City of Fort Bragg

Raw Water Line Replacement Project

Initial Study/Mitigated Negative Declaration

March 2022

Dewberry

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Raw Water Line Replacement Project

Initial Study/Mitigated Negative Declaration

Submitted to:

City of Fort Bragg
Public Works Department
1416 North Franklin Street
Fort Bragg, CA 95437

City Project Manager: Diane O'Connor

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1223 Pleasant Grove Road Suite 100
Roseville, CA 95678

Lead Engineer: Simon Gray, P.E.

Prepared by:

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CEQA Project Manager: Douglas Brewer

March 2022

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INITIAL STUDY

1. **Project Title:** Raw Water Line Replacement Project

2. **Lead Agency Name and Address:** City of Fort Bragg Public Works Department

3. **Contact Person and Phone Number:** Diane O'Connor, Assistant City Engineer. (707) 961-2823 Extension 134

4. **Project Location:** Fort Bragg. Includes Noyo River, Newman Gulch, Covington Gulch, and Hare Creek watersheds

5. **Project Sponsor's Name and Address:** City of Fort Bragg, Public Works Department, 416 North Franklin Street, Fort Bragg, CA 95437

6. **General Plan Designation(s):** Public land use

7. **Zoning Designation(s):** Various

1.0 INTRODUCTION

The City of Fort Bragg (City) is proposing to replace sections of its primary raw water transmission line that brings fresh water to the City's water treatment plant (WTP). The water line is reaching the end of its service life and pipe failures are becoming more regular and widespread. This project is for replacement of these segments of pipeline to increase the reliability and resilience of the raw water supply system. The City's Raw Water Line Project has been divided into five segments to facilitate implementation, although Segments 2-5 will be constructed under a single contract if funding allows.

- Segment 1 - raw water line from north side of Highway 20 to the Summers Lane Reservoir. This project was constructed in 2013 and is not included in this document.
- Segment 2 - replacement of approximately 2,700 feet of raw water line from the City's water treatment plant to the northern edge of the Noyo River flood plain.
- Segment 3 - replacement/realignment totaling about 4,700 feet of new pipe, beginning on the south side of the Noyo River at the Georgia Pacific (GP) Haul Road, and running west along the GP Haul Road (Haul Road) and then upslope to Summers Lane reservoir.
- Segment 4 - replacement of raw water line from near where the existing pipe goes underneath State Route 20 (Highway 20), southerly along Dwyer Lane to a connection point with the existing pipeline on the north side of Covington Gulch. The existing water line crossing of Covington Gulch is in good condition and will remain in place.
- Segment 5 - about 1,000 feet of new pipe leading from Forest Road 450 (FR 450) down to Hare Creek. The Hare Creek crossing will also need to be replaced with this segment.

- Lining of the Noyo River Crossing – this piece of the project will use trenchless technology to slip line the existing pipeline from the terminus of Segment 2 to beginning of segment 3. The lining may be performed under a separate construction contract but is still a part of the overall project. Trenchless technology was selected to avoid impacts to Noyo River aquatic ecosystem.

The City's project team, comprised of engineers, biologists, and environmental and geotechnical specialists, evaluated several pipeline corridor alternatives during the planning phase to optimize the pipeline alignment with due consideration of numerous engineering, environmental, geotechnical, land use, cost, and other important criteria. These preliminary engineering planning studies can be reviewed at the City's Public Works Department on request and are posted on the City's website along with this ISMND. These studies include:

- City of Fort Bragg Raw Water Line Replacement Project, City Project no: 2019-02. Project Existing Conditions and Constraints Technical Memorandum dated July 2019.
- City of Fort Bragg Raw Water Line Replacement Project, City Project No: 2019-02. Final project Practicality Report dated January 24, 2020.

The City has endeavored to plan the new pipeline to minimize environmental impacts to the extent feasible and practicable while designing a cost-effective project for City rate payers. The proposed alignment was carefully selected to help achieve that goal.

2.0 PROJECT DESCRIPTION

2.1 Introduction

The City of Fort Bragg Public Works Department (City) proposes to replace major portions of the City's main raw water supply pipeline with their Raw Water Line Replacement Project (Proposed Project). The Proposed Project would construct almost 2 miles of raw water pipeline, replacing sections that are reaching the end of their service life.

This Project Description is based on two engineering planning studies prepared by Coleman Engineering, the City's engineering consultant, and includes:

- City of Fort Bragg Raw Water Line Replacement Project, Technical Memorandum: Existing Conditions and Constraints, dated July 2019; and
- City of Fort Bragg Raw Water Line Replacement Project, Final Project Practicality Report, dated January 2020.

The purpose of these two planning studies was to provide technical analysis of potential alternative routes for a new pipeline, review pipeline hydraulics, and assist in evaluating and selecting the optimal pipeline corridor. The City considered several alternative pipeline corridors in the studies above and selected a preferred engineering alternative that considered various environmental, geological, and other constraints, with an emphasis on minimizing environmental disturbance. Please refer to these two studies for more information on existing conditions, alternatives considered and pipeline corridor selection. These reports were completed prior to the addition of the Hare Creek crossing replacement, the lining of the Noyo River crossing, and the Newman Pump Station, but are otherwise an accurate representation of the Proposed Project. They are available to the public for review at the City of Fort Bragg Public Works Department.

2.2 Project Location

The City of Fort Bragg is located in California's north coast region, within Mendocino County, California (**Figure 2-1**). The City of Fort Bragg's water supply comes from three main sources including Waterfall Gulch, Newman Gulch, and the Noyo River. The City's Water Treatment Plant (WTP), located at the intersection of Sherwood Road and Monsen Way, receives its raw water supply from these three local sources via two main pipelines. The pipeline from the Noyo River is not a part of this Project. The Proposed Project pipeline transports water from Waterfall Gulch and Newman Gulch and is shown on **Figure 2-2**.

2.3 Project Purpose and Need

Sections of the City's pipeline are reaching the end of their service life, and pipe failures are becoming more regular and widespread. Portions of the pipeline are partially buried, leaving the pipe crown exposed, and a small section of pipeline is being supported above ground on a deteriorating wooden trestle. Another section that was buried has been exposed and is being severely undercut by stream erosion. As a result, there is a constant threat to the reliability of the City's water supply.

The primary goals and objectives of the City's water supply project are to:

- Provide a reliable and resilient water supply system that will provide safe, high quality drinking water to the residents of Fort Bragg.
- Plan, design and construct the new water supply pipeline with sensitivity to the natural environment that includes the Noyo River, Newman Gulch, Hare Creek, and Covington Gulch watersheds,
- Demonstrate the City's commitment to good environmental stewardship and environmental sustainability by considering environmental issues during the pipeline planning, permitting and design process,
- Plan, design and construct a new pipeline that is cost-effective and has minimal impacts to City existing water rates.

Funding

Due to the drought induced water shortage in summer of 2021, the California Department of Water Resources awarded the City of Fort Bragg $8.8 M for this important public water supply project. The funds must be used and project implemented by 2024 according to the grant agreement. It is critical that the City meet this deadline to ensure a reliable water supply for Fort Bragg residents.

2.4 Existing Conditions

Raw water from the Noyo River is conveyed from the Madsen Hole intake structure, located to the east of the WTP, and is pumped via 10-inch and 14-inch diameter pipelines directly to the WTP. This pipeline is not included in the Proposed Project and is presented here to provide an overall presentation of the City's water supply.

The second and third sources of raw water are from two local streams, Waterfall Gulch and Newman Gulch, located south of the City's WTP. Water from both sources is conveyed in a single connecting pipeline under gravity pressure to the WTP. The existing pipeline is a combination of 6, 8, 10, and 12-inch diameter polyvinyl chloride (PVC), asbestos cement, ductile iron and steel pipes and crosses a variety of environments including the lands of Lyme Redwood Timberlands, LLC (Lyme), Jackson Demonstration State Forest (JDSF), and local County subdivisions. Significant sections of the existing pipeline are situated in steep, heavily wooded, and landslip-prone gorges such as Newman Gulch and Covington Gulch. Sections

of the pipeline corridor are also characterized by shallow groundwater, springs, and sensitive riparian environments, with portions lying within the California Coastal Commission designated Coastal Zone (CZ). The pipeline includes three water crossings, including the Noyo River, Hare Creek, and Covington Gulch. It also crosses a small unnamed watercourse between the Noyo River and Sherwood Road. The elevation at the pipeline's highest point is approximately 335 feet above sea level (Waterfall Gulch intake), while the low point in the profile is at the Noyo River crossing just above sea level.

Legend

Project Location

Mendocino County Boundary

California Coastal Zone

Dewberry

0 5 10 20 Miles

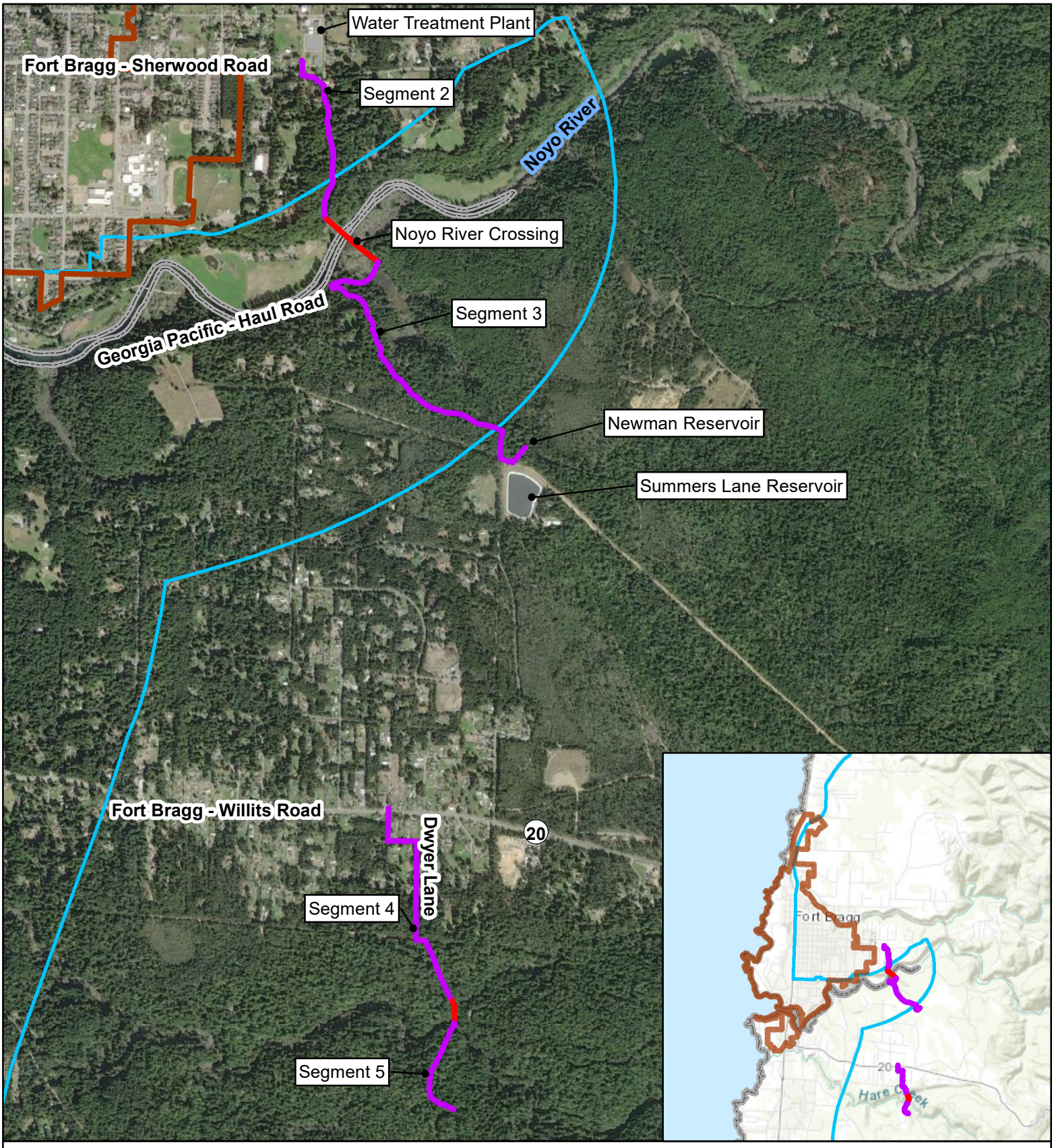
Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Regional Location

Figure 2-1



Legend

- Existing Alignment to be Retained
- Proposed Alignment
- Fort Bragg City Limits
- California Coastal Zone

Dewberry

0 500 1,000 2,000 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Project Location

Figure 2-2

The Proposed Project is divided into five distinct elements for planning and engineering purposes: Segments 2, 3, 4 and 5, plus lining of the Noyo River Crossing. Segment 1 from the north side of Highway 20 to the Summers Lane Reservoir was constructed in 2013 and is not included in the Proposed Project.

2.4.1 Segment 2 Pipeline (Water Treatment Plant to North of Noyo River)

The existing raw water pipeline exits the south end of the WTP and crosses under Sherwood Road, through private property, and along a narrow, unpaved driveway. At the end of this driveway is a narrow access road that descends down to the northern bank of the Noyo River. The surrounding slopes along this existing road/pipeline route are steep and heavily vegetated, with fern undergrowth and dense mature tree cover on each side of the road. Water was observed during recent surveys seeping from the road cut slopes at various locations, indicating high groundwater conditions. Surficial soils appear to be primarily residual soils consisting of clayey sand to sandy clay. Some very intensely weathered to decomposed sandstone (breaking down to a clayey sand and/or sandy clay with finger pressure) was observed within the slopes. A large outcrop of intact rock was observed at the bottom of the access road, at the northerly edge of the Noyo River floodplain.

City staff have advised that a large volume of stormwater runoff flows down the access road. There is a drainage ditch that runs along the western side of the road in its upper section. The drainage then crosses beneath the road twice as it progresses downslope. Additionally, there is a natural drainage inflow from the northeast that combines with the drainage ditch runoff approximately halfway down the access road. The watercourse formed by this accumulation of run-off and emergent ground water provides some riparian habitat. The watercourse parallels the access road and pipeline in the lower potions of Segment 2. Special construction measures will be utilized in these near stream areas to insure impacts to riparian habitats and aquatic resources are minimized. Best management practices for trench excavation, excavated material storage and prevention of localized stormwater run-off to be described in the Storm Water Pollution Prevention Plan (SWPPP) required from the construction contractor will be adopted in these near stream areas to ensure impacts to avoid or minimize impacts to riparian habitats and aquatic resources. There is an area of slope instability just above where the drainages converge. This area experienced a significant slope failure in 2003 that damaged the pipeline. The slope was temporarily repaired by excavating out the failed material and replacing it with fill. There has been more recent ground movement adjacent to this location after winter storms in January and February 2017, and the City first noted this ongoing movement in March 2017.

The natural drainage channel flows just below this area of slope instability, and is eroding the support at the slope toe, initiating ground movement. Additionally, the slope constituent materials are likely highly saturated in winter, based on evidence of high groundwater in the area. This only increases hydrostatic pressures and forces driving slope movement. Following a review by geotechnical engineers, the new pipeline will be deepened to below the potential slippage plane and relocated closer to the inboard side of the slope to avoid impacts caused by slope creep or movement.

2.4.2 Segment 3 Pipeline (South of Noyo River to Summers Lane Reservoir (N) and Newman Reservoir Intake)

The existing Segment 3 pipeline starts on the south side of the Noyo River, passes under the Haul Road, and then proceeds southerly, along the eastern slopes of Newman Gulch to the Newman Gulch Intake. From there it continues south and up to the Summers Lane Reservoir. This existing pipeline travels cross-country through a heavily forested area that is primarily owned by Lyme,with a small portion crossing the lands of GP. The majority of Segment 3 is located within the CZ.

2.4.3 Segment 4 Pipeline (Highway 20 to Covington Gulch)

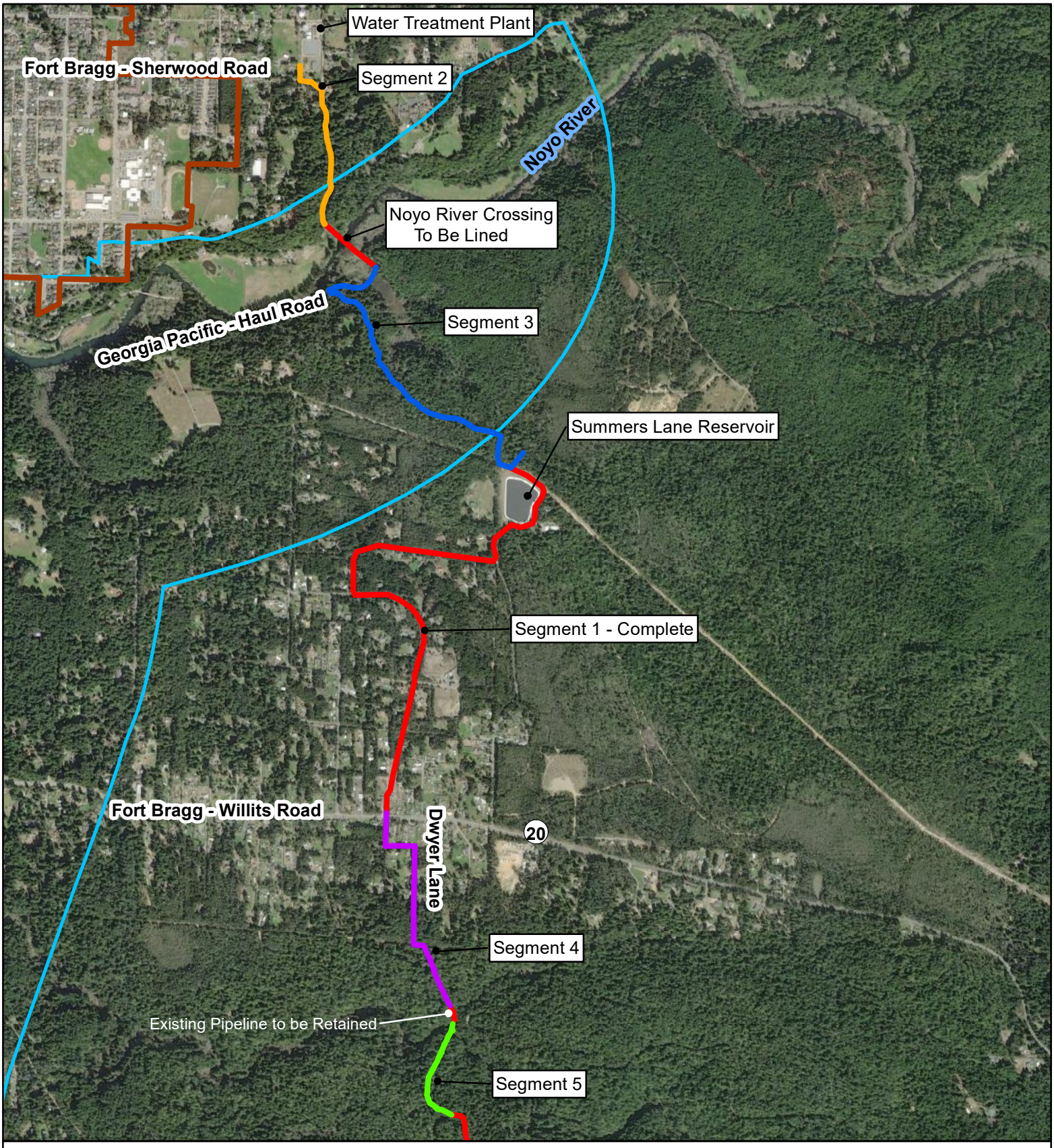
The northern section of the existing Segment 4 pipeline traverses cross-country through private property from Highway 20 to the northerly boundary of Jackson Demonstration State Forest (JDSF). South of these rural residential areas, the existing Segment 4 pipeline enters JDSF and the Covington Gulch watershed. The pipeline travels about 900 feet downhill, cross-country along steep, heavily forested terrain, where it connects to the north side of the Covington Gulch crossing. Soil conditions are not currently known for this section of the pipeline.

2.4.4 Segment 5 Pipeline (Hare Creek to Waterfall Gulch)

The existing Segment 5 pipeline connects the south side of the existing Hare Creek Crossing to the Waterfall Gulch water source, by traversing cross-country through heavily forested terrain, with steep cross-slopes and downhill sections. A portion of the pipeline in this section is supported by an existing above ground wooden trestle which is in a degraded condition, and a section along Hare Creek immediately south of the crossing has been severely undercut and the pipeline exposed. The southerly portion of the pipeline, from FR 450 to Waterfall Gulch water source was replaced in 1991 and is not a part of this project.

2.5 Proposed Project

The Proposed Project includes Segments 2 through 5 as described above, which are shown on **Figure 2-3** and detailed below in **Table 2-1**. Segment 1, which leads from the north side of Highway 20 to the Summers Lane Reservoir, was constructed in 2013 and is not included in the Proposed Project. Replacement of the pipeline section from the Waterfall Gulch Intake to FR 450 was performed in 1991 and is not a part of the Project. The proposed lining of the existing Noyo River Crossing is not included within the Segments, but will be done as part of the project, and will significantly extend its life without disturbing the river. A portion of Segment 5 will also replace the severely eroded and undercut Hare Creek Crossing.



Legend

- Segment 2 Alignment
- Segment 3 Alignment
- Segment 4 Alignment
- Segment 5 Alignment
- Existing Alignment to be Retained
- California Coastal Zone
- Fort Bragg City Limits

Dewberry

0 500 1,000 2,000 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Project Segments

Figure 2-3

Table 2-1. Raw Water Line Replacement Project Segments

Segment	Location	Approx. Length Existing / Proposed, feet	Existing Pipe Dia., Inches	Description of Proposed Pipeline Route and Terrain
1	Highway 20 (N) to Summers Lane Reservoir (S)	7,000	10	This segment was completed in 2013. It is not part of the Proposed Project.
2	WTP (N) to Noyo River floodplain (S)	2,650/ 2,700	10	The majority of Segment 2 follows the existing alignment. It is located in a sloped bench along a heavily wooded, steep, unstable gorge, prone to landslide and slope creep. There have been previous slope failures and loss of pipeline. Construction will end in the northern Noyo River floodplain.
3	GP Haul Road (N) to Summers Lane Reservoir (S). Includes Newman Reservoir pump station and force main	3,200 / 4,650	10	The new pipeline will start at the intersection of the existing Noyo River crossing and the GP Haul road. From there it will traverse the Haul Road westerly for about 750 feet and then steeply ascend southward to the top of the western side of Newman Gulch gorge through heavily wooded terrain. From there it will follow the top of the gorge along an existing skid road to Summers Lane and Newman Reservoirs. Most of the alignment is located within the Coastal Zone. A new pump station and force main will convey raw water from Newman Reservoir and connect to the new pipeline just north of the Summers Lane Reservoir.
4	Covington Gulch Crossing (N) to Highway 20 (S)	2,700/3,150	6 & 10	Segment 4 connects to the already constructed Segment 1 at its northerly end, on the north side of Highway 20. Replacement will include a new bore and jack crossing under Highway 20. South of Highway 20 the pipeline will be located within Dwyer Lane, a privately owned roadway in a residential subdivision between Highway 20 and an east-west forest boundary road located along the northern boundary of Jackson Demonstration State Forest (JDSF). From Dwyer it will cross the forest road and descend into steep, heavily wooded terrain to connect to the existing pipeline just north of Covington Gulch.

Segment	Location	Approx. Length Existing / Proposed, feet	Existing Pipe Dia., Inches	Description of Proposed Pipeline Route and Terrain
5	Hare Creek Crossing (N) to Forest Road 450 (S). Includes the Hare Creek crossing replacement	1,050 / 1,400	6 & 10	The new pipeline will connect to the existing just north of Hare Creek, and replace the existing Hare Creek crossing, which has been undercut by erosion along the embankment. Once across the creek, the new pipeline will ascend out of the gulch and along an existing skid trail located on the westerly slope of the watershed to Forest Road 450, where it will tie into the existing pipeline.
	Noyo River Crossing Lining	900	12	Trenchless technology will be used to line the existing Noyo River crossing. Equipment would be located on the GP Haul Road on the south side and within the northern Noyo River floodplain.

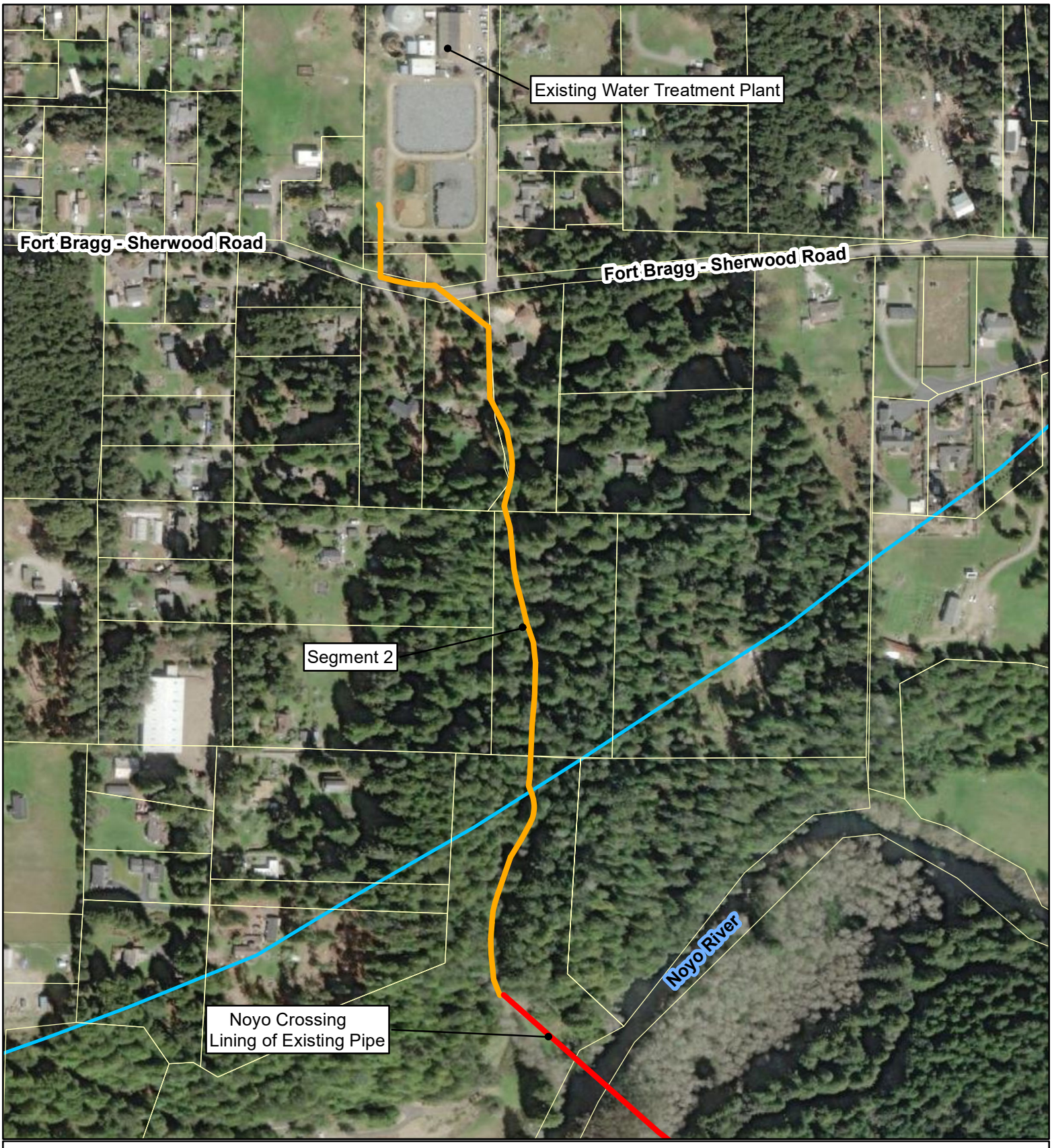
2.5.1 Segment 2 Pipeline (Water Treatment Plant to North Side of Noyo River)

The proposed pipeline, as shown on **Figure 2-4**, would connect the Noyo River Crossing to the WTP site, to feed the existing raw water storage basins. The new pipeline would cross under Sherwood Road and then follow the existing gravel / dirt driveway heading south, and then downhill on a dirt road to the northern side of the Noyo River floodplain. There are only minor realignments proposed which are generally confined within the existing roadways. The section of existing pipeline that extends underneath the Noyo River from its northern floodplain boundary to the Haul Road would be lined using trenchless methods and the pipe would be retained in-place.

Segment 2 is a high priority section for replacement due to past pipeline failures caused by slope creep in this area. The proposed right-of-way (ROW) would be on a narrow, benched access road with some existing culvert crossings. Construction would require minor clearing, tree trimming and improvements to the existing access road. A Storm Water Pollution Prevention Plan (SWPPP) and Erosion Control Plan would be prepared and implemented to prevent sediment or other debris from entering existing drainage channels. These measures would be installed and maintained during and after construction. Improvements to the access roadway within the permanent ROW are included under the Proposed Project.

Pipeline construction for Segment 2 would involve traditional open-cut, direct-buried pipeline installation. A minimum 12- to 20-foot-wide temporary construction easement would be required to string pipe, excavate the trench, store trench soils, install the pipeline, backfill, and compact the trench, regrade/reestablish the existing narrow access road, and restore the ROW.

Staging areas would be necessary to store materials and equipment need for the construction of this phase while not hindering construction activities. The main staging area for Segment 2 of the Proposed Project will be at the WTP, which is shown on **Figure 2-4**. No staging areas are proposed in the southern section of Segment 2. The existing crossing of the Noyo River is currently planned to be lined and to remain in-place. A small staging pit will be located within the northern Noyo River floodplain for lining operations.



Legend

- Segment 2
- Existing Noyo Crossing - Pipe Lining
- California Coastal Zone
- Parcels

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0 100 200 400 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Project Location Segment 2

Figure 2-4

2.5.2 Segment 3 Pipeline (GP Haul Road to Summers Lane Reservoir)

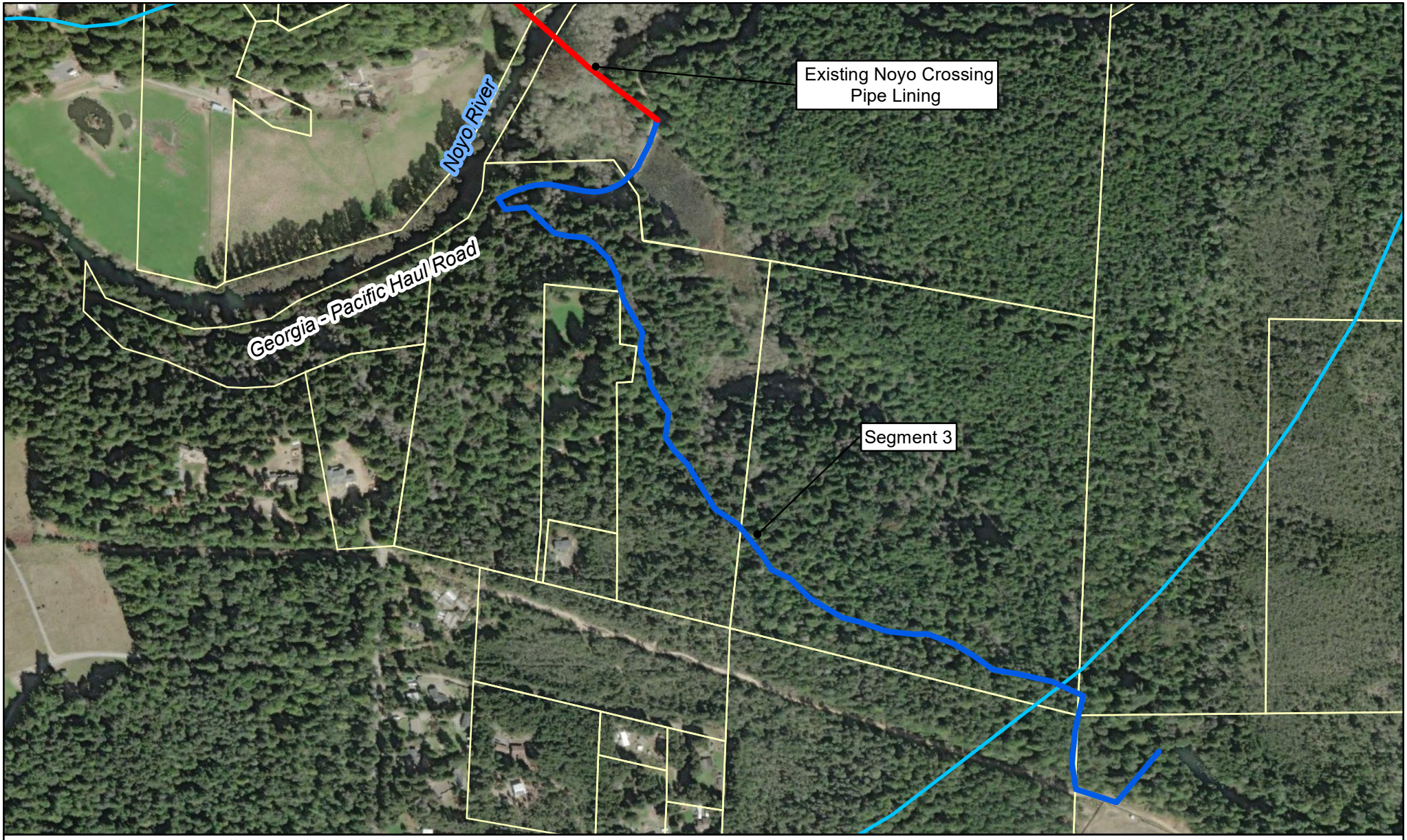
The Segment 3 corridor is shown on **Figure 2-5**. The proposed Segment 3 pipeline would first connect to the existing water line where the Haul Road intersects the existing Noyo River crossing. From there the pipeline will follow the Haul Road in a westerly direction for about 750 feet before ascending a steep slope leading to a skid trail located along the westerly ridgeline of Newman Gulch. The pipeline will follow the skid trail to the existing power pole line north of Summers Lane Reservoir, and then follow the power pole line east to a point north of the reservoir.

A new pump station and reservoir intake will be constructed to the south of Newman Reservoir. Raw water would be extracted from Newman Reservoir and pumped from this new pump station via force main to connect to the new pipeline just downstream of the Summers Lane Reservoir.

This segment of the Proposed Project would require land clearing, timber harvest, access road grading and earthwork, in coordination with the property owners, Lyme Redwood Timberlands LLC (Lyme), and the Celeri Family Trust. As a public utility project, the City's raw water pipeline is exempt from filing a formal timber harvest plan under the Forest Practices Act (14 CCR Section 1104.1(b)(c)). The City initiated early coordination with California Department of Forestry and Fire Protection (CALFIRE) staff at JDSF during the planning process and will submit the required form for obtaining the Public Agency, Public and Private Utility Right of Way Exemption (CALFIRE Form RM-73) to cover project Segments 3-5. It should be noted that during the extensive pipeline corridor planning process, the City has sought to select an alignment for Segment 3 that minimizes tree loss and avoids, to the extent feasible, wetlands and other environmentally sensitive areas within the project boundaries. Additionally, if possible, the City's contractor will seek to adjust the proposed alignment during construction to avoid loss of mature trees as the pipeline is relatively small (10-inch in diameter).

The City has held several meetings with Lyme, as the majority of this segment is on their property, and Lyme has indicated it is supportive of the Proposed Project. Lyme may decide to conduct timber harvest in this area prior to the Proposed Project. The City would coordinate with Lyme in the preparation and implementation of the required California Department of Forestry (CDF) Timber Harvest Plan in compliance with the Forest Practice Act for the area needed for pipeline construction, if Lyme chooses to move forward with a THP. If Lyme does not choose to perform a THP, the City will work with Lyme on the tree removal required to construct the new pipeline via THP Exemption process with CALFIRE.

A minimum 12- to 20-foot-wide temporary construction easement would likely be required for proposed access road grading, pipe stringing, trench excavation, trench soil storage, pipeline installation, trench backfill and compaction, and restoration of the ROW. Setbacks from the top of slopes should be approximately 50 yards, if possible, given site conditions. The City would seek to follow existing skid trails or roads to minimize impacts to vegetation. Similar to Segment 2, a SWPPP and Erosion Control Plan would be prepared and implemented for this section to prevent sediment or other debris from entering Newman Gulch and Newman Pond. These measures would be installed and maintained during and after construction. Long term revegetation of the ROW or permanent access road construction would also be required and would be coordinated with Lyme.



Legend

- Segment 3
- Existing Alignment to be Lined
- California Coastal Zone
- Parcel Boundaries

Dewberry

0 250 500 1,000 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

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Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Project Location Segment 3

Figure 2-5

Depending on environmental restrictions and allowed temporary workspace, the pipeline construction would allow for traditional open-cut, direct-buried pipeline installation for the majority of the length. On the steep slopes, additional equipment, including cable winches, is likely to be needed to support excavator operations.

Staging areas would be necessary to store materials and equipment needed for the construction of this phase, while not hindering construction activities. The proposed staging area for the southern portion of this section of the proposed pipeline would be located adjacent to the Summers Lane Reservoir. Staging areas for the northern portion of Segment 3 will be placed within the existing roadway shoulder along the Haul Road, and along existing lumber skid trails. Staging along the Haul Road roadway shoulders shall be designed to not hinder access along the roadway.

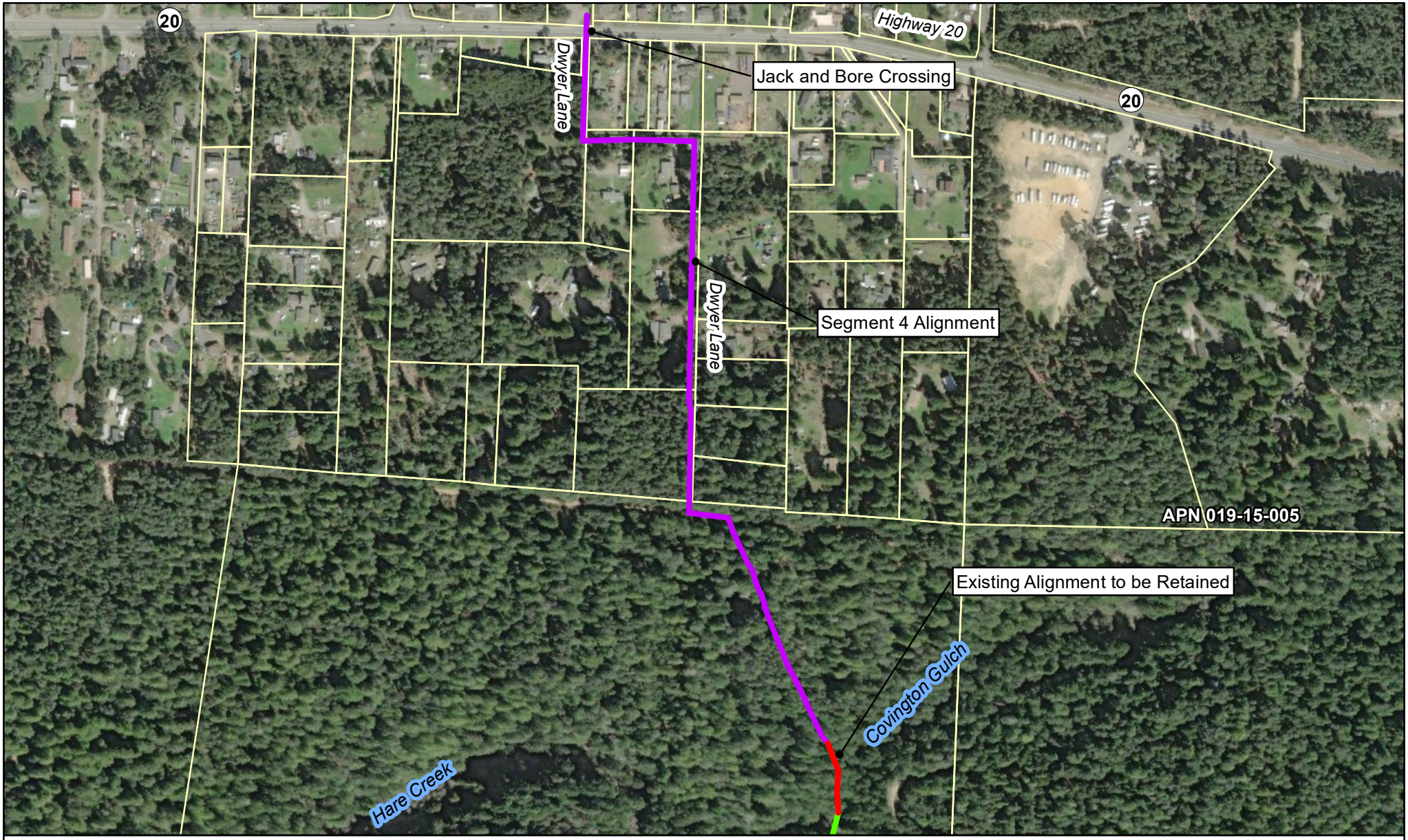
2.5.3 Segment 4 Pipeline (Highway 20 to Covington Gulch)

Figure 2-6 shows the Segment 4 pipeline corridor. This segment would likely begin with a jack-and-bore crossing under Highway 20 at Dwyer Lane to connect to the existing pipeline on the north side of Highway 20. The northern section of the Segment 4 pipeline would then include conventional open trenching construction along the privately owned and unpaved Dwyer Lane. The pipeline would then descend through JDSF to the north side of the Covington Gulch crossing and connect to an existing section of ductile iron pipeline that crosses Covington Gulch. The proposed alignment would require some land clearing, timber harvest, access road grading, and earthwork.

As a public utility project, the City's raw water pipeline is exempt from filing a formal timber harvest plan under the Forest Practices Act (14 CCR Section 1104.1(b)(c)). The City initiated early coordination with CALFIRE staff at JDSF during the planning process and will submit the required form for obtaining the Public Agency, Public and Private Utility Right of Way Exemption (CALFIRE Form RM-73) to cover project Segments 3-5. It should be noted that during the extensive pipeline corridor planning process, the City has sought to select an alignment for Segment 4 that minimizes tree loss and avoids, to the extent feasible, wetlands and other environmentally sensitive areas within the project boundaries. Additionally, if possible, the City's contractor will seek to adjust the proposed alignment during construction to avoid loss of mature trees as the pipeline is relatively small (10-inch in diameter). Any tree removal within the lands of JDSF will be coordinated with and/or otherwise approved by CALFIRE

The City has conducted coordination outreach with CALFIRE, as CALFIRE manages JDSF. They are supportive of the Proposed Project and would be a cooperating agency as part of the land in this segment is under their jurisdiction. Similar to the other segments, a 12- to 20-foot-wide temporary construction easement would be required for access road grading, pipe stringing, trench excavation, trench soil temporary storage, pipeline installation, trench backfill and compaction, and ROW restoration activities associated with the Proposed Project. Setbacks from the top of slopes should be approximately 50 yards, if possible, given site conditions. A SWPPP and Erosion Control Plan would be implemented for this section to prevent sediment or other debris from entering Covington Gulch or Hare Creek. These measures would be installed and maintained during and after construction. Long term revegetation of the ROW within JDSF would also be implemented along the Proposed Project corridor.

Staging areas would be necessary to store materials and equipment needed for the construction of this phase, while not hindering construction activities.



Legend

- Segment 4 Alignment
- Segment 5 Alignment
- Existing Pipeline to Be Retained
- Parcel Boundaries

Dewberry

0 200 400 800 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

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Fort Bragg Raw Waterline Replacement Project City of Fort Bragg, CA

Project Location Segment 4

Figure 2-6

There are a couple of proposed staging areas for Segment 4 of the proposed pipeline. One potential site is in an area at the southern end of Dwyer Lane that is away from the existing residents. An alternative staging area for this phase would be the boundary road along the northerly limit of JDSF. A lower staging area may be established in the open area just north of where Gravel Pit Road/Forest Road 400 crosses Covington Gulch.

2.5.4 Segment 5 Pipeline (Hare Creek Crossing to Forest Road 450)

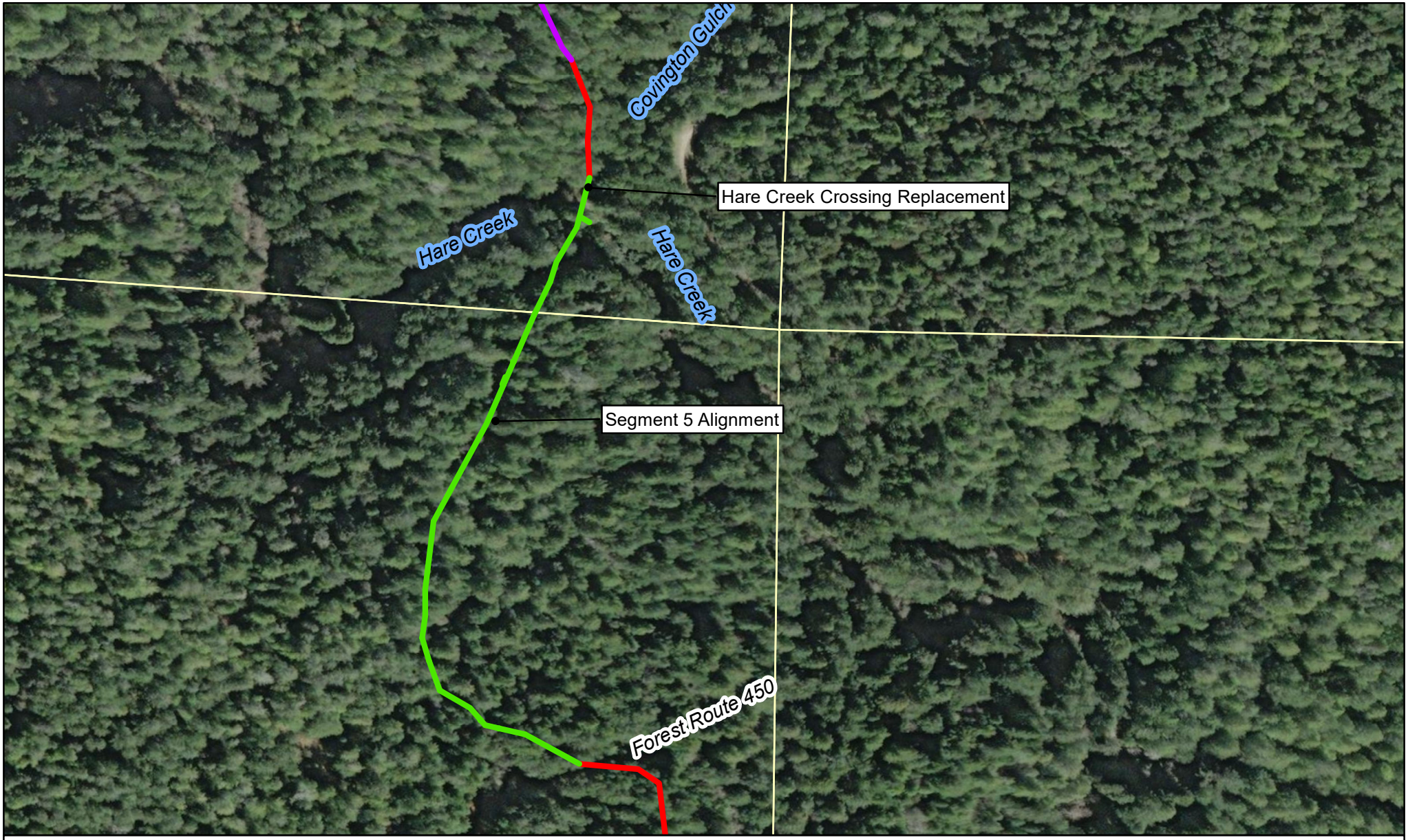
As shown on **Figure 2-7**, Segment 5 connects the north side of the Hare Creek Crossing with the existing pipeline from Waterfall Gulch, near FR 450, and it will replace the existing Hare Creek crossing. It is located entirely on JDSF Land. The proposed pipeline construction would require land clearing, timber harvest, access road grading, and earthwork.

As a public utility project, the City's raw water pipeline is exempt from filing a formal timber harvest plan under the Forest Practices Act (14 CCR Section 1104.1(b)(c)). The City initiated early coordination with CALFIRE staff at JDSF during the planning process and will submit the required form for obtaining the Public Agency, Public and Private Utility Right of Way Exemption (CALFIRE Form RM-73) to cover project Segments 3-5. It should be noted that during the extensive pipeline corridor planning process, the City has sought to select an alignment for Segment 5 that minimizes tree loss and avoids, to the extent feasible, wetlands other environmentally sensitive areas within the project boundaries. Additionally, if possible, the City's contractor will seek to adjust the proposed alignment during construction to avoid loss of mature trees as the pipeline is relatively small (10-inch in diameter). Any tree removal within the lands of JDSF will be coordinated with and/or otherwise approved by CALFIRE.

A 12- to 20-foot-wide temporary construction easement would be required for access road grading, pipe stringing, trench excavation, trench soils handling, installation of the pipeline, backfill and compaction, and restoration of the ROW activities associated with the Proposed Project. Setbacks from the top of slopes would be approximately 50 yards, if possible, given site conditions.

The new pipeline would be open cut, direct buried in this section, with additional support equipment used for construction using open trench excavation on steep slopes. Temporary bypass arrangements are needed to maintain flow in Hare Creek during construction. A SWPPP and Erosion Control Plan would be prepared and implemented to prevent sediment or other debris from entering Hare Creek. These measures would need to be installed and maintained during and after construction. Long term revegetation of ROW, or permanent access road construction, would also be implemented as needed along the proposed pipeline. In an effort to improve the environment, the City will also work with CALFIRE to remove as much as possible of the old appliances, motor vehicles parts, and other old garbage that has been dumped into Covington Gulch over many decades.

Staging areas would be necessary to store materials and equipment need for the construction of this segment, while not hindering construction activities. The proposed staging area for Segment 5 of the proposed pipeline would be within a wide section of FR 450, at the southern end of the proposed Segment 5 alignment.



Legend

- Segment 5 Alignment
- Segment 4 Alignment
- Existing Pipeline to Be Retained
- Parcel Boundaries

Dewberry

0 130 260 520 Feet

Source: ESRI Online Basemap, World Imagery Map, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

Fort Bragg Raw Waterline Replacement Project
City of Fort Bragg, CA

Project Location Segment 5

Figure 2-7

2.5.5 Noyo River Crossing Lining

Trenchless methods will be used to internally line the existing Noyo River Crossing (**Figure 2-8**). This will greatly extend the life of the crossing without causing major environmental disruption. Two small pits approximately 10 feet wide by 10 feet long will be excavated to allow a structural liner to be inserted into and extracted from the existing pipeline. The extraction pit will be located in a mowed, grassed area on the edge of the northern floodplain of the Noyo River. A winch for pulling the liner will be located at this pit. The insertion pit will be located on the southern side of the river along the Georgia Pacific Haul Road and outside of the floodplain. The proposed liner consists of three different layers. The outer coating protects the internal load-bearing core structure during the installation process and is made of an abrasion-resistant polyethylene (PE). Depending on the required pressure rating, the core structure is made of either one or two layers of seamless woven Kevlar®.

The existing pipe will first be inspected using a camera and cleaned using jetting prior to liner installation. The potable water for jetting will be collected and disposed of off-site. The liner will arrive on site folded by the manufacturer and its U-shape maintained by adhesive tape. The U-shaped and folded liner will be spooled onto transport reels (max. outside diameter approx. 8 feet) and placed at the insertion pit. Depending on the reel weight and length, either unwinding rails or unwinding stations will be used to unwind the liner from the reels.

A winch is placed at the extraction pit. From there, the winch rope is pulled through the existing pipe to the insertion pit. Depending on the liner diameter, the length of liner to be inserted, and the bends in the section, either a rope or a pulling head is attached to insert the liner. The rope or pulling head is connected to the winch rope. To prevent the liner from twisting while being inserted, an anti-twist device is installed between the rope (or pulling head) and the winch rope. On straight sections, the liner can be inserted with speeds of up to 30 feet per minute. When going through bends, the insertion speed is reduced to not more than 15 feet per minute. Inserting the liner is complete when there is at least 10 feet of tensionless liner after the rope or pulling head comes to rest in the extraction pit.

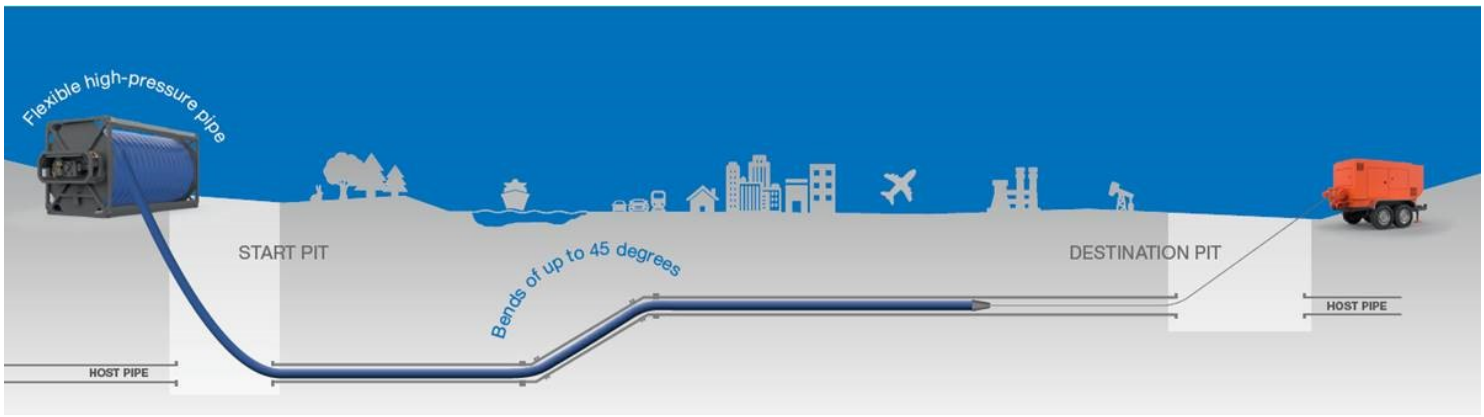
The liner is then expanded using compressed air. A minimum pressure is used first to break the adhesive tape. After inflating the liner, the liner is cut so that just 3 feet projects from the existing host pipe at both the insertion and extraction pits. Connectors are then installed to re-connect to the existing, non-lined pipe at both ends. A pressure test using potable water is then performed to confirm the integrity of the installed liner.

2.5.5.1 Utility Relocation

No major utility relocations are anticipated for the Proposed Project, though there are various existing utilities within the project limits which would be protected in place. The utilities within the Proposed Project area include overhead electric and telecommunications cables near the Summers Lane Reservoir and the Newman Reservoir, Highway 20, and Dwyer Lane.

2.5.5.2 Major Landholder Right of Way – Segments 3, 4 (portion), and 5

The City has existing easements over the majority of the alignment but plans to acquire all new easements for the entire Project. A significant portion of the City's pipeline is situated within lands owned and managed by Lyme and JDSF, which is managed by CALFIRE. The City conducted outreach with both landowners in November 2019, to make them aware of the Proposed Project and to obtain their input and concerns. Based on initial outreach meetings, both agencies are supportive of the Proposed Project and working collaboratively with the City to ensure the Proposed Project has minimal impacts to their lands. Additionally, the Proposed Project crosses multiple smaller private properties that are not owned by Lyme or JDSF, from which all new easements would need to be acquired.



Dewberry

Source: Primus Companies	Fort Bragg Raw Waterline Replacement Project Fort Bragg, CA	**Pipeline Lining Method for Noyo River Crossing**	**Figure 2-8**

2.5.5.3 Major Landholder Tree Removal – Segments 3, 4 (portion), and 5

The Proposed Project would require some timber removal for the new sections of pipeline on the subject lands. Lyme has informed the City that the Segment 3 area may be due for timber harvesting. Additionally, CALFIRE has informed the City that portions of the Segment 4 and 5 alignments may need to be thinned and cleared of brush due to the age of the last harvest, approximately 20 years ago. The City would coordinate with Lyme and CALFIRE on timber removal required by the Proposed Project.

2.6 Construction Activities

The following general processes are anticipated to be used for Proposed Project construction:

2.6.1 Clearing and Grubbing

Portions of trees, bushes, and landscaping in conflict with the Proposed Project would be removed. The areas around the Project site would be cleared of vegetation and fencing, if necessary, to gain access. All work would be within the approved Project limits of disturbance.

2.6.2 Tree Removal

The City was advised in early meetings with Lyme that the forest in Segment 3 may be scheduled for harvest during the general timeframe of this Proposed Project. The City would work closely and coordinate with Lyme on the pipeline right-of-way any timber removal. If Lyme does not choose to perform a THP, the City will work with Lyme on the tree removal required to construct the new pipeline via THP Exemption process with CALFIRE. The timber removal for those portions of Segments 4 and 5 within the JDSF would be coordinated with CALFIRE. Timber removal in Segment 2 and the remaining portion of Segment 4 would be led by the City and the City's Registered Professional Forester (RPF) on the Project team.

2.6.3 Site Grading and Preparation

Site grading and pipeline bed preparation would be performed using a variety of heavy machinery including graders and mini- and small excavators. The steep slopes in certain sections of the Proposed Project would require significant earthwork to prepare the area for pipeline placement and ensure the area can be maintained effectively in perpetuity. All surface soils graded for the Proposed Project would be retained onsite and be reused to cover the pipeline and/or used in the restoration process.

2.6.4 Implementation of Stormwater and Soil Erosion Control Best Management Practice Measures

The City's contractor selected for the Proposed Project would be required to obtain all required grading and construction permits for the Project, including the implementation and maintenance of soil erosion control measures to protect the Noyo River, Hare Creek, Covington Gulch, and Newman Gulch from sedimentation.

2.6.5 Site Restoration

The City intends to maintain portions of the pipeline ROW through vegetation management activities to ensure access to the pipeline can be accessed easily in these heavily forested watersheds. Lyme and CALFIRE may choose to maintain ROW within their lands which would be discussed later. The areas adjacent to the pipeline access would be restored to pre-project conditions in coordination with Lyme, CALFIRE and all private property owners. The City contractor selected for the project would prepare site restoration and maintenance plans for review and approval by the City, Lyme, CALFIRE, and the Coastal Commission.

Table 2-2 provides a general list and description of the type of equipment likely to be used during Proposed Project construction.

Table 2-2. List of Potential Construction Equipment Used on Project

Equipment	Construction Purpose
Air compressor	Finishing work
Backhoe	Soil manipulation, drainage work
Bobcat	Fill distribution
Bulldozer/Loader	Earthwork construction, clearing
Cable Winch	Working on steep slopes
Compaction equipment	Earthwork
Dump truck	Fill material delivery
Excavator / Mini-excavator	Soil manipulation
Flatbed truck	Material and pipe handling and delivery
Front-end loader	Dirt or gravel manipulation; pipe transportation
Generators	Power hand tools
Grader	Ground leveling
Haul truck	Earthwork construction, clearing
Holding tanks	Slurry storage and suspended solid water settling
Roller/compactor	Earthwork
Rubber tired boom truck	Lifting
Truck with seed sprayer	Landscaping
Water truck	Earthwork construction, dust control

2.6.6 Construction Schedule

Construction of the Proposed Project is anticipated to take two construction seasons to complete. The approximately 18-month construction period is scheduled to begin as early as Spring 2023, but this is dependent on funding availability. Construction schedules were developed as part of the construction cost estimating process. **Table 2-3** below shows the anticipated construction schedule for each segment phase:

Table 2-3. Conceptual-Level Construction Schedules by Segment

Segment	Schedule Working Days
2	80
3	100
4	80
5	90

The Noyo River Crossing lining project would require approximately 25 working days to complete, with the majority of this time being required for set-up and staging pit excavation, and then backfilling after lining is complete.

2.6.7 Hare Creek/Covington Creek Confluence Clean Up and Restoration Element

Photo 2-1. Urban trash observed in Covington Creek.

During field studies conducted for the City's proposed waterline replacement project, the City Team became aware of large amount of urban trash and materials that has been illegally disposed (it appears over many years based on the age of the trash) into the Covington Creek/Hare Creek watershed which has collected near the confluence of these two local streams. As shown in the **Photo 2-1**, old cars, motorcycle engines, car tires, refrigerators, dryers, and other assorted urban trash have been illegally dumped down the steep cliffs along Covington Gulch from above Forest Road (FR) 450. Most of the trash is in the lower reaches of Covington Gulch. Access to this area is very difficult with steep slopes. As part of this project, since the City will be in this area working to construct the new pipeline, the City is proposing to work with the landowner CALFIRE to remove as much urban trash that is feasible from Covington Gulch in the area near the confluence. The urban trash detracts from the natural beauty of JDSF and most likely has impacted water quality downstream of both creeks for many years. After the City's pipeline is constructed in the Hare Creek drainage, the City will attempt to remove urban trash. The area of stream is estimated to be about 100-200 feet and will be restored after trash removal. It is in the Fort Bragg community's best interest to take this opportunity to clean up this legacy issue and remove the trash and potential for water quality impairment in the Hare Creek watershed.

2.7 Construction Permits and Approvals Required

The following local, state, and federal agency permits, reviews, and approvals required for Proposed Project construction are shown below in **Table 2-4.**

Table 2-4. Project Permits and Approvals

Agency	Permit/Approval	Status
United State Army Corps of Engineers (USACOE)	Clean Water Act Section 404 Permit	To be initiated upon the completion of the ISMND
United States Fish and Wildlife Service (USFWS)	Section 7 Consultation for Threatened and Endangered Species	To be initiated upon the completion of the ISMND as part of the Clean Water Act Section 404 Permit
National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA/NMFS)	Section 7 Consultation for Threatened and Endangered Species	To be initiated upon the completion of the ISMND as part of the Clean Water Act Section 404 Permit
North Coast Regional Water Quality Board	Clean Water Act Section 401 Water Quality Certification	To be initiated upon the completion of the ISMND
United State Army Corps of Engineers (USACOE)	Clean Water Act Section 402 Wetlands Permit	To be initiated upon the completion of the ISMND
California Department of Fish and Wildlife (CDFW)	Section 1600 Lake or Streambed Alteration Agreement	To be initiated upon the completion of the ISMND
Mendocino County Local Coastal Commission	Coastal Development Permit	To be initiated upon the completion of the ISMND

Agency	Permit/Approval	Status
Mendocino County Public Works Dept.	Grading Permit	To be initiated upon the completion of the ISMND
Lyme Redwood Timberlands, LLC	New Easements	
CALFIRE Jackson Demonstration State Forest Unit	New Easements	To be initiated upon the completion of the ISMND
State Water Resources Control Board (SWRCB)	General Construction Stormwater Permit	To be initiated upon the completion of the ISMND
California Department of Transportation (Caltrans) District 1	Encroachment Permit	To be initiated upon the completion of the ISMND
Private Landowners	New Utility Easements	To be initiated upon the completion of the ISMND

2.8 References

City of Fort Bragg 2019. Raw Water Line Replacement Project, Technical Memorandum: Existing Conditions and Constraints, prepared by Coleman Engineering, Inc.

City of Fort Bragg 2020. Raw Water Line Replacement Project. Final Project Practicality Report prepared by Coleman Engineering, Inc.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The Project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

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

3.1 Determination (To be completed by Lead Agency)

On the basis of this initial study:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

_____ _____

Signature Date

_____ _____

Diane O'Connor
Assistant City Engineer
City of Fort Bragg

Date

4.0 ENVIRONMENTAL CHECKLIST

4.1 Aesthetics

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

4.1.1 Setting

Visual character is a description (not evaluation) of a site, and includes attributes such as form, line, color, and texture. Visual quality is the intrinsic appeal of a landscape or scene due to the combination of natural and built features in the landscape, and this analysis rates visual quality as high, moderate, or low. Visual sensitivity is the level of interest or concern that the public has for maintaining the visual quality of a particular aesthetic resource and is a measure of how noticeable proposed changes might be in a particular scene and is based on the overall clarity, distance, and relative dominance of the proposed changes in the view, as well as the duration that a particular view could be seen.

The Proposed Project is located in the City's General Plan Area and Sphere of Influence (SOI), as well as unincorporated Mendocino County. The Proposed Project would replace almost 2 miles of the City's raw water pipeline that has reached the end of its service life. The Proposed Project is included in the City General Plan and is located in areas with steep slopes that support dense forestland.

SEGMENT 2

Segment 2 of the Proposed Project is located on designated public utility, agricultural, and rural-residential land uses (Mendocino County, 2009a). The Segment 2 proposed pipeline is not located within or adjacent

to any officially designated Scenic Highways or Scenic Byways (Caltrans, 2020; FHWA, 2020). The topography along the Segment 2 proposed pipeline alignment is relatively flat from the Fort Bragg water treatment plant to the nearby residences south of Fort Bragg – Sherwood Road, and then it gradually slopes down to the south on an existing narrow access road to the northern floodplain of the Noyo River. The Fort Bragg Water Treatment Plant and rural residential developments surrounding the plant dominate the landscape along the northern section of the Segment 2 alignment. Large Douglas Fir and Redwood trees, dense understory vegetation, an unnamed creek, and steep slopes dominate the section of the alignment along the narrow access road.

Photo 4-1. Existing residences south of Fort Bragg-Sherwood Road near the Segment 2 proposed pipeline alignment.

Photo 4-2. View of the natural landscape around the Segment 2 existing pipeline alignment.

The northern section of the Segment 2 alignment is visible from adjacent residential land uses and viewers along Fort Bragg – Sherwood Road, while the section along the narrow access road is generally not visible from adjacent land uses due to topography and dense forests. The landscape along the northern section of the Segment 2 alignment is interrupted by overhead utility lines, Fort Bragg – Sherwood Road, and ornamental landscaping associated with the rural residential developments. As shown in **Photos 4-1** and **4-2**, above, the natural landscape of the section along the narrow access road is relatively uninterrupted. The landslide location is the sole notable feature present along the Segment 2 proposed pipeline.

SEGMENT 3

Photo 4-3. Existing conditions along Segment 3 on Lyme Redwood Timberlands property.

Segment 3 of the Proposed Project is located within the California Coastal Zone (Mendocino County, 2009a), on property with rural, forest land uses, most of which is owned by Lyme Redwood Timberlands LLC (Lyme). The Segment 3 proposed pipeline is not located within or adjacent to any officially designated Scenic Highways or Scenic Byways (Caltrans, 2020; FHWA, 2020). The landscape along the Segment 3 proposed pipeline alignment is relatively flat on the west ridge, and then traverses steep slopes down to the Georgia Pacific Haul Road (Haul Road) and Newman Gulch on the southern portion of the segment. Large redwood and Douglas Fir trees and

dense understory vegetation dominate the landscape along Segment 3 of the Proposed Project. This section of the Proposed Project is not visible to the public from adjacent land uses. The remoteness of the location and the dense forest lands shields the Segment 3 proposed pipeline site from public view. The continuity of the landscape is relatively uninterrupted along the Segment 3 proposed pipeline alignment, with the Haul Road being the sole notable feature present at the Project site.

SEGMENT 4

The Segment 4 proposed pipeline begins along the northern edge of Highway 20 at Dwyer Lane, then runs under Highway 20, and along Dwyer Lane to the northern edge of JDSF and then traverses southeast through dense forest land to Covington Gulch.

Photo 4-4. View facing south towards Hwy 20 Bragg-Willits Road, facing south towards Dwyer Lane.

Photo 4-5. General conditions of the natural landscape around the Segment 4 Covington Gulch proposed pipeline alignment.

Segment 4 of the Proposed Project has a General Plan Land Use designation of Rural Residential 1 (RR) and Public Lands (PL) (Mendocino County, 2009a). The Segment 4 proposed pipeline is not located within or adjacent to any officially designated Scenic Highways or Scenic Byways (Caltrans, 2020; FHWA, 2020). The terrain along the Segment 4 proposed pipeline alignment is generally flat to gently sloping from Highway 20 to the northern boundary of JDSF. The Segment 4 alignment would then descend through the JDSF and connect to the existing pipeline on the north side of the Covington Gulch crossing. Highway 20 and the rural residential developments dominate the visual setting along the northern section of the Segment 4 proposed pipeline alignment. Large trees, dense vegetation, Covington Creek, and steep slopes dominate the visual environment along the southern section of the alignment. The northern section is visible from nearby residents and motorists on Highway 20 and Dwyer Lane, while the section of Segment 4 within the JDSF is not visible to the public from adjacent land uses. The visual environment along the northern section of the Segment 4 proposed pipeline alignment is interrupted by overhead utility lines, Highway 20, fencing and landscaping associated with the rural residential developments. The visual setting of the southern section within JDFS is relatively uninterrupted as the surrounding land is lush forestland.

SEGMENT 5

Photo 4-6. Existing conditions along Segment 5 above Hare Creek.

Segment 5 of the Proposed Project is located entirely within JDSF in rural, forest land. The topography here is steep with dense redwood forests and typical understory vegetation. The Segment 5 proposed pipeline site is designated as Public Lands (PL) by the County General Plan (Mendocino County, 2009a). The Segment 5 proposed pipeline site is not located within or adjacent to any officially designated Scenic Highways or Scenic Byways (Caltrans, 2020; FHWA, 2020). The topography along Segment 5 of the Proposed Project alignment is steeply sloped along Hare Creek and then gradually levels out as it approaches FR 450. Large mature mixed redwood conifer forests and dense understory vegetation dominate the visual landscape. This segment of the Proposed Project is steep and the majority of it is not visible to the public. The continuity of the landscape is relatively uninterrupted along the Segment 5 proposed pipeline alignment, with FR 450 being the sole standout feature present at the Segment 5 proposed pipeline site.

4.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

No Impact. The Proposed Project is located in Rural Residential 1 ac (RR) and Public Lands (PL) General Plan land use designations as well as Agriculture Coastal Plan Land Use designation. A review of the County General Plan indicates that no designated scenic resources or scenic vistas were identified near the Proposed Project alignments.

The northern section of the Segment 2 alignment is visible from adjacent residents along Fort Bragg – Sherwood Road, while the section of pipeline along the narrow access road is not visible from adjacent land uses. Segment 2 of the Proposed Project's construction activities would involve minor grading and standard pipeline trenching process for the section of the Segment down to the Noyo River northern floodplain. This would have a temporary effect to visual and aesthetic quality in this section as the area will be restored to pre-project conditions. The visual and aesthetic quality would be consistent with the existing conditions upon construction completion. Segments 3 and 5 of the Proposed Project are not visible from adjacent land uses. The remoteness of the alignment and the dense forest land adjacent to the proposed pipeline alignments shield Segment 3 and 5 of the Proposed Project from public view. The northern section of the Segment 4 proposed pipeline alignment is visible from nearby residents and motorists on Highway 20 and Dwyer Lane. These visual receptors may experience temporary visual impacts during construction of the Proposed Project, however, their views would not be impacted upon construction completion, as the proposed pipeline would be underground, and conditions would be returned to those similar to the existing conditions. The section of Segment 4 within JDSF is not visible from adjacent land uses.

The Proposed Project would be visually consistent with the existing pipeline and surrounding conditions along the Proposed Project alignments. Upon the completion of construction, the

Proposed Project would be consistent with the visual character of the existing site and would have no impact on scenic vistas. No mitigation measures would be required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. The County General Plan indicates that the coast is considered a scenic resource, and policies in the County's Coastal Element are designed to protect its scenic value. Additionally, the County General Plan indicates that some ecological communities in the County, including the pygmy forest and protected redwood groves, provide unique scenic value (Mendocino County, 2009b). A review of the County General Plan indicates that no designated scenic resources or scenic vistas were identified near the Proposed Project segment alignments.

No State Scenic Highways, National Scenic Byways, or All-American Roads are located within viewable distance of the Proposed Project (Caltrans, 2020; FHWA, 2020). There are no officially designated scenic highways within Mendocino County, and the nearest designated scenic highway to the Proposed Project site is SR 116, located approximately 120 miles south of the Proposed Project site (Caltrans, 2020). A portion of Highway 20 that extends from SR 1 to US 101 near Willits is eligible for designation as a scenic route and is located along the Segment 4 proposed pipeline. The Proposed Project would construct a water pipeline underneath the existing alignment of Dwyer Road at the intersection of Highway 20 and would not have an effect on any eligible or officially designated state scenic routes, highways, or their viewsheds.

Vegetation removal would be required along all of the Proposed Project segments. Disturbed areas not directly adjacent to or overlying the pipeline would be revegetated with native plants. Areas directly overlying or within about 5 feet of the pipeline will be minimally revegetated or compacted to allow future access via off-highway motorized vehicles and to prevent root intrusion into the new pipeline. Construction activities, including the presence of construction equipment, may temporarily affect the visual environment to nearby residents on Segments 2 and 4 surrounding the Proposed Project site; however, these impacts would be temporary and minimal. Characteristics of the visual environment surrounding the Proposed Project site upon completion of construction would be consistent with existing conditions.

The visual characteristics and quality post construction would be similar to existing conditions as the disturbed areas would be revegetated and new shrub and plant growth would cover the off-pipeline area. The majority of the areas not planned for revegetation are currently unvegetated or minimally vegetated and are being used for public access. The Proposed Project would have a less than significant impact on scenic resources such as historic buildings, prominent natural features, or any state designated scenic highway. No mitigation would be required.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

SEGMENT 2

Less Than Significant Impact. The Segment 2 proposed pipeline alignment is located along Fort Bragg-Sherwood Road within rural-residential, agricultural, and forested settings. Receptors sensitive to visual change include City employees at the water treatment plant, adjacent homeowners, and motorists on Fort Bragg – Sherwood Road. Segment 2 of the Proposed Project is included in the City

General Plan and would not conflict with the County General Plan, because visual change associated with this segment would be minor, temporary, and limited to typical project construction activities.

Vegetation removal and grading would be required, and all disturbed areas outside of the existing roadway would be revegetated with native plants. Construction activities, including presence of construction equipment, may temporarily affect and dominate the visual environment surrounding the northern portion of the Segment 2 proposed pipeline alignment near Fort Bragg-Sherwood Road and the existing residences. However, these impacts would be temporary and limited to construction activities. Upon the completion of construction, the visual environment surrounding the Project site would continue to be dominated by the forested landscape and views would be similar to existing conditions.

Upon the completion of construction, Segment 2 of the Proposed Project would be visually consistent with the existing water pipeline and surrounding land uses. Therefore, Segment 2 of the Proposed Project would have a less than significant impact on visual character and quality of public views of the Project site and surrounding area. No mitigation would be required.

SEGMENT 3

Less Than Significant Impact. The Segment 3 proposed pipeline alignment is located within a rural, forested setting on Lyme timberland. Receptors sensitive to visual change include employees of Lyme and vehicles travelling along the private, Georgia Pacific Haul Road (Haul Road). Segment 3 of the Proposed Project is not visible to the public from adjacent land uses. Segment 3 would not conflict with the County General Plan, because visual change associated with this segment would be minor, temporary, and limited to typical project construction activities.

Vegetation removal would be required along the alignment and all disturbed areas outside of the approximately 10-foot wide pipeline corridor would be revegetated with native plants. Construction activities, including presence of construction equipment, may temporarily affect the visual environment surrounding the Segment 3 proposed pipeline site; however, these impacts would be temporary and less than significant. Upon the completion of construction, the visual environment surrounding the Proposed Project site would continue to be dominated by the forested landscape and views would be similar to existing conditions.

Upon construction completion, Segment 3 of the Proposed Project would be visually consistent with the existing water pipeline and surrounding timberland conditions. Therefore, the Segment 3 proposed pipeline would have a less than significant impact on visual character and quality of public views of the Project site and surrounding area. No mitigation would be required.

SEGMENT 4

Less Than Significant Impact. The Segment 4 proposed pipeline alignment is located within rural-residential, public lands, and forested settings. Receptors sensitive to visual change include adjacent residences on Dwyer Lane, vehicles travelling along Highway 20, and CALFIRE employees working in JDSF. The section of Segment 4 within JDSF is not visible to the public from adjacent land uses. Segment 4 of the Proposed Project would not conflict with the County General Plan, because visual change associated with this segment would be minor, temporary, and limited to Project construction activities.

Pipeline construction activities in this section would involve removal of several large trees and redwood understory vegetation in JDSF and would create a 20-foot-wide linear feature with no vegetation. This area would be maintained by the City to keep the pipeline easement free of vegetation. Vegetation removal and grading would be required along the Segment 4 proposed

pipeline alignment, and all disturbed areas outside of the approximately 10-foot wide pipeline corridor would be revegetated with native plants. Construction activities, including presence of construction equipment, may temporarily affect and dominate the visual environment surrounding the Segment 4 proposed pipeline site, especially at the northern portion of the alignment near the existing residences; however, these impacts would be temporary and limited to construction activities. Construction of Segment 4 of the Proposed Project would also create a narrow 20-foot-wide opening in the forest on the south slope down to Covington Gulch. Upon the completion of construction, the visual environment surrounding the Project site would continue to be dominated by the forested landscape and views would be similar to existing conditions.

Upon the completion of construction, Segment 4 of the Proposed Project would be visually consistent with the existing water pipeline and surrounding land uses. Therefore, the Proposed Project would have a less than significant impact on visual character and quality of public views of the Proposed Project site and surrounding area. No mitigation would be required.

SEGMENT 5

Less Than Significant Impact. The Segment 5 proposed pipeline alignment is located within a rural, forested setting in JDSF. Receptors sensitive to visual change include CALFIRE employees who manage the JDSF Demonstration State Forest and recreationists that access this area from FR 450.

Vegetation removal would be required along the Segment 5 proposed pipeline alignment and all disturbed areas outside of the approximately 10-foot wide pipeline corridor would be revegetated with native plants. Construction activities, including presence of construction equipment, may temporarily affect the visual environment surrounding Segment 5 of the Proposed Project site. However, these impacts would be temporary and less than significant. Upon the completion of construction, the visual environment surrounding the Project site would continue to be dominated by the forested landscape and views would be similar to existing conditions.

Upon construction completion, Segment 5 of the Proposed Project would be visually consistent with the existing water pipeline and surrounding timberland conditions. Therefore, the Segment 5 proposed pipeline would have a less than significant impact on visual character and quality of public views of the Segment 5 Proposed Project site and surrounding area. No mitigation would be required.

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

No Impact. Currently, the only sources of nighttime light at the Proposed Project site are a result of vehicular travel along the Fort Bragg – Sherwood Road, Haul Road, Highway 20, and Dwyer Lane. Project itself does include any new lighting. Construction activities would only occur during daylight hours, thus, would not increase light or glare along any Segment of the Proposed Project. The Proposed Project would have no impact to light and glare, and no mitigation would be required.

4.1.3 Mitigation Measures

No mitigation measures are required for the proposed project, as impacts would be less than significant.

4.1.4 References

California Department of Transportation (Caltrans). 2009. Scenic Highways. Scenic Highway System List. Available online: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed on June 12, 2020.

U.S. Department of Transportation Federal Highway Administration (FHWA). 2020. America's Byways. Available online: https://www.fhwa.dot.gov/byways. Accessed on June 12, 2020.

Mendocino County. 2009a. Mendocino County General Plan – 3.0 Development Element. Available online: https://www.mendocinocounty.org/government/planning-building-services/plans/mendocino-county-general-plan. Accessed on June 12, 2020.

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4.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Agricultural and Forest Resources – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

4.2.1 Setting

FARMLAND

The California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program was established in 1982 to assess the location and quantity of agricultural lands, and the conversion of these lands over time. This information is used to assist with decision making and planning regarding California's agricultural lands. According to the Farmland Mapping and Monitoring Program (FMMP), there were 1,955,610 acres of land identified as farmland or grazing land in Mendocino County in 2016 (CDOC, 2016a). The agricultural land in Mendocino County in 2016 was as follows: 0.93 percent prime farmland, 0.07 percent farmland of statewide importance, 0.39 percent unique farmland, zero percent farmland of local importance, and 98.62 percent grazing farmland (CDOC, 2016a). The only farmland type mapped within the Proposed Project area is grazing land on private land in Segment 2 (CDOC, 2016b).

The California Land Conservation Act (Williamson Act) was established after World War II when valuable farmland was rapidly converted to urban use due to pressure from continuous population growth. The

Williamson Act provides tax relief to landowners who participate in the program with the condition that their land will not be developed. According to the Mendocino County Resource Conservation District, 334, 724 acres of land within the County were enrolled under the Williamson Act as of 2014 (MCRCD, 2017). The County has not reported any changes to Williamson Act enrolled lands since 2014 (MCRCD, 2017). Additionally, the County does not allow farmland to be enrolled under the Williamson Act as farmland security zone (CDOC, 2016c). There are no parcels within the Proposed Project Area that are enrolled under the Williamson Act (Mendocino County, 2014).

TIMBERLAND

Public Resource Code (PRC) 12220(g) states that "Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. According to this definition nearly the entire Proposed Project alignment is located within forest land. PRC 4526 states that "Timberland" is land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. According to this definition nearly the entire Proposed Project alignment is located within timberland. California Government Code 51104 (g) states that "Timberland production zones (TPZ)" are an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the City and County General Plans, areas zoned as timberland preserve zones are TPZ.

According to the County General Plan, approximately 46 percent of Mendocino County is in National Forest land managed by the U.S. Forest Service or in private Timber Protection Zones (Mendocino County, 2009). The County protects its timber resources by establishing TPZs and discouraging the conversion or fragmentation of lands zoned "TPZ" to a land use that permanently precludes its use for timber production. According to the County General Plan, Segments 3-5 are located within established TPZs. Segment 3 of the Proposed Project is located within a TPZ managed by Lyme Redwood Timberlands LLC (Lyme), while Segments 4 and 5 of the Proposed Project are located within a TPZ in Jackson Demonstration State Forest (JDSF), which is managed by the California Department of Forestry and Fire Protection (CALFIRE).

CALFIRE manages the TPZ along Segments 4 and 5 of the Proposed Project with the 2016 JDSF Management Plan (CALFIRE, 2016). The JDSF Management Plan is an extensive management document that establishes policies and objectives in order to accomplish the goals of synthesizing the knowledge of current resource conditions on the JDSF, articulate the desired future structure of the Forest, define a path to that future condition, and establish abundant opportunities for future research and demonstration activities (CALFIRE, 2016). A review of the JDSF Management Plan indicates that the Segment 4 and Segment 5 Proposed Project alignments are located within the Hare Creek planning watershed and are not located within an existing area of special concern, research or experimentation area, or short-term harvest area. The JDSF Management Plan indicates that Hare Creek and Covington Creek at Segments 4 and 5 of the Proposed Project are designated as riparian zones, late seral developments, and riparian restoration demonstration areas (JDSF, 2016). These figures also indicate that FR 450 is classified as a recreational road and trail corridor (CALFIRE, 2016). Chapter 0351.7 of the JDSF Management Plan states that temporary permits for passage across State forests shall be granted to forest product operators or other parties having need of a temporary permit in the course of their operations, given that the administration of such permits does not interfere with the primary uses of the State forests by the State (CALFIRE, 2016). Chapter 0351.7 (C) further states that "The State will reserve the right to

cross, recross, and parallel any such lands or routes with its own roads or utilities". The City has conducted early coordination with CALFIRE management and staff for this project and will work with CALFIRE to obtain permits and renew existing easements and rights-of-way with the State.

CALIFORNIA TIMBERLAND PRODUCTIVITY ACT (CALIFORNIA GOVERNMENT CODE 51104(H))

California Law includes Chapter 51100, which is known as the California Timberland Productivity Act of 1982. California Government Code 51104 (h) states that a "compatible use" is any use which does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber, and shall include, but not be limited to, any of the following, unless in a specific instance such a use would be contrary to the preceding definition of compatible use:

1) Management for watershed.
2) Management for fish and wildlife habitat or hunting and fishing.
3) A use integrally related to the growing, harvesting and processing of forest products, including but not limited to roads, log landings, and log storage areas.
4) The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities.
5) Grazing.
6) A residence or other structure necessary for the management of land zoned as timberland production (California Legislative Information, 2021).

The proposed project would be consistent with 4), as it would replace major portions of the City's main raw water supply pipeline.

4.2.2 Discussion

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The are no lands designated as prime farmland, unique farmland, or farmland of statewide importance in the Proposed Project area. The Proposed Project would not result in any impacts to prime farmland, unique farmland, or farmland of statewide importance based on review of existing information and maps from CDOC (CDOC, 2016b). Therefore, there would be no impact associated with the conversion or loss of farmland resulting from the Proposed Project and **no mitigation** measures would be required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. Segments 2 and 3 of the Proposed Project are partially in the County's Agricultural (AG) zoning district. The Segment 2 proposed pipeline alignment would run adjacent to the existing water pipeline. Segment 2 of the Proposed Project would not impact the zoning of the surrounding areas upon construction completion. Pipeline construction for Segment 2 of the Proposed Project would require a minimum 12- to 20-foot-wide temporary construction easement. Once construction is finished, the existing narrow access road would be regraded/reestablished, and the ROW would be restored. Impacts to surrounding land would be minimal and temporary in nature. Construction of the Segment 2 proposed pipeline would not have a significant impact on the existing agricultural zoning district.

The existing Segment 3 pipeline is located along a different alignment than the City's existing pipeline. However, the stretch of Segment 3 that is in the Agricultural zoning district would be along the existing pipeline alignment. There would be no impact to the Agricultural zoning district upon construction completion. Construction of the Segment 3 proposed pipeline would require a minimum 12- to 20-foot-wide temporary construction easement. Once construction is finished, the existing narrow access road would be regraded/reestablished, and the ROW would be restored in the Agricultural zone. Impacts to surrounding land would be minimal and temporary in nature. Construction of the Segment 3 proposed pipeline would have a less than significant impact on existing agricultural zoning.

There are no parcels in the Proposed Project area that are enrolled under the Williamson Act (Mendocino County, 2014). The Proposed Project would not impact any land covered by a Williamson Act contract. There would be no impact and no mitigation measures would be required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

SEGMENT 2

No Impact. Segment 2 of the Proposed Project has a General Plan Land Use designation of Rural Residential 1ac (RR) and is in both the Rural Residential (RR) and Agricultural (AG) zoning districts. As such, it is not located on or near areas with zoning designations of forest land, timber land, or timberland zoned Timberland Production. Segment 2 of the Proposed Project would not conflict with, or cause the rezoning of forest land, timberland, or timberland zoned Timberland Production lands and would have no impact. No mitigation measures would be required.

SEGMENT 3

Less Than Significant Impact. The Segment 3 proposed pipeline starts where the Georgia-Pacific Haul Road (Haul Road) intersects the existing Noyo River Crossing and then follows the Haul Road in a westerly direction before traversing generally southeast to the Summers Lane Reservoir. The majority of Segment 3 of the Proposed Project is located on rural, forest land uses owned by Lyme primarily within the California Coastal Zone (Mendocino County, 2009a), with a small portion at the south end located on the lands of Celeri Family Trust that is zoned RL160. The Segment 3 proposed pipeline alignment is primarily located in both the Agricultural (AG) and Timberland Production (TP) zoning districts, as well as in a designated TPZ managed by Lyme. California Government Code 51104 (h) states that a "Compatible use" within a designated TPZ is any use which does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber. California Government Code 51104 (h) states that compatible uses within designated TPZs include, but are not limited to, six project types, unless in specific project conditions would be contrary to the preceding definition of compatible use. California Government Code 51104 (h)(4) identifies"The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities" as one of six compatible uses in relation to TPZ zoned parcels.

The existing Segment 3 pipeline is located along a different alignment than the proposed pipeline. The proposed and existing pipeline alignments are within the same TPZ managed by Lyme. The presence of the existing Segment 3 alignment has not compromised timber production within the surrounding area, and the Segment 3 proposed pipeline would not alter existing conditions at the existing pipeline alignment. The City has conducted initial outreach with Lyme on the project and would need to obtain a new permanent easement on Lyme Timber Company land. The easement would be a 20-foot buffer around the proposed Segment 3 alignment. The City has coordinated with Lyme on this pipeline segment and Lyme has indicated it is supportive of the Proposed Project.

Timber growth is largely a function of canopy closure and due to the narrow profile of the Segment 3 clearing limits, canopy cover would remain close to 100 percent and would not differ from the surrounding timber stand. The presence of Segment 3 of the Proposed Project would have minimal effects on overall timber production on this property. The City would coordinate with Lyme to ensure the Timber land would be impacted the least possible in order to install the Segment 3 proposed pipeline. The Proposed Project is crucial to the City of Fort Bragg as it would provide a reliable and resilient water supply system that provides safe, high quality drinking water to the residents of Fort Bragg. The City would apply for the applicable timber harvest document, and CALFIRE would ensure that the timber harvest is done in accordance with the Forest Practice Rules and all industry standards. Given the minimal contribution to net forest loss, this impact would be less than significant.

SEGMENT 4

Less Than Significant Impact. The southern portion of the Segment 4 is located within JDSF and designated TPZ managed by CALFIRE, while the northern portion of the segment is located within a rural residential zone. According to California Government Code 51104 (h), public utility projects are a compatible use within designated TPZs.

The planned repair and replacement of the Segment 4 proposed pipeline does not conflict with existing zoning at the Proposed Project area or create a need to rezone forest land. The existing Segment 4 pipeline has been in place for decades and the presence of the pipeline has not compromised timber production within the Proposed Project area. Additionally, a review of the JDSF Management Plan indicates that the Segment 4 alignment is not located within an existing area of special concern, research/experimentation area, or short-term harvest area (CALFIRE, 2016). Chapter 0351.7 (C) of the JDSF Management Plan indicates that Segment 4 of the Proposed Project improvements would be consistent with applicable zoning, management objectives and policies, given that the City obtains a Temporary Passage Permit from the JDSF Director.

Timber growth is largely a function of canopy closure and due to the narrow profile of the Segment 4 proposed pipeline limits, canopy cover would remain close to 100 percent and would not differ from the surrounding timber stand because of Proposed Project implementation. Therefore, the implementation of Segment 4 of the Proposed Project would not conflict with, or cause the rezoning of forest land, timberland, or timberland zoned for Timberland Production, and would have a less than significant impact in this regard. No mitigation measures would be required.

SEGMENT 5

Less Than Significant Impact. The Segment 5 proposed pipeline alignment is located within a designated TPZ managed by CALFIRE. California Government Code 51104 (h) states that a compatible use within designated TPZs include the erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities.

The planned repair and replacement of the Segment 5 proposed pipeline does not conflict with existing zoning at the Proposed Project area or create a need to rezone forest land. The existing Segment 5 pipeline has been in place for decades and the presence of the pipeline has not compromised timber production within the Proposed Project area. Additionally, a review of the JDSF Management Plan indicates that the Segment 5 alignment is not located within an existing area of special concern, research/experimentation area, or short-term harvest area (CALFIRE, 2016). Chapter 0351.7 (C) of the Jackson Demonstration State Forest Management Plan indicates that the Segment 5 proposed pipeline improvements would be consistent with applicable zoning, management objectives and policies, given that the City obtains a Temporary Passage Permit from the JDSF Director.

Therefore, the implementation of Segment 5 of the Proposed Project would not conflict with, or cause the rezoning of forest land, timberland, or timberland zoned for Timberland Production, and would have a less than significant impact in this regard. No mitigation measures would be required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

Less Than Significant Impact. Public Resource Code (PRC) 12220(g) states that "Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The existing pipeline has been in place for decades and the presence of the pipeline has not compromised timber production or resulted in the loss of forest land within the Proposed Project area.

Segments 2 and 4, of the Proposed Project would be constructed adjacent to the existing pipeline, while Segments 3 and 5 of the Proposed Project are located along a new alignment rather than the existing pipeline. Segments 3, and 4, of the Proposed Project are primarily located within a designated forest land and TPZ managed by Lyme.

Project construction would result in the removal of multiple mature trees within the Proposed Project area; however, forest growth and loss are determined through canopy closure metrics. The proposed project would require a maximum of a 20-foot-wide work area around the Proposed Project's alignment, which would be approximately 11,500 feet long. The total work area would be approximately 5.3 acres. There would be no loss of forest land in Segment 2 due to the pipeline alignment being located under an existing road. Segments 3, 4, and 5 of the Proposed Project are partially in TPZs. Public utility rights-of-way are designated as a compatible use with TPZ zoned lands. **Table 4-1** shows the estimated number of trees that would need to be removed in order to construct the Proposed Project as well as the estimated loss of forest land. The initial tree surveys were conducted by land surveying crews from Cinquini & Passarino Inc., and field verified later by Lee Susan, Registered Professional Forester (RPF). A total of about 317 trees would be removed with the project. A total of 249 trees with approximately 108 Mendocino cypress and 46 Bishop pine trees would need to be removed in the Lyme forest of Segment 3. The City has rerouted the proposed pipeline to avoid large trees at the southern end of Segment 3. This issue is discussed more fully in Biological Resources chapter below. In Segment 4, an estimated 18 Bishop pine and 1 cypress would be removed. Most of the Bishop pine trees observed in Segment 4, which is located outside of the CZ, are small trees ranging from < 1 inch in diameter to 31 inches in diameter. In Segment 5, located within the JDSF, an estimated 15 Bishop pine trees would be removed. Most of them are small trees ranging from seedlings <one-inch diameter at breast height (DBH) to 19 inches DBH. No cypress trees were documented in Segment 5 by RPF Lee. Trees mapped by the survey crew were generally those greater than five (5) inches in diameter, but RPF Lee has performed an inventory of all sizes.

Table 4-1. Estimated Tree Removal per Segment

Tree Type	Alder	Pine	Fruit	Redwood	Cypress	T.O.	Fir	Tree Count	Forestland Impacted (acres)
Segment 2	-	-	-	-	-	-	-	0	0
Segment 3	53	46	1	38	108	3	-	249	2.18
Segment 4	-	18	-	4	1	1	-	24	1.41
Segment 5	-	15	-	10	-	11	8	44	0.66
Total	**53**	**79**	**1**	**52**	**109**	**15**	**8**	**317**	**4.25**

The Proposed Project is crucial to the City of Fort Bragg as it would provide a reliable and resilient water supply system that provides safe, high quality drinking water. The Proposed Project would have a minimal contribution to net forest loss as the City has endeavored to avoid cypress and Bishop pine as is practicable given various constraints during the pipeline planning process. Trees slated for removal for Segment 3 of the City's water project would be removed during the Lyme timber harvesting process if they decided to move forward with a property-wide THP and sold as their property. If Lyme does not choose to perform a THP, the City will work with Lyme on the tree removal required to construct the new pipeline via THP Exemption process with CALFIRE. Additionally, California Government Code 51104 (h)(4) identifies "The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities" as a compatible use for the growth and harvest of timber. Additionally, Lyme informed the City that they are considering the harvest of timber in Segment 3. The ideal situation is for the City to build Segment 3 of the water pipeline after Lyme has conducted timber harvesting. In this regard, the trees owned by Lyme and slated for removal for the City's project would be harvested by Lyme during their timber harvest operations. In the event City's project is required prior to the Lyme timber harvest, the City will coordinate their activities with Lyme. As stated above, because it is a public water utility project, the City's project is exempt from preparing a formal THP under state law. The City will work with CALFIRE and Lyme on the timber harvesting aspect of the project and any terms and conditions or compensation required for the estimated tree loss and new utility easements on their properties. Therefore, the Proposed Project would have a less than significant impact on timber production in this regard and no mitigation measures would be required. Please see Biological Resources section for additional discussion regarding tree impacts and proposed mitigation measures.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

SEGMENT 2

No Impact. The are no lands designated as Farmland or forest land in the Segment 2 proposed pipeline area and implementation of the Proposed Project would not result in any impacts to prime farmland, unique farmland, or farmland of statewide importance (CDOC, 2016b). The Mendocino County General Plan (2009) identifies Assessor Parcel Number 019-61-001 for agricultural land use; however, the FMMP designates this area as grazing land (CDOC, 2016b). Segment 2 of the Proposed Project would replace a segment of the City's raw water pipeline that is reaching the end of its service life. It would have no impact on existing farmland following the completion of construction. Therefore, there would be no impact associated with the conversion or loss of farmland resulting from the Proposed Project and no mitigation measures would be required.

The southern portion of the Segment 2 proposed pipeline alignment is in an existing private road that is situated in a mature mixed conifer-redwood forest. Construction of the Segment 2 proposed pipeline would not result in the loss of trees. In addition, forest growth for a given location is primarily determined through canopy closure metrics. The Segment 2 proposed pipeline would not result in the loss of trees, nor would it affect the canopy closure metrics at the Segment 2 proposed project site. Segment 2 of the Proposed Project would not result in the loss or conversion of forest land. Additionally, California Government Code 51104 (h)(4) identifies "The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities" as a compatible use for the growth and harvest of timber. Therefore, Segment 2 of the Proposed Project would have a less than significant impact in this regard and no mitigation measures would be required.

SEGMENTS 3-5

Less Than Significant Impact. The are no lands designated as farmland in Segments 3, 4 and 5 of the Proposed Project area and implementation of the Proposed Project would not result in any impacts to prime farmland, unique farmland, or farmland of statewide importance (CDOC, 2016b). Therefore, there would be no impact associated with the conversion or loss of farmland resulting from Segments 3, 4 and 5 of the Proposed Project and no mitigation measures would be required.

The Segments 3, 4 and 5 proposed pipeline alignments are located within a designated forest land and TPZ managed by the Lyme Redwood Company and CALFIRE. Construction of Segments 3, 4 and 5 of the Proposed Project would result in the loss of multiple mature trees within the Proposed Project area. However, forest growth and loss are determined through canopy closure metrics. Due to the narrow profile of the Proposed Project's clearing limits, canopy cover would remain close to 100 percent and the Proposed Project construction would not result in the loss or conversion of forest land. Additionally, California Government Code 51104 (h)(4) identifies "The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities" as a compatible for the growth and harvest of timber. Therefore, Segments 3,4, and 5 of the Proposed Project would have a less than significant impact in this regard and no mitigation measures would be required.

4.2.3 Mitigation Measures

No mitigation measures are required for the proposed project, as impacts would be less than significant.

4.2.4 References

California Department of Forestry and Fire Protection (CALFIRE). 2016. Jackson Demonstration State Forest Management Plan 2016 Update. Accessed: January 25, 2017.

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Zachary Jones, General Manager, Lyme Redwood Timberlands, LLC. Personal communication with Diane O'Connor, City of Fort Bragg Public Works Assistant City Engineer.

4.3 Air Quality

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Air Quality – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project?				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 Setting

The Proposed Project is located within the North Coast Air Basin (NCAB) and is under the jurisdiction of the Mendocino County Air Quality Management District (MCAQMD). The Proposed Project is located in the Mendocino County North Coast area of the MCAQMD. Air quality districts are public health agencies whose mission is to improve the health and quality of life for all residents through effective air quality management strategies. MCAQMD is one of 35 regional air quality districts in California and has jurisdiction over all of Mendocino County. Under the California Clean Air Act, air districts are required to produce overall plans that outline strategies for air quality improvements within their air basin.

The Proposed Project is located in the City of Fort Bragg's (City) General Plan Area and sphere of influence (SOI), but primarily within unincorporated Mendocino County. The Proposed Project is located predominantly within lands governed by the Mendocino County General Plan and relevant GP policies are presented below. The following policies regarding air quality from the Mendocino County General Plan are relevant to the Proposed Project's air quality impact analysis:

Policy RM-37: Public and private development shall not exceed Mendocino County Air Quality Management District emissions standards.

Policy RM-38: The County shall work to reduce or mitigate particulate matter emissions resulting from development, including emissions from wood-burning devices.

Policy RM-41: Reduce dust generation from unpaved roads.

Policy RM-43: Reduce the effects of earth-moving, grading, clearing and construction activities on air quality.

Policy RM-45: Encourage the use of alternative fuels, energy sources and advanced technologies that result in fewer airborne pollutants.

Policy RM-46: Reduce or eliminate exposure of persons, especially sensitive populations, to air toxics.

The following policies from the MCAQMD Rules and Regulations are relevant to the Proposed Project air quality impact analysis:

Rule 1-160: The ambient air quality standards of the Mendocino County Air Quality Management District shall be those established by the California Air Resources Board and the U.S. Environmental Protection Agency (**Table 4-2**).

Rule 1-430: This Rule prohibits the handling, transportation, or open storage of materials, or the conduct of other activities in such a manner that allows or may allow unnecessary amounts of particulate matter to become airborne.

Segment 2 is located within the City of Fort Bragg's sphere of influence (SOI). The City's General Plan relevant air quality policies are presented below as well:

Policy OS-7.1: Participate in Regional Planning to Improve Air Quality: Continue to cooperate with the Mendocino County Air Quality Management District (MCAQMD) in implementing the Regional Clean Air Plan.

Policy OS-7.2: Air Quality Standards: Seek to comply with State and Federal standards for air quality.

Policy OS- 7.2.2: Work with Mendocino County Air Quality Management District to ensure that all new industrial projects include Best Available Control Technologies (BACTs) to control emissions of air pollutant to the maximum extent permitted by law.

The federal Clean Air Act requires the U.S. Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for major pollutants that could be detrimental to the environment and human health. The California Ambient Air Quality Standards (CAAQS) are the California state equivalent of the NAAQS. An air basin is in "attainment" (compliance) when the levels of the pollutant in that air basin are below NAAQS and CAAQS thresholds (**Table 4-2**).

Table 4-2. NAAQS and CAAQS

Pollutant		NAAQS		CAAQS	
		Averaging time	**Concentration Threshold**	**Averaging time**	**Concentration Threshold**
Carbon monoxide (CO)		8 hours	9 ppm	8 hours	0.09 ppm
		1 hour	35 ppm	1 hour	0.070 ppm
Lead (Pb)		Rolling 3-month average	0.15 µg/m^3	1.5 hour	0.15 µg/m^3
Nitrogen dioxide (NO_2)		1 hour	100 ppb	1 hour	0.18 ppm
		1 year	53 ppb	Annual mean	0.030 ppm
Ozone (O_3)		8 hours	0.070 ppm	8 hours	0.09 ppm
				1 hour	0.070 ppm
Particulate matter (PM)	$PM_{2.5}$	1 year	12.0 µg/m^3	Annual mean	12.0 µg/m^3
		24 hours	35 µg/m^3	n/a	n/a
	PM_{10}	24 hours	150 µg/m^3	24 hours	50 µg/m^3
				Annual mean	20 µg/m^3
Sulfur dioxide (SO_2)		1 hour	75 ppb	1 hour	0.25 ppm
		3 hours	0.5 ppm	24 hours	0.04 ppm
Visibility reducing particles		n/a	n/a	9 hours	Extinction of 0.23 per kilometer
Sulfates		n/a	n/a	24 hours	25 µg/m^3
Hydrogen sulfide		n/a	n/a	1 hour	0.03 ppm
Vinyl chloride		n/a	n/a	24 hours	0.01 ppm

Source: USEPA, 2016; CARB, 2020

ppm = parts per million, ppb = parts per billion, µg/m^3 = micrograms per cubic meter, n/a = not applicable

Mendocino County is currently in non-attainment for the State PM_{10} standard (particulate matter less than 10 microns in size) (CARB, 2019). The primary manmade sources of PM_{10} pollution in the County are from wood combustion (woodstoves, fireplaces and outdoor burning), fugitive dust, automobile traffic and industry (Mendocino County, 2021). Both the NCAB and Mendocino County are in attainment for all other State and Federal criteria air pollutants (US EPA 2016; CARB, 2020).

PARTICULATE MATTER ATTAINMENT PLAN

The MCAQMD prepared a PM_{10} attainment plan in 2005 to serve as a summary of the District's current air quality status, a long-range planning tool, and a roadmap for future District policy. While PM levels have dropped over the last 20 years, the District still exceeds the State standard several times a year. Most of these exceedances result from wildfires, residential wood burning, unpaved roads and construction activities, the largest sources of PM in the District. The Particulate Matter Attainment Plan recommends several control measures regarding woodstoves, campgrounds, unpaved roads, construction and grading activities, new residential development and open burning emissions reduction control measures. The control measures for construction and grading activities are: 1) Increase enforcement of existing Air Quality regulations, 2) Develop a regulation that would require permits for projects with over 1 acre of disturbance. This is similar to the requirements under the Naturally Occurring Asbestos regulations and could simplify the current permit requirements by making them consistent countywide (MCAQMD, 2005).

4.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The Proposed Project would replace almost 2 miles of the City's raw water pipeline that is reaching the end of its service life. The proposed project would not increase automobile capacity or create other permanent new sources of emissions. The Proposed Project would not induce unplanned growth or remove an existing obstacle to growth, create new demand for energy, alter any surrounding land use, or create a permanent source of emissions.

The Proposed Project is consistent with applicable policies in the County General Plan (Mendocino County, 2009) and the MCAQMD Rules and Regulations (2011), listed above. These documents have been determined to be consistent with applicable Federal and State air quality statutes, regulations, and plans. Adhering to these rules and regulations would ensure that the Proposed Project would be consistent with applicable NAAQS and CAAQA, regulations, and plans. Pipeline operations would not conflict with or obstruct the implementation of applicable air quality plans.

All construction equipment would be maintained in a manner consistent with state and federal regulations applicable to off-road, construction diesel equipment. The short-term construction impacts, and the long-term operational impacts would be less than significant, and no mitigation is required.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The Proposed Project would replace almost 2 miles of the City's raw water pipeline that is reaching the end of its service life. The proposed project would not increase automobile capacity on surrounding roads, nor would it increase traffic or congestion. The proposed project would have no impact related to criteria air pollutant emissions during operation.

Mendocino County is designated in State non-attainment for PM_{10} (CARB, 2021). Temporary air quality impacts, primarily dust and emissions from construction equipment resulting from the proposed project would be construction related. Construction emissions were modelled using the Road

Construction Emissions Model (RCEM), Version 9.0.0 (**Appendix A)**. For the purpose of this analysis, it was assumed that proposed project construction would last 18 months, the total project area would be 10 acres, and the maximum area disturbed/day would be 3 acres. In addition, the model assumed that: 1) the types and quantities of construction equipment typical of buried pipeline projects would be used; and 2) all on-road equipment used would be year 2010 or newer models. The Proposed Project would be funded and constructed over time as funding becomes available and therefore these emissions are not expected to occur simultaneously.

In 2010, the MCAQMD released Air Quality CEQA Thresholds of Significance to follow when evaluating air quality impacts (MCAQMD, 2010). **Table 4-3** shows the estimated emissions generated during project construction for all project segments and the MCAQMD 2010 Air Quality CEQA Thresholds of Significance.

Table 4-3. MCAQMD Criteria Air Pollution Project Level Thresholds

Pollutant	Construction – Related Thresholds	Operational – Related Thresholds		Estimated Construction Emissions
Criteria Air Pollutants and Precursors (Regional)	**Average Daily Emissions (lb/day)**	**Average Daily Emissions (lb/day)**	**Maximum Annual Emissions (tpy)**	**Maximum Daily Emissions (lbs/day)**
ROG	54	54	10	4.19
NO_x	54	54	10	44.65
PM_{10} (exhaust)	82	82	15	1.91
$PM_{2.5}$ (exhaust)	54	54	10	1.75
PM_{10} (fugitive dust)	Best Management Practices	None		30.00
$PM_{2.5}$ (fugitive dust)	Best Management Practices	None		6.24
PM_{10} (total)	None	None		31.91
$PM_{2.5}$ (total)	None	None		7.99
GHGs (Stationary Sources)	None	10,000 MT/yr.		-
CO_2e	None	None		7,327.91

Source: MCAQMD, 2010; SMAQMD, 2018.

lb = pound, tpy = tons per year, ROG = Reactive Organic Gas, NO_x = Nitrogen Oxide, GHG = Greenhouse Gas, MT = Metric ton

Estimates for criteria pollutant emissions generated by the Proposed Project are substantially below numerical thresholds established by the MCAQMD. The Proposed Project is anticipated to generate 1.91 lbs/day of PM_{10} (exhaust) emissions while the County threshold is 82 lbs/day for PM_{10} (exhaust). Although the project does not exceed numerical air quality standards for PM_{10}, the MCAPCD requires implementation of Best management practices (BMPs). BMPs would be implemented during construction to comply with applicable MCAQMD fugitive dust rules and regulations and to reduce construction emissions further. These BMPs would be implemented by the City's contractor and would include the following:

1. Prepare and implement a Fugitive Dust Control Plan.
2. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
3. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
4. All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

5. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
6. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
7. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).
8. Clear signage shall be provided for construction workers at all access points.
9. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
10. A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to dust complaints. This person shall report all complaints to the County and take immediate corrective action as soon as practical but not more than 48 hours after the complaint is received. The MCAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Air quality impacts related to construction would be temporary and would cease upon construction completion. The Proposed Project's estimated emissions of PM_{10} (exhaust) would be well below the MCAQMD thresholds and required BMPs would be in place to reduce PM_{10} (fugitive dust) pollution. Thus, the Proposed Project would have a less than significant impact on increasing non-attainment criteria air pollutants and no mitigation is required.

c) Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Sensitive Receptor locations may include hospitals, schools, convalescent facilities, and residential areas. The area near the proposed project is not heavily populated, but there are several nearby residences as well as a church.

SEGMENT 2

Less Than Significant Impact. Construction activities for Segment 2 of the Proposed Project are anticipated to last about 80 days. There are multiple sensitive receptors in the vicinity of the Segment 2 proposed pipeline alignment including two single-family residences located within 100 feet of the proposed alignment on APN 020-52-023 and APN 020-17-024, and two single-family residences within 200 feet of the proposed alignment on APN 020-52-013 and APN 020-54-005.

The nearby residents on Sherwood Road would be exposed to temporary construction emissions for about 80 days from construction activities and traffic. The construction emission predictions for the Proposed Project as a whole are below thresholds of significance established by the MCAQMD, so emission estimates for construction of the Segment 2 proposed pipeline would also be below thresholds of significance. Construction industry standard BMPs would be implemented in order to minimize potential air quality and dust impacts to local residents on Sherwood Drive. For these reasons, construction of Segment 2 of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would be less than significant. No mitigation measures are required.

SEGMENT 3

Less Than Significant Impact. Construction activities in this Segment are anticipated to last approximately 100 days months. There are two sensitive receptors within the vicinity of the Segment 3 proposed pipeline. These include a single-family residence on APN 049-61-001, located approximately 400 feet west of the northern limit of Segment 3 proposed pipeline, and a single-family residence on APN 019-64-008, located approximately 350 west of the Segment 3 proposed pipeline alignment.

The two residences near this alignment would be exposed to temporary construction emissions from typical construction equipment used for pipeline construction. The emission predictions for the construction of the Proposed Project as a whole are below thresholds of significant established by the MCAQMD, so emissions estimate for the construction of the Segment 3 proposed pipeline would also be below thresholds of significance. BMPs would be implemented in order to minimize potential impact to the sensitive receptors in the vicinity of the Segment 3 proposed pipeline. Therefore, construction of Segment 3 of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would be less than significant. No additional air quality mitigation measures are required.

SEGMENT 4

Less Than Significant Impact. Construction activities for Segment 4 of the Proposed Project are anticipated to last approximately 3 months. There are multiple sensitive receptors near the Segment 4 proposed pipeline alignment. There are 12 single-family residences located within 100 feet of the proposed alignment along Dwyer Lane, and the Bethel Baptist Church, which is located approximately 150 feet north of the Segment 4 proposed pipeline's northern terminus.

The neighborhood near Segment 4 of the Proposed Project would be exposed to temporary construction emissions for several days. The emission predictions for the Proposed Project as a whole are below thresholds of significant established by the MCAQMD, so emissions for the construction of the Segment 4 proposed pipeline would also be below thresholds of significance. BMPs would be implemented in order to minimize potential impacts to receptors in vicinity of Segment 4 of the Proposed Project. For these reasons, construction of Segment 4 of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations and impacts would be less than significant. No mitigation measures are required.

SEGMENT 5

No Impact. Construction activities for Segment 5 of the Proposed Project are anticipated to last approximately 2 months. This section of the proposed pipeline is located within JDSF and there are no sensitive receptors in the area. The emission predictions for the Proposed Project are below the thresholds of significance established by the MCAQMD. For these reasons, construction of Segment 5 of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations and there would be no impact. No mitigation measures are required.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. Project-related odor emissions would be limited to the construction period when emissions from equipment may be evident in the immediately surrounding area. Odors would be generated from vehicles and/or equipment exhaust emissions during construction. Odors

produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary, and for the types of construction activities anticipated for proposed project components, would generally occur at magnitudes that would not affect substantial numbers of people.

Segment 2 of the Proposed Project is located partially within a residential community on Sherwood Drive and residences adjacent to the Segment 2 proposed pipeline alignment maybe temporarily impacted by construction odors for several weeks during construction. The Segment 3 proposed pipeline alignment is located in a sparsely populated area, so odors and other emissions would not affect a substantial number of people for an extended period of time. The closest residential community to Segment 3 of the Proposed Project is located approximately 0.5 miles north of Segment 3of the Proposed Project's northern limit. Thus, there is a substantial buffer for dilution and dispersion of any odors generated during project construction. Segment 4 of the Proposed Project is located partially within a residential community and residences adjacent to the Segment 4 proposed pipeline alignment may temporarily be impacted by construction odors during construction of Segment 4. Segment 5 of the Proposed Project is in a sparsely populated area, so odors and other emissions would not affect a substantial number of people for an extended period of time. The closest residential community to Segment 5 of the Proposed Project is located approximately 0.4 miles north of the Segment 5 proposed pipeline alignment, providing a substantial buffer for dilution and dispersion of any odors generated during project construction.

Emissions resulting in odors would be temporary in nature and are not anticipated to occur at magnitudes that would significantly impact people in the surrounding areas. Odor emissions during the proposed project are not expected to result in nuisance odors. This impact is considered less than significant. No mitigation measures are required

The proposed project would not change the operations on surrounding roads, thus, odors and other emissions upon completion of the proposed project would be similar to existing conditions. Impacts regarding operations of the proposed project would also be less than significant. No mitigation measures are required

4.3.3 Mitigation Measures

No mitigation measures are required related to air quality. Implementation of standard air quality BMPs is expected to keep project emissions to acceptable levels.

4.3.4 References

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Sacramento Metropolitan Air Quality Management District (SMAQMD). 2018. Road Construction Emissions Model, Version 9.0.0. Date Accessed: June 28, 2021.

4.4 Biological Resources

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

4.4.1 Setting

EXISTING VEGETATION COMMUNITIES

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats may be protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, and the California Department of Fish and Wildlife (CDFW) Streambed Alteration Program; or local ordinances or policies such as City or County tree ordinances. Other sensitive biological communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by CDFW. CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its California Natural Diversity Database (CNDDB). Sensitive plant communities are also provided in list format by CDFW. CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe’s methodology, which those alliances ranked globally (G) or statewide (S) with status of 1 through 3 considered to be of special concern as well as imperiled.

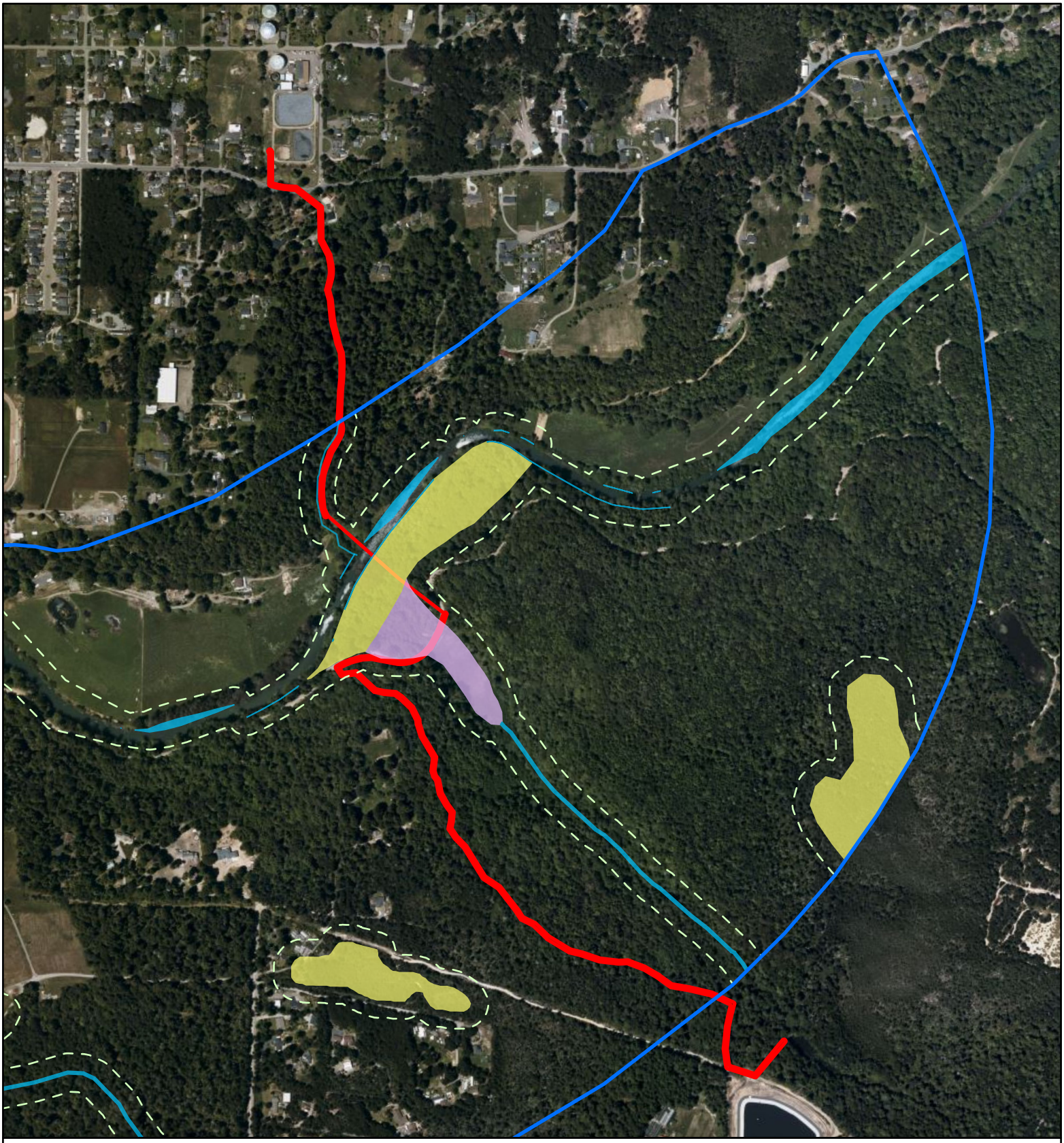
In Mendocino County, environmentally sensitive habitat areas (ESHA) as defined by the local Mendocino County Coastal Plan include anadromous fish streams, sand dunes, rookeries and marine mammal haul out areas, wetlands, riparian areas, pygmy vegetation containing species of rare or endangered plants, and habitats of rare and endangered plants and animals (Mendocino County, 1991). ESHAs are designated in the Proposed Project study area by assuming a 100-foot buffer around all riparian and pygmy cypress habitats. ESHA's in the project area are shown in **Figure 4-1**.

The Proposed Project is situated in a mix of land uses including urban industrial, rural residential and intensive managed forest lands by Lyme Redwood Company, LLC (Lyme) and the Jackson Demonstration State Forest (JDSF), managed by California Department of Forestry and Fire Protection (CALFIRE). General wildlife habitat assessment and biological surveys for the project were conducted in Newman Gulch, Newman Reservoir, Hare Creek, and Covington Gulch on March 13, April 30, April 31, August 21, November 21, 2019, and June 2, 2021. General wildlife habitat assessment and special-status species biological surveys were conducted over the entire Proposed Project by Dewberry Senior Project Manager Doug Brewer, Staff Environmental Scientist Zac Cornejo, and Staff Environmental Scientist Allison Piazzoni. Floristic surveys were supported by Registered Professional Foresters Lee Susan and Darcie Mahoney, Lyme Forester Fred Shuler and Botanist Jennifer Hawley, on May 13 and 14, 2020. Subsequent botanical surveys were conducted by consulting botanist Darcie Mahoney and Senior Project Manager Doug Brewer for the proposed Segment 2 and Segment 3 alignment alternative on June 2, 2021.

The Proposed Project study area is dominated by rural forested land and includes some rural residential parcels in Segments 2, 3 and 4. The primary water features in the Proposed Project study area include an unnamed Class II stream (Segment 2), the Noyo River, Newman Gulch, Newman Reservoir, Covington Gulch, and Hare Creek. Terrestrial habitat types within the Proposed Project study area include upland redwood forest and urban (developed). Aquatic habitats within the Proposed Project study area include riverine (intermittent), riverine (upper perennial), riverine (perennial), freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine.

SEGMENT 2

Segment 2 of the Proposed Project traverses urban (developed), upland redwood forest, riparian corridors, and riverine (perennial) habitats. (Holland, 1986) (**Figure 4-2**). From where the Proposed Project connects to the existing pipeline at the Fort Bragg Water Treatment Plant (WTP), to the end of the driveway off Fort Bragg-Sherwood Road, the habitat type is residential. An upland redwood forest community extends from the driveway to the southern end of the segment, on the edge of the Noyo River floodplain. In Segment 2, riparian corridors exist along the Class II unnamed stream. The riparian corridor was accounted for by creating a buffer of 50 feet from the top of the higher bank on each side of the stream.



Legend

Proposed Project Alignment - Segments 2 and 3

California Coastal Zone

100-foot ESHA Boundaries

Wetlands

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Riverine

Dewberry

N

0 105 210 420 630 840 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

California Coastal Zone Environmentally Sensitive Habitat Area Boundaries within the Proposed Project

Figure 4-1

Legend

- Segment 2 Study Area
- Segment 2 Proposed Project Area
- California Coastal Zone
- 100-foot ESHA Boundaries

Habitat Type

- Built (Rural Residential)
- Built (Urban Developed)
- Built (WTP)
- Riparian ESHA
- Riverine - Class II stream
- Upland Redwood Forest

Wetland Type

- Freshwater Forested/Shrub Wetland
- Riverine

Dewberry

N

0 40 80 160 240 320 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Habitat Types in the Proposed Project Study Area Segment 2

Figure 4-2

The upland redwood forest within Segment 2 consists of a diverse canopy and a dense understory. Species observed within Segment 2 included second-growth redwoods (*Sequoia sempervirens*), red alder (*Alnus rubra*), western hemlock (*Tsuga heterophylla*), and Douglas fir (*Pseudotsugamenziesii*). Understory species consisted of western skunk cabbage (*Lysichiton americanus*), redwood sorrel (*Oxalis oregana*), English ivy (*Hedera helix*), California buttercup (*Ranunculus californicus*), stinging nettle (*Urtica dioica*), sweet pea (*Lathyrus odoratus*), western trillium (*Trillium ovatum*), thimble berry (*Rubus parviflorus*), red columbine (*Aquilegia Formosa*), and several species of ferns. Licensed Forester Darcie Mahoney observed the CNPS Listed 4.2 species Leafy-stemmed miterwort (*Mitellastra caulescens*) and Nodding semaphore grass (*Pleuropogon refractus*) in the lower section of this segment. Other plant species that are common in the redwood forest include California nutmeg (*Torreya californica*), tan oak (*Lithocarpus densiflorus*), big-leaf maple (*Acer macrophyllum*), and California bay (*Umbellularia californica*). Other common understory species include huckleberry (*Vaccinium ovatum*) and salal (*Gaultheria shallon*).

Photo 4-7. Existing pipeline alignment in overgrown roadway in Segment 2 upland redwood forest habitat. 05.13.2020.

Wildlife species or their sign observed within Segment 2 of the Proposed Project included wild turkey (*Meleagris gallopavo*), bullfrog (*Lithobates catesbeianus*), turkey vulture (*Cathartes aura*), swift (*Apus apus*), and banana slug (*Ariolimax*). Mammals that are common in the redwood forest include opossum (*Didelphis virginiana*), Pacific shrew (*Sorex pacificus*), yellow-cheeked chipmunk (*Tamias ochrogenys*), western gray squirrel (*Scirius griseus*), northern flying squirrel (*Glaucomys sabrinus*), dusky-footed woodrat (*Neotoma fuscipes*), porcupine (*Erethizon dorsatum*), coyote (*Canis latrans*), black bear (*Ursus americanus*), ringtail (*Bassariscus astutus*), raccoon (*Procyon gracilis*), striped skunk (*Mephitis mephitis*), long-tailed weasel (*Mustela fenata*), western spotted skunk (*Spilogale gracilis*), bobcat (*Felis rufus*), black-tailed deer (*Odocoileus hemionus colombianus*), and various species of rodents and bats. A variety of species of amphibians and reptiles also inhabit the redwood forest. Birds inhabiting the redwood forest may include osprey (*Pandion haliaetus*), spotted owl (*Strix occidentalis*), northern saw-whet owl (*Aegolis acadicus*), hairy woodpecker (*Picoides pubescens*), pileated woodpecker (*Dryocopus pileatus*), Pacific-slope flycatcher (*Empidonax difficilis*), Stellar's jay (*Cyanocitta stelleri*), chesnut-backed chickadee (*Parus rufescens*), red-breasted nuthatch (*Sitta canadensis*), brown creeper (*Certhia americana*), winter wren (*Troglodytes troglodytes*), golden-crowned kinglet (*Regulus satrapa*), hermit thrush (*Catharus guttatus*), Wilson's warbler (*Wilsonia pusilla*), dark-eyed junco (*Junco hyemalis*), purple finch (*Carpodacus purpureus*), and pine siskin (*Carduelis pinus*). Areas more dominated by Douglas Fir may also include band-tailed pigeon (*Columba fasciata*), olive-sided flycatcher (*Contopus borealis*), pygmy nuthatch (*Sitta pygmaea*), and yellow-rumped warbler (*Dendroica coronata*).

This segment contains several aquatic features, including a Class II unnamed stream that runs parallel to the overgrown roadbed in proposed Segment 2 alignment. The Class II stream is a small riverine feature that flows adjacent to and underneath the access road via culverts at least three times before flowing into the Noyo River. Class II stream designation means that the stream does not serve as habitat for salmonids or other fish species, although the stream could provide potential dispersal habitat for amphibians. A 50-foot buffer around the stream was used to create a riparian corridor designation. No listed wildlife species of special concern were observed within Segment 2. Two listed plant species were observed within Segment 2 – nodding semaphore grass and leafy-stemmed miterwort. Both plants are listed as 4.2 fairly endangered in California by the California Native Plant Society (CNPS).

Photo 4-8. Class II unnamed stream in Segment 2.

SEGMENT 3

The proposed Segment 3 pipeline would connect to the existing water line where the Haul Road intersects with the existing Noyo River Crossing and follows the Haul Road in a westerly direction for about 750 feet before ascending a steep slope leading to an existing skid trail located along the west ridgeline of Newman Gulch (**Figure 4-3**). The pipeline would follow the skid trail to the existing power pole line north of Summers Lane Reservoir, and then follow the power pole line east to a point north of the reservoir.

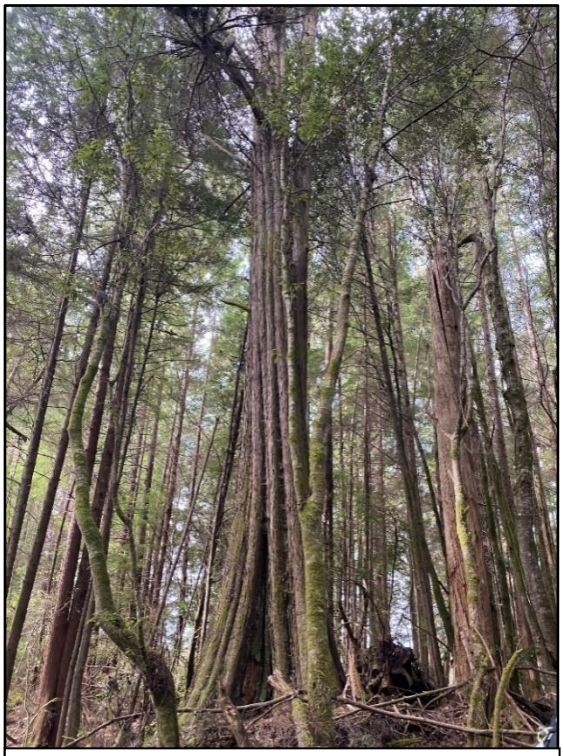
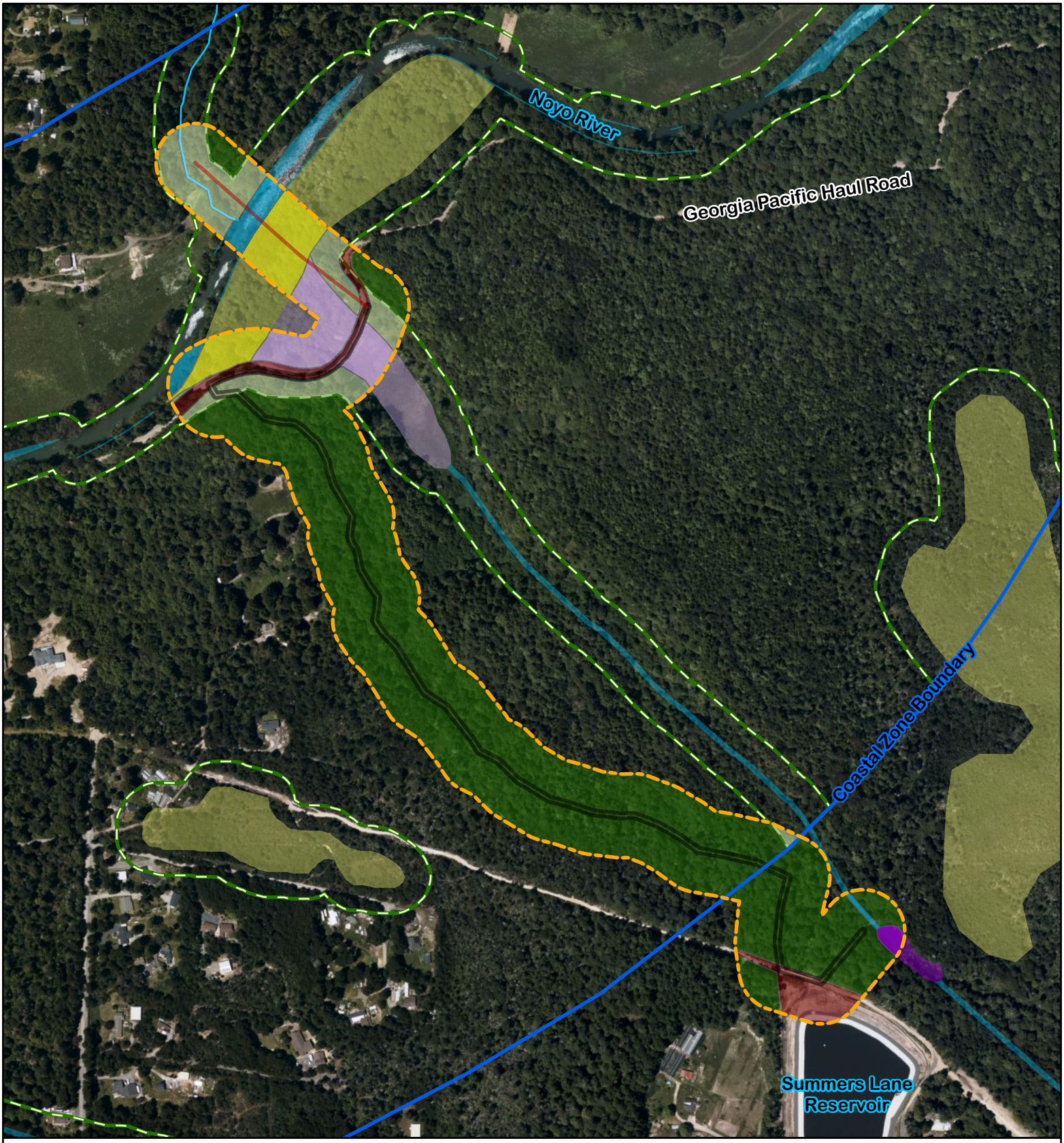


Photo 4-9. Mendocino Cypress in Segment 3. 05.14.2020.

Segment 3 is primarily within the CZ Boundary established by the California Coastal Commission (CCC). The Proposed Project would be consistent with and comply with Coastal Plan policies and environmental protection measures for ESHAs. Habitats within Segment 3 include second-growth upland redwood forest, dominated by coastal redwood and Douglas fir, and riverine (intermittent). Species observed within Segment 3 included the same species as Segment 2, as well as Mendocino cypress (*Hesperocyparis pygmaea*) (**Photo 4-9**, left), coastal redwood, Douglas fir, Bishop pine, spotted coralroot (*Corallorhizamaculata*), western rattlesnake plantain (*Goodyeraoblongifolia*), Pacific rhododendron (*Rhododendron macrophyllum*), Pacific madrone (*Arbutus menziesii*), and several species of ferns and other shrubs common to redwood forests. Wildlife observed within Segment 3 of the Proposed Project included California slender salamander (*Batrachoseps attenuates*), Steller'sjay (*Cyanocitta stelleri*), hermit thrush (*Catharus guttatus*), Swainson's thrush (*Catharus ustulatus*), osprey (*Pandion haliaetus*), and banana slug (*Ariolimax*). Segment 3 managed forested section was particularly dark and damp, and the ground was thick with downed trees, leaf litter and fallen branches.



Legend

- Segment 3 Study Area
- Segment 3 Proposed Project Area
- Noyo River Crossing (Lined)
- California Coastal Zone
- 100-foot ESHA Boundaries

Habitat Type

- Built (Urban Developed)
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riparian ESHA
- Riverine
- Riverine - Class II Stream
- Upland Redwood Forest

Dewberry

N

0 70140 280 420 560 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Habitat Types in the Proposed Project Study Area Segment 3 and Noyo River Crossing

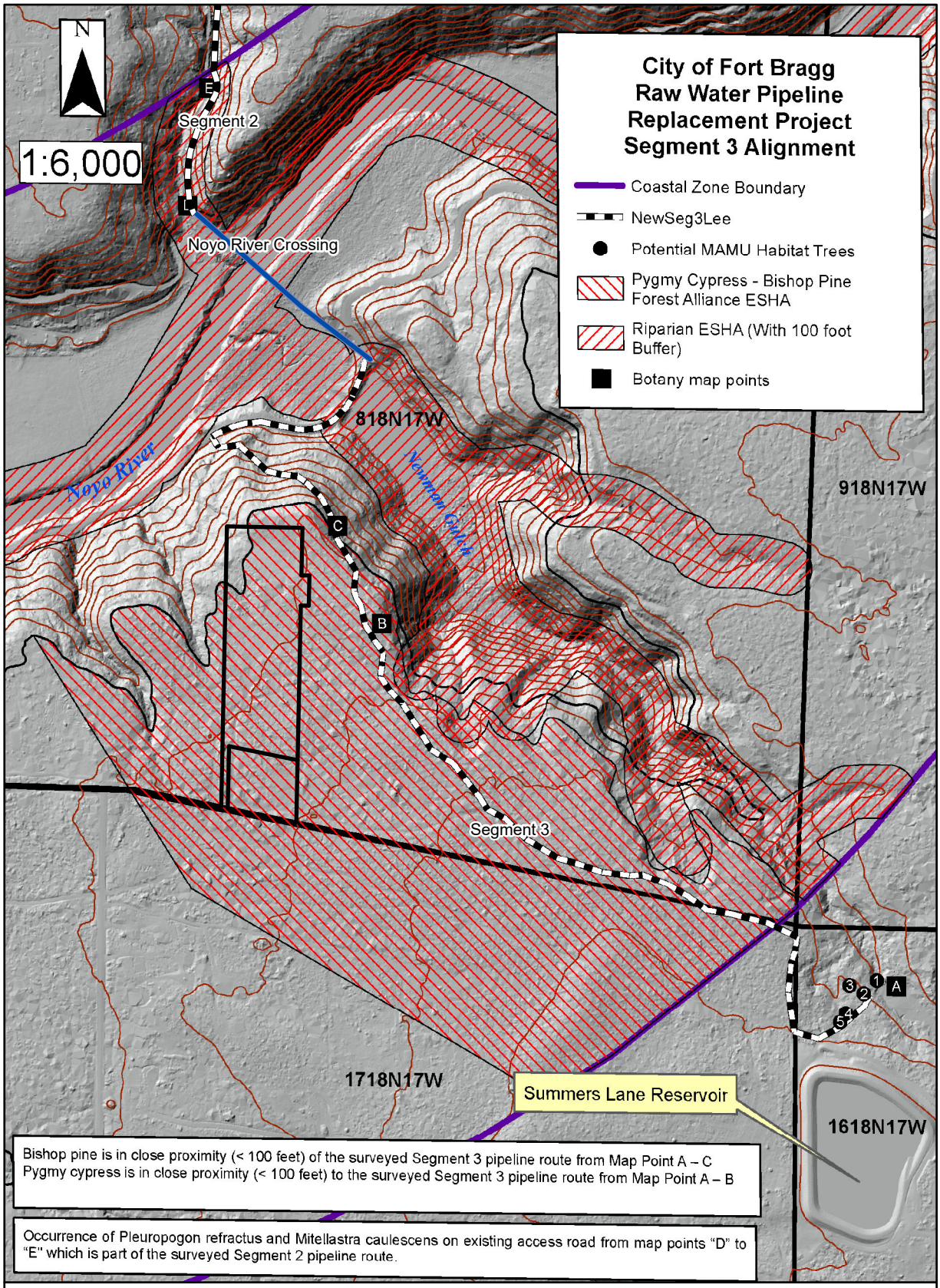
Figure 4-3

Photo 4-10. Newman Reservoir. 05.14.2020

Much of the forestland associated with Segment 3 has been owned and managed by Lyme since December 2015, with a small portion located on the lands of Celeri Family Trust. Lyme is considering a timber harvest on their property in the near future in the vicinity of Segment 3 based on conversations with Lyme management (Zach Jones pers. comm). **Figure 4-4** depicts the locations of the Mendocino Cypress-Bishop Pine Forest Alliance ESHA and Riparian ESHA boundaries. Trees that may serve as appropriate habitat for nesting marbled murrelet (MAMU) are also noted and numbered to correspond to trees shown in **Appendix D**. Additionally, trees that may serve as appropriate habitat for nesting marbled murrelet were noted. The southern portion of Segment 3 runs near Newman Gulch, which flows out of Newman Reservoir. On the day of the survey, May 14, 2020, water temperature in the creek was 15°C (59°F). The water was clear, slow-moving, and approximately two feet deep. The creek was approximately 4 feet across, and the banks were heavily vegetated. According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Mapper, the creek is classified as a R4SBA riverine intermittent streambed temporary flooded feature (USFWS, 2020b). Banks were relatively steep to undercut, with thick plant litter and green moss, and vegetated by the understory species found in the redwood forest. Photographed above is the Newman Reservoir, a city-owned and operated reservoir for the raw water pipeline. In order to protect riparian habitat conditions, a 50-foot buffer around Newman Creek and other aquatic features within the survey area was used to designate

Photo 4-11. Newman Gulch, flowing out of Newman Reservoir in Segment 3. 05.14.2020

riparian corridors. No wildlife species were observed during our survey of aquatic features within the vicinity of Segment 3 of the Proposed Project.



Dewberry

Source: Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet Notes: This Map was created for informational and display purposes only	Fort Bragg Raw Waterline Replacement Project Fort Bragg, CA	**Mendocino Pygmy Cypress Forest ESHA within Segment 3 and Noyo River Crossing of the Proposed Project**	**Figure 4-4**

SEGMENT 4

Segment 4 of the Proposed Project is located adjacent to Hwy 20 and within a rural-residential neighborhood and follows Dwyer Lane until it heads downhill into JDSF, where it connects to the existing pipeline crossing underneath Covington Gulch and Hare Creek. Within the limits of Segment 4, habitat types include rural residential (developed) and upland redwood forest habitat (**Figure 4-5**). JDSF is the largest of CALFIRE's eight demonstration forests. The area has a long history of industrial logging, which began in 1862 and continued under private ownership until the State's purchase of the property in 1947. Today, more forest growth occurs each year than is harvested. The most common species of tree is coastal redwood, but other species within the forest include Douglas fir, grand fir (*Abies grandis*), western hemlock, bishop pine (*Pinus muricata*), tanoak, alder (*Alnus spp.*), Pacific madrone, and California bay tree. The urban (developed) habitat along Dwyer Lane was planted with ornamental species such as Pacific rhododendron, Douglas iris (*Iris douglasiana*) (photographed right) and several shrubs. There were also young Douglas fir trees lining the gravel road.

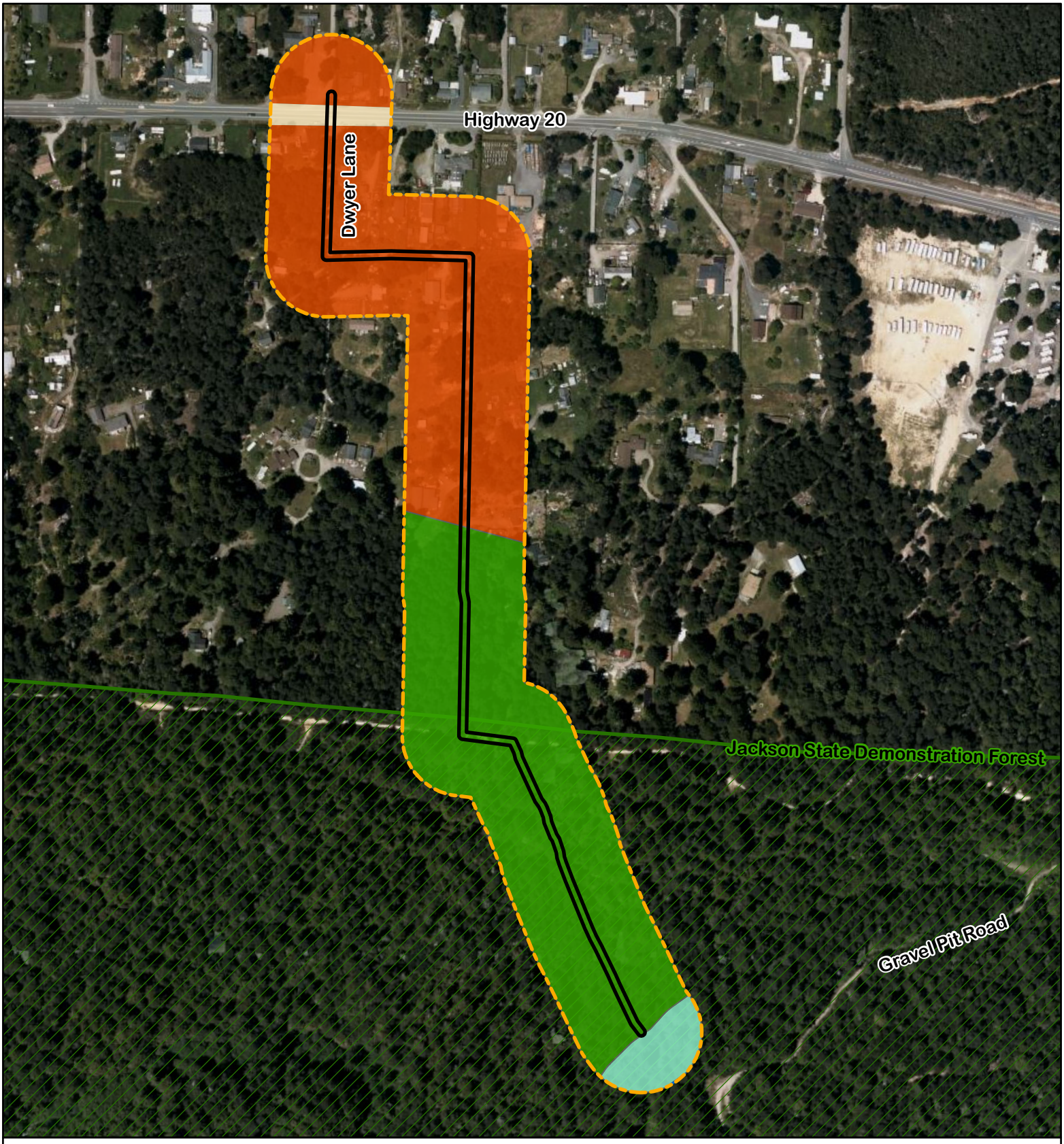
Photo 4-12. Douglas iris. 05.14.2020

Within JDSF the habitat is dense and heavily shaded due to dense mature canopy growth above and relatively dark, and the forest floor was thick with redwood and Douglas Fir leaf litter. Plant species observed included Himalayan blackberry (*Rubus armeniacus*), tanoak, and modesty (*Whipplea modesta*), as well as species previously observed in Segment 2 and Segment 3. No wildlife species were observed within Segment 3 during the May 14, 2020, survey.

Photo 4-13. Representative upland redwood habitat in Segment 4. Above Covington Gulch in JDSF. 05.14.2020.

SEGMENT 5

Segment 5 of the Proposed Project is located within JDSF and the primary habitat types within Segment 5 include an upland redwood forest riparian habitat along Hare Creek (**Figure 4-6**). Hare Creek is the primary aquatic feature within Segment 5. Within Hare Creek and its associated riparian zone, species observed during May 2020 survey included several juvenile Pacific giant salamanders (*Dicamptodon tenebrosus*) and three-spine stickleback (*Gasterostreus aculaeatus*).



Legend

- Segment 4 Study Area
- Segment 4 Proposed Project Area
- Jackson State Demonstration Forest
- Built (Rural Residential)
- Built (Urban Developed)
- Upland Redwood Forest
- Riparian Zone (JDSF)
- Riverine

Dewberry

N

0 4590 180 270 360 Feet

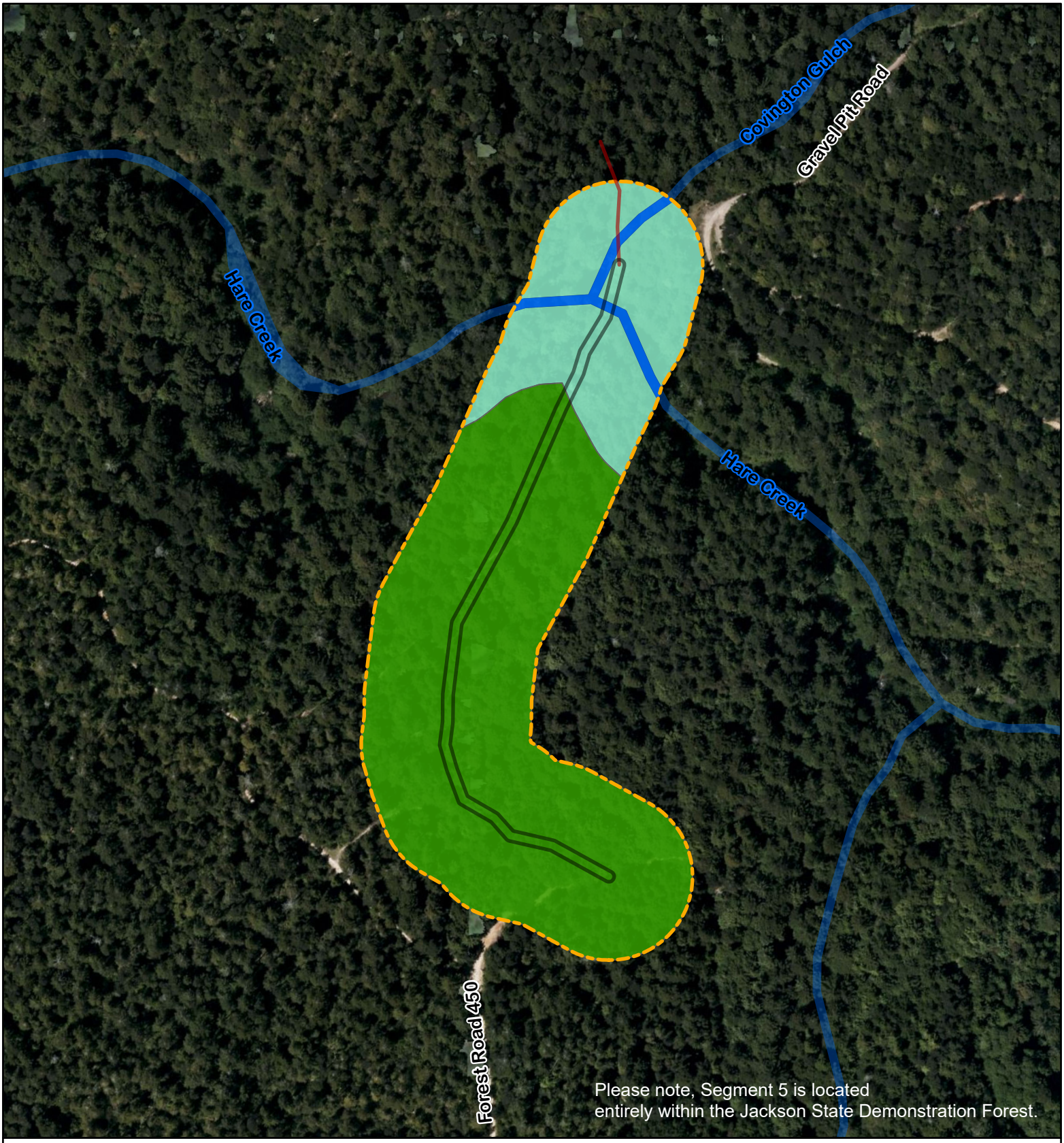
Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Habitat Types in the Proposed Project Study Area Segment 4

Figure 4-5



Legend

- Segment 5 Study Area
- Segment 5 Proposed Project Area
- Covington Gulch Crossing (Retained)
- Upland Redwood Forest
- Riparian Zone (JDSF)
- Riverine

Dewberry

N

0 35 70 140 210 280 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Habitat Types in the Proposed Project Study Area Segment 5

Figure 4-6

No anadromous fish were observed in Hare Creek during the numerous general biological surveys conducted for this project. There are very large log jams and debris piles downstream from the project area that may impede upstream migration. The Hare Creek riparian zone was particularly lush, with extremely large ferns, mature alder trees, Indian Rhubarb, stinging nettle, and moss. The banks were steep to undercut, and there were numerous fallen logs in the stream. The substrate of Hare Creek was medium to large sized cobbles with a significant amount of algae and others plant matter growing on the substrate, and water temperature was 15°C on the day of the May 14, 2020 survey. Hare Creek was flowing about 4-5 cubic feet per second based on a visual estimate by biologists. At the time of this survey, though, the ordinary high-water mark is approximately 22 feet across. No federally- or state-listed plant or wildlife species were observed within Segment 5 of the Proposed Project. Because both Segment 4 and Segment 5 exist within the JDSF, the JDSF Management Plan requirements were used to designate the riparian corridors around Covington Gulch and Hare Creek. Segment 5 is situated on very steep slopes (60-70%) heavily forested and contains some large second-growth coastal redwood trees. The forest floor was thick with leaf litter, and the understory was primarily species observed within previous redwood forest habitats. A portion of the proposed Segment 5 pipeline is situated on an extremely steep slope (estimated by an RPSF at 70-80%) with a mix of redwood and Douglas fir trees. The photograph to the right depicts the steep slopes in the Hare Creek watershed.

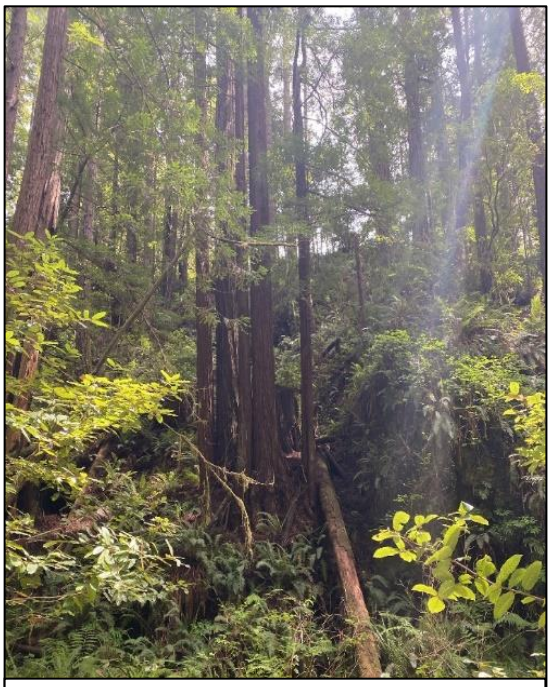


Photo 4-14. Representative photo of the existing steep slopes in the Hare Creek watershed. Pipeline is buried in slope. 05.14.2020.

SPECIAL-STATUS PLANT SPECIES

A list of special-status plants known to potentially occur within the vicinity of the Proposed Project was developed and reviewed. Sources included a 9-quad record search from the CDFW California Natural Diversity Database (CNDDB) (CDFW, 2020) (**Appendix B**), a list of potentially affected federally threatened and endangered species from USFWS Information for Planning and Consultation database (IPaC) (USFWS, 2020a) (**Appendix B**), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2020) (**Appendix B**).

The record searches identified 32 special-status plant species with the potential to occur in and around the Proposed Project area. Of those 32 species, suitable habitat conditions for nine plants were determined to occur in the Proposed Project area (**Table 4-4**). The plants listed are of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring on site. The survey was seasonally timed, to the extent feasible, to correspond with the blooming periods for each sensitive plant species that was considered to have potential to occur on site. The botanical survey plant lists are included in **Appendix C**.

Table 4-4. Special-Status Plant Species with Potential to Occur within the Proposed Project Study Area

Common and Scientific name	Federal /State/ CNPS	Lifeform	Distribution	Identification Period
Pygmy manzanita *Arctostaphylos nummularia ssp. mendocinoensis*	--/-- /1B.2	Perennial evergreen shrub	Mendocino County	January
Swamp harebell *Campanula californica*	--/-- /1B.2	Perennial rhizomatous herb	Mendocino, Marin, Santa Cruz, and Sonoma counties	June – October
Bunchberry *Cornus canadensis*	--/-- /2B.2	Perennial rhizomatous herb	Del Norte, Humboldt, Mendocino, and Siskiyou counties	May – July
Pygmy cypress *Hesperocyparis pygmaea*	--/-- /1B.2	Perennial evergreen tree	Mendocino and Sonoma counties	--
Coast lily *Lilium maritimum*	--/-- /1B.1	Perennial bulbiferous herb	Mendocino, Marin, San Francisco[5], San Mateo[4], and Sonoma counties	May - August
Bolander's beach pine *Pinus contorta ssp. bolanderi*	--/-- /1B.2	Perennial evergreen tree	Mendocino County	--
White-flowered rein orchid *Piperia candida*	--/-- /1B.2	Perennial herb	Del Norte, Humboldt, Mendocino, Santa Clara, Santa Cruz, Siskiyou, San Mateo, Sonoma, and Trinity counties	(March) May – September
Purple-stemmed checkerbloom *Sidalcea malviflora ssp. Purpurea*	--/-- /1B.2	Perennial rhizomatous herb	Mendocino, Marin, and Sonoma counties	May – June

The Proposed Project provides potentially suitable habitat for the following **special-status plant species**.

Pygmy manzanita *(Arctostaphylos nummularia ssp. mendocinoensis)*

Pygmy manzanita is not formally federally-listed or state-listed under ESA, but it is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. Pygmy manzanita is a perennial evergreen shrub that grows specifically in closed-cone coniferous forests with acidic, sandy, clay soils at elevations between about 300-660 feet. Pygmy manzanita is known to bloom in January and only occur in Mendocino County (CNPS, 2020). Pygmy manzanita was not observed during biological surveys.

Swamp harebell (*Campanula californica*)

Swamp harebell is a perennial rhizomatous herb found growing in mesic soils of bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, and North Coast coniferous forest habitats at elevations between about 3-1300 feet. Swamp harebell is known to bloom between June and October and occur in Mendocino, Marin, Santa Cruz, and Sonoma counties (CNPS, 2020). Swamp harebell was not observed during the 2019 and 2020 surveys. Swamp harebell is not federally-listed or state-listed but is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. Swamp Harebell was not observed during the 2019 and 2020 surveys.

Bunchberry (*Cornus canadensis*)

Bunchberry is a perennial rhizomatous herb found growing in bogs and fens, meadows and seeps, and North Coast coniferous forest habitat at elevations between about 200-6300 feet. Bunchberry is known to bloom between May and July and occurs in Del Norte, Humboldt, Mendocino, and Siskiyou counties (CNPS, 2020). Bunchberry is not federally-listed or state-listed but is ranked by the CNPS as being

moderately threatened in California, meaning that 20-80 percent of the known occurrences are threatened, although the species is common outside of California. Bunchberry was not observed during the 2019 and 2020 surveys.

Pygmy cypress (Hesperocyparis pygmaea)

Pygmy cypress is a perennial evergreen tree found growing in closed-cone coniferous forests in podzol-like soils at elevations between about 100-2,000 feet. Pygmy cypress occurs in Mendocino and Sonoma counties and is threatened by development, logging, and vehicles (CNPS, 2020). Mendocino Pygmy cypress, in non-pygmy form, was observed within Segment 3 of the Proposed Project during the May 14, 2020 survey. Pygmy cypress is not federally-listed or state-listed under Endangered Species Act but is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. Populations of Pygmy cypress are documented by CDFW in the Segment 3 project area north and south of Newman Gulch (refer back to **Figure 4-4**). Pygmy cypress is common in portions of the Segment 3 project area. Approximately 108 cypress were observed in tree surveys ranging from seedlings to mature trees by Registered Professional Foresters Lee Susan and Darcy Mahoney during field review of the project area.

Coast lily (*Lilium maritimum*)

Coast lily is a perennial bulbiferous herb found growing along roadsides and in broadleaved upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, freshwater marshes and swamps, and North Coast coniferous forest habitats at elevations between about 15-1,600 feet. Coast lily is known to bloom between May and August and occurs in Mendocino, Marin, San Francisco, San Mateo, and Sonoma counties (CNPS, 2020). Coast lily is not federally-listed or state-listed but is ranked by the CNPS as being seriously endangered in California, meaning that over 80 percent of the known occurrences are threatened. Coast lily was not observed during the 2019 and 2020 floristic surveys.

Leafy-stemmed miterwort (*Mitellastra caulescens*)

Leafy-stemmed miterwort is a perennial rhizomatous herb found growing in mesic soils and roadsides, as well as broadleaved upland forest, lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest habitats at elevations between 16-5,610 feet. Leafy-stemmed miterwort is known to occur in Del Norte, Humboldt, Mendocino, Siskiyou, Tehama, and Trinity counties, and is threatened by logging and road maintenance (CNPS, 2020). Leafy-stemmed miterwort is not federally-listed or state-listed. It is ranked as a 4.2 limited distribution in California, meaning that plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. As shown in **Figure 4-7**, leafy-stemmed miterwort was observed by Licensed Forester Darcie Mahoney in the lower portion of Segment 2 during the May/June 2020 and June 2021 surveys.

Bolander's beach pine (*Pinus contorta*)

Bolander's beach pine is a perennial evergreen tree found growing in closed-cone coniferous forest habitats with podzol-like soils at elevations between about 250-825 feet. Bolander's beach pine is known only from the white sand pine barrens along the Mendocino coast and is threatened by development and vehicles. Bolander's beach pine is only known to occur in Mendocino County (CNPS, 2020). Bolander's beach pine is not federally-listed or state-listed but is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. Bolander's beach pine was not observed during the 2019 and 2020 tree surveys.

White-flowered rein orchid (*Piperia candida*)

White-flowered rein orchid is a perennial herb found growing in broadleaved upland forest, lower montane coniferous forest, and North Coast coniferous forest habitats and is known to occur on serpentinite soils at elevations between about 100-4323 feet. White-flowered rein orchid is known to bloom between May and September and occurs in Del Norte, Humboldt, Mendocino, Santa Clara, Santa Cruz, Siskiyou, San Mateo, Sonoma, and Trinity counties (CNPS, 2020). White-flowered rein orchid is not federally-listed or state-listed but is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. White-flowered rein orchid was not observed during the 2019 and 2020 surveys.

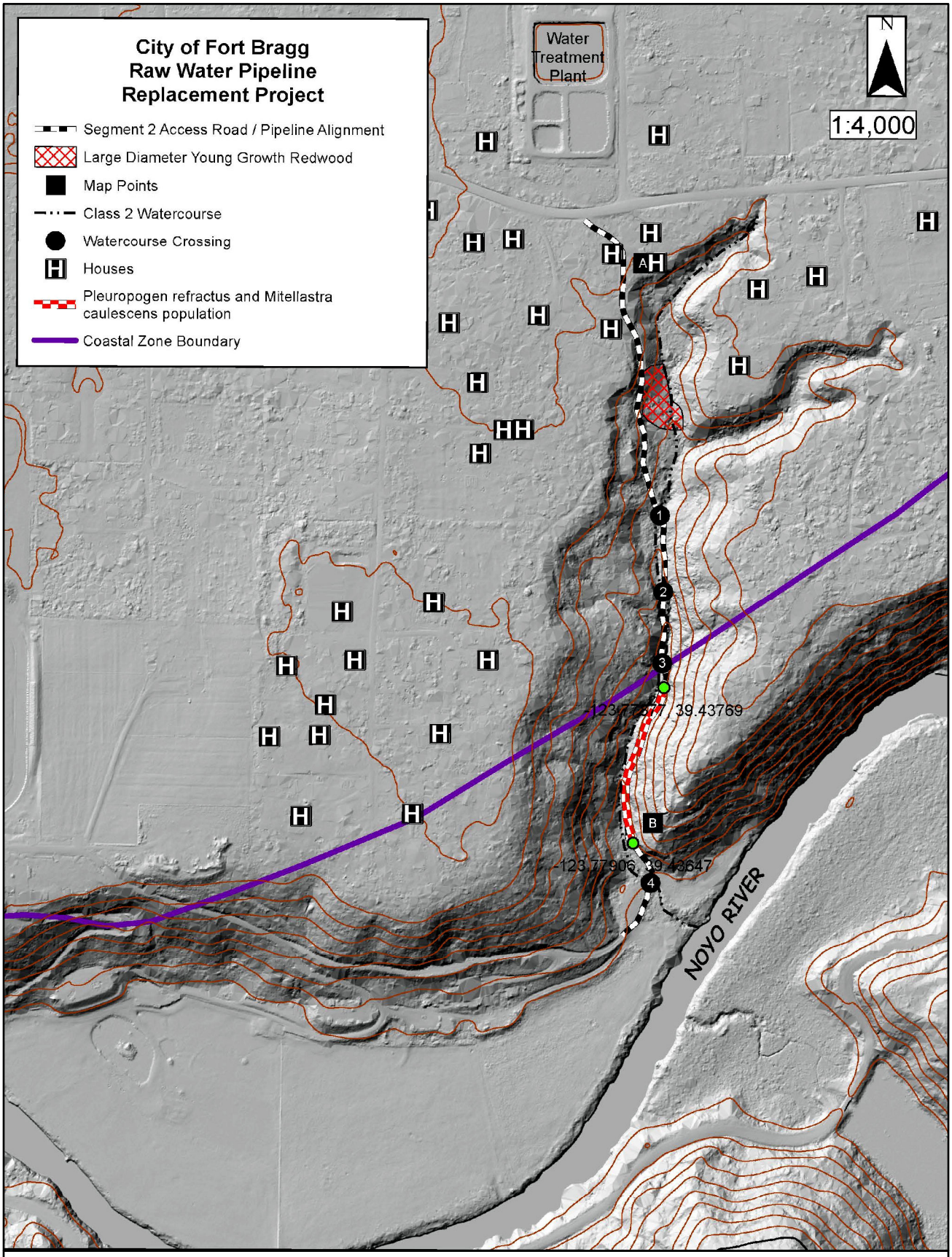
Nodding semaphore grass (*Pleuropogon refractus*)

Nodding semaphore grass is not federally-listed or state-listed. It is ranked as a 4.2 limited distribution in California, meaning that plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. It is moderately threatened in California, meaning that 20-80% of occurrences are threatened and a moderate degree and immediacy of threat.

Nodding semaphore grass is a perennial rhizomatous herb found growing in mesic soils of lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, and riparian forest habitats at elevations between 0-5,280 feet. Nodding semaphore grass is known to occur in Del Norte, Humboldt, Mendocino, and Marin counties and it is threatened by roadside mowing, logging, and associated road usage (CNPS, 2020). Nodding semaphore grass was observed by Licensed Forester Darcie Mahoney in Segment 3 of the Proposed Project during the May/June 2020 surveys as shown previously in **Figure 4-7**.

Purple-stemmed checkerbloom (*Sidalcea malviflora*)

Purple-stemmed checkerbloom is not federally-listed or state-listed but is ranked by the CNPS as being fairly endangered in California, meaning that 20-80 percent of the known occurrences are threatened. Purple-stemmed checkerbloom is a perennial rhizomatous herb that is found growing in broadleaved upland forest and coastal prairie habitats at elevations between about 50-280 feet. Purple-stemmed checkerbloom is known to bloom between May and June and occurs in Mendocino, Marin, and Sonoma counties. Major threats to purple-stemmed checkerbloom include development and non-native species (CNPS, 2020). Purple-stemmed checkerbloom was not observed during the 2019 and 2020 surveys.



Source: Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet Notes: This Map was created for informational and display purposes only	Fort Bragg Raw Waterline Replacement Project Fort Bragg, CA	**MAMU Habitat and Rare Plant Observations in Segment 2 of the Proposed Project**	**Figure 4-7**

SPECIAL-STATUS WILDLIFE SPECIES

A list of special-status wildlife species known to potentially occur within the vicinity of the Proposed Project was developed from state and federal sources including a 9-quad record search from the California Natural Diversity Database (CNDDB) (CDFW, 2020), a USFWS Information for Planning and Conservation (IPaC) list of potentially affected federally threatened and endangered species (USFWS, 2020a), and a National Oceanic Atmospheric Administration (NOAA) Fisheries list of aquatic species, essential fish habitat, and critical habitat (**Appendix B**). In addition, the USFWS Critical Habitat Mapper (USFWS, 2020b) and the National Wetland Inventory Wetlands Mapper (USFWS, 2020c) were reviewed.

The record searches identified 22 special-status wildlife species within the 9-quad search area or identified by the USFWS IPaC and NOAA Fisheries lists of federally-listed species. Of those, 11 special-status species were observed within a five-mile radius of the Proposed Project area by the CNDDB (**Table 4-5**). Ten of these species were determined to have the potential to occur in the area based on the presence of suitable habitat within the project area. General wildlife and habitat assessments were conducted in 2019 and 2020. Northern spotted owl surveys were conducted over two years by Summit Forestry Registered Professional Forester Curtis Tyler and others in 2018, 2019, and 2020. Marbled murrelet nesting habitat conditions were assessed and analyzed by Registered Professional Forester Lee Susan in 2020. A discussion of these special status animal species regarding the type and quality of habitat and potential for occurrence is discussed below.

In addition to the sensitive wildlife species discussed below, the Proposed Project area has suitable habitat for a variety of more common nesting bird species that are afforded protection under the California Fish and Game Code and the MBTA. As such, measures are also provided to avoid, minimize, or mitigate potential project-related impacts to nesting birds as discussed below.

Table 4-5. Wildlife Species with the Potential to Occur within the Proposed Project Study Area

Common & Scientific Name	Federal/ State Listing	Distribution	Habitat Association
Pacific tailed frog *Ascaphus truei*	--/SSC	Near Anchor Bay, Mendocino county, north along the coast to the Oregon Border and as far east as near Big Bend, Shasta County at elevations ranging from sea level to 8,400 feet.	Inhabits cold, clear, rocky streams in wet forests
Foothill yellow-legged frog *Rana boylii*	--/ CT/SSC	Originally found over most of California below 6,000 feet, west of the deserts and the Sierra-Cascade crest	Requires partly shaded, shallow streams and riffles with a rocky substrate. Woodland and forest areas. Need at least 15 weeks to attain metamorphosis
Northern red-legged frog *Rana aurora*	--/SSC	Ranges from Mendocino County in Northern California north along the west coast through Oregon and Washington, west of the Cascades Mountains, on Vancouver Island, and along the southwestern coast of British Columbia at elevations ranging from sea level 4,680 feet.	Found in humid forests, woodlands, grasslands, and stream sides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent water sources, lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.
Red-bellied newt *Taricha rivularis*	--/SSC	Endemic to California. Occurs along the coast from near Bodega, Sonoma county, to near Honeydew, Humboldt county, and inland to Lower lake and Kelsey Creek, Lake County.	A stream or river dweller. Found in coastal woodlands and redwood forest along the coast of northern California.

			Larvae retreat into vegetation and under stones during the day.
Southern torrent salamander *Rhyacotriton variegatus*	--/SSC	This species occurs throughout humid coastal drainages from near Pt. Arena in southern Mendocino Co., to the Oregon border in the coniferous belt	Found in shallow, cold, clear, well-shaded streams, waterfalls and seepages, particularly those running through talus and under rocks all year, in mature to old-growth forests. Occasionally found in riparian vegetation adjacent to water, but usually found in contact with water. Aquatic larvae live in clear shallow water and still, mucky water in creeks, often with accumulated leaves.
Western pond turtle *Emys marmorata*	--/SSC	Populations extend from southern British Columbia, Canada through Northern California	Thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation.
Northern goshawk *Accipiter gentilis*	-/SSC	Breeds in North Coast Ranges through Sierra Nevada, Klamath, Cascade, and Warner Mts., in Mt. Pinos and San Jacinto, San Bernardino, and White Mts. Remains yearlong in breeding areas as an uncommon resident.	Prefers middle and higher elevations, and mature, dense conifer forests. Casual in winter along north coast, throughout foothills, and in northern deserts, where it may be found in pinyon-juniper and low-elevation riparian habitats.
Marbled Murrelet *Brachyramphys marmoratus*	FT/CE	The listed portion of the species range extends from the Canadian border south to central California.	Spends the majority of its time on the ocean, roosting and feeding, but comes inland up to 50 miles to nest in forest stands with old growth forest characteristics. Large, unfragmented stands of old growth appear to be the highest quality habitat for marbled murrelet nesting
Northern spotted owl *Strix occidentalis caurina*	FT/CT	Structurally complex forests from southwest British Columbia through the Cascade Mountains and coastal ranges in Washington, Oregon, California, as far south as Marin County.	Complex, mature old-growth forests containing structures and characteristics required for nesting, roosting, and foraging.
Osprey *Pandion haliaetus*	--/WL	Breeds in northern California from Cascade Ranges south to Lake Tahoe, and along the coast south to Marin Co. Regular breeding sites include Shasta Lake, Eagle Lake, Lake Almanor, other inland lakes and reservoirs, and northwest river systems.	Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats.
Sonoma tree vole *Arborimus pomo*	--/SSC	The North Coast from Sonoma county north to the Oregon border, being more or less restricted to the fog belt	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats

Pacific tailed frog (*Ascaphus truei*)

Pacific tailed frog is listed as a California Species of Special Concern (SSC) by the CDFW. Often considered uncommon, surveys have shown that pacific tailed frog is quite common in areas with suitable habitat.

Presently, this species is known only from Del Norte, Siskiyou, Humboldt, Trinity, Shasta, Tehama, and Mendocino counties, although historical southern limits are suggested to reach as far as central Sonoma county (Bury, 1968; Jennings and Hayes, 1994; Salt, 1952). Pacific tailed frogs occur in permanent streams of low temperatures in conifer-dominated habitats including redwood, Douglas fir, Klamath mixed conifer, and ponderosa pine habitats. It may also occur in montane hardwood-conifer habitats. Pacific tailed frogs occur more frequently in mature or late-successional stands than in younger stands, in elevation ranges from near sea level to 6,500 feet (Jennings and Hayes, 1994).

Mating occurs underwater during much of the April to October activity period (Nussbaum et al., 1983; Jennings and Hayes, 1994). Eggs are laid several months later in globular masses attached to the underside of submerged rocks. Permanent water is critical because the aquatic larvae require 2 to 3 years to transform (Metter, 1964). Pacific tailed frogs are primarily nocturnal and exhibit very little seasonal movement (Jennings and Hayes, 1994). Individuals have been collected up to 40 feet from streams during moist periods, but during drier periods frogs are usually restricted to the stream bed itself. Pacific tailed frogs have been impacted by extensive logging, likely from the result of increased water temperature and siltation (Noble and Putnam, 1931; Metter, 1964; Bury, 1983; Nussbaum et al., 1983).

There are recorded observations of Pacific tailed frog within five miles of the Proposed Project area. The most recent recorded observation was in Hare Creek in 2002. All project water features provide suitable habitat for this frog. There were no direct observations of Pacific tailed frog during the wildlife and habitat assessment surveys however, unpublished Environmental DNA (eDNA) studies being conducted by Washington State University Professor Karen Goldberg for JDSF has documented the DNA of Pacific tailed frogs in their Hare Creek eDNA study (Fabula, pers. comm). eDNA is an emerging environmental monitoring tool used by biologists to document species existence in a watershed by scanning for DNA in surface water, soil, seawater, snow or even air rather directly sampled from an individual organism. Examples of eDNA include feces, mucus, gametes, shed skin, and hair.

Foothill yellow-legged frog *(Rana boylii)*

Foothill yellow-legged frog (FYLF) is designated as Threatened under federal ESA, but the Northwest and Coastal clade was not listed by CDFW under CESA. This species occurs in or near rocky streams in a variety of habitats. Adults may bask on exposed rock but will take cover underwater when disturbed. Eggs are attached to gravel or rocks in moving water near stream margins. FYLF requires permanent streams with shallow, flowing water, preferably in small- to moderate-sized stream situations with at least some cobble-sized substrate (Jennings and Hayes, 1994). This species is rarely found far from permanent water and breeds mid-March to early June, after high water of streams subsides (Jennings and Hayes, 1994). Historically, FYLF was distributed throughout the foothills of the Sierra Nevada and Coast Ranges from the Oregon border to the San Gabriel River. This species ranges in elevation from sea level to 6,363 feet (Jennings and Hayes, 1994).

FYLF has been recorded within five miles of the Proposed Project area. The most recent recorded observation was 18 years ago in Hare Creek in 2002 (CDFW 2021). There is suitable habitat in most of the streams in this study area and high potential for FYLF to be present within the area. There were no direct observations of any life stage of FYLF during numerous wildlife and habitat assessment surveys over a two-year period.

Northern red-legged frog *(Rana aurora)*

Northern red-legged frog (NRLF) is designated as a species of special concern by CDFW. The northern red-legged frog inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the Coast Ranges from Del Norte County to Mendocino County, usually below 3,936 feet. This species was once known as the red-legged frog with a range extending the length of the state in the Coast Ranges and

including portions of the Sierra Nevada and Cascades ranges. Sierra Nevada and Cascades populations and populations in the Coast ranges south of a narrow zone of overlap in southern Mendocino County are now considered to be a new species- *Rana draytonii,* the California red-legged frog (Schaffer et al., 2004). Adults leave the breeding pond soon after the breeding activity is concluded and may migrate about one half kilometer to their summer locations, which are likely to be riparian zones. In the northern part of their range, adults may hibernate. Juveniles are slower to leave the breeding ponds, but also tend to find cover in riparian areas, and may readily migrate about one half kilometer by summertime (Hayes et al., 2001, 2007).

NRLF has been recorded within five miles of the Proposed Project area. The most recent recorded observation was in Hayshed Gulch in 2010. There is potential for NRLF to be present in Newman Pond, Newman Reservoir and the same habitat as the other special-status amphibians. There were no observations of northern red-legged frog during the numerous wildlife and habitat assessment surveys conducted over a 2-year period.

Red-bellied newt *(Taricha rivularis)*

Red-bellied newt is designated as a species of special concern by CDFW. The red-bellied newt is found in California along the coast from Bodega in Sonoma County, inland to Lower Lake, and north to Honeydew, Humboldt County. It is a stream or river dweller found in coastal woodlands and redwood forest along the coast of northern California. Larvae retreat into vegetation and under stones during the day (Stebbins, 2003). Adults are terrestrial, becoming aquatic when breeding. Adults emerge after a few fall rains and move around feeding for a period before migrating to the breeding stream. Adults that are not breeding that year, continue to forage on the forest floor. Activity typically occurs at night and in the late afternoon, but newts are also found active in streams and on the surface in daylight during the breeding season and during rains. Red-bellied newts are often seen moving in large numbers to breeding sites during breeding season (Stebbins, 2003). Terrestrial animals spend the dry summer in moist habitats under woody debris, rocks, and in animal burrows. Juveniles apparently spend most of their time underground and are not active on the surface until near sexual maturity.

There are no recorded occurrences of red-bellied newt within five miles of the Proposed Project area. There is potential for red-bellied newt to be present in the area streams. There were no observations of red-bellied newt during the wildlife and habitat assessment surveys. However, unpublished eDNA studies being conducted by Washington State University Professor Karen Goldberg for JDSF has documented the DNA of red-bellied newts in their Hare Creek eDNA study (Fabula pers. comm).

Southern torrent salamander *(Rhyacotriton variegatus)*

Southern torrent salamander is designated as a species of special concern by CDFW. This salamander is endemic to the southernmost part of the range, extending from California to Oregon. Southern torrent salamander occurs in coastal coniferous forests in California and Oregon. Older forests are more likely to maintain a population of southern torrent salamanders. These forests have >80% canopy coverage due to sizeable trees, as well as large amounts of moss (Hammerson, 2004). Some younger forests have the proper habitat to maintain a population, but it is unusual to see a population living in a young forest. Reproduction occurs in the water, where the fertilized eggs are laid and abandoned (Tail and Diller, 2006).

Southern torrent salamander has been recorded within five miles of the Proposed Project area. The most recent recorded observation was in Hare Creek in 1995. There is high potential for southern torrent salamander to be present in the same habitat as the other special-status amphibians. There were no observations of southern torrent salamander during the wildlife and habitat assessment surveys. However, unpublished eDNA studies being conducted by Washington State University Professor Karen

Goldberg for JDSF has documented the DNA of southern torrent salamanders in their Hare Creek eDNA study (Fabula pers. comm).

Western pond turtle *(Emys marmorata)*

Western pond turtle is designated as a species of special concern by CDFW. The western pond turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Elevation range extends from near sea level to 4,690 feet (Jennings and Hayes, 1994). Western pond turtle is associated with permanent water in a wide variety of habitat types. Pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Individuals are associated with permanent ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams.

The western pond turtles have been recorded within five miles of the Proposed Project area. Western pond turtle was observed during a previous survey in Newman Pond by Biologist Doug Brewer in April 2019. The Noyo River and Newman Reservoir also have suitable habitat for western pond turtle however, none were observed during biological surveys.

Northern goshawk *(Accipiter gentilis)*

Northern goshawk is designated as a species of special concern by the CDFW. Northern goshawk was historically not common in its breeding range in the higher altitudes in the northern third of the state – south in the Coast Ranges to the vicinity of Laytonville and Mount Sanhedrin, Mendocino County, and in the Cascades and Warner Mountains – and further south in the Sierra Nevada to Kings Canyon National Park and Whitaker's Forest, Tulare County. Presently, northern goshawks are still well distributed across their core breeding range as listed, at elevations from about 1,000 to 10,800 feet. Northern goshawks nest in mature and old-growth forest stands over much of their California range. Suitable stands occur in a broad range of conifer and conifer-hardwood types. Northern goshawks forage in mature and old-growth forests that have relatively dense canopies (Widen, 1989; Austin, 1993; Bright-Smith and Mannan, 1994; Hargis et al., 1994; Iverson et al., 1996; Beier and Drennan, 1997), but may also forage in meadow edges and open sage brush (Younk and Bechard, 1994).

Northern goshawks are particularly threatened by habitat loss and habitat degradation, especially influenced by timber harvest and fire suppression (Squires and Kennedy, 2006). There are no recorded occurrences of northern goshawk within five miles of the Proposed Project area. The second-growth redwood forests in all Segments of the Proposed Project provide potential habitat for northern goshawk. Northern goshawk was not observed during any of the biological surveys conducted in 2019 and 2020.

Marbled murrelet *(Brachyramphys marmoratus)*

The marbled murrelet (MAMU) is a federally threatened species and a state endangered species. Critical habitat for the marbled murrelet was designated by the USFWS on May 24, 1996 and revised in 2011. Segment 4 and 5 of the Proposed Project are located within designated critical habitat for the marbled murrelet. The majority of marbled murrelet are found within or adjacent to the marine environment, although there have been detections of marbled murrelet on rivers and inland lakes. Marbled murrelets spend the majority of their lives on the ocean and come inland to nest. Marbled murrelets typically nest in old-growth forest, and commonly occupy large stands (500 acres) of trees in the Pacific Northwest. They will also nest on the ground in some areas Alaska (Lee pers. Comm). Preferred nesting habitat includes multistoried canopies on platforms at least 4 inches wide by 4 inches long. Marbled Murrelet are found in trees with large lateral limbs, epicormic branching (new growth growing from a bud exposed to

light and air), epiphytic growths such as lichens and mosses, and/or intertwined branching and are often associated with late seral (over mature) forest and/or tree structure characteristics (Susan, L., 2020).

Marbled murrelets occur year-round in marine subtidal and pelagic environments from the Oregon border to Point Sal, Santa Barbara County (Sowls et al., 1980). Marbled murrelet breeders require mature, coastal coniferous forests for nesting and nearby coastal waters for feeding. The range of the marbled Murrelet overlaps with the Proposed Project area. In general, the primary constituent elements (PCEs) necessary to designate critical habitat are as follows: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring; and (5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. Particularly for marbled murrelet, PCEs include (1) individual trees with potential nesting platforms and (2) forested areas within 0.5 miles of individual trees with potential nesting platforms, and with a canopy height of at least one-half the site-potential tree heights.

There are no recorded occurrences in state or federal databases for marbled murrelet within five miles of the Proposed Project area. However, adult and juvenile murrelets are commonly observed nearby at the Mendocino Headlands by bird enthusiasts from a review of records from Cornell University's Laboratory of Ornithology eBird database (www.ebird.org). Inspection of the proposed alignment confirms that most of the route is located in habitats not suitable for marbled murrelet nesting. MAMU have not been observed in JDSF based on conversations with CALFIRE Senior Wildlife Biologist Tina Fabula (Fabula pers. comm) and marbled murrelets were not observed during any of the general wildlife surveys conducted in 2019 and 2020.

The project area was surveyed for trees that might provide potential marbled murrelet nesting structure due to presence of older young growth North Coast coniferous forest habitats in some areas. Discrete portions of segments 2 and 3 were selected for closer inspection based on the presence of larger diameter trees. Of the areas selected for closer inspection, timber associated with the Segment 2 proposed pipeline alignment have the greatest potential to provide marbled Murrelet habitat. In this area, large diameter young growth redwood trees are found along a Class II unnamed watercourse (**Figure 4-7**). The MAMU nesting habitat tree assessments conducted by Summit Forestry is included in Appendix D (Summit Forestry 2020).

Large diameter trees associated with pipeline segments 2 and 3 were evaluated, and field review resulted in the following observations and conclusions. Limbs and branch nodes greater than 4 inches in diameter are present but lack the overall character thought to be necessary to serve as viable egg platforms. Specifically, downward sloping branch structure, lack of bryophyte development and limb size/structure yielding viable egg platforms where eggs would be secure through the incubation period without the benefit of a nest structure (flat or concave surfaces greater than 4" x 4") while at the same time being sheltered from strong winds, direct solar effects, and obscured enough from view to avoid predation during nesting. The dominant trees in this area either occur in small groups or individually tower above the surrounding forest canopy, resulting in a moderately open upper canopy environment. Based on these factors suggesting a general lack of suitable nesting habitat, marbled murrelet is not anticipated to nest in this area or any Segments of the Proposed Project (Susan, L., 2020). In addition, MAMU have not been observed in JDSF based on conversations with CALFIRE Senior Wildlife Biologist Tina Fabula (Fabula pers. comm).

Large diameter trees associated with pipeline segment 3 were evaluated and field review resulted in the following observations and conclusions. Potential habitat is limited to 5 trees located near the eastern end of the Segment 3 alignment. The locations of these trees are show in **Figure 4-7**. Individual limbs on individual trees itemized above may provide surfaces potentially large enough to provide a 4+ inch egg

platforms. The area where these trees are located is a busy environment with ongoing activity including municipal use and maintenance of the Newman Gulch Reservoir, use and maintenance of the Summers Lane Reservoir and extensive clearing and maintenance of right-of-way associated with the high voltage power transmission lines that bound this area on the south side. It is because of these site- specific factors rather than the shortage of possible platform nesting opportunities that Marbled Murrelet use of this area is considered to be unlikely.

Northern Spotted Owl *(Strix occidentalis caurina)*

The northern spotted owl (NSO) is a federally threatened species and a state threatened species under the California Endangered Species Act (ESA). The range-wide distribution includes British Columbia through the Cascade Range, coastal ranges, and intervening forest lands in Washington, Oregon, and northern California, as far south as Marin County. Generally, older forests with a higher degree of complexity and a high canopy closure are thought to be preferred for nesting and roosting activities.

Structural complexities of high-quality spotted owl habitat include a multilayered, multispecies canopy, large conifer overstory trees, shade-tolerant understory conifers or hardwoods, moderate to high canopy closure, live coniferous trees with deformities (i.e., cavities, broken tops, mistletoe infections), large snags, and large logs and other woody debris in the groundcover.

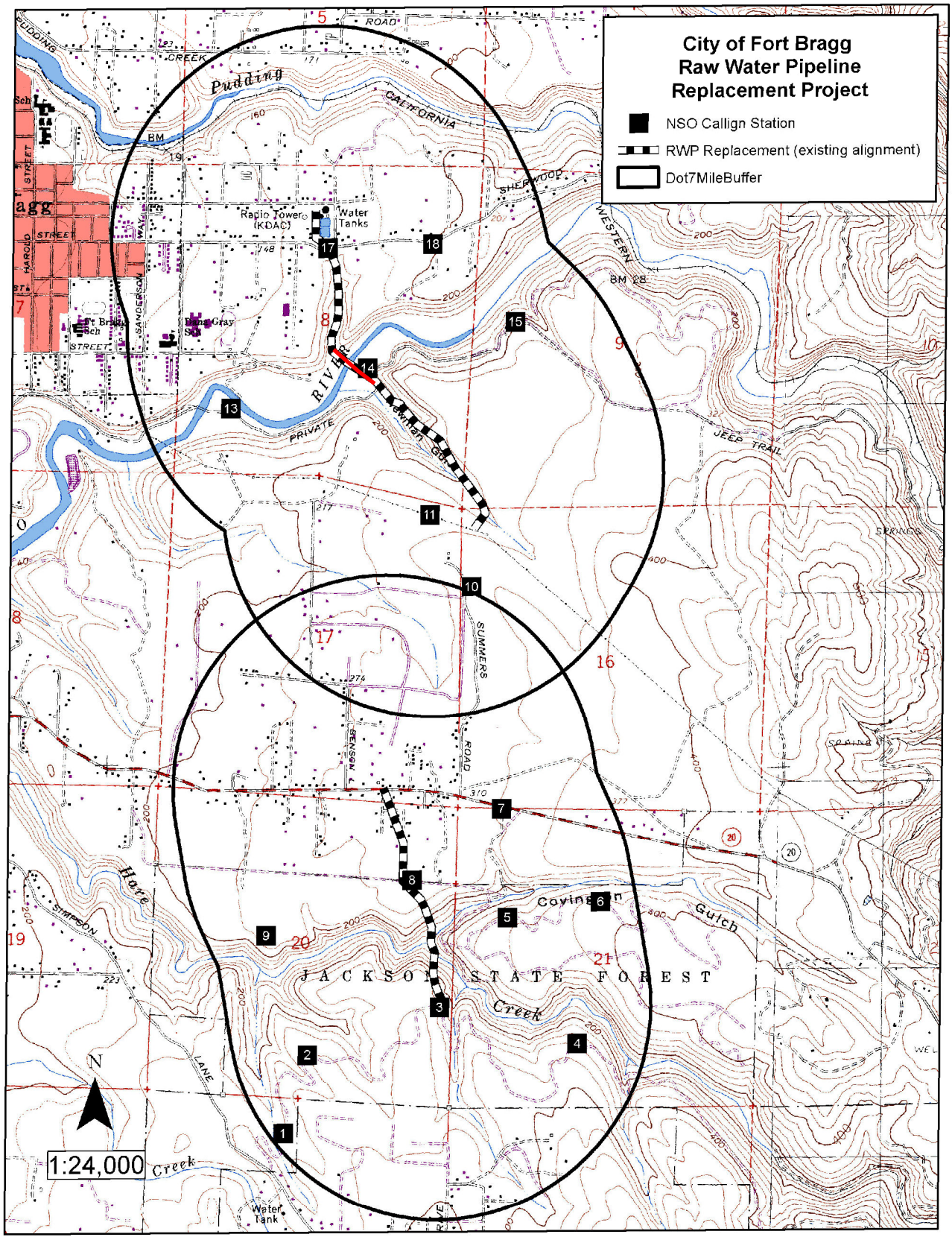
NSO are primarily threatened by the rapid expansion of the barred owl and loss of habitat due to wildfire and timber harvest. Revisions to the critical habitat for the NSO were published by USFWS on December 4, 2012, with an effective date of January 3, 2013. The Proposed Project area is located within areas designated as NSO critical habitat. CNDDB NSO database shows there are 9 activity centers within 5 miles of Project. There are no known NSO activity centers within 0.7 miles of the project location. As required by USFWS survey protocols, NSO surveys were conducted over a 2-year period by Summit Forestry Registered Professional Forester (RPF) Curtis Tyler. A total of 17 calling stations were established as part of the monitoring study (**Figure 4-8**). No positive callbacks were recorded at any of the 17 calling stations. Based on this data, it is unlikely that northern spotted owls are present in or around the Proposed Project area. Much of the pipeline is routed through rural residential areas and areas lacking the dense forest habitats normally associated with this species. NSO survey station maps (**Figure 4-8**) and survey sheets are included in Appendix E. NSO was not observed/heard during any of the 2019/2020 surveys.

Osprey *(Pandion haliaetus)*

The osprey is on the CDFW watch list, meaning that it was previously designated as a species of special concern, but no longer merits that status, or does not continue to meet the criteria to be designated as a species of special concern, but there is a concern and need for additional information. Osprey breed in northern California from the Cascade Ranges south to Lake Tahoe and along the coast south to Marin County. Regular breeding sites include Shasta Lake, Eagle Lake, Lake Almanor, and other inland lakes and reservoirs, and northwest river systems.

Ospreys use large trees, snags, and dead-topped trees in open forest habitats for cover and nesting. They require clear, open waters for foraging and exhibit yearlong, diurnal activity. The breeding season for osprey is March to September.

There are no recorded occurrences of osprey within five miles of the Proposed Project area. However, the Proposed Project corridor provides suitable foraging habitat in the Noyo River and Newman Gulch, within Segment 2 and Segment 3. An osprey and osprey nest were observed outside of the Proposed Project area near Newman Reservoir during the May 13, 2020 survey and osprey were also observed in the Hare Creek watershed near the confluence with Covington Gulch in August 2019.



Source: Mendocino County Coordinate System NAD 83
State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

NSO Calling Station Locations within the Proposed Project

Figure 4-8

Dewberry

Sonoma tree vole *(Arborimus pomo)*

The Sonoma tree vole is listed as a California species of special concern by the CDFW. Sonoma tree voles are distributed along the North Coast from Sonoma County north to the Oregon border, restricted to the fog belt. Sonoma tree voles occur in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats. Sonoma tree voles specialize on the needles of Douglas fir and grand fir, gathering and feeding at night. Sonoma tree voles create nests of Douglas-fir needles in tall trees. Sonoma tree voles exhibit yearlong, nocturnal activity. Breed primarily from February through September.

The spotted owl is the main predator of Sonoma tree voles, as well as saw-whet owls. Sonoma tree voles have been recorded within five miles of the Proposed Project area. The most recent occurrence was recorded in 2006, about 5 miles northeast of the City of Fort Bragg. The coastal redwood habitats in all four segments could provide suitable habitat for Sonoma tree vole. Sonoma tree vole was not observed during the surveys conducted in 2019 or 2020.

CALIFONRIA SENSITIVE NATURAL COMMUNITIES

Mendocino Pygmy Cypress Forest

Mendocino Pygmy Cypress Forest is a California Sensitive Natural Community, meaning that it is listed by CDFW in the CNDDB due to the rarity of the community in the state of California or throughout its entire global range. Mendocino Pygmy Cypress Forest is a low, gnarled, stunted "forest" that grows up to 3 meters tall (much taller on better soil), and is often quite scattered. Dry sites tend to have a dense, shrubby understory. Mesic sites tend to be more herbaceous. Most growth and flowering within the Mendocino Pygmy Cypress Forest occurs in spring and early summer. The forest occurs on coastal terraces, primarily between Fort Bragg and Albion on the Mendocino Coast.

According to the CDFW Vegetation Classification and Mapping Programs study, "Classification and Mapping of Mendocino Cypress *(Hesperocyparis pygmaea)* Woodland and Related Vegetation on Oligotrophic Soils, Mendocino and Sonoma Counties, California", Woodland and related vegetation reveals a loss of between 20% and 44% of Mendocino cypress and other sensitive vegetation types due to agricultural and urban development (2019). There are recorded occurrences of Mendocino Pygmy Cypress Forest within 5 miles of the Proposed Project area and cypress have been documented in the project area, primarily Segment 3. The most recent recorded occurrence in the CNDDB was in 1986. Although records are close to the Proposed Project area, most recorded Pygmy Cypress Forest areas have been harvested and converted into residential neighborhoods and otherwise developed. Mendocino Cypress trees were observed primarily in Segment 3 of the proposed project. One cypress was documented in Segment 4, and none were observed in Segment 5, as shown previously. There is one large Mendocino cypress tree measuring 78 inches in diameter in Segment 3, but the City has altered the alignment so that this tree will not be impacted by the project.

Bishop Pine Forest

Bishop pine (*Pinus muricata*) is an evergreen coniferous species of tree that grows to mature heights of 80 feet (24m) with a straight to contorted trunk up to 36 inches in diameter at breast height. Bark is dark grey. It is a pine with a very restricted range mostly in California including several offshore Channel Islands, and a few locations in Baja, California Mexico. It is always on or near the coast. Bishop pine is a fire-dependent species of pine that produces cones every year but requires fire or very warm days for the cones to open. Bishop pine are not formally listed for protection under the state or federal ESA but are generally associated with sensitive Pygmy Forest Alliance as defined by CDFW. Bishop pine trees were observed in the Project pipeline corridor, primarily in Segments 3-5. Segment 3 has approximately 46

trees while Segments 4 and 5 have 18 and 15 trees, respectively. Most of the trees are small ranging from < one-inch diameter to less than 31 inches DBH.

4.4.2 Regulatory Framework

Biological resources in California are protected and/or regulated by several federal, state, and local laws and policies. Those most applicable to the Proposed Project are summarized below.

FEDERAL

Federal Endangered Species Act

Under the federal Endangered Species Act (ESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 United States Code [USC] Section 1533[c]). Pursuant to the requirements of the ESA, an agency reviewing a Project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the Project site and determine whether the Project will result in "take" of any such species. In addition, the agency is required to determine whether the Project is likely to jeopardize the continued existence of any species proposed to be listed under the ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]).

Section 7 of the ESA provides a means for authorizing incidental take of federally endangered or threatened species that result from federally conducted, permitted, or funded Projects. Similarly, Section 10 authorizes incidental take of federally endangered species or threatened species that result from non-federal Projects.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, bird nests, and eggs. The MBTA is administered by the USFWS and special permits from the agency are generally required for the take of any migratory birds. This act applies to all persons and agencies in the U.S., including federal agencies.

Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), essential fish habitat (EFH) must be designated in every fishery management plan. EFH includes "…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The MSA requires consultation with NOAA Fisheries for projects that include a federal action or federal funding and may adversely modify EFH.

Clean Water Act, Section 401

Section 401 of the CWA requires applicants acquiring a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States, to also obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate RWQCB regulates Section 401 requirements (see under State below).

STATE

California Environmental Quality Act

Rare or endangered plant or wildlife species are defined in the CEQA Guidelines Section 15380; endangered means that survival and reproduction in the wild are in immediate jeopardy. Rare means that a species is either presently threatened with extinction or that it is likely to become endangered within

the foreseeable future. A species of animal or plant shall be presumed to be rare or endangered if it is listed in Sections 670.2

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFGC Section 2070). Pursuant to the requirements of CESA, an agency reviewing a Project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the Project site and determine whether the Project will result in take of any such species. Under CESA, "take" is defined as the action of or attempt to "pursue, hunt, shoot, capture, collect, or kill". The CDFW may authorize the incidental take of a state-listed species under Section 2081 of the CFGC. For species that are listed as threatened or endangered under both the ESA and CESA, and for which an incidental take permit has been issued in accordance with Section 10 of the ESA, CDFW may authorize take after certifying that the incidental take permit is consistent with CESA, pursuant to Section 2080.1 of the CFGC.

California Department of Fish and Game Code

The CDFW provides protection from take for state-listed and non-listed species. The CFGC defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". CFGC Section 2080 prohibits take of a species listed as endangered or threatened under the CESA and CFGC Section 2081 allows CDFW to issue an incidental take permit in accordance with Title 14 California Code of Regulations (CCR) Sections 783.4(a) and (b). Eggs and nests of all birds are protected from take under CFGC Section 3503. Raptors and raptor nests or eggs are protected from take under CFGC Section 3503.5. Migratory birds are expressly prohibited from take under CFGC Section 3513 and species designated by CDFW as fully protected species are protected from take under CFGC Sections 3511, 4700, 5050, and 5515.

Executive Order 13112 – Invasive Species

Executive Order (E.O.) 13112 requires federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health". FHWA guidance issued August 10, 1999 directs the use of the state's invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of NEPA analysis for a Project.

Under the E.O., federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

LOCAL

Mendocino County General Plan

Mendocino County does not currently have a habitat conservation plan or similar county-wide habitat conservation plan in place, nor does it have a tree conservation ordinance. The Mendocino County General Plan Resource Management Element provides policy guidance to address the conservation and long-range management and preservation of open-space lands and support of plant and animal species, including freshwater and marine resources and special-status species.

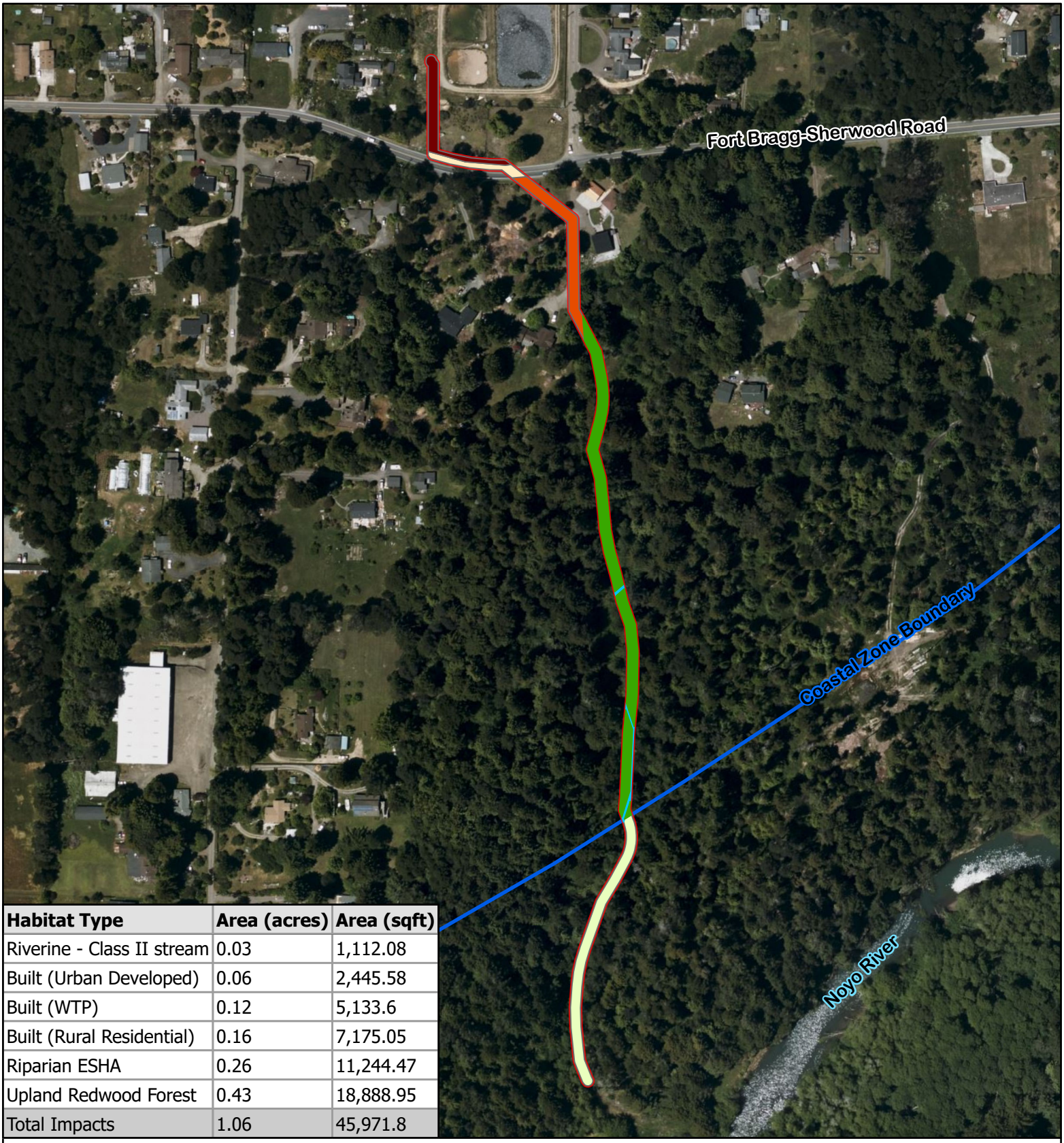
4.4.3 Discussion

The following impact analyses and discussions are presented by Project segment. First, if a biological issue is common to all segments of the project, all project segments are covered in one impact discussion. Alternatively, if a Project segment has a unique issue or an impact that is not common to other segments, a detailed discussion will be provided for that segment. The goal is to provide the reader a detailed analysis for certain segments and project issues (e.g., Hare Creek crossing) that are important for state and federal agency permitting and approvals. It also ties specific mitigation measures for each segment during project implementation and funding scheduling. Additionally, the City's Segment 3 pipeline is located within forest lands owned by Lyme and this area is being considered for timber harvest. As such, Lyme may be preparing a THP in the future that will address similar issues described herein. Therefore, the City has disclosed and documented herein their proportionate share of impacts from the project and will work with Lyme to implement various required biological mitigation measures required for Segment 3. Ideally the Lyme timber harvest would occur before this project is implemented. In the event the City's project needs to proceed first or Lyme postpones their timber harvest for any reason, the City will work with Lyme and CALFIRE through the THP exemption process and address various biological issues separately.

Impacts to habitats within Segments 2-5 are quantified and shown in **Figures 4-9** through **4-12. Table 4-6** below quantifies those impacts.

Table 4-6. Impacts to Habitat Type by Project Segment

Habitat Type	Segment 2	Segment 3	Segment 4	Segment 5	Total
	acres	acres	acres	acres	acres
Built	0.34	0.45	0.70	--	1.49
Riparian ESHA (CCZ)	0.26	0.06	--	--	0.32
Riparian Zone (JDSF)	--	--	0	0.12	0.12
Riverine	--	--	--	0.01	0.01
Class II Stream	0.03	--	--	--	0.03
Upland Redwood Forest	0.43	1.68	0.7	0.53	3.34
Total	**1.06**	**2.19**	**1.41**	**0.66**	**5.31**



Habitat Type	Area (acres)	Area (sqft)
Riverine - Class II stream	0.03	1,112.08
Built (Urban Developed)	0.06	2,445.58
Built (WTP)	0.12	5,133.6
Built (Rural Residential)	0.16	7,175.05
Riparian ESHA	0.26	11,244.47
Upland Redwood Forest	0.43	18,888.95
Total Impacts	1.06	45,971.8

Legend

- Segment 2 Proposed Project Area
- California Coastal Zone

Habitat Type

- Built (Rural Residential)
- Built (Urban Developed)
- Built (WTP)
- Riparian ESHA
- Riverine - Class II stream
- Upland Redwood Forest

Dewberry

N

0 3570 140 210 280 Feet

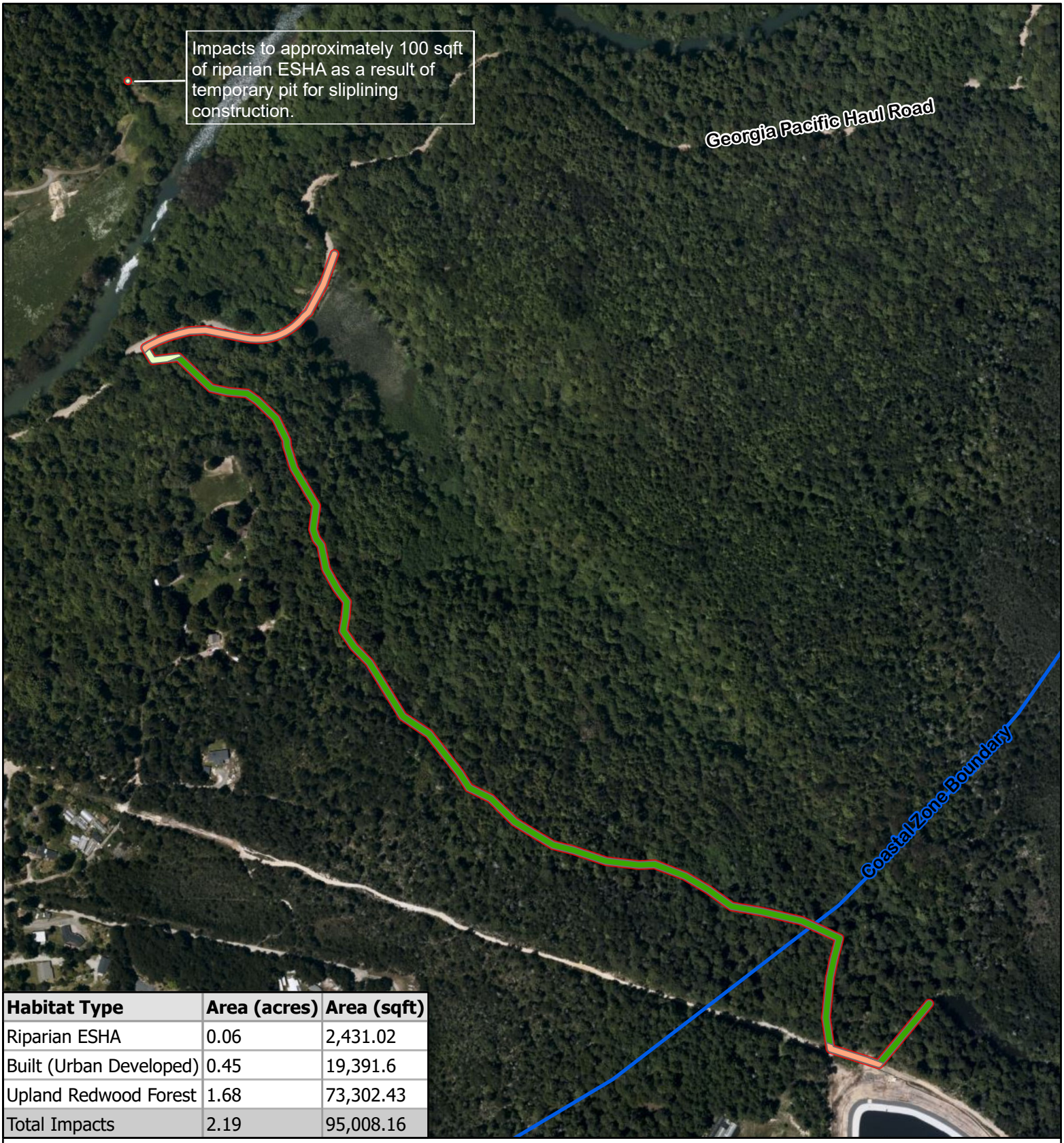
Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Proposed Project Impacts to Habitat Type Segment 2

Figure 4-9



Habitat Type	Area (acres)	Area (sqft)
Riparian ESHA	0.06	2,431.02
Built (Urban Developed)	0.45	19,391.6
Upland Redwood Forest	1.68	73,302.43
Total Impacts	2.19	95,008.16

Legend

Segment 3 Proposed Project Area

California Coastal Zone

Habitat Type

Built (Urban Developed)

Riparian ESHA

Upland Redwood Forest

Dewberry

N

0 55110 220 330 440

Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Proposed Project Impacts to Habitat Type Segment 3

Figure 4-10

Habitat Type	Area (acres)	Area (sqft)
Built (Rural Residential)	0.68	29,525.54
Built (Urban Developed)	0.02	1,009.51
Riparian Zone (JDSF)	0	28.11
Upland Redwood Forest	0.7	30,691.37
Total Impacts	1.41	61,254.53

Legend

- Segment 4 Proposed Project Area
- Jackson State Demonstration Forest

Habitat Type

- Built (Rural Residential)
- Built (Urban Developed)
- Upland Redwood Forest
- Riparian Zone (JDSF)

Dewberry

N

0 4080 160 240 320 Feet

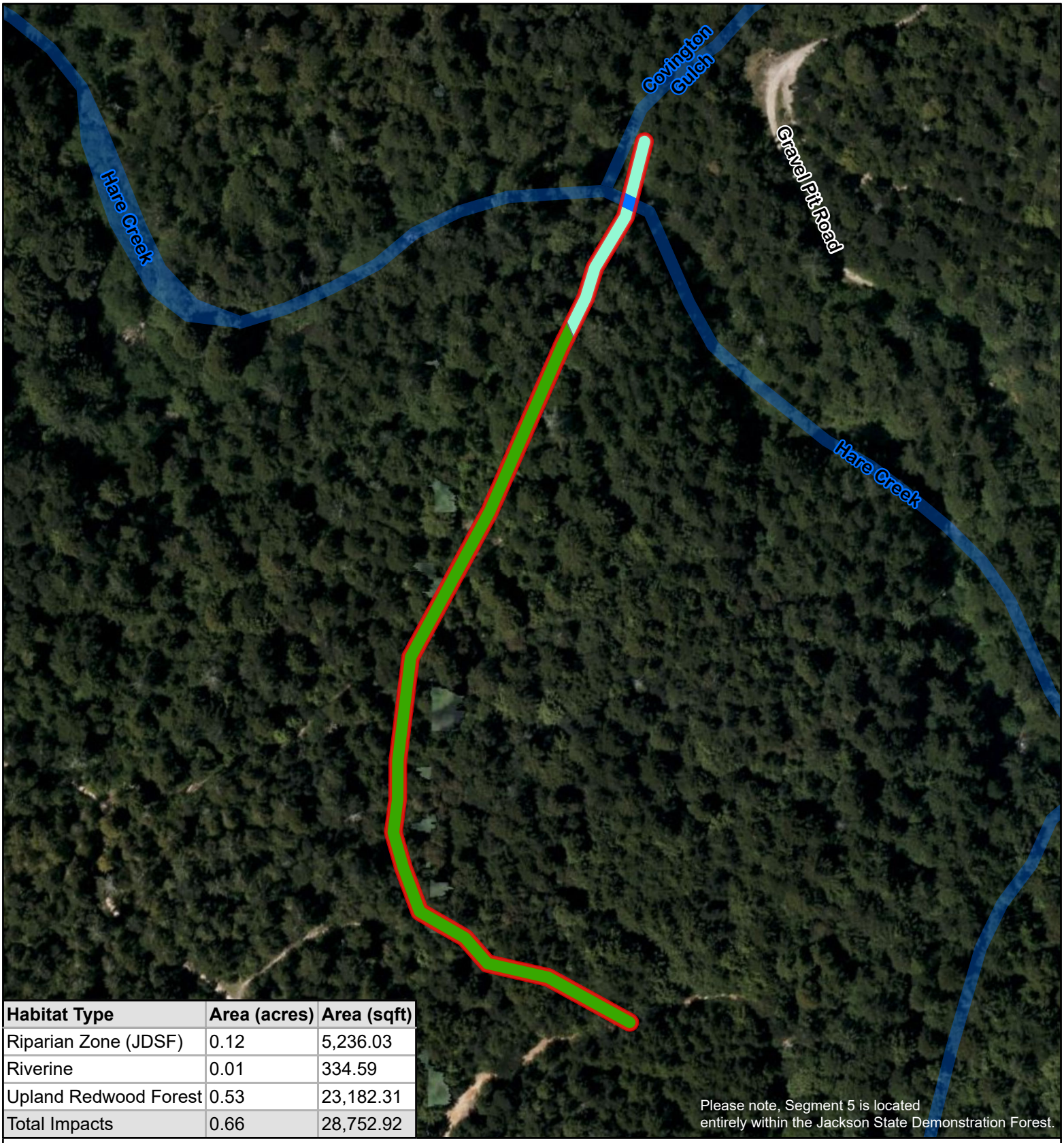
Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Proposed Project Impacts to Habitat Type Segment 4

Figure 4-11



Habitat Type	Area (acres)	Area (sqft)
Riparian Zone (JDSF)	0.12	5,236.03
Riverine	0.01	334.59
Upland Redwood Forest	0.53	23,182.31
Total Impacts	0.66	28,752.92

Please note, Segment 5 is located entirely within the Jackson State Demonstration Forest.

Legend

Segment 5 Proposed Project Area

Habitat Type

- Riparian Zone (JDSF)
- Riverine
- Upland Redwood Forest

Dewberry

N

0 2040 80 120 160 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Proposed Project Impacts to Habitat Type Segment 5

Figure 4-12

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

SEGMENTS 2-5 BIOLOGICAL SPECIES ISSUES COMMON TO ALL PROJECT SEGMENTS AND NOYO RIVER CROSSING

Noyo River Pipeline Lining

No Impact. No impacts to special-status species are anticipated for the pipeline lining as the shallow pits excavated for the process are located in an area that is dominated by non-native grasses and is routinely mowed by the landowners and the southern pit is situated within the Georgia Pacific Haul road.

Amphibians

Less than Significant with Mitigation. Potential Impacts to Special-Status Amphibians in Project Area Streams and Ponds During Water Line Construction. Biological surveys indicate that area streams have suitable habitat for variety of common and special-status amphibians. General habitat assessments and biological surveys of area streams and ponds were conducted March, May, August and November 2019, May 2020 and June 2021. Some of the surveys were conducted primarily for documenting presence/absence of amphibians and aquatic organisms in area streams. The unnamed Class II stream in Segment 2 is relatively shallow with rocky substrates with few pools or with significant sedimentation in certain areas from natural watershed erosion. While no amphibians of any life stage were observed in numerous field surveys conducted for this project at various times of the year, there is suitable habitat for special-status amphibians to occur within all water bodies in the project area including, FYLF, NRLF, red-bellied newt, and southern torrent salamander. While no suitable breeding habitat (e.g., minimal pools or slow-moving water with rocky substrate) is present within the proposed Segment 2 area, the Proposed Project would temporarily impact approximately 0.29 acres of marginal aestivation, foraging, and movement habitat for special-status amphibians (**Figure 4-9**). These impacts would be temporary in nature and would cease upon construction completion. There is a short section of pipeline and a new small pump station that is within 100 feet of Newman Gulch and Newman Reservoir. Both of these water bodies provide suitable breeding habitat for special-status amphibians, which includes FYLF, NRLF, red-bellied newt, and southern torrent salamander. The Proposed Project would temporarily impact approximately 0.06 acres of marginal aestivation, foraging, and movement habitat for special-status amphibians, adjacent to Newman Gulch out of Newman Reservoir (**Figure 4-10**). These impacts may occur during construction within the riparian ESHA habitat in Segment 3. Impacts would be temporary in nature and cease upon construction completion. The plan for Segment 2 is to construct/depress the new pipeline below the four existing small culverts, however, one or more culvert crossings may need to be replaced. If replacement will occur, temporary stream diversions will be required for each culvert in order to complete construction. As such, the Proposed Project activities could result in direct mortality or injury to individual amphibians, harassment of animals, displacement, or harm through temporary loss or degradation of habitat. This is impact is considered significant, therefore requiring mitigation measures. Implementation of **Mitigation Measure BIO-1, Conduct Pre-Construction Surveys for Amphibian Species,** would reduce the potential for Proposed Project impacts on special-status amphibians to a less than significant level.

Birds

No Impact. Potential Impacts to Nesting Northern Goshawks from Tree Loss and Construction Noise. Northern goshawks typically nest in mature forests with greater than 60 percent canopy cover. The forests in this area does not meet or exceed that canopy cover for preferred habitat. Across their

breeding range northern goshawks are typically found at elevations of 1000 to 10, 800 feet. The project is located at an elevation of less than 300 feet and the canopy cover in the project area is not their preferred habitat. No goshawks were observed during numerous wildlife surveys for this project or recorded in the CNDDB database. For these reasons, no impacts to goshawks are anticipated with the project.

Less than Significant with Mitigation. Potential Indirect Impacts to Nesting Osprey from Construction Noise. The Proposed Project study area contains suitable nesting and foraging habitat for osprey, primarily along the Noyo River with the very tall riparian habitat of alder trees, second-growth redwoods and tall snags. Osprey may also utilize Newman Pond and Newman and the forests around them for nesting and foraging. Mature ospreys were observed during field surveys in May 2019 along the Noyo River and flying over the JDSF forests near Hare Creek. Osprey are known to nest successfully in areas affected by certain types of human disturbance, including loud, routine noises and are commonly found near reservoirs and streams with significant recreational activities (e.g., jet skiing, water skiing etc.) (Poole, 1989). The ambient noise levels in project forests are generally low due to remoteness in segments near waterbodies. However, temporary noise generated for several days during excavation from the machinery used in trenchless technology and pit excavation on both sides of the Noyo River in Segment 3 adjacent to the Noyo River, if not timed properly, could potentially cause disruption of Osprey mating and nesting behaviors. If birds are nesting nearby prior to construction this is considered a significant impact. Implementation of **Mitigation Measure BIO-2, Conduct Pre-Construction Surveys for Nesting Osprey,** would reduce this impact to less than significant levels.

Less than Significant. Potential Impacts to Nesting Northern Spotted Owl from Construction Noise and Timber Harvest. The primary project impact mechanisms are both short-term temporary indirect impacts from construction noise in some segments and direct tree loss in segments 3, 4 and 5. The mixed conifer -redwood forests in the project are suitable habitat for NSO. As described earlier, USFWS protocol-level surveys consisting of two-consecutive year surveys were conducted by RPF from Summit Forestry Curtis Tyler throughout the Proposed Project alignment during 2018, 2019, and 2020. As presented earlier, calling surveys were conducted at 17 calling stations in and around the entire Proposed Project area as described previously. The surveys determined no positive callbacks at any of the 17 calling stations during any survey. Therefore, based on this data, NSO are unlikely to occur in or around the Proposed Project area. Therefore, the Proposed Project would have less than significant impacts to NSO. No mitigation is required.

Less than Significant with Mitigation. Potential Indirect Impacts to Nesting Migratory Birds and Other Raptors from Temporary Construction Noise. The forests in the project area contain suitable habitat for numerous resident and migratory birds and other common raptors found in the region that are protected under Migratory Bird Treaty Act (MBTA). Migratory birds are protected under the MBTA and tree loss in Segments 3, 4 and 5 could include mortality of young through forced fledging or nest abandonment by adult birds. Noise associated with construction activities involving heavy equipment operations that occurs during the breeding season (February 1 through August 31) could disturb nesting birds if an active nest is located near these activities. Clearing, grubbing, and any tree removal could potentially result in the disruption of nesting activities and the loss of nesting productivity for the season. Suitable nesting habitat for migratory birds and raptors exists within Segment 2 of the Proposed Project. For these reasons, this impact is considered significant. Implementation of **Mitigation Measure BIO-3, Conduct Nesting Bird Surveys,** would reduce potential impacts to migratory birds and other raptors to a less than significant level.

Mammals

Less than Significant with Mitigation. Potential Impacts to Sonoma Tree Vole from Temporary Construction Activities. Sonoma tree vole (STV) has been recorded within five miles of the Proposed Project area. All project segments contain suitable Douglas-fir tree habitat for nesting, foraging, and breeding. Because Sonoma tree voles are active primarily at night, when construction activities would not be occurring impacts are not expected to STV from construction operations Because no trees are planned for removal in Segment 2, impacts to this species would is considered less than significant. Segment 3 would involve minor timber harvest (~250 trees) for the City's pipeline and could impact STV because there is substantial high-quality habitat nearby for STV. This impact is considered significant requiring mitigation. Implementation of **Mitigation Measures BIO-4, Conduct Pre-Construction Surveys for Sonoma Tree Voles,** would reduce this impact to less than significant levels. City will coordinate with Lyme on this mitigation measure for Segment 3 which is located on their lands if needed for STV.

Reptiles

Less than Significant with Mitigation. Potential Impacts to Western Pond Turtle During Project Construction. All project streams have suitable habitat for the Western pond turtle (WPT) with the exception of Segment 2 Class II stream. WPT were observed in Noyo River during surveys in May 2019. Western pond turtles may be found overwintering up to 1,500 feet from their aquatic habitat, as well as migrating over half a mile under certain water conditions. Hare Creek provides suitable aquatic habitats for western pond turtles. At the time of the May 14, 2020 survey, Hare Creek contained several logs and other debris that was suitable basking habitat for western pond turtles. WTPs may use the habitat around the aquatic features in Segment 5 as nesting, movement, or overwintering habitat. The Hare Creek Crossing would be replaced as part of the Proposed Project and temporary bypass arrangements would be needed in order to maintain flows during construction. Approximately 0.01 acres of Hare Creek would be temporarily impacted during construction as a result of the temporary diversion. These impacts would be temporary in nature and Hare Creek would be returned to pre-project conditions upon construction completion. Hare Creek may also be temporarily impacted by falling rocks, soils and forest debris as a result of working on the steep slope (70-80%) to reach the pipeline connection to the Hare Creek Crossing. Proposed Project activities could result in direct mortality or injury to turtles, harassment of animals, displacement, or harm through temporary loss or degradation of habitat. Implementation of **Mitigation Measure BIO-5, Protect Western Pond Turtles During Construction Activities,** would reduce the potential for Proposed Project impacts on western pond turtles to a less than significant level.

SEGMENT SPECIFIC BIOLOGICAL ISSUES

Segment 2 Biological Species Issues

This segment includes placement of 2,500 feet of new pipeline within the existing City right-of-way and will include either depressing the pipeline under the four (4) existing small culverts or the replacement of one or more of the culverts, if depression is not possible. The primary biological issues for Segment 2 are potential impacts to nesting Marbled Murrelets, amphibians, environmentally sensitive habitat areas as defined by the CCC, potential impacts to rare plants and temporary impacts to water quality during construction. This section also presents the potential impact to MAMU.

Less than Significant with Mitigation. Potential Indirect Impacts to Nesting Marbled Murrelet from Construction Noise during Pipeline Construction. Based on the project description, Segment 2 is estimated to take up to 80 days during the dry season in Mendocino County to construct. As shown in **Figure 4-7**, there is a small stand of mature redwood trees located in the northern section of

Segment 2 that were evaluated by RPF Lee for potential MAMU nesting habitat. The survey revealed that the limbs and branch nodes greater than 4 inches in diameter are present but lack the overall character thought to be necessary to serve as viable MAMU egg platforms. Specifically, limbs in these trees have a downward sloping branch structure, lack bryophyte development and limb size/structure yielding viable egg platforms where eggs would be secure through the incubation period without the benefit of a nest structure (flat or concave surfaces greater than 4" x 4") while at the same time being sheltered from strong winds, direct solar effects, and obscured enough from view to avoid predation during nesting. The dominant trees in this area either occur in small groups or individually tower above the surrounding forest canopy, resulting in a moderately open upper canopy environment. Based on these unfavorable nesting habitat factors, and that no sightings of MAMU have occurred in this forested region by CALFIRE biologists via numerous MAMU surveys for THP applications in the region, MAMU are not anticipated to nest in this small area (Susan, L., 2020). USFWS has issued guidance (USFWS 2006) on assessing noise impacts to NSO and MAMU and defines "take" when at least one of the following conditions are met:

- Project-generated sound exceeds ambient nesting conditions by 20-25 decibels (dB),
- Project-generated sound, when added to existing ambient conditions, exceeds 90 dB and
- Human activities occur within a visual line of sight for a distance of 40 meter or less from the nest.

The ambient noise levels in Segment 2 where potential tree stands have been identified that may be used for MAMU nesting are relatively low (<50dB) and reflect the remote nature of these natural forested areas. Pipeline construction is expected to take several days near these trees so duration of noise impact would be relatively short. The equipment used for construction of this small pipeline (small Bobcat with small bucket, trenching equipment and small trucks) are not expected to generate significant noise but could cause ambient noise to increase by 20-25 decibels for short periods. The MAMU breeding season is from March 23-September 15 and noise levels at dawn and dusk are especially important when MAMU are active. The proposed pipeline in Segment 2 is within 40 meters from potential MAMU nesting trees.

Despite these factors, there is a small potential for MAMU to nest prior to construction activities for this project and the construction noise generated could potentially inhibit mating and nesting MAMU behavior and is considered significant impact requiring mitigation. Noise buffers (165 feet) for low noise areas have been established by USFWS/CDFW for THPs in the region. Implementation of **Mitigation Measure BIO-6, Implement MAMU Protection Measures and Comply with Seasonal Restrictions,** would reduce this impact to less than significant levels.

Less than Significant with Mitigation. Potential Impacts to Rare Plants. As discussed previously, there is the potential for 16 special-status plant species to occur within the Proposed Project area. Only two species were observed during floristic surveys conducted for Segment 2 of the Proposed Project. Populations of Leafy Mitrewort (*M. caulescens)* and Nodding Semaphore grass (*P. refractus)* were observed in southern portion of Segment 2 during the May/June 2020 surveys, by Registered Professional Forester Darcie Mahoney and other field biologists. Although these two plants are not formally listed and do not have formal legal protections under State or Federal ESA, they are considered rare locally by CNPS which is considered an authoritative body with expertise under CEQA, and the permanent loss of these populations would be considered significant at a local level. Implementation of **Mitigation Measure BIO-7, Conduct Preconstruction Surveys for Rare Plants, and BIO-8, Transplant and Restore Tree and Rare Plant Populations,** would reduce potential impacts to special-status plants in Segment 2 to a less than significant level.

Segment 3 Biological Species Issues

The primary biological issues in this segment include potential impacts to rare CNPS listed plants, important plant communities, environmentally sensitive habitat areas as defined by the CCC and potential MAMU nesting habitat. This segment starts along the Georgia Pacific Haul Road and proceeds southerly up to the City's Newman and Summers Lane Reservoirs.

Segment 3 of the Proposed Project is primarily located on timberland managed by Lyme Redwood Timberland, LLC (Lyme). Timber stands in this area are primarily second growth redwood forest. Lyme has been evaluating this area for potential timber harvesting. Segment 3 of the Proposed Project is anticipated to take up to 94 days to complete. Segment 3 starts at the intersection of the existing Noyo River crossing and the Haul Road. From there it will traverse the Haul Road westerly for about 750 feet and then steeply ascend southward to the top of the western side of Newman Gulch gorge through heavily wooded terrain. From there it will follow the top of the gorge along an existing skid road to Summers Lane and Newman Reservoirs. Once the pipeline leaves the existing roads a 20 foot wide temporary construction right-of-way will be cleared to provide access to install the pipeline. This construction will require moderate land clearing, timber harvest, pipeline right-of-way- grading, and earthwork because it is following existing trails and old skid roads from previous timber harvests.

Less than Significant with Mitigation. Potential Indirect Impacts to Nesting Marbled Murrelet from Construction Noise during Pipeline Construction. Based on the project description, Segment 3 is estimated to take up to 94 days during the dry season in Mendocino County to construct. As shown in **Figure 4-4**, there is a small stand of mature trees located in the southern section of Segment 3 that were evaluated by RPF Lee for potential MAMU nesting habitat. Large diameter trees associated with pipeline segment 3 were evaluated and field review resulted in the following observations and conclusions. Potential habitat is limited to 5 trees located near the southern end of the Segment 3 alignment. Individual limbs on individual trees itemized above may provide surfaces potentially large enough to provide a 4+ inch egg platforms. The area where these trees are located is a busy environment with ongoing activity including municipal use and maintenance of the Newman Gulch Reservoir, use and maintenance of the Summers Lane Reservoir and extensive clearing and maintenance of right-of-way associated with the high voltage power transmission lines that bound this area on the south side. It is because of these site specific factors rather than purely existence possible platform nesting opportunities that Marbled Murrelet use of this area is considered to be unlikely. Based on these unfavorable nesting habitat factors, and that no sightings of MAMU have occurred in this forested region by CALFIRE biologists via numerous MAMU surveys for THP applications in the region, MAMU are not anticipated to nest in this small area (Susan, L., 2020). USFWS has issued guidance (USFWS 2006) on assessing noise impacts to NSO and MAMU and defines "take" when at least one of the following conditions are met:

- Project-generated sound exceeds ambient nesting conditions by 20-25 decibels (dB),
- Project-generated sound, when added to existing ambient conditions, exceeds 90 dB and
- Human activities occur within a visual line of sign distance of 40 meter or less from the nest.

The ambient noise levels in Segment 3 where potential tree stands have been identified that may be used for MAMU nesting are relatively low (<50dB) and reflect the remote nature of these natural forested areas. Pipeline construction is expected to take several days near these trees so duration of noise impact would be relatively short. The equipment used for construction of this small pipeline (small Bobcat with small bucket, trenching equipment and small trucks) are not expected to generate significant noise but could cause ambient noise to increase by 20-25 decibels for short periods. The

MAMU breeding seasons is from March 23- September 15 and noise levels at dawn and dusk are especially important when MAMU are active. The Segment 3 MAMU trees are 850 feet west of the adjacent to the Fort Bragg Animal Shelter and Mendocino County Humane Society where ambient noise levels are higher. The proposed pipeline in Segments 3 is within approximately 120-125 feet from potential MAMU nesting trees.

Despite these factors, there is a small potential for MAMU to nest prior to construction activities for this project and the construction noise generated could potentially inhibit mating and nesting MAMU behavior and is considered significant impact requiring mitigation. Noise buffers (165 feet) for low noise areas have been established by USFWS/CDFW for THPs in the region. Implementation of **Mitigation Measure BIO-6, Implement MAMU Protection Measures and Comply with Seasonal Restrictions,** would reduce this impact to less than significant levels.

Less than Significant with Mitigation. Potential Impacts to Rare Plants and Sensitive Plant Communities. Mendocino cypress forests have been documented in this general mixed conifer redwood forest area from CNDDB database records and surveys for this project by RPF Lee and Mahoney. Clearing of vegetation to establish the temporary construction right-of-way could result in the direct loss of special-status plant species if present in the area through trampling or excavation if present within the construction zone or damage to sensitive root systems, through compaction, could occur outside of the construction zone. Floristic surveys of Segment 3 pipeline corridor were conducted by RPF Darcie Mahoney and Dewberry biologists in May/June 2020 and May/June 2021. Mendocino (Pygmy) cypress *(Cupressus pigmaea)* were observed within Segment 3. **Table 4-7** below shows the estimated number of trees to be removed in Segment 3. Approximately 249 trees would be removed in Segment 3 including 46 Bishop pine and 108 Mendocino cypress. The 108 small cypress trees (primarily seedlings to small trees) would need to be removed in the construction of the right-of-way which follows an old logging skid road. The potential loss of pygmy cypress trees is considered significant because they are a part of a designated special community in this region of Mendocino County by CDFW. **Mitigation Measures BIO-7, Conduct Preconstruction Surveys for Rare Plants,** and **BIO-8, Transplant and Restore Tree and Rare Plant Populations,** would reduce impacts to pygmy cypress trees to less than significant.

Table 4-7. Estimated Tree Removal per Segment

Tree Type	Alder	Pine	Fruit	Redwood	Cypress	T.O.	Fir	Tree Count	Temporary Construction ROW footprint (acres)
Segment 2	-	-	-	-	-	-	-	0	0
Segment 3	53	46	1	38	108	3	-	249	2.18
Segment 4	-	18	-	4	-1	1	-	24	1.41
Segment 5	-	15	-	10	-0	11	8	44	0.66
Total	53	79	1	52	109	15	8	317	4.25

Segment 4 Biological Species Issues

No Impact. Potential Indirect Impacts to Marbled Murrelet from Construction Noise during Pipeline Construction. Based on the project description, Segment 4 is anticipated to take up to 64 days to construct. Segment 4 was analyzed for suitable nesting habitat by RPF Lee Susan. The forest habitat in Segment 4 consists of smaller, young growth timber not known to support marbled murrelet

nesting efforts. Marbled murrelets (MAMU) have never been found to occur in this area. Based on absence of this species preferred habitat and lack of detections in this area we conclude that construction of Segment 4 of the Proposed Project would have no impacts to MAMU.

Less than Significant. Potential Impacts to Rare Plants and Sensitive Plant Communities. Segment 4 of the Proposed Project is anticipated to take up to 64 days to complete. Segment 4 is contained mostly within a rural-residential neighborhood and would be constructed underneath an existing gravel road. However, a small portion of Segment 4 (approximately 950 feet) enters JDSF and would traverse a relatively steep slope of redwood forest, and require some land clearing, timber harvest, and earthwork (**Figure 4-11**). Impacts to special-status plant species could include loss of the individual plants through trampling or excavation if present within the construction zone or damage to sensitive root systems, through compaction, could occur outside of the construction zone.

As discussed, there is the potential for 16 special-status plant species to occur within the Proposed Project area. No special-status plant species were observed during any of the biological surveys of the Proposed Project area. Implementation of **Mitigation Measures BIO-7, Conduct Preconstruction Surveys for Rare Plants, and BIO-8, Transplant and Restore Tree and Rare Plant Populations,** would reduce potential impacts to special-status plants to a less than significant level.

Segment 5 Biological Species Issues

No Impact. Potential Impact to Nesting Marbled Murrelet (MAMU) from Construction Noise during Pipeline Construction. Based on the project description, Segment 5 is anticipated to take up to 48 days to construct. Segment 5 was analyzed for suitable nesting habitat by Registered Professional Forester Lee Susan. The forest habitat in Segment 5 consists of smaller, young growth timber not known to support marbled murrelet nesting habitat.

No sightings of MAMU have occurred in this area by CALFIRE biologists over the last 30+ years and this species has not been an issue for timber managers along the north coast. Based on absence of this species preferred habitat and lack of detections in this area we conclude that construction of Segment 5 of the Proposed Project would have no impacts to marbled murrelets.

No Impact. Potential Impacts to Rare Plants and Sensitive Plant Community. Segment 5 exists entirely within JDSF and traverses a heavily forested landscape. Work required to construct Segment 5 would include clearing of timber and other vegetation within the 12- 20 foot wide pipeline right-of-way. Earthwork within the 12-20 foot wide construction right of way would follow vegetation clearance along the right-of-way. Impacts to special-status plant species within or adjacent to construction areas could include loss of individual plants through trampling or excavation if present within the construction zone or damage to sensitive root systems, through compaction, could occur outside of the construction zone. A floristic botanical survey was conducted to assess what if any special status plant species are located within the project area. No special-status plant species were observed during any of the biological surveys in Segment 5 and therefore no rare plant impacts are anticipated in this segment. No Mendocino Cypress trees were observed in this segment based in field surveys conduct by RFP Lee. Therefore, no impacts to rare plants or sensitive plant community are anticipated in Segment 5. A copy of the Botanical Survey report is included in this document as Appendix C for ease of reference.

Less than Significant with Mitigation. Potential Impacts to Coastal Steelhead, Coho Salmon, and Pacific Giant Salamander During Segment 5 Construction Activities in Hare Creek and Covington Gulch. Segment 5 includes replacing a short pipeline section that is within Hare Creek/Covington Creek confluence area. Few data or fisheries studies are available from CDFW or USFWS on fish populations in Hare Creek. There are several very large log jams (some 5-10 feet in height)

downstream of the pipeline crossing that may prevent upstream migration of fish into this area. This segment of the pipeline would be constructed during summer/late fall when stream flows in Hare Creek are normally at the seasonal low (generally between 1-5 cfs). The crossing would require dewatering a small section (approximately 350 square feet) of the stream to install the new pipe and may take several days to construct. Due to site remoteness and constraints, the crossing would be installed with manual labor (picks/shovels) and a mini-excavator, but no large machinery would be used in the stream to excavate the pipeline trench in this area. Stream flows in Hare Creek would be diverted around the project site to maintain flows downstream. Flows in Covington Creek would continue to provide water downstream into Hare Creek during construction activities Suitable habitat exists in the construction area for steelhead and salmon although numerous biological surveys conducted in Hare Creek/Covington Creeks did not observe any life stage of steelhead trout or Coho salmon. Several juvenile pacific giant salamanders were observed during one presence /absence survey. The stream substrate consists primarily of large cobbles and medium sized sediment with minimal sand and water is shallow and clear. There are some medium-large pools upstream and downstream of the crossing for fish, but no fish were observed in these pools. Construction in the stream could cause incremental increases in turbidity and suspend solids that could impact fish and aquatic resources if water is not managed properly. Construction in this area may also impact a known population of pacific giant salamander. This is considered a significant impact requiring mitigation. Additionally, the proposed clean-up of urban trash in Covington Gulch as part of Segment 4/5 construction would cause temporary impacts to water quality (primarily turbidity and suspended solids) when removing various items (car bodies, tires, appliances, and other debris). This work will be done in conjunction with CALFIRE/JDSF, who is supportive of this plan. City will implement water quality best management practices to minimize downstream impacts as part of the CDFW Streambed Alteration Agreement process with CDFW and restore the area once trash has been removed from confluence area of Covington Gulch and Hare Creek. Implementation of **Mitigation Measure BIO-10, Wetland Protections,** would reduce this impact to less than significant levels.

CONCLUSION

The Proposed Project could impact, either directly, or through habitat modification, special-status plant and wildlife species. The implementation of **Mitigation Measures BIO-1** through **BIO-10** would ensure that impacts to special-status species would be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

NOYO RIVER CROSSING

No Impact. Trenchless methods would be used to conduct slip lining construction at the Noyo River Crossing, temporary small pits (approximately 100 square feet) would be excavated on either side of the existing crossing outside of the Noyo River floodplain, but within the riparian ESHA of the Noyo River. No impacts to riparian habitat or sensitive natural community are anticipated with the excavation pits associated with the Noyo River pipeline lining. Although the northern pit is located within the jurisdictional buffer of the Noyo River riparian ESHA, it is located in an area that is covered with non-native grasses and Horsetail (*Equisetum telmateia*) and is routinely mowed by the landowner. The southern lining pit would be located within the Georgia Pacific Haul road and would not impact any riparian habitat. No habitat impacts to ESHA are expected.

SEGMENT 2 BIOLOGICAL COMMUNITY ISSUES

Less than Significant with Mitigation. Potential Impacts to Riparian Corridor along Class II Unnamed Stream from Temporary Construction Activities and Culvert Replacement. Land clearing and other construction activities would occur in proximity to the riparian corridor along the Class II unnamed stream in Segment 2. Additionally, culvert replacement activities, if required, may involve work directly in the stream area and impact the adjacent riparian habitat. Approximately 0.26 acres of riparian habitat and 0.03 acres of the Class II stream may be impacted. These impacts would be temporary in nature, as site restoration and revegetation will be conducted according to requirements of Mendocino grading permit and SWPPP General Construction Permit requirements. Additionally, **Mitigation Measure BIO-10, Wetland Protections,** would further protect riparian habitat and water quality; therefore, impacts would be less than significant.

No Impact. Potential Impacts to Mendocino Pygmy Cypress Forest from Construction Activities. No Mendocino Pygmy Cypress trees were observed during field surveys within the Segment 2 Proposed Project study area. There were no observations of Mendocino Pygmy Cypress trees recorded during any of the biological surveys of Segment 2 by both RPFs Susan and Mahoney and Dewberry biologists. Mendocino Pygmy Cypress Forest has been recorded by the CNDDB as occurring within five miles of the Proposed Project, primarily in an area south of the Noyo River in Segment 3 area. Based on the lack of Mendocino Pygmy Cypress trees in Segment 2, there would be no impacts to Mendocino Pygmy Cypress Forest from Segment 2 construction.

SEGMENT 3 BIOLOGICAL COMMUNITY ISSUES

Less than Significant with Mitigation. Potential Impacts to Mendocino Pygmy Cypress-Bishop Pine Forest Alliance ESHA from Temporary Construction Activities. Mendocino Pygmy Cypress Forest has been recorded by the CNDDB as existing within Segment 3 of the Proposed Project. Segment 3 of the Proposed Project is owned and managed by the Lyme. Based on early discussions with Lyme, prior to the start of construction of Segment 3, Lyme would develop a THP and conduct timber harvest throughout the Segment 3 alignment. Impacts to Pygmy Cypress-Bishop Pine Forest Alliance ESHA from timber harvest activities by Lyme would be addressed and mitigated for in Lyme THP document. Therefore, any Pygmy Cypress-Bishop Pine Forest Alliance ESHA present within Segment 3 would be managed by Lyme. If Lyme chose not to proceed with a THP prior to project construction, the City would coordinate tree removal with Lyme and mitigate for project-specific impacts. Based on tree surveys conducted for the Segment 3 proposed alignment, numerous Mendocino cypress trees (primarily seedlings and small trees less than 6 inches in diameter occur and would need to be removed as part of Proposed Project construction. Complete avoidance of Mendocino cypress trees in this area is not possible due to their widespread occurrence. The City has selected old skid roads and existing trails to minimize impacts to the extent feasible. Other pipeline routes were considered but environmental constraints associated with steep slopes and riparian resources revealed the proposed alignment was the best given criteria. Approximately 108 young cypress seedlings and small trees occur within the proposed alignment. The potential loss of up to 108 or more pygmy trees is considered a significant impact because the alliance is considered a special community by CDFW. Implementation of **Mitigation Measure BIO-8, Transplant and Restore Tree and Rare Plant Populations,** would reduce these impacts to less than significant levels.

Less than Significant with Mitigation. Potential Impacts to Riparian ESHA along the Noyo River, Newman Reservoir, and Newman Gulch from Temporary Construction Activities. In order to construct Segment 3 of the Proposed Project, minimal grading would be required, and land clearing and other construction activities will occur in proximity to the riparian corridor and habitats along the Noyo River, Newman Reservoir, and Newman Creek. Construction of the proposed Segment 3

alignment would require some minor grading for the new pipeline and pump station occur outside but near the riparian ESHAs of Newman Reservoir, Newman Pond and Newman Gulch. Riparian habitat in these areas would be protected through the implementation of the SWPPP and other erosion control/stormwater BMPs. These impacts would be temporary in nature, as site restoration and revegetation are described in the Project Description. Additionally, **Mitigation Measure BIO-10, Wetland Protections,** further protect riparian habitat and water quality; therefore, impacts would be less than significant.

SEGMENT 4 BIOLOGICAL COMMUNITY ISSUES

No Impact. Potential Impact to Mendocino Pygmy Cypress Forest ESHA from Temporary Construction Activities. Mendocino Pygmy Cypress Forest was not observed within the Segment 4 Proposed Project study area. There were no observations of Mendocino Pygmy Cypress trees recorded during any of the tree surveys and rare plant surveys of Segment 4 by RPF Lee and Mahoney. Mendocino Pygmy Cypress Forest has been recorded by the CNDDB as occurring within five miles of the Proposed Project. Based on the lack of Mendocino Pygmy Cypress trees in Segment 4, there would be no impacts to this ESHA from Segment 4 construction.

Less than Significant with Mitigation. Potential Impacts to Riparian ESHA along Covington Gulch from Temporary Construction Activities during Segment 4 Construction. In order to construct Segment 4 of the Proposed Project, land clearing and other construction activities will occur in proximity to the riparian ESHA of Covington Gulch. Above Covington Gulch, slopes are very steep, and it is possible that land may need to be cleared within the corridor, and for debris from land clearing to fall into the stream below. These impacts would be temporary in nature, as site restoration and revegetation are described in the Project Description. The City will be applying for SWRCB General Construction Stormwater Permit, CDFW 1602 Streambed Alteration Agreement and Clean Water Act Section 404 permit for this work and will implement mitigation accordingly with agencies. Additionally, **Mitigation Measures BIO-10, Wetland Protections,** would further protect riparian habitat and water quality; therefore, impacts would be less than significant.

SEGMENT 5 BIOLOGICAL COMMUNITY ISSUES

No Impact. Potential Impact to Mendocino Pygmy Cypress Forest ESHA from Temporary Construction Activities. Mendocino Pygmy Cypress Forest was not observed within the Segment 5 Proposed Project study area as there were no observations of Mendocino cypress (non-pygmy or pygmy trees) recorded during any of the tree surveys of Segment 5. Mendocino Pygmy Cypress Forest has been recorded by the CNDDB as occurring within five miles of the Proposed Project. Based on the lack of Mendocino Pygmy Cypress trees in Segment 5, there would be no impacts to this ESHA from Segment 5 construction.

Less than Significant with Mitigation. Potential Impacts to Riparian ESHA along Hare Creek from Temporary Construction Activities. In order to construct Segment 5 of the Proposed Project, land clearing and other construction activities will occur in proximity to the riparian ESHA along Hare Creek in Segment 5. The existing Hare Creek Crossing would be replaced as part of the proposed Segment 5 construction and would occur within the riparian ESHA. Additionally, slopes above Hare Creek are remarkably steep (70%-80% slopes) and it is possible that land may be cleared within the corridor, and that debris from land clearing could fall into the stream below. Soil erosion best management practices will be employed to minimize introduction of soil and forest debris into Hare Creek. These impacts would be temporary in nature, as site restoration and revegetation are described in the Project Description. Temporary bypass arrangements would be implemented to maintain flows in Hare Creek during construction. Additionally, **Mitigation Measure BIO-10, Wetland Protections,**

would further protect riparian habitat and water quality; therefore, impacts would be less than significant.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

NOYO RIVER CROSSING

No Impact. No impacts to wetlands are anticipated with the pipeline lining and excavation of small pits. The small northern pit (100 square feet) is located within the Noyo River floodplain and ESHA is temporary and proposed in an area that is regularly mowed by the landowner and consists of non-native grasses and horsetail (Equisetum sp.). The lining is anticipated to take several days, and the pit will be backfilled when completed and disturbed area restored.

SEGMENTS 2-5

Less than Significant with Mitigation. Potential Direct and Indirect Impacts to State or Federally Protected Wetlands Common to all Segments. Based on the Project description, the Proposed Project would take approximately 18 months to complete. Preliminary wetland surveys indicate that the Class II stream, Noyo River and Hare Creek meet the criteria for waters of the US. Because the project is following existing roads, old logging skid trails and prior impacted areas, no potentially jurisdictional wetlands exist within the Proposed Project alignment. However, pipeline construction would take place within, adjacent to, or within reasonable distance of, aquatic features that could be indirectly impacted by pipeline construction activities. Impacts to nearby wetlands could include increased erosion, sedimentation, turbidity, or pollution from construction activities and construction equipment. A temporary stream diversion would be installed in Hare Creek during replacement of the Hare Creek Crossing in Segment 5 of the Proposed Project. The diversion would temporarily impact approximately 0.01 acres of Hare Creek (approximately 350 square feet). Temporary impacts to riparian habitat of approximately 0.12 acres are estimated for the Hare Creek crossing. This relatively small area would be restored to pre-project conditions. The City will be filing applications for CDFW 1602 Lake and Streambed Alteration Agreement and Clean Water Act Section 404 permit for the project and will implement mitigation and terms and conditions of those permits. In order to reduce impacts to wetlands and waters of the U.S. to a less than significant level, implementation of **Mitigation Measure BIO-9, Protect Water Quality and Aquatic Resources in Hare Creek and Covington Gulch,** and **Mitigation Measure BIO-10, Wetland Protections,** would be implemented.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

NOYO RIVER CROSSING

No Impact. The City expressly chose to line the existing raw water pipeline to avoid impacts to the Noyo River ecosystem and migratory fisheries populations. No impacts to movement of wildlife or migratory fish are anticipated with the pipeline lining and temporary excavation and use of small pits for lining equipment. The small northern pit (100 square feet) is located within the Noyo River floodplain and ESHA would be temporary and is proposed in an area that is regularly mowed by the landowner and consists of non-native grasses and horsetail (*Equisetum sp*.). The lining is anticipated to take several days, and the pit will be backfilled when completed and disturbed area reseeded and restored to pre-project conditions.

SEGMENT 5

Less than Significant. Potential Temporary Impacts to Movement through Hare Creek during Segment 5 Construction. Replacement of the Hare Creek Crossing at Segment 5 of the Proposed Project is a high priority element of the Proposed Project. In order to replace the pipeline crossing, a temporary stream diversion would be installed to divert flows around the construction site and to maintain flows downstream in Hare Creek. Few fish were observed in Hare Creek during site surveys for the project. Construction would be planned in summer months when low flows are observed in Hare Creek (< 5 cfs). A small diversion dam 15-20 feet wide would be constructed temporarily in Hare Creek to allow water to pond and then be diverted around the construction site downstream. The Hare Creek crossing will be constructed using a mini excavator and hand tools due tosite constraints and should take several days to construct given its relatively short length. Any impacts from the stream diversion would be temporary in nature and Hare Creek would be restored to pre-project conditions at project completion. The City will file an application and obtain a CDFW Lake and Streambed Alteration agreement and CWA Section 4040 for this work and implement all environmental protection measures in that permit to ensure protection of all aquatic resources in Hare Creek. Therefore, impacts to wildlife movement through Hare Creek would be less than significant. No mitigation measures would be required.

SEGMENTS 2-5 WILDLIFE ISSUES COMMON TO ALL SEGMENTS

Less than Significant. Potential Temporary Impacts to Wildlife Movement During Construction. The Class II stream along the proposed Segment 2 alignment does not support fish or salmonids but does provide suitable foraging and habitat for several amphibian species. The upland redwood forest, particularly the heavily vegetated redwood understory, provides a movement corridor for several species of native wildlife. During construction, movement from one side of pipeline construction, to the other could be impeded in daylight hours. Construction activity noise, and human presence would deter wildlife from crossing at the construction site. The pipeline would be built in small stages (e.g., 100+ feet per day) so there is sufficient room for area wildlife to migrate and avoid pipeline trenches and construction areas. The Proposed Project would not remove, degrade, or otherwise interfere substantially with the structure or function of these wildlife movement corridors, as the pipeline would be buried underground and all areas within the construction zone would be revegetated by native species. Temporary disruption of wildlife movement would occur during the construction period; however, this temporary disruption would cease upon construction completion. Therefore, impacts to wildlife movement and migration are considered less than significant and no mitigation measures are required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

SEGMENTS 2-5 AND NOYO RIVER CROSSING

No Impact. Based on a review of local policies and ordinances, there are no local policies or ordinances related to impacts from the Proposed Project. There would be no impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

SEGMENTS 2-5 AND NOYO RIVER CROSSING

No Impact. Based on review of USFWS and CDFW available information, there are currently no approved Habitat Conservation Plans, Natural Community Conservation Plans, or other approved

local, regional, or state habitat conservation plan within or reasonably close to the Proposed Project area. Therefore, the Proposed Project would have no impact.

4.4.4 Mitigation Measures

Mitigation Measure BIO-1: Conduct Pre-Construction Amphibian Surveys. The following measures shall be implemented to reduce project-related impacts to special-status amphibians:

- A qualified biologist will conduct a preconstruction survey within 24 hours prior to the start of construction activities within the aquatic habitats in the project area. A qualified biologist will monitor any vegetation removal within the aquatic habitats of the project. The biologist will monitor installation of water diversion structures placed in Segment 2 and Segment 5 for any proposed culvert replacement and for all stream diversion activities.
- The upstream and downstream limits of the project will be flagged and/or signed to prevent the encroachment of construction personnel and equipment into any sensitive areas during project work.
- Prior to construction, environmental awareness training will be conducted for construction personnel to brief them on how to recognize each life stage of special-status amphibians. Construction personnel should also be informed that if a special-status amphibian is encountered in the work area, construction should stop and CDFW contacted for guidance. A training log sign-in sheet will be maintained.
- If special-status frogs or salamanders are found at any time during project work, construction will stop, and the Project Biologist will be notified and will assess species confirmation. If necessary, CDFW will be contacted for further guidance.
- Staging areas as well as fueling and maintenance activities shall be a minimum of 100 feet, if possible, from aquatic habitats. The City's construction contractor will prepare a spill prevention and clean-up plan and ensure all materials are onsite prior to construction.
- If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with mesh wire not larger than five millimeters.
- Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

Mitigation Measure BIO-2: Conduct Pre-Construction Surveys for Nesting Osprey. The following measures shall be implemented to reduce project-related impacts to osprey:

- Preconstruction surveys shall be conducted for nesting osprey within 500 feet of the project area no more than 14 days prior to construction if work is expected to take place during the nesting season (March 1 – September 15). If work is scheduled outside of the nesting season, surveys are not required.
- If an active nest is identified within 500 feet of the project area, an appropriate protective buffer shall be determined by a qualified biologist, in coordination with CDFW. The size of the buffer shall depend on site-specific conditions and potential disturbance levels. Construction buffers for Osprey nests may vary from 5 to 18 acres based on FPA rules (14CCR919.3). No work shall occur within the buffer until a qualified wildlife biologist has determined that the nesting attempt is complete.

- If potential nesting trees are to be removed during construction activities, removal will take place outside of the osprey nesting season. Trees maybe removed during the nesting season if it is determined the nest is inactive.
- Trees slated for removal during the nesting season may be removed after nest is checked by a qualified wildlife biologist to validate it is an inactive nest.

Mitigation Measure BIO-3: Conduct Nesting Bird Surveys. The following measures shall be implemented to reduce project-related impacts to nesting migratory birds including songbirds:

- Preconstruction surveys shall be conducted for nesting migratory birds and raptors within the project area no more than 14 days prior to construction for any work occurring during the nesting season (February 1 through August 31).
- If an active migratory bird nest is identified within the project area, an appropriate protective buffer shall be determined by a qualified biologist, and coordination with CDFW may be necessary. The size of the buffer shall depend on site-specific conditions and potential disturbance levels. Work shall not be allowed within the buffer until a qualified biologist has determined that the nesting attempt is complete.
- If potential raptor nesting trees are to be removed during construction activities, removal will take place outside of the nesting season. Trees maybe removed during nesting season if nest is found to be inactive by qualified biologist.

Mitigation Measure BIO-4: Conduct Pre-Construction Surveys for Sonoma Tree Voles (STV). The following measures shall be implemented to reduce project-related impacts to STV:

- If STV nests are identified by a qualified wildlife biologist prior to construction, the potential nesting tree shall be flagged and retained and adjacent trees (those with crowns touching the potential nesting tree) shall also be retained. Sonoma tree vole surveys should follow the survey protocol in Record of Decision of Northwest Forest Plan Version 2.1, October 2002 or any subsequent revision.
- Occupied trees shall be avoided to the fullest extent possible. If disturbance of occupied trees is unavoidable, consultation with CDFW will be conducted to determine appropriate mitigation measures.
- Tree removal by tree falling into the potential nesting tree shall be avoided, if possible.

Mitigation Measure BIO-5: Protect Western Pond Turtles During Construction Activities. The following measures shall be implemented by the City to reduce project-related impacts to western pond turtle:

- If dewatering is necessary on any project segment, the construction area shall be dewatered prior to construction activities. Dewatering activities will be conducted in accordance with all applicable conditions in CDFW 1600 series Lake and Streambed Alteration Agreements.
- No more than two weeks prior to the commencement of ground-disturbing activities, the City shall retain a qualified biologist to perform surveys for western pond turtle within suitable aquatic and upland habitat within the project construction area. Surveys will include western pond turtle nests as well as individuals. The biologist (with the appropriate agency permits) will temporarily relocate any identified western pond turtles upstream of the construction area, and temporary barriers will be placed around the construction area to prevent ingress. Construction will not proceed until the work area is determined to be free of turtles. The results of these surveys will

be documented in a technical memorandum that will be submitted to CDFW (if turtles are documented).

- Standard water quality BMPs shall be implemented throughout construction, in order to avoid and minimize adverse effects from erosion to water quality within the project area.

Mitigation Measure BIO-6: Implement MAMU Protection Measures and Comply with Seasonal Restrictions. The USFWS and CDFW have established seasonal protection measures and noise buffer requirements for MAMU (primarily for dawn and dusk periods when nesting MAMU are active March 23-Sept 15) that are used in the region for various THPs, and other projects managed by CALFIRE (USFWS 2006, CDFW 2019). The following seasonal protection measures for activities 165 feet from potential MAMU habitats with low ambient noise levels (<50dB) are required:

- No Use of small, hand- held power equipment,
- No Use of heavy-duty transportation equipment, and /or
- Hauling logs,
- No Felling of large trees (>30 in dbh),
- No Use of yarder whistle,
- No Use of Jake brakes,
- No Detonation of un-muffled explosives,
- No Use of chipper machine,
- No Use of chainsaws,
- No rebuilding of roads with dump trucks, bulldozers, or road graders.

Dawn is defined as a 4-hour period consisting of 2 hours before sunrise to 2 hours after sunrise. Dusk is defined as a 4-hour period 2 hours before sunset and 2 hours after sunset. Implementation of these protection measures are required from March 23-Sept 15. The City could construct the sections of the pipelines near the two tree stands either before or after this seasonal window with no restrictions.

The City has endeavored to avoid the potential MAMU habitat during the pipeline planning process.

The City will request a pre-consultation meeting with CDFW Fort Bragg office to discuss project and obtain any survey requirements and buffer requirements for this project. The City may hire a qualified biologist or RPF to conduct MAMU surveys within 30-60 days of the two tree stands identified prior to construction in Segment 2 and Segment 3 that maybe provide marginal nesting habitat and will comply with and implement the construction windows and required noise buffers if nesting MAMU are observed. If no nesting MAMU are observed the City may proceed with construction with no MAMU restrictions. If MAMU are observed nesting in either of the two tree areas, construction in these two areas shall be delayed until young MAMU have fledged the nest to avoid impacts. This mitigation measure will be coordinated with Lyme as these same MAMU mitigation requirements would apply to timber harvest plans being proposed by Lyme in the forests of Segment 3.

Mitigation Measure BIO-7: Conduct Preconstruction Surveys for Rare Plants. The following measures shall be implemented to avoid impacts to special-status plants:

- Seasonally appropriate (i.e., fall and spring) surveys for special-status plants shall be conducted by a qualified botanist within one year prior to construction commencing.

- If found, special-status plant species shall be flagged and avoided to the greatest extent possible.
- If impacts are unavoidable, and mitigation is warranted by the CDFW, a qualified botanist shall attempt to transplant the plant into an area away from potential construction impacts or collect seeds to replant after construction is complete.
- There shall be no net loss of habitat after the Proposed Project is complete. All areas impacted by clearing, grubbing, and tree removal, with exception of the main pipeline corridor, shall be revegetated with native species according to the revegetation plan.

Mitigation Measure BIO-8: Transplant and Restore Tree and Rare Plant Populations. The following measures shall be implemented to protect populations of Mendocino Cypress trees, Bishop pine trees, Leafy Mitrewort, and Nodding Semaphore grass:

- Prepare a Restoration Plan for all four species in consultation with CDFW. Nodding Semaphore - Prior to construction of Segment 2, a qualified biologist shall remove the mature Semaphore grass and miterwort associated and seed base for temporary relocation away from the construction site. Seeds can also be collected from the Nodding semaphore grass and re-sow it at the edge of the right-of-way in Segment 2, where erosion control will be necessary to protect the adjacent stream, or
- Once construction is complete, plants may be replanted to the same general area where they are observed or transplanted nearby in similar conditions.
- Cypress trees located primarily in project Segment 3 within the CZ with a DBH of 5 inches or greater shall be mitigated at a 3:1 ratio per CCC CZ policies. **Table BIO-8.1** presents the preliminary tree mitigation numbers for both Mendocino Cypress and Bishop Pine for all project segments. These ratios are consistent with a previous Mendocino cypress mitigation plan implemented for the City's Summers Lane Reservoir project back in 2015.

Table BIO-8.1. Proposed Tree Mitigation

Segment	Cypress Mitigation 1:1 Ratio < 5" dbh	Cypress Mitigation 3:1 Ratio >5" dbh	Total Cypress Mitigation (# trees)	Bishop Pine Mitigation 2:1 Ratio (# trees)
2	0	0	0	0
3	89	19x3=57	146	46x2=92
4	0	1x3=3	3	0
5	0	0	0	0
Total	**89**	**60**	**149**	**92**

- The City shall, in consultation with CDFW, prepare a Mendocino Cypress and Bishop Pine Mitigation Plan. The City proposes 3:1 mitigation for cypress trees greater than 5 inches DBH and a combination of transplanting and 1:1 mitigation for cypress saplings less than 5 inches DBH; 2:1 mitigation ratio for bishop pine impacts within Segment 3 only as Segments 4 and 5 are not within the CCC CZ jurisdiction. Bishop pine are considered a commercial tree species within CALFIRE THP process and do not require mitigation outside of the CZ. The tree estimates presented herein for disclosure purposes are considered preliminary and subject to change.
    - For Segment 2, there are no tree impacts as the pipeline follows an existing dirt road.
    - For Segment 3, based on preliminary count of trees (108 small cypress trees) within the construction right-of-way, this would require transplanting and planting of 116 cypress trees based on the proposed mitigation ratio. Also, within Segment 3, approximately 46

small Bishop pine trees would be impacted and will be mitigated at a 2:1 mitigation ratio for a total of 92 trees.

- For Segment 4, 3 cypress trees would be planted.

A total of 149 Mendocino cypress and 92 Bishop Pine would be planted with this mitigation proposal. The City will seek to avoid these two tree species if at all possible, during pipeline construction and a final count of cypress and bishop pine trees removed will be conducted by a RPF post construction to finalize mitigation requirements with the trustee agencies. The goal of the plan is to restore the populations within 5 years, or a term mutually agreed to by the parties. Details of the restoration plan should include background information, description of existing environmental conditions, detailed planting plan, monitoring program and performance standards. The City is proposing to transplant the young cypress seedlings and small Bishop pine trees from the construction area with approval from CDFW and CCC. This Mendocino cypress/Bishop pine mitigation plan and monitoring program will be coordinated with the landowner Lyme Company as the primary cypress population impacted by this project is located within their forests. The City will work with Lyme on sharing the proportionate costs of developing and implementing the plan and funding long-term monitoring required in this program to ensure successful establishment of the new cypress population. The tree mitigation program may be implemented after Lyme has received approval of their THP so that the restoration plan could be prepared for both projects in a holistic manner to benefit the Newman Gulch watershed tree population. In the event the City water project precedes Lyme's THP, the City will mitigate for their project specific impacts as described above separately with CDFW.

In February of 2022, during an outreach meeting, California Coastal Commission staff suggested that the City investigate the potential to assist with protection and possible restoration efforts at Sholar's Bog as a mitigation area that would be used for mitigating impacts to both Mendocino cypress and Bishop pine trees for this project. It could potentially be used for mitigating future projects by the City, as well as for projects proposed by Mendocino County and other local agencies. The Redwood Mendocino Cypress Association, as defined in CDFW 2019 study of the population, is a unique plant community in the region and would benefit from collaborative regional mitigation efforts. The City is actively seeking out potential partners in this concept such as Dorothy King Young chapter of California Native Plant Society, Mendocino Land Trust, CDFW, Lyme Redwood Company and others.

The 12.25 acre Sholar's Bog Pygmy Forest parcel is currently owned by College of the Redwoods Foundation and the purchase was funded by the California Coastal Conservancy. It is in need of improved maintenance and active protection, as well as restoration. The parcel is located about 1,500 feet south of the City's Summers Lane Reservoir and contains the most substantial known sphagnum bog in the area. It has been visited by scientists for decades, as it was first described in a 1933 edition of Science where it was referred to as the Summers Lane Bog. It is one of 3 known sites in California and is the furthest south. Pollen dating indicates that it is more than 10,000 years old. The City is following up with several agencies on the potential to bring this idea forward, but all discussions are still in progress. The City is open to a mutually agreed upon mitigation that will satisfy agency permitting requirements. The City of Fort Bragg recognizes this is an important issue for our community and wants to work collaboratively with others to develop a regional solution for these unique tree populations. The City is actively considering conservation opportunities for the Mendocino Cypress Woodlands, including providing funding for management or stewardship for lands already under conservation or to provide funding for preserving additional lands.

Mitigation Measure BIO-9. Protect Water Quality and Aquatic Resources in Hare Creek and Covington Gulch. In order to protect resources in Hare Creek area, the following measures are recommended:

- Implement **Mitigation Measure BIO-1 Conduct Preconstruction Surveys for Fish and Amphibians.** A qualified biologist will conduct pre-construction surveys for Pacific Giant salamanders and other amphibians and fish at least 14 days prior to construction.
- If any amphibians or fish are observed during surveys, a qualified biologist will relocate individuals upstream of the proposed construction zone into larger pools or other suitable habitat. The construction zone will be surveyed on a daily basis by trained staff prior to construction to ensure amphibians have not migrated into or near the construction area.
- The City will ensure all construction workers receive Worker Environmental Awareness Training in the identification of frogs, salamanders and fish that maybe found in the Hare Creek drainage and proper procedures to follow in the event they are discovered,
- The City will coordinate the details of this creek crossing with CALFIRE biologists and obtain any necessary permits and approvals from JDSF prior to construction,
- If determined necessary, the City will obtain a CDFW 1602 Streambed Alteration Agreement and implement the terms and conditions in the permit to protect aquatic resources.
- The City will monitor turbidity levels upstream and downstream to ensure levels in Hare Creek are within acceptable range during the short construction window (estimated 2-3 days to construct).
- If determined necessary, the City will obtain a Clean Water Act Section 404 Permit and associated federal approvals from S.F. District of United States Army Corp of Engineers for this portion of the project to ensure federal special-status species, wetlands, water quality and cultural resources in the area are fully protected during construction.
- The City will develop and implement a Hare Creek restoration plan for project area that will include details on restoring the natural grade in the streambed and local area, implementation of erosion control measures and planting of native plants (e.g., willow) to enhance the restoration in the impacted zone.

Mitigation Measure BIO-10. File for Clean Water Act Section 404 Permit, CDFW 1600 Permit and Implement Wetland Protection and Compensation Measures. The City will prepare permit applications for both CWA Section 404 and CDFW F&GC 1602 permits prior to project construction and implement the terms and conditions in each permit. These measures will be included in the plans and specification for the City's bid package for the project. The following measures shall be implemented by the City to avoid impacts to wetlands and other aquatic habitats:

<u>SPECIFIC WETLAND MEASURES</u>

- Prior to the start of construction, all portions of the streams or wetlands to be avoided shall be temporarily staked in the field by a qualified biologist.
- Prior to the start of construction, construction personnel shall be trained by a qualified biologist on all required avoidance and minimization measures as well as any Clean Water Act or CDFW permit requirements.
- Trash generated by the project shall be promptly and properly removed from the site

- No construction or maintenance vehicles shall be refueled within 200 feet of the streams unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.
- Appropriate erosion-control measures (e.g., fiber rolls, filter fences) shall be used on site to reduce siltation and runoff of contaminants into the streams or wetlands. Filter fences and mesh shall be of material that will not entrap reptiles or amphibians. Erosion control blankets shall be used as a last resort because of their tendency to biodegrade slowly and to trap reptiles and amphibians.
- Fiber rolls used for erosion control shall be certified as free of noxious weed seed and will not contain plastics of any kind.
- Seed mixtures applied for erosion control shall not contain invasive nonnative species and will be composed of native species or sterile nonnative species.
- Herbicide shall not be applied within 100 feet of wetlands, ponds, streams, or riparian woodland/scrub; however, where appropriate to control serious invasive plants, herbicides that have been approved for use by EPA in or adjacent to aquatic habitats may be used as long as label instructions are followed, and applications avoid or minimize impacts on covered species and their habitats. In seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species (e.g., yellow star-thistle). Herbicide drift shall be minimized by applying the herbicide as close to the target area as possible.

GENERAL WETLAND PROTECTION MEASURES

- Equipment storage, fueling, and staging areas shall be sited on disturbed areas or on rural or non-sensitive non-native grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types.
- No erodible materials shall be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- Silt fencing or other sediment trapping methods shall be installed down-gradient from construction activities to minimize transportation of sediment off site.
- Barriers shall be constructed to keep wildlife out of construction sites, as appropriate.
- Onsite monitoring shall be conducted throughout the construction period to ensure that disturbance limits and BMPs are being implemented properly.
- Active construction areas shall be watered regularly to minimize the impact of dust on adjacent vegetation and wildlife habitats, if warranted.
- Drainage structures (culverts and bridges) shall remain free of accumulations of vegetation and debris to provide maximum drainage capacity and potential use by wildlife as travel corridors.

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4.5 Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Cultural Resources - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

4.5.1 Setting

Cultural Resources are archaeological and historic sites, architectural resources, and traditional cultural properties, as well as the physical evidence of past human activity on the landscape. Cultural resources, along with Native American and historic human remains and associated grave goods, must be considered under various federal, state, and local regulations, including CEQA and the National Historic Preservation Act of 1966. In general, any trace of human activity more than 50 years in age is required to be treated as a potential cultural resource.

A cultural resource that is listed in, or eligible for inclusion in, the California Register of Historical Resources (CRHR) is referred to as an Historical Resource. A resource may be eligible for inclusion in the CRHR if it:

A) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

B) is associated with the lives of persons important in our past.

C) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

D) has yielded, or may be likely to yield, information important in prehistory or history.

The State CEQA Guidelines also require consideration of unique and non-unique archaeological resources, as defined in PRC §21083.2(g). In addition to meeting the criteria for listing in the CRHR, cultural resources must retain enough of their historic character or integrity, to be recognizable a historical resource and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (California Office of Historic Preservation 1999:69–70).

Background research sets the context for identifying many cultural resources and, as such, a brief summary of our literature review for the project area is provided.

ETHNOGEOGRAPHY

The project is located in territory that was traditionally inhabited by the Mato Pomo, a division of the Hokan language-speaking Northern Pomo (Kroeber 1976:222). What anthropologists know of Northern Pomo ethnogeography comes from interviews recorded from Native descendants fifty to one hundred years or more after the contact period with the colonizing Euro-Americans, and the subsequent displacement of these Pomo people from their homelands. Barrett (1908), Kroeber (1925), Heizer (1978), Stewart (1943), Harrington (1942-3), and others provide published anthropological reference sources for the Mato Pomo.

In Sherwood Valley, about twenty miles to the east of the project, the modern-day Sherwood Valley Band of Pomo Rancheria includes descendants from the Mato and Little Lake (Willits) Mitom tribelets and villages.

The Mato (ma t'o—"moldy ground") were the most northerly community of the Northern Pomo, their name referring to Sherwood Valley and a village site located there. Stewart (1943) divided the Mato Pomo into three minor divisions, each with a permanent village and their own chief: Mato, Kabedile, and Kulakau (Stewart 1943:34-5). The Mato Pomo held a territory of approximately 200 square miles from the coast to Outlet Creek (Stewart 1943:32). The northern boundary of the Mato Pomo territory on the coast was a line about fourteen miles north of Fort Bragg, and a mile north of Kalkabemina (Mussel Rock), as marked by Chadbourne Gulch (Stewart 1943:32). This was the boundary with the Coast Yuki who inhabited the coastline to the north. The exact southern boundary of the Mato Pomo and the Mitom Pomo is ill defined and may have been flexible. Stewart described the eastern and southern boundary of the Mato Pomo:

"From the junction of the Longvale and Outlet creeks, the Sherwood boundary followed upstream to Arnold, about three miles, where the line continued south and crossed the Willits-Sherwood road at Alper's Ranch, about six miles northwest of Willits…From Alper's Ranch the line extends about ten miles southwest before it turns west to reach the ocean a few miles south of the Noyo River" (Stewart1943:33).

The closest village to the project area, approximately one mile to the west, is *kadī'ū,* situated on the north bank of the Noyo River, at the mouth.

The contact period with the Euro-Americans in northern California was violent and oppressive, as it was for many Native people in California. With the establishment of the Mendocino Reservation in 1856 many different Pomo groups were forcibly removed from their homelands to the coast (Winn 1986:15). Most of these Native people were from counties further south, and though it is known that Mato-Pomo were sent to the reservation, it is not well documented. Having been displaced by the Euro-American settlers, a general Pomo diaspora took place with successive generations finding homes where they could, some living back in Little Lake Valley, on other Pomo Rancherias, in Sherwood and Round Valley, and along the Coast. Once the Sherwood Rancheria was established in 1909 descendants of the Mitom Pomo and Mato Pomo found sanctuary on their traditional lands where they continue to live today.

HISTORICAL CONTEXT

Fort Bragg came into being as a military fort in 1857, the year after the Mendocino Indian Reservation was established. Alexander Wentworth "A.W." MacPherson filed a land patent on the north half of the northeast ¼ of Section 8, T18N, R17W, where the City's water storage tanks are now located at the end of Oak Street (BLM 2020) and built a mill near the mouth of the river on the north side and was in operation by 1858. A small community rose up around the mouth of the river, and as the Army withdrew its forces from Fort Bragg and the Reservation closed around 1862, the land was opened up for public patents. During this time period valuable timberlands were purchased and harvested by the Fort Bragg Redwood Company, the Union Lumber Company, and A.W. MacPherson sold off some his holdings to J.G.

Jackson of the Caspar Lumber Company in 1877 (Stebbins 1986), who were the first to build a railroad on the Mendocino Coast. At the southern end of the project area, along Hare Creek at the confluence with Covington Gulch, is the grade of the Caspar, South Fork & Eastern Railroad, which delivered logs to the lumber mill at Caspar for a few decades around the turn of the 20th century. This grade was built in the late 1880s and was in operation until 1936 when the use of trucks for log transport had begun and was completely abandoned in 1949 (Holmes and Lawson 1996). To access the Hare Creek timber, the railroad was extended north from Jug Handle Creek in 1884, over a 160-foot tall, 1,000-foot-long wooden trestle. The railroad, renamed Caspar & Hare Creek Railroad, was extended a total of six miles from the mill up into the Hare Creek watershed. To reach its furthest extent, the railroad traveled through a tunnel southeast of Noyo Hill and into the South Fork Noyo River watershed, reaching Camp 20 at the mouth of Chamberlain Creek by about 1945 (Borden 1966:6, 15).

The City of Fort Bragg was incorporated in 1889 (City of Fort Bragg, 2020), and the water delivery system, which served the town is credited to early settler Horrace Freemont Milliken. Milliken was active in many volunteer and administrative capacities, filing articles of incorporation for the Fort Bragg Water Company in 1890 (*Ukiah Daily Journal* 3 Jan. 1890:3). As the town flourished, the ever-growing need for municipal water grew, and over the years ditches, pipes, diversions, land acquisition and changes to water rights kept the City afloat. Pumping from the Noyo River began in the 1920s, and as a result of federal funding to promote the construction of public works after the Great Depression, the City hired contractor Arthur Wilbur Biggars to further the water needs of the community by surveying Newman Gulch "with the view of ascertaining the cost of erecting a dam and securing a sufficient supply of water from this source to take care of the city's needs during the entire year" (*The Mendocino Beacon* 14 Oct. 1933:6). A system was engineered, and a plan executed in less than a year, that included the construction of a dam, the installation of 10,000 feet of pipe, trestles, such that "water first flowed on June 2, 1934, "and in exactly 2 hours and 5 minutes the water came through the Newman Gulch end of the pipe … good, clear cold spring water free from contamination" (*The Mendocino Beacon* 28 Apr. 1934:3). In the 1950s the system would undergo multiple upgrades, reroutes, and a pump station installed within the Noyo River in the 1960s. Water quality problems resulted in the installation of a water treatment plant in the 1980s.

INVESTIGATION RESULTS

William Rich and Associates (WRA) conducted a cultural resources investigation for the proposed project which included a record search at the California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC)(No. 19-0477), background research, Native American outreach, and a field survey of the project area on May 13 and 14, 2020 and June 2, 2021.

The survey reports and resource records on file at the NWIC indicate that no cultural resources are known within or crossing the linear project area; however, within 0.5 mile, two historic period cultural resources have been recorded. Twelve previous surveys have covered portions of the project area for timber harvest activities, inventory projects for State Parks and Jackson State Demonstration Forest (JDSF), and more specifically, two projects related to the City's water system including a survey of potential wells, to be placed near the City's water treatment plant (Flynn 1996), and a survey for the proposed Newman Reservoir (Van Bueren 2009). Twenty-eight additional cultural resources surveys have been performed in the 0.5 mile study area, according to the NWIC. A review of the National Register of Historic Places (NRHP), California Register of Historic Resources (CRHR), California Historic Landmarks, California Inventory of Historic Resources, Historic Properties Directory and Archaeological Determinations of eligibility yielded no findings for the project area or the surrounding 0.5 mile search buffer.

CALFIRE was also queried regarding previous surveys and cultural resources in the project area, as it relates to Segments 4 and 5 within JDSF. Information regarding three informal (unrecorded) resources was shared and include: a "trail, road, fence" alignment, which runs from west to east along Hare Creek

and bisects the northern end of Segment 5 as it crosses Hare Creek. According to background research, by WRA, this may also be the historical alignment of the Casper and Hare Creek Railroad Grade. A "train wreck" and "Tie Camp 1" are also noted in CalFire records; however, they lie well outside the project area.

During the cultural resources investigation, no pre-contact artifacts, features, or archaeological sites were encountered. A 50-foot segment of what is assumed to be ductile iron water pipeline (12-inch diameter), installed in the 1950s, as a replacement to the original, was identified where it lies on top of the ground source along a hillslope north of Hare Creek and south of Dwyer Lane in Segment 4. This short above ground segment of pipeline was recorded and evaluated as not eligible for listing to the California Register of Historical resources. Although much of the historical water system was not observed during the field survey, background research indicates the system has undergone ongoing maintenance, reconstruction, re-routing, and removal, precluding its ability to contribute significance to a larger district or collection of related sites or features in the vicinity. This pipeline segment would not qualify as an historical resource pursuant to CEQA.

Correspondence with the NAHC revealed that no sacred lands are on file at the project location, and they provided a list of suggested tribal contacts. Letters were mailed by WRA to representatives of the Coyote Valley Band of Pomo Indians, Guidiville Band of Pomo Indians; Noyo River Indian Community, Pinoleville Pomo Nation; Redwood Valley or Little River Band of Pomo Indians and the Sherwood Valley Band of Pomo Indians on June 17, 2020. No responses were received. The City of Fort Bragg carried out formal consultation with Native American Tribes as prescribed by AB 52, with a letter sent out on September 15, 2021. No responses have been received to date.

4.5.2 Discussion

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less Than Significant with Mitigation. According to assessments the identified water pipeline is not associated with any historically significant individuals or events (CRHR Criterion 1 or 2) and no evidence suggests it is the work of a master, or the earliest or best examples of their kind (CRHR Criterion 3). In addition, the pipeline had been previously impacted, and summarized as lacking historical integrity and does not appear to be eligible for inclusion on the CRHR.

It is possible that there are undiscovered historical resources in the project area, therefore, **Mitigation Measure CUL-1, Stop Work if Resources Unearthed,** has been incorporated into the project. By implementing this mitigation measure, historical resources defined in *Title 14*. *California Code of Regulations,* Chapter 3, Guidelines for Implementation of CEQA §15064.5 would be mitigated to a less than significant level.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation. Currently there are no recorded archaeological resources within the project vicinity and a good faith effort to contact local tribes has been made, both by WRA and the City of Fort Bragg. Although no recorded sites are documented it is possible there are unknown sites, therefore **Mitigation Measure CUL-1, Stop Work if Resources Unearthed,** has been incorporated into the project. By implementing this mitigation measure, archaeological resources defined in *Title 14*. *California Code of Regulations,* Chapter 3, Guidelines for Implementation of CEQA §15064.5 will be mitigated to a less than significant level.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation. Due to the potential for archaeological resources, there is a potential that human remains could be located within the project area. However, by incorporating **Mitigation Measure CUL-2, Compliance with California State Health and Safety Code, Section 7050.5**, the potential to disturb human remains is mitigated to less than significant level.

4.5.3 Mitigation Measures

Mitigation Measure CUL-1: Stop Work if Resources Unearthed. If cultural resources are unearthed pursuant to §15064.5 during any phase of project activity, all work in the immediate vicinity of the find shall halt until the significance of the resource has been evaluated. Any mitigation measures that may be deemed necessary shall be implemented by a qualified archaeologist prior to resumption of construction activities to the satisfaction of NAHC. The City will provide the opportunity for Native American monitors to participate in the identification, evaluation, and mitigation of effects upon, any Native American human remains, or cultural resources inadvertently exposed during the proposed construction. Consultation with personnel designated by the NAHC would be acceptable. Should tribal representatives agree to consult on any such discoveries, the costs incurred are the responsibility of the City.

Mitigation Measure CUL-2: Compliance with California State Health and Safety Code, Section 7050.5. If human remains are exposed by project related activity, the Applicant shall comply with California State Health and Safety Code, Section 7050.5, which states that no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and the disposition pursuant to California Public Resources Code, Section 5097.98.

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4.6 Energy

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Energy –Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

4.6.1 Setting

In 1975, the California State Legislature adopted Assembly Bill (AB) 1575 in response to the oil crisis of the 1970s. Public Resources Code Section 21100(b)(3) and CEQA Guidelines Appendices F and G require a description of the wasteful, inefficient, and unnecessary consumption of energy caused by a project. CEQA Guidelines. Appendix G provides guidance related to energy resources within the context of the Initial Study (IS). Both aim to focus on conservation energy by ensuring projects consider efficiency of energy use.

The production of electricity requires the consumption or conversion of energy stored in natural resources such as water, wind, oil, gas, coal, solar radiation, certain minerals (for nuclear power), and geothermal energy. Production of energy and energy use both result in pollution and in depletion of these renewable and nonrenewable resources.

ELECTRICITY AND NATURAL GAS

The Proposed Project is located in unincorporated Mendocino County (County), just east of the Fort Bragg city limits. According to the County's General Plan, the County primarily relies on imported electricity and natural gas for most of its energy needs. Most residents and businesses in the County, receive electric and natural gas service from Pacific Gas & Electric Company (PG&E) (PG&E, 2014a; PG&E, 2014b). According to the California Energy Commission (CEC), the total estimated energy use from both residential and nonresidential uses for the County was estimated to be 562.26 GWh (gigawatt hours) in 2019 while the total estimated gas consumption was 10.38 million therms (CEC, 2021).

4.6.2 Discussion

a) Results in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant. The Proposed Project's would replace sections of the City's raw water pipeline that have reached the end of their service life. The Proposed Project would not require creation of new energy sources and would not alter existing energy demand. The City's current water system transports raw water to the water treatment plant entirely by gravity and no electricity is used. The proposed project includes one small pump station to convey water from Newman Gulch Reservoir to the new pipeline. This is expected to be small incremental increase in energy consumption when compared to existing conditions. Energy consumption at the existing water treatment plant would be unchanged with the project. The Proposed Project would not introduce new developments, alter existing energy facilities service capabilities, or remove an obstacle to growth and induce unplanned

growth. Therefore, once completed, the Proposed Project would have negligible impact on energy use and no mitigation is required.

Energy in the form of gasoline and diesel fuel would be consumed by construction equipment and worker vehicles during construction period. Diesel equipment would be used during construction; however, compliance with local, State, and Federal construction regulations (e.g., limit engine idling times, require the recycling of construction debris, etc.) would reduce short-term energy demand during the Proposed Project's construction to the extent feasible. All construction industry standard Best Management Practices (BMPs) to minimize energy waste would be implemented. The approximately 18-month construction period is considered short-term in nature and would not generate substantial or wasteful energy consumption with the implementation of industry standard BMPs. The Proposed Project would have a less than significant impact to energy resources and no mitigation is required.

a) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The Proposed Project does not conflict with any local, State, or Federal regulations regarding energy use, energy efficient, or construction regulations. The Proposed Project would not conflict with or obstruct any energy resource sources identified in the General Plan and is consistent with the County's established energy resource goals and policies. Construction BMPs, identified above, would be implemented to reduce impacts to energy use to the extent feasible. The proposed project has no impact in this regard and no mitigation is required.

4.6.3 Mitigation Measures

No mitigation measures are required for the proposed project as related to energy consumption as impacts would be less than significant.

4.6.4 References

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4.7 Geology and Soils

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

4.7.1 Setting

GEOLOGY AND SOILS

The Proposed Project alignment is located in the Coastal Range geomorphic province of California in an area of relatively steep and mountainous topography. The elevation along the Proposed Project alignment ranges from approximately mean sea level to 400 feet above mean sea level (USGS, 2020a). The Proposed Project alignments are not identified as being within a fault or liquefaction hazard zone (CDOC, 2015). The portion of the Segments 4 and 5 proposed pipeline alignments along Covington Gulch and Hare Creek are designated as within an inner gulch landslide area, according to the California Department of Conservation (CDOC), Division of Mines and Geology (CDOC, 1983). This geomorphic province is generally considered seismically active, with the San Andres fault parallel to this range. The nearest earthquake fault zone to the Proposed Project alignment is the San Andres Fault Zone, located off coast and approximately six miles west of the Proposed Project site (USGS, 2020).

Site-specific geotechnical studies were conducted for this project to consider these issues in the final pipeline design (Crawford & Associates, Inc., 2020). Segments 4 and 5 have the steepest slopes in the project and will be designed to address these inherent characteristics of the soils and geology in this area. The Proposed Project site is underlain by Pleistocene-age marine and marine terrace deposits overlying undivided Cretaceous-age marine deposits (Crawford & Associates, Inc., 2020). The Cretaceous-age marine deposit is described as Franciscan Complex, comprising Coastal Belt rocks and mélange. These rocks generally consist of graywacke sandstone and shale. The Pleistocene-age marine terrace deposits (Qm) at the Proposed Project site are described as sorted quartz sand with minor gravel.

The Soil Survey of Mendocino County, Western Part, California identified multiple soil types along each segment of the Proposed Project (Natural Resources Conservation Service (NRCS), 2020). Characteristics of these soil types are included in **Table 4-8**. The soils along the Proposed Project alignment have low to moderate shrink-swell potential. The soils along the Proposed Project alignment have a low to moderately high k-factor (sheet erosion potential), meaning they are slightly to highly susceptible to erosion (NRCS, 2020).

Table 4-8. Characteristics of Project Site Soils

Soil Series Name	Shrink-swell Potential	Drainage	Runoff Potential	K Erosion Factor	Percent (%) Clay
Segment 2					
141- Ferncreek sandy loam, 2 to 9 percent slopes	Moderate	Somewhat Poorly Drained	Very High	0.24 (moderately low)	35
174- Irmulco-Tramway complex, 50 to 75 percent slopes	Moderate	Well Drained	High	0.32 (moderate)	27
214- Tropaquepts, 0 to 15 percent slopes		Poorly Drained			
Segment 3					
174- Irmulco-Tramway complex, 50 to 75 percent slopes	Moderate	Well Drained	High	0.32 (moderate)	27
196-Quinliven-Ferncreek complex, 2 to 15 percent slopes	Moderate	Moderately Well Drained	Very High	0.43 (moderately high)	35
214- Tropaquepts, 0 to 15 percent slopes		Poorly Drained			
Segment 4					
124- Caspar-Quinliven-Ferncreek complex, 9 to 30 percent slopes	Moderate	Moderately Well Drained	Very High	0.32 (moderate)	20
135- Dehaven-Hotel complex, 50 to 75 percent slopes	Low	Well Drained	High	0.15 (low)	35
196-Quinliven-Ferncreek complex, 2 to 15 percent slopes	Moderate	Moderately Well Drained	Very High	0.43 (moderately high)	35
199- Shinglemill-Gibney complex, 2 to 9 percent slopes	Moderate	Somewhat Poorly Drained	High	0.32 (moderate)	40
Segment 5					
124- Caspar-Quinliven-Ferncreek complex, 9 to 30 percent slopes	Moderate	Moderately Well Drained	Very High	0.32 (moderate)	20
135- Dehaven-Hotel complex, 50 to75 percent slopes	Low	Well Drained	High	0.15 (low)	35
196- Quinliven-Ferncreek complex, 2 to 15 percent slopes	Moderate	Moderately Well Drained	Very High	0.43 (moderately high)	35

Source: NRCS, 2020

PALEONTOLOGICAL SETTING

Paleontological resources are the fossilized evidence of organisms preserved in the geologic (rocks) record. Fossils are considered nonrenewable resources that are protected by federal, state, and local environmental laws and regulations. The entire Proposed Project area is underlain by the Franciscan Formation geologic unit, which include late Jurassic (145 to 163 million years ago) and early Cretaceous (113 to 125 million years ago) deposits (Mendocino County, 2009; Wakabayashi, 1999). The Franciscan Formation is considered to have a low to moderate sensitivity for the presence of paleontological resources (PG&E, 2002; Wakabayashi, 1999).

Regionally, the University of California Museum of Paleontology (UCMP) database lists 513 fossil localities within Mendocino County (UCMP, 2020). Of the known fossil localities, 63 are from the Cretaceous period and 2 are from the Jurassic Period. A review of the Mendocino County fossil record indicates that 10 early Cretaceous fossils have been discovered within the County and no late Jurassic fossils have been discovered. Location information provided by the UCMP indicates that no known fossil localities are located within the Proposed Project vicinity (UCMP, 2020).

STORMWATER PERMITTING

The California State Water Resources Control Board (SWRCB) requires all projects that disturb over one acre of soil to obtain a Construction General Permit (CGP). The permit regulates stormwater discharges from construction sites which result in a disturbed area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, the applicant is required to hire a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) to develop and implement an effective SWPPP. All Project Registration Documents, including the SWPPP, are required to be uploaded into the SWRCB's on-line Stormwater Multiple Application and Report Tracking System (SMARTS), at least 30 days prior to construction.

The City of Fort Bragg currently complies with and maintains a NPDES Permit for Small Municipal Separate Stormwater (MS4 Permit) and has a Stormwater Management Program (SWMP) that would be implemented with this project (City of Fort Bragg, 2005). The SWMP has six elements including: Public Education, Public Participation, Illicit Discharge and Elimination, Construction Site Runoff, Post-Construction Runoff, and Municipal operations. The SWMP requires the City to implement erosion and sediment control BMPs on project sites. The Construction site Runoff Control Element of the SWMP includes adopting and enforcing an erosion and sediment control ordinance, developing and maintaining standards for erosion and sediment control (ESC), and conducting outreach activities and site inspections. The SWMP requires the design and construction standards to be based on implementing the best management practices (BMPs) to reduce pollution in stormwater runoff to the maximum extent possible. The City would ensure the Proposed Project is consistent with their own NPDES stormwater permit requirements and SWMP, in addition to the State CGP program discussed above.

4.7.2 Discussion

ai) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Less Than Significant Impacts. No active faults are shown that cross the Proposed Project site, nor is the site within or adjacent to an Alquist-Priolo Earthquake Fault Zone (CDOC, 2015). The San Andreas fault is the only active fault within 15 miles of the Proposed Project alignment, and is located offshore of Fort Bragg, approximately 6 miles west the Proposed Project site (USGS, 2020b). The Proposed

Project replacement pipeline would be consistent with current structural and geometric standards including the current Caltrans Seismic Design Criteria. In addition, the Geotechnical report prepared by Crawford & Associates, Inc. concluded that the risk of fault rupture hazard is considered to be low, and no over-riding hazards were identified by either published mapping or site reconnaissance (Crawford and Associates, Inc., 2020). Therefore, the risk of the Proposed Project alignments causing loss, injury or death involving rupture of a known earthquake fault would be less than significant and no mitigation measures are required.

aii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Less Than Significant Impacts. No active faults are shown that cross the Proposed Project site, nor is the site within or adjacent to a region designated for high ground shaking potential (CDOC, 2015). The San Andres fault is the only active fault within 15 miles of the Proposed Project alignment, and is located offshore of Fort Bragg, approximately 6 miles west the Proposed Project site (USGS, 2020b). Operation of the Proposed Project, nor Proposed Project construction would use equipment that would generate excessive ground shaking or ground borne vibrations (See Noise Section of this document for a detailed review). Therefore, the risk of the Proposed Project causing loss, injury or death involving ground shaking would be similar to existing conditions and would be less than significant. No mitigation measures would be required.

aiii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Less Than Significant Impacts. Liquefaction of granular soils can be caused by strong, vibratory motion due to earthquakes. Soils that are highly susceptible to liquefaction are medium to fine grained, loose, granular and saturated at depths of less than 50 feet below the ground surface. Liquefaction of soils causes surface distress, loss of bearing capacity and settlement of structures that are found on soils. The Proposed Project alignments in Segments 4 and 5 are located along steep, forested slopes and are underlain by the soils recorded in **Table 4-8** (NRCS, 2020). Segment 3 has been located to avoid the steep slopes and erosive soils on the east side of Newman Gulch where the existing pipeline is situated. Based on the known soil and groundwater conditions throughout the area, the potential for liquefaction or seismically induced settlement along the Proposed Project site is considered low risk.

Therefore, the risk of the Proposed Project causing loss, injury or death involving seismic-related ground failure, including liquefaction, would be similar to existing conditions. Proposed Project impacts in this regard would be less than significant and no mitigation measures are required.

aiv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving Landslides?

Less Than Significant Impact. Landslides typically occur in areas with steep terrain when the ground becomes saturated, causing slope instability. The California Department of Conservation (CDOC) California Geological Survey (CGS) provides maps that show landslides and geomorphic features related to landslides and delineates potential slope-stability problem areas (CDOC,1983). The CGS broadly categorizes two types of landslide materials, rock or soil, or a combination of the two, and are further categorized as falls, topples, spreads, slides, or flows. The five most common combinations of material/movement for landslides are rockslides, earth flows, debris slides, debris flows, and rock falls. Potential hazards from landslides typically occur along hillsides and slopes and areas subjected to wildfire or heavy water inundation have a higher potential for landslides.

There have been no landslides identified within the Proposed Project area. However, the steep slopes adjacent to the upper part of Newman Gulch and all of Covington Gulch and Hare Creek are mapped as "inner gorge", which is a geomorphic feature formed by debris slide processes over time and generally have slopes of 65% or greater. Vegetation is vital in order for these slope-types to maintain stability. The Proposed Project area is located within steeply sloped, forested, and saturated terrain that is susceptible to landslide conditions. The City has endeavored to route the proposed pipeline alignment to avoid steeply sloped areas where possible during the pipeline corridor planning process. Segments 4 and 5 of the Proposed Project have been identified as within a landslide hazard zone, and Segment 4 of the Proposed Project is located near a known small active slide (CDOC, 1983). Additionally, the Segment 3 proposed pipeline alignment would run through relatively flat area south of Newman Gulch than the existing Segment 3 pipeline alignment. The proposed Segment 3 alignment would avoid the steep terrain that the existing pipeline runs through, therefore, resulting in a considerably lower risk of landslides when compared to existing conditions.

Although the Proposed Project alignment is located along terrain that is subject to high landslide potential, the Proposed Project would be engineered with geotechnical considerations to avoid contributing to the existing favorable landslide conditions. One of the key geotechnical considerations associated with the design and construction of the Proposed Project was the presence of steep terrain with slopes mapped as inner gorge which are prone to landslides and/or creeping (Crawford & Associates, 2020). Additionally, the Proposed Project is a relatively rural, forested section of the County and no structures, developments, or residence are located downhill of the Proposed Project alignment. While rural residential developments are located adjacent to the northern section of Segments 2 and 4 of the Proposed Project, the terrain at along these segments of the Proposed Project alignment is generally flat and the Proposed Project improvements would have no potential to increase landslide potential for the adjacent residences. Therefore, given the geotechnical considerations incorporated into the design and construction of the Proposed Project, the rural nature of the Proposed Project area, and the absence of structures, developments, and people downhill of the Proposed Project alignment, the Proposed Project would have a less than significant impact on landslide potential resulting in loss, injury, or death. No mitigation measures would be required.

b) Result in substantial soil erosion or loss of topsoil?

Less Than Significant Impact. The Proposed Project alignment spans multiple soil types which are described in **Table 4-8,** above. Soils along the Proposed Project alignment have T erosion factors ranging from 3 to 5, which indicate that the Proposed Project area has a low to moderate soil erosion potential. Construction activities involving soil disturbance which include, clearing and grubbing, excavation, cutting/filling, and grading activities have the potential to result in erosion or loss of topsoil. Additionally, the proposed removal of vegetation within the Proposed Project area and along steep slopes, especially in Segments 4 and 5, has the potential to increase soil erosion potential in the Proposed Project area. Areas in the Proposed Project corridor with steep slopes and high potential for soil erosion and sedimentation would be planned and designed with numerous erosion control best management practices to minimize erosion to the extent feasible. In compliance with the CGP, a SWPPP would be prepared for the Proposed Project and would contain measures to reduce erosion impacts from construction activities. Additionally, areas disturbed by the Proposed Project would be revegetated following the completion of construction activities, which would further reduce erosion impacts from construction activities. Therefore, the potential erosion impacts from construction activities would be less than significant and no mitigation would be required.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

SEGMENT 2

Less Than Significant Impact. The Segment 2 proposed pipeline alignment travels on relatively flat slopes from the City's water treatment plant to the residences south of Fort Bragg – Sherwood Road, and then traverses down a relatively narrow access road to the California Coastal Zone boundary along the Noyo River. The Segment 2 proposed pipeline alignment is underlain by three soil types which are presented in **Table 4-8** (NRCS, 2020). Based on the known soils and lack of a uniform water table throughout the area, the potential for soil liquefaction and seismically induced settlements along the Segment 2 proposed pipeline alignment is low (Crawford & Associates, Inc., 2020). The construction and operation of Segment 2 of the Proposed Project would have a less than significant impact in this regard, and no mitigation measures would be required. Refer to subsection aiii) above, for additional details.

Landslides typically occur in areas with steep terrain when the ground becomes saturated, causing slope instability. The Segment 2 proposed pipeline alignment is not located within an area designated by CDOC CGS as having a high landslide potential; however, slopes uphill and downhill of the existing access road along the existing Segment 2 pipeline alignment are unstable as they are steeply sloped, forested, and saturated. They are also susceptible to creep. Additionally, an existing landslide is present along the downhill slope of the Segment 2 proposed pipeline alignment. To address this unstable existing condition, this portion of Segment 2 will be excavated at a lower depth to avoid the problematic area and will be below the geologic formation. Implementation of BMPs, as required in the City's SWMP would ensure that Segment 2 construction activities would have a less than significant impact on slope stability and landslide potential at the Proposed Project site. The BMPs would be included in the erosion and control ordinance prepared for the Proposed Project under the requirements of the SWMP. The following BMPs would be implemented during construction:

- Install silt fencing or sediment trapping methods downslope of construction activities to protect Hare Creek and Covington Gulch and other streams
- Apply hydraulic mulch and hydroseeding to disturbed slopes
- Install fiber rolls and/or erosion control blankets to cleared and graded slopes
- Revegetate disturbed slope with native or non-reproducing (i.e., sterile hybrids) plants suitable for altered soil conditions at the project site.

SEGMENT 3

Less Than Significant Impact. The Segment 3 proposed pipeline alignment pipeline starts where the Georgia-Pacific Haul Road (Haul Road) intersects the existing Noyo River Crossing and then follows the Haul Road in a westerly direction before traversing steep slopes south to the Newman Gulch gorge. From there the proposed alignment would follow an existing skid road to the Summers Lane Reservoir. Segment 3 of the Proposed Project is underlain by three soil types which are presented in **Table 4-8** (NRCS, 2020). Based on the general flat topography, known soils and lack of a uniform water table throughout the area, the potential for soil liquefaction and seismically induced settlements along Segment 3 of the Proposed Project is low (Crawford & Associates, Inc., 2020). The construction and operation of the Segment 3 proposed pipeline would have a less than significant impact in this regard, and no mitigation measures would be required. Refer to subsection aiii) above, for additional details.

Landslides typically occur in areas with steep terrain when the ground becomes saturated, causing slope instability. The Segment 3 proposed pipeline alignment is not located within an area designated by the CDOC California Geological Survey as having a high landslide potential; however, slopes along the Segment 3 proposed pipeline alignment are highly unstable as they are steeply sloped, forested, and saturated. The permanent trench section that is located on steep slopes in Segment 3 will include trench dams to improve pipeline stability. Vegetation removal and grading associated with Segment 3 construction would further decrease slope stability at the Proposed Project site, which could result in on- and off-site landslides. Implementation of BMPs, listed above, would ensure that Segment 3 construction activities would have a less than significant impact on slope stability and landslide potential at the Proposed Project site.

SEGMENT 4

Less Than Significant Impact. The Segment 4 proposed pipeline alignment is relatively flat from State Route (SR) 20 to the southern end of Dwyer Lane, and then gradually slopes down to the Covington Gulch. The Segment 4 proposed pipeline alignment then extends approximately 320 feet down the steep slopes of Covington Gulch before connecting to the pipeline that crosses the waterways. Segment 4 of the Proposed Project is underlain by four soil types which are recorded in **Table 4-8** (NRCS, 2020). Based on the known soils and lack of uniform water table throughout the area, the potential for soil liquefaction and seismically induced settlements along the Segment 4 proposed pipeline alignment is low (Crawford & Associates, Inc., 2020). The construction and operation of the Segment 4 proposed pipeline would have a less than significant impact in this regard, and no mitigation measures would be required. Refer to subsection aiii) above, for additional details.

Landslides typically occur in areas with steep terrain when the ground becomes saturated, causing slope instability. The Segment 4 proposed pipeline alignment is located within an area designated by the CDOC CGS as a landslide hazard zone and is also located within the vicinity of a small active slide (CDOC, 1983). Additionally, the slopes along the Segment 4 proposed pipeline alignment are unstable as they are steeply sloped, forested, and saturated. The permanent trench section on steep slopes in Segment 4 includes trench dams to improve pipeline stability. Vegetation removal and grading associated with Segment 4 construction would further decrease slope stability at the Proposed Project site and increase the potential for on- and off-site landslides. Implementation of BMPs, listed above, would ensure that Segment 4 construction activities would have a less than significant impact on slope stability and landslide potential at the Proposed Project site.

SEGMENT 5

Less Than Significant Impact. The Segment 5 proposed pipeline alignment is steeply sloped along Hare Creek and the slope gradually flattens out as it approaches FR 450. The Segment 5 proposed pipeline alignment is underlain by three soil types which are recorded in **Table 4-8** (NRCS, 2020). Based on the known soils and lack of uniform water table throughout the area, the potential for soil liquefaction and seismically induced settlements along the Segment 5 proposed pipeline alignment is low (Crawford & Associates, Inc., 2020). The construction and operation of Segment 5 of the Proposed Project would have a less than significant impact in this regard, and no mitigation measures would be required. Refer to subsection aiii) above, for additional details.

Landslides typically occur in areas with steep terrain when the ground becomes saturated, causing slope instability. The Segment 5 proposed pipeline alignment is located within an area designated by the CDOC CGS as a landslide hazard zone (CDOC, 1983). Additionally, the slopes along part of the Segment 5 proposed pipeline alignment are unstable as they are steeply sloped, forested, and saturated. The permanent trench section on steep slopes in Segment 5 includes trench dams to

improve pipeline stability. Vegetation removal and grading associated with Segment 5 construction would further decrease slope stability at the Proposed Project site and increase the potential for on- and off-site landslides. Implementation of BMPs, listed above, would ensure that Segment 5 construction activities would have a less than significant impact on slope stability and landslide potential at the Proposed Project site.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. Table 4-8 identifies soil types within each Segment of the Proposed Project area. All of the soil types within the Proposed Project area have low to moderate shrink-swell potentials (NRCS, 2020). The Proposed Project would replace almost 2 miles of the City's raw water pipeline that has reached the end of its service life. Implementation of the Proposed Project would not introduce additional people or structures to the Proposed Project area and the risk to life or property related to expansive soil would be similar to existing conditions. During construction, construction personnel would be present at the Proposed Project site; however, the introduction of construction personnel to the Proposed Project area is assumed to have a negligible impact on risk associated with expansive soils at the Proposed Project site. Therefore, the Proposed Project's impact related to expansive soils would be less that significant and no mitigation measures are required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Less Than Significant Impact. The Proposed Project would replace almost 2 miles of the City's raw water pipeline that has reached the end of its service life. The Proposed Project does not involve construction of septic tanks or alternative wastewater disposal systems, or connection to sewer systems. Additionally, the Proposed Project is located within rural, forested areas of unincorporated Mendocino County where septic tanks and septic fields are not present. The northern sections of Segment 2 and 4 of the Proposed Project are located within rural residential communities who may actively use septic or alternative wastewater disposal systems; however, the Proposed Project alignment would be located beneath existing roadways at these sections and would not conflict with existing underground utilities. Therefore, the Proposed Project would have a less than significant impact on the use of septic tanks or alternative wastewater disposal system in the Proposed Project area and no mitigation measures would be required.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation. The Proposed Project alignment is located within the Coast Ranges Geomorphic Province, in an area of relatively steep and mountainous topography. According to the City General Plan and the County General Plan, the Proposed Project does not contain unique geologic features that would contain fossils or other paleontological resources (City of Fort Bragg, 2012; Mendocino County, 2009).

The entire Proposed Project alignment is located within the Franciscan Formation geological unit (Mendocino County, 2009). The Franciscan Formation geological unit was established during the late Jurassic and early Cretaceous era, and is approximately 145 million years old (Wakabayashi, 1999). The Franciscan Formation is considered to have a low to moderate sensitivity for the presence of paleontological resources (PG&E, 2002; Wakabayashi, 1999).

The Proposed Project alignment is generally within areas that have experienced minor levels of disturbance. The northern sections of Segments 2 and 4 of the Proposed Project have experienced considerable disturbance due to the installation of Fort Bragg -Sherwood Road, Highway 20, Dwyer

Lane, and the adjacent residential land uses; however, the maximum Proposed Project construction depth of 12 feet has the potential to encounter undisturbed soil.

While the Proposed Project is not anticipated to encounter unique paleontological resources due to the low sensitivity of the Franciscan Formation, Project construction has the potential to disturb unknown paleontological resources due to the relatively undisturbed nature of the Proposed Project area. There is always the possibility of unanticipated discoveries during earth work, trenching and other activities. **Mitigation Measure GEO-1, Immediately Halt Construction Activities if Any Paleontological Materials Are Discovered,** would be implemented to reduce potential impacts on unknown unique paleontological resources to a less than significant level.

4.7.3 Mitigation Measures

Mitigation Measure GEO-1: Immediately Halt Construction Activities if Any Paleontological Materials Are Discovered. If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find and shall notify the City's project manager. The City shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with SVP guidelines (1995). The proposed mitigation plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

4.7.4 References

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4.8 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Greenhouse Gas Emissions –Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

4.8.1 Setting

Greenhouse Gas (GHG) is used to describe atmospheric gases naturally contained within the earth's atmosphere that absorb solar radiation and subsequently emit radiation in the thermal infrared region of the energy spectrum, trapping heat in the Earth's atmosphere. These gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and water vapor, among others. A growing body of research attributes long-term changes in temperature, precipitation, and other elements of the earth's climate to large increases in GHG emissions since the mid-nineteenth century, particularly from human activity related to fossil fuel combustion. Anthropogenic GHG emissions of particular interest include CO_2, CH_4, N_2O, and fluorinated gases.

CO_2, CH_4, and N_2O trap solar radiation and the earth's own radiation in the atmosphere, preventing it from passing through the earth's atmosphere and into space. GHGs are vital to life on earth; however, increasing GHG concentrations are causing an increase in average global temperatures. In general, CH_4 has 21 times the warming potential of CO_2, and N_2O has 310 times the warming potential of CO_2. CO_2e represents CO_2 plus the additional warming potential from CH_4 and N_2O. The common unit of measurement for CO_2e is metric tons ($MTCO_2e$).

As the average temperature of the earth increases, climate patterns may be affected, including changes in precipitation patterns, accumulation of snowpack, and intensity and duration of spring snowmelt, as well as increased intensity of low precipitation and droughts. Human-made GHG emissions occur primarily through the combustion of fuels, mainly associated with transportation, residential energy, and agriculture.

Parts of the earth's atmosphere act as an insulating "blanket" for the planet. This "blanket" of various gases traps solar energy, which keeps the global average temperature in a range suitable for life. The collection of atmospheric gases that comprise this blanket are called "greenhouse gases," based on the idea that these gases trap heat like the glass walls of a greenhouse. These gases, mainly water vapor, CO_2, CH_4, N_2O, ozone (O_3), and chlorofluorocarbons (CFCs), all act as effective global insulators, reflecting visible light and infrared radiation back to earth. Most scientists agree that human activities, such as producing electricity and driving internal combustion vehicles, have contributed to the elevated concentration of these gases in the atmosphere. As a result, the earth's overall temperature is rising.

California's primary legislation for reducing GHG emissions is the California Global Warming Solutions Act (AB 32), which set a goal for the state to reduce GHG emissions to 40 percent of 1990 emission levels by 2030. The California Air Resources Board (CARB), among other state agencies, has enacted regulation in order to achieve these targets. In December 2008, CARB adopted its Climate Change Scoping Plan, which

contains the main strategies California would implement to reduce California's projected 2020 CO_2e emission levels by approximately 21.7 percent under a business-as-usual scenario. In November 2017, CARB adopted the second update; California's 2017 Climate Change Scoping Plan Update lays the framework for achieving the 2030 reductions as established in more recent legislation (CARB 2017). The 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level 40 percent below 1990 levels before 2030.

The Proposed Project is located within the North Coast Air Basin (NCAB) and is subject to the Mendocino County Air Quality Management District (MCAQMD) regulations. The MCAQMD is responsible for monitoring and enforcing federal, State, and local air quality standards in the County. In 2010, the MCAQMD released Proposed Air Quality CEQA Thresholds of Significance to follow when evaluating air quality impacts (MCAQMD, 2010). The proposed thresholds were created based off the Bay Area Air Quality Management District (BAAQMD) CEQA thresholds.

The Proposed Project is located in the City of Fort Bragg's (City) General Plan Area and sphere of influence (SOI), but primarily within unincorporated Mendocino County. Neither Mendocino County nor the MCAQMD has a Climate Action Plan, however, the MCAQMD included thresholds for GHGs in the 2010 Proposed Air Quality CEQA Thresholds of Significance. **Table 4-9** shows the Proposed Air Quality CEQA Thresholds of Significance regarding GHGs (MCAQMD, 2010).

Table 4-9. MCAQMD GHG Thresholds of Significance

Pollutant	Construction – Related Thresholds	Operational – Related Thresholds	
Criteria Air Pollutants and Precursors (Regional)	**Average Daily Emissions (lb/day)**	**Average Daily Emissions (lb/day)**	**Maximum Annual Emissions (tpy)**
GHGs Projects other than Stationary Sources	None	Compliance with Qualified Greenhouse Gas Reduction Strategy OR 1,100 MT of CO_2e/yr. OR 4.6 MT CO_2e/SP/yr (residents + employees)	
GHGs Stationary Sources	None	10,000 MT/yr	

Source: MCAQMD, 2010.

The City of Fort Bragg adopted a Climate Action Plan (CAP) in 2012 (City of Fort Bragg, 2020). The CAP was created to provide a tool to guide the community's direction in responsibly addressing climate change and greenhouse gas reductions. The City of Fort Bragg selected a target of 30% reduction for the local government sector and a target of 15% reduction for the community by 2020. The CAP states that the City's next steps are to fund and implement strategies to achieve the goals and to measure the effectiveness of the implementation strategies over time. No revisions have been made to the City's CAP since 2012, and neither the City Climate Action Plan nor the City General Plan identify greenhouse gas emissions policies specific to individual City projects or development projects within the City.

4.8.2 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant. The Proposed Project would replace almost 2 miles of the City's existing raw water pipeline that is reaching the end of its service life. The Proposed Project would not increase capacity along surrounding roads, nor would it increase traffic or congestion. The Proposed Project would not create new demand for energy, alter any surrounding land use, or create a permanent source of GHG emissions. The Proposed Project would not change water treatment plant operational GHG emissions compared to existing conditions.

GHG emissions associated with the Proposed Project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction, GHGs, would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Construction emissions were modelled using the Road Construction Emissions Model (RCEM), Version 9.0.0 (**Appendix A**). For the purpose of this analysis, it was assumed that construction would last 18 months, the total project area would be 10 acres, and the maximum area disturbed/day would be 3 acres. In addition, the model assumed that: 1) the types and quantities of construction equipment typical of buried small pipeline projects would be used; and 2) all on-road equipment used would be year 2010 or newer models.

The RCEM projected that a maximum of approximately 7,327.91 pounds of CO_2e would be emitted per day, totaling approximately 1,172.60 $MTCO_2e$ over the 18-month construction period. The MCAQMD does not have specific thresholds for assessing the significance of and reductions of GHG emissions from construction.

Proposed Project construction activities would result in minor levels of GHG emissions, but construction emissions are anticipated to be minimal and less than significant due to the short, 18-month duration of construction. The Proposed Project would implement best management practices (BMPs) as outlined Section 4.3, Air Quality, that would reduce emissions generated from diesel engines that would lower GHG emissions. In addition, the Proposed Project construction is considered small, short-term, and would not generate substantial air quality pollutant concentrations, including GHG emissions, as discussed in Section 4.3, Air Quality. Therefore, the proposed project construction activities would result in a less than significant impact. No mitigation would be required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant. The Proposed Project is located in the City of Fort Bragg's (City) General Plan Area and sphere of influence (SOI), but most of the pipeline project is located primarily within unincorporated Mendocino County and is under the jurisdiction of the MCAQMD. The MCAQMD does not have any specific thresholds for reducing GHG emissions from construction (MCAQMD, 2010). The proposed project would implement BMPs that would reduce emissions generated from diesel engines that would lower GHG emissions during construction. The City's CAP does not have any regulations or thresholds specific to GHG emissions during construction of projects.

The MCAQMD established operational GHG emission thresholds of significance (**Table 4-9**). The thresholds for projects other than stationary sources are to comply with a Qualified Greenhouse Gas Reduction Strategy OR 1,100 MT of CO2e/yr OR 4.6 MT CO2e/SP/yr (residents + employees), while threshold for a stationary source project is 10,000 MT/yr (MCAQMD, 2010). As the Proposed Project would not create new demand for energy or create a permanent source of GHG emissions, it would be consistent with the MCAMQD operational GHG emission thresholds of significance. The City's CAP established voluntary reduction goals for the City and community, however, no specific regulations or thresholds were set for City projects. In addition, the CAP's goal target year was 2020. No revisions have been made to the City's CAP since 2012.As detailed above, the Proposed Project would only generate GHG emissions during the construction phase. Since the City, County, and MCAQMD have

yet to establish construction related GHG emission thresholds, the Proposed Project would not conflict with any existing regulations, plans, or policies. Due to the short, 18-month duration of Project construction and the implementation of construction BMPs discussed in the Air Quality section of this document, the Proposed Project is anticipated to have a less than significant impact and no mitigation measures are required.

4.8.3 Mitigation Measures

No mitigation measures are required related to GHG emissions. BMPs would be implemented to reduce overall project emissions from construction, as discussed in Section 4.3, Air Quality.

4.8.4 References

California Air Resources Board. 2017. California's 2017 Climate Change Scoping Plan. Online: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf. Date Accessed: June 30, 2021.

City of Fort Bragg. 2012. City of Fort Bragg Climate Action Plan. Available: https://city.fortbragg.com/DocumentCenter/View/3660/Climate-Action-Plan-2012-PDF?bidId=. Accessed July 15, 2020.

Mendocino County. 2010. New MCAQMD Interim CEQA Criteria and GHG Pollutant Thresholds Briefing. Available: http://www.co.mendocino.ca.us/aqmd/pdf_files/MCAQMD_CEQA.pdf. Accessed May 29, 2020.

4.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Hazards and Hazardous Materials –Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐

4.9.1 Setting

The Proposed Project is located for the majority of its length in natural forested areas and relatively short sections are located in the urban environment near Summers Lane, Dwyer Lane, and Fort Bragg-Sherwood Road. Areas where the pipeline is located in or near urban land uses have a higher potential for encountering potentially hazardous materials and underground substances such as gasoline, diesel fuel from leaking underground storage tanks, illegal disposal of hazardous materials, old unpermitted landfills, or household dumps. This section presents an overview of the existing local, state, and federal laws that govern hazardous materials and waste in California.

Hazardous materials, including hazardous substances and wastes are regulated by state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement RCRA. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Hazardous materials typically encountered during construction and demolition activities include asbestos containing materials (ACMs) and lead containing materials (LCMs). New uses of ACMs were banned by the Environmental Protection Agency (EPA) in 1989, while new uses of LCMs were banned in 1978. Revisions to regulations issued by the OSHA on June 30, 1995, require that all thermal systems insulation, surfacing materials, and resilient flooring materials installed prior to 1981 be considered Presumed ACMs and treated accordingly. Structures constructed prior to 1978 are also presumed to contain LCM; however, structures constructed after 1978 may also contain lead-based paints. Additionally, pavement striping paint on roadways often contains lead and aerially deposited lead (ADL) is commonly located adjacent to heavily traveled roadways in service prior to 1987, as lead has been used as a gasoline additive prior to this time. In order to rebut the designation of construction debris as potentially containing ACMs, LCMs, or ADL, OSHA requires that these materials be surveyed, sampled, and assessed in accordance with 40 CFR 763 and 40 CFR 745.

Based on review of aerial photos and topographical maps (Google Earth, 2020; USGS, 2020), Fort Bragg - Sherwood Road and Highway 20 were built prior to 1943 and have served as important east-west transportation corridors for the region ever since. The Georgia Pacific Haul Road (Haul Road) and Dwyer Lane appear to have been constructed along their existing alignment prior to 1960, while FR450 does not

appear along its existing alignment prior to 1978 (USGS, 2020). A review of the General Location Map for Ultramafic Rocks in California indicates that the Proposed Project is not located within an area with a potential to encounter Natural Occurring Asbestos (NOA) (CDOC, 2000).

4.9.2 Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Segment 2 and portions of Segment 4 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline parallel to the existing alignment. Segments 3 and 5 of the Proposed Project would abandon the existing pipeline that is reaching the end of its service life in-place and replace it with a new raw water pipeline along a new alignment. Segment 4 is a combination of new and parallel alignments, in which the new alignment follows the existing Dwyer Lane. Operation of all four Proposed Project segments would not result in the routine transport, use, or disposal of hazardous materials and would have no impact in this regard.

Construction of the Proposed Project would potentially require the use of various types and quantities of hazardous materials during construction such as hydraulic oil, diesel fuel, grease, lubricants, solvents, and adhesives. Although equipment used during construction activities could contain various hazardous materials, these materials would be used in accordance with the manufacturer's specifications and all applicable regulations. Minor fuel or oil spills could occur during construction activities, and the release, even if accidental, of hazardous materials into the environment is regulated through existing Federal and State laws. These regulations require emergency response from local agencies to contain hazardous materials in the event of an accidental release. The use and handling of hazardous materials during construction activities would occur in accordance with applicable Federal, State, and local laws, including the California OSHA (Cal OSHA) requirements. Implementation of construction BMPs, compliance with vehicle manufacturer's specifications, and compliance with applicable regulations would result in impacts that are less than significant for the Proposed Project, and no mitigation would be required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

SEGMENT 2

Less Than Significant Impact. Operation of the Segment 2 proposed pipeline would be similar to existing conditions. The potential for release of hazardous materials into the environment during operations would be similar to existing conditions and impacts would be less than significant.

Since Segment 2 of the Proposed Project would abandon the existing pipeline in-place, no demolition activities are proposed that would potentially upset ACMs or LCMs during construction activities. Additionally, the Segment 2 proposed alignment is not located near an area identified as containing ultramafic rocks, and there is little to no potential to encounter NOA during construction at the Segment 2 Proposed Project site (CDOC, 2000). While Fort Bragg – Sherwood Road is a major collector roadway within the City and the County, the relatively low average daily traffic (ADT) along this roadway means that hazardous concentrations of ADL are not anticipated in the soil of the Segment 2 project site. Therefore, Segment 2 of the Proposed Project would have a less than significant impact on the foreseeable release or upset of hazardous materials within the Segment 2 proposed pipeline area.

SEGMENT 3

Less Than Significant Impact. Segment 3 of the Proposed Project would abandon the existing pipeline that is reaching the end of its service life in-place and replace it with a new raw water pipeline along a different alignment. Operation of the Segment 3 proposed pipeline would be similar to existing conditions. The potential for release of hazardous materials into the environment during operations would be similar to existing conditions and impacts would be less than significant.

Since Segment 3 of the Proposed Project would abandon the existing pipeline in-place, no demolition activities are proposed that would potentially upset ACMs or LCMs during construction activities. Additionally, the Segment 3 proposed pipeline alignment is not located near an area identified as containing ultramafic rocks, and there is little to no potential to encounter NOA during construction at the Proposed Project site (CDOC, 2000). The Haul Road is a private road with an extremely low ADT. Therefore, there is no potential for hazardous concentrations of ADL to be present in the soil of the Segment 3 Proposed Project site. Therefore, Segment 3 of the Proposed Project would have less than significant impact on the foreseeable release or upset of hazardous materials.

SEGMENT 4

Less Than Significant Impact with Mitigation. The potential for release of hazardous materials into the environment during operation of the Segment 4 proposed pipeline would be similar to existing conditions and impacts would be less than significant.

The Segment 4 proposed pipeline alignment is not located near an area identified as containing ultramafic rocks, and there is little to no potential to encounter NOA during construction at the Proposed Project site (CDOC, 2000). While Highway 20 is a minor arterial roadway within the City and the County, the relatively low average daily traffic (ADT) of 3,400 (Caltrans, 2016) at the Proposed Project site means that hazardous concentrations of ADL are not anticipated to be encountered during construction of the Segment 4 proposed pipeline.

Although Segment 4 of the Proposed Project would abandon the existing pipeline in-place, there are segments of the existing pipeline that could potentially conflict with the Proposed Segment 4 alignment and would require removal. Field surveys found that portions of the existing pipeline along the Segment 4 alignment are comprised of 10-inch diameter, asbestos-concrete pipes. If segments of the existing pipeline are required to be removed for the construction of the new pipeline, then there is potential to encounter ACMs. With the implementation of **Mitigation Measures HAZ-1, Prepare a Project Health and Safety Plan (HASP), and HAZ-2, Conduct Asbestos Containing Materials Survey**, construction of Segment 4 would have a less than significant impact.

SEGMENT 5

Less Than Significant Impact. Segment 5 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along a new alignment, except for the Hare Creek Crossing, which will be parallel with the existing alignment. Operation of the Segment 5 proposed pipeline would be similar to existing conditions. The potential for release of hazardous materials into the environment due to Segment 5 operations would be similar to existing conditions and impacts would be less than significant.

Since Segment 5 of the Proposed Project would abandon the existing pipeline in-place, no demolition activities are proposed that would potentially upset ACMs or LCMs during construction activities. Additionally, the Segment 5 proposed pipeline alignment is not located near an area identified as containing ultramafic rocks, and there is little to no potential to encounter NOA during construction at the Proposed Project site (CDOC, 2000). Since FR 450 is only accessible to CALFIRE for emergency

response and maintenance activities, there is no potential for hazardous concentrations of ADL to be present in the soil along FR 450 near the Segment 5 proposed pipeline alignment. Therefore, Segment 5 of the Proposed Project would have a less than significant impact on the foreseeable release or upset of hazardous materials within the Proposed Project area.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. None of the Proposed Project Segments are located within 0.25 miles of an existing or proposed school. The nearest school to the Proposed Project is the Fort Bragg Senior High School, located approximately 0.4 miles west of the Segment 3 proposed pipeline alignment. Due to the distance of the Proposed Project from existing and proposed schools, no impacts would occur in this regard and no mitigation measures are required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

SEGMENT 2

Less Than Significant Impact. A review of the State Water Resources Control Board GeoTracker database (GeoTracker) and Department of Toxic Substance Control EnviroStor database (EnvrioStor) was conducted along the Segment 2 proposed pipeline alignment to determine the presence of hazardous materials site occurrences, pursuant to Government Code Section 65962.5 (SWRCB, 2020; DTSC, 2020). The database review returned 11 Leaking Underground Storage Tank (LUST) listings and one Cleanup Program Site (CPS) listing within 1-mile of the Segment 2 proposed pipeline alignment. Ten of the eleven LUST listings have a status of 'Completed – Case Closed,' including a site within the Segment 2 Proposed Project area. Additionally, the one CPS listing has a status of 'Completed – Case Closed'. One of the LUST listings, designated as 'Private Residence Fort Bragg, CA 95437,' is located approximately 0.65 miles west of the Segment 2 proposed pipeline alignment and has an open and inactive status as of June 22, 2017. A review of the Open – Inactive status LUST listing indicated that the site recorded a diesel tank spill in 1990 (SWRCB, 2020**)**, and that there is no evidence that this site would result in contaminated soil or groundwater near the Segment 2 Proposed Project site. Based on a review of the GeoTracker and EnvrioStor databases, there are no known contamination plumes or underground hazards in the pipeline corridor that would impact construction of the Proposed Project. Therefore, Segment 2 of the Proposed Project would have a less than significant impact in this regard and no mitigation measures would be required.

SEGMENT 3

Less Than Significant Impact. A review of the GeoTracker and EnvrioStor databases was conducted along the Segment 3 proposed pipeline alignment to determine the presence of hazardous materials site occurrences, pursuant to Government Code Section 65962.5 (SWRCB, 2020; DTSC, 2020). The database review returned 7 LUST listing and one CPS listing within 1-mile of the Proposed Segment 3 alignment. Six of the seven LUST listings have a status of 'Completed – Case Closed' and the one CPS listing has a status of 'Completed – Case Closed'. Based on a review of the GeoTracker and EnvrioStor databases, Segment 3 of the Proposed Project is not included on a list of hazardous material sites that would create a significant hazard to the public or the environment. Therefore, Segment 3 of the Proposed Project would have a less than significant impact in this regard and no mitigation measures would be required.

SEGMENT 4

Less Than Significant Impact with Mitigation. A review of the GeoTracker and EnvrioStor databases was conducted along the Segment 4 proposed pipeline alignment to determine the presence of hazardous materials site occurrences, pursuant to Government Code Section 65962.5 (SWRCB, 2020; DTSC, 2020). The database review returned two LUST listing and one CPS listing within one mile of the Segment 4 proposed pipeline alignment. One of the LUST listings has a status of 'Completed – Case Closed' while the other site, designated as 'Landmark Grocery' has a status of 'Open – Remediation'. The active LUST site is located approximately 750 feet east of the jack-and-bore crossing of Highway 20 at Dyer Lane. Review of the active LUST listing indicated that the LUST site recorded a diesel and gasoline spill in 2001 (SWRCB, 2020). As of 2013 the water quality objectives at this active LUST site had not been achieved and the contamination plume has not been defined. Therefore, due to the proximity of the Segment 4 alignment to the active LUST site and the undefined status of the contamination plume, Segment 4 of the Proposed Project has potential to encounter contamination associated with an active hazardous materials sites during construction. With the implementation of Mitigation **Measure HAZ-1, Prepare a Project Health and Safety Plan (HASP)**, Segment 4 of the Proposed Project would have a less than significant impact in this regard.

SEGMENT 5

No Impact. A review of the GeoTracker and EnvrioStor databases was conducted along the Segment 5 proposed pipeline alignment to determine the presence of hazardous materials site occurrences, pursuant to Government Code Section 65962.5 (SWRCB, 2020; DTSC, 2020). The database review returned two LUST listing within one mile of the Proposed Segment 5 proposed pipeline alignment. Both of the LUST listings have a status of 'Completed – Case Closed' and there is no evidence that these sites would result in contaminated soil or groundwater at the Segment 5 Proposed Project site. Based on a review of the GeoTracker and EnvrioStor databases, Segment 5 of the Proposed Project is not included on a list of hazardous material sites that would create a significant hazard to the public or the environment. Therefore, Segment 5 of the Proposed Project would have no impact in this regard and no mitigation measures would be required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. None of the Proposed Project Segments are located within an established airport land use plan or within two miles of a public airport. The nearest public airport to the Proposed Project is the Little River Airport, located approximately 9.80 miles south of the Segment 5 proposed pipeline alignment. Additionally, the Fort Bragg Airport is a private airport located approximately 2.1 miles north of the northern limit of Segment 2 proposed pipeline alignment. Given the distance of the Proposed Project from these airports, the Proposed Project would have no impact in this regard and no mitigation measures would be required.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

SEGMENT 2

Less Than Significant Impact with Mitigation. Segment 2 of the Proposed Project would have no impacts on Fort Bragg – Sherwood Road or access to adjacent residences and properties, upon the completion of construction. Operations would be the same as existing conditions upon construction completion. The Proposed Project would not increase capacity on Fort Bragg - Sherwood Road. The

Proposed Project would not impair an adopted emergency response plan or emergency evacuation plan, as Fort Bragg – Sherwood Road operations would be similar to existing conditions.

Access along Fort Bragg - Sherwood Road and to nearby properties would be maintained throughout construction. Segment 2 of the Proposed Project would require the implementation of traffic handling and one-way traffic control to complete construction activities. Proposed traffic handling and one-way traffic control have the potential to create traffic congestion on Fort Bragg – Sherwood Road at the Segment 2 Proposed Project site, which may temporarily interfere with police and fire response times within the vicinity. Potential impacts to emergency access as a result of traffic handling activities associated with Segment 2 of the Proposed Project are anticipated to be minor and would last for the approximate three-month construction period. The Proposed Project would be coordinated with the Fort Bragg Fire Department (FBFD), CALFIRE, Fort Bragg Police Department (FBPD), the Mendocino County Sheriff's Office (MCSO), and other law enforcement or emergency service providers within the area through a standard Construction Period Emergency Access Plan, as required under **Mitigation Measure PUB-1, Prepare Construction Period Emergency Access Plan**. The implementation of **Mitigation Measure PUB-1** would ensure that the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant with mitigation measures.

SEGMENT 3 AND NOYO RIVER CROSSING

Less Than Significant Impact with Mitigation. Segment 3 of the Proposed Project would have no impacts on the privately owned and gated Georgia Pacific Haul Road (Haul Road) or access to adjacent residences and properties, upon the completion of construction. Access along the Haul Road and to properties adjacent to the Segment 3 Proposed Project site would be maintained throughout construction. The Proposed Project would require the implementation of traffic handling and one-way traffic control to complete the Noyo River pipe lining construction activities. Proposed traffic handling and one-way traffic control have the potential to disrupt police and fire response times within the vicinity of the Segment 3 proposed pipeline. Potential impacts to emergency access as a result of traffic handling activities are anticipated to be minor due to the low ADT along the Haul Road (Caltrans, 2017), and would last for the approximate five-month construction period. The Proposed Project would be coordinated with Lyme. With the implementation of **Mitigation Measure PUB-1**, impacts to emergency access, and adopted emergency response and evacuation plans at the Segment 3 Proposed Project site would be less than significant.

SEGMENT 4

Less Than Significant Impact with Mitigation. Segment 4 of the Proposed Project would have no impacts on Highway 20, Dwyer Lane, or access to adjacent residences and properties upon the completion of construction. Access along Highway 20, Dwyer Lane, and to properties off Dwyer Lane would be maintained throughout construction. Segment 4 of the Proposed Project would avoid impacting traffic patterns or emergency access along Highway 20 through the use of a jack-and-bore crossing at Dwyer Lane. Temporary traffic handling and one-lane traffic control would be required along Dwyer Lane to safely complete construction of Segment 4. Proposed traffic handling and one-way traffic control have the potential to disrupt police and fire response times along Dwyer Lane. Potential impacts to emergency access as a result of traffic handling activities are anticipated to be minor due to the low ADT of Dwyer Lane (Caltrans, 2017), and would last for the approximate three-month construction period. With the implementation of **Mitigation Measure PUB-1, Prepare Construction Period Access Plan,** impacts to emergency access, and adopted emergency response and evacuation plans at the Segment 4 proposed pipeline site would be less than significant.

SEGMENT 5

Less Than Significant Impact with Mitigation. Segment 5 of the Proposed Project would have no impacts on FR 450 upon construction completion. Temporary traffic handling is not anticipated to complete construction of Segment 5, as FR 450 is not accessible for public use and is only utilized by CALFIRE for emergency response and maintenance. Coordination with CALFIRE and implementation of **Mitigation Measure PUB-1 Prepare Construction Period Access Plan** would ensure that Segment 5 of the Proposed Project would have a less than significant impact on emergency access and adopted emergency response and evacuation plans during construction.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

SEGMENT 2

Less Than Significant Impact with Mitigation. Segment 2 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along approximately the same alignment. Operations of the Segment 2 proposed pipeline would be similar to existing conditions upon the completion of construction activities. The improvements would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. The Proposed Project would not result in an increase in the number of people within the Proposed Project site once construction is complete. Therefore, operation of Segment 2 of the Proposed Project would have no impact on increased wildfire risk.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segment 2 proposed pipeline alignment could result in the ignition of a fire due to the heavily forested nature of the southern portion of Segment 2. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Proposed Project site. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan,** would reduce the potential for Segment 2 construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Construction related impacts would remain less than significant after implementation of **Mitigation Measure FIRE-1**.

SEGMENT 3

Less Than Significant Impact with Mitigation. Segment 3 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along a new alignment. Operations of the Segment 3 proposed pipeline would be similar to existing conditions upon completion of construction. The Segment 3 proposed pipeline would require land clearing, timber harvest, access road grading and earthwork to install the proposed pipeline along a new alignment. A temporary construction easement would likely be required for proposed access road grading, pipe stringing, trench excavation, trench soil storage, pipeline installation, trench backfill and compaction, and restoration of the right-of-way (ROW). Setbacks from the top of slopes should be approximately 150 feet, if possible, given site conditions. The Segment 3 proposed pipeline would follow existing skid trails or roads to the extent possible to minimize impacts to vegetation. The new alignment would run through a gentler sloping topography than the existing pipeline alignment. These changes would not exacerbate wildfire risks, and therefore would not expose people in the surrounding area to pollutants due to wildfire or the uncontrolled spread of wildfire. The improvements would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. The Segment 3 proposed pipeline improvements would require the installation of an access road, which could potentially marginally increase fire risk within the

Proposed Project area; however, implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan,** would ensure that Proposed Project improvements would have less than significant impacts on fire risk.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segment 3 proposed pipeline alignment could result in the ignition of a fire due to the heavily forested nature of the Proposed Project area. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Proposed Project site. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan,** would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Construction related fire impacts would remain less than significant after implementation of **Mitigation Measure FIRE-1**.

SEGMENT 4

Less Than Significant Impact with Mitigation. Segment 4 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along approximately the same alignment. Operations of the Segment 4 proposed pipeline would be similar to existing conditions upon the completion of construction activities. The Segment 4 improvements would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. The improvements would require the installation of an access road, which could potentially marginally increase fire risk within the Proposed Project area; however, implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan,** would ensure that Proposed Project improvements would have a less than significant impacts on fire risk in the Segment 4 Proposed Project area.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segment 4 proposed pipeline alignment could result in the ignition of a fire due to the heavily forested nature of the southern portion of Segment 4. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Proposed Project site. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1** would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices.

SEGMENT 5

Less Than Significant Impact with Mitigation. Segment 5 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along approximately the same alignment. Operations of the Segment 5 proposed pipeline would be similar to existing conditions upon the completion of construction activities. The Segment 5 improvements would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. The improvements would require the installation of an access road, which could potentially marginally increase fire risk within the Segment 5 Proposed Project area; however, implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan,** for operations of Segment 5 would ensure that Proposed Project improvements would have less than significant impacts on fire risk in the Proposed Project area.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segment 5 proposed pipeline alignment could result in the ignition of a fire due to the heavily forested nature of the Segment 5 Proposed Project area. During construction, heavy equipment and passenger

vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Proposed Project site. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1, Prepare Fire Safety Plan**, would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Construction related impacts would remain less than significant after implementation of **Mitigation Measure FIRE-1**.

4.9.3 Mitigation Measures

Mitigation Measure HAZ-1: Prepare a Project Health and Safety Plan (HASP). A HASP shall be developed for the Project by the City's construction contractor. The City shall review and approve the HASP. The HASP shall describe appropriate procedures to follow in the event that any contaminated soil or groundwater is encountered during construction activities. Any unknown substances shall be tested, handled and disposed of in accordance with appropriate federal, state and local regulations.

Mitigation Measure HAZ-2: Conduct Asbestos Containing Materials Survey. A California-licensed abatement contractor will conduct a survey for asbestos containing materials prior to any required demolition (including concrete elements) and contractor will submit a National Emission Standard for Hazardous Air Pollutants (NESHAP) notification. Per Section 14-9.02 of the asbestos NESHAP regulation, all "demolition activity" requires written notification even if there is no asbestos present. This notification should be typewritten and postmarked or delivered no later than ten days prior to the beginning of the asbestos demolition or removal activity.

- If asbestos containing materials are found during asbestos concrete pipeline removal, the following is recommended:
- The materials shall be assumed hazardous and handled as such until testing is completed.
- Samples of suspect materials shall be collected for laboratory analysis, and all activities that may impact the materials shall cease until results are reviewed.
- Removal, disposal, storage and transportation of materials from the existing pipeline that contain asbestos shall be performed in compliance with Caltrans Standard Specifications 14-11.16, and other Federal and State regulations for hazardous waste.

Mitigation Measure PUB-1: Prepare Construction Period Emergency Access Plan. See the Public Services section of this document for information about this mitigation measure.

Mitigation Measure FIRE-1: Prepare Fire Safety Plan. See the Wildfire section of this document for information about this mitigation measure.

4.9.4 References

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4.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Hydrology and Water Quality – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv. impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

4.10.1 Setting

The City of Fort Bragg is located in California's north coast region, within Mendocino County, California. The City of Fort Bragg lies within the Coastal Franciscan Ecological Subsection of California (Miles and Goudey, 1997). This subsection is a steep, mountainous area of the northern California Coast Ranges, near the coast, south from Humboldt Bay to the Russian River. There is substantial oceanic influence on climate, including summer fog. The subsection is particularly mountainous, with rounded ridges, steep and moderately steep sides, and narrow canyons. The mean annual precipitation in this subsection is about 43 inches, with mostly rain at lower elevations. Runoff is rapid and many of the smaller streams are dry by the end of summer. Natural lakes are absent from the Coastal Franciscan Ecological Subsection (Miles and Goudey, 1997).

The City of Fort Bragg's water supply comes from three main sources including Waterfall Gulch, Newman Gulch, and the Noyo River. Raw water from the Noyo River is conveyed from the Madsen Hole intake structure, located to the east of the water treatment plant (WTP), and is pumped via 10-inch and 14-inch diameter pipelines directly to the WTP. This part of the pipeline was recently replaced and is not included in the Proposed Project but is included to represent the full scope of the City's water supply. The second and third sources of supply are from two local streams at the Waterfall Gulch and Newman Gulch watersheds, respectively, located south of the City's WTP. Significant sections of the pipeline are situated

in the steep, heavily wooded, and landslip-prone gorges of Newman Gulch and Covington Gulch. Sections of the pipeline corridor are also characterized by shallow groundwater, springs, and sensitive riparian environments, with portions lying within the California Coastal Commission designated Coastal Zone. The pipeline includes three water crossings including the Noyo River, Hare Creek, and Covington Gulch. The elevation at the pipeline's highest point is approximately 335 feet above sea level (Waterfall Gulch intake), while the low point in the profile is at the Noyo River Crossing just above sea level.

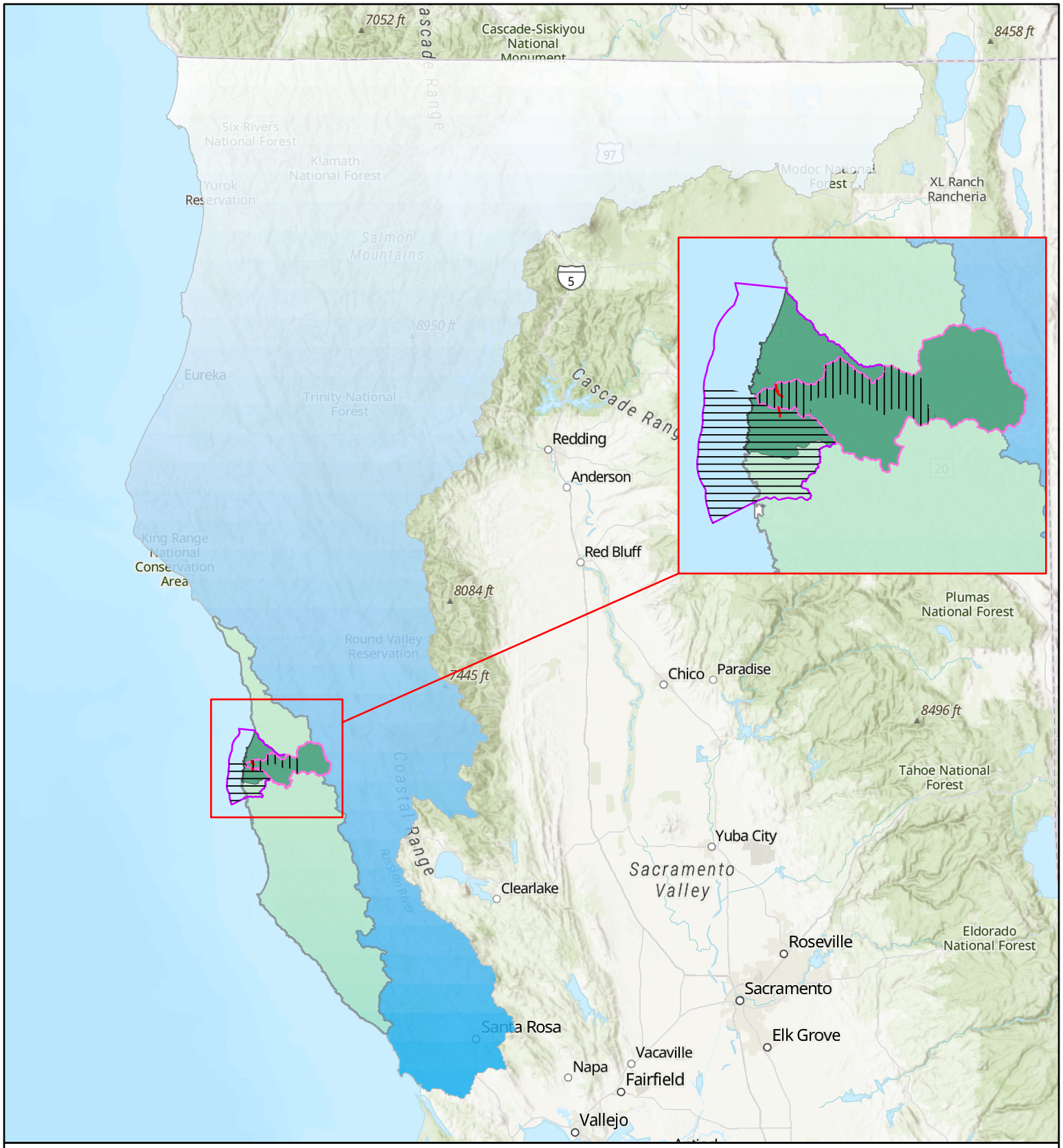
The Proposed Project is located in the Mendocino Coast Hydrologic Unit (HU [Hydrologic Unit Code 180101080204]) within the Noyo River Hydrologic Area (HA). The Hydrologic Sub-Area is undefined. The Proposed Project is further located in the Lower Noyo River sub-watershed, within the Noyo River watershed (**Figure 4-13**).

The Noyo River HA drains approximately 166 square miles and the Mendocino Coast HU covers approximately 1,599 square miles. Surface water storage in the Mendocino Coast HU is minor, and includes Newman Reservoir and Newman Gulch, both tributaries to the Noyo River. The Noyo River watershed encompasses an area of approximately 166 square miles and contains approximately 200 miles of stream that is habitat for fish, plus another 300 miles of perennial or intermittent stream that is habitat for amphibians with another 300 miles of seasonal watercourse (West Coast Watershed, 2007). The Noyo River watershed is a forested coastal watershed that drains into the Pacific Ocean at the Noyo Harbor in the City of Fort Bragg and is approximately 34 miles in length. 19% of the watershed is within JDSF, which is publicly owned and managed by the California Department of Forestry and Fire Protection (CALFIRE).

The Proposed Project is within the Fort Bragg Terrace Area Groundwater Basin. The groundwater basin is approximately 38 square miles and consists of a series of discontinuous, uplifted marine terrace deposits that lie along the northern California coastline within Mendocino County. Estimated storage capacity for the total storage of the Fort Bragg Terrace Area Groundwater Basin is approximately 112,780 acre-feet (af) (Department of Water Resources [DWR], 1982). There are no recent groundwater storage estimates published; however, it was concluded that under normal rainfall conditions, the terrace deposits reach maximum storage by mid-January of each year (DWR, 1982). Groundwater quality is generally good within the basin. Ferrous iron and sulfate occur sporadically within the Proposed Project (Department of Water Resources, 1982).

The Coast Ranges are underlain primarily by the Franciscan Formation, a highly erosive geologic unit made up of fractured and weathered sandstone and shale (Bailey et al., 1964). In the Noyo River watershed, the Coastal Belt Franciscan predominates with the exception of the Coastal Belt Franciscan Melange that is found in the southwestern headwaters section of the watershed. The Coastal Belt Franciscan bedrock is highly fractured and is subject to mass wasting events such as debris slides, deep-seated landslides, debris flows, and torrents (Matthews, 1999).

The primary water quality concerns for the Noyo River watershed are related to drinking water supply and the anadromous fishery. These issues include salmonid habitat disturbance, sedimentation of streams and harbors, and increasing turbidity (North Coast Regional Water Quality Control Board [NCRWQCB], 2011). The Noyo River is listed on the Clean Water Act (CWA) Section 303(d) list as impaired by excessive sediment loading associated with historic logging, overgrazing, and road building. Contamination from diesel, penta- and tetrachlorophenol, and dioxins in stream sediments has been documented in the Noyo River as a result of past activities at a wood treatment plant. Georgia Pacific has an old bark dump on the north side of the river where tannins may be leaching into a wetland area at Newman Gulch. Other pollution is attributed to the use of herbicides on forestland and frequent oil spills and fish waste dumping.



Legend

- Proposed Project
- North Coast Hydrologic Region
- Mendocino Coast Hydrologic Unit
- Noyo River Hydrologic Area

Watershed

- Noyo River
- Pudding Creek-Frontal Pacific Ocean

Subwatershed

- Hare Creek-Frontal Pacific Ocean
- Lower Noyo River

Dewberry

N

0 5 10 20 30 40 Miles

Spatial Reference
Name: NAD 1983 StatePlane California II FIPS 0402 Feet
GCS: GCS North American 1983
Datum: North American 1983

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Watershed Map

Figure 4-13

Beneficial uses are set in the Basin Plan for the North Coast Region and Noyo River HA. Beneficial uses include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, freshwater replenishment, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sport fishing, aquaculture, cold freshwater habitat, wildlife habitat, rare, threatened, or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, estuarine, and aquaculture (North Coast Basin Plan, 2018). Water quality objectives for all inland surface waters, enclosed bays, and estuaries of the basin have been set for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pesticides, pH, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity (North Coast Basin Plan, 2018).

SEGMENT 2

Local Hydrology

Photo 4-15. Small unnamed stream in Segment 2.

The Class II Unnamed Stream is the main small water feature within the proposed Segment 2 alignment (**Photo 4-15**). According to the CDFW, Class II streams are defined as streams that do not support fish population, but typically flows year-round and supports aquatic life. The stream is not defined on the National Wetland Inventory Mapper (USFWS, 2020). According to the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979), the stream can be classified as "riverine lower perennial unconsolidated bottom". The lower perennial stream system exhibits low gradient and slow water velocity. There is no tidal influence, and some water flows throughout the year. The substrate consists mainly of sand and mud, and fauna is composed mostly of species that reach their maximum abundance in still water (Cowardin et al., 1979). On the day of the May 13, 2020 survey, the Class II unnamed stream was flowing about 1-2 cubic feet per second. Water was clear with a maximum depth of approximately 3 inches deep. The substrate was mostly fine silt/sand and heavily vegetated by species such as skunk cabbage and ferns. The stream is routed underneath the existing dirt road with several culverts along the Proposed alignment. These culverts may be replaced with the proposed project. The stream is a minor tributary to the Noyo River (**Photo 4-16**). Within the Proposed Project site, the Class II Unnamed Stream is approximately 1 mile in length.

Photo 4-16. Noyo River.

SEGMENT 3

Local Hydrology

Although Segment 3 would involve no in-water work, there are several aquatic features within this area including Newman Reservoir, Newman Creek, and Newman Gulch Pond (**Photo 4-17**). Newman Reservoir, near Summers Lane Reservoir, is classified as a freshwater pond (PUBHh) by the National Wetlands Inventory (NWI) Mapper (USFWS, 2020). Newman Reservoir was created to store water for the City of Fort Bragg's existing raw water pipeline.

Newman Reservoir is approximately 0.45 acres total in size. Newman Creek, which flows out of Newman Reservoir, is classified as a riverine intermittent streambed temporarily flooded aquatic (R4SBA) feature by the NWI Mapper. Newman Creek veers north where Segment 3 is aligned in a northwest direction. Lower down in the watershed, the manmade Newman Gulch Pond is classified as a freshwater emergent wetland (PEM1/SS1Ch) (PEM1C) and freshwater forested/shrub wetland (PFO1C) feature by the NWI Mapper. The freshwater emergent wetland is described as being diked/impounded and supports specifically broad-leaved deciduous forests. The freshwater forested/scrub shrub wetland is palustrine, forested, seasonally flooded and supports broad-leaved deciduous forest types. On the day of the May 14, 2020 survey, Water temperature was approximately 68 degrees Fahrenheit (°F; 20°Celsius) and water was clear and slow moving. The substrate was silty sand with some medium sized cobbles. The creek had short, steep to undercut banks and was heavily vegetated. The creek also contained a significant amount of fallen tree branches and other plant material.

Photo 4-17. Newman Reservoir.

Newman Reservoir's littoral zone is heavily vegetated with various mixed conifer forests and has pockets of floating pond lily.

Newman Gulch Pond was heavily vegetated by pond lily on the day of the May 14 survey. The man-made pond reservoir drains to Noyo River. Water was clear on the day of the survey. The pond banks are surrounded by mixed confer redwood forests, sedge, and alder trees. The ubiquitous invasive species scotch broom was also observed throughout this area.

SEGMENT 4

Local Hydrology

The main aquatic features considered in Segment 4 are Hare Creek and Covington Gulch, a riverine habitat classified as a riverine intermittent streambed seasonally flooded (R4SBC) feature by the NWI Mapper (USFWS, 2020). This section of the stream connects to the main channel of Hare Creek just southwest of the Segment 4 alignment. Hare Creek flows in an east to west direction and ultimately connects to the Pacific Ocean approximately 2 miles west of the pipeline crossing. Hare Creek at Covington Gulch was fast flowing on the day of the May 14, 2020 survey. The creek was approximately 10 feet across and about 3 feet deep. Water temperature was 66°F (19°C). Hare Creek at Covington Gulch contained several fallen trees and tree branches and was heavily vegetated on its banks. Covington Gulch appears to have been a popular dumping spot and was filled with different types of human trash, such as car parts, refrigerators, and other large items.

Photo 4-18. Hare Creek at Segment 5.

SEGMENT 5

Local Hydrology

The main aquatic feature within Segment 5 is Hare Creek (**Photo 4-18**). The main channel of Hare

Creek is a riverine, upper perennial, unconsolidated bottom, permanently flooded (R3UBH) system according to the NWI Mapper (USFWS, 2020). Water temperature was approximately 19°C, clear, and the water was fast moving on the day of the May 14, 2020 survey. The banks were extremely steep and vegetated, and both abandoned, old pieces of the City's pipeline and the existing live pipeline were visible. The creek was approximately 20-25 feet wide in this area. Water quality data for Hare Creek are sparse based on internet searches of state and federal monitoring programs.

The Proposed Project would be subject to permits from the NCRWQCB and the State Water Resources Control Board (SWRCB). A National Pollution Discharge Elimination System (NPDES) Construction General Permit would be needed from the NCRWQCB to ensure that the Proposed Project would not result in pollution to streams. Other permits required for the Proposed Project would include a Clean Water Act Section 401 Water Quality Certification, an Army Corps of Engineers Section 404 Permit, and a CDFW 1600-1602 Lake and Streambed Alteration Agreement.

4.10.2 Regulatory Setting

FEDERAL

Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. The Federal Environmental Protection Agency delegated to the California State Water Resources Control Board (SWRCB) the implementation and administration of the NPDES program in California. The SWRCB established nine RWQCBs. The SWRCB enacts and enforces the Federal NPDES program, and all water quality programs and regulations that cross Regional boundaries. The nine RWQCBs enact, administer, and enforce all programs, including NPDES permitting, within their jurisdictional boundaries. Section 402(p) requires permits for discharges of stormwater from industrial, construction, and Municipal Separate Storm Sewer Systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S, including wetlands. This permit program is administered by the U.S. Army Corps of Engineers (Corps).

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The Corps issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide permits. Regional permits are issued for a general category of activities

when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Individual permits: Standard Individual permit and Letter of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of Corps' Individual permits. For Standard Individual permit, the Corps decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA, in conjunction with the Corps, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that Corps may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures have been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the Corps, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

STATE

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., such as groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by WDRs and may be required even when the discharge is already permitted or exempt under the CWA.

The SWRCB and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) as required by the CWA and regulating discharges to protect beneficial uses of water bodies. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions, and then set standards necessary to protect these uses. Consequently, the water quality standards developed for particular water body segments are based on the designated use and vary depending on such use. Water body segments that fail to meet standards for specific pollutants are included in a Statewide List in accordance with CWA Section 303(d). If a RWQCB determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed. The SWRCB implemented the requirements of CWA Section 303(d) through Attachment IV of the Caltrans Statewide MS4, as it includes specific TMDLs for which Caltrans is the named stakeholder.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by

approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater dischargers, including MS4s. The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying stormwater." The SWRCB has identified Caltrans as an owner/operator of an MS4 pursuant to federal regulations. The Caltrans' MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted. The MS4 stormwater permit requirements only apply to areas inside the City limits.

Construction General Permit

Construction General Permit (NPDES No. CAS000002, SWRCB Order No. 2009-0009-DWQ, adopted on November 16, 2010) became effective on February 14, 2011 and was amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. The permit regulates stormwater discharges from construction sites which result in a DSA of one acre or greater, and/or are smaller sites that are part of a larger common plan of development.

For all projects subject to the CGP, the applicant is required to hire a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) to develop and implement an effective SWPPP. All Project Registration Documents, including the SWPPP, are required to be uploaded into the SWRCB's on-line Stormwater Multiple Application and Report Tracking System (SMARTS), at least 30 days prior to construction.

Waivers from CGP coverage

Projects that disturb over 1.0 acre but less than 5 acres of soil, may qualify for waiver of CGP coverage. This occurs whenever the R factor of the Watershed Erosion Estimate (=RxKxLS) in tons/acre is less than 5. Within this CGP formula, there is a factor related to when and where the construction will take place. This factor, the 'R' factor, may be low, medium or high. When the R factor is below the numeric value of 5, projects can be waived from coverage under the CGP, and are instead covered by the Caltrans Statewide MS4.

Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a SWPPP, to implement soil erosion and pollution prevention control measures, and to obtain coverage under the CGP.

The CGP contains a risk-based permitting approach by establishing three levels of risk possible for a construction site. Risk levels are determined during the planning, design, and construction Segments, and are based on project risk of generating sediments and receiving water risk of becoming impaired. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows.

Section 404 and 401 Permitting

The City's project will trigger the need for a CWA Section 404 permit for work in and near area water bodies. Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by the Corps. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the Corps issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may prescribe a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act). WDRs may specify the inclusion of additional project features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project. The project would need CWA Section 404 permit for construction of various Segments of the project.

CDFW Lake and Streambed Alteration Program

Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following:

- Substantially divert or obstruct the natural flow of any river, stream, or lake.
- Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or
- Deposit debris, waste or other materials that could pass into any river, stream, or lake.

Please note that "any river, stream or lake" includes those that are episodic (they are dry for periods of time) as well as those that are perennial (they flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

CDFW requires a Lake or Streambed Alteration (LSA) Agreement when it determines that the activity, as described in a complete LSA Notification, may substantially adversely affect existing fish or wildlife resources. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. DFW may suggest ways to modify your project that would eliminate or reduce harmful impacts to fish and wildlife resources. Before issuing an LSA Agreement, DFW must comply with the CEQA.

4.10.3 Discussion

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than Significant with Mitigation. Potential short-term temporary increases in Turbidity and Total suspended solids to local water ways from construction activities Construction of the Proposed Project has the potential to expose bare soil and potentially generate other water quality pollutants that could be exposed to precipitation and subsequent entrainment in surface runoff to any of the streams present in Segments 2 through 5 (Unnamed Class II Stream, Noyo River, Newman Gulch, Newman Gulch Creek, Newman Reservoir, Covington Gulch, Hare Creek). For the Noyo River pipeline lining, the excavation pit located on the north side of the river (approx. 10'x10' or 100 square feet) would be in an area that is already impacted and plowed routinely by the property owner and may clear existing grasses and ruderal vegetation in the Noyo River floodplain and disturb soils that could

be transported to the river if not planned accordingly. There is high potential for soil erosion and water quality degradation in the steep sections of the project in Segments 4 and 5 that drain to Covington Gulch and Hare Creek. Both Hare Creek and Covington Creek have relatively clear water conditions with minimal turbidity during low flow conditions when construction is proposed. Construction activities involving soil disturbance, excavation, cutting, and grading activities could result in increased erosion and sedimentation to waterways and downstream waters. Equipment fluids could be exposed to precipitation and subsequent runoff. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff and contribute to water quality degradation.

Compliance with permit requirements of the NCRWQCB and SWRCB stormwater rules would assure the Proposed Project does not violate water quality standards or waste discharge requirements. **Mitigation Measure BIO-9, Protect Water Quality and Aquatic Resources in Hare Creek and Covington Gulch,** found in the Biological Resources section**,** would protect water quality, and avoid impacts to wetlands and other aquatic habitats. Additionally, implementation of **Mitigation Measure HYD-1, Develop Water Pollution Control Plan and Implement Water Quality Best Management Practices,** would require the development of a SWPPP and implementation of construction BMPs to protect water quality further throughout the Proposed Project and reduce impacts to a less than significant level.

b) Substantially decrease groundwater supplies Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant. Project would not substantially deplete groundwater resources as the City's water supply relies on local surface waters and does not rely on local groundwater aquifers. No segments of the Proposed Project area are actively used for groundwater recharge. The Proposed Project would not interfere with groundwater supplies or groundwater recharge. The City's water supply utilizes surface water resources, not groundwater sources. All Segments of the Proposed Project would be constructed using traditional, open-cut, direct buried methods, except for the slip lining of the Noyo River Crossing in Segment 3 and the jack-and-bore crossing of Dwyer Lane in Segment 4. Shallow groundwater maybe encountered in some areas of Segment 2 and from pit excavations for the Noyo River Crossing lining. If groundwater is encountered, water will be pumped out of the pit and on the nearby farmland for percolation. The pipeline would be buried a maximum of 5 feet below ground. The pipeline does not have the potential to interfere with groundwater levels. It is unlikely that the pipeline would intercept shallow groundwater under either wet or dry conditions, across all segments. Therefore, the impact of the Proposed Project on groundwater would be less than significant.

ci) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

SEGMENT 2

Less than Significant with Mitigation. Project would not have a substantial impact to existing drainage pattern of Class II Unnamed Stream which would result in substantial erosion or siltation on- or off-Site from Segment 2 pipeline construction. Construction of Segment 2 may require several culvert replacements and temporary diversion of water around each construction site, if constructing the pipeline below the culverts is not possible. This general area of the project has flowing water, is moist, and has various seeps and wet areas on both side of the existing road where the existing pipeline and

new pipeline is located. Segment 2 of the Proposed Project would not result in substantial erosion or siltation on- or off-site as a result of a drainage pattern alteration. The existing Class II unnamed stream would not be altered in its current course. It appears to flow year-round and is a combination of surface runoff and seepage from local geologic formations. Project does not include new impervious surfaces that could generate incremental increases in runoff when compared to ambient conditions. Stream water would be temporarily rerouted around each culvert using a small coffer dam and pump to maintain water flow downstream during pipeline trenching and culvert replacement, if necessary. Minor increases in background turbidity and suspended solids levels may occur for a short-period during initial placement of the cofferdam and pump. The unnamed stream does not support resident fish or minnow but is suitable habitat for amphibians. Levels should resume quickly to background levels after diversion operations begins. The City proposes to construct during the dry season when stream flows are lower and soil erosion potential from stormwater runoff is lower. This temporary increase in background levels is considered potentially significant requiring mitigation. Implementation of **Mitigation Measure HYD-1** and **BIO-10** would reduce this potential impact to less than significant levels. This activity would trigger the need for compliance with CDFW 1602 agreement. All activities would be required to follow the terms and conditions of the CDFW and CWA Section 404 Permits, described above. The Proposed Project would be designed and stabilized to prevent erosion and siltation following and during construction.

SEGMENT 3

Less than Significant Impact. Segment 3 of the Proposed Project would not result in substantial erosion or siltation on- or off-site as a result of a drainage pattern alteration. All work would be performed outside of the waters and nearby wetlands. Segment 3 does not involve any in-water work in the Noyo River or any another stream. Trenchless technology via slip lining of the Noyo River Crossing would occur outside the Noyo River floodplain. The existing waters would not be altered in their course, and the Proposed Project would be designed and stabilized to prevent erosion and siltation following and during construction.

SEGMENT 4

Less than Significant Impact. Segment 4 of the Proposed Project would not result in substantial erosion or siltation on- or off-site as a result of a drainage pattern alteration. All Segment 4 work would be constructed outside of the ordinary high-water mark of Covington Gulch. Segment 4 would not involve any in-water work or water crossings. The existing Covington Gulch would not be altered in its course, and the Proposed Project would be designed and stabilized to prevent erosion and siltation following and during construction.

SEGMENT 5

Less than Significant Impact with Mitigation. Segment 5 of the Proposed Project could result in substantial erosion or siltation on- or off-site to Hare Creek as a result of a pipeline construction on steep slopes and in-water work. The existing Hare Creek would not be altered in its course, and the Proposed Project would be designed and stabilized in order to prevent erosion and siltation following and during construction.

cii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No Impact. The proposed project is not expected to result in new impervious surfaces or increases rates or amounts of surface runoff. The pipeline trench will be backfilled with native materials and

not generate impervious surfaces. The City will prepare erosion control plans and implement BMPs to comply with existing City and State requirements.

ciii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. Segments 2, 3, 4, and 5 would not result in the creation of new impervious surfaces that would create or contribute to additional stormwater runoff that could exceed existing drainage systems. Several small culverts in Segment 2 may be replaced as part of pipeline construction to improve and restore drainage capacity in this area and is considered beneficial to drainage and stream erosion concerns. Many of the culverts are full of sand and fine sediment. No additional stormwater runoff is expected to be generated as a result of the Proposed Project. All segments of the Proposed Project would be required to follow the SWPPP and BMPs regarding stormwater runoff and water quality during construction.

civ) Impede or redirect flows?

No Impact. The Proposed Project would temporarily redirect water flows in the Class II stream in Segment 2 and in Hare Creek during construction, but flows would be restored after construction is completed. During construction for the Noyo River Crossing improvements, trenchless methods would be used to slip line the existing pipeline and no work would occur in the river. During construction, the ESHAs and other waters would be protected by the required buffers, SWPPP, BMPs, and Erosion Control Plan for each Segment of the Proposed Project. Therefore, there would be no effect to flows within the Proposed Project.

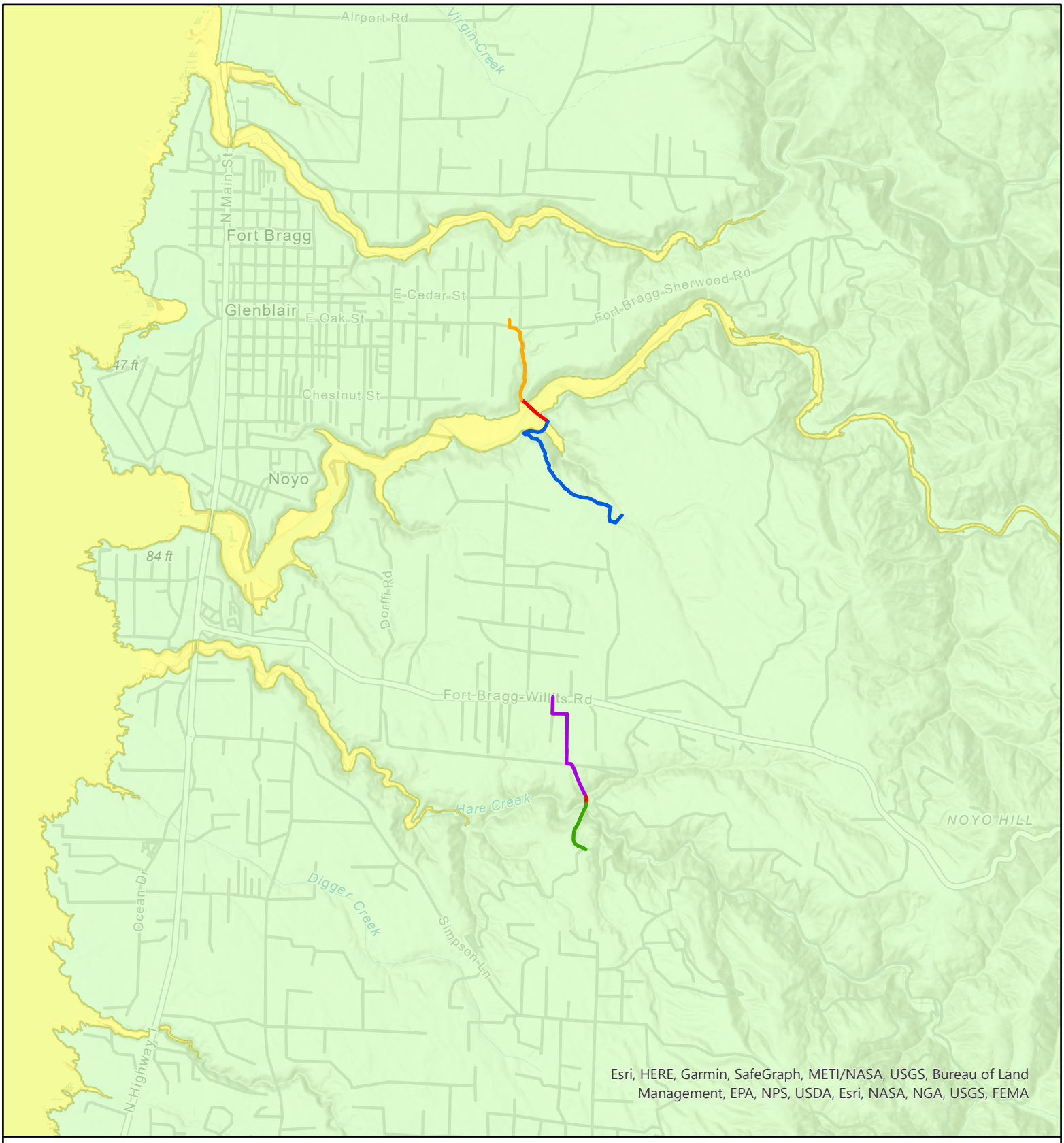
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

SEGMENT 2, 3, AND NOYO RIVER CROSSING

Less than Significant. The tsunami zone in the City of Fort Bragg encompasses all areas that are below 60 feet elevation (City of Fort Bragg, 2006). Segments 2 and portions of Segment 3 are within the Tsunami zone. The area between the south end of Segment 2 and the north end of Segment 3 is approximately 15 feet above msl. This area is considered the "Tsunami Zone", as shown in **Figure 4-14** from the California Department of Conservation (2009). The existing pipeline is buried under the Noyo River, and the proposed pipeline in Segment 2 and Segment 3 would also be buried underground. In the event a tsunami damaged the pipeline buried in this area, the pipeline carries untreated raw water, and would not cause any contamination. Therefore, the impact of a tsunami would be less than significant to Segment 2 and Segment 3 pipelines, and no pollutants would be released in the case of a tsunami or flood.

SEGMENT 4 AND 5

No Impact. A seiche is a standing wave occurring in a bounded body of water such as a lake or reservoir, generally due to meteorological effects such as wind or earthquakes. Segment 4 and Segment 5 do not exist within a seiche zone or the flood hazard zone. Therefore, it is extremely unlikely that the Proposed Project would be affected by a flood, tsunami, or seiche. The Proposed Project at Segment 4 and Segment 5 would not result in inundation by flood, tsunami, or seiche.



Legend

- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Existing Pipeline to be Retained

Tsunami Hazard Area

Evacuate

- No, Outside Hazard Area
- Yes, Tsunami Hazard Area

Dewberry

N

0 0.13 0.25 0.5 0.75 Miles

Source: Esri Online Basemap, World Terrain, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Tsunami Hazard Area Map

Figure 4-14

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. The Proposed Project would replace existing pipelines in Segments 2, 3, 4, and 5, designed to current hydrologic and structural standards, along a parallel or improved alignment. The existing pipeline would be abandoned in place. Operation of the Proposed Project would be similar to existing conditions. During construction, the Proposed Project would adhere to, and implement, permitting requirements, building/grading standards, and site-specific BMPs across all Segments. Therefore, the Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. No impact would occur as a result of the Proposed Project, during construction or following completion of the Proposed Project. No mitigation measures would be required.

4.10.4 Mitigation Measures

Mitigation Measure HYD-1: Develop Water Pollution Control Plan and Implement Water Quality Best Management Practices: Before any ground-disturbing activities, the City shall prepare and implement a Water Pollution Control Plan (WPCP) that includes erosion control measures and construction waste containment measures to ensure that local waterways are protected during and after construction. The WPCP shall follow guidance in the current version of the California Stormwater Quality Association (CASQA) BMP Handbook. The WPCP shall include site design to minimize offsite storm water runoff that might otherwise affect adjacent lake or stream habitat.

The WPCP shall require that the construction contractor implement BMPs to protect water quality within the various watercourses of the project. CASQA has developed resources for preventing water pollution during construction activities.

Based on review of the project, the following or equivalent BMPs will be used by the construction contractor when developing the WPCP:

- Silt fencing
- Hydraulic mulch
- Hydroseeding
- Fiber rolls
- Dewatering operations
- Material and equipment use over water
- Other spill control and prevention measures

The WPCP will also require that the construction contractor cover or otherwise stabilize all exposed soil 48 hours prior to potential precipitation events of greater than 0.5 inch.

4.10.5 References

California Department of Conservation. 2009. Mendocino County Tsunami Inundation Maps. Accessed at https://www.conservation.ca.gov/cgs/tsunami/maps/mendocino.

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California Department of Transportation (Caltrans). 2020. Caltrans Water Quality Planning Tool. Accessed at http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx.

California Department of Water Resources (DWR). 1982. Mendocino County Coastal Ground Water Study. Northern District.

City of Fort Bragg. 2006. Tsunami Contingency Plan. Accessed at https://city.fortbragg.com/DocumentCenter/View/2362/Tsunami-Contingency-Plan--Final-PDF.

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Miles and Goudey. 1997. Ecological Subregions of California.

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USFWS. 2020. National Wetlands Inventory Wetlands Mapper. Accessed at https://www.fws.gov/wetlands/data/mapper.html.

West Coast Watershed. 2007. Noyo River Watershed Enhancement Plan.

4.11 Land Use and Planning

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Land Use and Land Use Planning – Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

4.11.1 Setting

The Proposed Project would replace almost two miles of existing raw water pipeline and is divided into four distinct segments. The proposed project begins at Segment 2, just outside the limits of the City of Fort Bragg, and would extend to the end of Segment 5, located in JDSF. Segments 2, 3, 4, and 5, are located within the Mendocino County General Plan area.

The land use and zoning designations for each segment are listed below in **Table 4-10.**

Table 4-10. Land Use and Zoning Designations for the Proposed Project

Land Use Designations	Zoning Designations
Segment 2	
RR1 AG 60-DL	RR1 AG 60:DL
Segment 3	
AG 60 FL 160 RR 5 RR 160	AG 60 TP RR5 RL
Segment 4	
RR 2 PL	RR2 TPZ
Segment 5	
PL	TPZ

The following are existing land use plans that are relevant to the Proposed Project, including the City of Fort Bragg General Plan, Mendocino County General Plan, Mendocino County Coastal Plan, and the Jackson Demonstration State Forest Management Plan.

CITY OF FORT BRAGG INLAND GENERAL PLAN

The Fort Bragg Inland General Plan applies only to the non-coastal zone areas of the City of Fort Bragg. The Land Use Element establishes land use designations with types and intensities of land use, including open space and parks, and policies and programs regarding annexation, redevelopment, and the boundaries of the Sphere of Influence. The City's water treatment plant is within the General plan area, but rest of the project is located outside of the City limits within the jurisdiction of Mendocino County.

Land Use Element

Goals and policies from the Fort Bragg Inland General Plan that are relevant to the Proposed Project are as follows:

Policy LU-1.1. Implementation of the Land Use Designations Map: Implement the Land Use Designations Map by approving development and conservation projects consistent with the land use designations and ensure consistency between the Inland General Plan and the Inland Land Use and Development Code.

CITY OF FORT BRAGG COASTAL GENERAL PLAN

The Coastal General Plan establishes policies for all land within the Fort Bragg Coastal Zone (CZ). Approximately one-third of the City of Fort Bragg is located within the CZ, including all of the lands west of Highway One and much of the land on the east side of the highway that is south of Walnut Street. Segment 3 of the Proposed Project is entirely within the CZ, and all work must adhere to the Mendocino County Coastal Plan.

The following relevant goals and policies of the Coastal General Plan are as follows:

Policy 1-2: Where policies within the Coastal General Plan overlap or conflict, the policy which is the most protective of coastal resources shall take precedence.

Policy 1-3: Prior to the issuance of any development permit required by this Plan, the City shall make the finding that the development meets the standards set forth in all applicable Coastal General Plan policies.

Land Use Element

The Land Use Element is the heart of the Coastal General Plan since it has the broadest scope of the required elements and provides an overview of the long-term development and conservation goals and policies of the City.

The City adopted the *Fort Bragg Redevelopment Project* in 1987 which provides a framework for redeveloping about 1,130 acres of the City. The Project was established to address a number of adverse conditions and to achieve certain goals. Goals that are relevant to the Proposed Project are as follows:

- Improve the City's infrastructure such as roads, parking facilities, storm drainage, water and sewer capacity, pedestrian paths, and parks.

The Proposed Project would be classified as Public Facilities and Services (PF); this land use designation is intended for existing and proposed public buildings, utility facilities, water and wastewater treatment facilities, and related easements.

Environmentally Sensitive Habitat Areas

Policy OS-1.1: Definition of ESHA. "Environmentally sensitive habitat area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

MENOCINO COUNTY GENERAL PLAN

Mendocino County contains 2,246,000 acres, or 3,150 square miles, and is the 15th largest county in California in terms of land area. The goals of the Development Element that are relevant to the Proposed Project are as follows:

Goal DE-7: Basic Infrastructure - roadways, water and sewer service, schools, libraries, internet access, etc. - sufficient to support existing and future development, in place when needed, and fully funded both initially and on an ongoing basis.

Goal DE-16: Efficient and adequate public water and sewer services.

Goal DE-22: Utility systems that are readily available and support a viable economy, safeguard health, and do not detract visually from the area.

The following policies that are relevant to the Proposed Project are:

Policy DE-5: Designate sufficient land to accommodate the projected commercial, industrial, residential, and infrastructure needs of each community, compatible with General Plan policies, site planning constraints, and local community objectives.

Policy DE-6: Land use classifications shall be broad enough to allow flexibility in implementation, but specific enough to provide sufficient direction for carrying out General Plan objectives.

Policy DE-19: Land Use Category: PL-Public Lands

Intent: The Public Lands classification is intended to be applied to land in public ownership not appropriately included in some other classification. The classification is also intended to be applied to lands held and managed for public recreation or appropriate for acquisition for public purposes.

General Uses: Agricultural uses, forestry, conservation and development of natural resources, public facilities, recreation, utility installations.

Minimum Parcel Size: Not applicable.

Maximum Dwelling Density: No dwellings permitted except where required to meet the Public Lands intent.

Policy DE-21: Land Use Category: PS-Public Services

Intent: The Public Services classification is intended to be applied to lands presently being used for major public service facilities and to lands appropriately reserved for expansion or construction of new public serving facilities.

General uses: Sanitary landfills, cemeteries, airports, corporation yards, electric generating plants, power substations and other support facilities, schools, hospitals, civic centers, fairgrounds, utility installations, caretaker's dwelling unit.

Minimum Parcel Size:

- Within water and sewer districts: None
- Within water or sewer districts: 12,000 square feet
- Not within a water or sewer district: 40,000 square feet.

Maximum Dwelling Density: Residential use shall be limited to a single caretaker dwelling per ownership.

Policy DE-30: Protect natural resources and promote orderly development by enforcing the County's Resources Preserves Merger Ordinance.

Policy DE-186 - Policy DE-191: Water Supply and Sewer (Wastewater Treatment) Services Policies

Mendocino County Coastal Element

The Coastal Element is designed to be adopted as an element of the Mendocino County General Plan. The County General Plan includes no land use proposals within the CZ and the Coastal Element includes none outside. Few coordination problems surfaced except in the area around Fort Bragg. Here, most existing and potential development is outside the CZ. Four planning programs affect this area. The Fort Bragg general plan revision, and LCP and the County general plan revision and LCP.

According to the public and semi-public facilities designation of the Mendocino County Coastal Element, the intent of this land use classification is to designate existing major public and community serving uses that should be converted to another use only following approval of a plan amendment. This classification

is to be applied to properties which are properly used for or are proposed to be used for public purposes or for specified public utility purposes. All require conditional use permits. Conditional uses include public and semi-public facilities and utilities, i.e., schools, fire stations, churches, cemeteries, sewage treatment plants, refuse disposal site, sanitary landfills, electrical transmission and distribution lines, natural gas pipeline, community buildings, a nonprofit corporation or entity which is dedicated to public use and to public purpose, and like public uses.

JACKSON DEMONSTRATION STATE FOREST MANAGEMENT PLAN

The Jackson Demonstration State Forest Management Plan (JDSFMP) accomplishes the goals of synthesizing the knowledge of current resource conditions on JDSF, articulating the desired future structure of the Forest, defining a path to that future condition, and establishing abundant opportunities for future research and demonstration activities. Timber production is the primary land use on JDSF, but recreation is recognized as a secondary but compatible land use. Relevant Public Resources Codes to the Proposed Project include:

0351.7 Granting Temporary Permits for Passage: It is desirable to grant temporary permits for passage across State forests to forest product operators or other parties having need of them in the course of their operations where such permits do not interfere with the primary uses of the State forests by the State. Applications for temporary permits for passage may be made to the Director who will be guided by the following principles in submitting applications to the Director of General services for approval.

A. Temporary permits for passage will be granted on a reciprocal basis where practicable.

B. The State will have free use of all lands and routes over which permits for passage have been granted.

C. The State will reserve the right to cross, re-cross, and parallel any such lands or routes with its own roads or utilities.

D. Temporary permits for passage will be limited to a minimum economical width but in no case shall exceed 60 feet except for needed cuts and fills.

E. The grantee of any temporary permits for passage will pay the State the current market value of timber necessarily cut or damaged in clearing and construction on State lands, provided that the price and volume will be determined by the Director, and such timber when paid for will belong to the operator.

F. Temporary permits for passage will be of such duration as to meet the reasonable needs of the grantee. Three years' non-use of any permit for passage for the purpose granted will constitute an abandonment forfeiture thereof unless the period of non-use is otherwise agreed upon.

G. The State will be reimbursed for any damage caused to State property in the construction and/or maintenance of such, provided that the grantee will hold the State harmless from any and all liability arising from the construction, maintenance and/or use of areas covered by such permits for passage.

H. Where it appears that benefit will result to the State, any charge for such permit for passage may be reduced accordingly.

I. All slash and snags on the area covered by a permit for passage will be disposed of by the grantee. The grantee will have the same responsibility for fire protection on any such area as is required by the Board for fire protection on a timber operating area.

The City's water treatment plant is within the City General Plan area and most of the raw water pipeline is located primarily within forested portions of unincorporated Mendocino County. The surrounding zoning designations include Rural Residential, Agricultural lands, and Timberland Production.

The Proposed Project crosses through privately and publicly owned TPZ zones – Lyme Redwood Timber Company, LLC (Lyme) owns the TPZ forest in Segment 3, and CALFIRE manages the TPZ area in JDSF through Segment 4 and Segment 5. Segment 3 of the Proposed Project exists entirely within the CZ and would be regulated as such.

4.11.2 Discussion

a) Physically divide an established community?

SEGMENTS 2 AND 4

No Impact. The Proposed Project would not divide an established community, as the raw water pipeline provides water resources to the entire City of Fort Bragg and would be buried underground. The Proposed Project would not conflict with the City of Fort Bragg or County of Mendocino Zoning Ordinance or other policies. There are no Specific Plans, habitat conservation, or natural community conservation plans that would encompass the Proposed Project. Construction of Segments 2 and 4 of the Proposed Project would not permanently change land uses as a result of alignment. During construction, access to all nearby properties would be maintained. Construction related activities would not divide an existing established community. No impacts would occur, and no mitigation is required.

SEGMENTS 3 AND 5

Less than Significant. Segments 3 and 5 of the Proposed Project would require permanent new easements and or rights-of-way from Lyme and CALFIRE respectively in order to construct and operate the raw water pipeline on the proposed alignment. The permanent easement would be a 20-foot-buffer around the proposed Segment 3 alignment. The preferred alignment follows existing trails and old logging skid roads on land owned by Lyme. Segment 3 does not traverse an established community, nor would it divide an established community or prevent access to an established community. The City has been coordinating the Proposed Project with Lyme and Lyme has expressed support for the Proposed Project. Segment 3 would not conflict with the City of Fort Bragg or County of Mendocino Zoning Ordinance or other policies, as it is a public utility project. There are no Specific Plans, habitat conservation, or natural community conservation plans that would encompass Segment 3 of the Proposed Project. Construction related activities would not divide an established community.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

SEGMENT 2

No Impact. Segment 2 of the Proposed Project has a General Plan Land Use designation of Rural Residential 1ac (RR) and a zoning designation of Rural Residential/Single Family Residential (RR1). The RR land use classification is intended to be applied to areas on the northern fringes of the City that are appropriate for single-family dwellings in a semi-rural environment that can also accommodate lower intensity agricultural land uses. The maximum allowable residential density within the RR district ranges from 1 swelling unit per 5 acres to 1 dwelling unit per acre. The RR zoning district implements and is consistent with the RR land use designations of the Inland General Plan. Under City Ordinance 18.42.145 – Pipelines and Transmission Lines, lines and facilities for local utility service are permitted in all zones. Pipelines and transmission lines would be covered under a permit requirement

set by Specific Use Regulations, utility facilities require a Use Permit, and utility infrastructure is a permitted use, with Zoning Clearance required. Therefore, the Proposed Project would not conflict with the General Plan land use designation.

The Mendocino County Zoning Code (Title 20) states that the RR1 "district is intended to create and enhance residential areas where agricultural use compatible with a permanent residential use is desired". Permitted uses in this district include family residential – single family, cemetery, community recreation, cultural exhibits and library services, essential services, fire and police protection services, minor impact utilities, animal raising, forest production and processing, horticulture, packing and processing, row and field crops, and tree crops. The Proposed Project is included under permitted uses as a minor impact utility. Therefore, the Proposed Project would not conflict with the Zoning Code.

SEGMENT 3

Less than Significant. Segment 3 starts where the Noyo River pipeline intersects with the Haul Road. From there, the pipeline would follow the GP (Haul Road), heading west, for about 7500 feet before ascending a steep slope leading to a skid trail located along the west ridgeline of Newman Gulch. The pipeline would follow the skid trail to the existing power pole line north of Summers Lane Reservoir, and then follow the power pole line east to a point north of the reservoir. A new pump station would be constructed to the south of Newman Reservoir. This segment of the Proposed Project would require new permanent easements for the alignment of Segment 3. The City has coordinated with Lyme on this pipeline segment and Lyme has indicated support of the Proposed Project.

A significant portion of Segment 3 of the Proposed Project is located within the designated California Coastal Zone (CZ). It has a Coastal Plan Land Use designation of Agriculture – Development Limitations (AG-DL) and Forest Lands (FL) and a zoning designation of Agricultural (AG) and Timber Production (TP). The AG-DL land use classification is intended to be applied to lands suited for and appropriately retained for crop production, with a minimum parcel size of 40 acres. Development limitations apply to slopes over 30 percent, bluff erosion, or landslide risk that may prevent or limit development. The Proposed Project would be covered under Conditional Uses, which include cottage industry; recreational sales compatible with agriculture; visitor accommodations as designated on the Land Use Plan; and other uses determined to be related and compatible to agriculture; conservation, processing, and development of natural resources; extraction of sand, shale, and gravel in conjunction with an approved permit, which shall include a restoration plan; onshore oil and gas development; off-site alternative energy facilities, electrical transmission and distribution lines, natural gas pipelines; County review and approval required for more than one dwelling unit per legally created parcel, consistent with other sections and policies of the Coastal Element, and consistent with density requirements; public facilities and utilities necessary or appropriate within an agricultural area.

The FL land use designation is intended to be applied to lands which are suited for and are appropriately retained for the growing, harvesting, and production of timber and timber-related products. The classification includes lands eligible to be zoned Timberland Production (TPZ); intermixed smaller parcels and other contiguous lands, the inclusion of which is necessary for the protection and efficient management of timber resource lands. Conditional permitted uses on forest lands designated TPZ include light agriculture; cottage industry; dwelling groups; campgrounds where designated; major impact services and utilities (i.e., power generating facilities, sewage disposal facilities, sanitary landfills and water treatment plants); farm employee housing, farm labor camps; extraction of sand, shale and gravel. Uses determined to be related to and compatible with forestry; conservation, processing, and development of natural resources; recreation and utility installations. No use permit shall be granted for areas designated FL in TPZ until a specific finding has been made

that the proposed use is compatible with the growing and harvesting of timber and timber products. Therefore, the Proposed Project would not conflict with the General Plan Coastal Element land use designation.

The Mendocino County Zoning Code (Title 20) states that the AG "district is intended to create and preserve areas for the raising of crops and animals". Uses subject to a major use permit include family residential-cluster development, educational facilities, major impact facilities, major impact services and utilities, commercial recreation-outdoor sports, and recreation (limited), transient habitation-lodging (limited), animal waste processing, and mining and processing. The Proposed Project would require a Major Use Permit per Section 20.052.025, (B) Civic Use Types. The TPZ "district is intended to be applied to areas of the County which because of their general soil types, location and timber growing capabilities are suited for and should be devoted to the growing, harvesting, and production of timber and timber related products and are taxed as such". The Proposed Project is a permitted use under Section 20.068.010, (B) Civic Use Types. Therefore, the Proposed Project would not conflict with the Zoning Code.

The permanent easements required to complete Segment 3 of the Proposed Project would be less than significant to land uses in the City of Fort Bragg. The permanent easement would be a 20-foot-buffer around the proposed Segment 3 alignment. Coordination with Lyme is ongoing, and Lyme has indicated support of the realignment of the replacement pipeline for Segment 3 and impacts would be less than significant.

SEGMENT 4

No Impact. Segment 4 of the Proposed Project is partially within JDSF. It has a General Plan Land Use designation of Rural Residential 1 ac (RR) and Public Lands (PL) and a zoning designation of Rural Residential (RR2) and TPZ. The RR land use classification is intended to be applied to areas on the northern fringes of the City that are appropriate for single-family dwellings in a semi-rural environment that can also accommodate a lower intensity agricultural land use. The maximum allowable residential density within the RR district ranges from 1 swelling unit per 5 acres to 1 dwelling unit per acre. The RR zoning district implements and is consistent with the RR land use designations of the Inland General Plan. Under City Ordinance 18.42.145 – Pipelines and Transmission Lines, lines and facilities for local utility service are permitted in all zones. Pipelines and transmission lines would be covered under a permit requirement set by Specific Use Regulations, utility facilities require a Use Permit, and utility infrastructure is a permitted use, with Zoning Clearance required.

The PL land use designation is intended to be applied to land in public ownership not appropriately included in some other classification. The classification is also intended to be applied to lands held and managed for public recreation or appropriate for acquisition for public purposes. General uses include agricultural uses, forestry, conservation and development of natural resources, public facilities, recreation, and utility installations. As a utility, the Proposed Project is an allowable use within the PL designation. Therefore, the Proposed Project would not conflict with the General Plan land use designation.

The Mendocino County Zoning Code (Title 20) states that the RR2 "district is intended to create and enhance residential areas where agricultural use compatible with a permanent residential use is desired". Permitted uses in this district include family residential – single family, cemetery, community recreation, cultural exhibits and library services, essential services, fire and police protection services, minor impact utilities, animal raising, forest production and processing, horticulture, packing and processing, row and field crops, and tree crops. The Proposed Project is included under permitted uses as a minor impact utility. The TPZ "district is intended to be applied to areas of the County which

because of their general soil types, location and timber growing capabilities are suited for and should be devoted to the growing, harvesting, and production of timber and timber related products and are taxed as such". The Proposed Project is a permitted use under Section 20.068.010, (B) Civic Use Types. Therefore, the Proposed Project would not conflict with the Zoning Code.

Construction of the Proposed Project would be covered under the temporary permits for passage within the JDSF. Permanent easements will be obtained and recorded from CALFIRE once construction is complete.

SEGMENT 5

No Impact. Segment 5 of the Proposed Project exists entirely within the JDSF. It has a General Plan land use designation of Public Lands (PL) and a zoning designation of TPZ. The PL land use designation is intended to be applied to land in public ownership not appropriately included in some other classification. The classification is also intended to be applied to lands held and managed for public recreation or appropriate for acquisition for public purposes. General uses include agricultural uses, forestry, conservation and development of natural resources, public facilities, recreation, and utility installations. As a utility, the Proposed Project is an allowable use within the PL designation. Therefore, the Proposed Project would not conflict with the General Plan land use designation.

The Mendocino County Zoning Code (Title 20) states that the TPZ "district is intended to be applied to areas of the County which because of their general soil types, location and timber growing capabilities are suited for and should be devoted to the growing, harvesting, and production of timber and timber related products and are taxed as such". The Proposed Project is a permitted use under Section 20.068.010, (B) Civic Use Types. Therefore, the Proposed Project would not conflict with the Zoning Code.

The Proposed Project would be covered under the temporary permits for passage within the JDSF. Permanent easements will be obtained and recorded from CALFIRE once construction is complete.

4.11.3 Mitigation Measures

No mitigation is required as impacts to land uses would be less than significant.

4.11.4 References

City of Fort Bragg. 2008. Coastal General Plan. Accessed online at: https://city.fortbragg.com/284/Coastal-General-Plan.

City of Fort Bragg. 2008. Inland Land Use and Development Code. Accessed online at: https://www.codepublishing.com/CA/FortBragg/#!/LUC17/FortBraggLUC171/FortBraggLUC1714.html#17.14.020

County of Mendocino. 1991. Mendocino County Coastal Element. Accessed online at: https://www.mendocinocounty.org/government/planning-building-services/plans/coastal-element.

County of Mendocino. 2009. Mendocino County General Plan. Accessed online at: https://www.mendocinocounty.org/government/planning-building-services/plans/mendocino-county-general-plan.

County of Mendocino. 2020. Mendocino County Code. Accessed online at: https://library.municode.com/ca/mendocino_county/codes/code_of_ordinances?nodeId=MECOCO_PR

4.12 Mineral Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Mineral Resources – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Setting

The California Division of Mines and Geology has not identified any significant mineral resources in the City of Fort Bragg (City) or City's Sphere of Influence. Historically, various parties have taken small amounts of aggregate from area streams, but this is no longer the case (City of Fort Bragg 2002).

The most predominant of the minerals found in Mendocino County are aggregate resource minerals, primarily sand and gravel, found along many rivers and streams. Aggregate hard rock quarry mines are also found throughout the county. Three sources of aggregate materials are present in Mendocino County: quarries, instream gravel, and terrace gravel deposits. The viability of different sources for any use depends on the property of the rock itself and the processing required to prepare the rock. According to the Mendocino County General Plan Environmental Impact Report (2008), there are no mineral resources within the Proposed Project area. The closest mineral resource is located north of the City of Fort Bragg and is labeled as sand and gravel (Mendocino County 2009).

4.12.2 Discussion

a, b) **No Impact.** There are no mapped mineral resources in the City of Fort Bragg, Sphere of Influence, and therefore not within the Proposed Project area. The Proposed Project would construct a pipeline across 4 segments in order to provide clean water to residents of the City. The Proposed Project would not result in the loss of any locally important mineral resources delineated in the City's General Plan or any other land use document. The Proposed Project would result in no impact to mineral resources and no mitigation would be required.

4.12.3 Mitigation Measures

No mitigation is required as the Proposed Project would have no impact on mineral resources.

4.12.4 References

City of Fort Bragg. 2002. Fort Bragg General Plan Revision Draft Environmental Impact Report. Prepared by Leonard Charles and Associates.

Mendocino County. 2009. Mendocino County General Plan – 4.0 Resource Element. Available: https://www.mendocinocounty.org/government/planning-building-services/plans/mendocino-county-general-plan. Accessed May 29,2020.

4.13 Noise

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Noise – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or airport land use plan area, or, where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒

4.13.1 Setting

Noise is defined as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. A frequency weighting measure that simulates human perception is commonly used to describe noise environments and to assess impacts on noise-sensitive areas. It has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. The decibel notation used for sound levels describes a logarithmic relationship of acoustical energy, for example, a doubling of acoustical energy results in an increase of three dB, which is considered barely perceptible. A ten-fold increase in acoustical energy equals a ten dB change, which is subjectively like a doubling of loudness. **Table 4-11** presents typical noise levels, identifies decibel levels for common sounds heard in the environment.

Table 4-11. Typical Noise Levels

Common outdoor activity	Noise level (dBA)	Common indoor activity
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at three feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at three feet
	80	Garbage disposal at three feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at ten feet
Commercial area		Normal speech at three feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	

		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans, 2013

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are equivalent A-weighted sound level over a given time period (Leq); average day-night 24-hour average sound level with a nighttime increase of ten dBA to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL), also a 24-hour average that includes both an evening and a nighttime weighting. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse levels of noise with respect to public health because of sleep interference.

The Proposed Project is located primarily within a relatively rural, forested environment of unincorporated Mendocino County, and sound in the Project area can be characterized as ranging from typical quiet rural nighttime levels, as described in **Table 4-11**, to quiet suburban nighttime levels. Additionally, the Mendocino County Plan Development Element indicates that noise levels along the major roadways within the Project area, including State Route (SR) 20 and Fort Bragg -Sherwood Road, are projected to be nearly 65 dBA at 100 feet by 2030 (Mendocino County, 2009). Rural-residential developments are present along the northern portion of Segments 2 and 4 of the Proposed Project and would be considered sensitive receptors to land use (Mendocino County, 2009). Other land uses along the Proposed Project corridor include public utility, agricultural, forested land, and public land uses, which are generally considered less susceptible to noise impacts and are not considered sensitive receptors (Caltrans, 2013; Mendocino County, 2009).

Local agencies that have jurisdiction over the Proposed Project area have established policies and standards regarding noise levels. The City of Fort Bragg Inland General Plan Noise Element (City of Fort Bragg, 2012) includes maximum allowable noise level thresholds for non-transportation projects, which are included in **Table 4-12** below. Additionally, the City of Fort Bragg Municipal Code indicates that allowable hours for construction activities within residential areas to be 7:00 A.M. to 10:00 P.M. (City of Fort Bragg, 2020).

Table 4-12. Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (7 A.M. to 10 P.M.)	Nighttime (10 P.M. to 7 A.M.)
Hourly Leq dB	55	45
Maximum level, dB	75	65

Note: These noise levels apply to the residential property line nearest the project. Each of the noise levels shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The Mendocino County General Plan Development Element (Mendocino County, 2009) includes maximum allowable exterior noise level threshold for various land uses within the County, which are included in **Table 4-13** below. Additionally, the Mendocino County Code of Ordinances Section 20.708.015 states that temporary uses, such as construction activities, shall not create noise impacts to surrounding uses that exceed noise standards set out in the County's General Plan Development Element (Mendocino County, 2020). Neither the City nor the County have established construction activity exemptions for noise level thresholds within their jurisdictions.

Table 4-13. Exterior Noise Level Standards (Levels not to be Exceeded more than 30 Minutes in any Hour)

Land Use Type	Time Period	Maximum Noise Level (dBA)
Single Family Homes and Duplexes	7:00 A.M. – 10:00 P.M.	60
	10:00 P.M. – 7:00 A.M.	50
Multifamily Residential (3 or more per building)	7:00 A.M. – 10:00 P.M.	60
	10:00 P.M. – 7:00 A.M.	55
Public Spaces	7:00 A.M. – 7:00 P.M.	60
	7:00 P.M. – 7:00 A.M.	50

4.13.2 Discussion

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

SEGMENT 2

Less Than Significant Impact with Mitigation. Segment 2 of the Proposed Project would abandon the existing pipeline that is reaching the end of its service life in-place and replace it with a new raw water pipeline along approximately the same alignment. Operation of the Segment 2 proposed pipeline would be similar to existing conditions and would not introduce new stationary or transportation sources of noise to the Project Area. Upon construction completion, noise levels at the Segment 2 proposed pipeline site would return to existing conditions and impacts would be less than significant in this regard.

Noise from construction activities during daytime hours is anticipated to temporarily increase ambient noise levels for the duration of an approximately three-month construction period. The introduction of construction noise to the surrounding area has the potential to temporarily adversely impact nearby residents along the pipeline route and on Fort Bragg-Sherwood Road.

Construction activity noise levels would fluctuate depending on the particular type, number, and duration of uses of construction equipment, as well as vary depending on the type of construction activity or phase. Noise from construction activities may intermittently dominate the noise environment with varying levels of intensity. Noise from construction activities generally attenuate at a rate of 6 dBA per doubling distance. General construction equipment that would be used for and their associated noise levels at a distance of 50 feet are provided in **Table 4.14**. General construction phase/activity typical noise levels for Segment 2 are also summarized in **Table 4-15**.

Table 4-14. Construction Equipment Noise

Construction Equipment	Typical Noise Level (dBA at 50 feet)
Backhoe	80
Chain Saw	85
Dozers	85
Excavator	85
Grader	85
Horizontal Boring Hydraulic Jack	80
Scrapers	85
Trucks	84

Source: Federal Highway Administration, 2017

Table 4-15. Typical Construction Activity Noise

Construction Equipment	Typical Noise Level (dBA at 50 feet)
Ground Clearing	84
Excavation	85/78

Grading	85

Source: Federal Highway Administration, 2017

There are three sensitive receptors (single family residences) within approximately 50 feet of the Segment 2 proposed pipeline area, and an additional three sensitive receptors within 200 feet of the alignment (**Figure 4-15**). All sensitive receptors are single-family, rural residential homes. Construction activities would be limited to weekday daytime hours from 7:00 A.M. to 7:00 P.M., unless specifically authorized by the City and the County. Therefore, the strictest noise standards that Segment 2 construction would be subject to, would be the County's 60 dBA maximum noise Level standard for single-family homes and duplexes.

The loudest activity anticipated for Segment 2 of the Proposed Project construction would be excavation and grading, with typical noise levels of 85 dBA at 50 feet. Therefore, sensitive receptors within 50 feet of the Segment 2 proposed pipeline area would experience noise levels up to 85 dBA during construction, which is estimated to exceed maximum standards established by both the City and the County. Assuming an attenuation rate of 6 dBA per doubling distance, the three sensitive receptors located within approximately 200 feet of the Segment 2 proposed pipeline area would experience maximum noise levels of 73 dBA. This would be consistent with City's maximum noise standards but would exceed the County noise standards. With the implementation of **Mitigation Measure, NOI-1 Minimize Noise Disturbances to Nearby Residents,** the Proposed Project Segment 2 noise impacts would be reduced to less than significant levels.

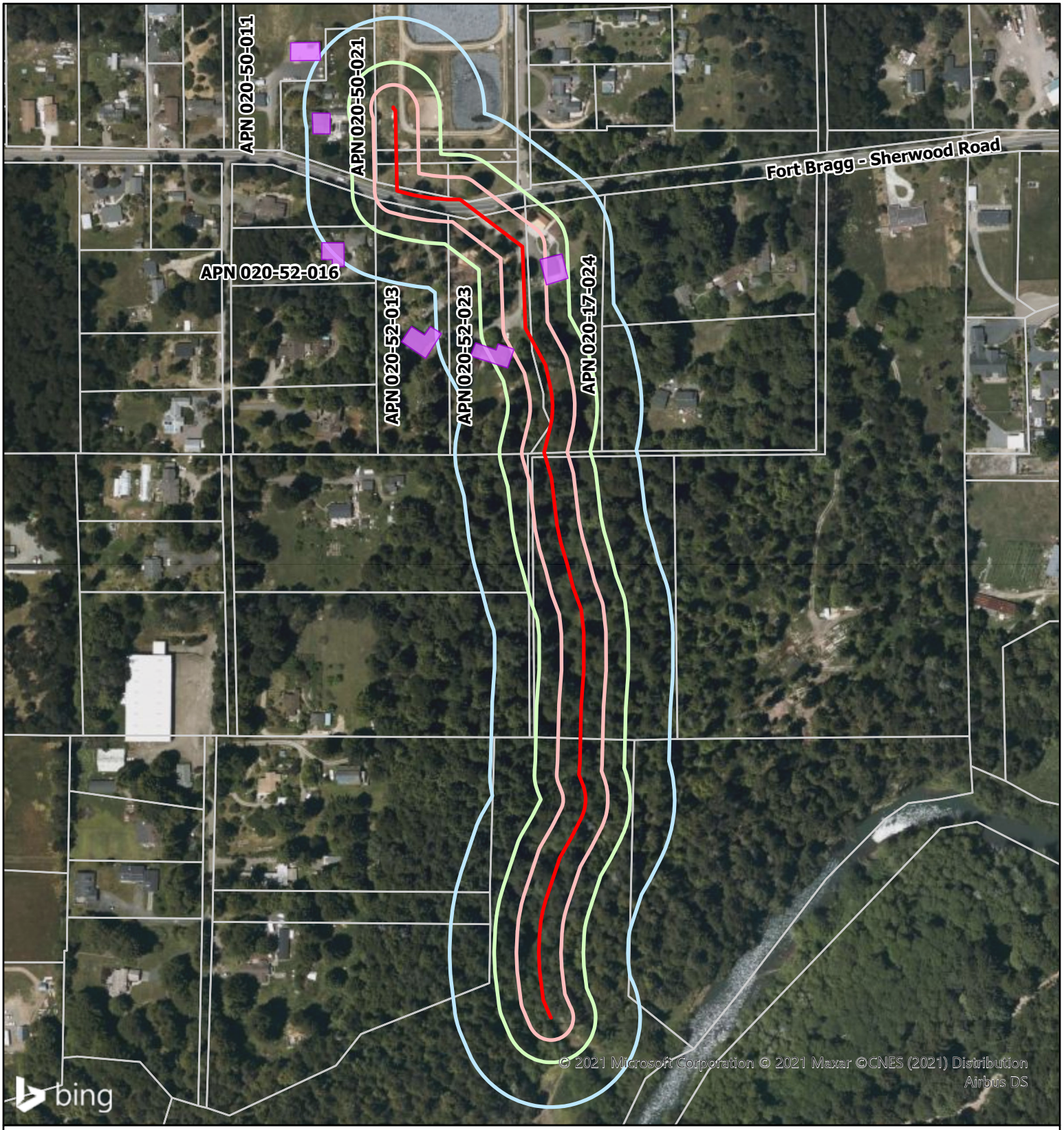
SEGMENT 3

No Impact. Segment 3 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along a new alignment. Operation of the Segment 3 proposed pipeline would be similar to existing conditions and would not introduce new stationary or transportation sources of noise to the Proposed Project Area. Upon the completion of Segment 3 construction, noise levels at the Segment 3 proposed pipeline site would return to existing conditions and impacts would be less than significant in this regard.

Noise from construction activities is anticipated to temporarily increase ambient noise levels in the vicinity of the Segment 3 proposed pipeline alignment for the duration of the approximately five-month construction period. The introduction of construction noise to the area around the Segment 3 proposed pipeline alignment has the potential to adversely impact special status species sensitive to noise level fluctuations in the Proposed Project Area, and these potential impacts are discussed in detail in the Biological Resources section of this document.

Construction activity noise levels would fluctuate depending on the particular type, number, and duration of uses of construction equipment, as well as vary depending on the type of construction activity. Noise from construction activities may intermittently dominate the noise environment with varying levels of intensity. Noise from construction activities generally attenuate at a rate of 6 per doubling distance. General construction equipment that would be used for Segment 3 construction and their associated noise levels at a distance of 50 feet are provided in **Table 4-14**. General construction phase/activity typical noise levels for Segment 3 of the Proposed Project are also summarized in **Table 4-15**.

There are no sensitive receptors within the Segment 3 proposed pipeline vicinity. Therefore, Segment 3 construction would be consistent with maximum noise standards established by both the City and the County. The temporary noise impact would be less than significant. No mitigation measures would be required.



Legend

- Segment 2
- Sensitive Receptors
- 50 foot Buffer
- 100 foot Buffer
- 200 foot Buffer
- Parcels

Dewberry

N

0 87.5 175 350 525 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Segment 2 Sensitive Receptors

Figure 4-15

SEGMENT 4

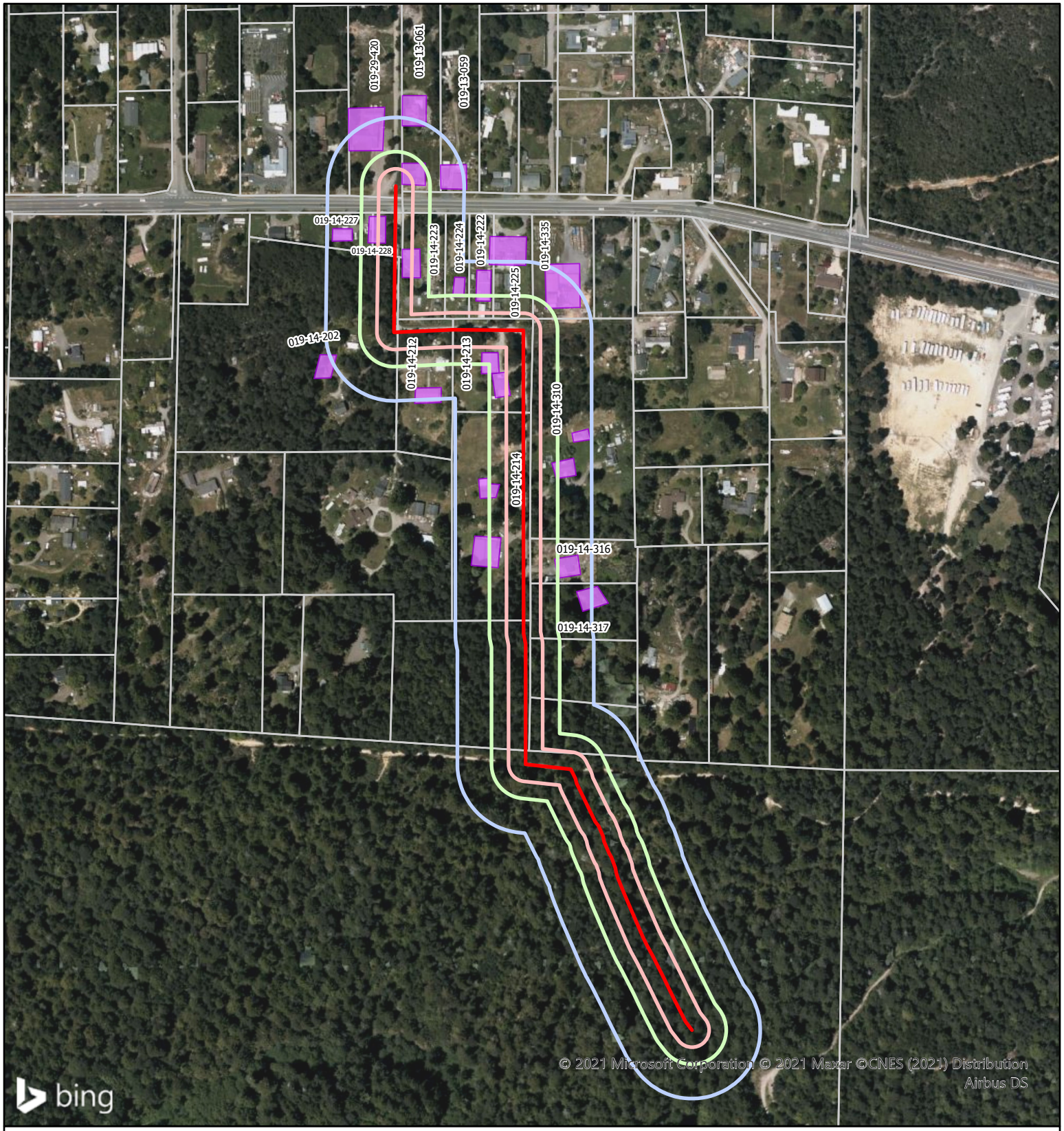
Less Than Significant Impact with Mitigation. Segment 4 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline along approximately the same alignment. Operation of the Segment 4 proposed pipeline would be similar to existing conditions and would not introduce new stationary or transportation sources of noise to the Project Area. Upon the completion of Segment 4 construction, noise levels at the Proposed Project site would return to existing conditions and impacts would be less than significant in this regard.

Noise from construction activities is anticipated to temporarily increase ambient noise levels in the vicinity of the Segment 4 proposed pipeline alignment for the duration of the approximately three-month construction period. The introduction of construction noise to the Segment 4 proposed pipeline alignment has the potential to adversely impact special status species sensitive to noise level fluctuations in the Proposed Project Area, and these potential impacts are discussed in detail in the Biological Resources section of this document.

Construction activity noise levels would fluctuate depending on the particular type, number, and duration of uses of construction equipment, as well as vary depending on the type of construction activity or phase. Noise from construction activities may intermittently dominate the noise environment with varying levels of intensity. Noise from construction activities generally attenuate at a rate of 6 dBA per doubling distance. General construction equipment that would be used for Segment 4 construction and their associated noise levels at a distance of 50 feet are provided in **Table 4-14**. General construction phase/activity typical noise levels for Segment 4 of the Proposed Project are also summarized in **Table 4-15**.

There are 3 sensitive receptors within approximately 50 feet of the Segment 4 proposed pipeline alignment. An additional 7 sensitive receptors are located within 100 feet of the Segment 4 proposed pipeline alignment, and an additional 9 are located within 200 feet (**Figure 4-16**). All but one of the sensitive receptors within the Segment 4 proposed pipeline vicinity are single-family, rural residential homes. The one sensitive receptor that is not a single-family residence is the Bethel Baptist Church, located approximately 200 feet north of the Segment 4 proposed pipeline alignment. Construction activities would be limited to weekday daytime hours from 7:00 A.M. to 7:00 P.M., unless specifically authorized by the City and the County. Therefore, the strictest noise standards Segment 4 of the Proposed Project construction would be subject to, would be the County's 60 dBA maximum noise Level standard for single-family homes and duplexes.

The loudest activity anticipated for Segment 4 of the Proposed Project construction would be excavation and grading, with typical noise levels of 85 dBA at 50 feet. Therefore, sensitive receptors within 50 feet of the Segment 4 proposed pipeline alignment would experience noise levels up to 85 dBA during construction, which would exceed maximum standards established by both the City and the County. Assuming an attenuation rate of 6 dBA per doubling distance, the 7 sensitive receptors located within approximately 100 feet of the Segment 4 proposed pipeline alignment would experience maximum noise levels of 79 dBA, while the 9 receptors located within 200 feet would experience noise levels up to 72 dBA. With the implementation of **Mitigation Measure NOI-1, Minimize Noise Disturbances to Nearby Residents,** the Segment 4 proposed pipeline noise impacts would be reduced to less than significant levels.



Legend

- Segment 4
- Sensitive Receptors
- 50 foot Buffer
- 100 foot Buffer
- 200 foot Buffer
- Parcels

Dewberry

N

0 115 230 460 690 Feet

Source: Esri Online Basemap, Bing Maps Aerial, Mendocino County Coordinate System NAD 83 State Plane California II FIPS 0402 Feet

Notes: This Map was created for informational and display purposes only

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

Segment 4 Sensitive Receptors

Figure 4-16

SEGMENT 5

Less Than Significant Impact. Segment 5 of the Proposed Project would abandon the existing pipeline in-place and replace it with a new raw water pipeline. Operation of the Segment 5 proposed pipeline would be similar to existing conditions and would not introduce new stationary or transportation sources of noise to the Proposed Project Area. Upon the completion of Segment 5 construction, noise levels at the Segment 5 proposed pipeline site would return to existing conditions and impacts would be less than significant in this regard.

Noise from construction activities is anticipated to temporarily increase ambient noise levels in the vicinity of the Segment 5 proposed pipeline alignment for the duration of the approximately three-month construction period. The introduction of construction noise to the Segment 5 proposed pipeline alignment has the potential to adversely impact special status species sensitive to noise level fluctuations in the Project Area, and these potential impacts are discussed in detail in the Biological Resources section of this document.

Construction activity noise levels would fluctuate depending on the particular type, number, and duration of uses of construction equipment, as well as vary depending on the type of construction activity or phase. Noise from construction activities may intermittently dominate the noise environment with varying levels of intensity. Noise from construction activities generally attenuate at a rate of 6 dBA per doubling distance. General construction equipment that would be used for Segment 5 construction and their associated noise levels at a distance of 50 feet are provided in **Table 4-14**. General construction phase/activity typical noise levels for Phase V are also summarized in **Table 4-15**.

There are no sensitive receptors within the Segment 5 proposed project vicinity. Therefore, Segment 5 construction would be consistent with maximum noise standards established by both the City and the County. Temporary noise impacts would be less than significant, and no mitigation measures would be required.

b) Generation of excessive ground-borne vibration or ground-borne noise levels?

Less than Significant. There would be no ground-borne vibration activities generated during pipeline operations. Upon completion of construction, vibration levels at the Proposed Project site would return to existing conditions and impacts would be less than significant in this regard.

Construction activities that would occur within the Proposed Project site include ground clearing, excavating, and grading. These activities have the potential to generate low levels of ground-borne vibration. Unlike typical noise attenuation rates, ground-borne vibrations dissipate rapidly with distance. Vibration source levels are assumed to attenuate by two-thirds for each doubling distance from the vibratory source (Caltrans, 2013). General construction equipment that would be used for project construction and their associated vibration levels at a distance of 25 feet are provided in **Table 4-16**. General construction vibration criteria for structural damage and human annoyance are summarized in **Table 4-17** and **Table 4-18**, respectively.

Table 4-16. Typical Vibration Source Levels for Construction Equipment

Construction Equipment	Peak Particle Velocity at 25 Feet (in/sec ppv)
Large Bulldozer/Scraper	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Excavator/Small Bulldozer	0.003

Source: Caltrans, 2013

Table 4-17. Vibration Criteria for Structural Damage

Structure and Residential Structure	Maximum Vibration Level (in/sec ppv)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans, 2013

Table 4-18. Vibration Criteria for Human Annoyance

Human Response	Maximum Vibration Level (in/sec ppv)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe perceptible	2.0	0.4

Source: Caltrans, 2013

SEGMENT 2

Less than Significant. There are three sensitive receptors within approximately 50 feet of the Segment 2 proposed pipeline. Large bulldozers and scrapers associated with clearing and grading operations would produce the highest level of vibration at the Segment 2 Proposed Project site. The maximum vibration levels would be 0.089 in/sec peak particle velocity (ppv) at 25 feet. Sensitive receptors within 50 feet of the Segment 2 proposed pipeline alignment would intermittently experience maximum vibration levels of 0.030 in/sec ppv due to construction. The maximum vibration levels generated by Segment 2 construction would range from barely to distinctly perceptible by adjacent residence and would have no impact on structures in the Proposed Project vicinity. Therefore, Segment 2 of the Proposed Project would have a less than significant impact due to ground-borne vibrations cause by construction and no mitigation measures would be necessary.

SEGMENT 4

Less than Significant. There are three sensitive receptors within approximately 50 feet of the Segment 4 proposed pipeline. Large bulldozers and scrapers associated with clearing and grading operations would produce the highest level of vibration at Segment 4 of the Proposed Project site of 0.089 in/sec ppv at 25 feet. Sensitive receptors within 50 feet of the Segment 4 proposed pipeline alignment would intermittently experience maximum vibration levels of 0.030 in/sec ppv due to construction. The maximum vibration levels generated by Segment 4 construction would range from barely to distinctly perceptible by adjacent residences and would have no impact on structures in the Proposed Project vicinity. Therefore, Segment 4 of the Proposed Project would have a less than significant impact due to ground-borne vibrations and no mitigation measures would be necessary.

SEGMENTS 3 AND 5

No Impact. There are no sensitive receptors within the vicinity of Segments 3 or 5 of the Proposed Project that would perceive vibrations generated by construction. Large bulldozers and scrapers associated with clearing and grading operations would produce the highest level of vibration at 0.089 in/sec ppv at 25 feet. Therefore, Segments 3 and 5 of the Proposed Project would have a less than

significant impact due to ground-borne vibrations cause by construction and no mitigation measures would be necessary.

c) For a project located within the vicinity of a private airstrip or airport land use plan area, or, where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?

No Impact. None of the Proposed Project Segments are located within an established airport land use plan or within two miles of a public airport. The nearest public airport to the Proposed Project is the Little River Airport, located approximately 9.80 miles south of the Segment 5 proposed pipeline alignment. Additionally, the Fort Bragg Airport is a private use airport located approximately 2.1 miles north of the northern limit of the Segment 2 proposed pipeline alignment. Given the distance of the Proposed Project from these airports, the Proposed Project would have no impact in this regard and no mitigation measures would be required.

4.13.3 Mitigation Measures

Mitigation Measure NOI-1: Minimize Noise Disturbances to Nearby Residents. The following control measures shall be implemented in order to minimize construction noise disturbances at sensitive receptors within the Project vicinity:

- Use newer equipment with improved muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding, etc.).
- Utilize construction methods or equipment that provides the lowest level of noise and ground vibration impact.
- Turn off idling equipment.

4.13.4 References

California Department of Transportation (Caltrans). 2013. Transportation and Construction Vibration Guidance Manual. September 2013. Online http://website.dot.ca.gov/env/noise/docs/tcvgm-sep2013.pdf. Accessed September 13, 2018.

City of Fort Bragg. 2012. Fort Bragg Inland General Plan. Ch. 8- Noise Element. Available: https://city.fortbragg.com/DocumentCenter/View/1228/Element-08--Noise-PDF. Accessed June 12, 2020.

City of Fort Bragg. 2020. Fort Bragg Municipal Code. Title 9 Public Peace, Safety, and Morals. Ch. 9.44 Noise. Available: https://www.codepublishing.com/CA/FortBragg/#!/html/FortBragg09/FortBragg0944.html. Accessed June 12, 2020.

Federal Highway Administration (FHA), 2017. Construction Equipment Noise Levels and Ranges. Available: https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm. Accessed June 12, 2020.

Mendocino County. 2009. Mendocino County General Plan – 3.0 Development Element. Available: https://www.mendocinocounty.org/government/planning-building-services/plans/mendocino-county-general-plan. Accessed June 12, 2020.

Mendocino County. 2020. Mendocino County, California Cod of Ordinance. Sec. 14.16.020 – Noise. Available: https://library.municode.com/ca/mendocino_county/codes/code_of_ordinances?nodeId=MECOCO_TIT14REPULA_CH14.16COBUGR_S14.16.020NO. Accessed June 12, 2020.

4.14 Population and Housing

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Population and Housing – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 Setting

The Proposed Project is located in the City of Fort Bragg's (City) General Plan Area and sphere of influence (SOI), as well as unincorporated Mendocino County. According to the 2019 American Community Survey (ACS) Demographic and Housing Estimates, the City has a total population of 7,302 individuals and a total of 3,148 housing units (US Census Bureau, 2019). Mendocino County has a total population of 87,224 individuals and a total of 40,960 housing units (US Census Bureau, 2019). The Proposed Project is located within Census Tracts 0103.00, 0104.00, and 0110.02. Census Tract 0103.00 has a population of 4,294 and a total of 2,157 housing units. Census Tract 0104.00 has a population of 3,247 and a total of 1,642 housing units. Census Tract 0110.02 has a population of 5,496 people and a total of 3,131 housing units in 2019 (FFIEC, 2021).

The Proposed Project is primarily located in forested portions of unincorporated Mendocino County and would not induce growth or population increases. As of 2019, the City supported approximately 2.56 people per household (US Census Bureau, 2020). The median household income in 2019 dollars was $44,276 and approximately 59.2% of the population ages 16 and older were in the civilian labor force. The nearest homes to the Proposed Project site exist in Segment 4, along Dwyer Lane, and would not be significantly impacted by the Proposed Project.

4.14.2 Discussion

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact. The Proposed project would provide temporary employment for several people during construction activities. The Proposed Project would not result in the permanent creation of new jobs that would induce substantial population growth. Additionally, the pipeline would operate similar to existing conditions, and design would reflect capacity of the existing City of Fort Bragg population. The replacement pipeline would not encourage population growth within the surrounding communities adjacent to the Proposed Project site at any Segment. This impact would be less than significant, and no mitigation measures would be required.

b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere?

No Impact. The Proposed Project would replace the existing raw water line along parallel or similar alignment as the existing pipeline, except where relocated to minimize environmental impacts. The

Proposed Project would not displace any housing or people, and replacement housing would not be required. There would be no impact and no mitigation measures would be required.

4.14.3 Mitigation Measures

No mitigation is required as impacts to population and housing are less than significant.

4.14.4 References

Federal Financial Institutions Examination Council (FFIEC). 2021. Geocode Map\. Available: https://geomap.ffiec.gov/FFIECGeocMap/GeocodeMap1.aspx. Accessed online August 31, 2021.

United States Census Bureau (US Census Bureau). 2019. ACS Demographic and Housing Estimates: Mendocino County; Fort Bragg city. Available: https://data.census.gov/cedsci/table?q=Fort%20Bragg&g=0500000US06045&tid=ACSDP5Y2019.DP05&hidePreview=true. Accessed August 31, 2021.US Census Bureau 2020: https://www.census.gov/quickfacts/fact/table/calaverascountycalifornia,fortbraggcitycalifornia/INC110219#INC110219

4.15 Public Services

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Public Services —				
a) Would the project result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☒	☐	☐
ii) Police protection?	☐	☒	☐	☐
iii) Schools?	☐	☒	☐	☐
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

4.15.1 Setting

The Proposed Project area is served by the Fort Bragg Fire Department (FBFD), the Fort Bragg Police Department (FBPD), and the Mendocino County Sheriff's Office (MCSO). The FBFD provides fire services within the City of Fort Bragg and outlying rural areas. The FBFD responds to approximately 500 to 600 calls per year, varying from structure fires to public assists. The Fort Bragg Fire Protection Authority is responsible for funding, directing, and overseeing the fire department. The FBFD consists of 36 volunteer fire fighters and four auxiliary members. There are three fires stations, located at:

- Main Street Fire Station, 141 N. Main Street (1.4 miles west of the start of Segment 2)
- Highway 20 Substation, 32270 Highway 20 (1-mile northwest of Segment 4)
- Little Valley Fire Company, 33680 Little Valley Road (5 miles north of Segment 2)

The FBPD serves the City of Fort Bragg and outlying rural areas. As of 2017, the FBPD consisted of 22 full-time employees, and is the only law enforcement agency on the California coast between Eureka and the San Francisco Bay Area, with sworn law enforcement officers on duty 24 hours per day. In 2017, FBPD responded to a total of 17, 966 calls for service and wrote 1,777 Crime Reports associated with those calls for service, resulting in 718 arrests (City of Fort Bragg, 2017). The FBPD headquarters is located at:

- 250 Cypress Street (1.5 miles west of Segment 3)

The Mendocino County Sheriff's Office operates a substation in the City of Fort Bragg, located at:

- 700 S Franklin Street (1.5 miles west of Segment 3)

The Proposed Project is contained within the Fort Bragg Unified School District (FBUSD) and the Mendocino Unified School District (MUSD). FBUSD is served by Dana Gray Elementary School, Redwood Elementary School, Fort Bragg Middle School, Fort Bragg High School, Coastal Adult School, and the Alternative Education program. MUSD is served by Greenwood Preschool, Albion Elementary School, Comptche Elementary School, Mendocino High School, Mendocino Community High School, Mendocino Sunrise High School, and Mendocino Alternative High School.

The Proposed Project is not in close proximity to any public parks. The nearest public park, Otis R Johnson Park, is located approximately 1-mile northwest of Segment 2.

4.15.2 Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

i) Fire protection?

ii) Police protection?

iii) Schools?

Less than Significant with Mitigation. Based on the project description, the Proposed Project is anticipated to take up to 18-months to construct, spread across four distinct segments. The Proposed Project would leave the existing pipeline in place while the replacement pipeline is constructed along a parallel or improved alignment. Segment 2 would be organized in order to maintain some level of traffic across Fort Bragg-Sherwood Road and the driveway for the three residences, before continuing in alignment through the redwood forest. Segment 3 would be planned in order to maintain traffic on the Georgia-Pacific Haul Road (Haul Road). Segment 4 would be constructed in order to maintain appropriate traffic across Highway 20 and Dwyer Lane. As the Proposed Project is a replacement pipeline, it would not be a facility that generates or emits hazardous materials. Operations would be similar to existing conditions upon construction completion. The Proposed Project would not increase capacity along Fort Bragg-Sherwood Road, Georgia-Pacific Haul Road, Highway 20, or Dwyer Lane that could increase traffic or congestion. The Proposed Project would not increase the need for fire or police protection, as service needs would be similar to existing conditions. Therefore, the Proposed Project would have no impact to public services upon the completion of construction.

Access over Fort Bragg-Sherwood Road, the Haul Road, Highway 20, and Dwyer Lane during construction may be limited in order to construct the replacement pipeline. Construction traffic control is not anticipated to significantly interfere with police and fire response times or school bus routes and would be temporary in nature.

During construction, construction workers would be present on site, which could result in the need for public services. Construction of the Proposed Project could result in accident or emergency incidents that would require emergency response, such as fire, police, medical, or hazardous waste services; however, construction activities would be short in duration, lasting approximately 48-94 days per Segment. Any increase in police or fire services due to construction activities would be temporary, ceasing upon completion of the Proposed Project.

The Proposed Project would not increase the population, refer to Section 4.14, Population and Housing, and thus, would not result in an increase in school age children beyond what the FBUSD currently provides. Construction workers are anticipated to come from the surrounding areas, and thus would not relocate to the project vicinity. Therefore, temporary increase in school services would not occur. No impact would occur with respect to school service needs and no mitigation measures are required.

The Proposed Project would coordinate with FBFD, FBPD, FBUSD and MUSD within the area, through a standard Construction Period Emergency and School Access Plan, as required under **Mitigation Measure PUB-1, Prepare and Implement a Construction Period Emergency Access Plan**. The

implementation of mitigation measures would ensure that the Proposed Project would not significantly interfere with emergency response plans or emergency evaluation plans and impacts would be less than significant.

a) Would the project result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

    i) Parks?

    ii) Other public facilities?

No Impact. The Proposed Project would not directly impact parks, as there are no parks within one mile of the Proposed Project site. While construction workers would be brought to the area during the construction season, they are anticipated to come from the surrounding area, and thus would not relocate. Construction workers would be on the project site during construction hours and would return home in the off hours or stay at local hotels or motels. Therefore, an increased demand on parks or other public services resulting in the need for new or improved facilities would not occur. No impact would result during construction of the Proposed Project.

The Proposed Project would leave the existing pipeline abandoned in place, while the new replacement pipeline is constructed along a parallel or improved alignment. Construction of the pipeline underneath roads at Fort Bragg-Sherwood Road, the Haul Road, Highway 20, and Dwyer Lane would be organized such that traffic would be maintained or an appropriate detour would be implemented in order to maintain traffic during construction. The demand on public services upon completion of construction would be similar to existing conditions. No impact would occur in this regard.

4.15.3 Mitigation Measures

Mitigation Measure PUB-1: Prepare and Implement a Construction Period Emergency Access Plan. Prior to the start of construction, the City's construction contractor shall coordinate with the City of Fort Bragg Police and Fire departments and local public and private ambulance and paramedic providers in the area to prepare a Construction Period Emergency Access Plan. The Construction Period Emergency Access Plan shall identify phases of the Project and construction scheduling and shall identify appropriate alternative emergency access routes.

4.15.4 References

City of Fort Bragg. 2020. "My Government". Accessed online at: https://city.fortbragg.com/101/My-Government.

City of Fort Bragg. 2020. "Our Community – Fire Department". Accessed online at: https://city.fortbragg.com/372/Fire-Department.

Dept of Planning and Building Services. 2009. "Map of Mendocino County School Districts". Accessed online at: http://www.co.mendocino.ca.us/planning/pdf/School_District_Map.pdf.

Fabian E. Lizarraga, Chief of Police. 2017. "Fort Bragg Police Department Annual Report 2017". Accessed online at: https://city.fortbragg.com/DocumentCenter/5iew/8739/FBPD-2017-Annual-Report.

Fort Bragg Unified School District. District School Sites. Accessed online at: http://www.fbusd.us/.

Mendocino Unified School District. District School Sites. Accessed online at: http://www.mendocinousd.org/.

4.16 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Recreation —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

4.16.1 Setting

The proposed project is situated in both private and public lands. Segment 2 of the pipeline is located on an existing dirt road that is privately owned. Segment 3 is primarily located on lands owned by Lyme Redwood Timberlands, LLC (Lyme). A portion of Segment 4 and segment 5 are situated on JDSF land owned and managed by CALFIRE. The Parks and Recreation (PR) designation includes publicly owned city, district, County, and regional parks facilities, as well as golf courses, whether publicly or privately owned. Appropriate uses in the PR designation are passive and active recreation-oriented activities, and ancillary commercial uses such as snack bars and restaurants.

The nearest zoned public recreation facility, Otis R Johnson Park, is located approximately one mile northwest of Segment 2 of the Proposed Project. Other public recreation facilities nearby include:

- Harold O. Bainbridge Park – 1.5 miles north-northwest of Segment 2
- Noyo Headlands Park – 2.0 miles west of Segment 2
- Pomo Bluffs Park – 2.61 miles southwest
- Glass Beach – 2.22 miles northwest of Segment 2

Although JDSF is zoned as a Timber Production Zone (TPZ), it is a State Forest and therefore open to the public for active, low-impact recreation. A small number of recreationists (walkers, joggers, mountain bikers), were observed during field surveys conducted for this project. JDSF offers fire roads and hiking trails to the public. The proposed staging area for Segment 5 would be within a wide section of FR 450, at the southern end of the proposed segment 5 alignment. This small area would not prevent public access to the road for low-impact recreation activities in JDSF.

4.16.2 Discussion

a, b) **No Impact.** Operations would be similar to existing conditions upon construction completion. The Proposed Project would not directly impact parks, as there are no parks within 1 mile of the Proposed Project site. The Proposed Project would not contribute to an increase in population, nor would it result in an increase in demand on existing neighborhood or regional parks. No additional neighborhood or regional parks would be required to be created as a result of the Proposed Project. The Proposed Project would have no impact on existing or planned parks and recreation facilities.

While construction workers would be brought to the area during the construction season, they are anticipated to come from the surrounding area, and thus would not relocate. Construction workers

would be on the project site during construction hours and would return home or stay in local motels or hotels in the off hours. Therefore, an increased demand on parks resulting in the need for new or improved facilities would not occur. No impact would result to recreation during construction of the Proposed Project and no mitigation measures are required.

4.16.3 Mitigation Measures

No mitigation is required as the Proposed Project would have no impact on recreation.

4.16.4 References

City of Fort Bragg. 2020. Inland Land Use and Development Code. Accessed online at: https://www.codepublishing.com/CA/FortBragg/#!/LUC18/FortBraggNT.html.

City of Fort Bragg. 2008. Map LU-1 Land Use Designations. Accessed online at: https://city.fortbragg.com/DocumentCenter/View/1265/Map-LU-1-Land-Use-Designations-PDF.

County of Mendocino. 2016. Fort Bragg Quadrangle Zoning Display Map. Accessed online at: https://www.mendocinocounty.org/home/showdocument?id=7166.

4.17 Transportation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Transportation– Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☒	☐	☐

4.17.1 Setting

The Proposed Project is located in the City of Fort Bragg's (City) General Plan Area and sphere of influence (SOI), as well as unincorporated Mendocino County (County). The Proposed Project would replace almost 2 miles of the City's raw water pipeline that has reached the end of its service life. Roadways that are within the Proposed Project area include Fort Bragg – Sherwood Road, Georgia Pacific Haul Road (Haul Road), State Route 20 (Highway 20), Dwyer Lane, and FR 450. According to the County General Plan, Fort Bragg – Sherwood Road, and Highway 20. are publicly accessible roadways, while Dwyer Lane and the Haul Road are private roadways. FR 450 is restricted for CALFIRE use only (Mendocino County, 2009). The County General Plan designates Highway 20 as a minor arterial roadway, Fort Bragg – Sherwood Road as a major collector roadway, and the Haul Road, Dwyer Lane, and FR 450 as rural local roads (Mendocino County, 2009). None of the roadways within the Proposed Project area are designated as existing bicycle routes.

4.17.2 Discussion

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than Significant with Mitigation. The entire pipeline would be underground, primarily within existing City easements. Roadways within the proposed pipeline alignment include Fort Bragg – Sherwood Road, the Haul Road, Highway 20, Dwyer Lane, and FR 450. Since the Proposed Project is a buried pipeline project, it would not result in a permeant change to circulation within the City or the County. The Proposed Project does not involve the construction of new roadways or any improvements to existing roadways. As the proposed project would not affect existing roadways, it would not result in a conflict with a program plan, ordinance, or policy addressing the circulation system in the City. Therefore, the proposed project would have no long-term impacts.

Minor short-term traffic-related impacts along Fort Bragg – Sherwood Road, the Haul Road and Dwyer Lane are anticipated due to the implementation of Proposed Project construction. Traffic impacts to Highway 20 are not anticipated due to the use of jack-and-bore crossing of the highway at Dwyer Lane. Temporary traffic handling is not anticipated to be required to complete Segment 4 construction, as FR 450 is not accessible for public use and is only utilized by CALFIRE for emergency

response and maintenance. Access for through traffic, pedestrians, and bicyclists along all roads in the Proposed Project area would be maintained throughout the construction period. However, temporary traffic handling and one-lane traffic control required for Segments 2,3, and 4 construction would result in minor traffic delays in the Proposed Project vicinity. Access to all properties and residences adjacent to the Proposed Project would be maintained throughout Project construction. The Proposed Project could result in temporary traffic disruptions; however, it would be coordinated with the Fort Bragg Fire Department (FBFD), Fort Bragg Police Department (FBPD), the Mendocino County Sheriff's Office (MSCO), and other law enforcement or emergency service providers within the area through the implementation of Mitigation Measure PUB-1 Prepare and Implement a Construction Period Emergency Access Plan, found in the Public Services section, which requires a Standard Construction Period Traffic and Emergency Access Plan. Therefore, proposed project construction would not conflict with a program plan, ordinance, or policy addressing the circulation system. The proposed project would have less than significant impact with the implementation of mitigation.

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less Than Significant. The Proposed Project would construct a raw water pipeline. The Proposed Project would be entirely underground, primarily within existing City easements. Operations of Fort Bragg – Sherwood Road, the Haul Road, Highway 20, Dwyer Lane, and FR 450 would be the same as existing conditions upon construction completion. The Proposed Project would not increase capacity along any road, nor would it increase traffic and congestion. Therefore, the Proposed Project would not increase vehicle miles traveled (VMT) on the surrounding roadways.

Access for vehicles, pedestrians, and bicyclists along roads within the Proposed Project area would be maintained throughout the construction period. Access to all adjacent properties would be maintained throughout the construction period as well. Thus, no detours would be required during construction for vehicular traffic. Because the roadways would maintain existing capacity and no detours would be necessary during construction, the Proposed Project construction activities would not result in an increase in VMT. Construction personnel would be required to commute to the proposed project site; however, it is assumed that construction personnel would come from the City or County and surrounding areas. In addition, by nature, construction personnel commute to various construction sites for their job. Therefore, it is not anticipated that the Proposed Project would increase VMT because of construction personnel.

CEQA Guidelines Section 15064.3 (b) provides criteria for analyzing transportation impacts. As stated in Section 15064.3(b)(2), transportation projects that reduce, or have no impact on, vehicle miles traveled (VMT) should be presumed to cause a less than significant impact. The Proposed Project would have no lasting impacts on traffic circulation with the City or the County. Operations of the Proposed Project would be similar to existing conditions upon completion of construction. The Proposed Project would not increase or decrease future vehicle capacity or create long-term changes to traffic patterns or VMT. Upon the completion of Proposed Project construction, no changes in traffic patterns, VMT or average daily traffic (ADT) would result from the Proposed Project and no mitigation measures would be required.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant with Mitigation. The Proposed Project would construct a raw water pipeline. The Proposed Project would be entirely underground, primarily within existing City easements. Thus, the proposed project would not change existing roadways and does not include design features such

as sharp curves or dangerous intersections, or any incompatible uses that would increase hazards along roadways above existing conditions. Therefore, the proposed project would have no impact in this regard and mitigation would not be required.

Temporary traffic handling and one-lane traffic control would be required along Fort Bragg – Sherwood Road, –the Haul Road and Dwyer Lane to complete Proposed Project construction. Implementation of traffic handling and one-lane traffic control would temporarily increase traffic hazards at the Proposed Project site for the duration of construction activities. Upon the completion of the Proposed Project construction, traffic handling and one-lane closures would be removed and traffic circulation at the project site would return to existing conditions. With the implementation of **Mitigation Measure TRA-1, Prepare Standard Traffic Management Plan,** the Proposed Project would have a less than significant impact on traffic hazards and incompatible uses during construction.

d) Result in inadequate emergency access?

SEGMENT 2

Less Than Significant with Mitigation. Segment 2 of the Proposed Project would have no impacts on Fort Bragg – Sherwood Road or access to adjacent residences and properties, upon the completion of the Proposed Project. Access along Fort Bragg - Sherwood Road and to properties adjacent to the Segment 2 proposed pipeline site would be maintained throughout construction; however, the Proposed Project would require the implementation of traffic handling and one-way traffic control to complete construction activities. Proposed traffic handling and one-way traffic control have the potential to create traffic congestion at the Segment 2 Project site which may temporarily interfere with police and fire response times or school bus routes within the Segment 2 Project vicinity. Potential impacts to emergency access as a result of traffic handling activities associated with Segment 2 of the Proposed Project are anticipated to be minor and would cease upon the completion of construction activities. With the implementation of **Mitigation Measure PUB-1, Prepare and Implement a Construction Period Emergency Access Plan,** impacts to emergency access at the Segment 2 Project site would be less than significant.

SEGMENT 3

Less Than Significant with Mitigation. Segment 3 of the Proposed Project would have no impacts on the Haul Road or access to adjacent residences and properties, upon the completion of the Proposed Project. As shown in the project description, a 100-foot square pit would be constructed on the GP Haul Road for lining the pipeline across the Noyo River and may cause temporary impacts to logging traffic for several days. Access along the Haul Road and to properties adjacent to the Segment 3 proposed pipeline site would be maintained throughout construction; however, the Proposed Project would require the implementation of traffic handling and one-way traffic control to complete construction activities. Proposed traffic handling and one-way traffic control have the potential to disrupt police and fire result response times within the Segment 3 proposed pipeline vicinity. Potential impacts to emergency access as a result of traffic handling activities are anticipated to be minor due to the low ADT along Georgia – Pacific Haul Road (Caltrans, 2017), and would cease upon the completion of construction activities. With the implementation of **Mitigation Measure PUB-1,** impacts to emergency access at the Segment 3proposed pipeline site would be less than significant.

SEGMENT 4

Less Than Significant with Mitigation. Segment 4 of the Proposed Project would have no impacts on Highway 20, Dwyer Lane, or access to adjacent residences and properties upon the completion of Project construction. Access along Highway 20, Dwyer Lane, and to properties adjacent to the

Segment 4 proposed pipeline site would be maintained throughout construction. Segment 4 of the Proposed Project would avoid impacting traffic patterns or emergency access along Highway 20 through the use of a jack-and-bore crossing at Dwyer Lane; however, temporary traffic handling and one-lane traffic control would be required along Dwyer Lane to safely complete Proposed Project construction. Proposed traffic handling and one-way traffic control have the potential to disrupt police and fire response times along Dwyer Lane within the Segment 4 Project area. Potential impacts to emergency access as a result of traffic handling activities are anticipated to be minor due to the low ADT of Dwyer Lane (Caltrans, 2017), and would cease upon the completion of construction activities. With the implementation of **Mitigation Measure PUB-1,** impacts to emergency access at the Segment 4 proposed pipeline site would be less than significant.

SEGMENT 5

Less Than Significant with Mitigation. Segment 5 of the Proposed Project would have no impacts on FR 450 upon the completion of Project construction. Temporary traffic handling is not anticipated to be needed to complete Segment 5 Project construction, as FR 450 is not accessible for public use and is only utilized by CALFIRE for emergency response and maintenance. Coordination with CALFIRE and implementation of **Mitigation Measure PUB-1,** would ensure that Segment 5 of the Proposed Project would have a less than significant impact on emergency access during construction.

4.17.3 Mitigation Measures

Mitigation Measure TRA-1: Prepare Standard Traffic Management Plan. The City will coordinate with Lyme for the temporary traffic and circulation impacts to the Haul Road during construction of Noyo River lining and Segment 3. The City would minimize disruptions to traffic along roadways within the Project area by implementing the following measures:

- During construction, the contractor shall place temporary signage to inform traffic of suggested construction zone traffic procedures.
- During construction, the contractor shall post reduced speed work zone signs at the proposed project site.
- The Contractor shall be required to submit a traffic control plan that will be approved by the City prior to construction.

Mitigation Measure PUB-1: Construction Period Emergency Access Plan. See the Public Services section of this document for information about this mitigation measure.

4.17.4 References

California Department of Transportation (Caltrans). 2017. 2017 Traffic Volumes. Available: https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes/2017/route-16-20. Accessed June 12, 2020.

Mendocino County. 2009. Mendocino County General Plan – Ch. 3 Development Element. Available: https://www.mendocinocounty.org/home/showdocument?id=5232. Accessed June 12, 2020.

4.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Tribal Cultural Resources — Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	☐	☒	☐	☐

4.18.1 Setting

A tribal cultural resource (TCR) is defined as a site, feature, place, cultural landscape, or sacred place or object that has cultural value to California Native American tribes. In order to be considered a TCR, the resource must be included in or determined eligible for inclusion in the California Register of Historic Resources (CRHR) or is in included in a local register of historical resources. Pursuant to Public Resource Code [PRC] §2107, a TCR is defined as either:

1. A site, feature, place, cultural landscape, sacred place, or object that has cultural value to California Native American Tribes that is included or determined to be eligible for inclusion in the CRHR (California Register) or a local register of historical resources.
2. A resource determined by the lead agency to be significant and is supported by substantial evidence.
3. A geographically defined cultural landscape that meets the criteria set forth in PRC §21074.
4. A historical resource described in PRC §21084.1, a unique archeological resource or "nonunique archaeological resource" described in PRC §21083.2 (g) and (h).

The CEQA Guidelines state that California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their TCRs. Lead agencies shall consult with these tribes who respond in writing and requests the consultation within 30 days of receipt of the formal notification of the project (PRC §21080.3.1). Traditionally and culturally affiliated tribes of a project area may suggest mitigation measures, including, but not limited to, those recommended in §21084.3.

In an effort to identify TCRs, WRA on behalf of the City reached out to the Native American Heritage Commission (NAHC) on May 27, 2020, requesting a search of the sacred lands files and a suggested list of Native American Tribes, groups, or individuals with interest in the project area and vicinity (**Table 4-19**). The NAHC responded on May 28, 2020, and formal notification via consult letters were sent by the City to the following tribes on September 15, 2021. Follow-up phone calls were made to tribal representatives

and the calls were documented in the WCR cultural report. No information was shared regarding cultural resources in the project area.

Table 4-19. Tribal Contacts

Tribe	Contact Name and Title
Coyote Valley Band of Pomo Indians	Michael Hunter, Chairperson
Guidiville Indian Rancheria	Merlene Sanchez, Chairperson
Noyo River Indian Community	None provided
Pinoleville Pomo Nation	Leona Williams, Chairperson Erica Carson, Tribal Historic Preservation Officer
Redwood Valley or Little River Band of Pomo Indians	Debra Ramirez, Chairperson
Sherwood Valley Rancheria of Pomo	Melanie Rafanan, Chairperson Tina Sutherland, Tribal Historic Preservation Officer

4.18.2 Discussion

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe

Less than Significant Impact with Mitigation. Although no evidence has been provided by the Tribes that TCRs are present in the project area and the thresholds under PRC Section 21074(a)(1) have not been met, the City acknowledges that TCRs may be present within the project area, and the proposed project could cause a significant impact to unknown TCRs within the project footprint. Accordingly, implementation of **Mitigation Measure TCR-1, Unanticipated Discovery of Tribal Cultural Resources**, (in addition to **Mitigation Measures CUL-1, Stop Work if Resources Unearthed,** and **CUL-2, Compliance with California State Health and Safety Code, Section 7050.5**, which are located in the Cultural Resources Section) is required. With the incorporation of these mitigation measures to address unanticipated discoveries to TCRs, the proposed project's potential impacts to unknown TCRs would be less than significant.

4.18.3 Mitigation Measures

Mitigation Measure TCR-1: Unanticipated Discovery of Tribal Cultural Resources. If a tribal cultural resource is encountered during project-related ground-disturbing activities, the construction contractor will cease all work within 100 feet of the find until it can be determined if the resource is significant. The contractor will notify the City, and the resource will be avoided, if possible. Preservation-in-place is the preferred manner of mitigating impacts; however, if avoidance is not feasible, a Treatment Plan that documents the research approach and methods for data recovery will be prepared and implemented in consultation with the City, and the appropriate tribal organization.

4.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Utilities and Service Systems – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

4.19.1 Setting

The Proposed Project is a buried pipeline, that would be constructed along a parallel or improved alignment. A portion of the Proposed Project lies within the City limits, while the majority of the Proposed Project is located within lands of unincorporated Mendocino County. The City of Fort Bragg provides utilities and services including water and wastewater (sewer) services. Power is provided by the Pacific Gas & Electric (PG&E) and Waste Management is the garbage collection service for the city. Propane gas is provided by commercial companies such as ER Energy, Inc., and Amerigas Propane.

Overhead utilities are present within and in proximity to the Proposed Project site, particularly within Segments 3 and Segment 4. Overhead electric and telecommunication lines exist at the Highway 20 crossing in Segment 4 and continue down Dwyer Lane. Overhead electric and telecommunication lines also exist at the Newman Gulch Intake Road at Segment 3. These overhead utilities lines are not anticipated to conflict with construction activities and would therefore not require relocation.

Portions of the City's existing raw water pipeline have reached the end of their service life. The raw water line that collects water from the Noyo River, which is conveyed from the Madsen Hole intake structure to the WTP via 10-inch and 14-inch diameter pipelines, has been replaced and is not a part of this Project. The second and third sources of supply are from two local streams at the Waterfall Gulch and Newman Gulch watersheds, both pumped in a single connecting pipeline under gravity pressure to the WTP. The

existing pipeline is a combination of 6, 8, 10, and 12-inch diameter polyvinyl chloride (PVC), asbestos cement, ductile iron, and steel pipes.

4.19.2 Discussion

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?

Less than Significant. The Proposed Project would consist of a buried, 10-inch pipeline constructed along a parallel or improved alignment to the existing raw water pipeline. A majority of the pipeline would be constructed using traditional open-cut, direct-buried pipeline installation, as well trenchless technology for the lining of the Noyo River crossing. A mini-excavator would be used for the Hare Creek crossing due to tight accessibility issues. The Proposed Project would not require the relocation or construction of new or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities. The existing raw water pipeline would be abandoned in place, and the new raw water pipeline would be constructed along a parallel or improved alignment and would be designed to provide effective, reliable water to the City of Fort Bragg.

The Proposed Project would be required to comply with all necessary local, state, and federal permits and would therefore be subject to avoidance and minimization measures, as well as standard BMPs described in those permits and would not have a significant effect on the environment. The Proposed Project impacts would be less than significant. No mitigation measures are required.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant. The new pipeline would be constructed parallel to, or of an improved alignment, to the existing water pipeline. The Proposed Project would be constructed over four Segments, each Segment being constructed over 48-94 days. During construction, the existing raw water pipeline would remain in place and functional. Temporary water shutoffs may be necessary to construct a pipeline segment in order to divert water from the existing raw water pipeline to the new replacement pipeline and would not adversely affect the water supply to the City of Fort Bragg. The City would rely on existing storage during these brief periods. The replacement pipeline would not affect water supplies for reasonably foreseeable future development during normal, dry, and multiple dry years. The Proposed Project would improve water supply reliability to the City of Fort Bragg. Therefore, the impacts to water supply would be less than significant. No mitigation measures are required.

c) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The Proposed Project would construct a new raw water pipeline and leave the existing pipeline abandoned in place. The Proposed Project would not generate wastewater; thus, it would not require wastewater services. During construction, port-a-potties are typically used at construction sites; however, they are removed once construction is completed. There would be no impact to wastewater treatment demands would be and no mitigation measures would be required.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant. The Proposed Project would construct a new raw water pipeline and leave the existing pipeline abandoned in place. The Proposed Project would generate minor amount of solid

waste from pipeline construction activities; however, the Proposed Project would not result in long-term demands for solid waste disposal services. Solid waste generated during with construction would be handled through existing local waste management providers in Fort Bragg at the local landfill. Solid waste generation would cease upon completion of the Proposed Project. The generated solid waste would be minimal, and its impact regarded as less than significant. No mitigation measures would be required.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant. The Proposed Project would comply with all federal, state, and local statutes and regulations related to solid waste including compliance with the 1989 California Integrated Waste Management Act (AB 939) requiring specific waste diversion goals for local agencies. All recyclables and organics collected from the Proposed Project area would be taken to the appropriate facilities. Solid waste generation would be extremely minimal, as the existing raw water pipeline would be abandoned in place. Any solid waste generated would be a direct result of construction activities. In following all federal, state, and local statutes and regulations, the Proposed Project's impact regarding solid waste would be less than significant.

4.19.3 Mitigation Measures

No mitigation is required as impacts to utilities are less than significant.

4.19.4 References

City of Fort Bragg. 2020. Finance & Utility Billing. Accessed online at: https://city.fortbragg.com/207/Finance-Utility-Billing.

4.20 Wildfire

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Wildfire – If located in or near sate responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

4.20.1 Setting

Segment 2 of the Proposed Project is located within the City of Fort Bragg's SOI, while Segments 3-5 of the Proposed Project are located in unincorporated Mendocino County. There are areas in the Proposed Project site that have steep slopes, are heavily wooded, and are prone to landslide hazards.

The City of Fort Bragg Fire Department (FBFD) provides fire protection services to Segment 2 of the Proposed Project, while the California Department of Forestry and Fire Protection (CALFIRE) provides fire protection services to Segment 3, 4, and 5 of the Proposed Project (City of Fort Bragg, 2018). The FBFD is a volunteer fire department with 36 active firefighters and three fire stations, and services the area within the City's SOI (FBFD, 2020). The nearest FBFD fire station to the Segment 2 Project alignment is located at 141 North Main Street, Fort Bragg, CA approximately 1.40 miles west of the Project site. The CALFIRE Mendocino Unit is responsible for providing fire protection services outside of the City of Fort Bragg SOI and includes 10 fire station units throughout Mendocino County. The nearest CALFIRE station to the Proposed Project is located at 802 North Main Street, Fort Bragg, CA, approximately 1.90 miles northwest of the northern limited of Segment 3 of the Proposed Project. In the event of an emergency, about half of Fort Bragg will evacuate to the north on Highway one, with the other half heading south. Some portion of those evacuating to the south may use Highway 20.

The entirety of the Proposed Project is within a State Responsibility Area (SRA) (CALFIRE, 2007a; CALFIRE, 2007b). The Segment 2 proposed pipeline goes through moderate, high, and very high Fire Hazard Severity Zones (FHSZ) (CALFIRE, 2007b). The Segment 3 proposed pipeline is located within high and very high FHSZ (CALFIRE, 2007b). The Segment 4 proposed pipeline is located within moderate, high and very high FHSZ (CALFIRE, 2007b). The Segment 5 proposed pipeline is located within moderate and high FHSZ (CALFIRE, 2007b).

4.20.2 Discussion

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

SEGMENT 2

Less Than Significant with Mitigation. The Segment 2 proposed pipeline would connect the Noyo River Crossing to the WTP site. The Segment 2 proposed pipeline would be underground along the existing water pipeline alignment. Operations of the nearby roads, Fort Bragg-Sherwood Road and Monsen Way would be the same as existing conditions upon construction completion. The Segment 2 proposed pipeline would not increase capacity along Fort Bragg-Sherwood Road or Monsen Way, nor would it increase traffic and congestion. Therefore, the proposed project would not impair an adopted emergency response plan or emergency evacuation plan, as Fort Bragg-Sherwood Road and Monsen Way operations would be similar to existing conditions. The proposed project would have no impact to emergency response plans or emergency evacuation plans during proposed project operations.

Fort Bragg-Sherwood Road and Monsen Way would remain open to through traffic during construction. Access to nearby residences along Fort Bragg-Sherwood Road would be maintained throughout construction. The Segment 2 proposed pipeline would not physically impair access to other existing roadways. The Segment 2 proposed pipeline may require the implementation of traffic handling and one-way traffic control to complete construction activities. Proposed traffic handling and one-way traffic control have the potential to create congestion where the proposed Segment 2 pipeline crosses Fort Bragg-Sherwood Road, which may temporarily interfere with police and fire response times. Potential impacts to emergency access because of traffic handling activities are anticipated to be minor and would last for the approximate three-month construction period. The proposed project would be coordinated with the FBFD, Fort Bragg Police Department (FBPD), the Mendocino County Sheriff's Office (MCSO), and other law enforcement or emergency service providers within the area through a standard Construction Period Traffic and Emergency Access Plan, as required under **Mitigation Measure PUB-1, Prepare and Implement a Construction Period Emergency Access Plan**, found in the Public Services section. The implementation of mitigation **PUB-1** would reduce the proposed project's potential to impair emergency access during construction. Therefore, impacts during construction would be less than significant with the incorporation of mitigation.

SEGMENT 3

Less Than Significant with Mitigation. The Segment 3 proposed pipeline starts where the Georgia-Pacific Haul Road (Haul Road) intersects the existing Noyo River Crossing and then follows the Haul Road in a westerly direction before traversing generally southeast to the Summers Lane Reservoir. The Segment 3 proposed pipeline runs through very dense forest land and is not near any public roads. The Segment 3 proposed pipeline would construct for several hundred feet of the Haul Road, which is a private timber road owned by the Lyme. The proposed pipeline would be underground and is not near any public roads. Operations of the Haul Road would be the same as existing conditions upon construction completion. The proposed project would not impair an adopted emergency response plan or emergency evacuation plan, as no public roads would be impacted. There would be no impact to emergency response plans or emergency evacuation plans during proposed project operations.

Access along the Haul Road and to adjacent properties would be maintained throughout construction. The Segment 3 proposed pipeline would require the implementation of minor traffic control during construction activities. Traffic control has the potential to disrupt police and fire response times along the Haul Road. Potential impacts to emergency access because of traffic handling activities are

anticipated to be minor due to the low ADT along the Haul Road (Caltrans, 2017), and would be temporary in nature. With the implementation of **Mitigation Measure PUB-1**, found in the Public Services section, impacts to emergency access, and adopted emergency response and evacuation plans during construction would be less than significant.

SEGMENT 4

Less Than Significant with Mitigation. The Segment 4 proposed pipeline begins with a bore and jack operation under Highway 20 at Dwyer Lane, runs along Dwyer Lane, and traverses southeast downslope through dense forest land to Covington Gulch. Dwyer lane is a narrow dirt road. The Segment 4 pipeline would be underground along the existing water pipeline alignment. Operations of the nearby roads, Highway 20, and Dwyer Lane would be the same as existing conditions upon construction completion. The Segment 4 proposed pipeline would not increase capacity along Highway 20 and Dwyer Lane, nor would it increase traffic and congestion. Therefore, the proposed project would not impair an adopted emergency response plan or emergency evacuation plan, as Highway 20 and Dwyer Lane operations would be similar to existing conditions. The proposed project would have no impact to emergency response plans or emergency evacuation plans during proposed project operations.

Access along Highway 20, Dwyer Lane, and to properties off Dwyer Lane would be maintained throughout construction. A jack-and-bore crossing under Highway 20 at Dwyer Lane would be used to connect the existing pipeline on the north of Highway 20 to the Segment 4 proposed pipeline. Minor traffic control along Dwyer Lane is expected during construction in the residential neighborhood, which would result in minor traffic delays and temporary impacts to circulation for residents in the area. Traffic control would have the potential to disrupt police and fire response times along Dwyer Lane. Potential impacts to emergency access as a result of traffic handling activities are anticipated to be minor due to the low ADT of Dwyer Lane (Caltrans, 2017), and would be temporary in nature. With the implementation of **Mitigation Measure PUB-1**, found in the Public Services section, impacts to emergency access, and adopted emergency response and evacuation plans during construction would be less than significant.

SEGMENT 5

Less Than Significant with Mitigation. The Segment 5 proposed pipeline runs from the north side of the Hare Creek Crossing to the existing pipeline at Waterfall Gulch, north of FR 450. The Segment 5 proposed pipeline is in very dense forest land and is not near public roads. FR 450 is located immediately south of the southernmost part of the Segment 5 proposed pipeline. FR 450 is a private road owned by Jackson Demonstration State Forest (JDSF) and is used for timber harvesting, forest management activities, forest protection, public access, and recreation. The Segment 5 proposed pipeline would not cross FR 450. As the Segment 5 proposed pipeline would be underground upon construction completion, there would be no impacts to nearby roads, emergency response plans or emergency evacuation plans during proposed project operations.

The proposed staging area for Segment 5 of the proposed pipeline would be within a wide section of FR 450, at the southern end of the proposed Segment 5 alignment. Traffic control would not be needed, as FR 450 is a private road that does not get a lot of traffic. Coordination with JDSF and CALFIRE and the implementation of **Mitigation Measure PUB-1**, located in the Public Services section, would ensure that construction of the Segment5 proposed pipeline would have a less than significant impact on emergency access and adopted emergency response and evacuation plans during construction.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

SEGMENTS 2 AND 4

Less Than Significant with Mitigation. The Segment 2 and 4, proposed pipelines would abandon the existing pipeline in-place and replace it with a new raw water pipeline along approximately the same alignment. Land use and roadway operations within and adjacent to the Segments 2, and 4 proposed pipelines would be the same as existing conditions upon construction completion. Operations of the Segments 2, and 4 proposed pipelines would be similar to existing conditions upon the completion of construction, as the Segment 2, and 4 proposed pipelines would be completely underground and parallel to existing pipeline. The proposed pipeline improvements on Segments 2 and 4 would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. Therefore, operation of the Segments 2, and 4 proposed pipelines would have no impact on increased wildfire risk.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segments 2, and 4 proposed pipelines alignment could result in the ignition of a fire due to the heavily forested nature of the nature of the surrounding area. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Segments 2 and 4 proposed pipeline sites. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1, Prepare and Implement Fire Safety Plan,** would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Construction related impacts would remain less than significant after implementation of mitigation measure.

SEGMENTS 3 AND 5

Less Than Significant with Mitigation. Segments 3 and 5 of the proposed pipeline would abandon the existing pipeline in-place and replace it with a new raw water pipeline along a new alignments. Segments 3 and 5 proposed pipeline would require land clearing, timber harvest, access road grading and earthwork to install the pipeline along a new alignment. A temporary construction easement would likely be required for proposed access road grading, pipe stringing, trench excavation, trench soil storage, pipeline installation, trench backfill and compaction, and restoration of the right-of-way (ROW). Setbacks from the top of slopes should be approximately 150 feet, if possible, given site conditions. Segments 3 and 5 proposed pipeline would follow existing skid trails or roads to the extent possible to minimize impacts to vegetation. The new alignment would run through a gentler sloping topography than the existing pipeline alignment. These changes would not exacerbate wildfire risks, and therefore would not expose people in the surrounding area to pollutants due to wildfire or the uncontrolled spread of wildfire. The Segment 3 proposed pipeline would have a less than significant impact in this regard. The improvements would not result in substantial changes in slope, prevailing winds, or other site conditions that would expose people or structures to increased wildfire risks. Therefore, operation of Segments 3 and 5 proposed pipeline would have no impact on increased wildfire risk.

Construction activities involving vehicles, heavy machinery, and personnel smoking along the Segments 3 and 5 proposed pipeline alignment could result in the ignition of a fire due to the heavily forested nature of the surrounding area. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire at the Segment 3 proposed pipeline site. Heated mufflers and improper disposal of cigarettes could

potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1** would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Construction related impacts would remain less than significant after implementation of mitigation measures.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant with Mitigation. The Proposed Project would require improvements to access roads, including access road grading. Access roads are necessary to complete the Proposed Project and to provide maintenance access to the new pipeline. Access road grading and installment would be coordinated with the nearby property owners. The installation and reestablishment of access roadways and future maintenance activities could potentially result in marginal increases in fire risk within the Project area; however, implementation of **Mitigation Measure FIRE-1** would ensure that Proposed Project improvements would have less than significant impacts on fire risk in the Project area.

The Proposed Project would not have any effect on other existing infrastructure; therefore, the Proposed Project would not require the installation or maintenance of additional infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts from proposed project implementation would have no impacts relative to this topic.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact. Significant sections of the Proposed Project are situated in steep, heavily wooded, and landslip-prone areas. Geotechnical data was collected during the pipeline planning process and the Project has been designed with these existing constraints in mind. Segments 2 and 4 of the Proposed Project would be installed underground along the existing alignment. Thus, operations of these Segments would be similar to existing conditions upon construction completion and improvements would not increase stormwater runoff, change drainage patterns, or result in a population increase that would ultimately expose people or structures to significant risks. Segments 3 and 5 of the Proposed Project would have a new alignment that would avoid the unstable and steep terrain in Newman Gulch that the existing pipeline runs through. The new alignment would reduce the risk of exposing people or structures to significant risks, including downslope or downstream flooding, as a result of runoff, post-fire slope instability, or drainage changes.

Access road grading and possible permanent installation of access roads along the Proposed Project alignment is anticipated to slightly modify drainage patterns at the Proposed Project site; however, any drainage changes associated with access road improvements would be minimal and would not expose people or structures to significant risks. The proposed project would not substantially increase stormwater runoff, result in drainage pattern changes, or result in a population increase that would ultimately expose people or structures to significant risks.

Mendocino County has a Risk Index that is Relatively High for Landslides (FEMA, 2021). Segments 2 and 3 of the proposed pipeline are in both Zone X, Area of Minimum Flood Hazard, and Zone A, Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage, on the Federal Emergency Management Agency's (FEMA) National Flood Hazard Map (NFHL). Segments 4 and 5 of the Proposed Project are both within Zone X.

During construction, construction workers would be present on site; however, this increase in workers would be temporary in nature. The risks associated with runoff, slope instability, and drainage changes within the Project site during construction would be similar to existing conditions. Therefore, the Project would have a less than significant impact in this regard and no mitigation measures are required.

4.20.3 Mitigation Measures

Mitigation Measure PUB-1: Prepare Construction Period Emergency Access Plan. See the Public Services section of this document for information about this mitigation measure.

Mitigation Measure FIRE-1: Prepare and Implement Fire Safety Plan. Prior to the start of construction, the contractor shall coordinate with the Mendocino County Fire Department, City of Fort Bragg Fire Department, and CALFIRE shall coordinate to prepare a Fire Safety Plan for use during construction and operation of the Proposed Project. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

1. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
2. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition.
3. Equipment parking areas (staging areas) shall be cleared of all extraneous flammable materials.
4. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.
5. Smoking shall be prohibited in wildland areas and shall be limited to paved areas or areas cleared of all vegetation.

4.20.4 References

California Department of Forestry and Fire Protection (CALFIRE). 2020. Mendocino County, CA Fire Departments. Available: https://www.firedepartment.net/directory/california/mendocino-county. Accessed June 12, 2020.

California Department of Forestry and Fire Protection (CALFIRE). 2007a. Local Responsibility Area. Available: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed June 12, 2020.

California Department of Forestry and Fire Protection (CALFIRE). 2007b. State Responsibility Area. Available: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed June 12, 2020.

City of Fort Bragg. 2018. Fort Bragg Coastal General Plan. Ch. 7 – Safety Element. Available: https://city.fortbragg.com/AgendaCenter/ViewFile/Agenda/_02262019-680. Accessed June 12, 2020.

Federal Emergency Management Agency (FEMA). National Flood Hazard Layer (NFHL) Viewer. Online: https://hazards-

fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Date Accessed: August 18, 2021.

Federal Emergency Management Agency (FEMA). National Risk Index. Online: https://hazards.fema.gov/nri/map#. Date Accessed: August 18, 2021.

Fort Bragg Fire Department (FBFD). 2020. Fire Department. Available: https://city.fortbragg.com/372/Fire-Department. Accessed June 12, 2020.

4.21 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Mandatory Findings of Significance –				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

4.21.1 Setting

According to CEQA regulations and guidelines, the Lead Agency must summarize the finding of significance from earlier sections and must consider potential cumulatively considerable effects for environmental impact reports (EIRs) and in the discussion section below. Even though this environmental document is an ISMND and not an EIR, the potential for cumulatively considerable effects is analyzed below.

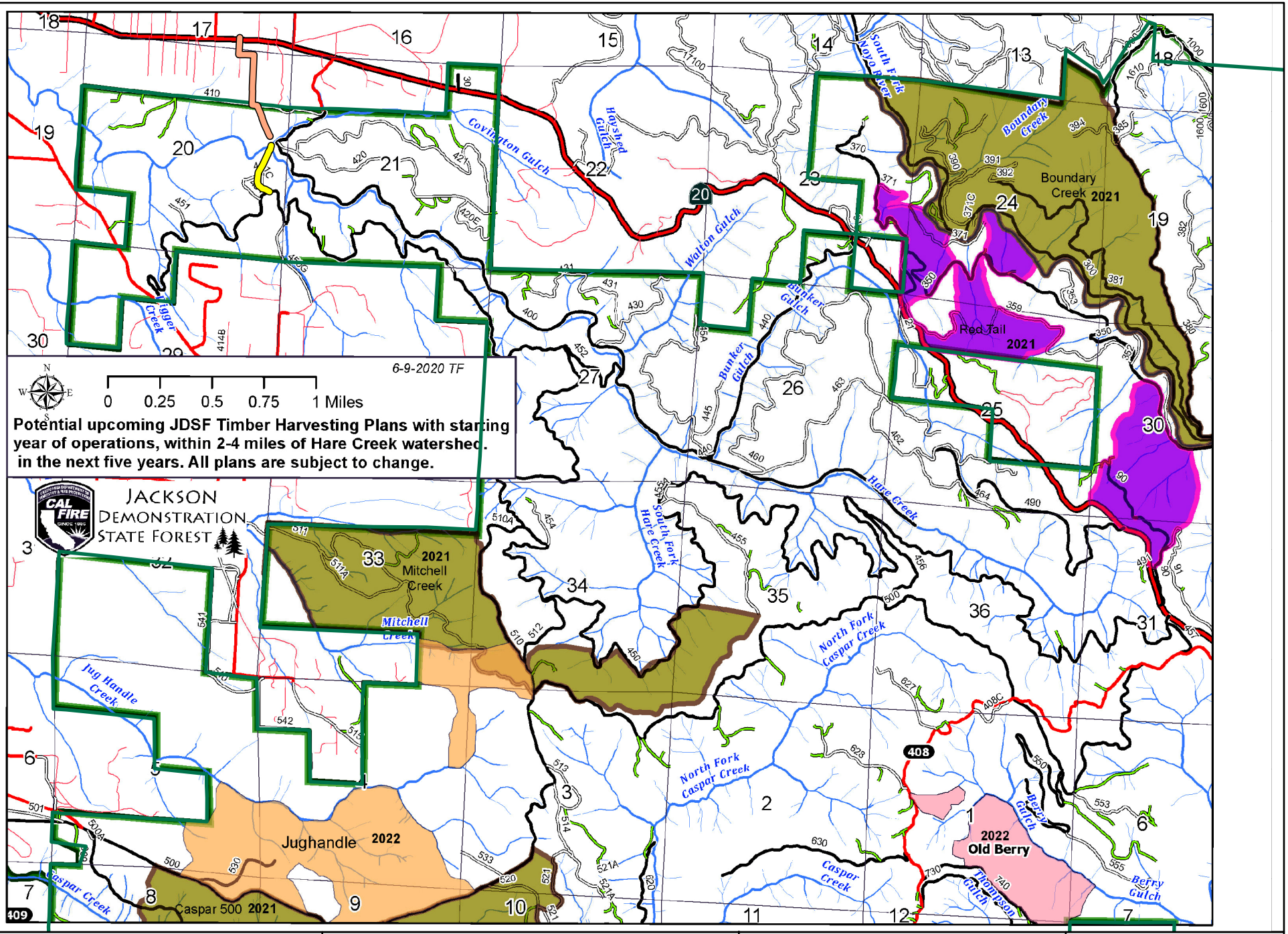
For the cumulative analysis, the City selected the listing approach to identify past, present and future projects in the project area that combined with the impacts of the City project could generate cumulative impacts. The city reviewed available information from Caltrans District 1, JDSF, Lyme and Mendocino County Planning Department on potential projects in the project vicinity. **Figure 4-17** presents information provided by JDSF on upcoming timber harvest plans within 5 miles of the Noyo River/Hare Creek/Covington Gulch watersheds within their jurisdiction in the next 5 years (Fabula pers comm). A general description of these potential timber harvest projects that were considered for cumulative impact analysis is provided below:

<u>BOUNDARY CREEK THP</u>

This timber harvest plan is located north of Highway 20 in the Boundary Creek tributary of South Fork Noyo River watershed located approximately three miles to the east of the City's pipeline project.

<u>RED TAIL THP</u>

Currently underway. This timber harvest plan (shown in purple) is also located in South Fork Noyo River watershed adjacent to and south of the Boundary Creek THP.



Legend

- Proposed Project Segment 4
- Proposed Project Segment 5
- Jackson State Demonstration Forest Boundary

Fort Bragg Raw Waterline Replacement Project
Fort Bragg, CA

JDSF Timber Harvesting Plans 2020-2025

Dewberry

Figure 4-17

MITCHELL CREEK THP

Scheduled for 2021 and is located in the Mitchell Creek watershed, approximately 1.5 mile south of the City's pipeline project.

THE JUGHANDLE THP

Scheduled for 2022 and is located in Jug Handle Creek watershed. This THP is located about 3 miles south of the City's pipeline project.

CASPAR THP

Currently underway and is located in the Caspar Creek watershed, which is located about 3.5-4miles south of the Hare Creek watershed.

LYME THP

Lyme is proposing to conduct timber harvest within their lands south of the Noyo River, which includes Segment 3 of the City's water line project. Lyme would prepare and submit a THP for the timber harvest with CALFIRE if they proceed before construction of the Proposed Project. The City plans to coordinate closely with Lyme on timing of their THP and the City's project. The presumed sequence of events is for the City to construct their Segment 3 pipeline after Lyme has completed their timber harvest. The City would coordinate with Lyme and CALFIRE for implementation of any adopted mitigation measures for their pipeline project within the Lyme THP area. If Lyme does not elect to proceed with a THP, the City would move forward using a utility exemption.

A review of current projects by Caltrans District 1 website (accessed August 16, 2021) shows they have 18 projects currently being planned and implemented in their region. Review of the information available on those projects indicates that none of the projects are near the City's water line project vicinity (www. https://dot.ca.gov/caltrans-near-me/district-1/d1-projects).

4.21.2 Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number, or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. The information in Section 4.4, Biological Resources, of this Initial Study/Mitigated Negative Declaration (ISMND) analyzes the potential effects of the proposed project on biological resources, including habitats, special-status plant species, and special-status wildlife species. Section 4.4, Biological Resources, requires the implementation of **Mitigation Measures BIO-1** through **BIO-10**. The impacts would be less than significant with the incorporation and adoption of mitigation measures. The information in Section 4.5, Cultural Resources, and Section 4.18, Tribal Cultural Resources, of this study analyze possible proposed project effects on cultural and tribal cultural resources including the possibility of human remains. Section 4.5, Cultural Resources, and Section 4.18, Tribal Cultural Resources, require the implementation of **Mitigation Measure CUL-1**, **CUL-2,** and **TRC-1**. The impacts would be less than significant with the incorporation of mitigation measures.

b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in

connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant with Mitigation. The City has identified several projects in the general region that are proposed within the general time frame of the City's pipeline project. The City's water line project is located primarily in forest lands and therefore the focus here was on projects proposed within JDSF and forest lands owned by Lyme as the City's project cuts through both of their properties. All of the projects presented previously are timber harvest plans located within the JDSF and are subject to strict requirements and environmental protection measures of the California Forest Practices Act. Each of these THPs listed above are subject to detailed planning and environmental impact analysis for approval by CALFIRE and undergo public review process. All of these THPs are approved with various terms and conditions to ensure environmental protections are in place to protect special status species, wetlands and other. The impacts of the City's project combined with these known future THPs is not expected to result in cumulative impacts because mitigation will be recommended for all significant environmental impacts of these projects through the THP process. Additionally, all of the known THPs provided by CALFIRE are located outside of the Hare Creek/Covington Gulch watershed therefore there are no combined effects at a watershed tributary scale. All of these projects must comply with local, state, and federal environmental laws and mitigation. Implementation of all the mitigation measures in this document **Mitigation Measures BIO1** through **BIO-10** would avoid significant cumulative impacts. For these reasons, this impact is considered less than significant with mitigation incorporated.

c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation. The City's raw water line project would have short-term temporary traffic, noise, and air quality impacts from construction activities to residents that live primarily along Sherwood Drive and Dwyer Lane. Various mitigation measures are recommended in Sections 4.2, Air Quality, and Section 4.13, Noise, and would address these issues to minimize impacts to local City and County residents. For these reasons, this impact is considered less than significant with mitigation incorporated.

4.21.3 Mitigation Measures

No additional mitigation measures are recommended beyond those presented in the individual technical sections of this ISMND.

APPENDICES

APPENDIX A. ROAD CONSTRUCTION EMISSIONS MODEL

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Moody Creek Bridge Replacement Project	
Construction Start Year	2023	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	8.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.13	miles
Total Project Area	2.81	acres
Maximum Area Disturbed/Day	2.81	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet
Off-road Equipment Emissions Mitigation	

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.80		1/1/2023
Grading/Excavation		3.60		1/26/2023
Drainage/Utilities/Sub-Grade		2.40		5/16/2023
Paving		1.20		7/28/2023
Totals (Months)		8		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grading/Excavation (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Paving (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grading/Excavation (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Paving (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip		20	Calculated	Calculated
One-way trips/day		2	Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		28	56	1,120.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		8	16	320.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grading/Excavation (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Paving (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grubbing/Land Clearing (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Grading/Excavation (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Draining/Utilities/Sub-Grade (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Paving (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.46	0.04	0.02	0.01	0.00	141.57	0.00	0.00	142.71
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	1.26
Pounds per day - Grading/Excavation	0.17	2.59	0.22	0.11	0.05	0.01	792.79	0.02	0.02	799.17
Tons per const. Period - Grading/Excavation	0.01	0.10	0.01	0.00	0.00	0.00	31.39	0.00	0.00	31.65
Pounds per day - Drainage/Utilities/Sub-Grade	0.11	1.67	0.14	0.07	0.03	0.01	509.65	0.01	0.01	513.75
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.04	0.00	0.00	0.00	0.00	13.45	0.00	0.00	13.56
Pounds per day - Paving	0.05	0.74	0.06	0.03	0.01	0.00	226.51	0.01	0.01	228.33
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	2.99	0.00	0.00	3.01
Total tons per construction project	0.01	0.16	0.01	0.01	0.00	0.00	49.08	0.00	0.00	49.48

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

2010+ Model Year Mitigation Option Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grading/Excavation (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Paving (grams/mile)	0.03	0.40	2.98	0.11	0.05	0.02	1,714.99	0.00	0.27	1,795.36
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.31	0.01	0.00	0.00	151.24	0.00	0.02	158.32
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.00	1.39
Pounds per day - Grading/Excavation	0.00	0.04	0.31	0.01	0.00	0.00	151.24	0.00	0.02	158.32
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	5.99	0.00	0.00	6.27
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.31	0.01	0.00	0.00	151.24	0.00	0.02	158.32
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	3.99	0.00	0.00	4.18
Pounds per day - Paving	0.00	0.04	0.31	0.01	0.00	0.00	151.24	0.00	0.02	158.32
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.09
Total tons per construction project	0.00	0.00	0.03	0.00	0.00	0.00	13.31	0.00	0.00	13.93

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		2.81	28.10	0.25	5.84	0.05
Fugitive Dust - Grading/Excavation		2.81	28.10	1.11	5.84	0.23
Fugitive Dust - Drainage/Utilities/Subgrade		2.81	28.10	0.74	5.84	0.15

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.44	2.24	5.12	0.20	0.18	0.01	758.27	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.38	6.52	3.10	0.15	0.14	0.01	1,000.21	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Grubbing/Land Clearing	pounds per day	0.88	9.06	8.58	0.36	0.34	0.02	1,807.80	0.57
Grubbing/Land Clearing	tons per phase	0.01	0.08	0.08	0.00	0.00	0.00	15.91	0.01

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Cranes	0.35	1.83	3.82	0.16	0.15	0.01	558.82	0.18
	2		Model Default Tier	Crawler Tractors	0.89	4.49	10.25	0.40	0.37	0.02	1,516.54	0.49
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Excavators	0.75	13.03	6.19	0.30	0.28	0.02	2,000.42	0.65
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Graders	0.77	3.39	9.31	0.30	0.28	0.01	1,281.71	0.41
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rollers	0.46	5.56	4.83	0.27	0.24	0.01	762.32	0.25
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rubber Tired Loaders	0.81	4.53	7.96	0.27	0.25	0.02	1,816.68	0.59
	4		Model Default Tier	Scrapers	3.15	24.55	33.13	1.30	1.20	0.06	5,880.52	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.30	4.46	3.07	0.15	0.14	0.01	603.15	0.20
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Grading/Excavation	pounds per day	7.54	62.14	78.92	3.16	2.91	0.15	14,469.49	4.67
Grading/Excavation	tons per phase	0.30	2.46	3.13	0.13	0.12	0.01	572.99	0.18

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.26	2.41	1.74	0.09	0.09	0.00	375.26	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.31	3.67	2.72	0.13	0.13	0.01	623.04	0.03
	2		Model Default Tier	Graders	0.77	3.39	9.31	0.30	0.28	0.01	1,281.71	0.41
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.33	3.73	2.75	0.13	0.13	0.01	623.04	0.03
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.11	2.29	1.40	0.04	0.04	0.00	333.80	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Scrapers	3.15	24.55	33.13	1.30	1.20	0.06	5,880.52	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.30	4.46	3.07	0.15	0.14	0.01	603.15	0.20
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day	5.31	45.00	54.73	2.18	2.04	0.10	9,804.32	2.71
Drainage/Utilities/Sub-Grade	tons per phase	0.14	1.19	1.44	0.06	0.05	0.00	258.83	0.07

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.19	2.88	1.88	0.09	0.08	0.00	455.22	0.15
	1		Model Default Tier	Paving Equipment	0.17	2.56	1.60	0.08	0.07	0.00	394.47	0.13
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rollers	0.15	1.85	1.61	0.09	0.08	0.00	254.11	0.08
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.30	4.46	3.07	0.15	0.14	0.01	603.15	0.20
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Paving	pounds per day	0.88	12.06	8.53	0.42	0.39	0.02	1,756.26	0.56
Paving	tons per phase	0.01	0.16	0.11	0.01	0.01	0.00	23.18	0.01
Total Emissions all Phases (tons per construction period) =>		0.46	3.89	4.76	0.19	0.18	0.01	870.92	0.27

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	766.45
0.00	0.00
0.01	1,010.99
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,827.01
0.00	16.08

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	564.84
0.01	1,532.90
0.00	0.00
0.02	2,021.99
0.00	0.00
0.00	0.00
0.01	1,295.52
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	770.54
0.00	0.00
0.00	0.00
0.02	1,836.30
0.05	5,943.88
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	609.64
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.13	14,625.18
0.01	579.16

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.67
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.12
0.01	1,295.52
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.14
0.00	0.00
0.00	337.40
0.00	0.00
0.00	0.00
0.05	5,943.88
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	609.64
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.09	9,897.59
0.00	261.30

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.13
0.00	398.72
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.85
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	609.64
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,774.90
0.00	23.43
0.01	879.96

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

APPENDIX B. USFWS, NOAA FISHERIES, CNDDB, AND CNPS SPECIES LISTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To: June 10, 2020
Consultation Code: 08EACT00-2020-SLI-0233
Event Code: 08EACT00-2020-E-00640
Project Name: Fort Bragg Raw Waterline Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Consultation Code: 08EACT00-2020-SLI-0233

Event Code: 08EACT00-2020-E-00640

Project Name: Fort Bragg Raw Waterline Replacement Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: The City of Fort Bragg Public Works Department (City) is proposing to replace major portions of the City's main raw water supply pipeline. The Proposed Project would replace approximately 3.42 miles of the City's raw water pipeline that is reaching the end of its service life. The City of Fort Bragg is located in California's north coast region, within Mendocino County, California. The City of Fort bRagg's water supply comes from three main sources, including Waterfall Gulch, Newman Gulch, and the Noyo River. The City's Water Treatment Plant (WTP), located at the intersection of Sherwood Road and Monsen Way, receives its raw water supply from these three local sources via two main pipelines. The pipeline from the Noyo River is not a part of this Project. The Proposed Project pipeline transports water from Waterfall Gulch and Newman Gulch. Raw waterline replacement will occur in Phases. Phase II is approximately 3,150 feet long, Phase III is approximately 4,200 feet long, Phase IV is approximately 3,250 feet long, and Phase V is approximately 1,350 feet long. The Proposed Project is anticipated to take two construction seasons to complete, approximately 18 months.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.43569521119172N123.77845835143745W

Counties: Mendocino, CA

Endangered Species Act Species

There is a total of 18 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Fisher *Pekania pennanti* Population: West coast DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3651	Threatened
Point Arena Mountain Beaver *Aplodontia rufa nigra* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7727	Endangered

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Behren's Silverspot Butterfly *Speyeria zerene behrensii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/900	Endangered
Lotis Blue Butterfly *Lycaeides argyrognomon lotis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5174	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields *Lasthenia burkei* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Contra Costa Goldfields *Lasthenia conjugens* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Howell's Spineflower *Chorizanthe howellii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7607	Endangered
Menzies' Wallflower *Erysimum menziesii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2935	Endangered
Monterey Clover *Trifolium trichocalyx* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4282	Endangered
Showy Indian Clover *Trifolium amoenum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* https://ecos.fws.gov/ecp/species/4467#crithab	Final
Northern Spotted Owl *Strix occidentalis caurina* https://ecos.fws.gov/ecp/species/1123#crithab	Final

Piazzoni, Allison M.

From: Piazzoni, Allison M.
Sent: Wednesday, June 17, 2020 8:46 AM
To: 'nmfswcrca.specieslist@noaa.gov'
Subject: Fort Bragg Raw Water Line Replacement Project

Good morning,

Federal Agency: n/a

Federal agency address: n/a

Non-federal agency representative (if any): City of Fort Bragg Public Works Department

Non-federal agency representative (if any)address: Diane O'Connor, Engineering Technician, 416 North Franklin St, Fort Bragg, CA 95437

Project title: Fort Bragg Raw Water Line Replacement Project

Quad Name **Fort Bragg**
Quad Number **39123-D7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat - X
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH - X

Groundfish EFH - **X**

Coastal Pelagics EFH - **X**

Highly Migratory Species EFH - **X**

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - **X**

MMPA Pinnipeds - **X**

Allison Piazzoni
Staff Environmental Scientist
Dewberry | Drake Haglan
11060 White Rock Road, Suite 200
Rancho Cordova, CA 95670
916.363.2586 Direct
apiazzoni@dewberry.com
dewberry.com

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Inglenook (3912357) OR Dutchmans Knoll (3912356) OR Fort Bragg (3912347) OR Noyo Hill (3912346) OR Mendocino (3912337) OR Mathison Peak (3912336))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAF02020	***Taricha rivularis*** red-bellied newt	None	None	G4	S2	SSC
AAAAJ01020	***Rhyacotriton variegatus*** southern torrent salamander	None	None	G3G4	S2S3	SSC
AAABA01010	***Ascaphus truei*** Pacific tailed frog	None	None	G4	S3S4	SSC
AAABH01021	***Rana aurora*** northern red-legged frog	None	None	G4	S3	SSC
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Candidate Threatened	G3	S3	SSC
ABNDC04030	***Oceanodroma homochroa*** ashy storm-petrel	None	None	G2	S2	SSC
ABNGA04010	***Ardea herodias*** great blue heron	None	None	G5	S4	
ABNKC01010	***Pandion haliaetus*** osprey	None	None	G5	S4	WL
ABNKC12060	***Accipiter gentilis*** northern goshawk	None	None	G5	S3	SSC
ABNNB03031	***Charadrius alexandrinus nivosus*** western snowy plover	Threatened	None	G3T3	S2S3	SSC
ABNNN06010	***Brachyramphus marmoratus*** marbled murrelet	Threatened	Endangered	G3G4	S1	
ABNNN12010	***Fratercula cirrhata*** tufted puffin	None	None	G5	S1S2	SSC
ABPAU01010	***Progne subis*** purple martin	None	None	G5	S3	SSC
AFBAA02100	***Entosphenus tridentatus*** Pacific lamprey	None	None	G4	S4	SSC
AFCHA02034	***Oncorhynchus kisutch pop. 4*** coho salmon - central California coast ESU	Endangered	Endangered	G4	S2?	
AFCHA0209Q	***Oncorhynchus mykiss irideus pop. 16*** steelhead - northern California DPS	Threatened	None	G5T2T3Q	S2S3	
AFCQN04010	***Eucyclogobius newberryi*** tidewater goby	Endangered	None	G3	S3	SSC
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G5	S4	
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G3G4	S2	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AMAFF23030	***Arborimus pomo*** Sonoma tree vole	None	None	G3	S3	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
CTT51110CA	***Sphagnum Bog*** Sphagnum Bog	None	None	G3	S1.2	
CTT51200CA	***Fen*** Fen	None	None	G2	S1.2	
CTT52110CA	***Northern Coastal Salt Marsh*** Northern Coastal Salt Marsh	None	None	G3	S3.2	
CTT52200CA	***Coastal Brackish Marsh*** Coastal Brackish Marsh	None	None	G2	S2.1	
CTT52410CA	***Coastal and Valley Freshwater Marsh*** Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	
CTT82120CA	***Grand Fir Forest*** Grand Fir Forest	None	None	G1	S1.1	
CTT83161CA	***Mendocino Pygmy Cypress Forest*** Mendocino Pygmy Cypress Forest	None	None	G2	S2.1	
IICOL4A010	***Coelus globosus*** globose dune beetle	None	None	G1G2	S1S2	
IIHYM24250	***Bombus occidentalis*** western bumble bee	None	Candidate Endangered	G2G3	S1	
IIHYM24380	***Bombus caliginosus*** obscure bumble bee	None	None	G4?	S1S2	
IILEPG5013	***Plebejus idas lotis*** lotis blue butterfly	Endangered	None	G5TH	SH	
ILARAU6040	***Calileptoneta wapiti*** Mendocino leptonetid spider	None	None	G1	S1	
IMGASC5070	***Noyo intersessa*** Ten Mile shoulderband	None	None	G2	S2	
NBMUS7S010	***Triquetrella californica*** coastal triquetrella	None	None	G2	S2	1B.2
NLLEC3S340	***Ramalina thrausta*** angel's hair lichen	None	None	G5?	S2S3	2B.1
NLLEC5P420	***Usnea longissima*** Methuselah's beard lichen	None	None	G4	S4	4.2
PDAST1A022	***Blennosperma nanum var. robustum*** Point Reyes blennosperma	None	Rare	G4T2	S2	1B.2
PDAST3M3Z0	***Erigeron supplex*** supple daisy	None	None	G2	S2	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDAST4R065	***Hemizonia congesta ssp. congesta*** congested-headed hayfield tarplant	None	None	G5T2	S2	1B.2
PDAST5L0C4	***Lasthenia californica ssp. bakeri*** Baker's goldfields	None	None	G3T1	S1	1B.2
PDAST5L0C5	***Lasthenia californica ssp. macrantha*** perennial goldfields	None	None	G3T2	S2	1B.2
PDAST6E030	***Microseris borealis*** northern microseris	None	None	G5	S1	2B.1
PDAST8H0H1	***Packera bolanderi var. bolanderi*** seacoast ragwort	None	None	G4T4	S2S3	2B.2
PDASTE5011	***Hesperevax sparsiflora var. brevifolia*** short-leaved evax	None	None	G4T3	S2	1B.2
PDBRA160E3	***Erysimum concinnum*** bluff wallflower	None	None	G3	S2	1B.2
PDBRA160R0	***Erysimum menziesii*** Menzies' wallflower	Endangered	Endangered	G1	S1	1B.1
PDCAM02060	***Campanula californica*** swamp harebell	None	None	G3	S3	1B.2
PDCON040D2	***Calystegia purpurata ssp. saxicola*** coastal bluff morning-glory	None	None	G4T2T3	S2S3	1B.2
PDCOR01040	***Cornus canadensis*** bunchberry	None	None	G5	S2	2B.2
PDCUS011A2	***Cuscuta pacifica var. papillata*** Mendocino dodder	None	None	G5T1	S1	1B.2
PDERI04280	***Arctostaphylos nummularia ssp. mendocinoensis*** pygmy manzanita	None	None	G3?T1	S1	1B.2
PDFAB0F080	***Astragalus agnicidus*** Humboldt County milk-vetch	None	Endangered	G2	S2	1B.1
PDFAB250P0	***Lathyrus palustris*** marsh pea	None	None	G5	S2	2B.2
PDFAB402J0	***Trifolium trichocalyx*** Monterey clover	Endangered	Endangered	G1	S1	1B.1
PDHYD0C2B1	***Phacelia insularis var. continentis*** North Coast phacelia	None	None	G2T2	S2	1B.2
PDMAL110E0	***Sidalcea malachroides*** maple-leaved checkerbloom	None	None	G3	S3	4.2
PDMAL110FL	***Sidalcea malviflora ssp. purpurea*** purple-stemmed checkerbloom	None	None	G5T1	S1	1B.2
PDNYC010N4	***Abronia umbellata var. breviflora*** pink sand-verbena	None	None	G4G5T2	S2	1B.1
PDONA05025	***Clarkia amoena ssp. whitneyi*** Whitney's farewell-to-spring	None	None	G5T1	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDONA0C1K0	***Oenothera wolfii*** Wolf's evening-primrose	None	None	G2	S1	1B.1
PDPGN040C0	***Chorizanthe howellii*** Howell's spineflower	Endangered	Threatened	G1	S1	1B.2
PDPLM040B6	***Gilia capitata ssp. pacifica*** Pacific gilia	None	None	G5T3	S2	1B.2
PDPLM04130	***Gilia millefoliata*** dark-eyed gilia	None	None	G2	S2	1B.2
PDRAN0A020	***Coptis laciniata*** Oregon goldthread	None	None	G4?	S3?	4.2
PDROS0W0B0	***Horkelia marinensis*** Point Reyes horkelia	None	None	G2	S2	1B.2
PDROS1L060	***Sanguisorba officinalis*** great burnet	None	None	G5?	S2	2B.2
PDSAX0N020	***Mitellastra caulescens*** leafy-stemmed mitrewort	None	None	G5	S4	4.2
PDSCR0D012	***Castilleja litoralis*** Oregon coast paintbrush	None	None	G3	S3	2B.2
PDSCR0D3N0	***Castilleja mendocinensis*** Mendocino Coast paintbrush	None	None	G2	S2	1B.2
PDSCR0D402	***Castilleja ambigua var. humboldtiensis*** Humboldt Bay owl's-clover	None	None	G4T2	S2	1B.2
PDSCR0H060	***Collinsia corymbosa*** round-headed Chinese-houses	None	None	G1	S1	1B.2
PDVIO041G0	***Viola palustris*** alpine marsh violet	None	None	G5	S1S2	2B.2
PGCUP04032	***Hesperocyparis pygmaea*** pygmy cypress	None	None	G1	S1	1B.2
PGPIN04081	***Pinus contorta ssp. bolanderi*** Bolander's beach pine	None	None	G5T2	S2	1B.2
PMCYP032D0	***Carex californica*** California sedge	None	None	G5	S2	2B.2
PMCYP037A7	***Carex lenticularis var. limnophila*** lagoon sedge	None	None	G5T5	S1	2B.2
PMCYP037L0	***Carex livida*** livid sedge	None	None	G5	SH	2A
PMCYP037Y0	***Carex lyngbyei*** Lyngbye's sedge	None	None	G5	S3	2B.2
PMCYP03BY0	***Carex saliniformis*** deceiving sedge	None	None	G2	S2	1B.2
PMCYP03EM5	***Carex viridula ssp. viridula*** green yellow sedge	None	None	G5T5	S2	2B.3

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMCYP0N010	***Rhynchospora alba*** white beaked-rush	None	None	G5	S2	2B.2
PMJUN012R0	***Juncus supiniformis*** hair-leaved rush	None	None	G5	S1	2B.2
PMLIL1A0C0	***Lilium maritimum*** coast lily	None	None	G2	S2	1B.1
PMORC1X050	***Piperia candida*** white-flowered rein orchid	None	None	G3	S3	1B.2
PMPOA04060	***Agrostis blasdalei*** Blasdale's bent grass	None	None	G2	S2	1B.2
PMPOA17070	***Calamagrostis crassiglumis*** Thurber's reed grass	None	None	G3Q	S2	2B.1
PMPOA531L0	***Puccinellia pumila*** dwarf alkali grass	None	None	G4?	SH	2B.2
PPLYC01080	***Lycopodium clavatum*** running-pine	None	None	G5	S3	4.1

Record Count: 90

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

51 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3912357, 3912356, 3912347, 3912346 3912337 and 3912336;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	perennial herb	Jun-Oct	1B.1	S2	G4G5T2
Agrostis blasdalei	Blasdale's bent grass	Poaceae	perennial rhizomatous herb	May-Jul	1B.2	S2	G2
Arctostaphylos nummularia ssp. mendocinoensis	pygmy manzanita	Ericaceae	perennial evergreen shrub	Jan	1B.2	S1	G3?T1
Astragalus agnicidus	Humboldt County milk-vetch	Fabaceae	perennial herb	Apr-Sep	1B.1	S2	G2
Blennosperma nanum var. robustum	Point Reyes blennosperma	Asteraceae	annual herb	Feb-Apr	1B.2	S2	G4T2
Calamagrostis crassiglumis	Thurber's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	2B.1	S2	G3Q
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr-Sep	1B.2	S2S3	G4T2T3
Campanula californica	swamp harebell	Campanulaceae	perennial rhizomatous herb	Jun-Oct	1B.2	S3	G3
Carex californica	California sedge	Cyperaceae	perennial rhizomatous herb	May-Aug	2B.3	S2	G5
Carex lenticularis var. limnophila	lagoon sedge	Cyperaceae	perennial herb	Jun-Aug	2B.2	S1	G5T5
Carex livida	livid sedge	Cyperaceae	perennial rhizomatous herb	Jun	2A	SH	G5
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	2B.2	S3	G5
Carex saliniformis	deceiving sedge	Cyperaceae	perennial	May-	1B.2	S2	G2

			rhizomatous herb	Jun(Jul)			
Carex viridula ssp. viridula	green yellow sedge	Cyperaceae	perennial herb	(Jun)Jul-Sep(Nov)	2B.3	S2	G5T5
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-Aug	1B.2	S2	G4T2
Castilleja litoralis	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun-Jul	2B.2	S3	G3
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Aug	1B.2	S2	G2
Chorizanthe howellii	Howell's spineflower	Polygonaceae	annual herb	May-Jul	1B.2	S1	G1
Clarkia amoena ssp. whitneyi	Whitney's farewell-to-spring	Onagraceae	annual herb	Jun-Aug	1B.1	S1	G5T1
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	1B.2	S1	G1
Cornus canadensis	bunchberry	Cornaceae	perennial rhizomatous herb	May-Jul	2B.2	S2	G5
Cuscuta pacifica var. papillata	Mendocino dodder	Convolvulaceae	annual vine (parasitic)	(Jun)Jul-Oct	1B.2	S1	G5T1
Erigeron supplex	supple daisy	Asteraceae	perennial herb	May-Jul	1B.2	S2	G2
Erysimum concinnum	bluff wallflower	Brassicaceae	annual / perennial herb	Feb-Jul	1B.2	S2	G3
Erysimum menziesii	Menzies' wallflower	Brassicaceae	perennial herb	Mar-Sep	1B.1	S1	G1
Fritillaria roderickii	Roderick's fritillary	Liliaceae	perennial bulbiferous herb	Mar-May	1B.1	S1	G1Q
Gilia capitata ssp. pacifica	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	1B.2	S2	G5T3
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	1B.2	S2	G5T2
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	annual herb	Mar-Jun	1B.2	S2	G4T3
Hesperocyparis pygmaea	pygmy cypress	Cupressaceae	perennial evergreen tree		1B.2	S1	G1
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	May-Sep	1B.2	S2	G2
Juncus supiniformis	hair-leaved rush	Juncaceae	perennial rhizomatous herb	Apr-May(Jun-Jul)	2B.2	S1	G5
Lasthenia californica ssp. bakeri	Baker's goldfields	Asteraceae	perennial herb	Apr-Oct	1B.2	S1	G3T1
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	1B.2	S2	G3T2
Lathyrus palustris	marsh pea	Fabaceae	perennial herb	Mar-Aug	2B.2	S2	G5
Lilium maritimum	coast lily	Liliaceae	perennial bulbiferous herb	May-Aug	1B.1	S2	G2
Microseris borealis	northern microseris	Asteraceae	perennial herb	Jun-Sep	2B.1	S1	G5
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	perennial herb	May-Oct	1B.1	S1	G2
Packera bolanderi var. bolanderi	seacoast ragwort	Asteraceae	perennial rhizomatous herb	(Jan-Apr)May-Jul(Aug)	2B.2	S2S3	G4T4

Phacelia insularis var. continentis	North Coast phacelia	Hydrophyllaceae	annual herb	Mar-May	1B.2	S2	G2T2
Pinus contorta ssp. bolanderi	Bolander's beach pine	Pinaceae	perennial evergreen tree		1B.2	S2	G5T2
Piperia candida	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar)May-Sep	1B.2	S3	G3
Puccinellia pumila	dwarf alkali grass	Poaceae	perennial herb	Jul	2B.2	SH	G4?
Ramalina thrausta	angel's hair lichen	Ramalinaceae	fruticose lichen (epiphytic)		2B.1	S2?	G5
Rhynchospora alba	white beaked-rush	Cyperaceae	perennial rhizomatous herb	Jun-Aug	2B.2	S2	G5
Sanguisorba officinalis	great burnet	Rosaceae	perennial rhizomatous herb	Jul-Oct	2B.2	S2	G5?
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	Malvaceae	perennial rhizomatous herb	May-Jun	1B.2	S1	G5T1
Trifolium trichocalyx	Monterey clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2
Viola palustris	alpine marsh violet	Violaceae	perennial rhizomatous herb	Mar-Aug	2B.2	S1S2	G5

Suggested Citation

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APPENDIX C. BOTANICAL SURVEY LIST

Botanical Survey for the Fort Bragg City Pipeline Realignment 2020 (Phases 2, 3, 4, and 5)

Project Description

The City of Fort Bragg proposes to replace portions of its raw water supply pipeline in five locations. This survey covers the locations described in Phases 2, 3, 4, and 5 of the pipeline realignment project document, and includes proposed pipeline routes extending from the Noyo River south to Jackson Demonstration Forest Road 450 on the south side of Hare Creek.

Phase 2 of the project primarily follows an existing road in a riparian redwood forest area from the water treatment plant off of Sherwood Road down to the Noyo River. Phase 3 traverses down a gentle slope from the Summers Lane reservoir to the Newman Gulch intake, and is redwood forest with cypress, bishop pine, tanoak, Douglas-fir, and hemlock. Phase 4 from Dwyer Lane (off of Hwy 20) follows a ridge down to Covington Gulch, and this is a forested area similar to that of Phase 3. Phase 5 runs from Hare Creek up to Waterfall Gulch, which is a forest of redwood, Douglas-fir, Bishop pine, and tanoak.

Survey Method

The scoping strategy, survey method and impact assessments used for this survey are consistent with the Department of Fish and Wildlife's "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities", March 20, 2018.

A rare plant list was generated from a nine-quadrangle query of the California Natural Diversity Database, and is attached to this report.

The survey was conducted on the following dates: May 14, May 20, June 10 and 11, 2020. Approximately 13 hours was spent surveying the pipeline route. The survey coincided with the bloom times of all species listed that could have habitat within the pipeline route. Plants surveyed were identified to the lowest taxonomic level necessary to make sure that they were not species of special concern.

The proposed pipeline route of Phase 2 – 5 was walked—some of which followed existing roads; and other areas went cross-country—and a floristic list of species encountered along the pipeline right-of-way is shown below under survey results.

Survey Results

Along the existing road in Phase 2 of the pipeline project were found two Rare Plant Rank 4.2 species: leafy-stemmed mitrewort (*Mitellastra caulescens*) and nodding semaphore grass (*Pleuropogon refractus*). Rare Plant Rank 4 denotes plants of limited distribution. A portion of the pipeline route within Phase 3 traverses an old road in which pygmy cypress trees (*Hesperocyparis pygmaea*) grow. These trees seeded onto the road after its past usage about 30 years ago. The tree is designated as a Rare Plant Rank 1B.2, which is rare, threatened or endangered, because the habitat in which it typically grows is very limited. The trees in this site, however, support a non-pygmy form of cypress, as large specimens occur near the right-of-way that share overstory space with redwood.

The Natural Diversity Data Base has been notified of these findings, and copies of the survey forms are attached to this report.

Rare plants were not observed in any of the other pipeline phase areas.

The following species were observed during the survey:

Scientific Name	Common Name
Abies grandis	grand fir
Adenocaulon bicolor	trail plant
Adiantum jordanii	maidenhair fern
Adiantum pedatum aleuticum	five-fingered fern
Allium triquetrum	three-cornered leek
Alnus rhombifolia	red alder
Anisocarpus madioides	woodland madia
Anthoxanthum odoratum	sweet vernal grass
Aquilegia formosa	columbine
Asarum caudatum	wild ginger
Athyrium filix-femina	lady fern
Avena barbata	slender oat
Baccharis pilularis	coyote bush
Bellis perennis	English daisy
Berberis aquifolium	Oregon-grape
Blechnum spicant	deer fern
Bromus carinatus	California brome
Bromus hordeaceus	soft brome
Bromus laevipes	narrow-flowered brome
Calypso bulbosa	calypso orchid
Cardamine californica	milkmaids

Cardamine oligosperma	bittercress
Carduus pycnocephalus	Italian thistle
Carex bolanderi	Bolander's sedge
Carex hendersonii	Henderson's sedge
Carex obnupta	slough-sedge
Carex pachystachya	thick-headed sedge
Cerastium glomeratum	chickweed
Cirsium vulgare	bull thistle
Claytonia sibirica	Siberian candyflower
Clintonia andrewsiana	clintonia
Collomia heterophylla	vari-leaf collomia
Conium maculatum	poison-hemlock
Crocosmia spp.	crocosmia
Cytisus scoparius	Scotch broom
Dactylis glomerata	orchard grass
Deschampsia elongata	slender hairgrass
Epilobium ciliatum watsonii	Northern willow herb
Equisetum spp.	horsetail
Erythranthe guttata	seep-spring mnokeyflower
Frangula purshiana	cascara buckthorn
Galium aparine	bedstraw
Gallium californicum	California bedstraw
Gaultheria shallon	salal
Genista monspessulanus	French broom
Geranium molle	dovefoot geranium
Hedera helix	ivy
Heracleum lanatum	cow parsnip
Hesperocyparis pygmaea	**pygmy cypress** (non-pygmy form)
Hierchloe occidentalis	vanilla grass
Holcus lanatus	velvet grass
Hordeum marinum	seaside barley
Hosackia rosea	rosy hosackia
Hydrophyllum tenuipes	Pacific waterleaf
Hypochaeris radicata	rough cat's ear dandelion
Ilex aquifolium	holly
Iris douglasiana	Douglas' iris
Juncus effusus	green rush

Listera banksiana	northwestern twayblade
Lonicera hispidula	hairy honeysuckle
Luzula comosa	Pacific woodrush
Luzula parviflora	small-flowered woodrush
Lysichton americanum	skunk cabbage
Lysimachia latifolia	Pacific starflower
Maianthemum racemosum	Solomon's seal
Marah oregana	wild cucumber
Mitellastra caulescens	**leafy-stemmed mitrewort**
Morella californica	wax-myrtle
Myosotis latifolia	forget-me-not
Nemophila parviflora	small-flowered nemophila
Notholithocarpus densiflora	tanoak
Oenanthe sarmentosa	water parsley
Osmorhiza chilensis	sweet cicely
Oxalis articulata	woodbox woodsorrel
Oxalis oregana	redwood sorrel
Pectiantia ovalis	coastal miterwort
Petasites palmatus	western coltsfoot
Phalaris aquatica	Harding grass
Pinus muricata	Bishop pine
Plantago lanceolata	English plantain
Plantago major	broadleaf plantain
Pleuropogon refractus	**nodding semaphore grass**
Polygala californica	milkwort
Polypodium californicum	California polypody fern
Polystichum munitum	sword fern
Prosartes smithii	Smith's fairy bells
Prunella vulgaris	self-heal
Pseudotsuga menziesii	Douglas-fir
Pteridium aquilinum pubescens	bracken fern
Ranunculus occidentalis	western buttercup
Ranunculus repens	creeping buttercup
Ranunculus uncinatus	hook-seeded buttercup
Raphanus spp.	wild radish
Rhododendron columbianum	Labrador-tea
Rhododendron macrophyllum	California rose bay
Rosa spp.	rose

Rubus discolor	Himalaya berry
Rubus parviflorus	thimbleberry
Rubus spectabilis	salmonberry
Rubus ursinus	Pacific blackberry
Salix scouleriana	Scouler's willow
Sambucus racemosus	red elderberry
Sanicula crassicaulis	Pacific sanicle
Satureja douglasii	yerba buena
Scirpus microcarpus	small-flowered bulrush
Scoliopus bigelovii	foetid adders' tongue
Scrophularia californica	coast figwort
Sequoia sempervirens	redwood
Solanum americanum	white nightshade
Sonchus spp.	sow thistle
Stachys spp.	hedgenettle
Tanacetum vulgare	tansy ragweed
Tellima grandiflora	fringecups
Tiarella trifoliata	sugar scoops
Tolmiea menziesii	piggy-back plant
Torilis arvensis	hedge parsley
Toxicoscordion fremontii	Fremont's camas
Trifolium dubium	hop clover
Trifolium repens	white clover
Trillium ovatum	trillium
Umbellularia californica	California bay
Urtica dioica	stinging nettle
Vaccinium ovatum	evergreen huckleberry
Vaccinium parvifolium	red huckleberry
Vancouveria planipetala	inside-out flower
Veronica americana	American brooklime
Vicea hirsuta	tiny vetch
Vicea sativa	spring vetch
Viola glabella	smooth yellow violet
Viola sempervirens	redwood violet
Whipplea modesta	modesty

Impacts Assessment and Mitigation Measures

Rare plants within the pipeline right-of-way cannot be avoided. Mitigation measures could include: collecting of seed from the semaphore grass and re-sowing it at the creekside edge of the right-of-way where erosion control will be necessary to protect the adjacent stream; or, a light blading of the road surface could occur after flowering of the leafy-stemmed mitrewort and semaphore grass, and spread back onto the creekside edge of the right-of-way. Both of these species will help prevent erosion into the stream if allowed to grow back there—particularly the low-growing mitrewort, which forms a dense mat along the ground. Pygmy cypress re-seeds itself very well; and the 100 or so small cypresses that would need to be removed in the construction of the right-of-way will be readily replaced by seeding-in from nearby retained cypress trees.

Although it is always possible to "miss" a sensitive species because of rainfall amount, heat, timing, or survey transect location, surveying habitat areas where sensitive species could exist minimizes the potential for a "false negative" field survey. Many variables occur which affect the outcome of botanical surveys--most of which are not under the control of the surveyor. The winter season of 2019/2020 fell far short of normal rainfall amounts, which could also affect presence or absence of species.

Submitted by:

Darcie Mahoney

Darcie Mahoney, Licensed Forester #2397
Author and Surveyor of Botanical Report, 14 June 2020

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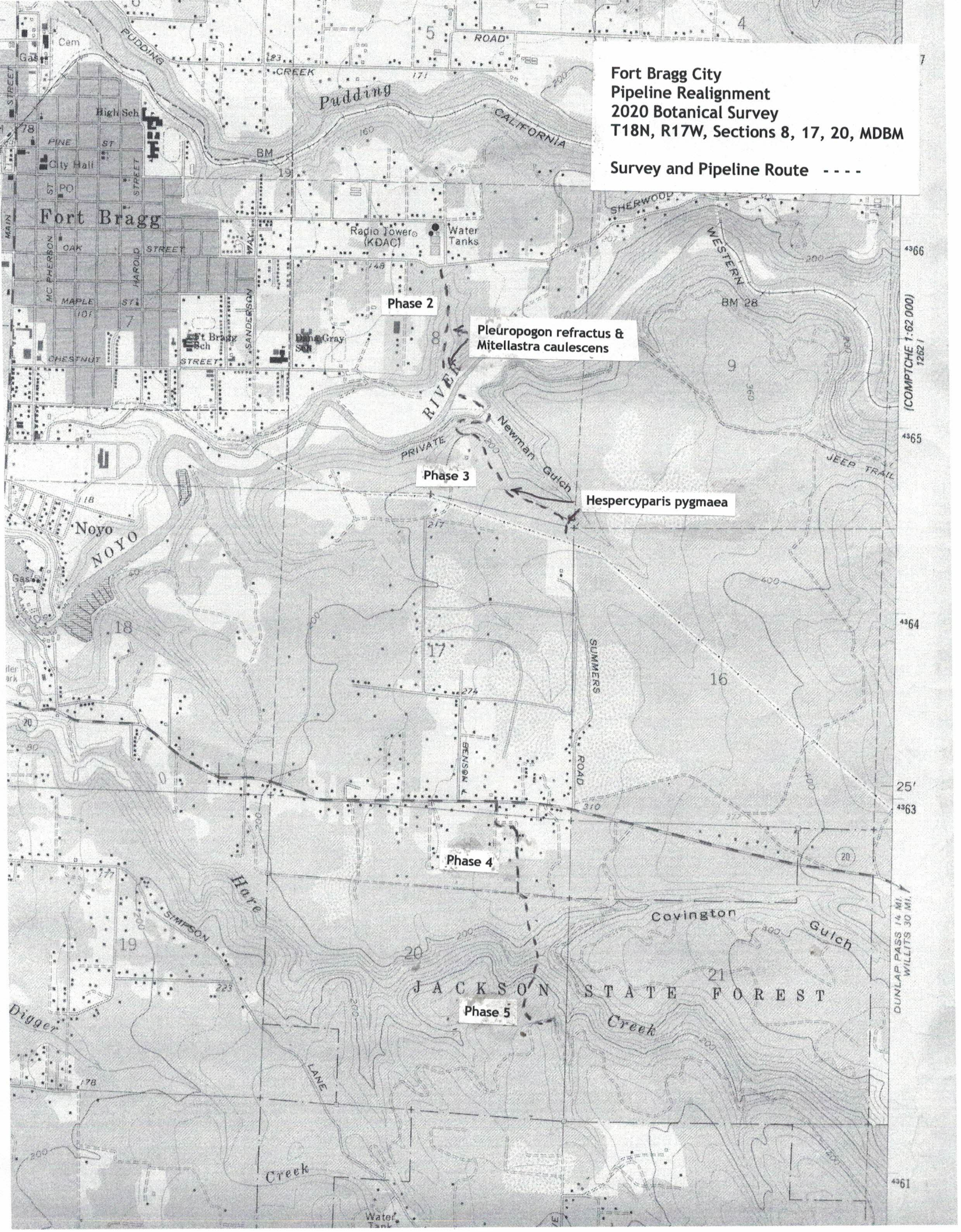
Fort Bragg City
Pipeline Realignment
2020 Botanical Survey
T18N, R17W, Sections 8, 17, 20, MDBM
Survey and Pipeline Route - - - -
Phase 2
Pleuropogon refractus &
Mitellastra caulescens
Phase 3
Hespercyparis pygmaea
Phase 4
Phase 5
Fort Bragg
Noyo
NOYO
RIVER
Newman Gulch
Pudding
CREEK
CALIFORNIA
WESTERN
SHERWOOD
JEEP TRAIL
PRIVATE
SUMMERS
ROAD
BENSON
Covington
Gulch
JACKSON STATE FOREST
Creek
Hare
SIMPSON
Digger
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HAROLD
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STREET
PINE
ST
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MAPLE
CHESTNUT
(COMPTCHE 1:62 000)
DUNLAP PASS 14 MI.
WILLITS 30 MI.

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

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

Date of Field Work *mm/dd/yyyy:* 05/20/2020

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Mitellastra caulescens*

Common Name: leafy-stemmed mitrewort

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

Total No. Individuals 1000's Subsequent Visit? ☐ yes ☑ no

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

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Darcie Mahoney, RPF#2397

Address: 30995 Greenwood Road
Elk, CA 95432

E-mail Address: dmahoney@mcn.org

Phone: (707) 877-3435

Plant Information

Phenology: 50 % vegetative 50 % flowering _____ % fruiting

Animal Information

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

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

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

See attached map, Phase 2 of Fort Bragg City Pipeline Realignment.

County: Mendocino Landowner / Mgr.: unknown

Quad Name: Fort Bragg Elevation: ~40'

T 18N R 17W Sec 8 , NW ¼ of SE ¼, Meridian: H☐ M☑ S☐ Source of Coordinates (GPS, topo. map & type): topo

T____ R __ Sec ____ , ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

Datum: NAD27☐ NAD83☐ WGS84☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☑ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☐

Coordinates: Easting/Longitude _____ Northing/Latitude _____

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

The mitrewort is growing by the thousands along about 500' of an old roadside edge adjacent a creek, along with Carex bolanderi, lady fern, five finger fern, Pacific waterleaf, and piggy-back plant. The overstory is redwood and Douglas-fir.

Other rare taxa seen at THIS site on THIS date: Pleuropogon refractus

Site Information Overall site quality: ☑ Excellent ☐ Good ☐ Fair ☐ Poor

Current / surrounding land use: timber management

Visible disturbances: no current disturbance

Threats: Pipeline right-of-way construction

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☐ Keyed (cite reference): _____
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☑ Other: The plant is known to the surveyor

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

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

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

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

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

Date of Field Work *mm/dd/yyyy:* 05/20/2020

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Pleuropogon refractus*

Common Name: nodding semaphore grass

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

Total No. Individuals ~50 Subsequent Visit? ☐ yes ☑ no
Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Darcie Mahoney, RPF#2397
Address: 30995 Greenwood Road
Elk, CA 95432
E-mail Address: dmahoney@mcn.org
Phone: (707) 877-3435

Plant Information

Phenology: 100 % vegetative _____ % flowering _____ % fruiting

Animal Information

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

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

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

See attached map, Phase 2 of Fort Bragg City Pipeline Realignment.

County: Mendocino Landowner / Mgr.: unknown
Quad Name: Fort Bragg Elevation: ~40'
T 18N R 17W Sec 8 , NW ¼ of SE ¼, Meridian: H☐ M☑ S☐ Source of Coordinates (GPS, topo. map & type): topo
T____ R __ Sec ____ , ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
Datum: NAD27☐ NAD83☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☑ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: Easting/Longitude _____ Northing/Latitude _____

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

The semaphore grass is growing along about 500' on an old road adjacent to a creek with trailing blackberry, Carex bolanderi, lady fern, sword fern, piggy-back plant. The overstory is redwood and Douglas-fir.

Other rare taxa seen at THIS site on THIS date: Mitellastra caulescens

Site Information Overall site quality: ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Current / surrounding land use: timber management

Visible disturbances: no current disturbance

Threats: Pipeline right-of-way construction

Comments:

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: The plant is known to the surveyor

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

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

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

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

Date of Field Work *mm/dd/yyyy:* 06/11/2020

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Hesperocyparis pygmaea*

Common Name: pygmy cypress

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

Total No. Individuals 100+ Subsequent Visit? ☐ yes ☑ no
Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Darcie Mahoney, RPF#2397
Address: 30995 Greenwood Road
Elk, CA 95432
E-mail Address: dmahoney@mcn.org
Phone: (707) 877-3435

Plant Information

Phenology: 100 % vegetative 0 % flowering _____ % fruiting

Animal Information

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

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

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

See attached map, Phase 3 of Fort Bragg City Pipeline Realignment.

County: Mendocino Landowner / Mgr.: Landowners: unknown and Lyme Timber Co.
Quad Name: Fort Bragg Elevation: ~240
T 18N R 17W Sec 8 , SE ¼ of SE ¼, Meridian: H☐ M☑ S☐ Source of Coordinates (GPS, topo. map & type): topo
T____ R __ Sec ____ , ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
Datum: NAD27☐ NAD83☐ WGS84☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☑ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: Easting/Longitude _____ Northing/Latitude _____

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

The cypress within and near the proposed pipeline construction route are of non-pygmy form within a forest of redwood, Douglas-fir, Bishop pine, hemlock, and tanoak.

Other rare taxa seen at THIS site on THIS date:

Site Information Overall site quality: ☑ Excellent ☐ Good ☐ Fair ☐ Poor

Current / surrounding land use: timber management and pipeline right of way

Visible disturbances: no current disturbance

Threats: pipeline construction

Comments: Approximately 100 small understory cypress will need to be removed during pipeline construction. Remaining cypress trees in the overstory will provide seeding-in of new trees.

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: The plant is known to the surveyor

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

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

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Fort Bragg (3912347) OR Inglenook (3912357) OR Dutchmans Knoll (3912356) OR Noyo Hill (3912346) OR Mendocino (3912337) OR Mathison Peak (3912336))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes OR Fungi)

City of Fort Bragg
Raw Water Pipeline Project
2020

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia umbellata var. breviflora pink sand-verbena	PDNYC010N4	None	None	G4G5T2	S2	1B.1
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Arctostaphylos nummularia ssp. mendocinoensis pygmy manzanita	PDERI04280	None	None	G3?T1	S1	1B.2
Astragalus agnicidus Humboldt County milk-vetch	PDFAB0F080	None	Endangered	G2	S2	1B.1
Blennosperma nanum var. robustum Point Reyes blennosperma	PDAST1A022	None	Rare	G4T2	S2	1B.2
Calamagrostis crassiglumis Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex californica California sedge	PMCYP032D0	None	None	G5	S2	2B.2
Carex lenticularis var. limnophila lagoon sedge	PMCYP037A7	None	None	G5T5	S1	2B.2
Carex livida livid sedge	PMCYP037L0	None	None	G5	SH	2A
Carex lyngbyei Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
Carex saliniformis deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
Carex viridula ssp. viridula green yellow sedge	PMCYP03EM5	None	None	G5T5	S2	2B.3
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	PDSCR0D402	None	None	G4T2	S2	1B.2
Castilleja litoralis Oregon coast paintbrush	PDSCR0D012	None	None	G3	S3	2B.2
Castilleja mendocinensis Mendocino Coast paintbrush	PDSCR0D3N0	None	None	G2	S2	1B.2
Chorizanthe howellii Howell's spineflower	PDPGN040C0	Endangered	Threatened	G1	S1	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Clarkia amoena ssp. whitneyi Whitney's farewell-to-spring	PDONA05025	None	None	G5T1	S1	1B.1
Collinsia corymbosa round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
Coptis laciniata Oregon goldthread	PDRAN0A020	None	None	G4?	S3?	4.2
Cornus canadensis bunchberry	PDCOR01040	None	None	G5	S2	2B.2
Cuscuta pacifica var. papillata Mendocino dodder	PDCUS011A2	None	None	G5T1	S1	1B.2
Erigeron supplex supple daisy	PDAST3M3Z0	None	None	G2	S2	1B.2
Erysimum concinnum bluff wallflower	PDBRA160E3	None	None	G3	S2	1B.2
Erysimum menziesii Menzies' wallflower	PDBRA160R0	Endangered	Endangered	G1	S1	1B.1
Gilia capitata ssp. pacifica Pacific gilia	PDPLM040B6	None	None	G5T3	S2	1B.2
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S2	1B.2
Hesperocyparis pygmaea pygmy cypress	PGCUP04032	None	None	G1	S1	1B.2
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Juncus supiniformis hair-leaved rush	PMJUN012R0	None	None	G5	S1	2B.2
Lasthenia californica ssp. bakeri Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lathyrus palustris marsh pea	PDFAB250P0	None	None	G5	S2	2B.2
Lilium maritimum coast lily	PMLIL1A0C0	None	None	G2	S2	1B.1
Lycopodium clavatum running-pine	PPLYC01080	None	None	G5	S3	4.1
Microseris borealis northern microseris	PDAST6E030	None	None	G5	S1	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Mitellastra caulescens leafy-stemmed mitrewort	PDSAX0N020	None	None	G5	S4	4.2
Oenothera wolfii Wolf's evening-primrose	PDONA0C1K0	None	None	G2	S1	1B.1
Packera bolanderi var. bolanderi seacoast ragwort	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
Phacelia insularis var. continentis North Coast phacelia	PDHYD0C2B1	None	None	G2T2	S2	1B.2
Pinus contorta ssp. bolanderi Bolander's beach pine	PGPIN04081	None	None	G5T2	S2	1B.2
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
Puccinellia pumila dwarf alkali grass	PMPOA531L0	None	None	G4?	SH	2B.2
Ramalina thrausta angel's hair lichen	NLLEC3S340	None	None	G5?	S2S3	2B.1
Rhynchospora alba white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
Sanguisorba officinalis great burnet	PDROS1L060	None	None	G5?	S2	2B.2
Sidalcea malachroides maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	PDMAL110FL	None	None	G5T1	S1	1B.2
Trifolium trichocalyx Monterey clover	PDFAB402J0	Endangered	Endangered	G1	S1	1B.1
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
Viola palustris alpine marsh violet	PDVIO041G0	None	None	G5	S1S2	2B.2

Record Count: 55

Addendum to the
Botanical Survey for the Fort Bragg City
Pipeline Realignment 2020
(Phases 2,3, 4, and 5)
6 June 2021

In May and June of 2020, I surveyed the Fort Bragg City's Phase 2,3,4, and 5 Pipeline Realignment sections to determine if rare plants were located within those areas (see attached Botanical Survey for the Fort Bragg City Pipeline Realignment 2020 Phases 2, 3, 4, and 5, Revised 15 June 2020).

On June 2, 2021, I accompanied Senior Environmental Scientist, Doug Brewer, and Consulting Archaeologist, Matt Steele, to view a couple of potential changes to the realignment within Phases 2 and 3 of the project.

Phase 2 of the realignment is located on an old road that runs adjacent an unnamed stream which flows into the Noyo River. The two rare plants noted in 2020 [*Mitellastra caulescens* (leafy-stemmed mitrewort) and *Pleuropogon refractus* ([nodding semaphore grass)] were also present on June 2, 2021 in the same areas noted before. These plants cannot be avoided during construction of the pipeline right-of-way. In the attached botanical survey report of June 15, 2020, I suggested mitigation measures to protect the seed bank of these two species so that the populations might continue after pipeline construction.

On June 2, 2021, we observed two areas on flats north and south of the Noyo River where 90-degree bends are suggested where the phase 2 and 3 sections come together. No rare plants were observed in these areas.

In 2020, I surveyed the flagged Phase 3 alignment that ran from the Summers Lane reservoir to the Noyo River. Since changes may be made to that alignment, on June 2, 2021, we traversed an area between the 2020 flagged alignment to the break in slope above Newman Gulch in order to determine if rare plant species occur within the area wherein the changes to the alignment might occur.

This traverse went through a gently-sloped forest of redwood, cypress (non-pygmy form), bishop pine, hemlock, Douglas-fir and tanoak. Generally, pygmy cypress (*Hesperocyparis pygmaea*) grows as a dwarf in areas of depauperate marine terrace soils; and since only a few areas contain this association, the tree has a California Rare Plant Rank of 1B.2, which is rare, threatened, or endangered in California or elsewhere. As pygmy forest expert, Robert Sholars, noted in "The Pygmy Forest and Associated Plant Communities of Coastal Mendocino County, California" (1982), occasionally, pygmy cypress is found in forests where the impervious hardpan is absent, and large specimens of cypress occur--as in the survey traverse area. Sholars notes that bare mineral soils are generally necessary for germination of pygmy cypress. He states that pygmy cypress "grows very vigorously in height when on a fertile soil. It is intolerant of shade, however, and can be excluded from an environment if competing species are able to overtop it". Thus, pipeline right-of-way construction provides an opportunity for pygmy

cypress to maintain itself within this forest due to the resultant bare soil after pipeline installation and creation of an opening to provide light for the germinating seedlings.

The only other rare plant noted in the re-survey of the Phase 3 alignment was *Veratrum fimbriatum*, fringed corn-lily (California Rare Plant rank 4.3, a plant of limited distribution), which occurs in the stream and wet areas below the break in slope, where no pipeline reconstruction will occur.

Additional species noted on June 2, 2021 were:

Artemisia douglasiana	California mugwort
Eucalyptus globulus	blue gum
Hydrophyllum tenuipes	Pacific waterleaf
Pyrola picta	white-veined wintergreen
Ribes menziesii	canyon gooseberry
Veratrum fimbriatum	fringed cornlily

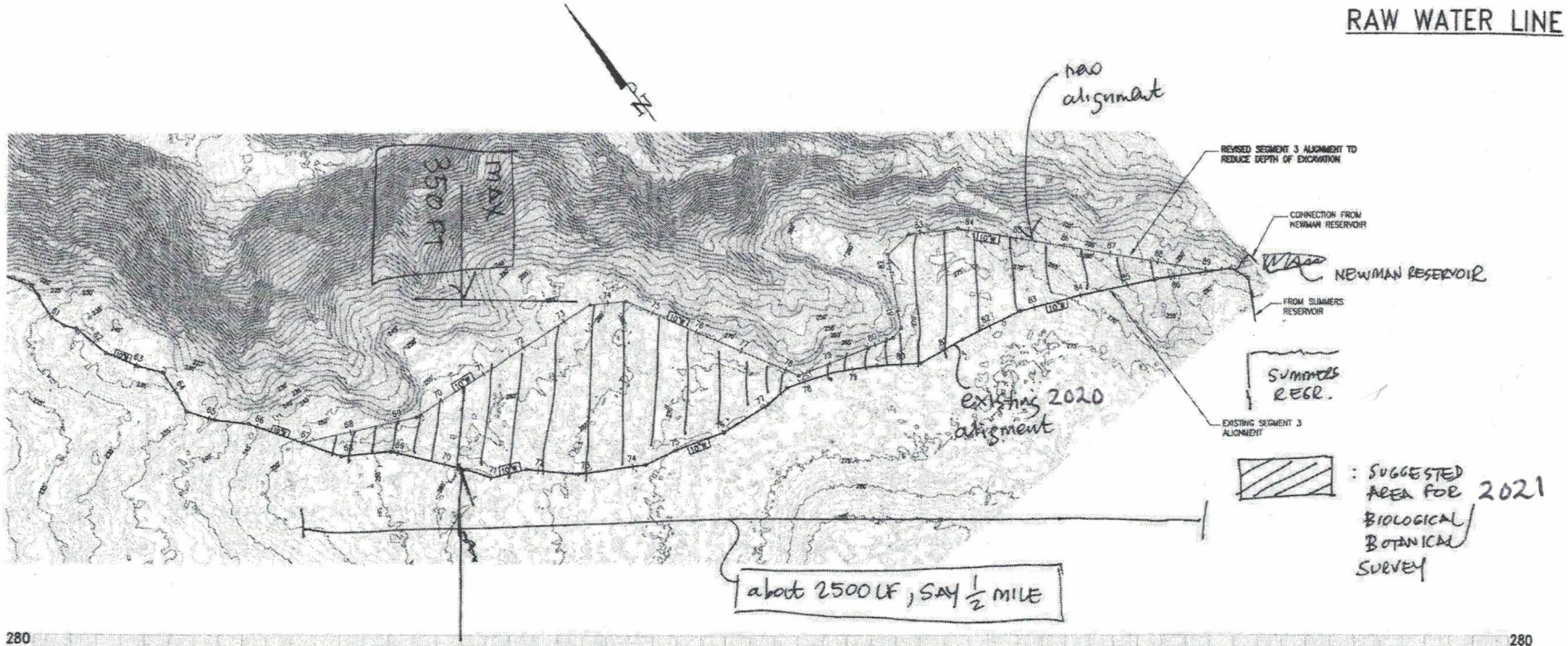
Both semaphore grass and mitrewort are naturally found in moist areas adjacent streams and ditches and often in areas previously disturbed; and pygmy cypress maintains iteself in forests that are occasionally disturbed. Based on the rare species' habitat needs, I believe the populations of pygmy cypress, leafy-stemmed mitrewort, and nodding semaphore grass can be conserved with the mitigations provided in the June 15, 2020 botanical survey report.

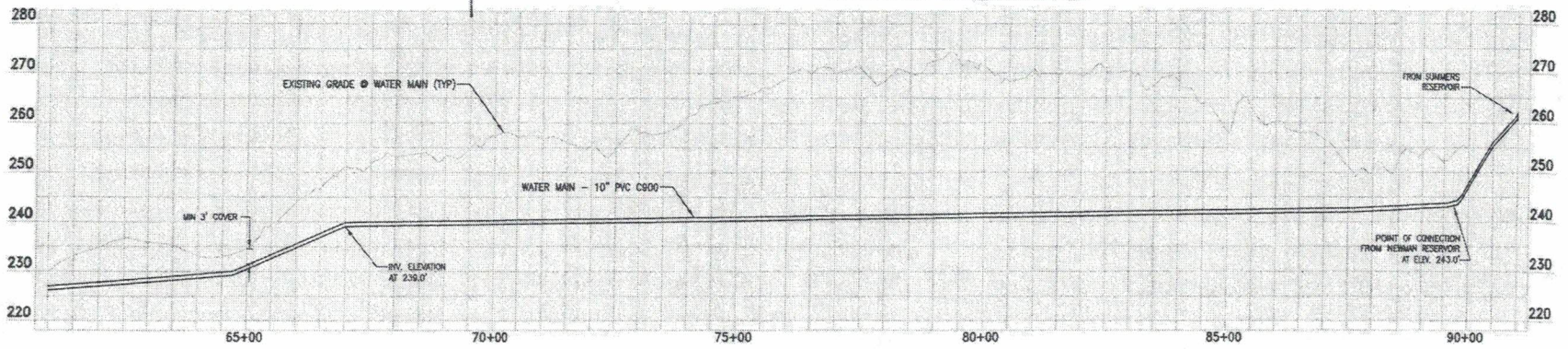
Darcie Mahoney

Darcie Mahoney, Licensed Forester No. 2397
Botanical Surveyor
Botanical Addendum prepared 6 June 2021

Additional Reference: Sholars, Robert. *The Pygmy Forest and Associated Plant Communities of Coastal Mendocino County, California.* 1982. Black Bear Press

RAW WATER LINE





COLEMAN ENGINEERING

COLEMAN ENGINEERING
1223 PLEASANT GROVE BLVD
SUITE 100
ROSEVILLE, CA 95678
(916) 781-1188

BAR IS ONE INCH AT FULL SCALE

IF NOT ONE INCH ON THIS SHEET SCALE ACCORDINGLY

NO.	REVISIONS	BY	APP	DATE
1				
2				
3				
4				
5				

RAW WATER LINE REPLACEMENT PROJECT

SEGMENT 3
DOWNSTREAM NEWMAN GULCH

CITY OF FORT BRAGG — CALIFORNIA

DESIGNED UNDER THE DIRECTION OF:

SIMON N. GRAY
P.C.E. No. 50311 - REGISTRATION EXPIRES 06-30-22 — DATE

DESIGN: ABY	DATE: 5/27/21
DRAWN: ABY	DATE: 5/27/21
CHECKED: SNG	DATE: 5/27/21

SCALE
HORZ: 1"=100'
VERT: 1"=10'

DRAWING NUMBER
1

SHEET NUMBER
1 OF 1 SHEETS

APPENDIX D. MAMU HABITAT REPORT

Marbled Murrelet

The range of the Marbled Murrelet (Brachyramphus marmoratus) overlaps with the project area. Marbled Murrelet is endangered pursuant to Fish and Game Code (FGC) §2050 et seq. The U.S. Fish and Wildlife Service (USFWS) lists this species as threatened pursuant to Title 16, United States Code (U.S.C.) §1531 et seq. under the Endangered Species Act (ESA) and the California Board of Forestry and Fire Protection lists the Marbled Murrelet as a sensitive species as defined by Title 14 California Code of Regulations §895.1.

The Marbled Murrelet is a seabird that nests within multistoried canopies on platforms at least 4 inches wide by 4 inches Iong. Marbled Murrelet are found in trees with large lateral limbs, epicormic branching, epiphytic growth and/or intertwined branching and are often associated with late seral (over mature) forest and/or tree structure characteristics.

Inspection of the planned pipeline route confirms that most of the route is located in habitats not suitable for marbled murrelet nesting. Closer inspection of certain areas in project areas Segment 2, Segment 3, Segment 4 and Segment 5 were made due to presence of larger young growth north coast coniferous forest habitats. Of the areas chosen for closer inspection timber associated with the Segment 2 and Segment 3 pipeline alignment have the greatest potential to provide marbled murrelet habitat. Segment 4 and 5 stands consist of smaller young growth timber not known to support marbled murrelet nesting efforts.

<u>Segment 2</u>

Adjacent to the surveyed Segment 2 route several large diameter young growth redwood trees are found along a class 2 watercourse from Map Point A to Map Point B.

The largest trees in this area are located in the northern end of the drainage. The dominant trees in this cluster were reviewed individually and are described below.

Tree 1 Young growth redwood:

Height: 88 feet to broken top
DBH: 48 inches
Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. The top of the tree is broken out at approximately 16 inches diameter. No bryophyte development noted in the canopy. This tree is open to the north.

Tree 2 Young growth redwood:

Height: 137 feet
DBH: 66 inches
Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. Has several spike knots (iterated tops) No bryophyte development noted in the canopy. This tree is open to the west.

Tree 3 Young growth redwood:

Height: 149 feet
DBH: 55 inches
Canopy Structure Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. No bryophyte development noted in the canopy. This tree is open to the south.

Tree 4 Young growth redwood:

Height: 172 feet
DBH: 76 inches
Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. No bryophyte development noted in the canopy. This tree is not part of a clump and open grown.

Tree 5 Young growth redwood:

Height: 187 feet
DBH: 70 inches
Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. No bryophyte development noted in the canopy. This tree is not part of a clump and open grown.

Tree 6 Young growth redwood:

Height: 137 feet
DBH: 58 inches
Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. Has several spike knots (iterated tops) No bryophyte development noted in the canopy. This tree is open to the west.

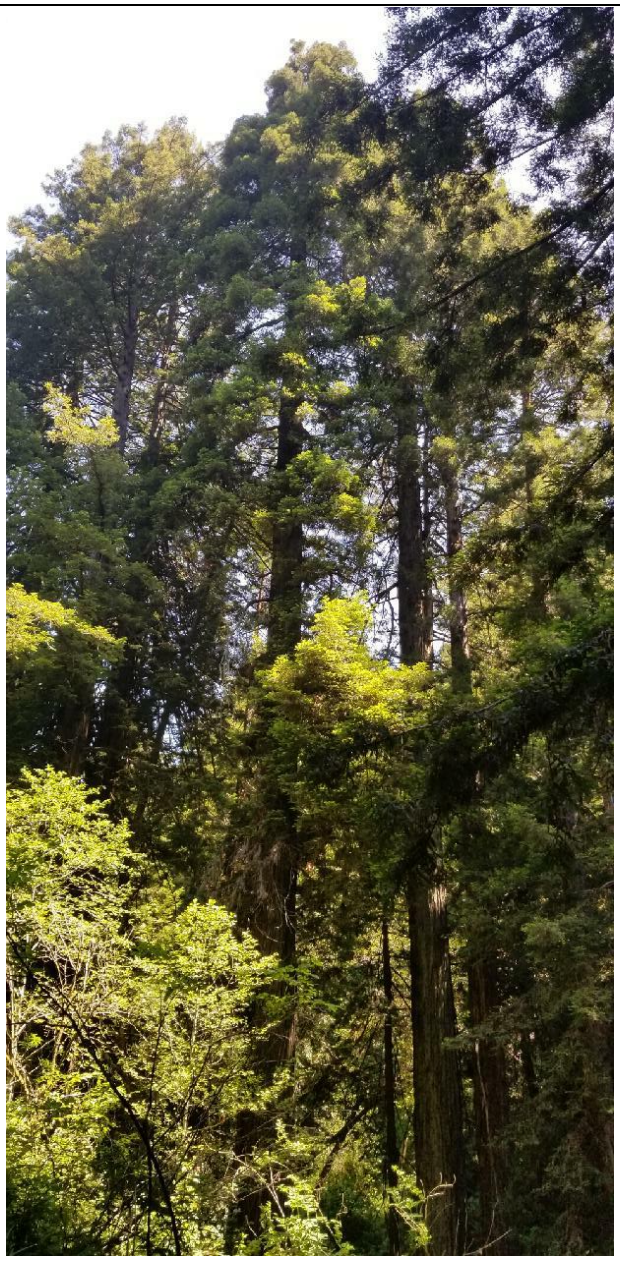


Figure 1: Large diameter young redwoods adjacent to Segment 2 pipeline route

Segment 2 Alignment Summary of Marbled Murrelet Habitat Assessment

Limbs and branch nodes >4 inches in diameter are present but lack the overall character thought to be necessary to serve as viable egg platforms. Specifically downward slopes branch structure, lack of bryophyte development and limb size/structure yielding viable egg platforms where eggs would be secure through the incubation period without the benefit of a nest structure (flat or concave surfaces greater than 4" x 4") while at the same time being sheltered from strong winds, direct solar effects and obscured enough from view to avoid predation during nesting. The dominant trees in this area either occur in small groups or individually tower above the surrounding forest canopy resulting in a moderately open upper canopy environment. Because of these factors, Marbled Murrelet use of this area is considered to be unlikely.

Segment 3 Alignment

Adjacent to the surveyed Segment 3 route several large diameter trees are located adjacent to Newman Gulch Reservoir on property owned by the City of Fort Bragg. These trees are located near the eastern terminus of the Segment 3 project area. The surveyed route extending westward is dominated by small diameter timber which is not suitable MAMU habitat.

Dominant trees at this location (see map) were reviewed individually and are described below.

Segment 3 Alignment **Tree 1**

Species Pygmy Cypress:
Height: 150 feet
DBH: 62 inches

Canopy Structure: Large limbs present with branching pattern that could potentially provide a 4+ inch egg platform. No some bryophyte development is also noted in the canopy. This tree is open to the east as it is directly adjacent to the Newman Gulch Reservoir (spillway visible in background).

Segment 3 Alignment **Tree 2**

Species: Pygmy Cypress:
Height: 132 feet
DBH: 75 inches

Canopy Structure: Large limbs present with branching pattern that could potentially provide a 4+ inch egg platform. No some bryophyte development is also noted in the canopy. This tree is surrounded by young growth canopy.

Segment 3 Alignment **Tree 3**

Species: Old Growth Redwood:
Height: 147 feet
DBH: 94 inches

Canopy Structure: Limbs typically sloping down and generally lacking diameters sufficient to provide 4+ inch egg platform. No bryophyte development noted in the canopy. This tree is not part of a clump and the upper canopy is open grown.

Segment 3 Alignment **Trees 4 and 5**

Tree 4
Species: Western Hemlock:
Height: 126 feet
DBH: 40inches

Tree 5
Species: Western Hemlock:0
Height: 120 feet
DBH: 34 inches

Canopy Structure: Limbs have some branching patterns yielding horizontal limb surfaces potentially large enough to provide a 4+ inch egg platform. No bryophyte development noted in the canopy. This tree is not part of a clump. Surrounding canopy is generally closed from above but open below providing little cover to avoid predation.

Segment 3 Alignment Summary of Marbled Murrelet Habitat

Potential habitat is limited to 5 trees located near the eastern end of the Segment 3 alignment. Individual limbs on individual trees itemized above may provide surfaces potentially large enough to provide a 4+ inch egg platforms. The area where these trees are located is a busy environment with ongoing activity including municipal use and maintenance of the Newman Gulch Reservoir, use and maintenance of the Summers Lane Reservoir and extensive clearing and maintenance of right-of-way associated with the high voltage power transmission lines that bound this area on the south side. It is because of these site specific factors rather than purely existence possible platform nesting opportunities that Marbled Murrelet use of this area is considered to be unlikely.

APPENDIX E. NSO SURVEY REPORT

NSO SURVEY SHEET												
Site #	n/a	Site Name		City FB				State	CA			
Visit#	1	Outing#	1	Year	2019	Survey Date		3/8/2019				

Landowner:	City FB				Physiographic Provence:		Coastal Mendocino Co.				
Complete Visit (Y/N)		YES	NO		Observers:		Curtis Tyler				
Type of Survey:	ACS	SC	CC	FO	RV	AV	OPP				

ACS = Activity Center Search **SC** = Station Calling **CC** = Continuous Calling **FO** = Follow Up Outing **RV** = Reproductive Visit

HISTORICAL SITE CENTER LOCATION (use if historical site center is being surveyed)

TWN		RNG		SEC		1/4		1/16				
WEATHER:	Clear, clam and cool											
OWLS DETECTED (Y/N)		YES	NO									

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
9	1805	1815		NR		Neighbor unsympathetic move station to S. of Hwy 20					
10	1836	1846		NR		frogs					
11	1853	1903		NR		Dogs in Dist.					
7	1912	1922		NR		some traffic					
8	1931	1941		NR							
5	1956	2006		NR							
6	2011	2021		NR							
13	2044	2054		NR		town noises					
14	2057	2107		NR							
15	2110	2120		NR		River					
19	2151	2201		NR							
18	2205	2215		NR		frogs					
17	2221	2231		NR		dog in dist					
1	2250	2300		NR							
2	2304	2314		NR							
3	2318	2328		NR							
4	2342	2352		NR							

NSO SURVEY SHEET

Site #	n/a	Site Name	City FB	State	CA
Visit#	2	Outing#	1	Year	2019
Survey Date	3/15/2019				

Landowner:	City FB	Physiographic Provence:	Coastal Mendocino Co.
Complete Visit (Y/N)	YES	NO	
Observers:	Curtis Tyler		

Type of Survey:	ACS	SC	CC	FO	RV	AV	OPP

ACS = Activity Center Search **SC** = Station Calling **CC** = Continuous Calling **FO** = Follow Up Outing **RV** = Reproductive Visit

HISTORICAL SITE CENTER LOCATION (use is historical site center is being surveyed)

TWN		RNG		SEC		1/4		1/16	

WEATHER:	Clear, calm with some high fog

OWLS DETECTED (Y/N)	YES	NO

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
1	20:11	20:21		NR		Buoy whistle					
2	20:25	20:35		NR		Buoy whistle					
3	20:38	20:48		NR		Buoy whistle					
4	20:54	21:04		NR		Hwy noises					
10	21:38	21:48		NR							
11	22:04	22:14		NR		Buoy/dog					
7	22:27	22:37		NR		some traffic					
8	22:51	23:01		NR		dogs in dist.					
9	23:09	23:19		NR		Buoy					
13	23:48	23:58		NR		Buoy/dogs in dist.					
14	0:00	0:10		NR		Buoy/ hwy in dist.					
15	0:12	0:22		NR		frogs					
17	0:39	0:49		NR							
18	0:51	1:01		NR		river					

NSO SURVEY SHEET

Site #	n/a	Site Name		City FB				State	CA			
Visit#	3	Outing#		Year	2019	Survey Date		3/27/2019				
Landowner:		City FB				Physiographic Provence:		Coastal Mendocino Co.				
Complete Visit (Y/N)			YES	NO		Observers:		Curtis Tyler & Lee Susan				
Type of Survey:		ACS	SC	CC	FO	RV	AV	OPP				

ACS = Activity Center Search **SC** = Station Calling **CC** = Continuous Calling **FO** = Follow Up Outing **RV** = Reproductive Visit

HISTORICAL SITE CENTER LOCATION (use is historical site center is being surveyed)

TWN		RNG		SEC		1/4		1/16				
WEATHER:		Cool, Clear										
OWLS DETECTED (Y/N)			YES	NO								

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
10	20:44	20:54		NR		Frogs & dogs					
11	21:01	21:11		NR		Dog in dist					
7	21:20	21:30		NR							
8	21:46	21:56		NR		stream in dist					
9	22:05	22:15		NR							
5	22:28	22:38		NR							
6	22:43	22:53		NR							
4	23:27	23:37		NR							
3	23:40	23:50		NR							
2	23:53	0:04		NR		light fog					
1	0:07	0:17		NR		light fog					
20	19:44	19:56		NR		met John Ramirez from Lyme					
17	20:07	20:17		NR		dogs, cars, etc					
18	20:19	20:29		NR		dogs, cars, etc					
19	20:31	20:41		NR		dogs, cars, etc					
13	20:56	21:06		NR							
14	21:09	21:20		NR							
15	21:23	21:33		NR							
16	21:39	21:49		NR							

Stations 10-1 are CT ; Stations 20-16 are LS

NSO SURVEY SHEET

Site #	n/a	Site Name	City FB		State	CA
Visit#	4	Outing#	Year	2019	Survey Date	5/5/2019

Landowner:	various	Physiographic Provence:	Coastal Mendocino Co.
Complete Visit (Y/N)	YES NO	Observers:	Susan, L

Type of Survey:	ACS	SC	CC	FO	RV	AV	OPP

ACS = Activity Center Search **SC** = Station Calling **CC** = Continuous Calling **FO** = Follow Up Outing **RV** = Reproductive Visit

HISTORICAL SITE CENTER LOCATION (use is historical site center is being surveyed)

TWN		RNG		SEC		1/4		1/16	

WEATHER:	mild, nice

OWLS DETECTED (Y/N)	YES	NO

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
4	20:17	20:17		NR							
3	20:31	20:31		NR							
2	20:44	20:44		NR							
1	21:00	21:00		NR							
10	21:38	21:38		NR							
11	22:04	22:04		NR							
7	22:27	22:27		NR							
8	22:51	22:51		NR							
9	23:09	23:09		NR							
13	23:48	23:48		NR							
14	0:00	0:00		NR							
15	0:12	0:12		NR							
17	0:39	0:39		NR							
18	0:51	0:51		NR							

NSO SURVEY SHEET

Site #	*n/a*	**Site Name**		*City FB*				**State**		*CA*		
Visit#	*5*	**Outing#**		**Year**	*2019*	**Survey Date**		*5/17/2019*				
Landowner:		*various*				**Physiographic Provence:**		*Coastal Mendocino Co.*				
Complete Visit (Y/N)			**YES**	**NO**		**Observers:**		*Susan, L*				
Type of Survey:		**ACS**	**SC**	**CC**	**FO**	**RV**	**AV**	**OPP**				

ACS = Activity Center Search **SC** = Station Calling **CC** = Continuous Calling **FO** = Follow Up Outing **RV** = Reproductive Visit

HISTORICAL SITE CENTER LOCATION (use is historical site center is being surveyed)

TWN		**RNG**		**SEC**		**1/4**		**1/16**				
WEATHER:		*good*										
OWLS DETECTED (Y/N)			**YES**	**NO**								

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
1	*20:31*	*20:41*		*NR*							
2	*20:43*	*20:53*		*NR*							
3	*20:56*	*21:06*		*NR*							
4	*21:13*	*21:25*		*NR*							
10	*22:04*	*22:14*		*NR*							
11	*22:23*	*22:33*		*NR*							
7	*22:48*	*22:58*		*NR*							
8	*23:12*	*23:22*		*NR*							
9	*23:29*	*23:39*		*NR*							
13	*0:12*	*0:22*		*NR*							
14	*0:24*	*0:34*		*NR*							
15	*0:36*	*0:46*		*NR*							
17	*1:03*	*1:13*		*NR*							
18	*1:15*	*1:25*		*NR*							

NSO SURVEY SHEET												
Site #	n/a	Site Name		City FB				State	CA			
Visit#	6	Outing#		Year	2019	Survey Date		5/28/2019				
Landowner:		various				Physiographic Provence:		Coastal Mendocino Co.				
Complete Visit (Y/N)			YES	NO		Observers:		Susan, L				
Type of Survey:		ACS	SC	CC	FO	RV	AV	OPP				
ACS = Activity Center Search SC = Station Calling CC = Continuous Calling FO = Follow Up Outing RV = Reproductive Visit												
HISTORICAL SITE CENTER LOCATION (use is historical site center is being surveyed)												
TWN		RNG		SEC		1/4		1/16				
WEATHER:		good										
OWLS DETECTED (Y/N)			YES	NO								

Station	Start	End	SPP	Obs Type	Sex	Bearing/Distance	T/R/Sec	1/4	1/16	UTM East	UTM North
4	20:40	20:54		NR							
3	20:59	21:09		NR							
2	21:12	21:24		NR							
1	21:27	21:37		NR							
10	21:59	22:09		NR							
11	22:17	22:27		NR							
7	22:44	22:54		NR							
8	23:13	23:23		NR							
9	23:31	23:44		NR							
13	0:15	0:25		NR							
14	0:27	0:37		NR							
15	0:39	0:51		NR							
17	1:12	1:22		NR							
18	1:24	1:34		NR							

Most of this survey area is urbanized such that it does not really function as NSO habitat