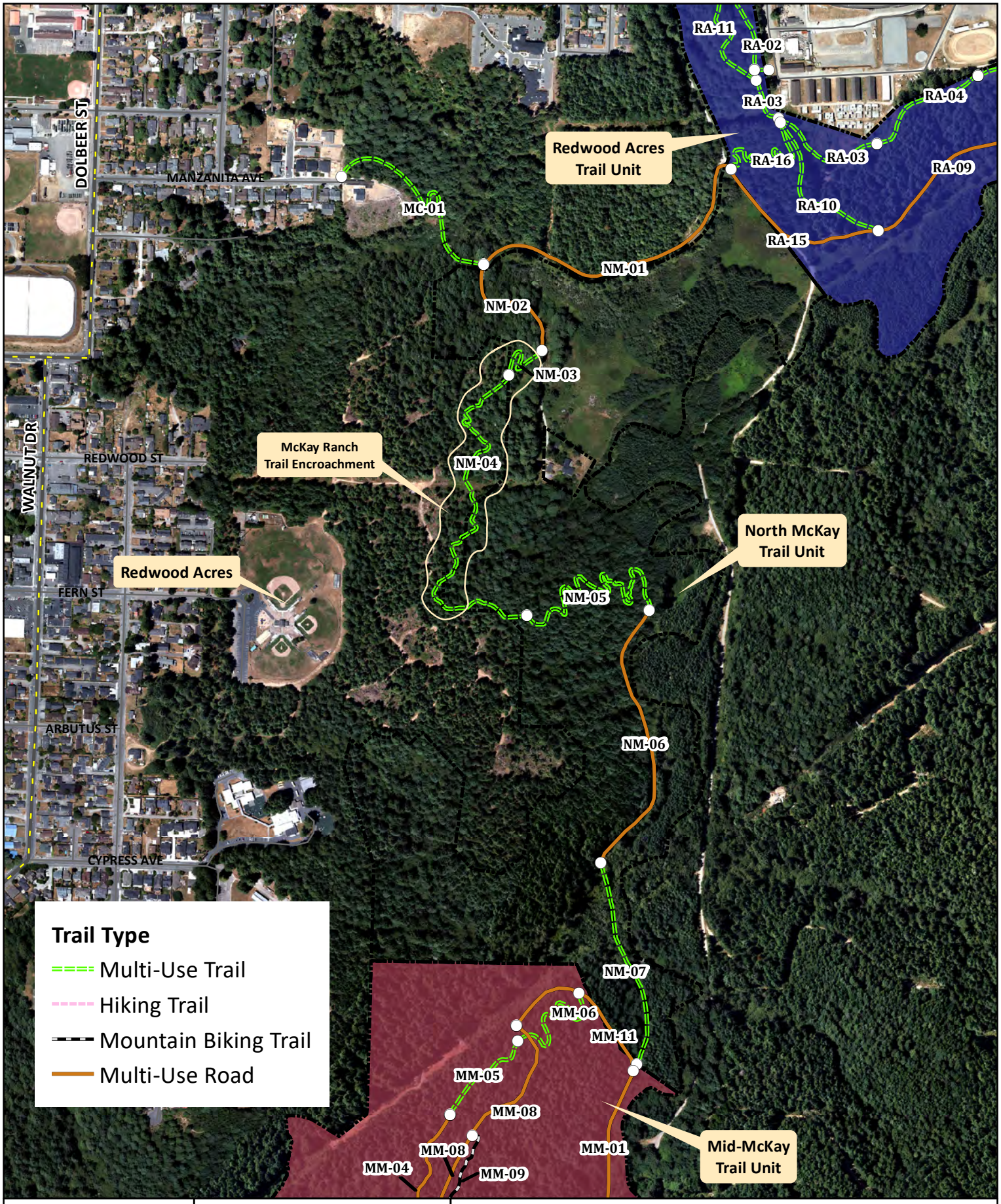
0 200 400 Feet

Imagery: LiDAR Hillshade
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Park Street Trail

Map 4-6
LiDAR



0 375 750 Feet

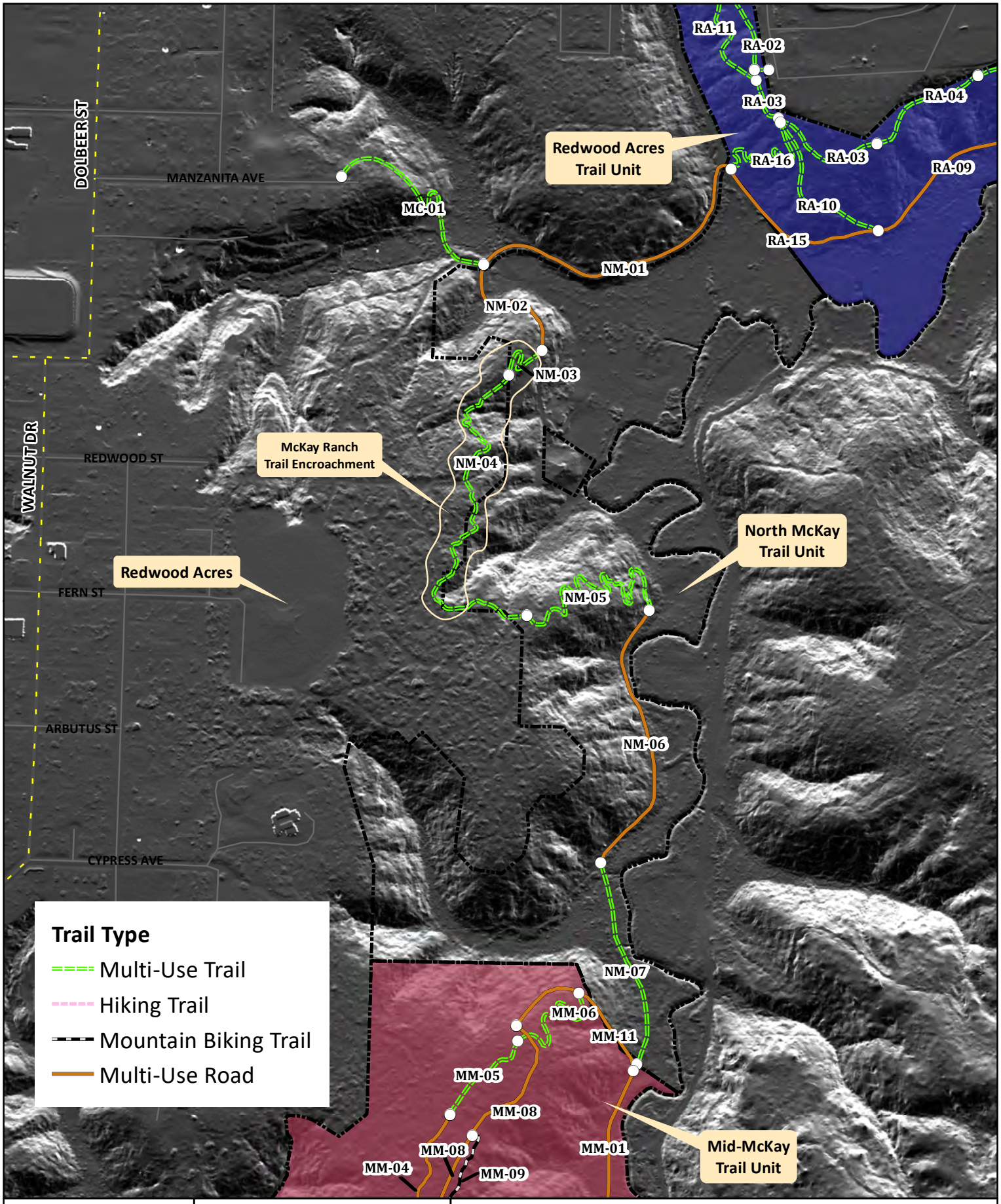
N W E S

Imagery: Access Geographic 2019
Printed: December 14, 2020
Humboldt County Public Works

McKay Community Forest

North McKay Trail

Map 4-7
Aerial



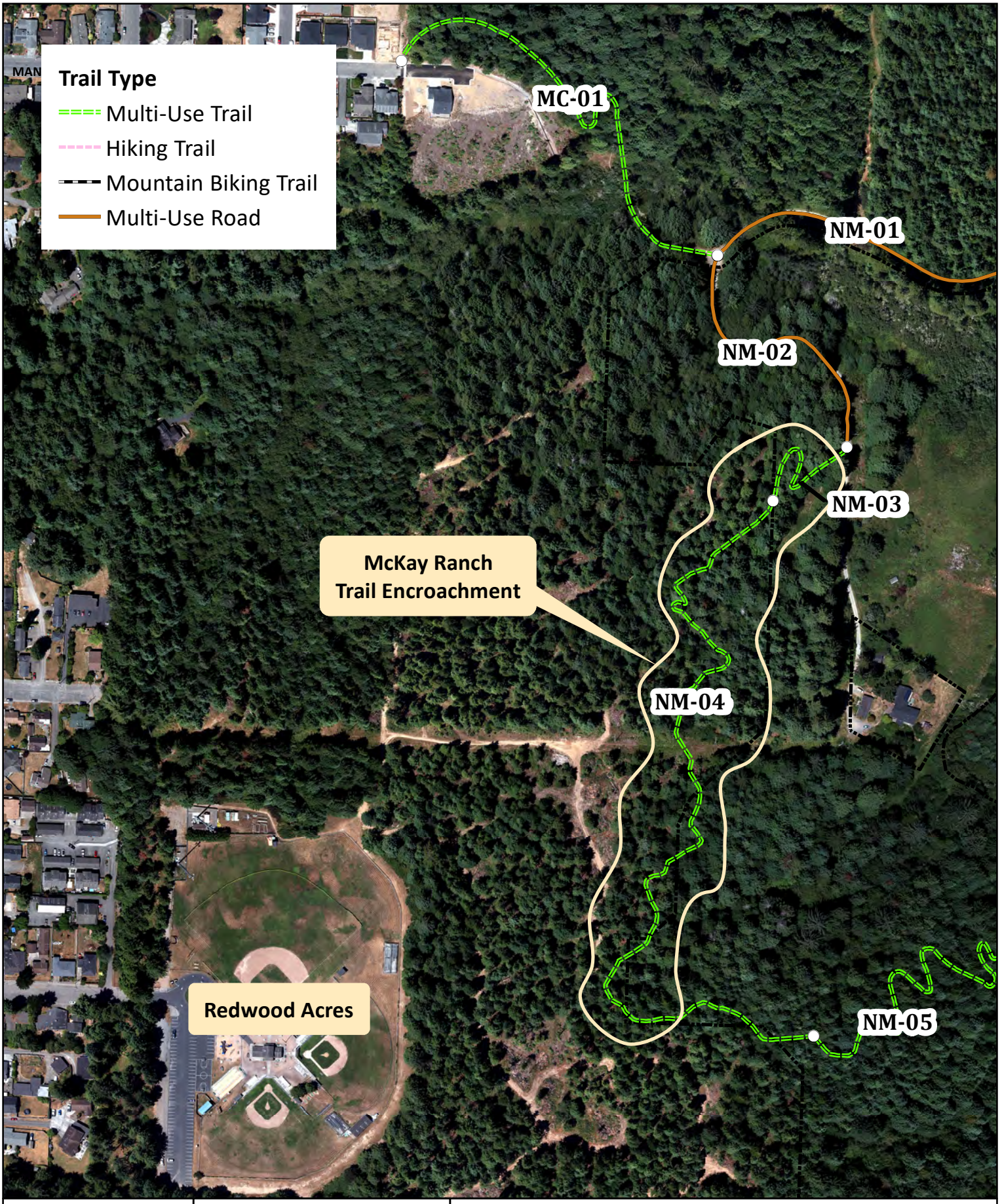
0 375 750 Feet

Imagery: LiDAR Hillshade
Printed: December 14, 2020
Humboldt County Public Works

McKay Community Forest

North McKay Trail

Map 4-7
LiDAR



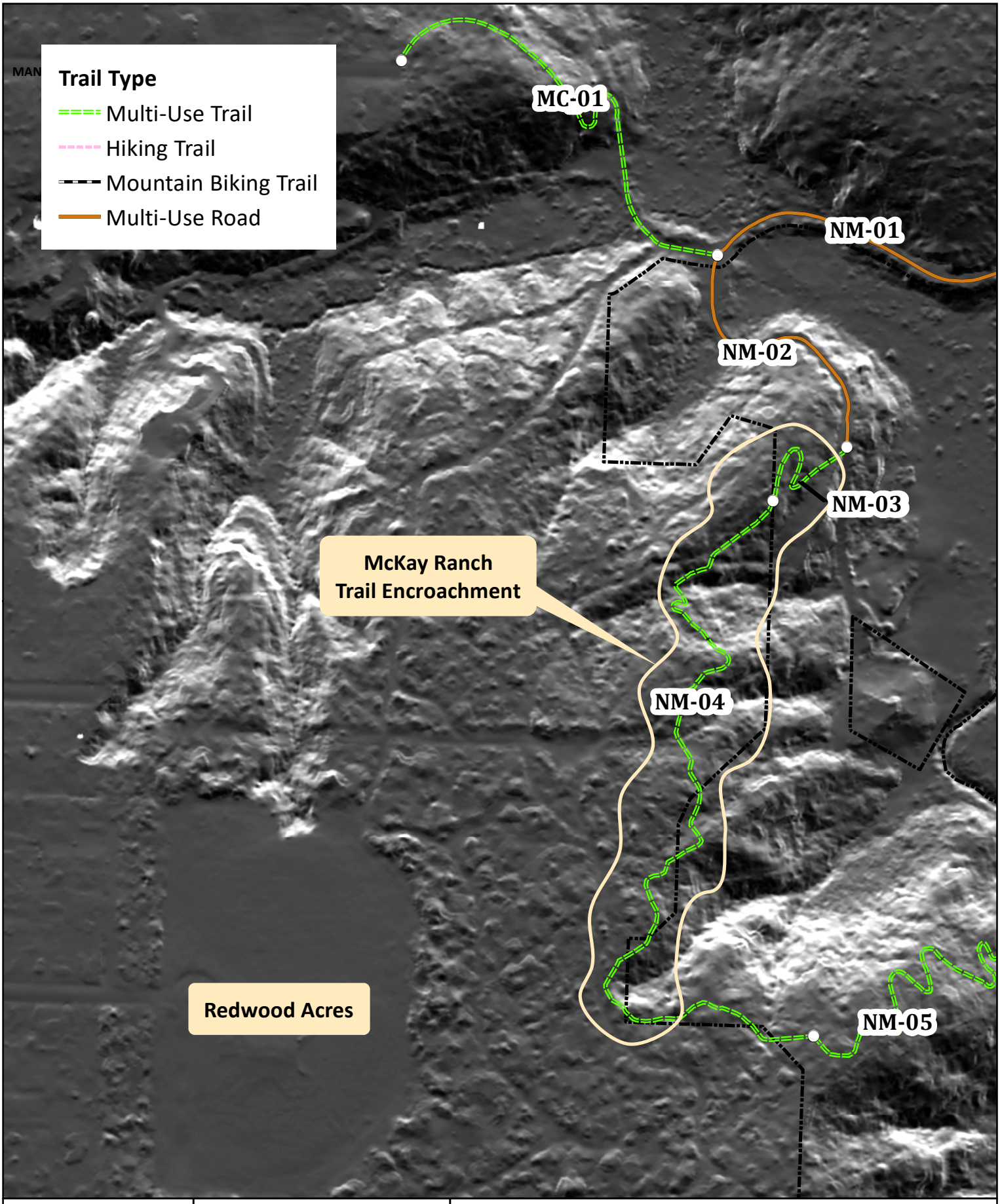
0 150 300 Feet

Imagery: Access Geographic 2019
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Proposed McKay Ranch Trail Encroachment

Map 4-8
Aerial



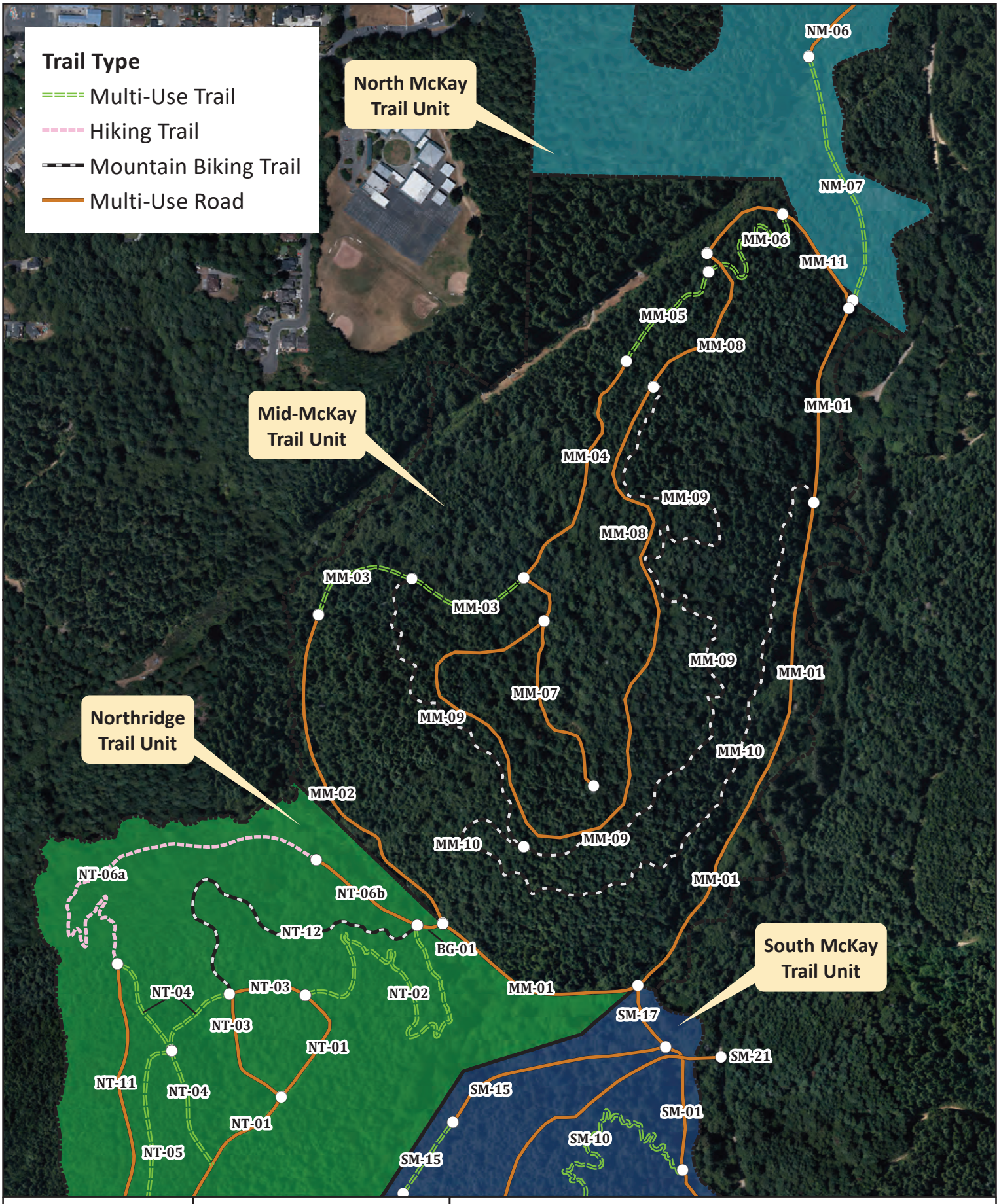
0 150 300 Feet

Imagery: LiDAR Hillshade
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Proposed McKay Ranch Trail Encroachment

Map 4-8
LiDAR



0 250 500 Feet

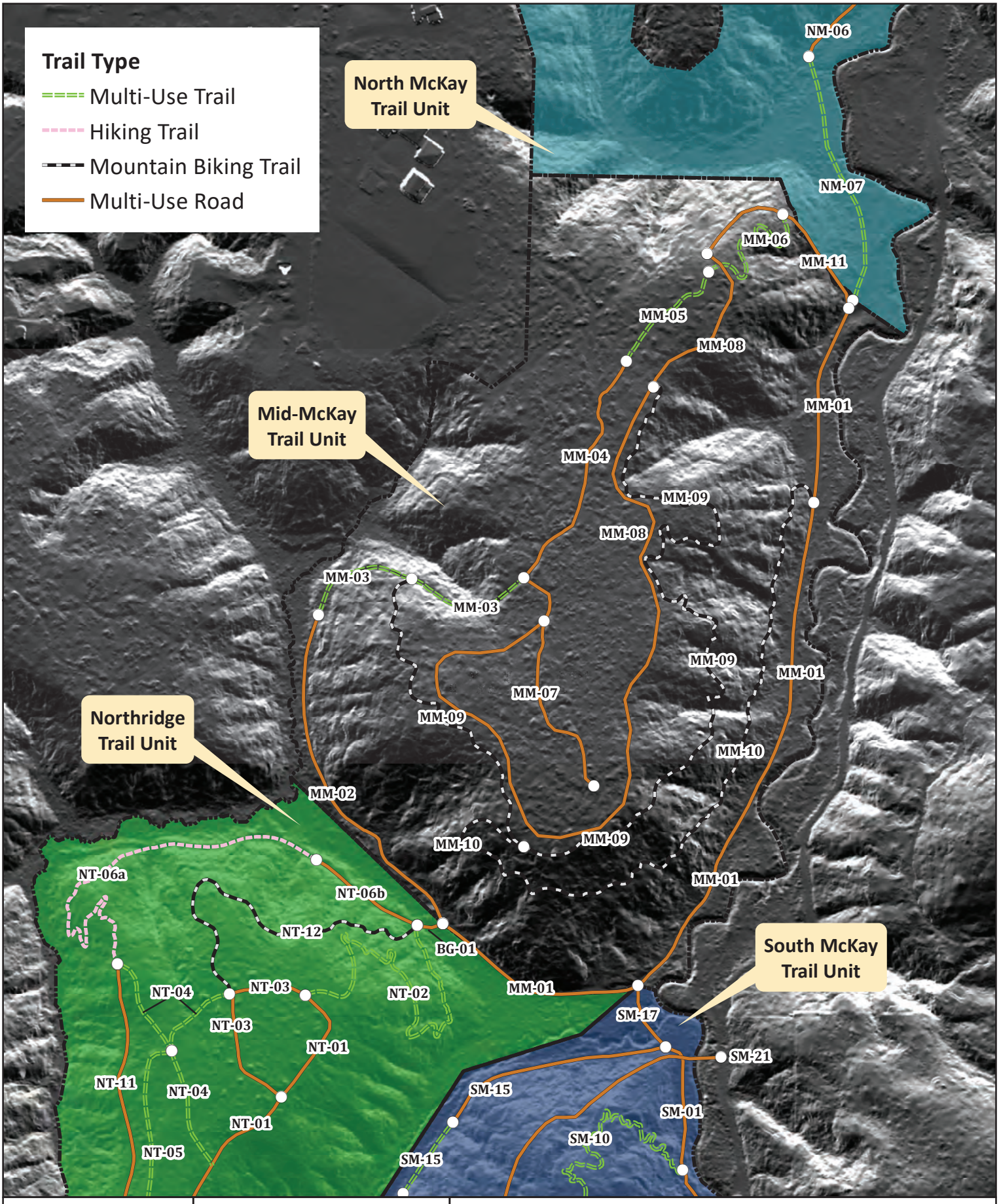
Imagery: Access Geographic 2019
Printed: June 24, 2021
Humboldt County Public Works

N W E S

McKay Community Forest

Mid-McKay Trail

Map 4-9
Aerial



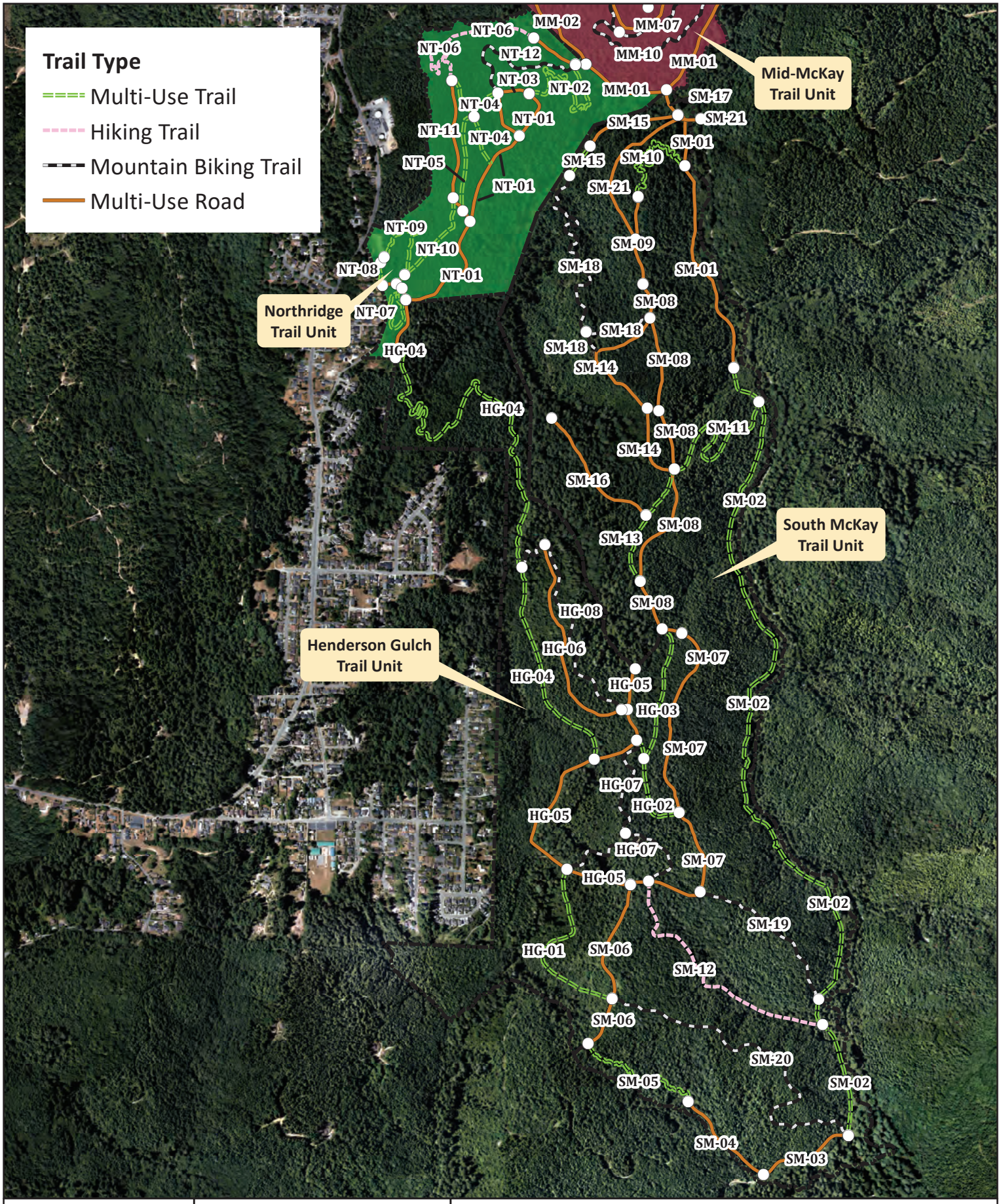
0 250 500 Feet

Imagery: LiDAR Hillshade
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Mid-McKay Trail

Map 4-9
LiDAR

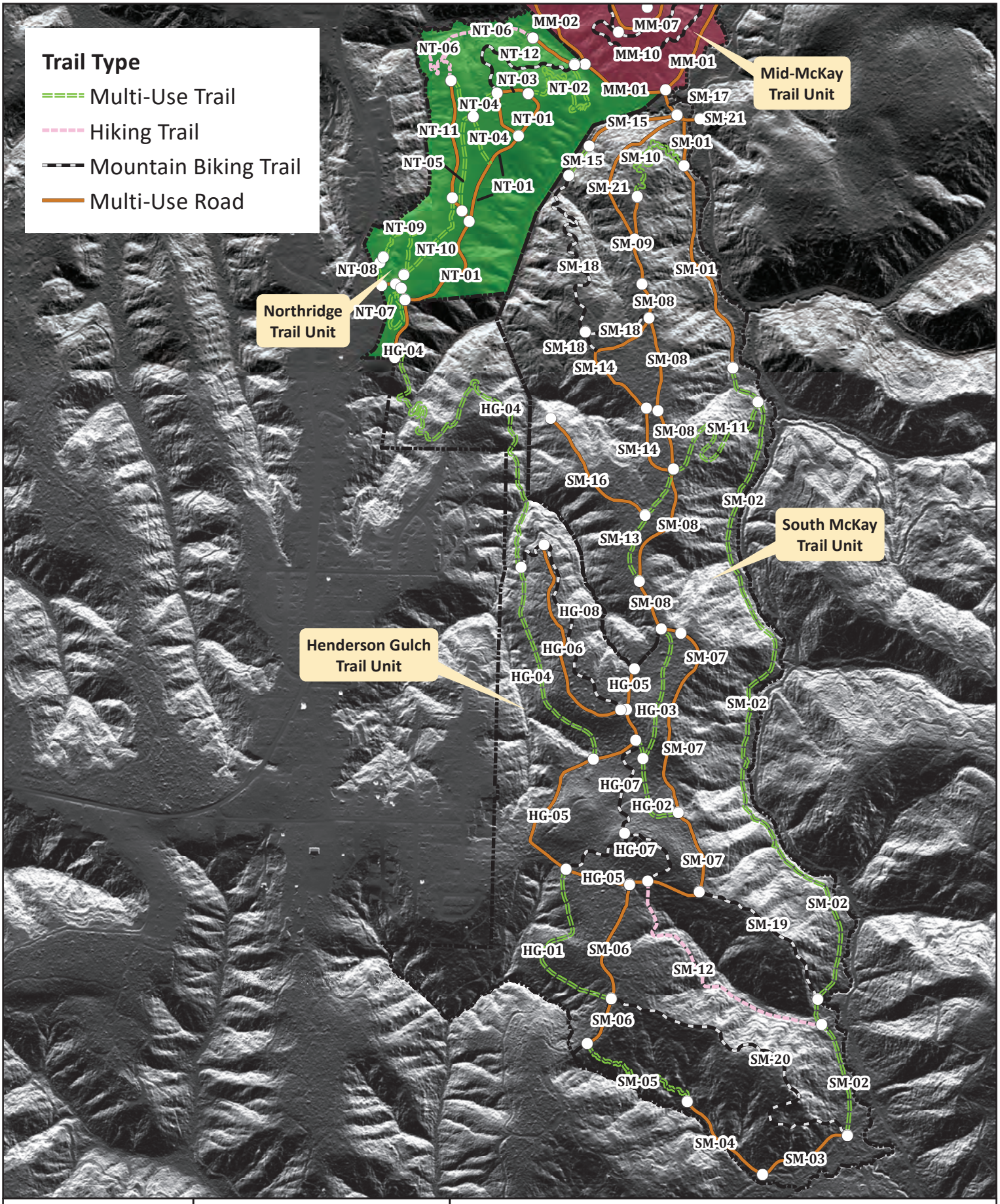


Imagery: Access Geographic 2019
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

South McKay and Henderson Gulch Trails

Map 4-10
Aerial



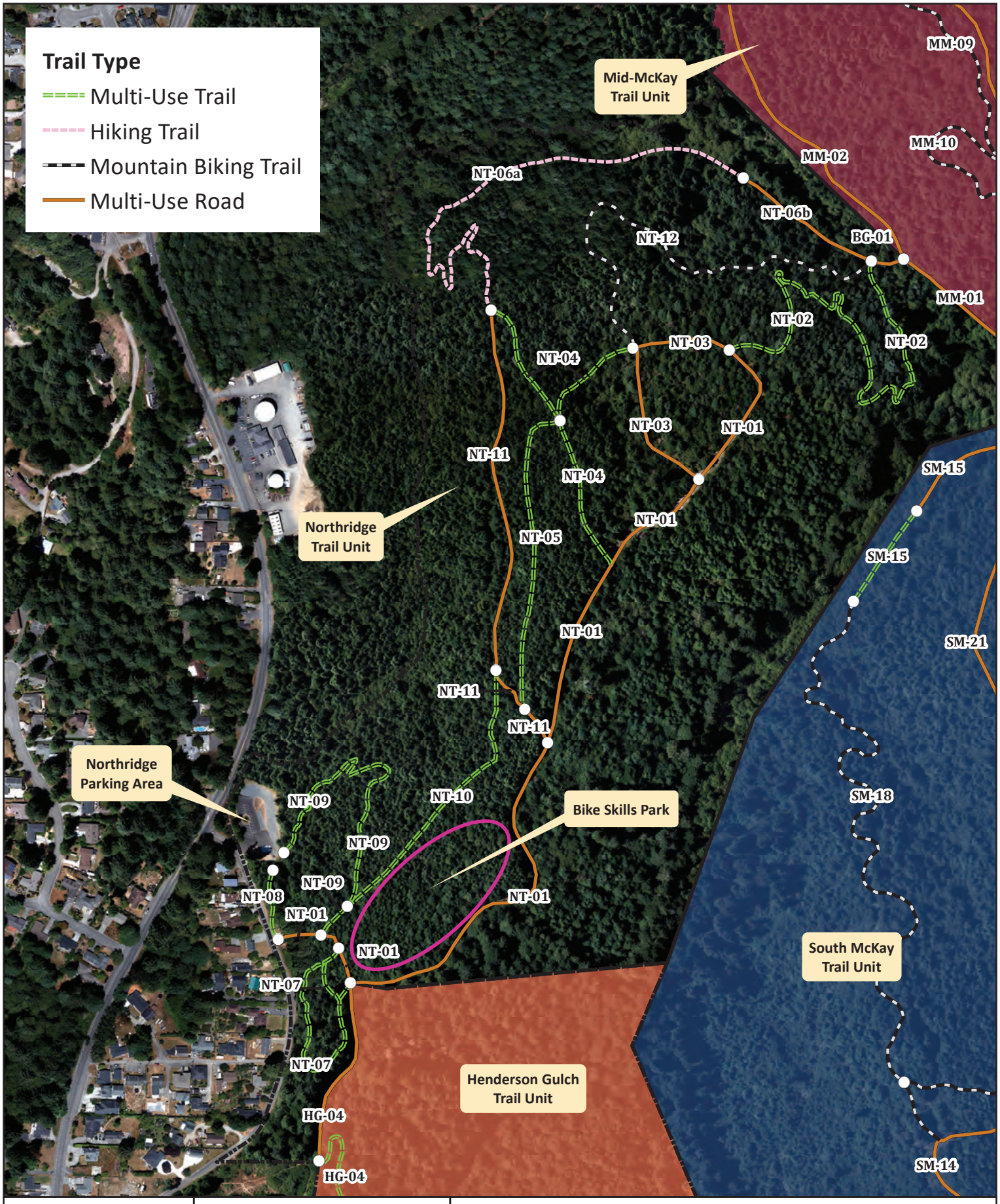
0 750 1,500 Feet

Imagery: LiDAR Hillshade
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

South McKay and Henderson Gulch Trails

Map 4-10
LiDAR



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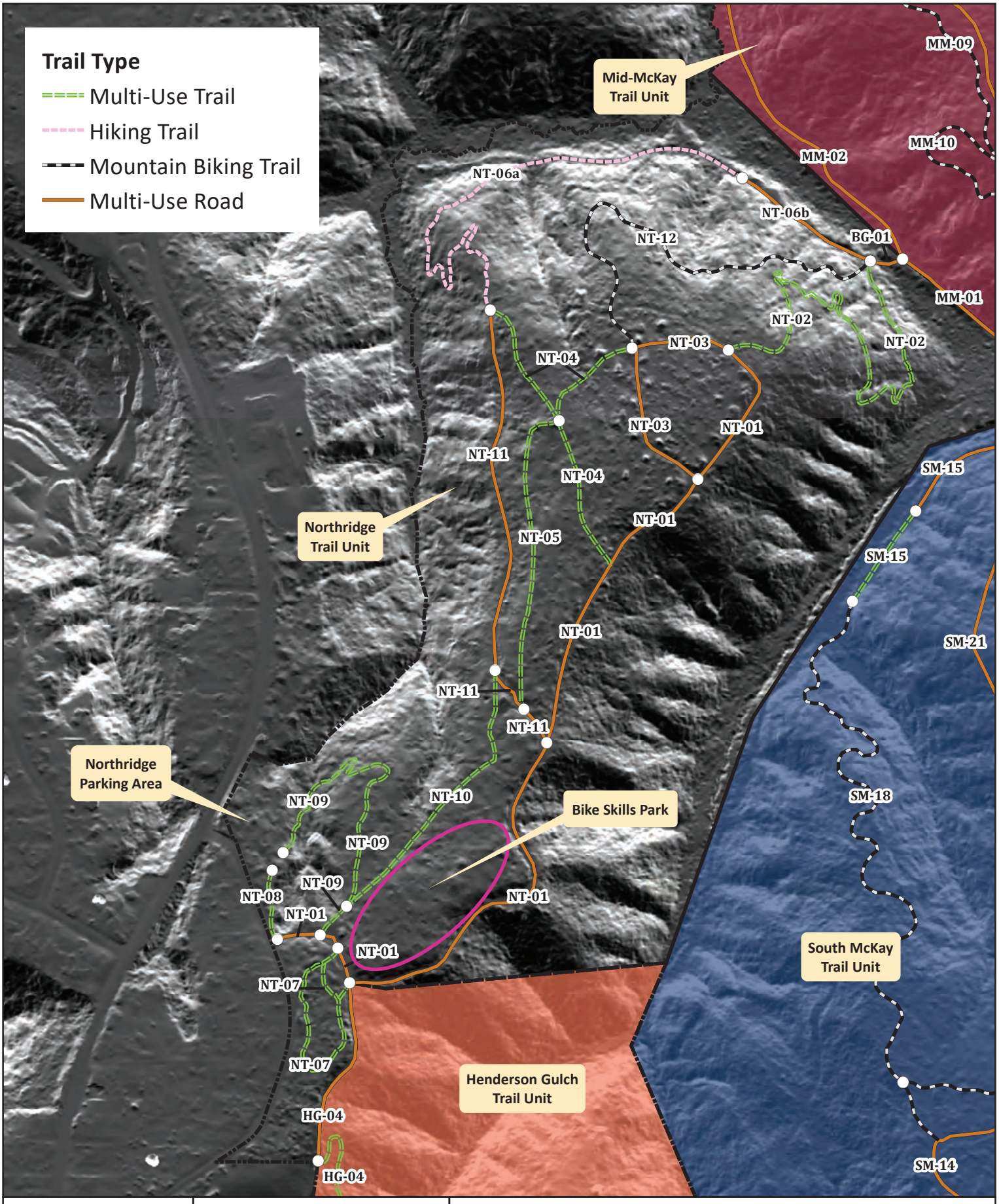
Imagery: Access Geographic 2019
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Northridge Trail

Map 4-11
Aerial



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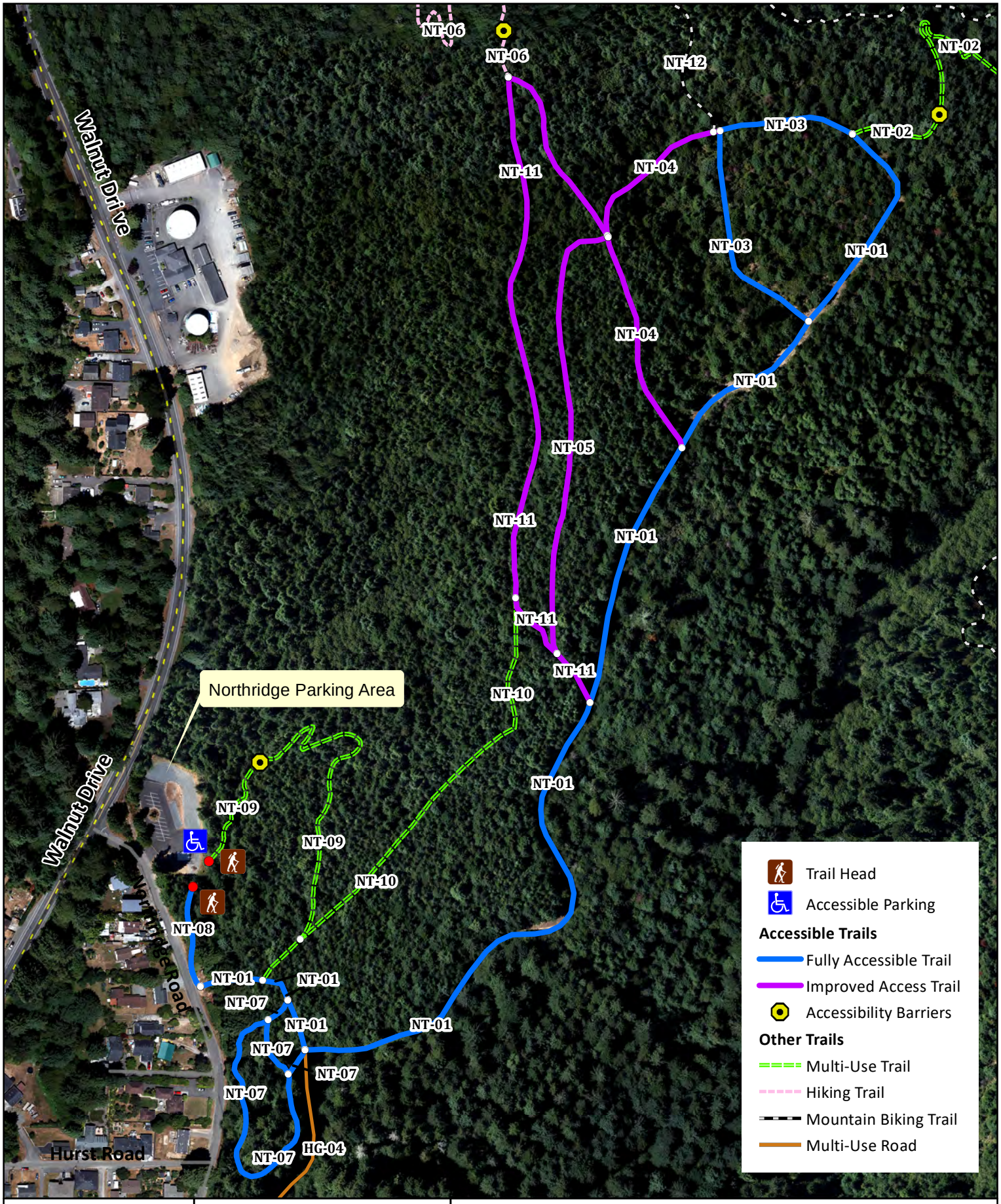
Imagery: LiDAR Hillshade
Printed: June 24, 2021
Humboldt County Public Works

McKay Community Forest

Northridge Trail

Map 4-11
LiDAR



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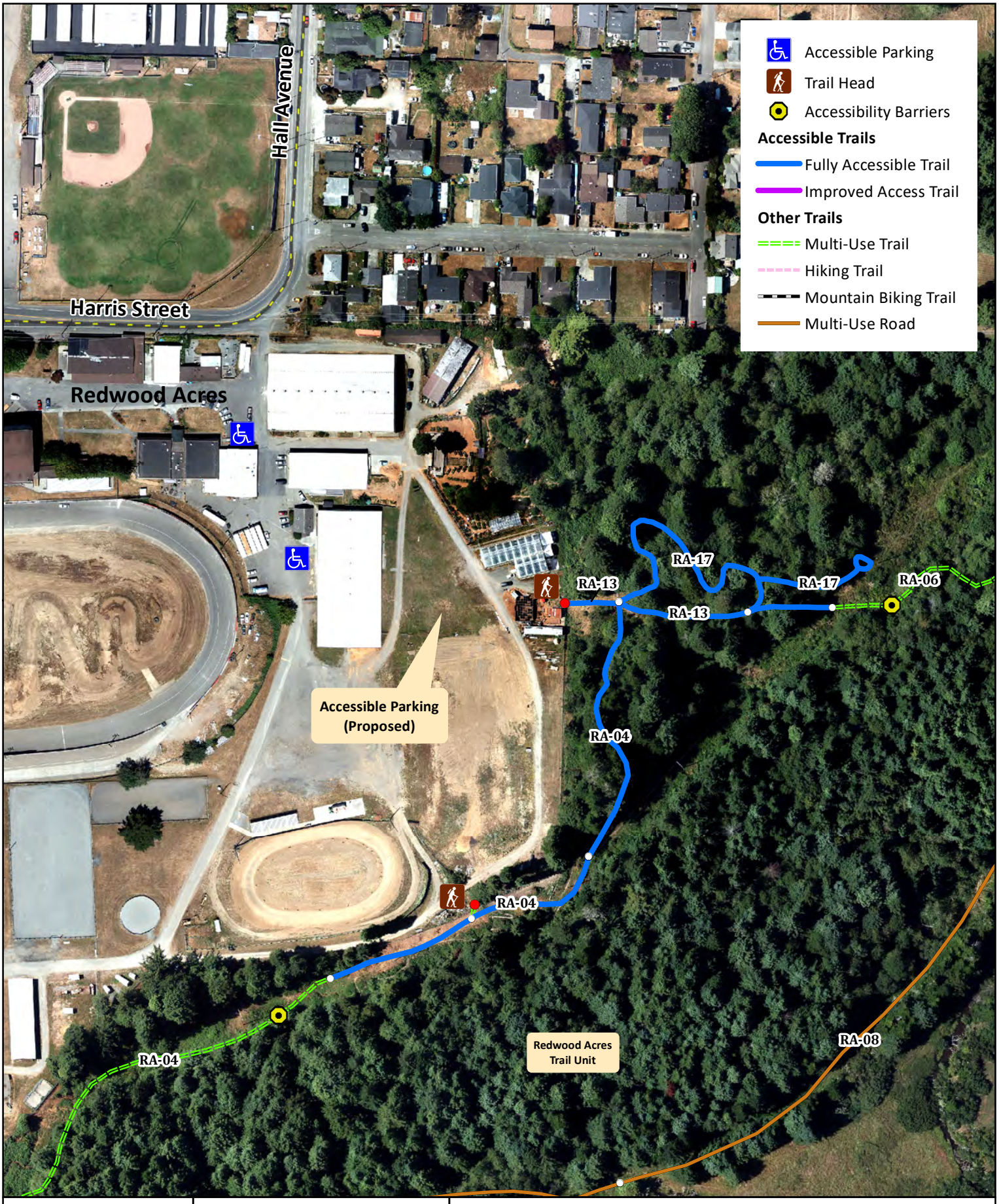
Imagery: Access Geographic 2019
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Accessible Trails - Northridge

Map 4-12



0 100 200 Feet

Imagery: Access Geographic 2019
Printed: December 10, 2020
Humboldt County Public Works

McKay Community Forest

Accessible Trails - Redwood Acres

Map 4-13

Attachment C

Glossary

Adaptive management	A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met.
Age class	One of the intervals into which the age range of trees is divided for classification or use.
Anadromous fish	Fish that are born and reared in fresh water which move to the ocean and later return to fresh water to reproduce.
Appurtenant Road	A Logging Road under the ownership or control of the Timber Owner, Timberland Owner, Timber Operator, or plan submitter that will be used for log hauling.
Aspect	Direction or exposure of terrain towards which a slope faces.
Association	A kind of plant community with a definite species composition and structure, and relatively uniform environment (Plant Ecology).
Basal area	The cross-sectional area, in square feet, of a tree measured at breast height (4.5 feet).
Best management practice (BMP)	The method, measure or practice selected by an agency to meet its nonpoint source pollution control needs. BMPs include, but are not limited to structural controls, operations, and maintenance procedures. BMP's can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.
Biological diversity	The distribution and abundance of different plant and animal communities and species over time and space.
Blowdown	Trees felled by high winds.
Board foot (BF)	A unit of measurement equal to an unfinished board one foot square by one inch thick.
Broadcast burn	Allowing prescribed fire to bum over a designated area for reduction of fuel hazard, or as a silvicultural treatment.
California Environmental Quality Act (CEQA)	Following the passage of NEPA, the California State Legislature passed an Act in 1970 to declare state policy which will ensure the long-term protection of the environment. The Act will encourage the development and maintenance of a high-quality environment now and in the future; provide the people of California · with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from pollution; and prevent the elimination of fish or wildlife species due to man's activities.
Canopy	The uppermost spreading, branchy layer of a forest.

Canopy closure	The progressive reduction in space between tree crowns as they spread laterally; a measure of the percent of potential open space occupied by the collective tree crowns in a stand.
Cavity nester	Wildlife species that excavate and/or occupy cavities in trees and snags.
Clearcutting	Harvesting of all trees in one area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand or strip.
Codominant	One main crown class of trees with their tops in the upper canopy but lower than the dominant trees.
Commercial thinning	Timber sales which call for selective harvest in immature stands designed to improve the quality and growth of the remaining trees.
Conservation measure	A principle requiring a specific level of attainment; a rule to measure against.
Cover	Vegetation used by wildlife for protection from predators; to ameliorate conditions of weather; or in which to reproduce.
Cultural resources	Buildings, sites, areas, architecture, memorials, and objects having scientific, prehistoric, historic, or social values.
Cumulative effect	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
Defect	Any irregularity or imperfection in a tree, log, or wood product that reduces its soundness, durability, strength or utility.
Diameter at breast height (DBH)	The diameter of a standing tree measured at a point four feet-six inches from ground level on the uphill side.
Dispersed recreation	Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.
Down log	Portion of a tree that has fallen or been cut and left in the woods.
Ecosystem function	The manner in which organisms interact with each other and their environment.
Edge	Where plant communities meet or where successional stages of vegetative conditions within plant communities come together, e.g., field and woodland, forest and meadow.

Effects (impacts)	Environmental consequences (the scientific and analytical basis for comparison of alternatives) as. a result of a proposed action. Effects may be either direct, which are caused by action and occur at the same time and place; indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable; or cumulative (see definition above).
Endangered species	Any plant or animal species which is in danger of extinction throughout all or a significant portion of its range (Endangered Species Act of 1973).
Endemic species	A species whose natural occurrence is confined to a certain region and whose distribution is relatively limited.
Erosion	Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural or geologic erosion, primarily as a result of the influence of activities of man, animals or natural catastrophes.
Fire Protection Zone	That portion of the logging area within 100 ft. (30.48 m), as measured along the surface of the ground, from the edge of the traveled surface of all public roads and railroads, and 50 ft. (15.24 m) as measured along the surface of the ground from the traveled surface of all private roads, and within 100 ft. (30.48 m), as measured along the surface of the ground, from permanently located structures currently maintained for human habitation (Ref. Sec. [4562], PRC).
Forb	Any herbaceous plant other than grasses or grass-like plants
Forest Stewardship	Forest stewardship is based on conservation principles that ensure protection of all forest resources including wildlife, timber, soil, water, recreational opportunities and natural beauty. Forest stewards actively manage their land on a long-term basis by following management objectives that are based on multiple resources, are economically viable and conserve natural resources.
Forester	A professionally trained individual who supervises the development, care and management of forest resources to include timber, wildlife and recreation. In California foresters are licensed by the State. A Registered Professional Forester (RPF) is a person who holds a valid license as a professional forester.
Fragmentation	The process of reducing size and connectivity of stands that compose a forest.
Full log suspension	The system of transporting logs from the cutting site to the landing without touching the ground.
Geographic Information System (GIS)	An information processing technology to input, store, manipulate, analyze and display spatial resource data to support the decision-making processes of an organization. Generally, an electronic medium for processing map information, typically used with manual processes, to effect specific decisions about the land base and its resources.

Group selection	The cutting method in which trees are removed periodically in small groups resulting in openings that do not exceed an acre or two in size. The result is an uneven-aged stand.
Hazard reduction	Any treatment of forest fuels that reduces the threat, ignition or spread of wildfire.
Hydrologic disconnection	Removal of direct routes of drainage or overland flow of road runoff to a watercourse or lake.
High-lead (cable) logging	Method of powered cable logging in which the main block is fastened high on a spar tree (or equivalent) to enable the front end of the logs being skidded to be lifted clear of the ground.
Indicator species	Species of fish, wildlife or plants which reflect ecological changes caused by land management.
Individual tree selection	The selection of trees for harvest based on individual tree characteristics.
Infiltration	The movement of water through the soil surface.
Inner gorge	A stream reach bounded by steep valley walls that terminate upslope into a gentler topography.
Intermediate (crown class)	One main crown class of trees with their tops in the middle canopy.
Intermediate harvest	Most commonly used intermediate cuttings are release, thinning, improvement and salvage.
Intermittent streams	Streams that do not contain water year-round.
Intolerant Trees	Trees which reproduce successfully only in the open, or where the canopy is greatly broken.
Landing	Any place where round timber is assembled for further transport, usually in the woods.
Layout	Preparation of a soft bed in order to cushion the fall of a large tree and thus prevent excessive breakage. Usually involves tractors pushing soil into a pile.
Litter layer	The loose, relatively decomposed organic debris on the surface of the forest floor typically made up of leaves, bark and small branches.

Management indicator species	Management indicator species are animals or plants selected for special attention in the Forest Plan for one or more of three reasons. These include 1. emphasis species - species to be managed as key resources on the basis of identified issues (e.g., threatened, endangered, rare, sensitive, harvest or special interest species); 2. special habitat indicators - species that require special habitat such as snags, riparian, old-growth forest stands, etc.; 3. cumulative ecosystem change indicators - species generally having large home ranges, requiring diverse habitat.
Mass movement	The downslope movement of earth by gravity. Includes but not limited to landslides, rock falls, debris avalanches and soil creep.
Mean Annual Increment (MAI)	The average annual growth of a stand, calculated by dividing the total growth accrued over its life by its age in years at the time of measurement.
Monitoring	A process of collecting information to evaluate whether objectives and anticipated, or assumed results of the management plan are being realized. .
Mortality	The loss of a population of trees, other plants and animals due to all lethal causes.
Multistoried	Forest stands that contain trees of various heights and diameter classes which therefore support foliage at various heights in the stand.
Nesting, roosting and foraging habitat	The forest vegetation with the age class, species of trees, structure, sufficient area and adequate food source to meet some or all of the life needs of the northern spotted owl.
Net scale	The scale of a log after deduction for defect.
Nonpoint source pollution	Water pollution that does not result from a discharge at a specific, single location (such as a pipe) but results from land runoff and is normally associated with agricultural, silvicultural or urban runoff.
Objective	Objectives are more specific statements, and are measurable. They describe the actions required that lead to attaining goals.
Overstory	The portion of trees in a forest which forms the uppermost layer of foliage.
Perennial streams	Streams which normally flow throughout the year.
Plant associations	A plant community type based on land management potential, successional patterns and species composition.

Plant community	An association of plants of various species found growing together in different areas with similar site characteristics.
Pre-commercial thinning	The selective felling or removal of trees in a young stand, conducted to accelerate diameter growth on remaining trees, maintain a specific stocking density and improve vigor and quality of remaining trees. Conducted at an age before the trees are commercially merchantable.
Prescribed fire	Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives such as rejuvenating or type-converting vegetation.
Quadratic Mean Diameter	Quadratic mean diameter (QMD) is a measure of central tendency which is considered more appropriate than arithmetic mean for characterizing the group of trees which have been measured. Compared to the arithmetic mean, QMD assigns greater weight to larger trees – QMD is always greater than or equal to arithmetic mean for a given set of trees.
Reach	A continuous unbroken stretch of a stream with homogeneous characteristics; an extremity of a stream; a specified portion of a stream.
Recruitment	Replenishment. In terms of wildlife biology, to achieve successful reproduction or to replenish a supply of habitat elements, such as snags or down logs.
Reforestation	The natural or artificial restocking of an area with forest trees; includes measures to obtain natural regeneration, as well as tree planting and seeding.
Regeneration	The renewal of a tree crop, whether by natural or artificial means. Also, the young tree crop (seedlings and saplings) itself.
Release	All work done to free desirable trees from competition with other, less desirable vegetation.
Resilience	The ability of a social or ecological system to absorb disturbances, while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.
Restoration	Restoration is an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability.
Right-of-way	An accurately located land area within which a user may conduct operations approved by or granted by the landowner.

Riparian areas	Terrestrial areas where the vegetation and microclimate are influenced by perennial and/or intermittent water, associated high water tables and soils which exhibit some wetness characteristics; this habitat is transitional between true bottom land wetlands and upland terrestrial habitats and, while associated with water courses, may extend inland for considerable distance.
Rotation	The planned number of years required to establish and grow timber to a specified condition or maturity for regeneration harvest (including the regeneration period).
Salmonid	Member of the fish family Salmonidae, includes salmon and trout.
Salvage	Removal of recently dead or dying trees to minimize the loss of wood products.
Seasonal road	A Logging Road that is part of the permanent road network that is not designed for year-round use.
Second growth (young growth)	Timber stands established after natural or human-caused removal of the original stand or previous forest growth.
Sediment	Solid material, both mineral and organic, that is suspended in, or being transported by water.
Sediment yield	The quantity of soil, rock particles, organic matter or other dissolved or suspended debris that is transported through a cross-section of stream in a given period.
Seeps	Places where water oozes from the ground.
Selection cutting	The annual or periodic removal of trees, individually or in small groups, from an uneven-aged forest in order to realize yield and establish a new stand of irregular constitution.
Sensitive species	Those species that are under consideration for official listing as endangered or threatened species; or are on an official state list as needing special management attention.
Seral stage	A transitory or developmental stage of a biotic community in an ecological succession (does not include climax successional stage).
Shaded Fuel break	A shaded fuel break is a forest management strategy used for mitigating the threat of wildfire in areas where natural fire regimes have been suppressed, leading to a dangerous buildup of combustible vegetation. Constructing a shaded fuel break is the process of selectively thinning and removing more flammable understory vegetation while leaving the majority of larger, more fire tolerant tree species in place.

Silvicultural system	A management process whereby forests are tended, harvested and replaced resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the methods that remove the mature trees and provide for regeneration; and to the type of forest thereby produced.
Silviculture	The art and science of growing and tending forest vegetation, i.e., controlling the establishment, composition and growth of forests for specific management goals.
Site	Productive capacity of an area to produce forests or other vegetation. Related to climatic, biotic and soil factors for forest crops. It is expressed by a site index based on height of dominant trees in a stand at a certain age. Site indices are sometimes grouped into site classes.
Site preparation	Removal of unwanted vegetation, slash, roots and stones from a site before reforestation.
Skid	To remove a severed tree from its stump to a collection point where it is loaded onto another vehicle.
Slash	The residue of trees left on the ground after timber cutting or after other disruptions such storms or fires. Slash includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark and chips.
Slope stability	The resistance of a natural or artificial slope surface to failure by land sliding (mass movement).
Snag	A standing dead tree.
Soil compaction	An increase in bulk density (weight per unit volume) and a decrease in soil porosity resulting from applied loads or pressure.
Soil productivity	Capacity or suitability of a soil for establishment and growth of a specified crop or plant species, primarily through nutrient availability.
Soil series	A group of soils developed from a particular type of parent material having naturally developed horizons that are similar in characteristics and arrangement in the soil profile.
Spatial	Referring to the distance, interval, or area between or within things.
Species diversity	The distribution and abundance of different plant and animal communities and species.
Stand	A geographically identifiable group of trees sufficiently uniform in age-class distribution, composition and structure to be a distinguishable unit.
Steelhead	A large-sized, silvery anadromous rainbow trout.

Stocking	The degree to which trees occupy the land, measured by basal area and/or number of trees by size and spacing; compared with a stocking standard, that is, the basal area and/or number of trees required to fully utilize the land's growth potential.
Stream class	The classification of streams according to their beneficial uses. Whole streams or parts of streams can be classified. One stream may be divided into several classes. Class I. Perennial or intermittent streams have one or more the following characteristics: (1) is the direct source of water for domestic use (cities, recreation sites, etc.); (2) are used by large numbers of fish for spawning, rearing or migration; (3) have sufficient flow to have a major influence on the water quality of a Class I stream. Class II. Perennial or intermittent streams have one or both of the following characteristics: (1) are used by non-fish aquatic species (e.g., salamanders, benthic insects, etc.); (2) have sufficient flow to have a moderate influence on downstream quality of a Class I or II stream. Class III. Intermittent streams not meeting Class I or Class II definitions Class IV. All man-made watercourses such as inboard ditches or those not meeting Class I, II or III definitions.
Stratum	A grouping of similar stands defined for silvicultural or management purposes according to similarities in stand composition, structure and age. Plural is strata.
Structure	The various horizontal and vertical physical elements of the forest.
Stumpage	Selling of timber based upon the log buyer paying for the timber “at the stump” whereby logging and hauling costs are borne by the purchaser as opposed to a delivered log type of timber sale where timber is paid for delivered to the sawmill.
Successional stage	A phase in the gradual changing of a biological community (same as seral stage).
Surface erosion	The detachment and transport of soil particles by wind, water or gravity. Surface erosion can occur as the loss of soil in a uniform layer (sheet erosion), in rills, or by dry ravel.
Suspended sediment	Sediment suspended in a fluid by the upward components of turbulent currents or by colloidal suspension.
Sustained yield	The yield that a forest can produce continuously at a given intensity of management.
Terrestrial	Living on land; distinguished from aquatic (living in water).

Tethered Operations	Tractor Operations which utilize synchronized cable winch systems which have been specifically designed or modified by the manufacturer or a Professional Engineer, as described within the Professional Engineers Act (Chapter 7 of Division 3 of the Business and Professions Code), to assist equipment in felling or Yarding during Timber Operations.
Threatened species	Any species of plant or animal which is likely to become endangered in the foreseeable future throughout all, or a significant portion of its range.
Timber site index	A measure of site productivity based on the maximum rate of tree height growth. It is normally expressed as the height in feet reached by a tree at a given, or base age (the site index).
Timber stand improvement (TSI)	Measures such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, etc., of unwanted trees with the objective of improving growing conditions of the remaining trees.
Tolerance	The forestry term for expressing the relative capacity of a tree to compete under low light and high root competition.
Tolerant Trees	Trees which reproduce and form understories beneath canopies of less tolerant trees or even beneath shade of their own species.
Tonne	Metric ton. One metric ton (tonne) of carbon equals 3.67 metric tons of carbon dioxide equivalent (CO_2e).
Tractor Operations	Any activity which is associated with Timber Operations and is performed by wheel or track mounted ground-based equipment, including, but not limited to, tractors or skidders.
Turbidity	The optical property of water as affected by suspension of material such as sediment, i.e., the muddy or cloudy state of water.
U.S Fish and Wildlife Service	A division within the U.S. Department of the Interior.
Underburning	Prescribed burning of the forest floor for botanical, wildlife habitat, fire hazard reduction or silvicultural objectives.
Understory	Vegetation growing under the canopy formed by taller trees (trees or shrubs).
Uneven-aged Management	The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the proportion of trees of particular sizes to be retained in each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands include single-tree and group selection.

Vertical Diversity	The diversity in a stand that results from the complexity of the aboveground structure of the vegetation.
Viewshed	A total landscape seen or potentially seen from specific points on a logical part of a travel route or water body.
Watershed	The land area drained by a river system.
Wetlands	Areas that are inundated by surface or ground water with a frequency sufficient to support, and that, under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, wet meadows, river overflows, mud flats and natural ponds.
Wildland-urban interface	Any area where man-made improvements are built close to, or within, natural terrain and flammable vegetation, and where high potential for wildland fire exists.
Wildlife tree	A snag or a live tree designated for wildlife habitat.
Windfall Yarding	Trees or parts of trees felled by high winds (see blowdown).
Yarding	The movement of forest products from the point of felling to a landing.
Yield table	A table showing the progressive change in a stand's development at periodic intervals covering the range of age of a species on given sites. It may include information on average diameter and height, basal area, number of trees, volumes of thinning and final cuts, and other essential data.
Yield tax	A tax levied on timber at the time it is harvested. It is based on stumpage (log value minus logging costs) value from Board of Equalization published quarterly reports.

Attachment D

Comments on Draft Plan and Summary of Public Engagement

McKay Community Forest
Forest Stewardship Plan
Outreach and Community Engagement Summary

Prepared by:
Redwood Community Action Agency
for the County of Humboldt

June 13, 2022

McKay Community Forest Stewardship Plan

Outreach Summary

- *Project Website and Email Communications*

The County of Humboldt maintains a project website at https://humboldtgov.org/mckayforest. All project outreach-related items were uploaded to the project website. The website also has a "stay informed" sign-up option so that interested individuals can receive project-related email updates. This list was used to notify community residents about the availability of the Draft Forest Stewardship Plan and the opportunities to engage in person and/ or submit comments.

- *Flyer*

A project flyer was developed to share information about the public outreach events, including the tabling days and Zoom meeting. The flyer was distributed online, placed on the project website, emailed to project stakeholders, and posted to local bulletin boards in the Humboldt Bay and greater Eureka area. See Attachment A for the flyer.

- *Summary Handout*

County of Humboldt staff updated a previous draft developed by RCAA to share quick facts about the McKay Forest Stewardship Plan. This one page (front and back) handout provides an expedited overview of the Forest Stewardship Plan's goals, a map of the McKay Community Forest, and other introductory information. This handout was made available via the project website and at in-person tabling events. See Attachment B for the handout.

- *Zoom Community Meeting*

Meeting held: May 12, 2022, 6:00 pm – 7:30 pm
The County of Humboldt, BBW & Associates and RCAA staff hosted an open community meeting via Zoom to present the Draft Forest Stewardship Plan as well as address questions and concerns from the general public. The Zoom meeting was recorded for posterity and public viewing, and is provided on the County's project website. Transcribed notes of questions and comments are provided in Attachment C.

- *Comment Forms / Emails*

The general public was provided opportunities to comment on the Draft Forest Stewardship Plan via comment forms and email submissions. The comment forms were provided to interested people at each tabling event as well as on the County website as a PDF. Comments could be handed in, mailed in or sent via an email directly to County staff. The comment form is provided an as attachment, as well as all submitted forms. Comments were also directly submitted to County staff. Comments received via forms or emails are summarized in Attachment D.

- *One-on-one/ Small Group Meetings*

The County of Humboldt and RCAA staff met with various stakeholders and interested parties to conduct one-on-one or small group conversations regarding the Draft Forest Stewardship Plan, Trail Plan, and other management aspects of the McKay Community Forest. Notes from a meeting with the property owners of a private inholding surrounded by the McKay Community Forest are summarized in Attachment E.

- *Tabling Events*

The County of Humboldt and RCAA staff held three separate tabling events to engage the general public about the Draft Forest Stewardship Plan. Two of the events were advertised via a flyer, and one was added as an impromptu event due to the convenient timing of the monthly "Arts Alive" art walk in downtown Eureka. The dates for tabling events were May 7 in the morning (held in the 3000 block of Harris Street adjacent to the Community Forest sign), May 7 in the evening (at Arts Alive in downtown Eureka), and May 14 in the afternoon (at the Humboldt Cider Company's outdoor gathering space). At each event, the Draft Forest Stewardship Plan and Trail Plan were available for review, as well as information about the Zoom community meeting and other tabling events. Comment forms were available to complete, and staff were available for Q&A and informational discussions about the McKay Community Forest. Approximately 80 people total attended the 3 separate events. While some comment forms were submitted, most people were generally interested in hearing more about 1) locations of trail and recreational amenities, 2) boundaries and access points to the community forest, and 3) timeline for trail construction. Photos of two of the tabling events are available in Attachment F.

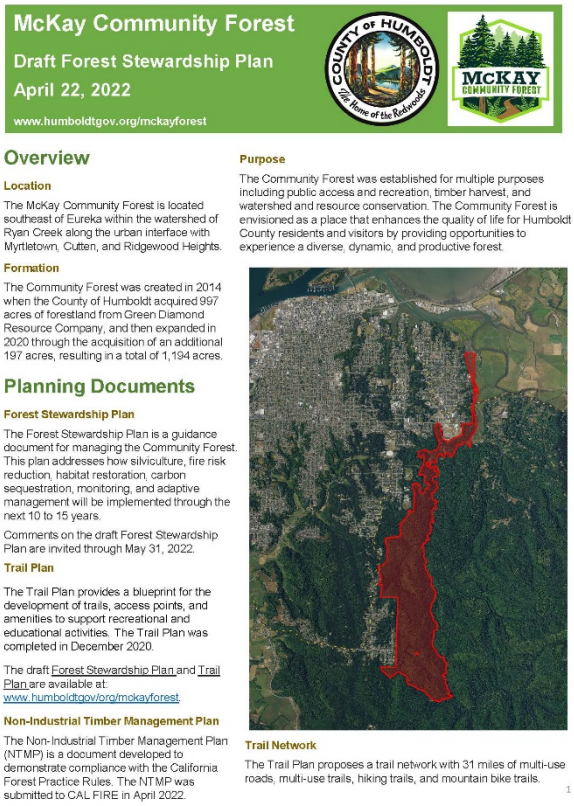
- *EcoNews Report*

Hank Seemann, Humboldt County Deputy Director of Public Works, and Stevie Luther, Humboldt Trails Council, were interviewed for the audio-based EcoNews Report on April 30, 2022. The conversation summarized the Draft Forest Stewardship Plan, addressed general timelines for trail and recreation amenity development, and described expected next steps and uses of the McKay Community Forest. An audio recording of the conversation is available here: https://www.yournec.org/the-real-mckay-release-of-management-plan-brings-eurekas-future-community-forest-one-step-closer/

Attachments

Attachment A: Flyer

Attachment B: Forest Stewardship Plan Summary Handout



McKay Community Forest

Draft Forest Stewardship Plan

April 22, 2022

www.humboldtgov.org/mckayforest

Overview

Location

The McKay Community Forest is located southeast of Eureka within the watershed of Ryan Creek along the urban interface with Myrtletown, Cutten, and Ridgewood Heights.

Formation

The Community Forest was created in 2014 when the County of Humboldt acquired 997 acres of forestland from Green Diamond Resource Company, and then expanded in 2020 through the acquisition of an additional 197 acres, resulting in a total of 1,194 acres.

Planning Documents

Forest Stewardship Plan

The Forest Stewardship Plan is a guidance document for managing the Community Forest. This plan addresses how silviculture, fire risk reduction, habitat restoration, carbon sequestration, monitoring, and adaptive management will be implemented through the next 10 to 15 years.

Comments on the draft Forest Stewardship Plan are invited through May 31, 2022.

Trail Plan

The Trail Plan provides a blueprint for the development of trails, access points, and amenities to support recreational and educational activities. The Trail Plan was completed in December 2020.

The draft Forest Stewardship Plan and Trail Plan are available at: www.humboldtgov.org/mckayforest.

Non-Industrial Timber Management Plan

The Non-Industrial Timber Management Plan (NTMP) is a document developed to demonstrate compliance with the California Forest Practice Rules. The NTMP was submitted to CAL FIRE in April 2022.

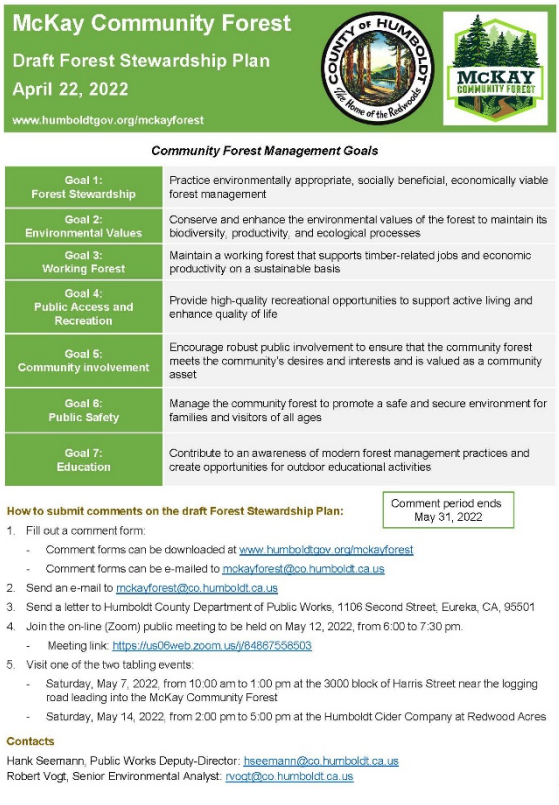
Purpose

The Community Forest was established for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation. The Community Forest is envisioned as a place that enhances the quality of life for Humboldt County residents and visitors by providing opportunities to experience a diverse, dynamic, and productive forest.

Trail Network

The Trail Plan proposes a trail network with 31 miles of multi-use roads, multi-use trails, hiking trails, and mountain bike trails.

1



McKay Community Forest

Draft Forest Stewardship Plan

April 22, 2022

www.humboldtgov.org/mckayforest

Community Forest Management Goals

Goal 1: Forest Stewardship	Practice environmentally appropriate, socially beneficial, economically viable forest management
Goal 2: Environmental Values	Conserve and enhance the environmental values of the forest to maintain its biodiversity, productivity, and ecological processes
Goal 3: Working Forest	Maintain a working forest that supports timber-related jobs and economic productivity on a sustainable basis
Goal 4: Public Access and Recreation	Provide high-quality recreational opportunities to support active living and enhance quality of life
Goal 5: Community involvement	Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset
Goal 6: Public Safety	Manage the community forest to promote a safe and secure environment for families and visitors of all ages
Goal 7: Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

How to submit comments on the draft Forest Stewardship Plan:

Comment period ends May 31, 2022

1. Fill out a comment form:
   - Comment forms can be downloaded at www.humboldtgov.org/mckayforest
   - Comment forms can be e-mailed to mckayforest@co.humboldt.ca.us
2. Send an e-mail to mckayforest@co.humboldt.ca.us
3. Send a letter to Humboldt County Department of Public Works, 1106 Second Street, Eureka, CA, 95501
4. Join the on-line (Zoom) public meeting to be held on May 12, 2022, from 6:00 to 7:30 pm.
   - Meeting link: https://us06web.zoom.us/j/84867558503
5. Visit one of the two tabling events:
   - Saturday, May 7, 2022, from 10:00 am to 1:00 pm at the 3000 block of Harris Street near the logging road leading into the McKay Community Forest
   - Saturday, May 14, 2022, from 2:00 pm to 5:00 pm at the Humboldt Cider Company at Redwood Acres

Contacts

Hank Seemann, Public Works Deputy-Director: hseemann@co.humboldt.ca.us
Robert Vogt, Senior Environmental Analyst: rvogt@co.humboldt.ca.us

2

Attachment C: Zoom Public Meeting Notes

May 12, 2022, 6:00 pm – 7:30 pm

In Attendance:

Project Staff

- Hank Seemann, County of Humboldt
- Bob Vogt, County of Humboldt
- Mark Andre, BBW & Associates
- Jared Gerstein, BBW & Associates
- Natalie Arroyo, Redwood Community Action Agency
- Chris Lohoefener, Redwood Community Action Agency

Participants, by user name

- Ben
- Bruce Cann
- Bartly Carlson
- Carol Mayes
- Cliff H
- David
- Gail Popham
- Kristen Peckham
- Paddle
- Red Cloud
- Seegers
- Sonia Waraich
- Stan Wong
- TJ
- Vivian Gerstein

1) Introductions, agenda, ground rules, icebreaker poll questions – Natalie Arroyo (RCAA)
2) Staff presentations (PowerPoint slides)
    - Hank Seemann (County) – basic overview and trail plan, including public outreach process
    - Jared Gerstein (BBW & Associates) – forestry overview and basic concepts in plan
    - Mark Andre (BBW & Associates) – concluding remarks and perspective from experience with Arcata Community Forest, what to expect in coming years/ decades
3) Questions/comments for presenters
   (Summarized for length)

   Q - Bruce Cann: Are there already some logging sites prioritized that would be entered in the near future or is that yet to be determined?
   A – Jared Gerstein: The answer is yes and right now the most likely first harvest will be east of Winship school, basically from Winship school down to Ryan Creek and north to the big power transmission corridor, about 100 acres.

   Q – Bruce Cann: Is there anything (logging) planned for the Northridge area in the next 10 years?
   A – Jared Gerstein: Not at this time.

Q – Gail Popham: Will there be parking available closer to Redwood Fields and do we expect that Redwood fields will provide parking for people to access the community forest?
A – Hank Seemann: That's happening now, informally, and then as the McKay Ranch Subdivision advances, there will be more formalized access to the community forest in that area… In the short term, Rex Bohn, who manages Redwood Fields, has indicated that he would like the parking area to serve as an access point.

Q – Bruce Cann: Is the easement near the McKay Ranch Subdivision formalized and if not, what's the priority on developing that trail easement?
A – Hank Seemann: Bruce is referring to the portion of the community forest just east of Redwood Fields, where the community forest is narrow and has unique features - where there's a private inholding property, a single family residence – so in order to avoid impacting that property, the County has mapped a trail that would traverse the eastern boundary of that future subdivision… the landowner has committed to providing the County an easement for that trail and it will be recorded when the first phase of the subdivision is finalized… would expect that to happen within the next year, but not going to be our first priority for building out trails… the first priority will be Northridge and then going North East and South from Northridge… also want to talk with Redwood Acres about their interest in allowing access points, and if that's possible, prioritize trails around Redwood Acres as well.

Q – TJ: Will County staff be assigned to help with garbage removal and keep an eye on the trail?
A – Hank Seemann: Yes, Public works has a parks division that manages several county parks so the McKay Forest will be part of their domain. County staff will do what we can and then also rely on collaboration with the Volunteer Trail Stewards and community members to monitor areas, help with trash pickup and encourage appropriate uses.

Q – Bruce Cann: Regarding the trails at Northridge… once the trails are put in, use is going to increase rapidly… will the bridge at the bottom, over the creek, be a priority? I would hope so given that once people get down in there, they are going to want to cross that creek to reach some other areas and I can see people trying to jump across, causing erosion as well as creating safety issues…
A - Hank Seemann: That's a really important consideration, and as we start building trail, we'll need to think ahead to where it will be logical for people to want to go… trying to prioritize the bridge project is a good idea, and with signage, we can try to encourage people to stay within the formal trails until the future trails are built… dispersed, haphazard use can really have an impact on vegetation and slope stability, so we want to keep concentrated use on the formal trails that are built appropriately, with current standards.

Q – From the chat: How much of the logging profit will go to the community forest?

A – Hank Seemann: When the Board of Supervisors accepted the property for the community forest, it was based on the premise that the forest would be economically self-sustaining over the long term… at a time when county finances were struggling and the general fund had a lot of demands, the board saw this as an investment in the long term, and we've been doing our work over the last several years through an internal loan… so, initially, the revenue from our future timber harvests will go back to pay off that loan… The next priority is to invest in building the trail infrastructure… there's an important bridge over Henderson Gulch, and in fact a total of 10 bridges in the trail network, ranging from 15 feet long to 90 feet long… those are expensive items that will require contractors and securing materials so that's a big investment… There will also be staffing and on-the-ground issues to deal with, as well as managing some of the logging roads – some of the historic logging roads were built well but a lot of them are in inappropriate locations that need to be either decommissioned or treated for sediment sources… The vision is, ultimately, that there will be surplus revenues that could be considered for other community benefits, whether it's community parks or other things… it's hard to predict exactly but hopefully in 15 or 20 years we could get to that point, but it depends on a variety of factors…

Q – Bruce Cann: To avoid getting lost in the forest, it would be nice to have a few maps with the proposed trail systems and some other key features like the drainages… Geo-referenced and in PDF form so that we can put them on our smartphones… there's an app called Avenza that works well…
A – Hank Seemann: I think that's a good suggestion Bruce, there is definitely a need for that and I like your idea of having it be electronic… later this summer, once we complete the environmental report and can start the formal trail building and have a grand opening at Northridge, we will definitely prioritize starting to make maps available.

Other - Natalie Arroyo: we have some comments in the chat, "thank you to all involved, very exciting" and then another person, David, said they'd like to be involved with the McKay stewardship trail program.

Attachment D:

Public Comment Form Submissions and Comments Received by Email

From:	Jim Clark
To:	McKay Forest
Subject:	Draft McKay Community Forest Stewardship Plan & riparian resources
Date:	Saturday, April 30, 2022 6:34:08 PM

I request that the trail and road system plan include the watercourse and wetland layers and added to the draft plan. If such a map is to complex I would suggest that trails and roads within 100’ of watercourses and wetlands be identified on a map.

Watercourses and wetlands are the most productive wildlife areas in the planning area. They are also the most sensitive and very attractive to visitors. It is therefor important trails that can be accessed most of the year by the public be located to avoid wildlife disturbance while still providing visual access to the public.

I tried to correlate trail locations to watercourses but found it difficult to do accurately from the provided maps. I believe that a map clearly showing potential areas of conflict with an indexed summary of the areas and their concerns would be helpful for public review. I also believe that the interested public should be aware of the process involved in resolving these types of potential conflicts.

Sincerely,

Jim Clark
Eureka

Forest Stewardship Plan
Comment Form

Date: May 9, 2022

Where do you live? Lentell Road Name (Optional): L. Lampi

Email (optional):

☐ Please add me to the McKay Community Forest e-newsletter list

1. The management goals are listed in the table below. Do you have any suggestions or concerns?

I like the goal of education about forest management practices. The tract provides an opportunity for historical perspective to inform visitors of how the forest and the current environment came to be. The past logging of the tract should be a part of this educational goal. The Timber Heritage Association could provide valuable information. The tract had its own railroad.

Community Forest Management Goals

Management Goal	Description
Forest Stewardship	Practice environmentally appropriate, socially beneficial, economically viable forest management
Environmental Values	Conserve and enhance the environmental values of the forest to maintain its biodiversity, productivity, and ecological processes
Working Forest	Maintain a working forest that supports timber-related jobs and economic productivity on a sustainable basis
Public Access and Recreation	Provide high-quality recreational opportunities to support active living and enhance quality of life
Community Involvement	Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset
Public Safety	Manage the community forest to promote a safe and secure environment for families and visitors of all ages
Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

2. What is most important to you about the McKay Community Forest?

That it be kept free of free lance camping. Strict enforcement must be a priority.

3. Are there parts of the Forest Stewardship Plan that could be improved?

What is the plan to keep visitors from wandering onto Green Diamond property on the East side of Ryan Creek and from there onto private property? We have had a few bicyclist, motorcycles and occasional foot traffic come onto private land.

4. How can the McKay Community Forest provide the most valuable benefits to the public?

Please set aside areas that are foot traffic only. Especially free from bicyclist. Bicycles in the forest are like fingernails on a chalkboard.

May 13, 2022

I have walked on the McKay track for a few years now. I first walked down the road until the trail through the redwoods was finished. I park on Harris street and enter at the location that is next door to Redwood Acres Fairgrounds. As I enter I begin to hike the trail just to the left of the entrance. This is a wonderful trail for hiking. However, it is a very narrow trail. Most of it is only wide enough for one person at a time to be on the trail. If I am hiking with friends, we have to walk much of it single file. A few months ago a bicyclist was coming down the trail toward me at a very fast speed. He was coming down a hill, and because there was a blind curve, he did not see me. He did not have time to brake. My dog and I had to jump out of the way into the bushes, some of which were poison oak, so as not to be run over. I am opposed to allowing mountain biking on this particular section of the McKay track. It is simply too narrow with many hills that encourage fast biking. Since cyclists are riding bicycles, can't they ride down the road a bit to do their mountain biking on trails that are farther away that hikers aren't apt to frequent? I do not want to share the trail with them near the entrance as it is too dangerous.

Susan Vaughn

Eureka Resident

Relates to
map 4-3

From: C T
To: McKay Forest
Subject: Plan comment
Date: Friday, May 13, 2022 6:40:15 PM

Whatever the county and partners decide to do, keep trail development standards high (high).

Always select alignments with excellent long-term sustainability, not as to short-term gain. Surface harden all trails during construction (not later), and drain all trails appropriately (beware creating too-long fall-line alignments, those built or likely to manifest). Secondly, relying on volunteer builders and maintenance-providers can be good, however caution is advised; too many folk are now aligning and building too quickly, and too steep, with little consideration as to potential degradation over the long term.

Maintenance is always required, a given, but when aligning and building you typically only get, as to capital development funds, one shot at getting it right enough. So, think “impact” and not just at 2025 and 2035 levels but 2100 and beyond. The result of work being done faster, cheaper, can result in the next county staffer and thereafter being stuck with legacy problems, and potentially too little funds, subordinate staff, and/or limited volunteer-resources to effectively manage, the resource, and using public, slipping and sliding away.

It’s a great resource, the McKay. Thanks much, Humboldt County, and best wishes!

Chris Turner

Sent from my iPhone

From: Carol Mayes
To: McKay Forest
Subject: Questions about McKay forest trails
Date: Friday, May 13, 2022 6:23:12 PM

> **Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Hi I attended the zoom presentation on Thursday May 12 and I have the following questions:
1. Does the plan address how homeless populations will be managed so that the trails are safe for public use?
2. Are any guided walks for the public planned?
This is a great project for our community. Thank you for all your efforts.
Sincerely
Carol Mayes

Forest Stewardship Plan
Comment Form

Date: 5/14/22

Where do you live? Eureka Name (Optional): Katie Vaughn-Kelso

Email (optional): katierosevk@gmail.com

☒ Please add me to the McKay Community Forest e-newsletter list

1. The management goals are listed in the table below. Do you have any suggestions or concerns?

I care about waterway health & an experience of being immersed in nature. The clear cut hillsides are sad and I'd like a healthier harvest plan.

Community Forest Management Goals

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Community Involvement	Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset
Public Safety	Manage the community forest to promote a safe and secure environment for families and visitors of all ages
Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

2. What is most important to you about the McKay Community Forest?

Hiking w/ my dog & mom (she's 70) on a hill in the forest, without bikes!

3. Are there parts of the Forest Stewardship Plan that could be improved?

Designated hiking trails close to parking - 1 & 2 hour long loops. narrow trails, hills, no bikes.

4. How can the McKay Community Forest provide the most valuable benefits to the public?

I would like more trails along the waterways. Also No 5G or othe cell towers/antenna within 1500 feet of the trails!

Comment Forms can be e-mailed to mckayforest@co.humboldt.ca.us

Forest Stewardship Plan
Comment Form

Date: 5-14-2022

Where do you live? 5344 Northridge Rd Name (Optional): Dean Howatt

Email (optional): already signed up

☐ Please add me to the McKay Community Forest e-newsletter list

1. The management goals are listed in the table below. Do you have any suggestions or concerns?

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Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

2. What is most important to you about the McKay Community Forest?

Providing a natural forest environment that is easily accessed from the city.

3. Are there parts of the Forest Stewardship Plan that could be improved?

I am most worried about security issues like camping, illegal trail building + motorcycles.

4. How can the McKay Community Forest provide the most valuable benefits to the public?

Provide a quiet walk or bike ride in the forest.

Comment Forms can be e-mailed to mckayforest@co.humboldt.ca.us

Forest Stewardship Plan
Comment Form

Date: 5-14-22

Where do you live? Manila, CA Name (Optional): Warren Moak

Email (optional):

☐ Please add me to the McKay Community Forest e-newsletter list

1. The management goals are listed in the table below. Do you have any suggestions or concerns?

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2. What is most important to you about the McKay Community Forest?

I would love to see a disc golf course incorporated into the plan at some point. The demand is there.

3. Are there parts of the Forest Stewardship Plan that could be improved?

4. How can the McKay Community Forest provide the most valuable benefits to the public?

Allowing multiple uses economically and recreationally. Figuring out how to ~~[illegible]~~ create many uses and not have too much overlap would be valuable.

Comment Forms can be e-mailed to mckayforest@co.humboldt.ca.us

Forest Stewardship Plan
Comment Form

Date: 5/16/2022

Where do you live? 5344 Northridge Rd. Name Dean & Nancy Howatt

Email (optional): We are on the email list.

☐ Please add me to the McKay Community Forest e-newsletter list

1. The management goals are listed in the table below. Do you have any suggestions or concerns?
We feel public safety will be the most difficult goal to be achieved. Without some type of supervision there will be illegal camping, motor vehicle use, tree cutting, trail building and marijuana growing. As neighbors of the McKay Tract since 1985 we have seen all of these problems many times.

Community Forest Management Goals

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2. What is most important to you about the McKay Community Forest?
Preserving good habitat for wildlife, providing easy walking access for older folks and small children or just a place for people to take a quick walk in a quiet place.

3. Are there parts of the Forest Stewardship Plan that could be improved?
We are not opposed to logging as this is a traditional part of our economy and it creates a more diverse wildlife habitat than a mature forest.

4. How can the McKay Community Forest provide the most valuable benefits to the public?
The quiet refuge of a forest that can be enjoyed right next to the city is a tremendous asset.

REDWOOD REGION AUDUBON SOCIETY

A MEMBER OF THE NATIONAL AUDUBON SOCIETY
P.O. BOX 1054, EUREKA, CALIFORNIA 95502

May 20, 2022

mckayforest@co.humboldt.ca.us
Humboldt County Department of Public Works
1106 Second Street
Eureka, CA, 95501

RE: Draft comments on Draft Forest Stewardship plan

Redwood Region Audubon Society (RRAS) has reviewed the Forest Stewardship Plan (FSP) including the Trails Plan, for the McKay Community Forest. We agree with the Vision and plans for long term management that emphasize science and community input. However, to assure the best mitigation for potential trail and road impacts, we believe that a better-defined process should be included in the Trails Plan.

We would like to see the mitigated negative declaration move forward smoothly to enable site work to begin as soon as possible. That is why we are requesting a defined process rather than a complete, detailed plan.

The FSP Special Management Areas 3.8.1 through 3.8.4 are of particular interest to RRAS as they represent high potential for bird and wildlife viewing while at the same time must be protected from overuse by the public. Steps to protect these areas in the Forestry section are appropriate but we believe that their protection, and possible enhancement, needs to be addressed in the context of trails and public use.

RRAS has a membership of over 500 members, mostly in Humboldt County. Among us are many who are retired or active natural resource professionals, and many experienced birders. We request to be included for active participation in the McKay Community Forest Planning and development.

Sincerely,

Gail Kenny
President

From: Bruce Cann
To: McKay Forest
Subject: Comments on Draft McKay Community Forest Stewardship Plan
Date: Monday, May 23, 2022 1:09:53 PM

Thank you for the opportunity to comment on the draft stewardship plan for the McKay Community Forest. Overall, the draft plan is excellent. I just have a few suggestions forconsideration in writing the final plan.

1. Page 57: Please add some language that constructed logging roads and landings shall be located in areas that minimize visual impacts from designated public trails, consistent with the other protection measures listed on that page.

2. Page 66: For Conservation Measure 10, please replace the word “may” with “will” and add “chipping” specifically as a method for getting rid of slash and reduce fuel loads. Lop and scatter should not be considered as it does not reduce fuel loading in the short term. Slash piles and landings need to be located in areas that are not seen from public use trails to the maximum extent possible.

3. Page 73: Please re-write to remove the wording about spreading more fuel. This forest already contains very heavy fuel loading. Emphasize the priority will be chipping, burning, or removal to reduce fuel loading in the short term.

4. Page 73: Please add no logging on Sunday as well.

5. Page 89: It might be appropriate to somehow develop an enforceable set of “interim management guidelines” until an ordinance is formally adopted.

That it for now…again, great work!!!

Bruce R. Cann

Forest Stewardship Plan
Comment Form

Date: May 30, 2022

Where do you live? Eureka Name (Optional): Susan Penn

Email (optional):

Please add me to the McKay Community Forest e-newsletter list Yes!

1. The management goals are listed in the table below. Do you have any suggestions or concerns?

Community Forest Management Goals

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2. What is most important to you about the McKay Community Forest?

The most important thing for me personally is having legal, safe access to the area and use of its trails.

3. **Are there parts of the Forest Stewardship Plan that could be improved?**

Two things are foremost for me: access points and hiking trails.

I realize that access is dependent on permission, etc., and don't truly know how all that works. What I'm seeing is that there is no proposed public access in the southern portion at all. You have roads and trails in that area, but no way for a walker to access them readily.

As a pedestrian, a hiker, I would like to see more trails dedicated to hiking. Looking at the proposed trails, I see lots of trails designed for mountain biking, and just two small hiking sections. One of these is in the far south area, with no access for miles to the north. This would require hiking along multi-use roads and trails for a long way just to get to this small section. Walking along roads has its advantages, but there is something special about a trail. I don't mind sharing trails with bikers, and all the bikers I've

encountered out there have been courteous. But bikes do tend to thrash the trails, especially during wet weather.

So much to read! I appreciate all the work that has gone into this.

4. How can the McKay Community Forest provide the most valuable benefits to the public?
I think a few interpretive signs would be wonderful. There is a lot of history in the property, and also a lot of natural features that you could share.

Your plan does mention signage, etc., and it would be helpful to know when you're leaving/entering private/public property.

I like a lot of the restoration plans, even though I don't know all the locations or details.

Logging sustainably, wisely, and supporting the forest for community use in that way sounds like the way to go!

Humboldt Trails Council
Post Office Box 7164
Eureka, CA 95502

May 31, 2022

Hank Seemann, Deputy Director
Humboldt County Public Works
1106 2nd Street
Eureka, CA 95501

RE: Comments on the McKay Community Forest draft Forest Stewardship Plan

The Humboldt Trails Council has reviewed the McKay Community Forest draft Forest Stewardship Plan, and we want to commend you on its thoroughness and vision. We wish to reaffirm our organization's support for the development of the McKay Community Forest, and our commitment to working with you on trail development and maintenance.

We appreciate the community involvement component and the commitment to public access and safety. Stewardship is a guiding principle and priority for our organization.

We look forward to following through with these commitments and the development of the McKay Community Forest as a vital community resource. Thank you for all you do for the trail community in Humboldt County.

Karen Underwood
Advocacy Chair, Humboldt Trails Council

Seemann, Hank

From: Jessica Heiden
Sent: Monday, June 06, 2022 8:49 AM
To: Seemann, Hank
Subject: Re: Alternate names for 'McKay' Community Forest

Hi Hank,

Since McKay was the name of the logging company, I think we should look into a more meaningful name for this new community resource. Let's make sure this is an inclusive and respectful project :)

The Wiyot people lived here for thousands of years before we came and started changing and using the natural resources, including logging the redwood forests. I think we can use a name different than the McKay to bring awareness to the history and culture of this area. Any other names, like Ryan Creek/Slough would be good to be renamed at this time too.

Since the Community Forest is a new project, this is the ideal time to consider other names. I would definitely recommend discussions with the local tribes for their input.

Thank you,
Jessica

On Thu, Jun 2, 2022, 5:10 PM Seemann, Hank <HSeemann@co.humboldt.ca.us> wrote:

> Hi Jessica-
>
> Could you expand on your perspective regarding the name? Do you have a concern about the name "McKay"? Are there specific reasons that you believe an alternative name would be beneficial?
>
> Sincerely,
> Hank
> ---
> Hank Seemann
> Deputy Director - Environmental Services
> Humboldt County Public Works Department
> 1106 Second Street
> Eureka, CA 95501
> 707-268-2680
>
> ---
>
> **From:** Jessica Heiden
> **Sent:** Tuesday, May 31, 2022 10:18 PM
> **To:** Seemann, Hank <HSeemann@co.humboldt.ca.us>
> **Subject:** Alternate names for 'McKay' Community Forest

Hello Deputy Director Seeman,

We are hoping that other names will be considered for the future Community Forest in Humboldt. Currently the name being used is the McKay Community Forest. The question about alternate names was brought up during the May 12th meeting, but it was near the end and unfortunately does not seem to be on the recording (https://humboldtgov.org/CivicMedia?VID=76).

Although you mentioned there is a history and association with the name "McKay", we are hoping the County is open to alternatives. For example, Patrick's Point State Park was renamed 'Sue-meg' State Park. It was probably a lot more work to rename an existing State Park, so looking into alternative names for the Community Forest as early as possible seems like a good idea.

For the Community Forest project, will you be looking into alternative names?

Thank you,
Jessica & Trey

Forest Stewardship Plan
Comment Form

Date June 1, 2022

Where do you live? Eureka Name (Optional): Pamela Cosel

Email (optional):

☐ Please add me to the McKay Community Forest e-newsletter list **YES**

1. **The management goals are listed in the table below. Do you have any suggestions or concerns?**
   Yes, I think it looks good, and with regard to "recreation" and public use, I want to bring up the issue of **DOGS** on the trail. Many pet owners walk with their dogs, of course. Please be sure to work this into the plan. Meaning: please install stands with "doggie bags" and trash cans for such, here and there. Also, I have lived in a city where there was an "off-leash" dog park, and I don't know if that fits into the design. Most trails should require dogs to be ON leash, though.

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Education	Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities

2. What is most important to you about the McKay Community Forest?
Being sure that the plan is run smoothly and funded wisely: not too much spent but enough to get the job done

3. Are there parts of the Forest Stewardship Plan that could be improved?
See my comments above about including dogs in the plan.

4. How can the McKay Community Forest provide the most valuable benefits to the public?
Make it accessible to all ages, including parents with infants on bikes, strollers possibly, handicapped persons, and dogs/pets.

Comment Forms can be e-mailed to mckayforest@co.humboldt.ca.us

From:	Rees Hughes
To:	McKay Forest
Subject:	Considering Alternative Names for McKay Community Forest
Date:	Tuesday, June 07, 2022 11:35:40 AM

Hank,

I would like to suggest that, at some point, serious consideration be given to reconsidering the name of the McKay Community Forest. Elevating the name of another lumber baron not particularly known for enlightened or progressive timber management and not associated with local philanthropy, seems like a lost opportunity.

While I don't have a specific name to suggest, I do think that it would be appropriate to appoint a committee representing a diversity of interests and perspectives to vet potential new names.

Rees

Attachment E: Notes from meeting with private inholding property owners

Meeting notes – Stakeholder outreach for McKay Community Forest Stewardship Plan

Participants: David Greene and Melanie McCavour (property owners of private inholding within the McKay Community Forest), Hank Seemann (County of Humboldt), Natalie Arroyo (Redwood Community Action Agency)

Meeting date: May 17, 2022

Property owner concerns by category

The logging road leading to their property from Harris Street:

- Section 1.2.1 (Community Setting) indicates that the "R line" road and R-1 road are used by residents of the private inholding to travel to their home, but this should also be stated in Section 3.6 (Transportation System).
- Concerns about safety of non-motorized users on the roadway leading to their property due to narrow roadway and traffic volumes. David and Melanie estimate that there are between 10-20 one-way trips on the road daily. This includes PG&E, the residents and their family, visitors to the private property, AirBnB of the private property, and postal workers/ delivery personnel.
- The gate on the R Line road at Harris Street that was previously locked is problematic. The lock would become frozen, muddy, and difficult to unlock. It would not stay open when driving through. Currently Green Diamond is keeping the gate open. The owners of the private property do not object to a gate, but want it to be an automatic/ electrified gate, or a gate where the locking mechanism is easier to reach and the gate can be made to stay open while driving through. With the gate open, there has been more vehicle traffic and dumping. Melanie would like to see a gate modification so that the gate can be closed, but is also easier to use. Hank will help to identify the new Green Diamond staffperson to communicate this to, since Green Diamond is responsible for the gate.
- David and Melanie have performed maintenance on the road leading to their property. The road easement document created in 2009 defines maintenance responsibilities for the non-exclusive easement.
- Brush has encroached on the road and needs to be cut back. The County plans to cut back the vegetation and maintain vegetation to increase sight distance when formal trail use is designated on the road. Road width must accommodate a fire truck.
- Melanie and David would like to see a delineated part of the roadway for non-motorized users. They wish to see delineators or "bike paddles" used, and the roadway either widened or vegetation cleared to use the full roadway width. Hank, Melanie and David did not agree about this approach. Hank believes the roadway cannot be widened sufficiently to establish a "trail lane" separate from the vehicle travel lane for the entire length due to adjacent wetlands. In addition, Hank believes that the paddles would not be effective in preventing people from walking or biking on the full width of the road. The County proposes a "shared use" approach for this low volume road, where motorized vehicles are responsible for using extra caution and non-motorized users may share the road.
- Melanie asked about exploring alternative ways to access the property, such as an extension of the road planned for the new Kramer property development. The road will end to the west of the inholding property, and the land is steep there. Hank does not think it is a likely option due to the grade involved.

Other requests and considerations:

- The use hours for public access will be dawn to dusk. Signage will be needed to convey this message. No lighting will be provided nor is being proposed by the County.
- Signage is needed to indicate appropriate uses and convey that the R-Line and R-1 roads are not open to vehicular use by the general public.
- David and Melanie's home is fully electrified and they agreed not to use natural gas. There is a large gas line, which could be removed.

Other comments on Forest Stewardship Plan:

- No concerns noted about the forestry aspects of the plan, which were reviewed.

David and Melanie wish to have a visual barrier to the extent feasible around their property. In particular, they noted the Sitka spruce along the southeast portion of the property, but they wish to preserve a visual barrier on all sides. They want to minimize the aesthetic impact on their p

Attachment F: Photos from Tabling Events